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An Intervention to Improve Mental Health and Family Well-Being of Injecting Drug Users and Family Members in Vietnam

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Abstract

Family plays an important role in the lives of injecting drug users (IDUs) in Vietnam. This study examined the preliminary outcomes of an intervention targeting IDUs and their family members in Vietnam. Eighty-three families, including 83 IDUs and 83 family members, were recruited from 4 communes in Phú Tho Province, Vietnam. The 4 communes were randomized to either an intervention condition or a standard care condition. The IDUs and their family members in the intervention condition completed 4 group sessions, with the aims to improve their mental health and family relations and to promote positive behavioral change. The intervention effect was evaluated at baseline and 3- and 6-month follow-up assessments. A significant reduction in depressive symptoms and improvement in family functioning were reported for IDUs in the intervention group compared with those in the standard care group. The family members in the intervention group reported better coping skills at 3 months, fewer depressive symptoms at 6 months, and improved family function at both 3 and 6 months compared with those in the standard care group. However, no significant intervention effect was observed for IDUs in terms of drug-

using behavior. This study demonstrates the feasibility and preliminary outcomes of an intervention that simultaneously targets IDUs and their family members in Vietnam. Study findings highlight the importance of including family members and enhancing their role in drug use intervention efforts.

Keywords

injecting drug users; family members; intervention; Vietnam

Located in the Golden Triangle, a hotbed of opium production, Vietnam is experiencing a severe epidemic of drug use (Hoffman, Nguyen, Kershaw, & Niccolai, 2011). In 2009, it was estimated that there were about 150,000 drug users in the country, 83% of whom were injection heroin users (Ministry of Labor Invalid and Social Affairs of Vietnam, 2010). A high level (47–81%) of needle sharing among injecting drug users (IDUs) has been observed across different provinces (Hammett et al., 2012; Hoa & Doussantousse, 2001; Tuan et al., 2007; Tuan, Long, Vinh, & Detels, 2001). The epidemic of drug use has become a serious challenge in Vietnam and deserves immediate attention (Nguyen & Scannapieco, 2008).

In Vietnam, families play an important role and exert the most important contextual influence in the lives of IDUs (Go et al., 2011). Most IDUs have daily family contact or live in their parents' home, so the family is the principal source of support for IDUs (Ogden & Nyblade, 2005; Rudolph et al., 2012; Salter et al., 2010). Drug-using behavior and its consequences significantly impact not only the physical and mental health of individual IDUs, but also the well-being of the family as a whole. Therefore, interventions targeting family members and IDUs have been identified as a public health priority (Hammett et al., 2006).

Despite a great deal of attention to the IDU population in Vietnam (Hammett et al., 2006, 2012; Khoat, West, Valdiserri, & Phan, 2003; Ngo, Schmich, Higgs, & Fischer, 2009), little research has been done for interventions targeted specifically to IDUs and their families. The current study is a 2-year intervention pilot targeting IDUs and their family members in Vietnam. The primary focus is to examine whether the intervention will improve mental health and family well-being of IDUs and their family members.

Method

Study Design and Participants

The intervention pilot was conducted from August 2011 to February 2012 in Phú Tho Province, one of the poorest provinces in northern Vietnam. Four communes (a community-level subdivision) were randomly selected from all communes in the province. The four selected communes are all in urban areas, and they were matched into two pairs based on geographic area and number of IDUs. After the baseline assessment, the two communes in each pair were randomized to either an intervention or a standard care condition. The distance between the intervention and standard care communes was far enough to avoid contamination. The study was approved by the Institutional Review Boards of the University

of California, Los Angeles, and the Vietnam National Institute of Hygiene and Epidemiology.

All IDU participants were recruited from commune health centers (CHCs) in each of the selected communes. In Vietnam, service providers in the CHC provide curative and preventive health services, such as referrals for HIV testing, counseling, and preventive education to IDUs in the community (World Health Organization, 2010). They have developed direct working relationships with IDUs in their communes through their routine practices. The CHC providers introduced the project through verbal explanation and a printed flier to IDUs, who were then referred to a study recruiter. The recruiter met with prospective IDUs who were interested in participating and screened them individually for eligibility. The inclusion criteria were age 18 or older, a history of injecting drug use, residence in the participating commune, and willingness to invite a family member to participate in the study. Upon enrolling, IDUs and, with their consent, family members were recruited. The inclusion criteria for family member participants were age 18 or older, immediate or extended family member of the recruited IDU and living with the IDU, and previous knowledge of the drug use status of the IDU participant. When recruiting IDUs and family members, the recruitment staff followed standardized scripts to explain the purpose of the study, procedures, its voluntary nature, and potential risks and benefits. Written informed consent was obtained. A total of 78% of the prospective participants contacted agreed to participate in the study.

