



A network-oriented peer-driven HIV preventive intervention for injection drug users in Southern Kyrgyzstan: Adapting and testing feasibility

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Abstract

This paper describes the adaptation process and feasibility testing of the Self-Help in Eliminating Life-threatening Diseases (SHIELD) intervention for injection drug users (IDUs) and their risk networks in the Southern Kyrgyzstan region of Osh. HIV rates among IDUs in Osh are 13% and current harm reduction programs are not reaching those most at risk. Qualitative and quantitative mixed-methods were used with 72 IDUs to adapt and pilot the intervention. Throughout the process, IDU participants helped to identify cultural and contextual realities that impact on HIV risks and the success of prevention interventions. The pilot's preliminary outcomes show promising findings.

Introduction

Central Asia is experiencing one of the fastest growing HIV epidemics in the world, with transmission driven largely by widespread heroin use (Godinho et al., 2005). While drug injection accounts for nearly three-quarters of the HIV cases in Central Asia; there has been a recent increase in the number of new cases linked to heterosexual activity with IDUs (UNAIDS, 2008; Renton et al, 2006; Winstanley et al., 2006). Men account for over 90% of IDUs in Central Asia (Renton et al., 2006) and in some towns along known drug trafficking routes, an estimated 15% of adults inject drugs (Aceijas, et al 2006). Recent data suggest that Kyrgyzstan has an estimated 44,400 IDUs (Aceijas et al, 2006). This is 0.74% of the general population and one of the highest prevalence rates of IDUs in the world

This study was conducted in the Osh region of Southern Kyrgyzstan. The city of Osh, with a population of 300,000, is a low-resource setting and has limited substance abuse treatment programs. A heavily trafficked highway route used for heroin distribution from Afghanistan passes through Osh (UNODC, 2008). Thus, the drug is readily available and inexpensive. This exacerbates emerging overlapping epidemics of drug addiction and HIV transmission as increased rates along heroin-trafficking routes are reported (Beyrer, 2003; Godinho et al, 2005). Almost half (44.9%) of all the registered HIV cases in the country are located in Osh and IDUs constitute 66.7% of all the registered HIV cases. The proportion of IDUs infected with HIV has steadily increased over the past 5 years. Recent data indicate that 13% of IDUs in Osh are HIV positive and 50% have HCV (Republican AIDS Center, 2009). Heroin IDUs are mostly male (85 %) (Burkhanov, 2008). Of the estimated 5,000 IDUs in Osh (1.6% of the population) less

than 2,000 have contact with the health care system or harm reduction organizations (Burkhanov, 2008).

To date, no evidenced-based intervention prevention models targeted to IDUs in Kyrgyzstan are available. There is a tremendous need to implement evidence-based HIV approaches for IDUs that are contextually and culturally congruent and designed for low resource settings. In this paper, we describe a pilot NIDA funded study that adapted, and piloted the Self-Help in Eliminating Life-threatening Diseases (SHIELD), an HIV prevention intervention model for IDUs and their risk networks (Latkin, et al 2003) in the Southern Kyrgyzstan region of Osh.

SHIELD has been identified as a best practice by the Centers for Disease Control (CDC) for HIV prevention interventions (CDC, 2009). SHIELD is a network-oriented peer educator HIV prevention for IDUs and members of their risk network. This intervention has been found to be effective in reducing drug and sexual risks with IDUs in the United States (Latkin et al, 2003) and is being adapted and tested through randomized clinical trials around the world (Latkin, et al, 2009). The joint US-Central Asia research team conducted formative research about HIV risks and drug use in Osh and reviewed available evidence-based interventions in an effort to identify or to decide to create an intervention tailored to fit the context in Osh (Higgins et al, 2006; McKleroy et al, 2006; Dushey, et al 2001; Syringe, et al, 2005; Kelly et al, 1999; Coyle et al, 2008; Wegbreit et al, 2006; Needle et al, 2005; Friedman SR & Aral S. 2001). The team selected SHIELD as the intervention model for Osh because it addresses both sexual and drug risk behaviors, aims to reduce individual and group risk behaviors, has the potential to access ‘hidden’ populations not currently participating in harm reduction or other services, and may be implemented in low resource settings.

Refinement and piloting the feasibility of the SHIELD intervention was conducted over a one-year period from 2008-2009. A mixed method approach was employed in a three stage process: (1) establishing a collaborative community board (CCB) to work with the research team through all stages of the research implementation; (2) conducting two focus groups with a total of 12 IDUs to obtain their feedback on the feasibility of recruitment, retention strategies, and intervention components, and (3) piloting the intervention with 60 participants (30 index participants were trained as peer educators, and 30 network members were recruited by the index participant who reported engaging in sexual and/or drug risk behaviors with them). Feedback from the CCB and participants was elicited throughout the study period and their input was used to refine the final intervention.

