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Effectiveness of Dual Focus Mutual Aid for Co-occurring Substance Use and Mental Health Disorders: A Review and Synthesis of the "Double Trouble" in Recovery Evaluation

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Abstract

Over five million adults in the U.S. have a co-occurring substance use disorder and serious psychological distress. Mutual aid ("self-help") can usefully complement treatment, but people with co-occurring substance use and psychiatric disorders often encounter a lack of empathy and acceptance in traditional mutual aid groups. Double Trouble in Recovery (DTR) is a dual focus fellowship whose mission is to bring the benefits of mutual aid to persons recovering from co-occurring disorders. An evaluation of DTR was conducted by interviewing 310 persons attending 24 DTR meetings in New York City in 1998 and following them up for two years, in 1999 and 2000. The evaluation produced 13 articles in 12 peer reviewed journals, the main results of which are summarized here. The sample's characteristics were: mean age, 40 years; women, 28%; black, 59%; white, 25%; Hispanic, 14%; never married, 63%; live in supported community residence, 53%; high school graduate or GED, 60%; arrested as adult, 63%; diagnoses of: schizophrenia, 39%; major depression, 21%; or bipolar disorder; 20%; currently prescribed psychiatric medication, 92%; primary substance used, current or past: cocaine/crack, 42%; alcohol 34%; or heroin, 11%. Overall, the findings indicate that DTR participation has both direct and indirect effects on several important components of recovery: drug/alcohol abstinence, psychiatric medication adherence, self-efficacy for recovery, and quality of life. The study also identified several "common" therapeutic factors (e.g., internal motivation, social support) and unique mutual aid processes (helper-therapy, reciprocal learning) that mediate the influence of DTR participation on recovery. For clinicians, these results underline the importance of fostering stable affiliation with specialized dual focus 12-step groups for their patients with co-occurring disorders, as part of a comprehensive recovery-oriented treatment approach.

Keywords

co-occuring disorders; mutual aid; self-help; DTR; recovery; substance use; 12-step; addiction; mental illness

INTRODUCTION

Over five million adults in the U.S. have a co-occurring substance use disorder and serious psychological distress, according to the National Survey of Drug Use[1] and Health

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[1]The National Survey on Drug Use and Health (NSDUH) is a nationwide U.S. survey involving interviews with approximately 70,000 randomly selected individuals aged 12 and older. It provides national and state-level estimates of the past month, past year, and lifetime use of tobacco products, alcohol, illicit drugs, and non- medical use of prescription drugs.

(Substance Abuse and Mental Health Services Administration, 2005). This is one of the most stigmatized and poorly served populations in both addiction and mental health treatment. Mutual aid ("self-help") has been shown to be useful in recovery from addiction or mental health problems separately. During 1997 – 2002 an evaluation study was conducted to determine the effectiveness and therapeutic mechanisms of a growing 12 step-based mutual aid model for persons with co-occurring disorders, Double Trouble in Recovery (DTR)[2], specifically intended to meet the needs of dually diagnosed persons for peer support in their recovery process. The study has resulted in 13 peer-reviewed, data-based articles published in 12 professional journals. Although this publication record helps demonstrate the scientific credibility of the results, it also tends to fragment the findings. The purpose of this article is to review and synthesize the main findings of the DTR evaluation which are distributed among those previous papers, and to formulate recommendations to maximize recovery outcomes among persons with co-occurring disorders.

Prevalence of co-occurring disorders

Of 5.2 million adults in the U.S. with a co-occurring substance use disorder and serious psychological distress, one-half have received neither substance dependency treatment[3] nor mental health care during the past year, and specialty treatment for such co-occurring disorders is only starting to become available (SAMHSA, 2005). Numerous studies of both community and patient samples have shown substantial rates of comorbid disorders. The Epidemiologic Catchment Area study reported lifetime prevalence of 29% for drug dependence among those with a mental health disorder and lifetime prevalence of a mental disorder of 53% among those with a drug use disorder (Regier et al., 1990). Similar rates of comorbidity were found in the National Comorbidity Study[4] (Kessler, 1995). A generalizable study of 130 low income, inner city U.S. residents reported a lifetime prevalence of dual diagnoses of 60% among patients in a mental health clinic and 67% among patients in outpatient substance user treatment (Hien et al, 1997).

