

## Feasibility and preliminary effects of a screening, brief intervention and referral to treatment model to address gender-based violence among women who use drugs in Kyrgyzstan: Project WINGS (Women Initiating New Goals of Safety)

LOUISA GILBERT<sup>1</sup>, TINA JIWATRAM-NEGRON<sup>1</sup>, DANIL NIKITIN<sup>2</sup>, OLGA RYCHKOVA<sup>3</sup>, TARA McCRIMMON<sup>1</sup>, IRENA ERMOLAEVA<sup>4</sup>, NADEJDA SHARONOVA<sup>5</sup>, AIBEK MUKAMBETOV<sup>6</sup> & TIMOTHY HUNT<sup>1</sup>

<sup>1</sup>Global Health Research Center of Central Asia, Columbia University, New York, USA, <sup>2</sup>Global Research Institute, Bishkek, Kyrgyzstan, <sup>3</sup>Open Society Foundations, New York, USA, <sup>4</sup>Asteria Foundation, Bishkek, Kyrgyzstan, <sup>5</sup>The Podruga Foundation, Osh, Kyrgyzstan, and <sup>6</sup>Open Society Foundations, Bishkek, Kyrgyzstan

### Abstract

**Introduction and aims.** Intimate partner violence (IPV) and other forms of gender-based violence (GBV) are serious public health threats among women who use drugs or engage in binge drinking in Kyrgyzstan. This study aimed to evaluate the feasibility and preliminary effects of a two-session IPV and GBV screening, brief intervention and referral to treatment model (WINGS) with HIV counselling and testing for women who use drugs or engage in binge drinking in Kyrgyzstan, using a pre/post-design. **Design and methods.** We screened 109 women from harm reduction non-government organisations in Kyrgyzstan, of whom 78 were eligible, 73 participated in the intervention study, and 66 completed a 3-month post-intervention follow-up. To assess the effects of the intervention, we used random-effect Poisson and Logistic regression analyses for continuous and dichotomous outcomes respectively. **Results.** At baseline, 73% reported any physical or sexual IPV victimisation, and 60% reported any physical or sexual GBV victimisation in the past year. At the 3-month follow-up, participants reported experiencing 59% fewer physical IPV incidents in the prior 90 days than at baseline ( $P < 0.001$ ) and 27% fewer physical GBV incidents than at baseline ( $P < 0.01$ ). From baseline to the 3-month follow-up, participants also reported a 65% reduction in the odds of using any illicit drugs ( $P < 0.05$ ) and were more likely to report receiving GBV-related services ( $P < 0.001$ ). **Discussion and conclusion.** The high rates of participation, attendance and retention and significant reductions in IPV and GBV victimisation and drug use from baseline to the 3-month follow-up suggest the feasibility and promising effects of this brief intervention. [Gilbert L, Jiwatram-Negron T, Nikitin D, Rychkova O, McCrimmon T, Ermolaeva I, Sharonova N, Mukambetov A, Hunt T. Feasibility and preliminary effects of a screening, brief intervention and referral to treatment model to address gender-based violence among women who use drugs in Kyrgyzstan: Project WINGS (Women Initiating New Goals of Safety). *Drug Alcohol Rev* 2017;36:125–133]

**Key words:** intimate partner violence, gender-based violence, substance use, women, screening.

### Introduction

Emerging evidence suggests that gender-based violence (GBV) is a serious public health threat and human rights violation among women who use or inject drugs or engage in binge drinking (WWUD) in Kyrgyzstan and

other countries with heroin epidemics [1–3]. The term ‘GBV’ incorporates prevalent forms of violence against WWUD, including intimate partner violence (IPV), non-partner physical and sexual assault and trafficking [4]. Population-level prevalence estimates of IPV and other GBV victimisation among WWUD are scarce

Louisa Gilbert PhD, Associate Professor, Tina Jiwatram-Negron PhD, Post-Doctoral Fellow, Danil Nikitin MS, Project Director, Olga Rychkova MSc, Program Officer, Tara McCrimmon MPH, Project Coordinator, Irena Ermolaeva BA, Director of Asteria, Nadejda Sharonova BA, Director of Podruga, Aibek Mukambetov PhD, Program Officer, Timothy Hunt MS, Director of Training and Capacity Building. Correspondence to Dr Louisa Gilbert, Social Intervention Group, Global Health Research Center of Central Asia, Columbia University School of Social Work, 1255 Amsterdam Avenue, Room 832, New York, NY, USA. Tel: 212-851-2395; E-mail: lg123@columbia.edu

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worldwide. However, research among different populations of WWUD has estimated that between 20 and 57% have experienced IPV in the past year, which is much higher than rates found among general female populations [5–7]. Compared with general populations of women, WWUD also experience substantially higher rates of sexual assault from a range of non-intimate partners, including drug dealers, pimps and commercial clients as well as from police and prison guards [1,3,8,9].

