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The Efficacy of Assertive Community Treatment to Treat Substance Use

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Abstract

BACKGROUND—Assertive Community Treatment (ACT) has been studied extensively in people with severe mental illness, but there have only been a few clinical trials in which substance use was one of the measured outcomes.

OBJECTIVE—The goal of this article was to describe the efficacy of ACT in treating co-occurring substance use disorders and suggest approaches to make it more efficacious.

DESIGN—A literature review was conducted and randomized clinical trials describing ACT's impact on substance use were reviewed.

RESULTS—Four randomized clinical trials of ACT that measured substance abuse adequately were identified, all of which showed small to no effect on substance abuse compared with control conditions. Methodological issues might account for the small effects. ACT might further reduce substance use by being paired with evidenced-based substance abuse treatment, helping clients become housed or helping them manage their money better.

CONCLUSION—Integrated ACT, in which the ACT team provides substance abuse counseling, has the potential to reduce substance use by several mechanisms, but this has been difficult to demonstrate in clinical trials when participants in control groups receive similar interventions.

Keywords

Assertive Community Treatment; dual diagnosis; substance abuse

Individuals with co-occurring severe mental illness and substance use disorders represent a particularly vulnerable population whose treatment poses special challenges. The dually diagnosed are at disproportionately high risk for homelessness (Drake, Bartels, Teague, Noordsy, & Clark, 1993) and more frequent hospitalizations (Fletcher, Cunningham, Calsyn, Morse, & Klinkenberg, 2008), in addition to health problems (Green, Drake, Brunette, & Noordsy, 2007) and HIV infection (Rosenberg et al., 2001). Effective treatment that targets both mental health and substance abuse is needed to prevent these adverse outcomes.

Integrated treatment programs use interdisciplinary teams to deliver substance use, psychiatric, medical, and other treatments in a coordinated fashion. Integrated treatment is

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the accepted standard of care for dually diagnosed patients (Green et al., 2007; Ziedonis et al., 2005). Case management, in which patients receive help with the logistics and day-to-day problems of living in the community, has been identified as one of several ways to provide integrated treatment to people with co-occurring disorders (Vanderplasschen, Wolf, Rapp, & Broekaert, 2007). Assertive Community Treatment (ACT) differs from simple case management in that it is provided in conjunction with small case loads, multidisciplinary teams, 24-hour availability of services, an emphasis on maintaining functioning in the community, and the provision of services in the community as opposed to in clinicians' offices.

In the past, mental health and substance abuse services were often separate and patients would have different providers and even attend different facilities for each. The early ACT model created by Stein and Test (1980) did not address substance use specifically. However, it has been updated over the past decade, and most ACT teams now offer some form of individualized substance abuse counseling (Drake, 1998). The integration of ACT with substance use counseling is often referred to as *Integrated ACT*.

Over the years, ACT has been tested extensively among persons with severe mental illness. ACT treatment has been associated with significant reductions in psychiatric hospitalization (Wasmer & Pinkerton, 1999), improved housing conditions (Lehman, Dixon, Kernan, DeForge, & Postrado, 1997), and increased adherence to prescribed medications (Dixon, Weiden, Torres, & Lehman, 1997). However, there are limited data concerning ACT's impact on substance abuse (Green et al., 2007).

In this article, we will describe the efficacy of ACT in treating substance use by first reviewing clinical trials in which ACT's impact on substance use (*alcohol* or *drugs*) was determined. Second, we will consider modifications to ACT that might further reduce substance use.

Clinical Trials of ACT With Substance Use Outcomes

Study Selection

Published randomized clinical trials were considered that compared ACT to a control condition and reported substance use as an outcome. Candidate studies were identified by literature searches on PsychINFO and Medline. Search terms used were *Assertive Community Treatment* and *substance use*. A meta-analysis (Coldwell & Bender, 2007) and critical reviews of ACT (Burns & Santos, 1995; Dixon et al., 2010; Lehman, 1999; O'campo et al., 2009; Vanderplasschen et al., 2007) were also read to identify pertinent articles. Eight studies were initially identified; four were excluded as they did not measure substance use (Jerrell, 1999; Lehman et al., 1997) or adequately report substance use outcomes (e.g., relied solely on self-reported measures; Bond & McDonel, 1991; Clarke et al., 2000). We selected four randomized trials that measured substance abuse adequately, in that self-report of substance use was validated with toxicology tests among dually diagnosed patients.

