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A randomized trial of Web-based videoconferencing for substance abuse counseling

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ABSTRACT

Web-based videoconferencing can improve access to substance abuse treatment by allowing patients to receive counseling services in their homes. This randomized clinical trial evaluates the feasibility and acceptability of Web-based videoconferencing in community opioid treatment program (OTP) participants. Participants that reported computer and Internet access ($n = 85$) were randomly assigned to receive 12 weeks of weekly individual counseling in-person or via eGetgoing, a Web-based videoconferencing platform. Fifty-nine of these participants completed the study (eGetgoing = 24; in-person = 35), with most study withdrawal occurring among eGetgoing participants. Participants exposed to the study conditions had similar rates of counseling attendance and drug-positive urinalysis results, and reported similar and strong ratings of treatment satisfaction and therapeutic alliance. These results support the feasibility and acceptability of Web-based counseling as a good method to extend access to individual substance abuse counseling when compared to in-person counseling for patients that are able to maintain a computer and Internet connection for reliable communication.

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1. Introduction

Web-based technologies hold promising opportunities for improving access to a wide range of therapeutic and educational interventions (Cucciare, Weingardt, & Humphreys, 2009; Godleski, Darkins, & Peters, 2012). There is a growing literature on the efficacy and effectiveness of Web-based strategies for treating substance use disorders, most prominently tobacco and alcohol (Alcohol Research Group & Vernon, 2011; Chen et al., 2012). Most of these studies, however, have been descriptive in design, and few of the emerging Web-based interventions have targeted individuals with persistent and severe opioid dependence disorder (Backhaus et al., 2012; Kiluk et al., 2011).

Opioid-agonist treatment programs (OTPs) appear to be good settings for incorporating the use of Web-based interventions. There are well over 1200 OTPs in the United States alone, serving more than 300,000 patients on any given day (Substance Abuse and Mental Health Services Administration, 2012). Opioid-dependent patients enrolled in OTPs often have additional substance use problems and other health concerns that require concurrent treatment services (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997), problems that could be addressed partly through Web-based counseling services. In addition, opioid-agonist treatment is often a long-term intervention that can require years of treatment. The use of Web-based interventions can improve the convenience of treatment for some patients and potentially increase retention across extended periods of time (Ball & Ross, 1991; McKay, 2005; McLellan, Lewis, O'Brien, & Kleber, 2000; Steel, Cox, & Garry, 2011).

Prior studies of Web-based interventions for substance use problems have often evaluated computer-administered preprogrammed treatment and education modules rather than the delivery of "real time" counseling services (Alcohol Research Group & Vernon, 2011; Chen et al., 2012; Kiluk et al., 2011; Sinadinovic, Wennberg, & Berman, 2012). Pre-packaged interventions may not be particularly compatible with the routine course of opioid dependence over extended periods of time, with symptoms that fluctuate in scope and severity (Ball & Ross, 1991; McKay, 2005; McLellan et al., 2000). In contrast, Web-based videoconferencing platforms can be integrated within a continuum of services for stable patients and used to intensify treatment for symptomatic patients that require more intensive care (King et al., 2009). A meta-analysis by Spek et al. (2007) found that Web-based interventions were better attended and more effective when accompanied by direct therapist involvement, findings that dovetail with other studies reporting strong associations between counseling attendance and improved substance abuse outcomes (King & Brooner, 2008; McLellan, Arndt, Metzger, Woody, & O'Brien, 1993). Studies focusing on psychiatric and other clinical populations have reported at least comparable outcomes in Web-based versus traditional in-person service delivery (Backhaus et al., 2012; Deen, Godleski, & Fortney, 2012; Koch, 2012; Olden, Cukor, Rizzo, Rothbaum, & Difede, 2010; Shore, 2013).

Very few published randomized trials have evaluated the effectiveness of Web-based videoconferencing interventions, though several new studies are currently underway (e.g., Strachan et al.,

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2012; Thorp, Fidler, Moreno, Floto, & Agha, 2012). In addition, available studies have not explored potential unintended negative effects of Web-based delivery of routine counseling that might compromise acceptability in and transportability to community-based programs. These effects include the impact of Web-based care on patient–therapist relationships, and technological obstacles that might interfere with the expected convenience of the intervention (e.g., Deen, Fortney, & Schroeder, 2013; Shore, 2013; Sucala et al., 2012; Thorp et al., 2012).

A small randomized and controlled trial conducted at our community-based OTP (King et al., 2009) yielded encouraging results on the feasibility and acceptability of eGetgoing (CRC Health Group, Inc.), a Web-based videoconferencing substance abuse treatment service delivery platform that can deliver "real time" group counseling services. Participants submitting drug-positive urine specimens ($n = 37$) were assigned to a more intensive counseling schedule for 6 weeks that included 1-hour, twice-weekly cognitive–behavioral group therapy sessions. Participants received either eGetgoing Web-based group counseling ($n = 20$) or routine on-site and in-person group counseling ($n = 17$). The results showed a trend such that eGetgoing participants attended a higher percentage of scheduled group counseling sessions than those assigned to the control condition (eGetgoing: 92% versus on-site: 76%, $p = .07$), though both conditions had similar rates of drug-positive urine tests (eGetgoing: 37% versus on-site: 42%, $p =$ ns). eGetgoing participants also reported a strong preference for Web-based service delivery.

