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A Comparison of Four Telephone-based Counseling Styles for Recovering Stimulant Users

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Abstract

The continuing development and refinement of empirically supported interventions to increase participation in posttreatment care and promote sustained abstinence from illicit drug use is a priority for the addictions field. The purpose of this study was to assess the combined and relative effectiveness of four types of counseling styles, delivered by telephone, relative to a no-call control condition. Stimulant users ($N = 302$) were randomized to one of four low-cost, telephone support protocols (unstructured/non-directive, unstructured/directive, structured/non-directive, structured/directive) or a standard referral to aftercare without telephone counseling (control). All of the study participants were nearing the completion of (or had completed) an intensive phase of structured, outpatient stimulant abuse treatment. Drug use and aftercare participation were assessed at 3 and 12 months following randomization. Intent-to-treat analyses showed no significant time-by-group interactions for these primary outcomes. Subsequent analyses, however, revealed a significant difference between the aggregated call groups and the control group at the time of the 3-month follow-up. The mean ASI drug use severity composite score for subjects in the call conditions declining from .058 at baseline to .048 at 3 months, whereas the non-call/control group average score increased from .053 to .062 ($\chi^2(1) = 4.95, p = .026$). A similar—and slightly stronger—effect was found when the study sample was restricted to those reporting any use during the month prior to the baseline interview ($n = 152$). This study provides modest support for the telephone-based counseling approaches strategies examined in this project. Subsequent research will assess interactions between patient characteristics and counseling styles, and improved identification of which treatment graduates might be more likely to benefit from this type of continuing support.

Keywords

Continuing care; stimulant users; telephone-based counseling; recovery support

In spite of the strong support for continued care following substance abuse treatment among both clinicians and researchers, empirical support for existing approaches is surprisingly limited. In his review of 14 controlled studies of continued care conducted since 1988, McKay (2001) found a statistically significant effect for aftercare on posttreatment drug use in only 1 of 7 studies that featured an active control condition and 3 of 7 studies that featured a minimal- or no-treatment control group. The four studies that produced “favorable” results (i.e., lower levels of substance use associated with continued care)

involved the following conditions: (1) home visits by a nurse over a 12-month period, (2) couples counseling combined with relapse prevention, (3) a combination of recovery behavioral counseling and self-help groups (relative to merely making a community program referral), and (4) extended follow-up telephone contacts in an employee assistance program. In a subsequent review of the continued-care research literature, McKay (2009) found that more recent efforts tended to show stronger results, primarily attributable to longer planned treatment durations and an increased emphasis on active attempts to take the treatment services to the patients.

Based on the subset of continued care studies showing a significant effect on posttreatment substance use, it may be (cautiously) inferred that several aspects of aftercare may be particularly important. Namely, they should (1) involve proactive approaches (rather than relying on patients to initiate requests for such assistance), (2) involve other factors of the patient's life, such as significant others, (3) refer patients to a specific program and follow up to increase the likelihood of attendance, and (4) have repeated contacts with the patient over an extended period.

But even among interventions that adhere to some or all of these principles, it appears that the mere provision of ongoing support is often not sufficient to maintain the behavioral changes achieved during the primary treatment phase. Rather, certain "ingredients" appear to be critical to foster long-term recovery from drug use, and some ingredients are more, or less, important for certain types of patients (Karno and Longabaugh, 2004). Much of the prior work in this area has relied on correlational designs, and may be confounded by self-selection factors (e.g., motivation) that independently as well as interactively account for variance in outcomes. Thus, it is clear that more experimental studies of continued care should be undertaken if this literature is to keep pace with studies of primary substance abuse treatment.

As part of the NIDA Clinical Trials Network (CTN), the CTN TELE project, derived from the Betty Ford Center (BFC) model, was designed to assess value of a *generic* telephone protocol as a continued care promotion intervention following residential substance abuse treatment. Upon treatment completion, patients received seven telephone calls conducted according to the same schedule: 1, 2, 4, 6, 8, 10, and 12 weeks following treatment discharge. Findings from this study revealed positive trends in the hypothesized direction (i.e., favoring those randomized to the call conditions) but no statistically significant differences (Hubbard et al., 2007).