Consequences of co-occurring disorders

There is considerable evidence that comorbid disorders are more severe and chronic than single psychiatric disorders (Hagnell & Grasbeck, 1990; Hirschfeld et al., 1990; Kessler, 1995; Murphy, 1990). In the general population, persons with lifetime comorbidity are more likely than those with only one disorder to experience major impairments with economic domains (e.g., unemployment, financial problems), social isolation, and interpersonal conflicts (Kessler, 1995). Comorbidity is highly predictive of negative treatment outcomes (Gonzalez and Rosenheck, 2001; Donat and Haverkamp, 2004). Among substance user patients, the severity of psychiatric symptoms is associated with poorer outcomes (McLellan et al., 1983; Rounsaville et al., 1986; Walker et al., 1983). Among mental health patients, particularly persons manifesting schizophrenia, a comorbid addictive disorder has been associated with increased mental health treatment and more medication, higher rehospitalization and emergency room visits, homelessness, criminality and violence, suicide attempts, increased fluctuation and severity of psychiatric symptoms, legal problems,

[2]The DTR program is detailed below.

[3]Treatment can be briefly and usefully defined as a planned, goal directed change process, of necessary quality, appropriateness and conditions (endogenous and exogenous), which is *bounded* (culture, place, time, etc.) and can be categorized into professional-based, tradition-based, mutual-help based (AA,NA, etc.) and self-help ("natural recovery") models. There are no unique models or techniques used with substance users- of whatever types- which aren't also used with non-substance users. In the West, with the relatively new ideology of "harm reduction" and the even newer Quality of Life (QOL) treatment-driven model there are now a new set of goals in addition to those derived from/associated with the older tradition of abstinence driven models. Editor's note

[4]The National Institute of Mental Health Epidemiologic Catchment Area Program interviewed 20,291 persons to determine the prevalence of comorbid alcohol, other drug, and mental disorders in the U.S. total community and institutional population.

family stress, and HIV and HCV infection (Bartels et al., 1993; Bergman & Harris, 1985; Drake & Brunette, 1998; Mueser et al., 1992; Osher & Kofoed, 1989, Osher et al., 1994; Westermeyer & Walzer, 1985). For example, in a study with 755 severely mentally ill (SMI) subjects, 2.5% of dually diagnosed participants were co-infected with HIV and HCV, whereas only 0.6% of SMI participants without a comorbid substance use disorder were co-infected (Rosenberg et al., 2005).

Effectiveness of mutual aid

Mutual aid groups (often termed "self-help groups") are based on the premise that a group of individuals who share a common problem can collectively support each other and mitigate or eliminate that problem and its personal and social consequences. Members learn about their problem and share their experiences, strengths and hopes for recovery. The group is a setting where individuals' socially stigmatized attributes and behaviors (e.g., substance use; mental health problems) can be discussed in an accepting, trusting environment. It also provides a source of strategies to cope with the problem and, as a person's recovery progresses, the opportunity to become a role model. Many mutual aid groups follow some version of the 12-step model of recovery originally developed by the founders of Alcoholics Anonymous (AA) (Alcoholics Anonymous, 1939/2001/1952). Growing evidence indicates that 12-step groups are useful in maintaining abstinence from "substances of abuse" (e.g., Devine et al., 1997; Humphreys et al., 1994; 1999; Timko et al., 2000; Timko et al., 2006; Thurstin et al., 1987; Tonigan et al., 2002;; Humphreys and Moos, 2007; Kaskutas et al., 2005; Kelly et al., 2006; McCrady & Miller, 1993), especially for those who attend regularly or become affiliated (e.g., Fiorentine et al., 1999; Kingree, 1995; McKay et al., 1994; Montgomery et al., 1991; Watson et al., 1997). For example, Moos et al., (1999) found that increased attendance in 12-step groups was associated with a higher proportion of abstinence from drugs and alcohol, less severe distress and psychiatric symptoms, and a higher likelihood of being employed at one-year follow-up. Fiorentine & Hillhouse (2000) found that attending 12 step groups *less than* once a week had no effect on substance use outcomes but attending once a week or more was beneficial. Weiss et al., (2005) reported that active participation (e.g, speaking at meetings, taking a leadership role), but not attendance alone, was associated with reductions in drug use among cocaine dependent patients. Mutual aid participation is proposed to be an important complement to treatment, increasing the likelihood that gains made during treatment are reinforced and sustained after services end (Etheridge et al. 1999; Fiorentine et al., 1999; Fiorentine & Hillhouse, 2000b; Magura, 2007).