Accumulating research has established multiple bi-directional relationships between different types of IPV and GBV victimisation and different types of drug and alcohol use [3,6,7,10]. Failure to address IPV and GBV among WWUD may significantly increase their risks for continued drug use, relapse and premature attrition from drug treatment [6,7,11,12]. Exposure to IPV and GBV victimisation has also been found to directly and indirectly increase the risk of HIV/sexually transmitted infection acquisition as well as to result in poorer treatment outcomes among women living with HIV [3,13]. Taken together, this research underscores the importance of redressing GBV victimisation in harm reduction programs, needle and syringe programs (NSP) and HIV treatment programs serving WWUD.

Recent systematic reviews highlight several gaps in the continuum of integrated interventions to address IPV and GBV for WWUD [3,14]. Although several interventions among WWUD have demonstrated efficacy or promising effects in reducing physical IPV [3,15], only one to our knowledge has reduced sexual IPV [16], and few have even addressed GBV. Moreover, these integrated interventions, which are 10 sessions or longer and require professional clinical skills, have been mostly implemented in drug treatment settings in the USA.

These systematic reviews underscore the urgent need for brief integrated GBV interventions that may be delivered in non-clinical settings to reach broader populations of WWUD at risk for GBV. Such brief GBV interventions may be combined and optimised with a continuum of HIV prevention, testing and treatment models that have been scaled up in NSPs and other harm reduction programs serving WWUD in Kyrgyzstan and other low- and middle-income countries. Given the widespread problem of IPV and GBV among WWUD worldwide, United Nations Office on Drugs and Crime and the World Health Organization recently added GBV screening and prevention services to their recommended comprehensive package of nine core services for NSPs [17].

Growing research worldwide suggests that screening, brief intervention and referral to treatment (SBIRT) models that include core components of IPV screening, safety planning and referrals to IPV services are promising in reducing IPV for women in health-care settings [18,19]. A recent randomised controlled trial tested the effectiveness of a single-session computerised versus case

manager-delivered IPV SBIRT models [Women Initiating New Goals of Safety (WINGS)] among 191 WWUD in probation settings in the USA [20]. Both modalities identified equally high rates of physical and sexual IPV in the past year (47% for both conditions), and both significantly reduced drug use and increased use of IPV services at the 3-month follow-up [20]. These study findings suggest that WINGS has potential as a brief low-threshold intervention to address GBV among women in resource-constrained harm reduction settings worldwide.

This study aims to evaluate the feasibility and preliminary effects of implementing a two-session GBV prevention SBIRT model, which was adapted from WINGS and combined with rapid HIV counselling and testing (HCT) in two harm reduction non-government organisations (NGO) in Kyrgyzstan. We present empirical data on recruitment, attendance, retention, acceptability, safety and preliminary effects of WINGS using a pre-post design with 73 WWUD. The primary outcome for this feasibility trial was incidence of experiencing different types of IPV and GBV victimisation in the prior 90 days. Secondary outcomes included the prevalence of using illicit drugs in the prior 90 days and the percentage of women who received IPV or GBV-related services in the prior 90 days. Secondary outcomes also included a proportion of women who disclosed experiencing any type of IPV and GBV in the past year during the screening activity of the first intervention session and a proportion of women who agree to complete HCT by the second intervention session.

## Methods

### *Study design and procedures*

This study involved a pre/post-test pilot study of the WINGS SBIRT model, culturally adapted as Wings of Hope in Russian. Data were collected from participants immediately prior to participating in the intervention ('baseline') and 3 months after completing the intervention ('follow-up'). We conducted this study in collaboration with two harm reduction NGOs in Kyrgyzstan, Asteria, in the capital city of Bishkek and Podruga, in the southern border city of Osh. We formed a Community Collaborative Research Board consisting of harm reduction NGO staff, police, Ministry of Interior representatives, substance abuse treatment providers, representatives from United Nations Office on Drugs and Crime, Centers for Disease Control and Prevention and UNAIDS and GBV/IPV service providers. The Community Collaborative Research Board provided feedback on the adaptation, implementation and evaluation of WINGS.