Clinical Trials

Drake et al. (1998) compared integrated mental health and substance use treatment provided in two platforms—ACT and standard case management—in 223 dually diagnosed patients who were followed for 3 years. The participants were predominately male, and more than half had a diagnosis of schizophrenia, schizoaffective disorder, and alcohol use disorder. ACT included individual and group substance abuse treatment delivered by the ACT team. Substance use was assessed by self-report, clinician ratings of drug and alcohol use, and observer measures of the extent to which participants met criteria for a substance use

disorder. In the data analyses, participants in both treatment groups were further divided into those who were assigned to treatment and those exposed to it during the study.

Both groups substantially reduced their substance use over time. Among patients actually exposed to treatment, the ACT group had fewer days of reported alcohol use than patients assigned to case management, but there was no significant difference on the proportion of participants who achieved remission from an alcohol or drug use disorder. Overall, the effects of ACT on substance abuse were small. The authors cited several reasons for the lack of larger differences between groups. An important reason was the high quality of usual care offered in both groups, with staff in both conditions trained in treating dual disorders. Furthermore, the standard case management provided components of ACT in that those providing standard case management began incorporating some ACT principles into their practice.

In an innovative three-arm study, 135 people with co-occurring disorders and a history of homelessness were randomly assigned to either Traditional ACT, ACT Augmented by Community Workers, or Broker Case Management (Morse et al., 1997) and followed for 18 months. The Traditional ACT program had a strong focus on housing and providing extended homeless outreach services (i.e., staff frequented homeless shelters). In addition to receiving traditional ACT services, participants in the ACT Augmented by Community Workers treatment were assigned a paraprofessional community worker to assist with daily activities. The paraprofessional was tasked with helping integrate patients into the community. In the Broker Case Management group, the case manager served as a broker who developed an individualized treatment plan and then arranged for other treaters to provide the services. Unlike staff on the ACT team, case managers rarely went into the community, and they had large caseloads.

As in the Drake et al. (1998) study, participants in all three groups improved in most substance use measures over time. The ACT treatments were more effective in getting participants assistance with their finances and housing, and ACT participants had more service contacts than participants in the Broker Case Management group. Only the Traditional ACT group had more average days in stable housing when compared with the other groups. Overall, participants assigned to the ACT interventions reported significantly higher satisfaction with their treatment and had less severe psychiatric symptomatology when compared with those assigned to Broker Case Management. Despite receiving more services and showing more improvement in psychiatric symptoms, participants assigned to ACT had no less substance use than those assigned to Case Management. Lack of follow through by case managers in the broker model and the lack of treatment with a special focus on substance use counseling within ACT were given as reasons for the lack of effectiveness in treating substance abuse.

Another innovative clinical trial enrolled participants with a major psychotic disorder, either homelessness or unstable housing, and active substance use (defined as abuse or dependence on alcohol or drugs within the past 6 months). Altogether, 198 participants were randomized to either integrated dual diagnosis treatment delivered as part of an ACT model or to integrated dual diagnosis treatment delivered as part of standard case management, and the participants were then followed for 3 years (Essock et al., 2006). Both treatment teams provided substance abuse treatment. The main differences between the control and treatment interventions were that the case managers had almost twice as many patients as the ACT clinicians and provided fewer services directly. The substance use outcomes included the ASI Alcohol and Drug use sections, Timeline Follow-Back Calendars for alcohol and drug use, and case manager ratings informed by urine toxicology tests and saliva tests for alcohol.