The present 12-week study builds on these findings by using a randomized and controlled design to evaluate the feasibility and acceptability of the eGetgoing videoconferencing platform to deliver individual counseling sessions routinely offered in OTPs. The eGetgoing condition was compared to a usual care condition that offered the same schedule of on-site and in-person individual counseling services. The primary outcomes were counseling attendance and treatment satisfaction, while secondary outcomes included rates of drug-positive urine samples and the quality of therapeutic alliance. In addition, the relative reinforcement value of the eGetgoing intervention was assessed using a novel multiple choice procedure (Kidorf, Stitzer, & Griffiths, 1995) to provide data on the potential for Web-based videoconferencing formats to motivate changes in drug use or other treatment behaviors. Based on data from our first study (King et al., 2009), we expected the eGetgoing condition to be associated with higher rates of counseling utilization and greater treatment satisfaction.

2. Materials and methods

2.1. Participants

Eighty-five outpatients receiving opioid dependence treatment and comprehensive substance abuse care at Addiction Treatment Services at Johns Hopkins Bayview Medical Center (ATS) were enrolled in the study and randomized to study condition. Only 59 of these participants ultimately began randomized treatment and formed the study sample: 26 subjects withdrew from the eGetgoing condition due to problems with computer or Internet function ($n = 12$) or lost interest in the study ($n = 14$) prior to starting their randomized condition (see CONSORT diagram Fig. 1). ATS had a mean census of approximately 475 patients at the time of the study. Patients were eligible for the study if they: (1) were drug abstinent and counseling adherent for the previous 30 days; (2) stated that they had a functioning computer with Internet connection; (3) were interested in receiving standard individual counseling via Web-based videoconferencing and agreed to register with eGetgoing within 8 weeks of study enrollment; and (4) agreed to randomized assignment to study condition. We chose to target those with at least a short period of drug abstinence and counseling adherence because of their potential willingness to attend routine and intensified counseling schedules (in-person or via videoconferencing) over the short time frame of the study. These patients may also be more appreciative of videoconferencing formats because their abstinence affords more time towards work and family responsibilities and other recovery-oriented activities that might interfere with routine clinic counseling schedules. In addition, active drug users may be less likely to budget for non-essential household items such as computers with Internet connection.

Participants were recruited by use of IRB approved poster notices placed in conspicuous areas of the treatment clinic. In addition, research assistants reviewed counselor caseloads with clinical staff at least monthly to identify potentially eligible participants. Counseling and/or research staff members approached potential participants, informed them about the study, and scheduled appointments for those interested in study participation. Participants were enrolled from December 2009 to May 2012 and were followed for 12 weeks. All participants provided written informed consent to participate in the study, and the Johns Hopkins Institutional Review Board (IRB) approved the project.

2.2. Study design

After completing baseline assessments, participants were randomly assigned to one of two 12-week service delivery conditions: (1) standard in-person individual counseling delivery (in-person), or (2) Web-based individual counseling delivery using the eGetgoing videoconferencing platform (eGetgoing). All other aspects of routine treatment in the clinic remained unchanged (see section 2.3). The only difference between study conditions was the availability of Web-based videoconferencing for individual counseling delivery in the eGetgoing condition. Due to concern that those assigned to the eGetgoing condition might not have a working computer and Internet connection suitable for the study, the first 38 participants were randomized using a 2 (eGetgoing) to 1 (in-person) ratio to ensure an adequate numbers of participants starting the eGetgoing condition. The remaining 47 participants were randomized using a 1:1 ratio.

Fifty-seven participants received methadone maintenance treatment (M dose = 83 mg), one received buprenorphine/naloxone maintenance, and one received naltrexone maintenance. Participants agreed to attend one weekly individual counseling session of 30–40 minutes duration as part of the study (and routine care) protocol. The primary counselor (BA or MA degree) provided the individual counseling and utilized supportive and problem-solving approaches (CSAT, 2005). Following the 12-week study, participants returned to treatment as usual (King & Brooner, 2008).

2.2.1. eGetgoing service delivery

Both the Joint Commission and the Commission on Accreditation of Rehabilitation Facilities (CARF) have accredited the eGetgoing Web-based videoconferencing platform to deliver substance abuse treatment. The initial registration and computer set-up required access to a telephone as well as an Internet connection. Participants were also provided with a low-cost headset with microphone for their home computers to facilitate verbal communication between participant and provider. Participants assigned to this condition were required to contact an eGetgoing Information Technology (IT) technician to ensure that their computer had the required software, and to complete a structured tutorial given by the technician on navigating the eGetgoing platform. This process was often time consuming for participants with less computer experience, though the amount of preparation time to participate in a session went down over the course of the study. The participant's assigned counselor also completed the same eGetgoing registration and online training procedures and continued to provide the individual counseling while the participant was in the study.

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