There is less research on mutual aid for persons in mental health recovery, but this also suggests mutual aid has benefits. A national survey of over 2000 participants in peer-led mood disorder support groups indicated that the longer people attended, the less likely they were to have stopped medication against medical advice, and that hospitalization rates were significantly lower (Sheffield, 2003). A survey of members of Recovery, Inc., a mutual aid program for people with mental illness, found that neurotic distress declined for both peer-leaders and recent members since first joining the program, although significantly more so for the leaders, who had longer periods of participation (Galanter, 1988).

"Traditional" mutual aid and dually diagnosed persons

Historically, traditional "single focus" 12-step groups such as Alcoholic and Narcotics Anonymous (AA and NA) have been under-utilized by individuals with co-occuring disorders (Minkoff, 1989; Minkoff and Drake, 1991; Noordsy et al., 1996; Zaslav, 1993). Studies have also indicated that clinicians are less likely to refer persons with dual diagnoses than those with a single diagnosis to mutual aid groups (Humphreys, 1997c; Villano et al., 2005; Laudet, 2000). Traditional 12 step groups have substantial limitations for persons with

co-occurring disorders and may not be suitable for individuals with severe psychiatric disorders (Bartels and Thomas, 1991). Identifying and bonding with other members may be difficult for dually diagnosed individuals if they feel different from or are rejected by other group members. Dual-diagnosed persons who are newcomers to 12-step meetings often find a lack of acceptance and empathy (Jerrell and Ridgely, 1995; Noordsy et al., 1996; Powell et al., 1996; Vogel et al., 1998). Dually-diagnosed individuals' experiences when attempting to use mutual aid as a recovery resource include avoiding initial attendance, dropping out or finding it hard to make a regular commitment, and difficulties identifying with other members (Noordsy et al., 1996). Some dually diagnosed members report receiving misguided advice about psychiatric illness and the use of medications, which are seen as "drugs" (e.g., Hazelden, 1993; Laudet, 2000a), although this is not the official view of Alcoholic Anonymous and Narcotics Anonymous World Services (e.g., Alcoholic Anonymous, 1984). Nevertheless, there remains strong aversion against the use of psychoactive medication in local 12 step chapters, where the potential for use and misuse of certain medications makes any use, whether for treatment of substance dependency or mental illness, unacceptable. This has concrete consequences, such as not being allowed to participate actively at meetings. A survey of AA leaders revealed their predominant belief that individuals should take their medications as prescribed, but most also "*felt that participation in a group especially [designed] for persons with a dual diagnosis*[5] *would be more desirable than a traditional AA group*" (Meissen et al., 1999).