Study procedures received approval from the Columbia University Institutional Review Board and the Institutional Review Board of the Global Research Institute of Kyrgyzstan.

#### Recruitment and participation

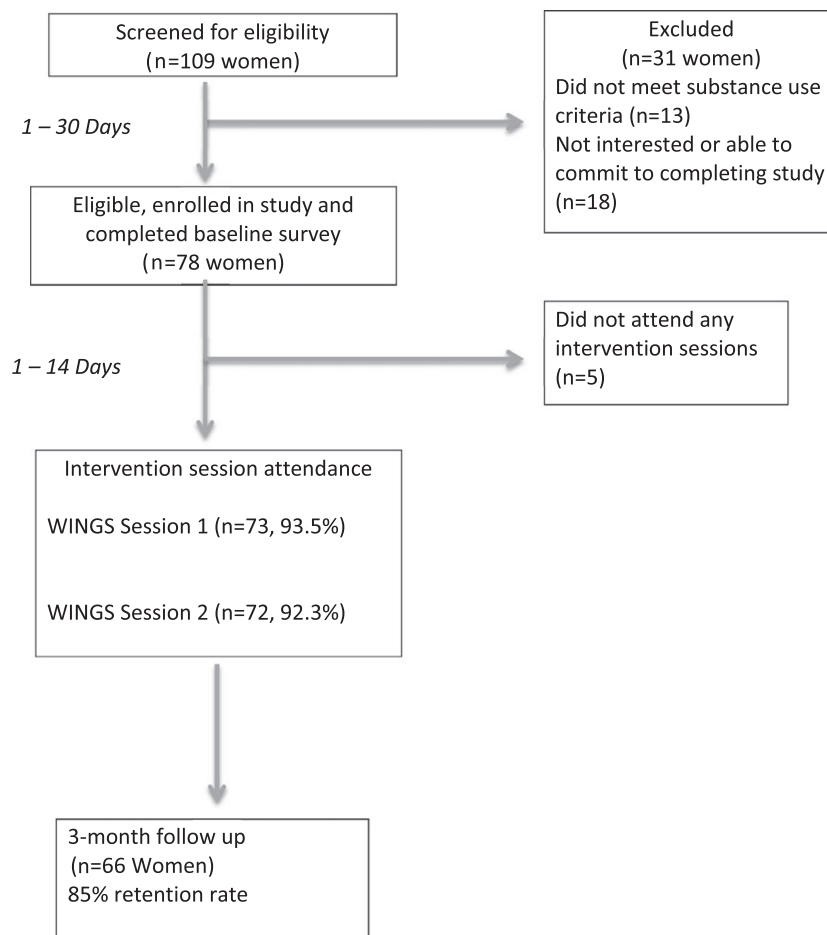
Outreach workers actively recruited clients from study sites by handing out flyers and inviting women to be screened. They also visited public venues (e.g. parks, abandoned buildings) to recruit WWUD for this study. Women who expressed interest in participating completed informed consent prior to being screened.

**Participants.** From July to October 2013, we screened 109 women, 78 of whom met eligibility criteria, enrolled in the study and completed baseline assessment. Eligibility criteria included: (i) being aged 18 years or older; (ii) reporting illicit drug use, binge drinking or receiving drug or alcohol treatment in the past 6 months; and (iii) demonstrating basic fluency in Russian. Of the 78 women, 73 (93.5% participation

rate) attended the first intervention session, 72 (92.3%) attended the second session, and 66 completed the 3-month follow-up assessment (90.4% retention rate). Approximately half (50.7%,  $n = 37$ ) were recruited in Bishkek and 49.3% ( $n = 36$ ) were recruited in Osh. There were no significant differences on socio-demographic characteristics or any outcomes between the participants who completed the 3-month follow-up versus those who were not retained, except for injection drug use. Those who reported injecting drugs in the prior 90 days at baseline were more likely to complete the 3-month follow-up. Figure 1 depicts the participant flow and yields for each of the study's main activities.

The participants received compensation equivalent to US\$3 for completing the screening interview, US\$5 for completing the baseline assessment, travel reimbursement of US\$3 for attending each intervention session attended and US\$7 for the 3-month follow-up assessment.

**Procedures.** Eligible women who provided consent completed a baseline survey using audio computer-assisted self-interview.



**Figure 1.** Recruitment and participation flowchart for a pilot trial of WINGS.

*Measures.* Outcome measures were administered at the baseline pre-intervention assessment and again at the 3-month follow-up assessment. Additionally, IPV and GBV past year prevalence were assessed during the first intervention session, and receipt of HCT was assessed at the end of the second intervention session.

