Correlates of Staying Safe Behaviors Among Long-Term Injection Drug Users: Psychometric Evaluation of the *Staying Safe* Questionnaire

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Abstract

We report on psychometric properties of a new questionnaire to study long-term strategies, practices and tactics that may help injection drug users (IDUs) avoid infection with HIV and hepatitis C. Sixty-two long-term IDUs were interviewed in New York City in 2009. Five scales based on a total of 47 items were formed covering the following domains: stigma avoidance, withdrawal prevention, homeless safety, embedding safety within a network of users, and access to resources/social support. All scales (a .79) except one (a = .61) were highly internally consistent. Seven single-item measures related to drug use reduction and injection practices were also analyzed. All variables were classified as either belonging to a group of symbiotic processes that are not directly focused upon disease prevention but nonetheless lead to risk reduction indirectly or as variables describing prevention tactics in risky situations. Symbiotic processes can be conceived of as unintentional facilitators of safe behaviors. Associations among variables offer suggestions for potential interventions. These *Staying Safe* variables can be used as predictors of risk behaviors and/or biological outcomes.

Keywords

Staying safe; Symbiotic goals; Prevention tactics; Injection drug users; HIV; Hepatitis C

Introduction

The *Staying Safe* research study developed grounded hypotheses about how some injecting drug users (IDUs) avoid becoming infected with either HIV or HCV despite having injected drugs for a long time (between 8 and 15 years) in a locality with high HCV and HIV prevalence [1]. These hypotheses posit that IDUs who are able to attain symbiotic goals like avoiding withdrawal and maintaining social support are more likely to remain uninfected. The goals are "symbiotic" in the sense that even though they are not directly focused upon disease prevention they may nonetheless help reduce transmission risk [2]. This new approach to studying IDUs examines practices, strategies, and environmental factors associated with *Staying Safe* long-term and represents a major turn from focusing on short-term risk behaviors [3].

An example of a symbiotic goal is avoiding withdrawal. Among strategies IDUs use for avoiding withdrawal are shielding oneself from loss of income, homelessness, or incarceration. Aligning one's resources (e.g., income) with drug consumption appears to be a particularly key strategy for withdrawal avoidance. If these strategies and tactics fail, experiencing withdrawal is conducive to increases in risk behaviors like sharing drug paraphernalia.

Our research documented another symbiotic goal: developing withdrawal coping skills to manage withdrawal symptoms. For instance, users may apply to enter detoxification or methadone maintenance programs when the drugs they need are not available; they may temporarily use valium or other pills instead; engage in physical exercise more frequently; or engage in other types of activities to keep their mind off withdrawal [4].

Some IDUs have also developed strategies for avoiding stigma and devolution, like hiding their use and presenting themselves as leading a normal life. Users hide track marks from needles or try to avoid abscesses as well as keep themselves from getting dirty. An earlier paper adopted the phrase "keeping it together" to describe strategies to prevent being labeled as 'junkie' and other forms of stigmatization [5].

A number of support structures also are hypothesized to play vital roles in helping IDUs remain uninfected with HIV and/or HCV. Maintaining social ties with relatives, neighbors, and non-using friends can be crucial when users need food, money, shelter, or legal help. Maintaining good relations with other users and dealers is also important in order to ensure a steady supply of drugs. Some "resources" provided by drug using friends, however, may increase infection risk—for instance, if they provide their apartment for injecting and share non-sterile injection equipment.

Bourgois [6] described instances in which social relations of distrust among drug users, combined with difficulties in obtaining drugs, prevented them from staving off withdrawal and led to high risk situations. In contrast, users helping other users to inject safely by providing them with sealed syringes is a socially-embedded way to avoid risk behavior. The term "intravention," which we defined as health-directed efforts waged by members of a community to protect other community members, [7, 8] suitably describes this kind of HIV/HCV transmission risk prevention.