Intervention

The intervention, entitled "Intervention V," was developed based on fieldwork with local commune stakeholders, service providers, and IDUs and their family members in Vietnam. Intervention topics and contents were designed to reflect the challenges faced by the target population. Four intervention sessions were delivered separately for IDUs and family members, each in a group format with 10 participants, over the course of 4 consecutive weeks. Sessions for IDU and family members shared common topics and themes, including (1) my family, (2) my responsibility, (3) my support, and (4) my community. Session 1 focused on the importance of family support, and addressed healthy family routines and caregiving; Session 2 aimed to overcome family challenges, manage negative emotion, and learn coping skills; Session 3 emphasized the development of realistic goals and supporting positive behavioral changes; and Session 4 encouraged breaking barriers of societal stigma in order to integrate into their community. Interactive activities such as games, pair-share, and role-play were included to encourage participants' full involvement. Although the theme and format of IDUs' and family member's sessions were similar, there were different focuses and contents for the two populations. The IDU sessions emphasized making positive behavior change for the well-being of the family, and the intervention for family members focused on dealing with the burden of being a caregiver and providing positive support for the IDUs. Homework activities were assigned at the end of each session for the IDUs and family members to work on together to strengthen the interaction between IDUs and their family members. Two booster sessions were conducted 2 months and 4 months after the initial group sessions to reinforce the intervention effort.

A local team of facilitators delivered the intervention to ensure regional relevancy and sustainability. The facilitation team consisted of health educators from provincial AIDS committees and local commune health workers with experience interacting with IDUs and their family members. Most facilitators had associate or undergraduate medical degrees, and all facilitators went through extensive training on research ethics, facilitation skills, intervention principles and delivery, session-by-session content flow and practice, and procedures for emergency situations. All intervention sessions were delivered in the native language and incorporated local cultural elements. Project evaluators observed all group sessions to ensure the fidelity of the intervention.

Assessments and Follow-Ups

The intervention outcomes were evaluated at baseline and 3-and 6-month follow-ups. The assessments were administered face-to-face by trained interviewers in a private location. Each assessment took about 45 to 60 min. Participants were paid 80,000 dong (about U.S. $5) for each assessment. The follow-up rate was 100% for family members and 98% for IDUs. No significant difference was observed in attrition rate between the intervention conditions (see Figure 1).

Several measurement scales were used in the study. Depressive symptoms reported by IDUs and family members were measured by using a short version of the Zung Self-Rating Depression Scale (Zung, 1965). This 10-item instrument was adapted from the original 20-item questionnaire and was successfully used in China (Li, Liang, Ding, & Ji, 2011). The participants were asked how often they feel a particular sentiment (e.g., "I feel down-hearted and blue") in 10 situations. Response categories ranged from 1 (α *little of the time*) to 4 (*most of the time*). A higher overall score indicates a higher level of depressive symptoms (α = .84 for IDU and .75 for family members). Family functioning was reported by IDUs and family members using the Family Functioning Scale (Bloom, 1985; Bloom & Naar, 1994). Three subscales (Family Cohesion, Family Conflict, and Family Sociability) were adapted from the original 15 subscales. The three subscales contained 15 items. Participants evaluated how true each item was for their family on a 4-point scale from 1 (*very untrue*) to 4 (*very true*). With some items being reverse-coded, a higher score indicates better family functioning (α = .84 for IDU and .86 for family members). Family members' level of coping was measured using the Brief COPE Scale (Carver, 1997). Four of 14 subscales were chosen from the original instrument (Active Coping, Planning, Positive Framing, and Acceptance), with two items for each subscale. Responses ranged from 1 (*not at all*) to 4 (*a lot*), and a higher score indicates better coping (α = .88).