The present study is distinct in two ways from the CTN TELE protocol. First, we investigated the value of a telephone protocol following intensive outpatient treatment, the treatment setting used by nearly 90% of individuals in treatment in the United States (SAMHSA, 2007). Therefore, the value of a positive finding would have substantial relevance for the majority of treatment programs and patients served in the U.S. treatment system. Second, the present study was designed to compare four different telephone support protocols: unstructured/non-directive, unstructured/directive, structured/non-directive, structured/directive.

Our focus on the dimensions of structure and directiveness was based on a compelling literature that has emerged over the last 25 years. Although providing general telephone support may enhance patients' self-efficacy to maintain abstinence and encourage ongoing participation in related pro-social activities, evidence exists that more structured counselor-patient interactions can increase the patient's focus on the specific clinical issues related to recovery. For example, using an experimental design, Farabee et al. (1995) assigned treatment patients to (1) simply list the consequences of their drug use (unstructured), or (2)

list the consequences of their drug use using the Divisions of the Self (DOS) personal analysis matrix of seven life domains: Social, Cognitive, Overt behavioral, Physical, Emotional, Motivational, and Spiritual/Philosophical divisions of the self (see also Dees et al., 1991). As predicted, patients asked to list the consequences of their drug use using a structured format generated significantly more items than did patients who were told simply to list the consequences on their own. In addition, patients who were required to generate consequences with the structured DOS form showed significantly higher motivation to change than those who generated consequences without such guidance. With regard to the use of structured telephone support interactions, the above study holds a promising implication. Specifically, having counselors provide general support for maintaining abstinence and attending continued care may be inadequate as a means of encouraging the adoption of specific behaviors that support abstinence over the long term.

The second dimension, directiveness, refers to the extent to which the clinician offers direct advice to a patient. “Passive” support approaches are likely to be less effective with this population. In one study, for example, patients treated for alcohol dependence were given a card with a toll-free number to call whenever they felt they were in need of assistance. This study condition was eventually discontinued when, after seven months only one of the 43 subjects assigned to this condition had called this number—and this subject had only called twice (Fitzgerald and Mulford, 1985). Even among more proactive approaches (i.e., where the counselor initiates the follow-up contacts), the literature offers little guidance as to what type of patient is more likely to benefit from structured and/or directive counseling approaches as opposed to general support. This line of research is summarized in the Systematic Treatment Selection (STS) model proposed by Beutler and Clarkin (1990). This model holds that an individual’s response to psychotherapy is the result of multiple interactions between individual and treatment characteristics. Indeed, Karno et al. (2002) found that patients with high baseline reactance scores had better drinking outcomes when therapists provided less directive interventions, whereas patients low in reactance benefited more from directive interventions. Through an analysis of videotaped treatment sessions from Project MATCH, Karno and Longabaugh (2005a,b) found a similar negative effect of directive interventions for patients high in reactance. Of interest was that from the same study of Project MATCH treatment sessions, Karno and Longabaugh (2004) discovered a new, independent interaction effect between patient anger and therapist directiveness. This effect indicated that directive interventions were indicated for patients low in anger, yet contraindicated for patients high in anger. In light of these findings, the degree of directiveness emerges as a critical factor to consider in psychosocial interventions for substance abuse.

Considering the previous research, we hypothesized that a relatively low-cost set of protocols, utilizing periodic telephone contact and reinforcement conducted by research staff, could enhance attendance in continued care and significantly reduce relapse. In addition, we examined the individual and interactive effects of the structure and directiveness of these telephone-based interactions.

Method

The University of California, Los Angeles South General Campus Institutional Review Board reviewed and approved all procedures with human subjects for this study. A Federal Certificate of Confidentiality was also obtained to protect client records from being subpoenaed.