A pre post design was conducted to examine the feasibility of the intervention. This information, along with facilitator and participant feedback, was used to further refine the intervention content and delivery. This paper presents results for the baseline and immediate post test to demonstrate potential promise of the intervention for this new setting. The paper also describes the process of the implementations of the three stages and presents the outcomes at immediate post-test. The paper discusses lessons learned and implication for future SHIELD intervention research with IDUs in Osh and other Central Asian countries.

Method

The Method section describes the SHIELD intervention, the process to adapt the intervention for Osh, and the methods for quantitative data analysis.

Description of the SHIELD Intervention

The five core elements of SHIELD are: (1) implement the intervention in a small group setting; (2) follow sequence of intervention activities, (3) follow the structured intervention sessions; (4) include the communication and risk reductions skill sets, and (5) peer educator training activities in every session. The rationale for including each of these elements is further explained in the SHIELD intervention package that is designed to develop the skills and knowledge of the index participants to become an effective peer educator. The group setting also encourages a sense of community membership and social support. The intervention sessions are only provided to the index participants who were instructed to share the information they learned at each session (SHIELD A Peer-Led Project, Intervention Package, 2003),

SHIELD is guided by four overlapping psychological theories: Social Cognitive Theory (Bandura, 1997; Bandura 1994), Social Identity Theory (Tajfel and Turner, 1986; Turner, 1982), Cognitive Dissonance Theory (Festinger, L., 1957) and Social Influence Theory (Asch, 1956; Asch 1966). The general topics of each session are the following. Session 1: Introduction to study goals and establish group rules in order to build group cohesion, discuss modes of HIV transmission and the role of a peer mentor in disseminating harm reduction messages. Session 2: Peer Mentoring and Injection-related HIV Risk Behaviors: Provide basic concepts of harm reduction with safer injection behaviors and how mentors can deliver these concepts within their social networks. Session 3: Safer Sex Practices and Communication Skills: focus on motivating participants to adopt less risky sexual behaviors, and includes skills-building to use condoms correctly. Session 4: Personal Resistance to Change: identify their own personal barriers to adopting safer behavior and learn negotiation skills in reducing sexual and injection risks. This session includes training in Active Listening Skills. Session 5: Interpersonal Barriers to Peer Mentoring: Learn to identify and re-frame their barriers to peer mentoring and practice effective

ways to approach others as a peer mentor. Session 6: Review, Mentor Plans, and Graduation: Set goals for their roles as mentors and review lessons about harm reduction.

Stage I: Community Collaborative Board (CCB)

A Community Collaborative Board was created that included a broader community model (Morin et al, 2003; El-Bassel et al, 2008), such as representatives of the local government officials (Mayor's Office), the police, substance abuse treatment providers, a representative of the Republican AIDS Center, and local NGO directors. Lack of sustainable leaders in IDU groups in Osh was the main reason a broader board was created versus a more population-specific model (which ideally would have been primarily composed of former and current IDUs) (Morin et al, 2003).

We employed Community Based Participatory Research (CBPR) to guide the creation of SHIELD's CCB because it offers a paradigm for researchers on how to partner with a community in a way that can improve the quality of the research and help the community to address HIV-related problems (Minkler, 2005). The overarching aim of CBPR is to increase knowledge and understanding of a given phenomenon and use the knowledge obtained in interventions and to change policies to improve the health and quality of life of community members (Israel, et al., 2005).

Function of the CCB

Major roles that the CCB members have include being an advisor to the researchers, giving feedback on the content of the questionnaires, intervention and training, and recruitment and retention of participants in the research. CCB member feedback is valuable for the research integrity and, as such, ensures that the voices of participants are reflected in the study design and

implementation. The CCB members were extremely committed to assisting the SHIELD research process – the first study of this kind in the region – and members acknowledged that the project uniquely responded to the needs of their community and served as a road map on culturally-congruent HIV interventions with IDUs in Osh. The CCB has agreed to be active in any future randomized clinical trial (RCT) that is informed by the findings from this pilot study.

Mechanisms involved in helping the CCB to achieve its purpose

During this 12-month study, the Project Director met with the individual CCB members and reviewed all the project material with a sub-set of the CCB. In addition to individual meetings with members, the board met twice during the study period. The Project Director frequently emphasized that the CCB members bring community voices into play at all stages of the research implementation. Meetings were facilitated by the Project Director and/or the U.S.-based Principal Investigator. The Project Director continued to contact individual CCB members throughout the study. The CCB meetings include ongoing training, an explanation of members' roles in each stage of the research, Board rules, expectations, term of service on the CCB, confidentiality issues, and communication structures (such as how information is presented in the CCB, consensus building skills, and how conflicts can be resolved).

