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Long-term recall of social relationships related to addiction and HIV risk behaviors*

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Abstract

Background—Social relationships have been demonstrated as a key predictor of relapse among addicted persons and are likely to be important determinants of HIV risk behaviors also. However, the degree to which this population can reliably and consistently identify important people (IPs) in retrospect has been understudied.

Methods—Using the modified Important People and Activities questionnaire, we investigated to what degree IPs were dropped, added, or retained, and whether data about individual IPs were reported accurately on 6- and 12-month follow up periods using a sample of 50 drug or alcohol abusing participants.

Results—We found that IPs were largely retained, and that those retained versus dropped/added differed by their reaction to participant alcohol/drug use, as well as frequency of contact. We further found that there were differences in reliability of data describing specific IPs. While both

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Conducted some of the statistical analyses for the paper, wrote text, and prepared the manuscript.

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Participated in gathering the data used in this report, and provided methodology text and related edits to the paper.

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6- and 12-month follow up periods led to reliabilities ranging from excellent to fair, we found poorer reliability on responses to recall of “frequency of contact” and “reactions to drinking”, as well as “reactions to drug use”.

Conclusion—Future investigations of reliability of social relationships recalled retrospectively should attempt to examine possible systematic biases in addition to the reliability of specific IP data. More sophisticated studies are needed on factors associated with systematic variation in reporting of aspects of social relationships that are associated with addictions or HIV risk outcomes.

Keywords

Important people; Social Influence; Reliability; Reactions to substance use; Recovery; Addiction

1. Introduction

Evidence that social relationships are strongly related to health behaviors, notably addictions, is substantial and compelling (for a review, see Witkiewitz, Marlatt, 2004; also see Dobkin et al., 2002; Havassy et al., 1991). However, less is known about the relation of social relations and HIV risk behaviors. Interventions focused on social changes have become more popular as evidence for their efficacy has accumulated (Litt et al., 2007; 2009; Longabaugh et al., 1995; 2010). These developments have increased research interest in techniques for assessing social relationships and the mechanisms by which they relate to substance use and HIV risk. A focus on the mechanisms by which social influences affect behavioral outcomes leads naturally to longitudinal research so that temporal precedence and potential causal direction can be determined. Social relationships, furthermore, are dynamic; change is important to measure. However, methods for measuring change over time in social relationships are still in their infancy.

Generally, social relationships are believed to be promotive of good mental health, including in the realm of addiction (Longabaugh et al., 1993; Longabaugh et al., 1998; Mowbray, 2012). Having many supportive social relationships, has been demonstrated to predict lower relapse rates (Beattie and Longabaugh, 1999). This is notably relevant to treatments designed to employ or encourage social support as part of the intervention, such as with twelve-step recovery programs. Simultaneously, certain relationships can be detrimental to abstinence, such as those accepting or encouraging of substance use (Rook, 2015; Stout et al., 2012). Similarly, there has been an increase in attention to social influences on HIV risk, particularly those that are dynamic and interactive (Auerbach et al., 2011). Not surprisingly, the number of IV drug users in one’s social network is related to continued use of IV drugs (and, therefore, HIV risk; Latkin et al., 1995; Valente and Vlahov, 2001). In addition, partner needle sharing has been related to both emotional support and having a current sexual relationship with that partner (Unger et al., 2006). Dynamic changes are also evident in the association between social networks and HIV risk. For example, Costenbader et al. (2006) showed that an increase in drug-using network contacts over time related to increases in risk behaviors, after accounting for baseline behavior and characteristics. Hence, it is important to disambiguate the contribution that specific relationships may have on substance use and sex risk behavior. Social relationships may change over time in numerous ways, as specific

relationships detrimental to abstinence may be dropped and relationships beneficial to abstinence encouraged. Additionally, important relationships may change contexts, as an abstinent friend may themselves relapse, putting abstinent contacts at risk. Such use of substances by important network members is often used as a measure of negative social influences on participants (e.g., Groh et al., 2007; Longabaugh et al., 2010).