Overview

The current study involved a 2 (high vs. low structure)×2 (high vs. low directiveness) factorial design and a no-call control condition, in which subjects were simply encouraged to participate in the continuing-care outpatient groups. Subjects were randomized into one of these five conditions upon completing the primary phase of intensive outpatient treatment. The standard aftercare plan for all program graduates consisted of weekly outpatient groups and self-help meetings, and all participants were encouraged to participate. The recovery support calls were provided to study participants by trained UCLA research staff. Interviews assessing background characteristics and drug use were conducted 1 week prior to completion of primary treatment (baseline), and again at 3 and 12 months following study enrollment. (Interviewers were blinded to the conditions to which the subjects were assigned.) Follow-up rates for the 3- and 12-month assessments were 95.3% and 85.9%, respectively.

Assessments included the Addiction Severity Index (ASI; McLellan et al., 1985), modified Drug Avoidance Activities (Farabee et al., 2002), and—included at the time of the follow-up interviews—aftercare participation (based on self-reports and attendance logs). The ASI is a standardized 40-minute clinical research instrument widely used in addiction research to quantify problem areas of alcohol/drug user populations. The test has excellent interrater and test-retest reliability as well as discriminant and concurrent validity. The following areas of functioning are measured: medical condition, education/employment, drug use, alcohol use, legal issues, family and social functioning, and psychiatric condition. The ASI produces composite scores for these domains, ranging from 0 – 1, with higher values corresponding to greater problem severity.

The DAA Survey was adapted from the measure used by Silverman et al. (1996) in their studies of contingency management for the treatment of substance abuse. The version employed in the current study consisted of the eight original drug avoidance activities plus six other items (e.g., “I exercised,” “I scheduled my time,” “I went to a counselor”). The additional items were considered to be related to good treatment outcomes based on our previous clinical experience and represented some of the behaviors advised in the treatment orientation groups. This survey was administered at all three data collection points. Items were rated on a 7-point Likert-type scale, ranging from 1 (*not at all*) to 7 (*daily*). The adapted DAA Survey consists of 14 items with a Cronbach’s alpha of .85, a range of 14–96, and mean of 48.2 (*SD* = 19.5).¹ Consequently, higher DAA scores indicate more frequent participation in drug-avoidance activities.

Urine specimens were also collected in conjunction with all three interviews. Urines were tested by Redwood Toxicology Laboratory, which uses DRI EIA reagents for preliminary screening of drug abuse. All positive results, as indicated by preliminary screening were confirmed by a chromatography, radioimmunoassay, or gas chromatography. If subjects interviewed in-person did not provide a urine sample or if a provided sample was uninterpretable due to dilution or improper temperature, then the urinalysis result was assigned a “positive” result.² Other missing urinalysis results were not imputed and were considered missing for statistical analysis.

¹Based on the DAA scores collected at treatment end.

²Adulterated specimens accounted for 3.3% of urines collected at baseline, 4.3% of those collected at the 3-month contact, and 6.7% of those collected at the 12-month contact.

Study Participants

The study sample comprised 302 substance users who reported primary use of either cocaine/crack, methamphetamine, or both cocaine/crack and methamphetamine upon admission into treatment at one of five outpatient treatment programs located in Los Angeles, San Bernardino, and Orange counties, Southern California. Participants were approached, recruited, and randomly assigned into one of five study conditions: (1) unstructured/non-directive, (2) structured/non-directive, (3) unstructured/directive, (4) structured/directive, or (5) standard referral to aftercare (no-call control). Seventy-eight percent of the eligible graduated patients who were invited to participate in this study agreed to do so. Non-participants either "signaled" their refusal by not keeping a scheduled baseline appointment or by stating to the researcher that they were not interested in participating. The most commonly cited reasons for not participating were that they were "too busy," "not interested," and "just wanted to be done with treatment."