In sum, symbiotic processes are characterized as reducing conditions that lead to risk behavior with high-risk partners and/or in high-risk settings. These processes can be conceived of as facilitators of safe behaviors that need not be intentional. The facilitation is a by-product of IDUs' attempts to achieve other goals (e.g., maintaining social support) that also help reduce the risk of getting infected. Another set of components of this risk reduction model, *prevention tactics in risk situations,* is related to injection practices and/or handling

of drug-taking equipment. Whereas symbiotic processes are "upstream" on the chain of events preceding drug use, prevention tactics in risk situations are more immediately connected to moments of risk related to injection drug use. Despite the differences in time frames, however, both components provide or create opportunities for reduction of risk behaviors and thus for prevention of infection transmission.

Importantly, training IDUs in "staying safe" approaches may provide the basis for a new generation of prevention programs. To facilitate evaluations of these programs, and to enable epidemiologic testing of the *Staying Safe* hypotheses, we developed a draft *Staying Safe Epidemiological Questionnaire.* This questionnaire was designed to measure practices, prevention tactics, strategies, and other characteristics of IDUs that we hypothesize are related to remaining uninfected. The focus of the following sections is the description and psychometric evaluation of the questionnaire.

Methods

Developing *Staying Safe* Questions

In the initial stage of questionnaire development, we converted our emerging concepts into draft questions, pilot-tested them, and conducted an initial validity check. These concepts emerged from analyses of in-depth interviews with 35 *Staying Safe* research project participants [2, 4]. In writing questions, subjects' language during in-depth biographical interviews helped us word questions appropriately. If existing materials did not provide adequate guidance, field staff interviewed additional IDUs, or re-interviewed prior subjects, to explore appropriate wordings.

The draft *Staying Safe Epidemiological Questionnaire* included 142 questions about respondents' safe behaviors over time in a variety of contexts, settings, and individual circumstances. Administering these questions took about 45–60 min. The questions covered the following domains:

a. Taking care of oneself, avoiding stigma and devolution (hard times) along with ensuring steady access to clean syringes and other injection equipment;

b. Drug withdrawal experiences and ways IDUs manage to avoid withdrawal;

c. Homelessness as a factor for increased injection risk that can be mitigated by a reliance on resources facilitating safer injecting;

d. Injecting with others: Injection networks are both an important resource for IDUs as well as a source of risk;

e. Maintaining social relations with relatives, non-using friends and neighbors, other drug users and dealers as well as with treatment program staff ensures access to important resources that help reduce risk.

Participants

Sixty-two long-term IDUs who had injected heroin and perhaps other drugs for between 8 and 15 years were recruited to participate in assessing psychometric qualities of this questionnaire. Study participants were referred to us by other research projects, a detoxification center, and a harm reduction agency that screened subjects for us by how long they had been injecting drugs. All eligible subjects whom they referred were interviewed at the *Staying Safe* project storefront in the Lower East Side Manhattan.

Developing Scales and Assessing Their Psychometric Properties

Starting with 142 questionnaire items, 18 were dropped before the reliability testing was conducted. Some of these items were lead-in questions (e.g., ever worked as a dealer, ever incarcerated, are you currently employed), some had very small numbers of respondents (e.g., only seven participants ever worked as dealers), and several items had to be dropped because of an incorrectly placed skip pattern.

We then grouped questionnaire items according to the previously outlined domains. SPSS statistical software was used to calculate Cronbach's alpha [9] to measure reliability and internal consistency of the initial scales. Upon examining alphas and the mean inter-item correlations, we dropped poorly fitting items and recomputed reliability coefficients. In this process, we excluded a total of 70 items (e.g., money related items or job related items, some of which were poorly worded) that were not correlated with the other items in the respective subgroups, so their deletion led to the enhancement of alpha.

Since Kopalle and Lehmann [10] cautioned against selecting an idiosyncratic set of items based purely on generating a large value for alpha, we ensured that both initial item selection and the trimming process proceeded on theoretical and logical grounds. To calculate confidence intervals for alpha we used Koning and Franses' [11] algorithm implemented in the R program for statistical computing [12].

Next, we assessed intercorrelations of the scales with each other and with the seven single-item measures. Two of these measures were related to symbiotic processes (reducing drug intake on one's own and storing sealed syringes)—and the remaining five items were related to prevention tactics in risk situations:, making sure that partner has clean works, keeping one's own personal injection space, injecting alone, others asking to use one's syringes, and having drugs but no sterile syringes.