Few instruments exist that attempt to measure change over time in specific addiction-related aspects of social relationships. One of these is the Important People and Activities (IPA) instrument originally developed by Longabaugh et al. (later known as the IPI (Longabaugh et al., 2010; see Beattie and Longabaugh (1999) for details on the original instrument) and employed in Project MATCH (Project MATCH Research Group, 1997). The original intent of the IPA was to study social processes during and after treatment to describe changes in clients' social environments. Given the growing need to assess social influences on both substance use and HIV risk, we have further modified the IPA to collect data on HIV risk behaviors. This instrument, designated the Modified IPA (MIPA; Zywiak et al., 2016) gathers data on an index participant's social network (Important People, or IPs), how they relate to the index participant, their contact with the participant (including sexual interactions), their substance use, their reactions to the index participant's drug and alcohol use, and unprotected sexual activity between participants and IPs.

Cross-sectional (test-retest) reliability for the MIPA has been reported in Zywiak et al. (2016). Over a one-week period, all but one MIPA variable demonstrated acceptable to excellent reliability. In longitudinal research, however, it is important to understand the limits of retrospective reporting. How IPs react to a participant's substance use has been shown to be a strong predictor of long-term outcome (Stout et al., 2012), so it is important to understand how recall of this information may be affected over different recall intervals. While preliminary evidence indicates that the MIPA may be a useful measure for understanding the dynamic nature of social relationships, we must also have confidence in the long-term recall of such relationships. To accomplish this goal, we conducted a longitudinal reliability study among adults in substance use treatment who were in a parent study of social relationships, substance abuse, and HIV risk behaviors. We separately investigate the description of IPs recalled, forgotten, or added at recall, as well as the reliability of IP details. Furthermore, to promote continued improvements in the MIPA, we conducted exploratory analyses examining variables affecting the recall of important persons.

2. Methods

2.1 Participants

Adults receiving substance use treatment in Southeastern New England ($n = 50$), who were engaged in a longitudinal study of substance misuse, HIV risk, and the clients' social networks, were selected for participation in this reliability sub-study. Eligibility criteria for the parent study were: 1) enrolled in substance abuse treatment; 2) age ≥ 18 ; 3) use of primary substance within the past six months; 4) past year diagnosis of substance abuse or dependence; 5) absence of legal issues that would limit their participation; and 6) ability to read/write English. Participants were 64% ($n = 32$) female, age 38.9 years on average, and

racially 12% (n=6) nonwhite. Ethnically, participants were 28% (n=14) non-Caucasian. All procedures were approved by the Pacific Institute for Research and Evaluation Institutional Review Board. Additional sub-study consent was obtained from all participants.

2.2 Procedure

The protocol of the parent study called for interviews with participants every three months for a total of 24 months. Within the parent study, a sub-sample of participants who had been enrolled for at least 12 months were approached and offered the opportunity to recall their reported network membership and IP characteristics from the interviews 6 and 12 months previous; compensation for this interview was a \$25 gift card. If participants agreed, the reliability sub-study questionnaires were completed during regularly scheduled interviews for the parent study. During these interviews, the reliability data were always collected first; if parent study interviews had been conducted first, reliability data might have been contaminated by the practice of prompting. We compared the reliability subsample to the remainder of the study sample on 21 characteristics covering background, clinical, and health care. We found statistically significant differences on two: health insurance (yes vs. no, Chi square = 22.460, df = 1, $p < .0001$, with the subsample having fewer insured persons 73% to 95%) and number of lifetime convictions (Satterthwaite-corrected t-test = 2.60, df = 127, $p = .0103$, with the reliability sample having fewer, 3.52 to 7.64). We conclude that the two samples overall are comparable with regard to characteristics likely to be related to recall of social connections.

2.3 Measures

One fundamental aspect of recalling social interactions back in time is recalling who was, or was not, in contact with the participant during the period being recalled. Figure 1 sets the stage for the analytic comparisons, where we illustrate the process for a hypothetical participant whose recall interview occurred on May 1, 2016. That person was asked to recall their original data from both the December 1, 2015 (i.e., 6 months back) and May 1, 2015 (i.e., 12 months back) interviews. For analyses, we designate the original interview data as “ORIG6” and “ORIG12,” respectively; recall data are referred to as “BACK6” and “BACK12.”