There are some inconsistencies both in the research on participation in traditional 12 step groups by dually diagnosed persons and on outcomes of such participation. ("Participation" may refer to attendance and/or active involvement depending on the study.) In one study, after discharge from hospital, dually diagnosed patients attended 12 step groups about as often as patients with substance disorders only, although patients with schizophrenia and schizoaffective disorder attended least (Jordan et al., 2002). Two studies have reported higher rates of mutual aid attendance among dually-diagnosed persons than have previously been indicated in the literature (DiNitto et al, 2001; Bogenschutz & Akin, 2000). However, both of these studies also raised questions about the effective use of traditional 12-step fellowships by this population. Bogenschutz & Akin's (2000) study of 81 dual diagnosis patients reported that attendance at one or more 12-step meetings in the past 3 months was 27% and for the past 12 months was 53%. The authors comment that this "surprisingly high" attendance rate was comparable to 12-step attendance rates among substance users enrolling in a primary addiction treatment program. However, despite this relatively high attendance, dual diagnosis patients reported difficulties with traditional 12-step meetings, such as disapproval from other members' about taking psychiatric medication and lack of understanding of mental illness. DiNitto et al (2001) also reported a high rate of 12 step attendance among dually-diagnosed patients discharged from an inpatient chemical dependency unit, but other than a reduction of legal problems at follow-up, were unable to identify any benefits associated with attendance at traditional 12-step meetings.

[5]A diagnostic process, in simplistic terms, permits the collection of necessary and relevant data/information in order to facilitate decision making. From a medical-treatment perspective a useful diagnosis "offers", minimally, three critical, necessary types of information: etiology, process and prognosis…which are not always known. The relatively recent substance use disorder related nosology of "dual diagnosis" is inadvertently misleading in that any substance use, of whatever type(s) can be "tagged"/diagnosed in each area of his/her life: medically, psychiatrically, socially, gender identification, educationally, spiritually, morally, IQ, SES, ethnically, racially, legal-status, etc. depending upon the criteria used (whatever their underpinnings and validity) and the needs of the categorizers. Neither "substance use disorder" (in its variations) nor dual diagnosis, also in its variations offer, in a predictable sense, etiological, process and prognostic information which can be or which are used for effective treatment planning, implementation and evaluation of the range of heterogeneous drug users. "Dual diagnosis", as an ongoing useful tool for a range of substance use(r) intervention stakeholders and gatekeepers can be usefully explored in the vast labeling theory literature. To paraphrase the General Semanticists: the map =//= the territory; the substance use disorder and/or the "dually diagnosed" =//= the substance user PERSON. Editor's note.

Twelve-step involvement was related to abstinence at follow-up for both dually diagnosed and substance use disorder-only patients, although dually diagnosed patients were somewhat less likely to be in remission (Ritsher et al., 2002). Among dually diagnosed patients discharged from inpatient care, 12 step participation was related to increases in coping skills (Moggi et al., 1999). But another study reported that, after discharge from inpatient care, depressed patients with substance use disorders benefited less from 12 step attendance than patients with substance use disorders only (i.e., had poorer substance use outcomes); the authors concluded that "newer, dual-diagnosis-specific, self-help groups may be a better fit for these patients" (Kelly et al., 2003).

The above literature indicates that, although traditional 12 step attendance rates are sometimes similar for persons with co-occurring and substance abuse disorders only, the benefits of such participation tend to be less for the former, and problems remain with their being fully accepted and involved in traditional 12 step groups The documented lower participation of persons with schizophrenia and schizoaffective disorder, who are a substantial proportion of the SMI, is especially noteworthy (Bogenschutz et al., 2006; Jordan et al., 2002;). Thus, some of the inconsistency among studies may be attributable to differences in diagnoses and/or severity of psychiatric disorders. Barriers to 12-step involvement (i.e., active participation) in contrast to barriers to attendance may also partially explain the apparent limited effectiveness of traditional 12-step groups for dually diagnosed persons. Recent literature has underscored the relative higher benefit of 12-step involvement compared with simple attendance (e.g., Weiss et al., 2005). The American Psychiatric Association (1995) recommended that persons with dual diagnoses who are prescribed psychoactive medications be referred to support groups where such therapy is recognized as useful, rather than labeled. Consequently several recent investigators have independently concluded that specialized "dual focus" fellowships have an important role to play to bringing the full benefits of mutual aid to the large population of person with co-occurring disorders (Bogenschutz, 2005; Kelly et al., 2003; Meissen et al., 1999).