The results of the multiple correlation tests are reported with adjusted *P*-values using the Benjamini and Hochberg [13] *False Discovery Rate* (FDR) procedure. FDR controls the expected proportion of falsely rejected null hypotheses. This error rate is equivalent to the family-wise error rate when all null hypotheses are true but is smaller otherwise. Our multiple-comparison problem involves an overall decision which is based on multiple aspects of the new prevention strategy. Conclusions about different aspects are of interest per se, but the set of discoveries will be used to reach an overall decision regarding the new strategy. We wish therefore to make as many discoveries as possible which will enhance a decision in favor of the new strategy, subject to control of the FDR. Control of the probability of any error is unnecessarily stringent, as a small proportion of errors will not change the overall validity of the conclusion, and thus family-wise error control is not needed [13].

The composition and psychometric properties of the final scales will be described next.

Results

The sample included 40 males (64.5%) and 22 females (35.5%). Thirty-four participants were White (55%), twenty Latino (32%), seven Black (11%) and one Asian (2%). Mean age was 35.5 (range: 19 to 65). Four respondents self-reported that they were doubly-infected (by HIV and hepatitis C), 28 said they were hepatitis C positive only, and 25 said they were uninfected by either virus. Four HIV-negative participants did not report their hepatitis C serostatus and one hepatitis C positive participant did not report his or her HIV status.

The reliability analysis of the questionnaire items resulted in the construction of the five scales described in Table 1. (Scale items and response categories are listed in the Appendix):

a. The *Keeping It Together* scale (12 items, a = .82) is based on stigma avoidance items that describe how IDUs take good care of themselves and hide their drug habits from others. These 12 items tap into three sub-domains: hiding use by creating an image of a person who leads a normal life, taking care of one's veins and hiding track marks caused by needles, and opting for various forms of social distancing so that others would not find out about one's use.

b. The *Withdrawal Prevention Tactics* scale (5 items, a = .61) contains items that ask whether a user has done any of the following to avoid withdrawal episodes in the last six months: saved a bag for the next morning; put aside additional drugs; stored methadone; or put aside money for getting the next bag in an emergency. A fifth item asked how many times he or she used other substances like painkillers or other drugs to avoid withdrawal symptoms until he or she could get heroin.

c. The *Homeless Safety Tactics* scale (2 items, a = .79) asked about two types of resources that may help homeless IDUs (N = 33) maintain safer drug use practices: 'Do you have a place where you store clean needles?' and 'Do you have a place where you safely store drugs?'

d. The *Embedding Safety within Network* scale (3 items, a = .81) asked about various forms of intravention: whether injectors discuss safety issues, provide sterile syringes to others, and think in advance about bringing sterile syringes if somebody else needs one.

e. Finally, social support and resource items yielded a 25-item *Access to Resources* scale (a = .86) that consists of three subscales: support from relatives, non-using friends, and neighbors (9 items, a = .80); support from drug users (9 items, a = .85); and support from program staff (7 items, a = .79). As for the specific types of resources provided by these three support groups, we asked questions about how many times in the last six months respondents were provided or recommended places where they could go to sleep; were given or lent money; obtained emotional support; received help/support when they had been in trouble with the law; and obtained recommendations about where they could go for work. Other questions asked about help related to drug use and withdrawal, e.g., how many times were respondents given or supplied with sterile syringes; were provided help to cope with withdrawal; or were recommended to seek help in the detoxification unit, or methadone program, or syringe exchange program (see Appendix for listing of individual items).

Table 2 summarizes psychometric properties of the scales described above. Alpha coefficients were satisfactory in almost all cases (ranging from .79 to .86). The only exception was that the *Withdrawal Prevention Tactics* scale had a lower alpha (.61). Excluding one of the five items in this scale would lead to slight increase of alpha but for theoretical and empirical reasons, we kept all five items in the scale.

Table 3 shows correlations among scales, subscales, and single-item measures. Overall, this table presents 105 correlations: 36 among symbiotic processes variables; 54 between symbiotic processes and prevention tactics in risk situations; and 15 among the prevention tactics. As indicated in the table, 15 correlations were statistically significant and 13 marginally significant with the FDR correction.