The Modified IPA (MIPA) is an interviewer-administered form for capturing information about an index participant’s social network from the participant’s own perspective. There are two major sections to the form. The first section is called the “log.” It is a list of important people named by the participant, along with largely static information about the IPs. This list may be expanded after baseline to capture new IPs during follow-up. The form page provided in supplementary materials¹ (section S6) has room for 12 IPs, but in our two-year longitudinal study we add continuation pages as needed. Each IP is given an internal reference number to assure that each individual IP is tracked correctly over time. The other two form pages (found in Supplementary Materials¹ sections S7 and S8) are linked to the log page, and are intended to capture information that is renewed at each interview point on

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the latest amount of contact with the participant, alcohol and drug status, reactions to the index participant's alcohol and drug use, and information about HIV risks.

At the recall interview, subjects were asked to recall as accurately as possible the IPs they reported at their original interviews 6 and 12 months previous, as well as the characteristics of each individual IP. These IP characteristics included current relationship, frequency of contact, alcohol and drug status, drug of choice, IV drug use, unprotected sex, and reaction to subject's alcohol and/or drug use. We examined accuracy of recall for both individual IPs (i.e., naming the same people at the recall period) and characteristics of those IPs. To account for sparse data in some of the characteristics being analyzed, a number of response categories were collapsed; for example, there were too few ex-partners among the IPs for them to be considered separately; therefore, ex-partners were collapsed with partners into a combined category. Other relationship categories we found needed to be collapsed were family (immediate family, plus extended family), friends (friend, plus friends from work), people from treatment (e.g., counselor, fellow group member), and other. Answers for Frequency of Any Contact and for Frequency of In-person Contact were collapsed into monthly or less (not in past 3 months, once in past 3 months, less than monthly, about once a month), near weekly (every other week, once or twice a week), and near daily (3 to 6 times a week, Daily (7 times a week)). Answers for Alcohol and Drug Status were collapsed into: frequent drinker (heavy drinker, moderate drinker), light drinker, and non-drinker (doesn't use, had (or has) a problem, and doesn't drink). Unknown alcohol/drug status was rare in the current sample (< 5% at any time point) and therefore coded missing. Reaction to Alcohol and Reaction to Drugs were collapsed into negative (didn't accept), neutral, positive (accepted, encouraged), not applicable (i.e., participant does not use/drink), and unknown (IP doesn't know, subject doesn't know). Drug of Choice was collapsed into hard drugs (sedatives, opiates, heroin, and cocaine/crack), soft drugs (marijuana), and not applicable. Indicating "other" drugs and "don't know" was extremely rare in the current sample (< 2% at any time point) and were therefore coded missing. IV drug use was re-coded such that answers of "don't know" (< 5% at any time point) were coded missing, while retaining all other categories. The original coding for Unprotected Sex (i.e., yes/no) was maintained. We did not calculate agreement for MIPA questions about relationships in flux, or frequency of unprotected sex. Virtually no relationships were indicated to be in flux (<= 2% at any time point). Frequency of unprotected sex was rarely indicated, as most IPs reported no sexual partners.

2.4 Assessment Strategy

Most reliability papers begin and end with a report of what reliability has been achieved. Indeed, previous reliability research on the IPA/MIPA has been limited to either the subject-level examination of global reliability of assessments (Longabaugh et al., 1998), or the reliability of the IP-level questions (Zywiak et al., 2016). However, a complete investigation of the reliability of the MIPA should include data both on the accurate reporting on identical IPs between ORIG and BACK, and on the reported details on those IPs. It is specified to the participant that his or her responses cover the identical timeframe that was discussed during the earlier interview. In that context, true change in an IP's status is the target of the analysis, and faulty recall would represent measurement error or noise. Finally, if we are to improve

our instruments, we need analyses of what factors affect our reliability. For this reason, we investigate sociodemographic and relational predictors of recall of one's social connections back in time. We conducted exploratory analyses comparing IP characteristics of those reported at both the ORIG and BACK time points vs. those added or not reported. These analyses can inform both why and how much recall may change over short vs. long recall intervals. The characteristics tested for association with recall status for BACK6 and BACK12 were background characteristics of the IPs (gender, relationship to the index participant, and amount of any contact and in-person contact with the index participant), the IP's own substance use status (level of use of alcohol and drugs, what specific drug, if any, was used, and use of IV drugs), the IP's reaction to substance use (for both drugs and alcohol) by the index participant, and finally whether the IP was involved in unprotected sex with the participant. These variables capture important aspects of how the index participant and IP relate to one another, especially with regard to substance abuse.