*Primary outcomes.* *Intimate partner violence (IPV) and GBV victimisation* were assessed using a shortened 15-item version of the Revised Conflict Tactics Scale that has been used in prior studies [25,26]. It includes eight subscales measuring any minor or severe sexual, physical and severe verbal abuse/violence by an intimate partner (IPV) or other (GBV) within the past year (responses are dichotomised yes/no). The participants were also asked whether or not and the number of times they experienced any of these IPV and GBV items on these eight subscales in the prior 90 days at baseline and the 3-month follow-up for the primary outcome. Internal consistency of the Revised Conflict Tactics Scale subscales ranges between 0.79 and 0.95 [27].

*Secondary outcomes.* *Frequency of drug use* was assessed with an item from the Risk Behavior Assessment [21], which asked the participants whether or not they used any illicit drug, injected drugs and consumed four or more drinks in a 6-hour period (binge drinking) in the past 90 days [22].

*Receipt of IPV/GBV services* was assessed with a single item that asked, 'Have you received any services, counseling or group support for partner abuse or violence from others in the past 90 days?', which has been used in prior IPV prevention research [19,23,24].

*Disclosure of IPV and GBV over the past year* was measured during the screening activity of the first intervention session by the same shortened 15-item version of the Revised Conflict Tactics Scale used for the primary outcome described in the preceding texts (the only difference being a 12-month, rather than a 90-day, time frame).

*Receipt of HIV Counselling and Testing* was assessed by whether or not women agreed to complete HIV testing by the end of their second intervention session. At the 3-month follow-up, a single item assessed whether they had been linked to HIV care.

*Socio-demographic and psychosocial background variables* included age, ethnicity/race, religion, education, employment status, criminal justice history, residential status, marital status, opioid overdose history, exchanging sex for money or drugs and post-traumatic stress disorder (PTSD). PTSD was measured using the 17-item PTSD checklist—civilian, which has an alpha reliability of 0.97 [25].

*Intervention development, content and delivery.* Women Initiating New Goals of Safety is an evidence-based SBIRT intervention that was originally tested with WWUD in New York City [20]. WINGS is guided by social cognitive theory [26,27], which has been applied to IPV SBIRT models [19,24]. The core components of WINGS for this study (detailed in Figure 2) were designed to enable women to identify different types of IPV and GBV, develop self-efficacy to protect themselves from IPV and GBV, raise awareness of drug-related triggers for IPV and GBV, develop safety plans to reduce risks for IPV and GBV, enhance social support and link women to IPV and GBV-related services, substance abuse treatment and HCT and HIV care. We adapted WINGS by conducting two focus groups with NGO clients who met study eligibility criteria and two focus groups with NGO staff. The focus group data informed: (i) the inclusion of culturally specific types of IPV and GBV in Kyrgyzstan; (ii) safety planning steps that considered the different contexts in which IPV and GBV occur and (iii) available services for WWUD in Kyrgyzstan.

Non-government organisation caseworkers used a computerised structured interview to administer the IPV/GBV screening and provide automated feedback on their risks (none, medium, high) as well as to administer the other core activities of WINGS. The participants received a copy of their safety plan, social support map, safety goals, and service referrals. One to two weeks later, the participants completed the second session, where they updated their safety plans, addressed barriers to accessing services and were offered optional rapid HCT. The participants who tested positive were linked to HIV care.

*Data analysis.* Generalised linear models were employed to estimate whether changes in study outcomes significantly differed from baseline to the 3-month post-intervention assessment on the 66 women who completed both assessments. Random-effect Poisson and logistic regressions were used for continuous (count) and dichotomous measures, respectively. These models included dummy coding for assessment time (0 = baseline and 1 = follow-up) with random effects for repeated measures and sites. Analyses were adjusted for age, ethnicity, education and the site at which they received the intervention. Statistical analyses were performed using Stata 12 [28].