Drug-using behavior was calculated with the Addiction Severity Index (McLellan et al., 1992). IDUs were queried on the frequency of their illicit substance use (e.g., heroin, other opiates/analgesics, amphetamine, cocaine, hallucinogens) in the previous 30 days. The perceived severity of their drug-using problem was also measured. Based on the combination of these responses, a drug composite score was constructed, with a higher score indicating more severe drug-using behavior (McGahan, Griffith, Parente, & McLellan, 1986). In addition, we also collected IDU and family member background information,

including gender, age, education, marital status, and employment status. Duration of drug use and HIV status of IDUs were also self-reported.

Data Analysis

Background characteristics of IDUs and family members were reported for the intervention and standard care groups. The data for IDUs and family members were analyzed separately. Baseline differences between the intervention and standard care groups were analyzed using t tests, and an intent-to-treat approach was used to analyze intervention effects. Plots of means over time for the outcome measures were generated to graphically examine the outcome at different assessment points. We estimated mixed-effect models to fit each participant's outcome measures with the intervention effect, and covariates included IDU and family member background characteristics, group (standard care vs. intervention), visit (baseline, 3-, or 6-month follow-up), and Group × Visit interaction. The models also included commune-level random effects to account for dependence within communes and a first-order autoregressive covariance structure to account for repeated observations within each participant. To examine the changes (improvement or reduction) in outcome measure between the intervention and standard care groups at the follow-up assessments, we presented the comparison of interest through model contrasts (i.e., the estimated baseline differences and intervention effects at each follow-up after adjusting for IDU and family member characteristics). The results from F tests for the main effects (group and visit effects) and the interaction term were reported. Statistical analyses were conducted using SAS for Windows (Version 9.2).

Results

Participant Characteristics

In total, 83 pairs of IDUs and their family members were included in our study; 43 pairs were in the intervention condition and 40 pairs in the standard care condition. No baseline differences were observed for gender, age, marital status, or employment status of IDUs. Fewer IDUs (15.0%) in the standard care group had 9 years or less education than IDUs in the intervention group (46.5%, $p = .0020$). One fourth ($n = 23$, 27.7%) of IDUs reported excessive alcohol drinking during their lifetime. Heroin was the primary substance abused by all participants; two participants reported cocaine use, one reported amphetamine use, and two reported cannabis use in their lifetime. Two (2.4%) participants reported using more than one substance per day during their lifetime. Half ($n = 20$, 50.0%) of the IDUs in the standard care and 26 (60.5%) in the intervention group reported 10 years or longer history of drug use. Seven IDU participants in the intervention group (16.3%) and another seven in the standard care group (17.5%) were HIV positive at baseline. All of the family members in the standard care group and 81.4% in the intervention were women ($p = .0037$). About 40% of the family members were spouses, 33.7% were parents, and 12.0% were siblings. Family members in the intervention group were younger ($p = .0375$) and less likely to be unemployed ($p = .0031$) than those in the standard care condition. Family members' marital status and education level were comparable across the two intervention groups (see Table 1).

Outcome Measures at Baseline and Follow-Up Assessments

Figure 2 presents the means (±2 *SD*) of outcome measures among IDUs and family members at baseline and 3- and 6-month assessments. For IDUs, levels of drug composite score, depressive symptoms, and family functioning were comparable between the standard care and intervention groups at baseline. The drug scores of the two intervention conditions remained stable at baseline and follow-up assessments. However, the level of depressive symptoms among IDUs in the intervention group reduced from 17.98 at baseline to 14.81 at 3 months and 15.45 at 6 months. The levels of family functioning increased from 44.53 at baseline to 48.51 at 3 months and 47.19 at 6 months. Such desirable changes were not observed among IDUs in the standard care condition. The outcome measures for family members were comparable at baseline. Family members in the intervention group demonstrated increased levels of coping at 3 and 6 months (28.88 at baseline; 30.98 at 3 months; 30.86 at 6 months), reduced depressive symptoms (17.95 at baseline; 14.81 at 3 months; 13.26 at 6 months), and improved family functioning (47.70 at baseline; 51.93 at 3 months; 51.44 at 6 months). The positive trends in the outcome measures were not evident for family members in the standard care group (see Figure 2).