Kappa for agreement between nominal categories (e.g., current relationship type) was estimated using SAS 9.4 for Windows software. Weighted kappa for agreement between ordinal categories was estimated for MIPA questions where answer categories were ordered (e.g., frequency of any contact: monthly or less, near weekly, near daily). As the predictor analyses were exploratory and done for multiple variables at two recall intervals, an alpha level of .005 was adopted. Finally, a generalization of Fisher's exact test was used to ascertain statistical significance (Freeman and Halton, 1951), given occasional cell sparsity.

3. Results

Overall, recall of individuals is largely accurate. Comparing ORIG6 with BACK6, of the 341 IPs listed at ORIG6, 307 (90%) were recalled at BACK6; in addition, 49 IPs were mentioned at BACK6 who were not listed at ORIG6. Looked at another way, 34 cases were not recalled at BACK6, while 49 were added. Of the 305 IPs reported at ORIG12, 292 (96%) were recalled at BACK12, while 13 were omitted and 86 were added.

3.1 Reliability of IP characteristics at recall

We examined IP details at recall for those IPs who were consistently mentioned at ORIG and BACK. This subset of IPs forms a meaningful subsample of the full set of reported IPs, exclusion of whom is subject to the predictors described above. For those IPs consistently reported at both ORIG and BACK, Table 1 contains agreement scores between original assessments and BACK6 as well as BACK12 responses. Based on suggested categorization by Cicchetti (1994), on BACK6 responses, agreement on four questions was Excellent (range: .770 – .950), agreement on three questions was Good (range: .649 – .724), and three questions were rated Fair (range: .508 – .595). On BACK12 responses, agreement on two questions was Excellent (range: .842 – .967), agreement on four questions was Good (range: .654 – .670), and four questions were rated Fair (range: .427 – .554).

3.2 Predictors of recall of the individual IPs

How the IP and participant relate to one another is one of the strongest predictors of which IPs are recalled (exact $p < .0001$ for both BACK6 and BACK12; see Table 2. At both recall

intervals, partners and family members were accurately recalled at higher rates than friends (82–88% vs. 57–64%). Friends, rather, were more likely to be added at recall (21–40% vs. 4–14%). Amount of contact (original report) between the IP and the participant also is significantly related to being recalled accurately (exact $p < .0001$ for BACK6, $p = .0017$ for BACK12), with the most frequent contact being related to higher recall (82–88% vs. 53–78%; see Table 3). A similar pattern is found when looking only at in-person contact except that the effect is by our alpha level not significant for BACK6 (exact $p = .0284$ for BACK6, $p = .0004$ for BACK12; Table S1 in Supplementary Material²).

An IP's reaction to the participant's alcohol use was significantly related to recall for BACK6 (exact $p = .0001$), but not by the stricter criterion for BACK12 (exact $p = .0333$; see Table 4). At BACK6, those who accepted or encouraged the participant's drinking were more likely to be omitted at recall. At BACK12, however, this pattern is not evident. With regard to reaction to the participant's drug use, we found no significant effects at either BACK6 (exact $p = .3012$) or BACK12 (exact $p = .0633$; see supplementary Table S2²). We found that IPs' alcohol statuses were associated with recall at BACK12 (exact $p < .0001$), but not at BACK6 ($p = .2554$; see Table 5). Moderate to heavy drinking IPs were more likely to be added at BACK12 than nonusers or light users; participants were also more likely to add IPs whose alcohol status was unknown. However, we did not find significant effects of IP drug use status on recall status (BACK6 exact $p = .0248$; BACK12 $p = .0168$; see supplementary Table S3³). We also examined how type of substance used by the IP and whether or not the IP injects drugs might affect recall, but neither had statistically significant effects (exact p -values for IP drug of choice were .9338 and .0137 for BACK6 and BACK12; the p -values for IV drug use were .8874 and .1461; see supplementary tables S4 and S5³). IP gender also did not influence recall (exact p -values .3182 and .6053; see S6), nor did whether the IP engaged in unprotected sex with the participant (exact p -values .1812 and .0322; see S7).

