Journal of Substance Abuse Treatment 47 (2014) 265–274

Contents lists available at ScienceDirect

Journal of Substance Abuse Treatment

Is level of exposure to a 12-step facilitation therapy associated with treatment outcome?

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ARTICLE INFO

Article history:
Received 7 October 2013
Received in revised form 3 June 2014
Accepted 8 June 2014

Keywords:
12-Step
12-Step facilitation
Treatment exposure
Intensive referral
Cocaine
Methamphetamine

ABSTRACT

This study examined whether level of exposure to Stimulant Abuser Groups to Engage in 12-Step (STAGE-12), a 12-Step facilitative therapy, is related to treatment outcome. Data were from a large National Drug Abuse Treatment Clinical Trials Network (CTN) study comparing STAGE-12 combined with treatment-as-usual (TAU) to TAU alone. These analyses include only those randomized to STAGE-12 ($n = 234$). Assessments occurred at baseline and 30, 60, 90, and 180 days following randomization. High-exposure patients ($n = 158$; attended at least 2 of 3 individual, and 3 of 5 group, sessions), compared to those with less exposure ($n = 76$), demonstrated: (1) higher odds of self-reported abstinence from, and lower rates of, stimulant and non-stimulant drug use; (2) lower probabilities of stimulant-positive urines; (3) more days of attending and lower odds of not attending 12-Step meetings; (4) greater likelihood of reporting no drug problems; (5) more days of duties at meetings; and (6) more types of 12-Step activities. Many of these differences declined over time, but several were still significant by the last follow-up. Treatment and research implications are discussed.

1. Introduction

Twelve-Step facilitative therapy refers to a form of treatment that seeks to increase attendance and involvement with 12-Step mutual support groups. There is strong research support for the ability of these therapies to increase attendance and active involvement in 12-Step fellowships, improve drinking or other substance use outcomes, and have long-lasting effects (Carroll, Nich, Ball, McCance, & Rounsaville, 1998; Carroll et al., 2000; Donovan & Floyd, 2008; Project Match Research Group, 1997; Timko & DeBenedetti, 2007; Timko, DeBenedetti, & Billow, 2006). This is also true for studies focusing specifically on stimulant users (cocaine or methamphetamine). In the Cocaine Collaborative Treatment Study (Crits-Christoph et al., 1999) Individual Drug Counseling (IDC) plus Group Drug Counseling (GDC), both of which have a strong 12-Step focus, was superior to GDC-plus brief case management and to individual cognitive or supportive-expressive therapy combined with GDC. Among alcohol and cocaine dependent adults, Carroll et al. found both Twelve-Step Facilitation (TSF) (adapted from Project Match; Project Match Research Group, 1997) and cognitive behavioral therapy (CBT) superior to a clinical management condition at reducing during-treatment cocaine use, but this difference was not maintained at 1-year follow-up (Carroll et al., 2000).

In the parent study for the current analyses, Donovan et al. (2013) compared Stimulant Abuser Groups to Engage in 12-Step (STAGE-12), an intervention consisting of 5 group sessions adapted from TSF combined with 3 individual sessions adapted from the Intensive Referral Program intervention (Timko et al., 2006), combined with treatment as usual (TAU) to TAU-alone among stimulant users in intensive outpatient treatment. Results revealed that those receiving STAGE-12 were more likely to be abstinent during treatment than those in TAU-alone, but among those who were not abstinent, STAGE-12 participants used stimulants on more during-treatment days (Donovan et al., 2013). The current study examines whether level of exposure to STAGE-12 was related to outcome.

A number of studies have found that greater doses of 12-Step oriented treatments are associated with more involvement in 12-Step or other mutual support groups as well as improved substance use outcomes. Kaskutas, Subbaraman, Witbrodt, and Zemore (2009), found a dose response for "Making Alcoholics Anonymous Easier" MAAEZ treatment at the 12-month follow-up point—the group that

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http://dx.doi.org/10.1016/j.jsat.2014.06.003
0740-5472/

completed 0–1 sessions had a self-reported abstinence rate of 70% from both alcohol and drugs, whereas those completing 3 sessions had a rate of almost 80%, and those completing all 6 sessions had a rate of 90%. In a population with substance use disorder (SUD) co-occurring with a psychiatric disorder, Timko, Sutkowi, Cronkite, Makin-Byrd, and Moos (2011) found that a higher dose of Intensive Referral services was associated with attending at least one dually-focused mutual help group (DFGs), greater readiness to attend DFGs, attending more substance-focused groups (SFGs), and being more involved in SFGs. In a study of TSF with dually diagnosed alcohol dependent patients, Bogenschutz et al. (2014) found that the number of TSF sessions was associated with increased abstinence and decreased drinking intensity both during and following treatment. Brown, Seraganian, Tremblay, and Annis (2002) found that a higher dose of TSF was associated with increased confidence in high-risk situations but not with improved substance abuse outcomes. Findings related to readiness (Timko et al., 2011) and confidence (Brown et al., 2002) and their association with 12-Step treatment dose raise the possibility of a "third factor" explanation of dose–outcome associations. Greater motivation or self-efficacy at the outset of 12-Step treatments might lead to both better attendance and improved outcomes. The present study examines both dose–outcome associations and this possible explanation for them.