## Results

### *Socio-demographic and psychosocial characteristics*

The participants had a mean age of 41 years (SD = 8.3) (Table 1). The majority were ethnic Russians (60.3%,  $n = 44$ ), 9.6% were ethnic Kyrgyz, and the remaining 30.1% ( $n = 22$ ) identified as 'other'. Nearly half (45.2%,

| Description of core components of WINGS SBIRT  |  |
|--|--|
| <b>Session 1</b>   |  |
| <b>Psycho-education:</b> NGO staff describes how conflict may occur in relationships and what IPV is and the different forms; describes how drug use may lead to violence and violence may trigger drug use; describes violence by others (GBV); provides information on how widespread violence is; consequences of violence on individual health and children; discusses/clarifies violence and misinformation about the acceptance of it in religion.   |  |
| <b>Screening and violence risk assessment:</b> NGO staff administers abbreviated and adapted Revised Conflict Tactics Scale with participants that covers physical, injurious, verbal and sexual abuse subscales to screen for IPV and GBV victimisation in the past year; facilitator informs participants whether they are at high-, medium- or low-risk <sup>a</sup> .  |  |
| <b>Enhancing motivation to improve relationship safety:</b> NGO staff asks participants to identify potential negative effects of relationship conflict and experiencing IPV on their physical and mental health, well-being and children; then asks participants to identify their motivations to improve relationship safety.  |  |
| <b>Safety planning:</b> NGO staff asks participants different safety planning items to reduce their risk of exposure to GBV using an adapted version of IPV Safety Planning Checklist which includes attention to violence by others.  |  |
| <b>Enhancing social support and reducing risk:</b> NGO staff asks participants to identify family members and friends to whom they can turn for support, advice and practical help to prevent or reduce their risks for experiencing violence and for resolving relationship conflict; then asks participants to identify steps they can take in the next week to strengthen different types of support. Participants are also asked to map those who may pose a threat/danger to reduce risk of harm.   |  |
| <b>Goal-setting to reduce or prevent violence:</b> NGO staff asks participants to identify personal relationship safety goals including: (i) stay together, no change; (ii) stay together, stop violence; (iii) separate or divorce from partner, no further contact; (iv) separate or divorce from partner, but continue to be involved with children or (v) distance or avoid engagement with other threatening relationships; then asks participants to identify other steps they can take towards these goals.   |  |
| <b>Identification of service needs and referrals:</b> Based on participant goals, NGO staff collaboratively helps participants identify and prioritise services that they may need and refers them to appropriate and available services. Staff then asks participants to come up with a step-by-step action plan for pursuing services in the next week and provides participants with service resource manual and printout of their personal safety plan. NGO staff then schedules a follow-up session in 7-10 business days and tracks for confirmation of the linkage to care. |  |
| <b>Session 2</b>   |  |
| <b>Review and update risks:</b> NGO staff provides a brief review of material from previous session, including risk assessment/screening, goal setting, and safety planning. NGO staff engages in a discussion to identify any new risks since previous session.   |  |
| <b>Assessing and building motivation and confidence:</b> NGO staff administers a brief screening to assess motivation to address violence and identify barriers to implementing safety plan. NGO staff and participants then work to identify strategies/problem solve barriers.   |  |
| <b>Review and revise safety planning, support map, and goals:</b> NGO staff and participants review and revise safety planning goals, social support enhancement plan, and other goals and service plan  |  |
| <b>Summary and self-care plan:</b> NGO staff reviews sessions and checks-in with participants about progress towards self-care goals, helping participant identify new ones.   |  |
| <b>HIV counselling and testing:</b> At the close of the session, participants are offered optional rapid HIV testing and counselling according to Kyrgyzstan Ministry of Health guidelines. Participants who tested positive were linked to HIV care.  |  |
| <sup>a</sup> Women who did not screen positive for any IPV or GBV and were not in any relationship were asked to complete the post IPV and GBV screening activities (safety planning, social support enhancement, goal setting, identifying and addressing service referrals) from the hypothetical perspective if they were in a situation where they were experiencing IPV or GBV or if they are helping a family member or friend who are experiencing IPV and GBV.   |  |
| GBV, gender-based violence; IPV, intimate partner violence; NGO, non-government organisation; SBIRT, screening, brief intervention, and referral to treatment; WINGS, Women Initiating New Goals of Safety.  |  |

**Figure 2.** Description of core components of Women Initiating New Goals of Safety screening, brief intervention and referral to treatment.

$n=33$ ) were married. Approximately three-quarters (76.7%,  $n=56$ ) reported having children. The majority (61.6%) had a secondary or lower education. Less than one-third (30.1%,  $n=22$ ) were employed. The majority (81.2%,  $n=60$ ) had been arrested, and 54.8% ( $n=40$ ) reported having spent time in a jail or prison. Almost two-thirds (63%) reported engaging in sex trading in their lifetime. Almost nine of every ten women (89%,  $n=69$ ) met the criteria for PTSD.