Among the five primary scales, the *Withdrawal Prevention Tactics* scale had the largest number of associations with the other four scales (two significant and two marginally

significant), even though this scale had the lowest alpha. Next follows the *Embedding Safety within Network* scale, which is significantly correlated with three other *Staying Safe* scales. The *Access to Resources* and *Homeless Safety Tactics* scales both had one significant and one marginally significant correlation). Finally, the *Keeping It Together* scale is significantly correlated with just one other scale, the *Withdrawal Prevention Tactics* scale. A possible reason for this is that the remaining three scales are based on interactions with other people (users and non-users), whereas the *Keeping It Together* scale addresses individual tactics and strategies.

Single-Item Measures

Table 3 includes seven single-item measures, of which the first two (reducing intake on one's own and storing sealed syringes) are grouped with the scales under the heading of symbiotic processes. Reducing drug intake on one's own is highly correlated with the *Withdrawal Prevention Tactics* scale as well as with the *Embedding Safety within Network* scale. Even though voluntary reduction of heroin consumption is an important indicator of the ability to exercise control over one's drug use, only 11% of respondents indicated they can do it often; 36% can do it sometimes, and 53% stated that they reduce their drug intake only rarely or never. In contrast, 80% of respondents store sealed syringes. This item was marginally associated with three scales.

Prevention Tactics in Risk Situations

Among those respondents whose partners are also IDUs, 63% said they often or very often make sure their injection partner has clean works. This item was marginally associated with two scales and one subscale. Twenty-five respondents (44%) indicated that when they inject with others in the same room, they always keep their own personal injection space. A personal injection space reduces the likelihood of accidental equipment sharing (and perhaps reduces the likelihood of exposure to stray blood). This item is strongly related to two Staying Safe scales (Keeping It Together and Withdrawal Prevention Tactics).

Sixty-eight percent of the sample reported that they inject alone often or all the time (42 and 26%, respectively), and 58% said that other injectors had asked to use their syringes in the last six months. The latter item was strongly associated with the *Embedding Safety within Network* scale and the *Drug Users Support* subscale. A correlation of the same magnitude was found between this item and 'being in the situation when you had drugs but no sterile syringes'.

Discussion

This article described *Staying Safe* questionnaire items and scales to measure IDUs' long-term strategies, practices, and tactics for staying uninfected from HIV and HCV. We examined psychometric properties of five *Staying Safe* scales, three subscales, and seven single-item measures. Some of the concepts we presented are specific tactics or strategies that were measured either by a single-item or by scales with only a few items each (i.e., the 2-item *Homeless Safety Tactics* scale, 3-item *Embedding Safety within Network* scale, and 5-item *Withdrawal Prevention Tactics* scale). On the other hand, concepts such as social support and stigma avoidance (which is captured in the *Keeping It Together* scale) are constructs that could be tapped into by a potentially large number of items. In the process of constructing these scales, we considered whether they should consist of subscales and what the relative proportion of items to include in each subscale should be.

As Clark and Watson [14] recommend, when creating subscales, scale developers must show that intrasubscale item correlations are systematically higher than intersubscale item

correlations; if this condition cannot be met, then subscales should be abandoned in favor of a single overall score. Out of a larger social support item pool, we selected nine items about support from relatives and neighbors, nine items about support from drug using friends, and seven items about support from syringe exchange or treatment program staff. The mean inter-item correlations (shown in Table 2) for these subscales were $r = .289$ for support from relatives, $r = .386$ for support from drug users, and $r = .344$ for support from program staff, which were in all three cases higher than the mean inter-item correlation for all 25 items combined ($r = .191$). This justifies forming these three subscales of the *Access to Resources* scale.

In contrast, mean inter-item correlations in the three *Keeping It Together* subscales were $r = .381$ (presenting oneself as leading a normal life), $r = .258$ (social distancing and hiding drug use), and $r = .427$ (avoiding abscesses, track marks, and injecting cocaine/crack). Note that the overall mean inter-item correlation for all 12 items combined was $r = .275$, which is higher than the distancing/hiding subscale. Thus, we did not describe these subscales individually and instead treated all 12 items as parts of one stigma avoidance scale. In other words, since not all subscales of the *Keeping It Together* scale demonstrated the required psychometric properties (intrasubscale correlation strength), we reported only the overall scale alpha.