The recognition of the limitations of traditional "single focus" 12-step groups for dually-diagnosed persons has led to the development of several 12-step based fellowships specifically to address dual recovery needs: Dual Recovery Anonymous (DRA; Hazelden, 1993), Dual Disorders Anonymous (DDA) and Double Trouble in Recovery (DTR; Vogel et al, 1998). DRA started in 1989 in Kansas City and its educational recovery materials began to be distributed by the Hazelden Foundation in 1993, which greatly contributed to the growth of the organization, which currently holds meetings in most U.S. states as well as in Canada, Australia, New Zealand, India and Iceland. DDAstates that it "supports peer to peer 12 step recovery meetings for people with mental illness and addiction problems. The DDA program differs from other 12 step recovery programs with the addition of the 5 steps which assist in mental health recovery." The meetings are currently concentrated in southern California and the Vancouver area of Canada. Information about membership characteristics of these organizations does not seem to be available at this time. DTR is described below.

Although specialized 12 step facilitation (TSF) models for persons with co-occurring disorders have been developed and are valuable (Bogenschutz, 2005; Brooks and Penn, 2003), these are professionally-led therapies designed to prepare patients for peer-led dual focus 12 step groups. The research summarized in this paper is the first study of the effectiveness of participation in a specialized dual focus 12 step fellowship, including an examination of the mechanisms of attitudinal and behavioral change in such groups.

METHODS

Description of Double Trouble in Recovery

Double Trouble in Recovery is a mutual aid program adapted from the 12 steps of AA, specifically embracing those who have a dual diagnosis of substance abuse and psychiatric disorder (Double Trouble in Recovery, Inc., 2000; Vogel et al, 1998). DTR was started in New York State in 1989 and currently has over 200 groups meeting in the U.S. across 14 states, with the most currently in New York, Georgia, Colorado, Oklahoma and New Mexico. There are currently 40 DTR groups in New York City. Groups meet in community-based organizations, psychosocial clubs; outpatient programs for mental health, substance abuse and dual-diagnosis; and hospital inpatient units. All DTR groups are led ("chaired') by recovering dually-diagnosed individuals (often termed "consumers") and follow a traditional 12-step format. DTR was co-founded by Howard S. Vogel, who continues as its Executive Director and was a collaborator in the research reported here.

DTR has adapted the first and twelfth steps of AA to include mental health issues, as follows. Step 1: We admitted we were powerless over mental disorders and substance abuse -- that our lives had become unmanageable. Step 12: Having had a spiritual awakening as the result of these steps, we tried to carry this message to other dually-diagnosed people and to practice these principles in all our affairs.

Similar to traditional, single focus, 12 step groups, DTR fellowship members are encouraged to share their experiences with the expectation that this will lead to positive social relationships, abstinence and the maintenance of abstinence. However, unlike traditional 12-step groups, DTR recognizes that dual-diagnosed persons suffer the double stigma of mental disorder and chemical dependency and that negative attitudes towards dual-diagnosed persons are prevalent. Many dual-diagnosed patients are on a prescribed regimen of psychiatric medication. DTR provides an opportunity for dually diagnosed patients to receive peer support for taking prescribed psychiatric medication, which can be as crucial for recovery as abstinence from drugs and alcohol. However, DTR is not conceptualized as a replacement for traditional 12-step groups, which are also attended by many dually diagnosed persons despite their limitations (e.g., DiNitto, et al, 2001), but rather as serving a special need for peer support that otherwise would not be met. As noted in the Double Trouble in Recovery (1998) Manual, "*DTR creates a safe environment where a person can discuss the issue of mental disorders, medication, medication side-effects, psychiatric hospitalizations and experiences with the mental health system openly without shame or stigma*."