#### Drug and alcohol use

Of the total baseline sample ( $n=78$ ), 60 (82.2%) reported using any illicit drug, 52.1% ( $n=38$ ) reported

using heroin, and 69.9% met the criteria for binge drinking in the past 90 days. Slightly more than half (54.8%,  $n=40$ ) reported ever having experienced an opioid overdose. Less than half (41.1%,  $n=40$ ) were enrolled in any substance abuse treatment in the past 90 days.

#### Experience of different types of IPV and GBV victimisation in the past year

The participants disclosed very high rates of IPV and GBV over the past 12 months during the first intervention session (Table 2) with 80.8% ( $n=59$ ) experiencing physical or sexual IPV in the prior year and 61.6% ( $n=45$ ) experiencing physical or sexual GBV. More than

**Table 1.** Socio-demographics and background characteristics of women who participated in intervention study ( $n = 73$ )

|   | <i>n</i> (%) or mean, SD |
|---|--------------------------|
| Age (mean, SD)  | 41.0, 8.3                |
| <i>Ethnicity</i>  |                          |
| Russian   | 44 (60.3%)               |
| Kyrgyz  | 7 (9.6%)                 |
| Other   | 22 (30.1%)               |
| <i>Religion</i>   |                          |
| Muslim  | 17 (23.3%)               |
| Christian   | 49 (67.1%)               |
| Other   | 7 (9.6%)                 |
| <i>Marital status—currently married/common-law marriage</i> | 33 (45.2%)               |
| Women asked if they wanted to marry/live with their partner | 14 (42.4%)               |
| Education—secondary or lower                                | 45 (61.6%)               |
| Employment—employed, past 12 months                         | 22 (30.1%)               |
| Have children   | 56 (76.7%)               |
| Place to sleep every night, past 90 days                    | 66 (90.4%)               |
| Ever arrested?  | 60 (81.2%)               |
| Ever jail/prison?   | 40 (54.8%)               |
| Sex trading, ever   | 46 (63.0%)               |
| <i>Intervention site</i>                                    |                          |
| Asteria   | 37 (50.7%)               |
| Podrugá   | 36 (49.3%)               |
| Binge drinking  | 51 (69.8%)               |
| Any illicit drug use in the past 90 days                    | 60 (82.2%)               |
| Any heroin use in the past 90 days                          | 38 (52.1%)               |
| Ever experienced opioid overdose                            | 40 (54.8%)               |
| Enrolled in substance abuse treatment in past 90 days       | 30 (41.1%)               |
| PTSD symptoms present                                       | 65 (89%)                 |

PTSD, post-traumatic stress disorder.

half (56.2%,  $n = 41$ ) experienced severe physical IPV, and 37% ( $n = 27$ ) experienced severe sexual IPV in the prior year. Rates of severe violence by non-intimate partners were also elevated with 32.9% ( $n = 24$ ), disclosing severe physical GBV and 32.9% ( $n = 24$ ) severe sexual GBV. Half (50.7%,  $n = 37$ ) indicated that police were among the perpetrators of GBV.

#### *Preliminary effects of intervention on IPV, GBV and other health-related outcomes*

Multivariate analyses examined changes in the outcomes over the time period from baseline to the 3-month follow-up (Table 3). At 3-month follow-up, the participants experienced 0.79 times the number of verbal IPV incidents compared with baseline ( $P < 0.05$ ) and 0.41 times the number of physical IPV incidents compared with baseline ( $P < 0.001$ ). Similarly, the participants experienced 0.73 times the number of physical GBV incidents compared with baseline ( $P < 0.01$ ). At the 3-month follow-

**Table 2.** Identification and prevalence of different types of IPV and GBV victimisation in the past year during screening activity of first intervention session ( $n = 73$ )

| Type of violence                        | Intimate partner, <i>n</i> (%) | Violence by other, <i>n</i> (%) |
|---|--------------------------------|---------------------------------|
| Verbal                                  | 51 (69.9%)                     | 45 (61.6%)                      |
| Minor physical                          | 49 (67.1%)                     | 35 (48.0%)                      |
| Severe physical                         | 41 (56.2%)                     | 24 (32.9%)                      |
| Injurious                               | –                              | 15 (20.6%)                      |
| Minor sexual                            | 48 (65.8%)                     | 33 (45.2%)                      |
| Severe sexual                           | 27 (37.0%)                     | 24 (32.9%)                      |
| Psychological abuse                     | 34 (46.6%)                     | 29 (39.7%)                      |
| Any physical/sexual violence            | 59 (80.8%)                     | 45 (61.6%)                      |
| <i>Ever police violence<sup>1</sup></i> |                                |                                 |
| Police among perpetrators               | –                              | 37 (50.7%)                      |
| Police was sole perpetrator of GBV      | –                              | 17 (23.3%)                      |

<sup>1</sup>Assessed during baseline. GBV, gender-based violence; IPV, intimate partner violence.

up, the participants had increased odds of being linked to IPV or GBV services (adjusted odds ratio = 12.3,  $P < 0.001$ ). However, the participants experienced a significant increase in the number of verbal GBV incidents (adjusted incident rate ratio = 1.34,  $P < 0.001$ ). No significant change was detected in incidents of sexual IPV or GBV from baseline to the 3-month follow-up.