Limitations

The fact that the mean inter-item correlations for scales with just two or three items are much higher than the mean inter-item correlations for scales with five or more items (see Table 2) indicates that the scales with only a few items cover rather narrow domains, especially when there is some degree of redundancy between the items. This is primarily true for the *Homeless Safety* Tactics scale, which appears to lack sufficient breadth since it is based on just two highly correlated items ($r = .653$; 'Do you have a place to store needles?', 'Do you have a place to store drugs?'). High redundancy increases internal consistency but often creates an overly narrow scale that likely may not assess the construct optimally.

In contrast, even though the Withdrawal Prevention Tactics scale consists of a larger number of items (5), this alone did not sufficiently compensate for its much lower mean inter-item correlation (.251), which resulted in a rather weak scale reliability ($a = .61$). However, the fact that this scale has the largest number of associations (four significant and other four marginally significant) with other scales and single item measures speaks strongly for retaining this scale.

Furthermore, since our sample size was small, we were unable to conduct factor analysis to assess construct validity or examine multidimensionality. Finally, in several instances, imprecisely worded questions limited interpretation of the data. This problem most often pertained to items that asked about syringes without sufficiently clear specification whether we meant used syringes or sealed (sterile) syringes (e.g., Have other injectors asked to use your ... syringes?).

Conclusion

All in all, the correlations among variables present a preliminary picture of their patterns of association that will be useful in planning future research using them as predictors of risk behaviors and/or biological outcomes. To some extent, the correlations between the symbiotic process variables and the prevention tactics in risk situations variables are possible validators of these measures. Given the lack of prior research in this area, however, we cannot have great confidence in such cross-sectional construct validation. Thus,

validation of these measures should await longitudinal studies that determine whether single variables or groups of variables in this study predict changes in risk behaviors and/or biological outcomes. Such studies should also conduct further analysis of the psychometric properties of these measures with larger samples.

The scales presented here describe conditions that may facilitate safe injection. Interventions that target the symbiotic goals and processes described above, if effective, might create a new public health prevention paradigm. We hope that the measures described in this paper will pave the way for cohort studies to test whether these scales and variables are associated with less incident infection. They can also be used to measure which IDUs take up a given strategy or practice for prevention program evaluation as well as for studying psychological, physiological, social and other etiologic factors that explain which IDUs engage in specific strategies and practices.

Acknowledgments

Appendix

See Table 4

Table 4

Items that compose the scales and subscales

Keeping It Together scale	
1. Despite my drug use I manage to lead a 'normal' life.	0 never[a]
2. In the last six months, I have managed to keep myself from getting too dirty.	1 rarely
3. I wear long sleeves so others will not see my track marks.	2 some of the time
4. I try to avoid abscesses (e.g. avoiding dull needles or use needles once).	3 most of the time
5. I avoid track marks (e.g. using cream, rotating where I inject).	4 all the time
6. I avoid injecting cocaine/crack because it hurts my veins	
7. I avoid letting non-injectors see me inject.	
8. I avoid letting other injectors see me inject.	
9. If I borrow money I always pay it back.	
10. I have time to think about things other than getting money, drugs, using drugs, and physical survival.	
11. I never hang around known injectors in my neighborhood, so that I am not labeled.	
12. I take care of myself better than "junkies" who don't take care of themselves.	0 strongly disagree[b]
	1 somewhat disagree
	2 neither disagree or agree
	3 somewhat agree
	4 strongly agree

Withdrawal Prevention Tactics scale	
In the last six months have you done any of the following to avoid withdrawal episodes?	
1. Saved a bag for the next morning	0 never[c]

Withdrawal Prevention Tactics scale

2. Put aside additional drugs (e.g., stashing heroin not as a wake-up bag) to resort to in an emergency	1 rarely
	2 sometimes
3. Stored methadone	3 often
4. Put aside money for getting the next bag in an emergency	4 very often
	0 never[d]
5. How many times did you use other substances (painkillers, other drugs) to see you through until you could get drugs?	1 once
	2 two to five times
	3 six to ten times
	4 eleven or more times