4. Discussion

The literature on the reliability of social assessments in addiction is small, with test-retest papers by our group (Longabaugh et al., 1998; Zywiak et al., 2016) on adults and one by Hallgren Ladd, and Greenfield (2013) on college students, all with generally positive results, being the most relevant. This paper represents the first longitudinal study of social recall of which we are aware, and the first to look into the details and predictors of recall.

Overall, the overwhelming majority of IPs identified at ORIG6/ORIG12 are listed again at recall (90–96%). Interestingly, there is more of a tendency at 12-month recall to add network members than to omit them (summing across both recall intervals, 47 omissions are more than overcome by 135 additions; sign test z -score = 6.45, $p < .0001$). While it is tempting to accept original report as the gold standard, our predictor analyses indicate that the omissions and additions do not occur entirely at random. For example, the tendency for new heavy drinkers to be reported at BACK12 may indicate either that participants avoided mentioning

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some of the heavy drinkers in their original report, or that the participants may have inserted some heavy drinkers who were in contact with the participant at some period either before or after ORIG6/ORIG12, but who perhaps were being avoided at ORIG6/12 while the participant was still in treatment.

Several study findings have important implications for research, and/or point to a need for further study. Analyses of recall predictors over 6 and 12 months indicated that IPs who have strong relationships with the participant (spouses and family members) and persons who have frequent contact with the participant are reported with more accuracy than others. Since both factors are likely to be associated with having stronger social influence, these findings bolster confidence that influential relationships can be recalled reliably when data have to be gathered over 6–12 month intervals. With regard to recall of network support of drinking or drugs, the data are more mixed. There are significant predictors of reporting of alcohol status and IPs' reactions to the participant's alcohol use, though these are not consistent over time. The findings are consistent with two hypotheses that are not mutually exclusive: (1) participants either may have sanitized their relationships in the original interviews, or (2) they may have recalled more problematic relationships in later recall than may have been the case at ORIG. As one recalls social interactions farther back in time, there can be errors in recalling or reporting when events occurred; e.g., reporting a relationship as being present at month 6 that ended at month 3, or vice versa. While these considerations point to the virtue of gathering data as contemporaneously as possible, as noted above tradeoffs always have to be made in the design of intensive longitudinal studies involving subject burden vs. quantity and quality of information.

There are no consistent predictor results from the analyses of IP drug use or IP reaction to the participant's drug use. While more research, especially on potential predictors of IP drug use and IP reactions to drug use, is necessary, those who use recall of social support for/against substance use six to twelve months in the past should conduct sensitivity analyses to rule out the potential for recall biases to affect their results. For example, multiple imputation can be used to assess the impact of under-reporting of IP substance use by creating simulated versions of a study's data in which some IPs reported as non-users or minimal users could be revised upward. If only minimal revisions result in substantial revisions to a study's conclusions, then under-reporting could be a weakness of the study's conclusions.

IP reactions to drinking and drugging and quantity of substance use vary in their reliability of recall. Results showed that participants reporting on a consistent IP typically reported the nature of the relationship, the IP's drug of choice and sexual history very well, but Reaction to Drinking and Reaction to Drugging appear to change most at recall. One factor affecting recall may, as noted above, be conflation of information from different time periods than the period nominally being recalled. Recall bias may increase the relevance of certain IPs in retrospect; similarly, social desirability may motivate participants to underplay the importance of IPs with a more negative impact on drug history. Overall, however, the reliability of IP details from the current study largely match those of Zywiak et al. (2016), who reported lowest scores on reliabilities for Reaction to Drinking and Drugging. Surprisingly, as the recall period in that study was only one week, BACK6 reliabilities

occasionally surpass those of Zywiak et al.. Potentially, our choice to collapse categories for meaningful appraisal of weighted kappas raised the frequency of consistent responding.