DTR also differs from traditional 12 step groups in that training of consumer (patient) facilitator/chairs is part of the model and that treatment providers are encouraged to support consumers in starting consumer-led DTR meetings in their facilities. Moreover, because many dually diagnosed individuals are in continuing care, DTR has always considered a key part of its mission to support establishing meetings in programs as well as in the community. Indeed, our New York City data indicate that two-thirds of DTR members were originally introduced to DTR in a program and informal information indicates a similar pattern in other states; currently 57% of DTR meetings in NYC are in programs. However, DTR does not yet have the equivalent of AA's Hospital and Institutions (H & I) program that "brings" AA meetings to facilities; thus each facility needs to initiate a DTR group if it desires one. Also, DTR does not have specific provisions for the participation of family members or significant others, although they may attend "open" DTR meetings in the community as well. ("Closed" DTR meetings in institutional settings are limited to patients.)

Recruitment of Sample

Potential study participants were recruited at DTR meetings held in community-based organizations, outpatient programs and supported residences for persons diagnosed with mental disorders throughout New York City. All DTR participants who had been attending meetings for one month or more were eligible. The researchers counted 360 attendees at 24 DTR meetings and, with the assent of each group, asked the attendees individually and privately whether they were interested in participating in the study. They were told that participation in the research could help make other consumers more aware of the existence and potential benefits of DTR. Sixteen were ineligible due to less than one month of attendance, and 34 declined participation, either immediately or when they were subsequently contacted for an interview. Thus, 310 out of 360 attendees (86%) at the meetings participated in the study.

Procedures

Study participation was voluntary based on informed consent; the NDRI Institutional Review Board approved the study. The interview was a semi-structured instrument administered at study entry, one year later and two years later. The study employed as interviewers experienced members of the DTR fellowship who received training in interviewing skills and were closely supervised in their research activities. These included white, African–American, female and male interviewers. Study intake interviews (N=310) were conducted in 1998; one-year follow-up interviews (N=276) were conducted in 1999, representing a re-contact rate of 90% (276/306) of those remaining alive. Subjects were re-interviewed (N=233) at a two-year follow-up in 2000, representing a two-year re-contact rate of 76% (233/306). The interviews required about two hours; participants received $35 for their time at study entry and $40 for each of the follow-up interviews. The articles report either one or two year outcome results depending on when the analysis was conducted.

Measures

The study used a variety of measures depending on the purpose of individual analyses. Table 1 summarizes the main measures employed, in the categories of DTR participation, process measures and indices of recovery.

Drug/alcohol abstinence was measured by asking respondents about their use of each of eleven substances which are either illegal or used without a prescription (e.g, alcohol, marijuana, cocaine/crack, heroin, prescription analgesics in the previous year following the format of the Addiction Severity Index (McLellan et al., 1992); a summary variable was constructed to indicate abstinence from alcohol and drugs subject to misuse at each time point. Legal psychoactive substances such as tobacco and caffeine were not included due to their presumably lesser effects on personal and social dysfunction. Other addictive behaviors such as eating disorders and compulsive gambling were not considered by the study, since these are not directly addressed in DTR. Different kinds of mediation analyses were conducted, so that variables such as self-efficacy or social relationships may have been included either as process factors or measures of recovery. Significance of statistical results was consistently reported by the articles at the $p < .05$ level (2-tailed).

Attrition Analysis

Participants followed-up and lost to follow-up were compared on age, gender, ethnicity, primary “substance of abuse,” primary psychiatric diagnosis, DTR attendance and number of psychiatric symptoms prior to study entry. When compared with those interviewed at the one-year follow-up, participants not interviewed were younger ($r = .11$, $p < .05$) and were more likely to report cocaine/crack as their primary problem substance ($r = .16$, $p < .05$).

When compared with those interviewed at the two-year follow-up, participants not interviewed had shorter DTR attendance before study intake ($r = .13$, $p < .05$) and were more likely to report cocaine/crack as their primary problem substance ($r = .14$, $p < .05$) (Magura et al., 2007).