Homeless Safety Tactics scale

1. Do you have a place where you store clean needles?	Yes/no
2. Do you have a place where you safely store drugs?	Yes/no

Embedding Safety within Network scale

1. In the last six months how often did you talk with the people you inject with about the need to inject safely?	0 never[e]
	1 rarely
	2 some of the time
2. How often did you supply sterile syringes to the people you inject within the last six months?	3 most of the time
3. When you inject with others, how often, in the last six months, have you made sure you have had enough sterile syringes with you so you can provide anyone who needs one with one?	4 all the time

Access to Resources scale (consists of three subscales:)

Support from Relatives/Non-using Friends, and Neighbors subscale

How often, in the last six months, have your relatives, non-using friends and neighbors...

1. ...let you have a place to sleep?	0 never[f]
2. ... given you money with no strings attached on how you would use it?	1 once
3. ...lent you money expecting you to pay back?	2 two to five times
4. ... emotionally supported you when you have been feeling down or otherwise unhappy?	3 six to ten times
5. ...been there for you when you have been in trouble with the law (bail, lawyers, incarceration)?	4 eleven or more times

6. ... recommended places where you can go to for work?

7. ...recommended where you can go to for help in dealing with your drug use (e.g., detox, MMTP, SEP)?

8. ...helped you cope with drug sickness/withdrawal?

9. ...given or supplied you with sterile syringes?

Support from Drug Users subscale

How often, in the last six months, have drug users you know.

1. ...let you have a place to sleep?

2. ...given or lent you money?

3. ...given you drugs?

4. ...emotionally supported you when you have been feeling down or otherwise unhappy?

5. ...been there for you when you have been in trouble with the law (bail, lawyers, incarceration)?

Access to Resources scale (consists of three subscales:)

6. ...recommended where you can go to for help in dealing with your drug use (e.g., detox, MMTP, SEP)?

7. ...helped you cope with drug sickness/withdrawl

8. ...allowed you to inject at their place (apartment, room etc.)?

9. ...given or supplied you with sterile syringes?

Support from Program Staff subscale

How often, in the last six months, have program staff.

1. ...recommended places where you can go to sleep?

2. ...given or lent you money?

3. ...emotionally supported you when you have been feeling down or otherwise unhappy?

4. ...been there for you when you have been in trouble with the law (bail, lawyers, incarceration)?

5. ...recommended places where you can go to for work?

6. ...recommended where you can go to for help in dealing with your drug use (e.g., detox, MMTP, SEP)?

7. ...helped you cope with drug sickness/withdrawal?

The right-hand column entries describe the response categories used for each item, with footnotes to each scale describing this more fully

[a]These response categories were used for items 1–11 of the *Keeping it Together* scale

[b]These response categories were used for item 12 of the *Keeping it Together* scale

[c]These response categories were used for items 1–4 of the *Withdrawal Prevention Tactics* scale

[d]These response categories were used for item 5 of the *Withdrawal Prevention Tactics* scale

[e]These response categories were used for items 1–3 of the *Embedding Safety within Network* scale

[f]These response categories were used for all items and subscales of the *Access to Resources* scale

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Table 1

Descriptives: *N*s, means or percentages, standard deviations, and ranges

Variable	N	Mean or %	sd	Range possible	Range actual
Risk reducing symbiotic processes					
Scales					
Keeping it Together scale	57	27.23	9.24	0–48	5–48
Withdrawal Prevention Tactics scale	62	7.23	4.02	0–20	0–19
Homeless Safety Tactics scale	33	1.15	0.91	0–2	0–2
Embedding Safety within Network scale	60	4.63	3.27	0–12	0–12
Access to Resources scale	56	25.46	13.80	0–100	0–60
Relatives Support subscale	61	9.98	6.84	0–36	0–32
Drug Users Support subscale	61	10.64	7.59	0–36	0–30
Program Staff Support subscale	57	4.51	4.21	0–28	0–16
Single-item measures					
Reducing drug intake on one's own	62	1.34	0.97	0–4	0–3
Storing sealed syringes	62	81%	0.40	0–1	0–1
Prevention tactics in risk situations					
Making sure partner has clean works	24	2.92	1.18	0–4	1–4
Keeping own personal injection space	57	2.74	1.40	0–4	0–4
Injecting alone	62	2.71	1.14	0–4	0–4
Others asked to use your syringes	62	58%	0.50	0–1	0–1
Had drugs but no sterile syringes	62	1.29	1.41	0–4	0–4