Stage II: Study adaptation process

Focus Groups

We conducted two focus groups with a total of 12 IDUs (9 men and 3 women). Each group was led by two facilitators and met for two hours. Eligibility included being aged 18 or older, a current or former injection drug user, and able to speak Russian (the dominant language).

Participants were recruited by project staff and by word-of-mouth. All participants were from Osh and were of Russian, Kyrgyz, or Uzbek ethnicity.

The average age of focus group participants was 34 (with a range from 23 to 50), all 12 were IDUs, 5 had a history of incarceration, 10 were involved in drug treatment (detoxification and drug rehabilitation programs), and several self-identified as being HIV positive. Participants were compensated the equivalent of \$3 USD worth of food and personal hygiene products. The purpose of the focus group was to obtain feedback about the content of the sessions, skills-building, and homework assignments, feasibility of recruitment and retention of IDUs and IDU world views on HIV risks that they and their network members encounter and their prevention strategies.

Intervention Content Feedback

Each session was reviewed by focus group participants who found that the content, role plays, and social and cognitive skills covered in the sessions in the original SHIELD were in general appropriate for IDUs in Osh, but they recommended some revisions to make it more contextually relevant to their situations. The focus groups strongly recommended adding a component on overdose management. Death from overdose is not uncommon in Osh. Services to help an IDU in overdose crisis are limited and “street remedies” used are not scientifically based. Local pharmacies carry Naloxone (available with a prescription), but its cost is prohibitive for IDUs. The focus groups reported that most IDUs would rather use the money to buy heroin. They also recommended minimizing the discussion on the female condom because the female condom is not available at local pharmacies or trust points. Focus group members also reviewed the HIV education information and did not recommend any changes. They felt

that the manual contained an appropriately measured amount of HIV facts and particularly liked the Group Problem-Solving and Role Play activities.

The focus groups elicited IDU community's norms for cleaning injecting equipment and discussed how best practices may be adapted to local practices in the content of the intervention. The focus group participants reported that IDUs in Osh - most with prison experience - have developed their own methods of cleaning injection equipment between shared uses. Rather than place the needle into a cup of water, participants drew water directly into the syringe (barrel), removing both the needle and the plunger. They cited speed as a reason for using this method. The needle and plunger set is then very loosely placed back on the syringe (barrel) so that with a couple of squirts, water is able to "clean" the inside and outside of the needle. Participants referred to this as the "shower" method. After this is done a couple times, the needle and hilt are fastened on tightly and injecting resumes. In reality, this method does not remove germs or contaminants from the outside surface of the needle but local injecting culture has dictated its use and it has become the norm.

It was also learned that IDUs in Osh often mix heroin with cheaper drugs available in local pharmacies, like *Dimedrol (Diphenhydramine)*, *Diazepam (Relanium)*, or illegal *khanka* (a raw liquid derivative from opium poppy dried till paste status and formed into 2-3 cm tablets). These drugs are combined to increase the length of the high and/or lessen withdrawal, but the practice also causes damage to the veins. The final facilitator manual included information about local injection practices so that the facilitators would be prepared to answer questions and talk about local customary behaviors and risks.

Peer Educators and Network Members

The focus groups described characteristics of respected members of their IDU community because they believed that these leaders would make good potential peer educators. In Osh, if a fellow drug user helps another who is in overdose crisis, they are respected. In contrast, someone who does not help during an overdose crisis is thought to be selfish and can be socially isolated. The participants also stated that IDUs or former IDUs who had been in prison had additional life experience and skills in adapting to difficult situations, and such individuals would be listened to by their community. Several focus group members mentioned the names of NGO harm reduction outreach workers that they knew and commented that those who had charisma were able to communicate better and were listened to by the IDU community, so this characteristic was thought to be beneficial.

As far as identifying to whom to target the intervention, participants specifically suggested that reaching out to newer users should be a priority because they seem to be less familiar with what to do during an overdose and were less aware of HIV transmission pathways. Shorter term users were also thought to be more sexually active, whereas many of the longer term IDUs had reduced sexual activity. The notion of recruiting sexual partners – especially non drug using partners – was a novel concept to the participants because most outreach programs in Osh only target drug users. The focus groups were accepting of this idea and felt index participants would recruit both drug and sexual partners.