Twelve-step intervention studies vary in the way they have measured "treatment exposure" or "dose." Exposure may be measured using the number of sessions attended or the number of weeks in treatment (Fiorentine & Hillhouse, 2000; Kaskutas, 2009; Kaskutas et al., 2009; Maude-Griffin et al., 1998; Project Match Research Group, 1997; Timko et al., 2011; Wells, Peterson, Gainey, Hawkins, & Catalano, 1994). Fiorentine and Hillhouse measured treatment exposure as the number of weeks in treatment, but also included a "treatment completion" variable in their study of substance abusers who most frequently identified stimulants as their primary drug of choice. In that study, treatment providers determined at the end of 24 weeks of treatment whether participants had successfully completed treatment, dropped out, or needed additional treatment.

The purpose of the present study was to examine whether level of exposure to a 12-Step oriented therapy is related to stimulant users' treatment outcomes such as self-reported stimulant use, self-reported non-stimulant use, biological measures of drug use, or self-reported attendance and active involvement in 12-Step meetings. The parent study, a large National Drug Abuse Treatment Clinical Trials Network (CTN) efficacy/effectiveness trial (Donovan et al., 2013) provided the opportunity to examine whether those with a high level of exposure to the STAGE-12 intervention differed in their treatment outcomes from those with less exposure.

2. Methods

The University of Washington's Institutional Review Board (IRB) approved the study's procedures, as did the IRBs of universities with which each study site was affiliated. The National Institute on Drug Abuse convened a Data and Safety Monitoring Board that reviewed study design, progress and results.

2.1. Design

The parent study employed a two-group randomized repeated measures design. The two study conditions were: the Stimulant Abuser Groups to Engage in 12-Step (STAGE-12) intervention integrated into treatment as usual (TAU) (henceforth referred to as "STAGE-12") or TAU alone. Because intervention exposure was measured only for the STAGE-12 participants, these analyses are confined to the 234 participants randomly assigned to that condition. Assessments took place at baseline and at 30 (mid-treatment), 60 (end-of-treatment) 90 (first follow-up), and 180 days (last follow-up) following randomization. Assessments were primarily in-person, with phone interviews done in rare cases in which direct contact was impractical. Participants received $30 for each assessment and a $40 bonus if they completed all assessments. Additional details about the STAGE-12 intervention, study methods, and primary substance use outcomes appear elsewhere (Daley, Baker, Donovan, Hodgkins, & Perl, 2011; Donovan et al., 2011; 2013).

2.2. Participants

2.2.1. Treatment sites and providers

Participant recruitment, assessment, and treatment took place at 10 community-based treatment programs (CTPs) within the CTN that provided outpatient psychosocial SUD treatment. Interested CTP clinicians who volunteered were randomly assigned to provide the STAGE-12 intervention or continue to provide TAU.

2.2.2. Patients

To be included, patients: (1) were at least 18 years old; (2) were enrolled in outpatient treatment at the participating site; (3) reported stimulant use in the past 60 days (or in the past 90 days if incarcerated during the past 60); (4) met *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition* (*DSM-IV*) criteria for current stimulant abuse or dependence with a stimulant as primary or secondary drug of abuse; and (5) were able to provide consent and were willing to agree to study procedures. They were excluded if they: (1) needed opiate detoxification; (2) were seeking detoxification only, opiate substitution, or inpatient/residential treatment; (3) had a medical or psychiatric condition that could be worsened by participation; (4) reported being incarcerated for more than 60 of the previous 90 days; or (5) had pending legal action that would interfere with study participation.

2.3. STAGE-12 intervention

Descriptions of the STAGE-12 intervention can be found elsewhere (Daley et al., 2011; Donovan et al., 2013) and the intervention manual (Baker, Daley, Donovan, & Floyd, 2009) is available at http://ctndisseminationlibrary.org/display/888.htm. Designed to fit well into standard outpatient SUD treatment (Donovan et al., 2011), STAGE-12 replaced 5 group and 3 individual TAU counseling sessions. The five 90-minute group sessions were based on TSF Therapy for Drug Abuse and Dependence (Baker, 1998; Carroll et al., 1998).

The three individual sessions were used to both introduce and draw to a close the group intervention. In addition, a second purpose of the individual sessions was to initiate an intensive referral process modeled after Timko et al. (2006) and AA's *Bridging the Gap* program (Alcoholics Anonymous, 1991). This included linking the participant to a 12-Step volunteer who would attend a meeting with the participant. The combined group and individual sessions were designed to be delivered over a period of 5–8 weeks, with group treatment delivered weekly and individual sessions delivered before, during, and after the 5 group sessions.

STAGE-12 was integrated into TAU; that is, STAGE-12 sessions replaced standard treatment sessions that would otherwise have been received (see Donovan et al., 2011). However, STAGE-12 participants did receive portions of the standard TAU that were not replaced. "The 10 selected CTPs provided a mean of 9.6 hours of treatment per week (standard deviation [SD] = 2.85, ranging from 6 to 15 hours) for an average of 13.5 weeks (SD = 5.12, ranging from 7.5 to 24 weeks). During the course of the study patients in participating CTPs typically attended three group sessions and one individual session per week (Donovan et al., 2013, p. 105)."