RESULTS

Characteristics of DTR Members

Among 310 DTR members attending 24 DTR groups, the mean age was 40 years, slightly more than one-quarter (28%) were women, nearly three-quarters were minority (58% black; 14% Hispanic, 25% white, 3% other) and only 7% were currently married/common law; 63% had never been married. A majority (53%) lived in a supported community residence. Sixty percent graduated from high school or received a GED (note an error in reporting this statistic in several previous papers). Sixty-three percent were arrested as adults and 37% had multiple arrests. The three most frequent self-reported psychiatric diagnoses were: schizophrenia (39%), major depression (21%) and bipolar disorder (20%); 92% were currently prescribed psychiatric medication. The three most frequently reported primary substances used were: cocaine/crack (42%), alcohol (34%) and heroin (11%). (Magura et al, 2007). Five or more lifetime mental health hospitalizations were reported by 49%. Generally this sample was rather homogeneous in the severity of substance use and mental illness and their personal and social consequences. The areas rated by the respondents as most difficult to deal with in their recoveries were: dealing with feelings and inner conflicts; socioeconomic issues (work and money problems), and the maintenance of sobriety (Laudet et al., 2000). Work-related issues were further examined in a separate paper, summarized below. (Note these reported statistics may vary slightly among the published papers due to differences in the analytical sample sizes, rounding, and reclassification of several ambiguous interview responses.)

Initial and Sustained DTR Participation

The majority of DTR members (67%) had first been introduced to DTR through a treatment program (51% in a mental health or dual-diagnosis ambulatory or inpatient setting; 16% by a substance use provider). Less frequent sources of DTR referral were: friend (20%), the community (10%), traditional 12-step groups (4%) and community conferences (2%). The three most frequent reasons for first coming to DTR were the opportunity to be with other dual-diagnosed persons (33%), to stop using drugs or alcohol or to avoid relapse (32%), or advised to go to a DTR meeting by their treatment program (25%). Retention and sustained attendance in DTR groups was high: at one-year follow-up 71% were still attending DTR meetings and attended at least once a week. Nearly half reported that they “always” shared at meetings. Participants generally rated DTR as “very important” to their recovery. The two most frequent reasons cited for maintaining attendance were recovery from substance abuse (36%)[6] and fellowship with other dually diagnosed persons (33%). Among those who stopped attending DTR, the main reasons were: no meeting to go to (either because the member was no longer enrolled in the program/residence where the meeting was held, or because the meeting had been discontinued); and location constraints (“getting there”) including no transportation available to meetings or no carfare for transportation. Virtually all DTR members currently attending meetings expressed the intention of continuing to attend (99%) (Laudet et al., 2003a).

[6]The journal’s style utilizes the category *substance abuse* as a diagnostic category. Substances are used or misused; living organisms are and can be *abused.* Editor’s note.

Multivariate analysis was conducted to determine the predictors of retention in DTR. Overall, persons who are older, who have presumably experienced more severe consequences of substance use (e.g., more arrests), experience more severe psychiatric symptoms, and are abstinent but troubled in their efforts to maintain abstinence, are more likely to continue regular attendance at DTR (Laudet et al., 2003b).

Effect of DTR on Drug/Alcohol Abstinence

Absolute rates of past year abstinence increased from 54% at baseline to 72% at one year follow-up and to 74% at two-year follow-up. Repeated measures analysis with generalized estimating equations (GEE) indicated that, over the 2-year follow-up period, ongoing DTR attendance was significantly associated with a greater likelihood of drug/alcohol abstinence after controlling for other pertinent variables such as sociodemographic characteristics, primary misused substance, severity of mental health symptoms, number of past hospitalizations for drug addiction or psychiatric problems, and traditional 12 step attendance. In addition to the main effect for DTR attendance, the analysis also found main effects on (higher) drug/alcohol abstinence for: pre-baseline abstinence; lower psychiatric symptom severity (as measured by the Colorado Symptoms Index, Shern et al., 1994); and not receiving inpatient treatment during the study period (Laudet et al., 2004a).

Effect of DTR on Adherence to Psychiatric Medication

Eighty-seven percent of study participants interviewed one year after baseline reported that they had been prescribed psychiatric medication in the previous year. In multivariate analysis, ongoing DTR attendance during the follow-up period was associated with higher adherence to psychiatric medication, independent of possible confounding variables. Three variables measured at baseline in independently predicted better adherence: living in supported housing, fewer stressful life events, and lower severity of psychiatric symptoms. In addition, better adherence was associated with lower symptom severity at one year after baseline and no psychiatric hospitalization during the follow-up period (Magura, et al., 2002).