Intervention Implementation Location

The focus groups recommended conducting the interventions in easily reached locations where IDUs can feel safe. Local transportation is limited and there are costs associated with travel, so specific locations throughout the community were recommended. The focus groups

encouraged conducting the sessions in community settings such as local NGOs or their syringe distribution Trust Points. Most IDUs are familiar with these locations and feel safe accessing the sites, which may also attract IDUs who are not registered as drug users with the government. The focus groups also suggested expanding the number of intervention locations, so that more IDUs could participate. One example of an additional site would be the substance abuse treatment center where inpatient drug treatment (detoxification) is provided and daily methadone doses are distributed. This site may not attract the “hidden” IDUs in the population, but it is a location where registered drug users live or visit on a daily basis.

Refining the Study: Criteria, Intervention and Implementation Plan

Prior feedback from the CCB and key informants resulted in the decision to have more specificity in the eligibility criteria and have only men as index participants as over 85% of IDUs in Osh are male. Osh is in a more traditional part of the country and it was felt that some of the topics would be culturally unacceptable to a mixed gender group. In this study, female sexual or drug risk partners of the male index participants were eligible to be recruited as network members.

Based on the information learned from the focus groups, the research team refined the intervention session content. In addition, information learned about local drug use norms were incorporated into the facilitator training manual. We included content on overdosing in Session 5 that raised awareness of risks for overdose, identified personal risks or triggers for overdose, and presented a plan to reduce risks and avoid triggers. We explained how to assist when a friend overdoses (i.e., provide help in breathing and call an ambulance from a mobile phone). Information gathered also was helpful in making final selections about intervention

implementation sites and the compensation package. The CCB and key informants cautioned the study team not to provide financial remuneration in the study but to compensate with useful goods. This was done, although the CCB and study team were aware that a few participants would sell the goods for cash.

Stage III: Intervention Pilot

Study design

The pilot study was designed to examine feasibility of recruitment, participation in the intervention and retention at the follow-up post tests. The pilot phase included 60 participants, 30 male index peer educators and 30 network members recruited by the index participants prior to the baseline. Index participants were recruited, completed a short eligibility criteria assessment, and received a baseline assessment if they met the eligibility criteria. The intervention was conducted over a three week period – two sessions per week – and four cohorts were implemented. Assessment was conducted pre and post intervention to test feasibility and potential promise of the intervention.

Eligibility Criteria

Eligibility for the index participants were being male, aged 18 or older, had unprotected sex or unsafe injection practices within the past 30 days, and being fluent in Russian. The index participants also had to be able to recruit a member of their sexual or drug risk network for the study. This individual was defined as someone with whom he had unprotected sex or practiced unsafe injecting practices in the past 30 days. The network member could be either male or female, aged 18 or older and fluent in Russian. The rationale for using Russian is that it is a

common language that the many ethnic groups in Osh speak (future studies, especially if they are implemented in rural settings, will evaluate using other local languages).

All but three of the interested index participants met eligibility requirements (the three who were not enrolled could not recruit a network member). All of the recruited network members met the eligibility requirements. Network members were screened and eligible participants immediately completed the informed consent process and took the baseline survey.

Sample

At baseline the total sample consisted of 60 participants, 30 index participants and 30 network members. Of the thirty network members, N=10 were female. For the male network members, all 20 had injected drugs and shared syringes with the index participant. For the female network members, 9 of 10 had shared drug paraphernalia with the index participants and 7 of these females had unprotected sex with the index participant. Risk behaviors shared between the index participant and the network member were identified by self-report at the eligibility screening.

Study Site

The intervention sessions were implemented at the main office of the local harm reduction organization that collaborated on this study. The local NGO partner in this study is well known by IDUs, trusted, and known to be a safe place to visit. The screening, consent process, and surveys were conducted in a private room within the local NGO and were conducted by one of two project staff, the Project Director, or the facilitator/interviewer. Both are Masters degree-educated social workers with prior experience working with IDUs.

Compensation

Index participants were compensated \$3.5 to \$4 USD worth of food and personal hygiene items for each intervention session attended. Both the index participants and the network members were compensated \$3.5 to \$4 USD worth of food and personal hygiene items for each of the assessments they completed. Snacks were provided at each intervention session and a graduation party with food and refreshments was held after the final intervention session.

Recruitment of Participants

Index participants were recruited by word-of-mouth through harm reduction NGO outreach workers. During their daily distribution of syringes and condoms they alerted the IDU community that an HIV prevention study would be starting and gave them contact information. Interested participants called the number which was operated by the Project Director. The index participants were responsible for identifying a network member and having them come to the study office for eligibility screening. Recruitment was ongoing as a total of 30 index participants were recruited and the intervention was implemented in four cohorts, (5-8 participants in each cohort). The six intervention sessions were implemented over a three week period and the cohorts ran consecutively.