Participants in both groups used significantly less alcohol and less drugs over time. The authors considered these to be benefits of both treatments and noted that these reductions were greater than those seen in other similarly disadvantaged populations followed over time. When the analyses were restricted to patients with more severe baseline substance use, there were slight differences favoring ACT on case manager-rated substance use severity and self-reported days using alcohol. The pattern of change at the two study sites was slightly different. Overall, both groups showed similar improvement by the end of the study. No group differences were found on psychiatric symptoms or quality of life. The researchers concluded that integrated treatment could effectively address substance use as part of either ACT or standard case management. They suggested that the high quality of care in the community minimized differences in the care patients in both groups *received* and noted that some effects favoring ACT were more apparent at the site where less standard care was provided in the community.

In a more recent single-site study, Fletcher et al. (2008) compared Integrated ACT, Traditional ACT Only, and Standard Case Management in 191 dually diagnosed homeless patients who were followed for 30 months. The Integrated ACT and Traditional ACT differed in that only Integrated ACT staff provided outpatient substance abuse counseling, with a substance abuse specialist on staff and biweekly treatment groups. Traditional ACT clinicians referred patients to other community providers for substance abuse treatment. Participants assigned to Standard Case Management were shown a list of community agencies that provided treatment and were helped make their initial contact with the agency.

Participants in all three groups reduced their substance use and psychiatric symptomatology over the course of the study. Overall, there were no significant differences between the treatments but there were subtle differences in the time course of improvement. Both ACT groups had equivalent reductions in substance use for the first 9 months of the study, but Integrated ACT patients maintained their improvement for an additional 9 months longer than patients assigned to Traditional ACT. Patients who made more substance abuse treatment contacts and those who received more transportation assistance had greater improvements in their substance abuse. The authors attributed the minor differences in outcome between the two ACT treatments to the provision of some substance abuse treatment as part of Traditional ACT (i.e., diffusion from the Integrated ACT to Traditional ACT treatments), but concluded that the lack of difference between the two ACT treatments and Standard Case Management was largely because ACT is not a potent substance abuse treatment.

With notable consistency, these randomized control trials found small or no effects of ACT on substance abuse, but all showed significant improvement over time in substance abuse. The studies had many strengths. They employed substantial samples and relatively long follow-up periods. They were conducted by experienced dual diagnosis researchers who attempted to maintain fidelity to the assigned ACT and control treatments. Possible explanations for the reduced substance use over time in both ACT and comparison groups in these studies reflects regression to the mean among addicts enrolled during periods of heavy use who revert to more typical patterns of use, the benefits of standard treatment over time, or effects of ACT that are obscured because participants in the control conditions also received potent treatments.

The importance of treatment-as-usual is suggested by the site differences reported in the multisite studies. Nevertheless, in light of the negative and weak findings, it seems unlikely that Traditional ACT has a large effect to reduce substance abuse above and beyond what is achieved by integrated mental health and substance abuse treatment.

Mechanisms by Which ACT Might Further Reduce Substance Use

Integrated ACT has been associated with improvement in a number of domains that might be associated with abstinence. There are three features of Integrated ACT that might be built on to make it a more effective substance abuse treatment for dually diagnosed patients: the direct provision of substance abuse counseling, provision of housing, and help for patients in managing their funds.

Substance Abuse Counseling

One limitation in studies of Integrated ACT may be that the substance abuse treatment provided may not be sufficiently efficacious. It has been suggested that ACT programs might more effectively address substance use by providing evidence-based substance abuse treatments (Green et al., 2007). For example, substance abuse counseling that tailored elements of motivational interviewing and cognitive behavioral therapy to the dually diagnosed was substantially more effective in reducing substance use than group counseling in a well-conducted clinical trial (Bellack, Bennett, Gearon, Brown, & Yang, 2006). Contingency management treatments, in which patients are reinforced with material prizes for abstinence, have also shown substantial benefits in small studies of dually diagnosed patients (e.g., Tidey & Ries, 2007). There are few controlled studies of such adjunctive substance abuse counseling (Drake, O'Neal, & Wallach, 2008), but the evidence base is growing.