Counseling Support Conditions

Participants in the four telephone-based counseling conditions were contacted on a fixed temporal schedule by telephone by a trained counselor. Modeled after the BFC's TELE intervention, all of the telephone counseling conditions consisted of seven telephone calls conducted according to the same schedule: 1, 2, 4, 6, 8, 10, and 12 weeks following treatment discharge. The four counseling conditions were as follows:

Unstructured/Non-directive (UN). Consistent with telephone counseling protocols implemented with alcohol treatment patients (Fitzgerald and Mulford, 1985), counselors in the UN condition were instructed to provide subjects with general encouragement to participate in the outpatient continued care program and to ask the respondents to generate their own list of behaviors or activities they believed would assist them in maintaining abstinence. Further, the counselors refrained from providing specific advice and instead focused on expressing genuine concern for the subject's welfare.

Structured/Non-directive (SN). Counselors delivering this condition structured their interactions with subjects according to the modified Drug Avoidance Activities (DAA) checklist (Farabee et al., 2002). This checklist assessed engagement in the 14 DAA behaviors (e.g., avoided people who used drugs, looked for a job, attended religious services, spent time with family, etc.), assessing both frequency and level of participation in each. Counselors were trained to use this structured set of behavioral prompts as a checklist to maintain the subjects' awareness of the broader set of behaviors associated with long-term drug avoidance and lifestyle change. The adapted DAA items were used to ensure that the counselor reviewed a broad range of recovery behaviors with the subject and maintained their salience over time. However, aside from inquiring about the subject's engagement in these activities, the counselors did not provide direct advice. Rather, the counselor's role was to heighten the subject's awareness of the behaviors that are associated with sustained abstinence but leave it up to the subject to incorporate these activities in his or her own life.

Unstructured/Directive (UD). Counselors delivering the UD condition asked the respondents to generate their own list of behaviors or activities that they believed would assist them in maintaining abstinence. The counselors noted these behaviors and then played an active role in providing guidance for the respondents as to how the frequency of these behaviors could be increased (e.g., more frequent participation in self-help groups, education, or exercise classes).

Structured/Directive (SD). As in the SN condition, counselors delivering the SD condition relied on the adapted DAA checklist to provide the structure for the telephone counseling sessions. However, counselors in the SD condition would then play an active role in encouraging the subjects to increase their participation in the targeted behaviors (including aftercare), even to the point of assisting subjects in developing action plans that would facilitate their engagement in these activities.

Specific call procedures tailored to the nature of the assigned condition were closely followed. All of the calls were tape recorded and reviewed by the project director using a fidelity rating form to assess content and style of calls. Overall ratings were also given, based on a 10-point Likert-type scale. Approximately 10% of these were also monitored and rated by the principal investigator, and the average fidelity rating was 9.1 (inter-rater reliability was .87). Any substantive variations (which were rare) from the scripted protocols were reviewed with the counselors during regular weekly staff meetings. On average, subjects in the call conditions participated in 5.37 ($SD = 1.71$) of the seven possible calls. The mean duration of the calls was 5 minutes 12 seconds ($SD = 4.10$).³ This typical “dose” level is consistent with that found in the Betty Ford Center’s TELE demonstration (Hubbard et al., 2007).

Statistical Analysis

Study groups were examined using chi square or analysis of variance for baseline equivalence in terms of gender, ethnicity, age, and criminal justice (as the source of referral), with no significant differences found. A generalized linear model (with generalized estimating equations GEE) was used for assessing study condition differences in aftercare participation and differential change over time in other outcomes, specialized to the distribution of the dependent variable: a normal distribution for comparison of means on the ASI drug-use composite score and number of days with stimulant use in the past 30 days, and a binary distribution for the remaining outcomes measured as no/yes. Of primary interest was the main effect of study condition for aftercare participation and the study condition-by-time interaction for drug use outcomes. In addition to overall group differences, we compared all intervention groups combined to the control condition (call vs. no-call) in terms of two separate time-related comparisons: baseline to 3 months and baseline to 12 months. Further examination of call vs. no-call conditions on substance use outcomes over time also focused on a subsample of subjects with ASI drug problem scores greater than zero at baseline.