Retention for Sessions and Assessment

One of the aims of the study was to develop and refine strategies to ensure retention of participants in the six sessions and in the follow-up interviews. Of the index participants remaining in the study, 80% completed the immediate post test and 66.7% of the network members completed the immediate post test. During the study period, 16.6% (N=10) of the participants had to drop out of the study, this included the five index participants who had to

drop out and subsequently their network members. One of the index participants who dropped out of the study completed all six sessions but was arrested after that point and was not available for follow-up. Reasons for non-attendance among participants included experiencing daily living problems as a result of addiction and involvement with the criminal justice system. Four others had to drop out during the three week time period when the intervention was being implemented: one died of an overdose, one was hospitalized due to illness, and two were arrested and detained by the police. In future studies, we will better account for the estimated drop-out rate in the recruitment strategy.

The follow-up rates improved over the study period because the study team refined the retention strategies based on lessons learned from previous cohorts (the final cohort had a 93.8% post test completion rate). The revised strategies included having the Project Director go into the community the day before follow-up surveys and remind individuals of the appointment. To further include the network members and to have them available for the immediate post survey, the final cohort the research team decided to invite the network members to the final session. This served to have more network members be present for the post-intervention survey.

Intervention Session Attendance

The index participants attended an average of 4.6 out of the 6 sessions. Reasons for missing sessions most often included being sick or picking up day labor work. One of the barriers affecting timely attendance at the sessions or attending at all was the index participant's need to obtain a daily methadone dosage before the session and the unpredictable schedule of methadone clinics often interfered with sessions.

Quality Assurance

All intervention sessions were taped. The facilitator team, composed of the Project Director (acting as facilitator) and the second facilitator, conducted all sessions. After each session they completed facilitator feedback notes. Feedback on the intervention implementation was collected from the facilitators after each session by filling out a form on content covered/missed and barriers to implantation. Participants also completed a feedback form after each session on their level of satisfaction with the intervention content and delivery style. These data were collected to assess the level of adherence, quality control and supervision of the facilitators.

Research Staff Training

A two-day training program was provided to the second intervention facilitator. The training was conducted by the Project Director who had reviewed the intervention in detail with the US-based team. These two individuals also conducted the surveys and the screening. In a larger study, these tasks would be conducted by separate staff. Additional training for the facilitator and the local NGO Director involved in the project, which included the online Human Subjects protocols and HIPAA training.

Pre/Post Assessment

The assessment tool used in this study is part of the SHIELD intervention package which was modified prior to the intervention pilot as a result offered back from focus groups and interviews with the CCB. The same survey instrument was used at the pre/post time period.

The assessment covered: (A) HIV-related communication, (B) Peer education self-efficacy, (C) Social support network, (D) Sex-related risk behaviors, (E) Drug-related risk behaviors, (F) Drug treatment, and (G) Future behaviors. The sections corresponded with the

topics and skill-building activities included in the intervention sessions and allowed for a pre/post evaluation of the impact of the intervention.

Peer Education Self-efficacy

The HIV-related communication asked if and who they talked with about HIV and on which HIV topics, e.g., general information, transmission, HIV testing, HIV medication. The Peer Education Self-Efficacy Scale consisted of 5 questions asking about the level of difficulty of a variety of behaviors, including talking to others about safe sex, safe injecting, and about getting an HIV test. Each item was rated on a scale from 1 (very difficult) to 4 (very easy). The composite score was calculated and a high score represented higher level of peer education self-efficacy. The scale demonstrated a good measure of internal consistency (Cronbach's alpha = .755).

Social Network Assessment

The Social Network Assessment questions inquired about social support and if the participant has people in their life to talk to about personal problems, has someone to care for them, someone to help when they are in trouble, and someone in their life who would support their risk reduction. The questions were rated on a 4-point Likert scale from 1 (strongly disagree) to 5 (strongly agree). The scale demonstrated moderate measure of internal consistency (Cronbach's alpha = .684). A high score on the social network scale indicates stronger social support.

Sexual Risk Behavior

The sexual risk behavior questions asked about number and types of partners, sexual behaviors, and safe sex practices in the past 30 days. The questions included the frequency of using condoms.

Drug-related Risk Behaviors

The drug-related risk behavior questions inquired about types of drugs used, frequency of use, and drug equipment sharing information, and if the participant had experience with, ever used and how often, ever participated in a needle exchange program. To assess injecting drug related risks in the past 30 days, the items were dichotomized (never using unclean needles or injection equipment versus always or sometimes unclean needles or injection equipment, never using unclean equipment, and always using sterile needles).

