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Efficacy of automated telephone continuing care following outpatient therapy for alcohol dependence

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HIGHLIGHTS

- Alcohol Therapeutic Interactive Voice Response is a recovery support innovation.
- 12-week outpatient CBT treatment was efficacious in the full sample.
- ATIVR outcomes were similar for both randomized groups at 4 month follow up.
- Clients abstinent at the conclusion of CBT benefitted more from ATIVR continuing care.

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ABSTRACT

Background: Relapse rates following cognitive behavioral therapy (CBT) for alcohol dependence are high. Continuing care programs can prolong therapeutic effects but are underutilized. Thus, there is need to explore options having greater accessibility.
Methods: This randomized controlled trial tested the efficacy of a novel, fully automated continuing care program, Alcohol Therapeutic Interactive Voice Response (ATIVR). ATIVR enables daily monitoring of alcohol consumption and associated variables, offers targeted feedback, and facilitates use of coping skills. Upon completing 12 weeks of group CBT for alcohol dependence, participants were randomly assigned to either four months of ATIVR (n = 81) or usual care (n = 77). Drinking behavior was assessed pre- and post-CBT, then at 2 weeks, 2 months, 4 months, and 12 months post-randomization.
Results: Drinking days per week increased over time for the control group but not the intervention group. There were no significant differences between groups on the other alcohol-related outcome measures. Comparisons on the subset of participants abstinent at the end of CBT (n = 72) showed higher rates of continuous abstinence in the experimental group. Effect sizes for the other outcome variables were moderate but not significant in this subgroup.
Conclusions: For continuing care, ATIVR shows some promise as a tool that may help clients maintain gains achieved during outpatient treatment. However, ATIVR may not be adequate for clients who have not achieved treatment goals at the time of discharge.

1. Introduction

In the treatment of substance use disorders, continuing care refers to the stage of treatment following an initial episode of more intensive specialty treatment. There is considerable evidence that continuing care can prolong the therapeutic effects of the initial treatment (see Lash, Timko, Curran, McKay, & Burden, 2011; McKay, 2009 for reviews). The umbrella of continuing care encompasses a range of activities including self-help groups, home visits, and outpatient counseling reflecting various therapeutic orientations (e.g., Twelve-step, Cognitive-Behavioral Therapy (CBT), Motivational Enhancement), and delivered in group or individual contexts or by telephone. Regardless of treatment perspective, effective programs tend to be those that incorporate close monitoring of both substance use and therapeutic behaviors, actively deliver treatment rather than passively relying on patients' initiative to attend a traditional clinic or facility, and are available for greater than 3 months' duration (McKay, 2009; McKay et al., 2009).

As the field of continuing care research advances, experts have called for the development of more adaptive disease management such that

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treatment intensity can be modified in response to patient functioning (c.f., Position Statement from the Betty Ford Institute Consensus Research Conference on Extending the Continuum of Care, McKay et al., 2009). Furthermore, development of programs that are low cost, available on demand, and potentially portable is desirable because such programs may extend the reach of continuing care (Lash et al., 2007; McKay, 2009). Automated interventions can convey these advances.

One recent example of an automated continuing care intervention is described in an administrative report by Klein, Slaymaker, Dugosh, and McKay (2012), wherein a web-based mixed media support program was offered after discharge. The program incorporated video, patient journal, workbook of sessions, forum for fellowship, and a resource library delivered in a sequence of modules that all patients had access to for 18 months post-discharge from residential care. Results indicated wide variability in the use of the program, but were encouraging: those who elected to use the system even once following discharge had, at the 6 month assessment, higher rates of continuous abstinence and greater number of days abstinent compared with those who never used the program after discharge. However, there was no control group so the results may be confounded with patient motivation.

Klein et al.'s (2012) online continuing care program demonstrates the promise of using newer communication technologies to facilitate patients' access to care from home and at any time of day. Randomized trials of other technology-based interventions have demonstrated efficacy for decreasing alcohol and drug use (see reviews by Moore, Fazzino, Garnet, Cutter, & Barry, 2011; Newman, Szkodny, Llera, & Przeworski, 2011). The development of automated continuing care programs is justified because they can result in significant cost savings compared to clinician delivered treatments. They can be programmed to include features associated with efficacious continuing care, such as extended monitoring of behavior and the provision of behavior contingent feedback. Furthermore, automated systems have the potential to incorporate adaptive treatment algorithms to accommodate within-patient variability in treatment response over time.