Mixed-Effect Models of Outcome Measures

Tables 2 and 3 present the estimated intervention effects (differences in improvement or reduction in outcome measures between the intervention and standard care groups) from the mixed-effect regression models, controlling for participants' background characteristics. For IDUs, no significant intervention effect was observed on the drug composite score. Compared with the standard care group, a significant reduction in depressive symptoms was seen at 3 months in the intervention group (estimated difference in reduction from baseline between intervention and standard care = 5.118, $SE = 1.007$, $p < .0001$); the estimated difference in reduction became smaller at 6 months (estimated difference in reduction = 3.674, $SE = 1.019$, $p = .0004$) after controlling for age, marital status, education, employment, years of drug use, and HIV status. The level of depressive symptoms in IDUs was negatively associated with being married or living as married ($p = .0422$) and more education ($p = .0232$). A significantly higher improvement in family functioning was shown at 3 months (estimated difference in improvement = 4.923, $SE = 1.042$, $p < .0001$) and 6 months (estimated difference in improvement = 3.075, $SE = 1.202$, $p = .0115$) for the intervention group after controlling for the same set of selected covariates.

For family members, after controlling for gender, age, education, marital status, and employment status, we found a significantly improved level of coping at 3 months for the intervention group (estimated difference in improvement = 1.735, $SE = 0.794$, $p = .0305$). However, the estimated difference in reduction became insignificant at 6 months. The intervention effect of depressive symptoms was insignificant at 3 months, and was strengthened to a significant level at 6 months (estimated difference in reduction = 3.682, $SE = 0.8826$, $p < .0001$). The intervention effect in family functioning was significant at both 3 months (estimated difference in improvement = 3.945, $SE = 1.111$, $p = .0005$) and 6 months (estimated difference in improvement = 3.850, $SE = 1.124$, $p = .0008$). Older family members were associated with better coping ($p = .0205$) and a higher level of depressive symptom ($p < .0001$).

Discussion

The intervention piloted in this study is the first in Vietnam to focus on mental health and family relations for both IDUs and their family members. The intervention was well received by the participating IDUs and their family members, as reflected by the near 100% participation in the multiple sessions and the high follow-up rate. Local service providers and intervention facilitators also spoke highly about the strategies and approaches used in the intervention. The providers affirmed that they had learned new perspectives and techniques to interact with IDUs and their family members, and asserted the need to more effectively involve family members in future drug use control and treatment strategies. Our intervention pilot could potentially serve as a model to provide a continuum of services beyond drug rehabilitation centers in Vietnam.

Of the various challenges associated with drug use behaviors, mental health is one of the most critical to acknowledge. Hence, it is very encouraging to see promising outcomes in both depressive symptoms and family functioning for the IDU participants in this study. On the other hand, our intervention pilot failed to show intervention outcomes for IDU drug-using behavior, which reflects the difficulties in changing addictive behavior with a short, four-session intervention. This finding reinforces the need for combination prevention strategies to promote positive behavioral change among IDUs. Continued attention is also needed to develop harm-reduction strategies, including availability of clean syringes and opioid substitution therapy.

In a family-oriented culture such as Vietnam, it is useful to consider the impact of drug use on the collective (family) rather than its traditional framing as the challenge of a single individual. Results from this study reinforce the link between family experience and individual drug use. Participation in this intervention pilot provided family members of IDUs with improved skills to cope with an adverse situation, reduced depressive symptoms, and enhanced family functioning. Future intervention programs should explore additional avenues for exploiting the power of family to address the challenges associated with drug use.

There are some limitations to be noted. First, given the pilot nature of this study, the sample size was small and the follow-up period was short. Therefore, the study results did not provide conclusive evidence of the intervention's efficacy, especially for drug-using behavior. Also, because of the limited sample size, some imbalances in background characteristics were found between intervention conditions. Second, the outcome measures relied on self-reported data, so issues related to social-desirability bias and recall bias could be raised. Also, some differences in outcome measures between groups, although showing an encouraging trend, may not be clinically significant in nature. Third, caution must be used in generalizing the findings to IDUs in other geographic areas, IDUs who refused to participate or who did not receive routine health care, or IDUs whose drug-using status is not known to commune service providers. Finally, there was a lack of control activity provided to the standard care group, so it is difficult to differentiate the intervention effect from the change due to attention received by the intervention group. Despite these limitations, we believe that the findings presented here indicate the positive effects of

Intervention V for IDUs and their family members. It is necessary for future program developers to recognize the importance of family members in the well-being of IDUs and broaden their role in harm reduction and HIV-prevention programs to achieve a sustainable intervention impact in drug use control and prevention.