Results

As shown in Table 1, nearly three-quarters of the participants were male, with a mean age of 37 ($SD = 9.8$). With regard to race/ethnicity, two thirds of the participants categorized themselves as “White,” 23% self-identified as Non-White Hispanic, and 5% as African American. On average, participants had at least a high-school degree and over half reported that they had typically maintained full-time employment over the past 3 years. When asked to identify their primary drug, 56% reported methamphetamine, 30% reported cocaine, and the remaining 14% identified both methamphetamine and cocaine as their primary drugs.

Outcomes are summarized for the sample and by study condition in Table 2 for baseline, 3-month, and 12-month observations and for the one measure of any aftercare participation during the study period. When comparisons were made across the five study conditions, no significant differences were found for any of the substance use outcomes across time (condition-by-time interaction) nor for aftercare participation. Focusing specifically on the

³Group means (mins) were—UN: 3.38 ($SD=2.1$), SN: 3.7 (1.3), UD: 6.0 ($SD=3.1$), & SD: 7.7 ($SD=5.4$).

four counseling condition groups, no significant main effects were found for directiveness or structure or for the interaction of these dimensions in any of the outcomes, nor for the interaction of either or both (directiveness or structure) with time for any of the substance use outcome measures.

However, a significant difference was found when comparing all of the call groups combined to the no-call control group in terms of change from baseline to 3 months, with the mean ASI drug score for those in the call groups declining from .058 at baseline to .048 at 3 months, whereas the non-call/control group average score increased from .053 to .062 ($\chi(1) = 4.95, p = .026$). ASI scores continued to decrease by 12 months in the combined call group (to .044), but because the no-call group scores also declined (to 0.57), differences in change from baseline to 12 months were no longer significant. No significant differential changes across time for the combined call group vs. the no-call group were found in other outcomes; however, the main effect of time (across the three time periods) was significant for number of self-reported stimulant days ($\chi(2) = 9.88, p = .013$) and percentage positive urines ($\chi(1) = 17.87, p < .001$), with results showing general increases over time (across call and no-call groups). Patterns suggested that subjects in the combined call group had somewhat smaller increases in the number of self-reported days of stimulant use at the 3-month observation than did the no-call group. The difference between the combined call group and the no-call group in aftercare participation also was not significant.

This pattern was also apparent when focusing specifically on the subgroup of subjects who had ASI scores greater than zero at baseline (50.3% of the initial sample). Participants assigned to any of the call conditions experienced a decrease in average ASI drug score from .113 at baseline to .075 at 3 months, whereas the non-call/control group average score showed little change, registering at .112 at baseline and .110 at 3 months ($\chi(1) = 6.18, p = .013$). Means and percentages from these combined-group comparisons are provided in Table 3.

Discussion

In the present study, we sought to compare four low-cost, telephone support protocols (unstructured/non-directive, unstructured/directive, structured/non-directive, structured/directive) with each other as well as with a no-call control group, for stimulant users completing an intensive phase of outpatient substance abuse treatment. Although none of the individual call groups were found to be more effective than the control group with regard to reducing stimulant use or increasing aftercare attendance, participants in the aggregated call group (i.e., with all four support conditions combined) did have significantly lower ASI drug use composite scores than did those assigned to the control group at the time of the 3-month follow-up. It is difficult to assess the clinical significance of the improvement on this variable for the call groups (a reduction from .058 to .048). Indeed, this has been a criticism of the ASI composite scores (Melberg, 2004). However, the absolute change as a proportion of the baseline value $([.058-.048]/.058)$ reveals 18.8% change, which may suggest more than a nominal effect.

Although the average sample size per condition was only 60, it is clear, upon inspection of the group means and percentages in Table 2, that the lack of statistical significance for most of the comparisons cannot be attributed to small cell sizes. There are no consistent trends favoring any of the experimental conditions, aside from the improved ASI drug use composite score for the aggregated call groups at the 3-month follow-up. Aside from the relatively small cell sizes, this study has a number of strengths that lend credence to our findings. This was a randomized study design that included close fidelity monitoring, self-reported and objective outcome measures, and high contact rates at both follow-up points.