There were significant decreases in the participants' drug use from baseline to the 3-month follow-up. The participants reported lower odds of any drug use in the past 90 days (adjusted odds ratio = 0.35,  $P < 0.05$ ) and lower odds of any injection drug use in the past 90 days (adjusted odds ratio = 0.39,  $P < 0.05$ ). No changes were noted regarding binge drinking behaviours.

Of the 73 participants who attended the first intervention session, 65 (89%) agreed to complete rapid HIV testing and counselling at the end of the second session. Of these participants, four (7.7%) tested positive for HIV (three were new cases), and three reported that they were successfully linked to HIV care by the 3-month follow-up.

#### *Intervention attendance, acceptability and safety*

Over 90% of the participants ( $n = 72$ ) attended both intervention sessions. Of these participants, 63 (87.5%) indicated that they were extremely or very satisfied with the intervention, 60 (83.3%) felt extremely or very comfortable with their WINGS caseworker, and 69 (95%) indicated that they would recommend WINGS to others. No adverse events were detected by study staff or caseworkers.

**Table 3.** Effects of WINGS on incidents of IPV, GBV, substance use and linkage to services in the past 90 days (*n* = 66 women who completed 3-month follow-up)

|  | Sample no. (%) or mean, SD |            | Relative risk ratio or odds ratio—change from baseline to 3-month follow-up |                       |
|--|----------------------------|------------|---|-----------------------|
|  | Baseline                   | 3 months   | Unadjusted  | Adjusted <sup>a</sup> |
| <i>Intimate partner violence</i>         |                            |            |   |                       |
| No. of verbal incidents: IRR             | 3.5, 6.1                   | 2.8, 6.7   | 0.79 [0.65, 0.96]*  | 0.79 [0.65, 0.96]*    |
| No. of physical incidents: IRR           | 7, 12.0                    | 2.9, 6.5   | 0.41 [0.35, 0.49]***  | 0.41 [0.35, 0.49]***  |
| No. of sexual incidents: IRR             | 9.4, 18.8                  | 8.9, 20.7  | 0.94 [0.84, 1.06]   | 0.94 [0.84, 1.06]     |
| <i>Gender-based violence</i>             |                            |            |   |                       |
| No. of verbal incidents: IRR             | 3.9, 13.0                  | 5.2, 16.6  | 1.34 [1.1, 1.6]***  | 1.34 [1.1, 1.6]***    |
| No. of physical incidents: IRR           | 3, 6.9                     | 2.2, 12.5  | 0.73 [0.59, 0.90]**   | 0.73 [0.59, 0.90]**   |
| No. of sexual incidents: IRR             | 2.9, 7.1                   | 2.6, 7.0   | 0.89 [0.72, 1.1]  | 0.89 [0.72, 1.1]      |
| <i>Drug and alcohol use</i>              |                            |            |   |                       |
| Any illicit drug use, past 30 days: OR   | 56 (84.9%)                 | 43 (67.2%) | 0.37 [0.16, 0.86]*  | 0.35 [0.15, 0.84]*    |
| Any injection drug use, past 30 days: OR | 38 (60.3%)                 | 25 (39.7%) | 0.43 [0.20, 0.91]*  | 0.39 [0.18, 0.84]*    |
| Binge drinking, past 90 days: OR         | 45 (62.2%)                 | 40 (60.6%) | 0.50 [0.17, 1.5]  | 0.50 [0.17, 1.46]     |
| Access to IPV/GBV-related services: OR   | 15 (22.7%)                 | 55 (77.3%) | 11.56 [5.12, 26.1]***   | 12.3 [5.3, 28.4]***   |

\**P* < 0.05. \*\**P* < 0.01. \*\*\**P* < 0.001. <sup>a</sup>Adjusted covariates include age, ethnicity, education and intervention site (non-government organisation site). GBV, gender-based violence; IPV, intimate partner violence; IRR, incident rate ratio; OR, odds ratio; WINGS, Women Initiating New Goals of Safety.