Acknowledgments

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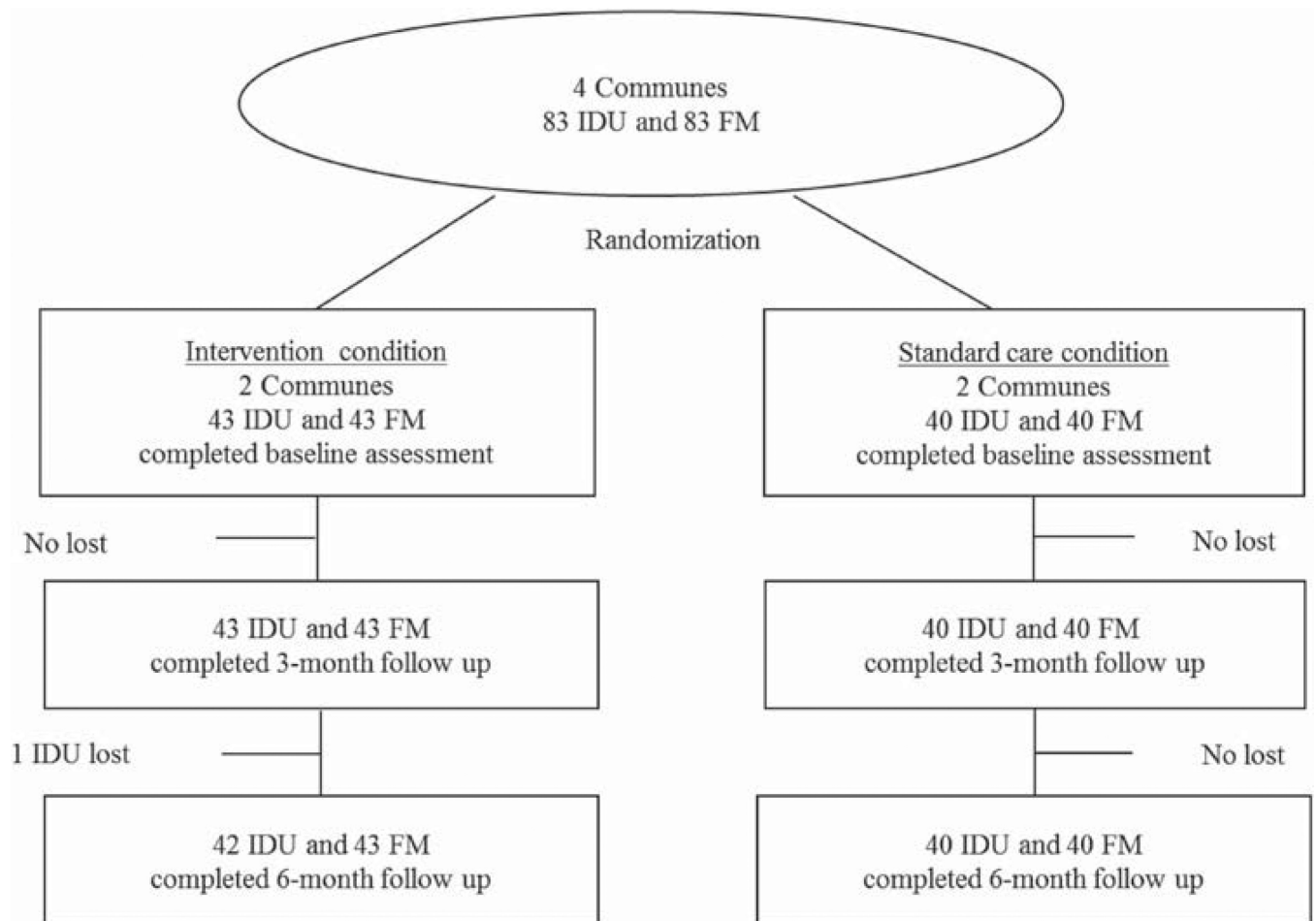
Figure 1.
Study flow chart. FM = family member; IDU = injecting drug user.
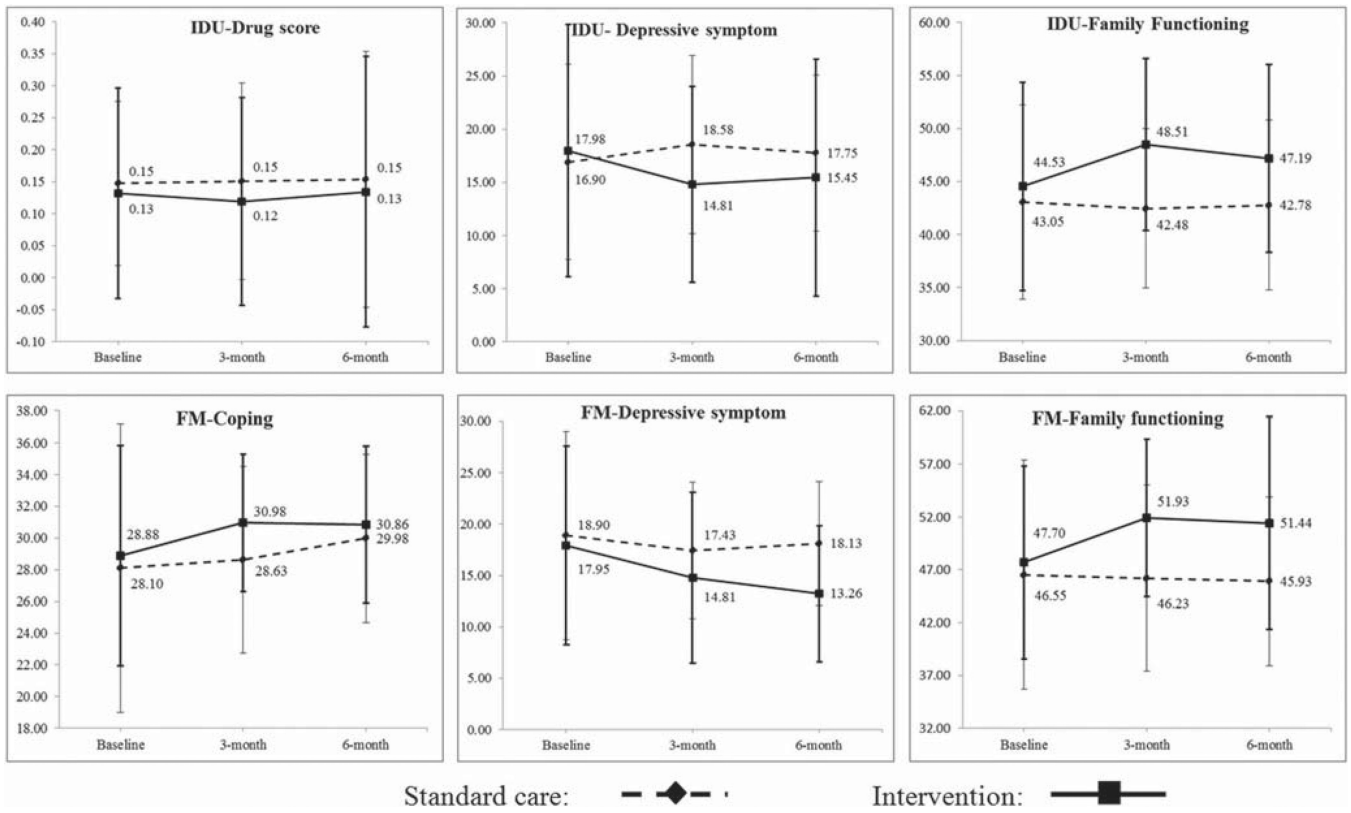
Figure 2.
Plots of means (±2 *SD*) at baseline and follow-up points for IDUs and family members. FM
= family member; IDU = injecting drug user.