Risk Reduction Intentions

The final section focused - the likelihood of using safer practices in the future. Finally, participants were asked about their future protective behaviors (e.g., “*How likely are you to use a condom the next time you have vaginal sex?*”). Participants intentions to use safe injecting and safe sex practices were evaluated using a scale from 1 (very unlikely) to 4 (very likely). The future protective behaviors scale consisted of 4 items and demonstrated moderate internal consistency (Cronbach’s alpha = .695).

Data analysis

The analysis was performed in SPSS 17. A General Linear Modeling (GLM, or a repeated-measures analysis of variance) was used to estimate pretest and immediate posttest differences for continuous outcomes (peer education self-efficacy, social support, and future protective behaviors scales) (Judd, McClelland, and Ryan, 2008). Generalized estimated

equations (GEE) technique was used to measure pre-test and post-test differences for binary outcomes (drug-related risk behaviors--using shared needles, using shared equipment, using sterile needles; and sexual HIV risk behaviors--having multiple sexual partners, having unprotected vaginal or anal sex with main or sexual partners). We performed analyses on the complete cases available at both waves (the number of participants completing the posttest was N=44), adjusting for the types of participant (index or network) (Albert, 2004).

Findings

Characteristics of the sample

The average age of the participants was 39 (SD=8.2) years old. All of the participants (index and network) had injected heroin in the past 60 days and 70% reported having vaginal or anal sex with a regular or casual partner. Among those reporting having sex in the past 30 days, less than half (44%) always used a condom with a casual partner and less than a quarter (23%) always used a condom with a regular partner. None of the 60 participants paid for sex in the month prior to the study. Among those who were sexually active in the past 30 days, 17% reported having more than one sexual partner in the past month and the majority (76%) reported having had sex with one main partner. Seventy-eight percent had talked about HIV in the past 30 days. The majority discussed HIV prevention with friends (75%), other family members (19%) and only 10% reported discussing HIV-related topics with their sex partners. The majority (90%) had ever received a syringe through a syringe exchange program. All participants reported injecting heroin in the past 60 days. In addition, 14% of participants reported sniffing heroin in the past 6 months and 40% reported smoking marijuana (hashish). At baseline, there were no significant differences in sexual and drug-related risk behaviors among index and network participants.

Outcomes

Drug-related outcomes

As presented in Figure 1, at baseline 43% of participants never used needles or syringes after someone else without cleaning in the past 30 days prior to the assessment. At the posttest following the intervention 64% of participants reported never using shared drug paraphernalia. As demonstrated in Table 1, the difference between pretest and immediate posttest was statistically significant ($B = .75$, $SE = .27$, Wald = 10.11, $p < .001$). Further, there was a significant increase in the percentage of participants reporting never using shared equipment from pretest to posttest ($B = 2.44$, $SE = .51$, Wald = 23.37, $p < .001$). The percentage of participant reporting never using equipment (e.g., cooker) that someone else used increased by 17% (from 15.9% at baseline to 32.6 at posttest). There was also a significant improvement in the reported use of sterile needles and frequency of accessing needles through a needle exchange program.

[Insert Table 1 here]

[Insert Figure 1 here]

Sexual risk outcomes

As Figure 2 shows, 6.8% of participants reported having more than one sexual partner (either casual or main) in the past 30 days prior to the assessment. At immediate posttest, 4.7% of participants reported having multiple partners and, as reported in Table 2, the difference between pretest and immediate posttest is statistically significant ($B = -2.18$, $SE = .46$, Wald = 22.31, $p < .001$). Additionally, participants reported a significant decrease in having unprotected vaginal and anal sex with casual partners between pretest and posttest ($B = -3.18$, $SE = .7$, Wald = 20.41, $p < .001$ and $B = -3.16$, $SE = .7$, Wald = 20.17, $p < .001$, respectively). However, a relatively small number of participants were at risk for having unprotected vaginal sex (9.1%) or anal sex

(6.8%) with causal partners. Changes in these sexual risk behaviors did not differ significantly for index or network partners.

The most common reported sexual HIV risk behavior was unprotected vaginal sex with the main partner. Although the percentage of participants reporting unprotected vaginal sex with the main partner decreased from 41% at baseline to 36% at posttest, the change was not statistically significant ($B = -.58$, $SE = .35$, Wald = 2.64, *ns*).

[Insert Figure II]

Self-efficacy

As reported in Table 2, compared to the baseline, at immediate posttest participants demonstrated significantly higher peer-educator self-efficacy ($F_{1,41} = 11.71$, $p < .001$, partial eta-squared = .218), social support ($F_{1,41} = 7.22$, $p < .01$, partial eta-squared = .147), and greater intentions to engage in sexual and drug risk reduction behaviors in the future ($F_{1,41} = 25.59$, $p < .001$, partial eta-squared = .386).