Table 2

Psychometric properties of *Staying Safe* scales

	Number of items	Cronbach's alpha	95% CI[a]	Mean inter-item correlation
Keeping it Together scale	12	.82	.73–.87	.275
Withdrawal Prevention Tactics scale	5	.61	.42–.74	.251
Homeless Safety Tactics scale	2	.79	.58–.89	.653
Embedding Safety within Network	3	.81	.70–.88	.586
Access to Resources scale	25	.86	.79–.90	.191
Relatives Support subscale	9	.80	.70–.86	.289
Drug Users Support subscale	9	.85	.78–.90	.386
Program Staff Support subscale	7	.79	.68–.86	.344

[a]Confidence intervals were calculated using Koning and Franses [11] algorithm implemented in the R program for statistical computing

Table 3

Variables describing risk reducing symbiotic processes and prevention tactics in risk situations: Intercorrelations between scales, subscales, and single-item measures

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
Risk reducing symbiotic processes															
1 Keeping It Together scale	r	1													
	P														
2 Withdrawal Prevention scale	r	.419	1												
	P	.010*													
3 Homeless Safety Tactics scale	r	.287	.417	1											
	P	.268	.074†												
4 Embedding Safety within Network scale	r	.160	.378	.555	1										
	P	.438	.021*	.010*											
5 Access to Resources scale	r	−.032	.341	.290	.415	1									
	P	.895	.062†	.268	.016*										
6 Relatives Support subscale	r	.098	.304	.176	.117	.721	1								
	P	.646	.074†	.514	.550	.000***									
7 Drug Users Support subscale	r	−.101	.276	.358	.500	.809	.299	1							
	P	.646	.105	.123	.001**	.000***	.081†								
8 Program Staff Support subscale	r	−.135	.088	.044	.192	.579	.167	.335	1						
	P	.514	.665	.895	.315	.000***	.418	.064†							
9 Reducing drug intake on one's own	r	.171	.479	.378	.441	.214	.127	.200	.079	1					
	P	.397	.002**	.105	.006**	.268	.514	.268	.704						
10 Storing sealed syringes	r	.250	.315	.433	.329	.118	−.056	.185	.134	.214	1				
	P	.169	.065†	.105	.062†	.555	.764	.315	.514	.232					
Prevention tactics in risk situations															
11 Making sure partner has clean works	r	.130	.141	.560	.445	.454	.362	.455	.195	−.154	−.022	1			
	P	.704	.665	.080†	.105	.097†	.210	.097†	.549	.646	.975				
12 Keeping own	r	.396	.411	.311	.162	.078	−.005	.119	.022	.211	.196	.051	1		

		1	2	3	4	5	6	7	8	9	10	11	12	13	14
personal injection space	P	.021*	.010*	.232	.428	.704	.976	.550	.936	.268	.300	.895			
13 Injecting alone	r	.145	.004	-.426	-.029	.062	.131	-.068	.074	-.087	-.199	.018	.274	1	
	P	.493	.976	.065†	.895	.751	.514	.719	.704	.663	.268	.976	.123		
14 Others asked to use your syringes	r	.005	.270	.411	.468	.188	-.090	.386	.065	.230	.246	-.125	.076	-.132	1
	P	.976	.112	.074†	.004**	.329	.657	.016*	.734	.194	.158	.704	.704	.514	
15 Had drugs but no sterile syringes	r	.068	.142	.130	.267	.122	-.008	.225	-.006	.130	.131	.075	-.154	-.244	.388
	P	.726	.482	.646	.123	.550	.976	.210	.976	.514	.514	.823	.460	.159	.016*

r correlation coefficient; P adjusted P-values using Benjamini & Hochberg [13] false discovery rate correction

† P < .1;

* P < .05;

** P < .01;

*** P < .001