Automated telephone technology, in particular, offers the advantages of cost, simplicity, and universal accessibility. We and others have used Interactive Voice Response (IVR) systems to enhance and/or extend alcohol and other treatments in primary care outpatient practices (Helzer et al., 2008) and specialty treatment settings, both inpatient (Mundt, Moore, & Bean, 2006) and outpatient (Hall & Huber, 2000; Hasin et al., 2013; Kranzler, Hasaballah, Tennen, Feinn, & Young, 2004; Moore et al., 2013; Naylor, Keefe, Brigidi, Naud, & Helzer, 2008; Rose, Skelly, Badger, Naylor, & Helzer, 2012; Simpson, Kivlahan, Bush, & McFall, 2005). These studies support the feasibility, patient acceptability, and/or efficacy of automated treatment enhancement programs, both during treatment (Hasin et al., 2013; Kranzler et al., 2004; Moore et al., 2013; Simpson et al., 2005) and post-treatment (Mundt et al., 2006; Naylor et al., 2008; Rose et al., 2012).

The IVR-based continuing care programs described in the literature have been quite variable in their contents and structure, and typically reflect a particular treatment orientation. Our multifaceted Alcohol Therapeutic Interactive Voice Response (ATIVR) continuing care program, described in detail in the methods section, was based on CBT techniques of self-monitoring thoughts, emotions, and behaviors, and strengthening inter- and intra-personal coping skills. In developing the ATIVR, our objectives were to mimic efficacious continuing care programs such as that of McKay et al. (2010) that offer self-monitoring, feedback, counseling, and therapist contact, albeit in a less intensive, patient directed format suited to IVR delivery. The ATIVR proved usable in pilot testing, and resulted in significant pre-post improvements in coping skills and abstinence rate. In this study, we tested the efficacy of ATIVR, hypothesizing that participants randomized to ATIVR would have better drinking related outcomes at 2- and 4-months following CBT compared with those in the usual care (no ATIVR) control condition.

2. Materials and methods

2.1. Participants and recruitment

Participants (N = 158) were recruited from the community of Chittenden County, VT (population ca. 150,000) through clinic referrals, public service announcements, and local advertising online and in print. Criteria for study eligibility were: age 18 or older, diagnosis of current or lifetime DSM-IV Alcohol Dependence, past 90 days' report of at least one drink and at least one symptom of Alcohol Abuse or Alcohol Dependence, and attendance at 8 or more outpatient CBT sessions. Candidates were excluded if they met criteria for dependence on a drug other than alcohol or marijuana, or reported using narcotics intravenously more than 5 times within the past year. Recruitment took place from August 2005 to February 2009, and final follow-up assessments were completed in August 2010. All procedures were approved by the University of Vermont Committee on Human Research in the Medical Sciences.

Participant characteristics are shown in Table 1. There were no significant differences between treatment and control groups in demographic or substance use characteristics. The ATIVR group trended toward higher alcohol consumption in the 30 days prior to randomization compared with the usual care group, but these differences were not significant.

2.2. Design and procedure

Potential participants were screened initially by phone for eligibility. Those meeting entry criteria completed an in person informed consent and intake assessment conducted by a trained research assistant (RA). Participants received compensation of $25 for this interview. Consenting participants were enrolled in a 12-week program of outpatient group CBT treatment. Manualized treatment was provided by doctoral students and supervised by a PhD-level Clinical Psychology faculty member at a University outpatient clinic. A small number of participants were treated by a Certified Drug and Alcohol Abuse Counselor at the academic medical center who had adopted our CBT treatment manual during the course of this study. To be eligible for randomization and continued participation in the trial, participants were required to have completed a minimum of eight of the 12 CBT sessions.

At the conclusion of CBT, participants returned to the research office for an assessment, and were randomized in a 1:1 allocation to either ATIVR or usual care. Randomization was stratified based on whether subjects had legal issues pending relating to their alcohol use. Within each stratum, a blocked randomization was used to insure that an equal number of subjects were randomized to each of the two treatment conditions within each sequential block of 10 participants.

Participants randomized to ATIVR were trained in the use and features of the program (described below) by an RA and were given a Participant Manual. Participants were required to complete their first ATIVR call during this session, using a unique identifier. Research staff was present for technical support and/or questions about the system, but did not discuss nor observe the participants' responses to the system. Participants randomized to the experimental group were given access to the ATIVR for four months. Participants were encouraged to call daily, but were not paid for calling. In the first month, participants who missed two consecutive ATIVR calls received a single reminder phone call from an RA, who offered assistance with any technical difficulties and/or provided suggestions for remembering to call, as appropriate. In months 2–4, a reminder call was made if a participant missed three consecutive ATIVR calls.

Follow up interviews were conducted at 2-weeks, 2-months, 4-months, and 12-months post randomization (i.e., the 12-month assessment occurred 8 months after the active treatment phase ended). The 2-week interview was by phone; all other interviews were in person with a few exceptions at the 12-month assessment when an in person interview was not possible and the interview was conducted by