## Discussion

To our knowledge, this is the first feasibility study of a GBV SBIRT model with HCT that has been implemented with WWUD in harm reduction settings in Kyrgyzstan or other countries. The high participation, attendance, retention and client satisfaction rates and absence of adverse events suggest the feasibility, safety and acceptability of WINGS. The findings also suggest that the intervention was effective in identifying high rates of different types of IPV and GBV in the prior year. These findings suggest that WINGS is not only an effective tool for screening for IPV, consistent with prior research [20], but it may be used to identify a wider spectrum of GBV, including police violence among WWUD in Kyrgyzstan.

The findings also suggest promising effects of the intervention over the 3-month follow-up period in reducing incidents of physical and verbal IPV as well as physical GBV. The lack of significant reduction in reported incidents of sexual IPV is consistent with findings from other IPV intervention studies [14,19] and may highlight the need for enhancing intervention content on sexual safety planning to avoid risky sexual encounters. The increase in number of verbal GBV incidents may be influenced by outlier cases, as suggested by the high-standard deviation values with this outcome. Alternatively, this result may suggest that as women began to enact safety planning strategies to resist risky encounters, they were more likely to experience verbal abuse.

The high proportion of participants who completed HIV testing demonstrates the promise of the intervention in increasing HIV testing rates and linking women to HIV

care. The substantial increase in the proportion of women accessing IPV or GBV-related services from 22% at baseline to 77% at the 3-month follow-up indicates that the WINGS SBIRT model may play an instrumental role in linking women to services. The range and magnitude of changes in primary and secondary outcomes found in this study suggest that changes are clinically significant in addition to being statistically significant.

## Limitations

The lack of a control or comparison group limits our ability to attribute the statistically significant changes in outcomes to the intervention as such changes could occur naturally over time or as a result of desirability biases, regression to the mean, reactivity to the assessment and other non-intervention related effects associated with engaging in other harm reduction services of the NGOs. The lack of a long-term follow-up makes it difficult to ascertain whether positive changes were sustained over time. The generalisability of the study findings is limited to the two NGOs where the pilot trial was conducted. WINGS did not address or assess for the perpetration of IPV or mutual IPV; this issue should be addressed in future research.

## Conclusions

Despite these limitations, the study findings suggest the feasibility and promise of a brief SBIRT intervention in identifying and addressing the widespread problem of

IPV and GBV among WWUD in Kyrgyzstan. Moreover, the high rates of completing HCT and linkage to HIV care suggest that WINGS may enhance HIV testing and treatment rates among WWUD.

These findings suggest that WINGS may also have relevance to address IPV and GBV in resource-constrained harm reduction settings in other countries where IPV or GBV services for WWUD are nascent or non-existent.

The high prevalence, severity and frequency of all types of IPV and GBV identified among this sample underscore the urgent need for policies and programs to address this serious public health and human rights issue among WWUD in Kyrgyzstan. The lack of systematic collection of IPV and GBV incidence and surveillance data among WWUD in Kyrgyzstan continues to remain a huge obstacle to bringing visibility to and addressing IPV and GBV in this population.

Consistent with findings from other studies on WWUD worldwide [9,29,30], the widespread experience of police violence highlights the critical need for redoubling and coordinating legislative, policy, program and advocacy initiatives to redress police violence against WWUD in Kyrgyzstan. Fear of experiencing police violence remains a huge obstacle for WWUD seeking safety, emergency medical care and legal protection from IPV and GBV. Although WINGS addresses police violence and sex work-related GBV, further refinements to the safety planning, social support enhancement, goal setting and referral activities in the intervention are needed to address the specific needs of women who are experiencing these issues. Similarly, the extremely high rates of PTSD and opioid overdose found in this study highlight the need for additional SBIRT modules that may identify WWUD at risk of these co-occurring issues and link them to appropriate services.

Future research is needed to evaluate the effectiveness of implementing WINGS in a broader range of harm reduction programs using a randomised controlled trial or a stepped-wedge design with a comparison condition, a longer-term follow-up and a larger sample size to detect changes in IPV, GBV and HIV testing and treatment outcomes among WWUD. The large network of NSPs and harm reduction programs in Kyrgyzstan and other countries provide an optimal venue to implement GBV SBIRT models like WINGS to reach a large number of WWUD at high risk of GBV and link them to GBV services as well as to HIV and substance abuse treatment services.

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