[Insert Table 2]

Discussion

This paper presents the process of adaptation, implementation and pilot testing of an evidence-based HIV prevention intervention for IDUs and their social network in Osh, Kyrgyzstan, a city heavily affected by drug trafficking and drug use. This study is one of the first attempts to bring an HIV intervention to Osh and, in particular, to expose drug treatment programs to new prevention strategies that focus on IDUs as agents of change and reach out to the social networks of these IDUs. The process of implementing this pilot study provided an opportunity to engage multiple constituencies in the process of refinement and testing of the intervention such as involving the CCB, focus groups that included IDUs, piloting the sessions

and obtaining feedback from the participants. These constituencies had the opportunity to contribute their voices and worldviews on all the study aspects and implementation.

Participants in the study were enthusiastic about the experience and the opportunities. Moreover, the drug treatment staff, NGO staff and outreach workers, as well as the research team found the experience useful because it exposed them to a new way of delivering an intervention to clients. Training IDUs to educate their network about reducing their risk behaviors was identified as an innovative and creative approach to working with hard-to-reach and vulnerable groups. All these constituencies provided feedback and their worldviews were incorporated into each component of the research. Lessons were learned about the intervention content, recruitment and retention that informed the study's final protocols that will be implemented in a future efficacy trial on SHIELD in Osh.

Through the feedback we obtained from the CCB, focus groups that included IDUs and through the implementation of the pilot, we have identified that the core components of Shield are relevant to the target study population. Participants reported that these components were matched to their HIV and STI risk reduction needs. The index participants reported finding that the role-plays and peer educator training were particularly important in teaching new skills that can then be taught to their peers. We also learned that other content areas need to be added, such as overdose prevention and a focus on sexual risk reduction among steady partners. The majority of the participants in this study had a steady sexual partner. Given that the IDUs in this study reported having unsafe injection practices, practicing safe sex with all partners is necessary to prevent the transmission of HIV. Focus group members also helped to identify important characteristics to look for in recognizing peer leaders in the community and further described local norms for using drugs and cleaning equipment.

Important lessons were learned during the pilot related to recruitment and retention in the sessions and follow-up measures. The retention rate was satisfactory considering the number of participants who dropped out of the study due to death, hospitalization and incarceration. Factoring in these dropped participants, the overall immediate post survey had a 73% completion rate and the final cohort had a follow-up rate of 93.8%. Incarceration, serious health problems, and overdose are clearly major barriers to retaining IDUs in a study. We also have learned that a more community-based retention strategy is needed to recruit index participants, and conferring with the network members about their own contact information is critical.

Findings from the immediate posttest demonstrate the SHIELD intervention has potential to reduce drug and sexual risks among IDUs and their risk networks. Pre post repeated measures report that at immediate posttest for both index and network members over the past thirty days, a reduction in number of sexual partners, a decrease in having unprotected vaginal and/or anal sex, an increase in number of participants who reported reduced frequency of sharing needles and an increase in reporting use of sterile needles and in obtaining more frequently needles from needle exchange programs.

The study has several limitations. It uses pre and immediate post design, small sample size and relies on self-reported data. Despite these limitations, the study has important implications for a future efficacy trial using SHIELD in Kyrgyzstan. The process of implementation and testing the study demonstrate that the study is feasible and ready to be tested in a controlled clinical efficacy trial. Engaging the IDUs, their networks and their community in the process of implementing the research by incorporating their feedback and worldviews on all the study components was found to be empowering for IDUs, risk network members, and service providers. The participants reported feeling positive about being an integral partner in adapting

an HIV intervention that fits their needs and worldviews and that their voices were heard and taken seriously into consideration in the adaptation of the intervention and implementation of the research.

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Figure 1. Safe Injecting Practices in the past 30 days: pretest and posttest differences (N=44)