While the study informs future research on longitudinal assessment, it is not without limitations. First, the MIPA is a self-report instrument that relies heavily on subjective assessment of an individual's social network. Reaction to drinking/drugging and assessment of IP drinking/drugging is not only subject to general issues of recall, but also possible changes in perspective over time. For example, as an individual gains recovery time, they may, in retrospect, recall an IP's drinking as more excessive than initially stated. Second, our sample of drug and alcohol abusers in southern New England is not necessarily representative of such persons nationally, and the sample size of 50 index participants limits our power to detect between-subjects effects. Finally, our recall time frames of 6 and 12 months were relatively arbitrary.

Understanding change in social relationships over time is a challenging scientific task. Ideally, the process of capturing data should be as prospective as possible, with frequent, highly detailed assessments of social linkages. However, ideal methodology must be balanced against the patience of research participants who have limited time to devote to research, the cost of frequent assessments, and the potential for frequent assessment to lead to stereotyped reporting by participants. Hence, there is a need for the development and testing of multiple tools for reliably gathering longitudinal social and other data suitable for a range of research needs. More sophisticated studies are needed on factors associated with variations in the accuracy with which different aspects of social relationships are reported. For now, retrospective recall of IP details appears mostly reliable, although less reliable recall was not at random.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Highlights

- Important Persons (IPs) predict drug and alcohol recovery and HIV risk.
- The Modified Important People and Activities (MIPA) interview details IP influence on recovery, but may be biased in recall.
- We investigated 6- and 12-month reliability and predictors of MIPA recall data.
- Most IPs were recalled, though predictors of recall/omission were substantive.
- IP detail reliability was good to excellent, except IP reactions to drugs/alcohol.

Figure 1.
Timeline for hypothetical participant.

Table 1

Agreement between original assessment and 6-month (BACK6) and 12-month (BACK12) recall.

MIPA	N	Kappa (ASE)	P
BACK6 Current Relationship	307	.950 (.016)	<.001
BACK6 Freq. of any contact	307	.595 (.040) ^I	<.001
BACK6 Freq. of in-person contact	307	.649 (.035) ^I	<.001
BACK6 Alcohol Status	288	.708 (.034) ^I	<.001
BACK6 Reaction to Drinking	307	.508 (.038)	–
BACK6 Drug Status	294	.724 (.039) ^I	<.001
BACK6 Drug of Choice	289	.806 (.038)	<.001
BACK6 Recent i.v. drug use	291	.770 (.042)	<.001
BACK6 Reaction to Drugging	307	.530 (.043)	–
BACK6 Unprotected Sex	307	.886 (.043)	<.001
BACK12 Current Relationship	292	.967 (.017)	<.001
BACK12 Freq. of any contact	292	.520 (.043) ^I	<.001
BACK12 Freq. of in-person contact	292	.554 (.039) ^I	<.001
BACK12 Alcohol Status	287	.660 (.036) ^I	<.001
BACK12 Reaction to Drinking	292	.427 (.041)	–
BACK12 Drug Status	283	.644 (.044) ^I	<.001
BACK12 Drug of Choice	281	.654 (.046)	<.001
BACK12 Recent i.v. drug use	283	.670 (.048)	<.001
BACK12 Reaction to Drugging	292	.520 (.041)	–
BACK12 Unprotected Sex	292	.842 (.049)	<.001

Note. Participants were asked to recall as accurately as possible the IPs they reported at their original interviews 6 and 12 months previous (BACK6 and BACK12, respectively). ASE: Asymptotic standard error.

^I Indicates weighted Kappa for agreement between ordinal categories.