Our analyses also adhered to an intent-to-treat approach, with the exception of one *post hoc* analysis in which the sample was limited to those who had an ASI drug use composite score greater than zero at baseline (thereby avoiding a “floor effect” in our attempts to measure change).

The latter issue points to an important limitation of this study, namely, our decision to recruit study subjects from a population of treatment graduates. There is an extensive body of research demonstrating that treatment retention and completion are among the strongest predictors of positive outcomes (Condelli and Hubbard, 1994; Simpson et al., 1997). Therefore, given this sampling approach, we might expect a restricted range in posttreatment outcomes. Although such an approach is justifiable, given that our goal was to examine strategies to sustain gains achieved during the primary phase of treatment, it also poses the methodological problem of measuring improvements where further improvement cannot occur. Indeed, in our sample, half of the study participants had an ASI drug use composite score of zero at the time of study enrollment. Results of our *post hoc* analysis limited to subjects with any positive value on this measure at baseline support the rather common-sense notion that posttreatment support may be best allocated to those who evince a need for such support. However, even among our subsample of subjects with ASI drug composite scores greater than zero, the effect of telephone support remained quite modest, and did not manifest itself in the urinalysis, self-reported days of stimulant use, or aftercare attendance outcomes. Given the relatively positive drug-use outcomes across all study conditions (only about one third testing positive for stimulants at the 1-year follow-up contact), it may be that our focus on program graduates (instead of dropouts) was misplaced. Telephone support may be better suited as an adjunct to primary treatment—for all patients—rather than as post treatment support for the subset of graduates.

It is difficult to account for the fact that the ASI drug use composite measure was the only outcome to differ significantly between the call groups and the control condition raises two possibilities. This may be because the composite measure captures variation in the drug use domain beyond what the UA data and self-reported days of use offer. This is quite plausible in that the drug use composite variable reflects the (potential) use of nine drugs. Also included in the composite are subjective items regarding the subject’s perceived problems with drug use. Another potential confound of this study was that subjects in the call groups may have felt more pressure to report progress to the interviewer than the controls, who had no counselor contact (as part of this study) over the 12-month period. However, this seems unlikely, given that self-reported days of drugs use did not vary between subjects in the call and control groups. Likewise, there is evidence that substance abusers who have undergone counseling are more likely to honestly report their drug use than substance abusers without prior treatment exposure (Farabee & Fredlund, 1996).

In his review of continuing care evaluations conducted from 1988 to 2000, Jim McKay (2001) found that, out of 14 controlled studies, only 1 of 7 studies featuring an active control condition (and 3 of 7 that used minimal or no-treatment control groups) produced positive findings. He concluded that such weak support for existing efforts provides a convincing rationale for continuing the pursuit of effective continuing care strategies—or combinations of primary and continuing care. We agree with this assessment and intend to focus our subsequent attention on assessing interactions between patient characteristics and counseling styles, as well as improved identification of which treatment graduates might be more likely to benefit from continuing care support. Exploratory analyses for the present paper examined interactions between treatment type and two client factors: drug use severity and gender, but neither of these efforts revealed significant relationships or even promising trends. However, these moderators may be less important than psychological traits, such as

patient reactance and anger, which have been studied by Karno and Longabaugh (2004; 2005a,b).

Given that health care reform has begun to change current health systems, such as the Substance Abuse and Mental Health Services Administration, which may explicitly fund recovery support services, such as telephone-based recovery support, these findings add to a broader research literature on potential strategies for providing ongoing care for treated substance abusers in recovery.