Table 1

Numbers (Percentages) of Baseline Demographic and Background Characteristics

Characteristic	IDU			Family member		
	Standard care	Intervention	p	Standard care	Intervention	p
Number of participants	40	43		40	43	
Gender			1.0000			.0037[b]
Male	40 (100)	43 (100)		0	8 (18.6)	
Age (years)			.5026			.0375[b]
30	15 (37.5)	11 (25.6)		16 (40.0)	10 (23.8)	
31–40	19 (47.5)	24 (55.8)		3 (7.5)	12 (28.6)	
41	6 (15.0)	8 (18.6)		21 (52.5)	20 (47.6)	
Marital status			.8540			.1309
Single	16 (40.0)	15 (34.9)		2 (5.0)	3 (7.0)	
Married/living as married	22 (55.0)	25 (58.1)		29 (72.5)	37 (86.1)	
Divorced/separated or widowed	2 (5.0)	3 (7.0)		9 (22.5)	3 (7.0)	
Education (years)			.0020[a]			.2313
9	6 (15.0)	20 (46.5)		18 (45.0)	19 (47.5)	
10–12	27 (67.5)	22 (51.2)		10 (25.0)	15 (37.5)	
13	7 (17.5)	1 (2.3)		12 (30.0)	6 (15.0)	
Currently unemployed	9 (22.5)	14 (32.6)	.3063	23 (57.5)	11 (25.6)	.0031[b]
Duration of drug use (years)						
10	20 (50.0)	26 (60.5)	.3378			
HIV status						
Positive	7 (17.5)	7 (16.3)	.8820			