Housing

ACT is designed to help patients live in the community and has consistently been associated with reduced homelessness (e.g., Morse et al., 1997). Although substance abuse has been associated with failure to maintain stable housing in several studies (Hurlburt, Hough, & Wood, 1996), the link between becoming housed and becoming abstinent is complicated and may depend on what other services are offered. In two well-controlled clinical trials of substance users enrolled in extensive concomitant treatments, those assigned to housing (whether or not the housing depended on abstinence) were more likely to abstain from drugs than those not provided housing (Milby et al., 2000; Milby, Schumacher, Wallace, Freedman, & Vuchinich, 2005).

The best way to provide housing that promotes abstinence is controversial, and whether to require a period of abstinence when housing is provided is uncertain (Kertesz, Crouch, Milby, Cusimano, & Schumacher, 2009). In a day hospital-based study (Milby et al., 2005), participants assigned to abstinence-contingent housing had higher abstinence rates than those assigned to housing that was not contingent on abstinence. However, the "Housing First" study found that homeless individuals with co-occurring mental illness who received noncontingent housing (Housing First, before abstinence) had no greater substance use than those who were required to be abstinent and in psychiatric treatment as a precondition to being housed (Tsemberis, Gulcur, & Nakae, 2004). Interestingly, participants in the Housing First condition were not required to be abstinent but *were* required to allow a money management program to pay their rent from Social Security and other sources of income. It is possible that the benefits of ACT in reducing substance use are amplified when *ACT therapists* help patients attain abstinence-promoting housing.

Money Management

Assistance managing finances is a component of ACT. This may take the form of informal assistance paying bills and budgeting or may take the form of assignment of a representative payee to receive a patient's Social Security disability payments and manage them to see that a patient's basic needs are met (Hanrahan et al., 2002). Moser and Bond (2009) surveyed 23

ACT treatment teams and found that the median proportion of patients on ACT teams who had been assigned representative payees was 45%, although the data did not suggest that payee assignment was caused by implementation of ACT.

The provision of money management services is an important mechanism by which ACT might reduce substance use, and in fact money management is frequently recommended to prevent purchases of drugs. Although assignment of a representative payee per se does not alter substance abuse (e.g., Rosen, McMahan, & Rosenheck, 2007; Swartz, Hsieh, & Baumohl, 2003), payee programs *based at mental health centers* have been associated with self-reports that substance use was reduced (Dixon, Turner, Krauss, Scott, & McNary, 1999; Rosen, Desai, Bailey, Davidson, & Rosenheck, 2001). Case-control data from agency-based programs have also suggested that payeeship benefits in reducing substance use (Ries & Comtois, 1997). In the only clinical trial of representative payee assignment, veterans who had been determined to need a payee but not been assigned one were randomly assigned to a payee program bundled with case management services or to treatment as usual. In this sole prospective study, participants assigned to the payee and case management group reported less alcohol and drug use than those assigned to the control group (Conrad et al., 2006).

There is also evidence that voluntary money management-based substance abuse treatment can help patients abstain. An intervention called ATM (Advisor Teller Money Manager) has been developed to integrate substance abuse treatment into money management (www.behaviorchange.yale.edu). In a clinical trial in which ATM was compared with a workbook control condition, ATM was associated with significantly reduced cocaine use among 90 dually diagnosed patients at a community mental health center (Rosen, Rounsaville, Ablondi, Black, & Rosenheck, 2010). Remarkably, 82% of the patients assigned to ATM were willing to store either some of their funds or a checkbook with the money manager.

Conclusion

Although the clinical trial data concerning ACT's efficacy as a substance abuse treatment is equivocal, it is likely that Integrated ACT is more effective than non-integrated psychiatric and substance abuse treatment. Integrated ACT may be a more demonstrably effective substance abuse treatment when we learn what substance abuse treatments to pair with ACT and how to provide housing and money management so that they more effectively foster abstinence.

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