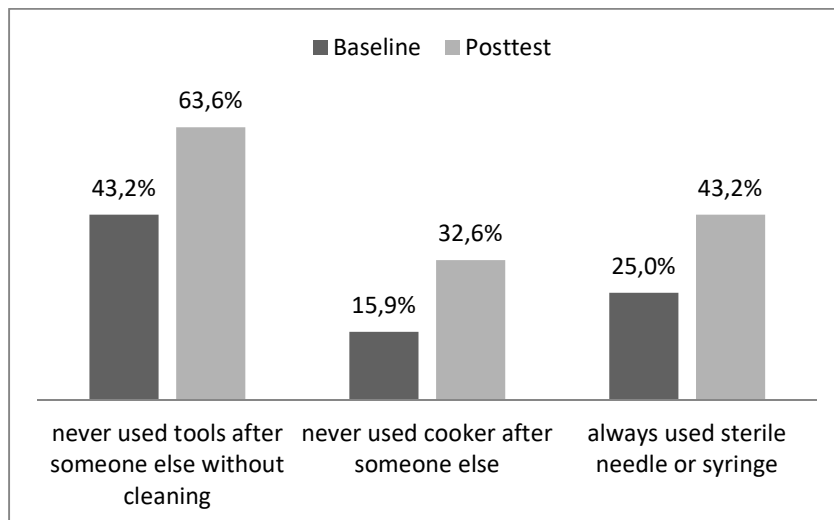


Figure 2. Sexual risk behaviors in the past 30 days: pretest and posttest differences (N=44)

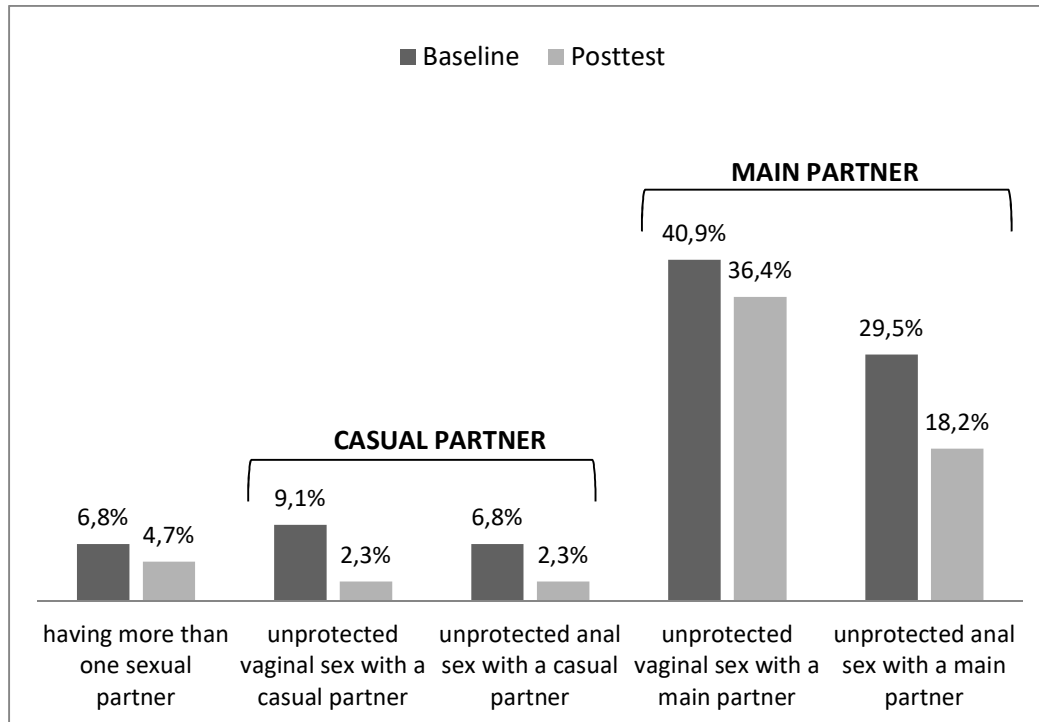


Table 1. Drug and Sexual Risk Behavior (pre-post N=44)

	B	SE	Wald Stat
SAFE INJECTING BEHAVIORS			
Never using unclean needles	.75	.24	10.11***
Never using unclean equipment	2.44	.51	23.37***
Always used sterile needles	2.75	.57	23.12***
Exchanged needles through the Needle Exchange Program	2.73	.58	22.78***
SEXUAL RISK BEHAVIORS			
Having multiple sexual partners	-2.18	.46	22.31***
Casual Partner			
Having unprotected vaginal sex	-3.18	.7	20.41***
Having unprotected anal sex	-3.16	.7	20.17***
Main Partner			
Having unprotected vaginal sex	-.575	.35	2.64
Having unprotected anal sex	-1.27	.39	10.73***

Table 2. Pretest-posttest differences in mediating variables (N=44)

	Mean (SD)		F-test
	Baseline	Posttest	
Peer-educator self-efficacy scale	3.07 (.67)	3.43 (.55)	11.71***
Social support scale	3.76 (.62)	4.03 (.66)	7.22**
Future intentions in regards to safer sexual and injecting practices	3.19 (.6)	3.7 (.43)	25.59***
	Mean (SD)		F-test
	Baseline	Posttest	
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