Table 2

Presence or Absence of Important People in the ORIG6/12¹ and BACK6/12² Reports, By Relationship of the Important Person to the Index Participant³

Nature of Relationship ⁴	Listed at ORIG6/12 and BACK6/12 N (%)	Not in ORIG6/12, added at recall N (%)	Listed at ORIG6/12, not at BACK6/12 N (%)
BACK6 Results:			
Partners/Ex-Partners	44 (88%)	2 (4%)	4 (8%)
Family	182 (85%)	20 (9%)	12 (6%)
Friends and Others	81 (64%)	27 (21%)	18 (14%)
BACK12 Results:			
Partners/Ex-Partners	43 (88%)	5 (10%)	1 (2%)
Family	175 (82%)	30 (14%)	8 (4%)
Friends and Others	74 (57%)	51 (40%)	4 (3%)

¹*Note.* Original recall report.

²Recall 6 or 12 months later for the original period.

³Exact $p < .0001$ for both recall intervals.

⁴Collapsed to three categories to minimize sparseness.

Table 3 Frequency of Contact with Important People in the ORIG6/12¹ and 6/BACK12² Reports³

Frequency of Contact ⁴	Listed at ORIG6/12 and BACK6/12 N (%)	Not in ORIG6/12, added at recall N (%)	Listed at ORIG6/12, not at BACK6/12 N (%)
BACK6 Results:			
< Monthly	18 (78%)	3 (13%)	2 (9%)
Monthly	20 (59%)	9 (26%)	5 (15%)
Every other week +	94 (70%)	20 (15%)	20 (15%)
3+ times/week	175 (88%)	17 (9%)	7 (4%)
BACK12 Results:			
< Monthly	10 (53%)	7 (37%)	2 (11%)
Monthly	18 (67%)	8 (30%)	1 (4%)
Every other week +	76 (66%)	36 (31%)	3 (3%)
3+ times/week	188 (82%)	35 (15%)	7 (3%)

¹*Note.* Original recall report.²Recall 6 or 12 months later for the original period.³Exact $p < .0001$ for BACK6, $p = .0017$ for BACK12.⁴Collapsed to four categories to minimize sparseness.

Table 4IP reaction to Alcohol Use by S in the ORIG6/12¹ and 6/BACK12² Reports³

IP ETOH Reaction ⁴	Listed at ORIG6/12 and BACK6/12 N (%)	Not in ORIG6/12, added at recall N (%)	Listed at ORIG6/12, not at BACK6/12 N (%)
BACK6 Results:			
Did Not Accept	173 (83%)	29 (14%)	6 (3%)
Neutral	39 (81%)	5 (10%)	4 (8%)
Accepted/Encouraged	30 (65%)	4 (9%)	12 (26%)
S or IP DK, N/A	65 (74%)	11 (12%)	12 (14%)
BACK12 Results:			
Did Not Accept	145 (73%)	43 (22%)	11 (6%)
Neutral	27 (63%)	16 (37%)	0 (0%)
Accepted/Encouraged	44 (77%)	13 (23%)	0 (0%)
S or IP DK, N/A	76 (83%)	14 (15%)	2 (2%)

¹**Note.** Original recall report.²Recall 6 or 12 months later for the original period.³Exact $p < .0001$ for BACK6, $p = .0017$ for BACK12.⁴Collapsed to four categories to minimize sparseness.

Table 5 Alcohol Status of Important People in the ORIG6/12¹ and 6/BACK12² Reports³

IP ETOH Status	Listed at ORIG6/12 and BACK6/12 N (%)	Not in ORIG6/12, added at recall N (%)	Listed at ORIG6/12, not at BACK6/12 N (%)
BACK6 Results:			
Non-user	159 (80%)	25 (13%)	14 (7%)
Light User	78 (79%)	8 (8%)	13 (13%)
Moderate User	32 (82%)	5 (13%)	2 (5%)
Heavy User	21 (78%)	4 (15%)	2 (7%)
Do Not Know	17 (63%)	7 (26%)	3 (11%)
BACK12 Results:			
Non-user	144 (78%)	32 (17%)	8 (4%)
Light User	87 (83%)	15 (14%)	3 (3%)
Moderate User	34 (69%)	14 (29%)	1 (2%)
Heavy User	23 (64%)	12 (33%)	1 (3%)
Do Not Know	4 (24%)	13 (76%)	0 (0%)

¹*Note.* Original recall report.²Recall 6 or 12 months later for the original period.³Exact $p = .2554$ for BACK6, $p < .0001$ for BACK12.