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Table 1

Sample characteristics

	Total Sample (<i>n</i> = 302)
Sex (%)	
Male	73%
Female	27%
Race/Ethnicity (%)	
White	66%
African American	5%
Hispanic	23%
Other	6%
Age at Enrollment (<i>M</i> ± <i>SD</i>)	37 ± 9.8
Education Level - Yrs Completed (<i>M</i> ± <i>SD</i>)	13.1 ± 2.8
Usually Employed Full Time in Past 3 Yrs (%)	56%
Primary Substance (%)	
Methamphetamine	56%
Cocaine	30%
Both	14%

There were no statistically significant differences in subject characteristics by study conditions.

Table 2

Outcomes over time, for total sample and by study condition

	Time	Total sample (<i>n</i> = 302,282, 227) ^{<i>f</i>}	Non- structured/ Non-directive (<i>n</i> = 65,59,47) ^{<i>f</i>}	Structured/Non- directive (<i>n</i> = 62,61,49) ^{<i>f</i>}	Non- structured/ Directive (<i>n</i> = 61,52,45) ^{<i>f</i>}	Structured/ Directive (<i>n</i> = 61,58,42) ^{<i>f</i>}	Control (<i>n</i> = 53,52,44) ^{<i>f</i>}
ASI drug score, (<i>M</i> ± SD)	Baseline	0.057±0.075	0.064±0.077	0.045±0.067	0.067±0.079	0.054±0.079	0.053±0.076
	3-mo.	0.050±0.075	0.055±0.074	0.036±0.060	0.050±0.089	0.050±0.075	0.062±0.079
	12-mo.	0.047±0.077	0.041±0.060	0.042±0.071	0.039±0.077	0.056±0.090	0.057±0.088
Positive urine, %	Baseline	14.72	15.38	10.00	13.11	11.67	24.53
	3-mo.	23.88	24.14	27.12	26.00	17.65	24.00
	12-mo.	33.82	30.95	30.95	28.95	33.33	44.19
Any stimulant use in past 30 days (self-report), %	Baseline	10.26	10.77	9.68	13.11	8.20	9.43
	3-mo.	12.77	13.56	11.48	13.46	8.62	17.31
	12-mo.	14.54	10.64	16.33	13.33	16.67	15.91
No. days stimulant use in past 30 days (self-report), (<i>M</i> ± SD)	Baseline	0.440±2.417	0.354±1.576	0.129±0.461	0.721±3.104	0.311±1.246	0.736±4.156
	3-mo.	0.979±3.998	1.085±4.240	0.902±4.194	0.750±2.943	0.759±2.799	1.423±5.402
	12-mo.	1.141±4.391	0.255±0.846	1.000±2.951	1.822±6.397	1.524±5.204	1.182±4.652
Readmitted to treatment within 90 days, %		23.40	28.81	19.67	25.00	20.69	23.08
Any aftercare, %		86.09	78.95	91.07	86.00	89.09	85.42

^{*f*} *n* at baseline, 3 months, 12 months for most outcomes; *n* = 299, 268, 204 for urinalysis for total sample

Table 3

Outcomes over time, for total sample and by call vs. no-call

	Time	Call (<i>n</i> = 249,230, 183)	No Call (<i>n</i> = 53,52,44) ^{<i>I</i>}
ASI drug score, <i>M</i> ± SD	Baseline	0.058±0.075	0.053±0.076
	3-mo.	0.048±0.075	0.062±0.079 *
	12-mo	0.044±0.074	0.057±0.088
Positive urine, %	Baseline	12.60	24.53
	3-mo.	23.85	24.00
	12-mo	31.06	44.20
Any stimulant use in past 30 days (self-report), %	Baseline	10.44	9.43
	3-mo.	11.74	17.31
	12-mo	14.21	15.91
No. stimulant days in past 30 days (self-report), <i>M</i> ± SD	Baseline	0.378±1.856	0.736±4.156
	3-mo.	0.878±3.614	1.423±5.403
	12-mo	1.131±4.339	1.182±4.652
Any aftercare, %		86.24	85.42

^{*I*} *n* at baseline, 3 months, 12 months for most outcomes; for urinalysis *n* = 246, 218, 161 for Call and 53, 50, 43 for No Call

*
p = 0.05