Note. IDU = injecting drug user.

[a] A significant group difference was found for IDUs.

[b] A significant group difference was found for family members.

Table 2

Results From Mixed-Effects Regression Models-Injecting Drug Users (IDUs)

Parameter	Drug composite score			Depressive symptoms			Family functioning		
	Est.	SE	p	Est.	SE	p	Est.	SE	p
IDU characteristics									
Age	−0.0006	0.0015	.6632	0.0191	0.0779	.8070	0.0157	0.0679	.8179
Married	−0.0228	0.0170	.1820	−1.8452	0.9006	.0422	−0.8605	0.7808	.2722
Education	−0.0097	0.0035	.0069	−0.4437	0.1933	.0232	0.0584	0.1736	.7370
Unemployed	0.0125	0.0144	.3842	1.5433	0.8338	.0662	−0.1910	0.8249	.8172
Years of use	−0.0018	0.0019	.3405	−0.1222	0.1006	.2266	0.0170	0.0886	.8482
HIV positive	−0.0216	0.0187	.2506	−0.3648	1.0178	.7205	0.9022	0.9163	.3264
Main effect[a]									
Intervention			.0368			.0077			<.0001
Visit			.5817			.1963			.0024
Visit × Intervention[a]			.6788			<.0001			<.0001
Baseline comparison[b]	−0.0294	0.0198	.1400	0.3794	1.0806	.7260	1.5948	1.0151	.1183
Intervention effect[c]									
3 months	−0.0150	0.0174	.3896	−5.1179	1.0070	<.0001	4.9230	1.0424	<.0001
6 months	−0.0090	0.0161	.5810	−3.6738	1.0191	.0004	3.0753	1.2021	.0115

[a] p value from F test. The significances of the main effects were not of interest.

[b] Estimated difference in IDU outcome measure at baseline between intervention and standard care through model contrasts.

[c] Intervention effect = estimated difference in changes from baseline between intervention and standard care through model contrasts.

Table 3

Results From Mixed-Effects Regression Models-Family Members

Parameter	Coping			Depressive symptoms			Family functioning		
	Est.	SE	p	Est.	SE	p	Est.	SE	p
Family member characteristics									
Male	−0.9560	0.9337	.3075	−1.2722	1.0886	.2444	−0.8775	1.3552	.5183
Age	0.0540	0.0231	.0205	0.1095	0.0268	<.0001	−0.0315	0.0334	.3463
Married	0.7817	0.6353	.2204	0.1589	0.7297	.2879	−1.4733	0.9139	.1090
Education	0.1015	0.0786	.1995	−0.0854	0.0916	.3524	0.1555	0.1141	.1751
Unemployed	−0.4156	0.5984	.4884	−0.2971	0.6775	.6616	1.2591	0.8533	.1421
Main effect[a]									
Intervention			.0146			<.0001			<.0001
Visit			<.0001			<.0001			.0002
Visit × Intervention[a]			.0789			.0002			.0005
Baseline comparison[b]	0.6613	0.7436	.3752	−1.0840	0.8506	.2045	2.0689	1.0665	.0542
Intervention effect[c]									
3 months	1.7347	0.7942	.0305	−1.5364	0.8720	.0801	3.9450	1.1113	.0005
6 months	0.4936	0.8026	.5395	−3.6815	0.8825	<.0001	3.8496	1.1242	.0008

[a]
p value from F test. The significances of the main effects were not of interest.

[b]
Estimated difference in family member's outcome measure at baseline between intervention and standard care through model contrasts.

[c]
Intervention effect = estimated difference in changes from baseline between intervention and standard care through model contrast.