Effect of DTR on Quality of Life

The study investigated the effects of DTR of quality of life over the two year study period using repeated measures analysis with GEE that controlled for a variety of possible confounding factors. Degree of DTR affiliation was significantly associated with self-efficacy for mental health recovery (measured by the Mental Health Confidence Scale; Carpinello et al., 2000) and three quality of life measures: feelings of well-being, social relationships and leisure time activities. It was hypothesized that self efficacy for recovery would mediate the relationship between DTR affiliation and quality of life. Self-efficacy fully mediated the effects of DTR affiliation on feelings of well-being and leisure time and partially mediated DTR's effect on social relationships (Magura et al., 2007).

Common vs. Unique 12 Step Process Factors as Mediators between DTR Participation and Outcomes

The study tested the hypotheses that two common process factors (internal locus of control and sociability) and two factors unique to 12 step groups (spirituality and installation of hope) mediate the effects of DTR affiliation on two outcomes, drug/alcohol abstinence and health promoting behavior (a composite of psychiatric medication adherence, medical care and self-care). (Cf. Morgenstern et al., 1997; 2002). The degree of DTR affiliation during the study period was associated with more positive outcomes at one year follow-up. Internal locus of control and sociability mediated the effects of DTR group affiliation on both

outcomes, whereas spirituality and hope acted as mediators only for health promoting behavior (Magura et al., 2003a).

Specific Mutual Aid Processes in Relation to Abstinence Outcomes for DTR

The study hypothesized that three theoretical "active ingredients" characterizing mutual aid - helper-therapy, reciprocal learning and emotional support - would be associated with better drug/alcohol abstinence outcomes for members of DTR.

The "helper-therapy principle," first defined by Frank Reissman (Gartner and Reissman, 1977), states that assuming a helping role actually strengthens a mutual aid group member's emotional and behavioral commitment to change. By assisting, advising and supporting others - through sharing and speaking at meetings, through informal contacts outside meetings, and by eventually sponsoring other members and becoming a meeting facilitator - a member reinforces his/her own learning of the valued attitudes, skills and behaviors. This is particularly related to the 12^{th} step of AA and DTR (see above).

During the "reciprocal learning process" mutual aid group members have opportunities to learn new attitudes, skills and behaviors both through general information sharing at meetings and the example of specific role models. Open meetings are sources of information about coping behaviors, including what has worked for others in advancing their recoveries and what has not. Members share experiences, failures, successes and hopes. Members listen to others in similar situations and with similar problems to learn what has worked for them. In accordance with 12-step tradition, direct advice is not given from one member to another at meetings, but may be given on a one-on-one basis. Constructs similar to reciprocal learning in self-help have been previously identified as important in the group psychotherapy and social learning literatures (Yalom, 1985; Bandura, 1995).

Mutual aid groups also foster a process of "emotional support," i.e., communicating and demonstrating acceptance of the member as a valued human being. The concept of emotional support encompasses two of Yalom's (1985) therapeutic factors in group psychotherapy: "universality," defined as learning others have the same type of problem or are in similar circumstances, and "group cohesiveness," the perception that members of the group understand and accept each other. Similarly, Carpinello and Knight (1991) found that a "common bond" was a major factor in the effectiveness of mental health self-help as perceived by members.

This is the first time that these key theoretical variables have been examined empirically in research on mutual aid. Psychometrically valid measures of each process variable were constructed. The study's hypotheses were partially supported, in that greater DTR involvement at baseline predicted more helper-therapy and reciprocal learning activities, although not more emotional support, during a one year follow-up period, independent of other factors. Higher levels of internal motivation, social support, coping, traditional 12 step involvement and recovery self-efficacy at baseline also predicted more positive mutual aid processes. Higher levels of helper-therapy and reciprocal learning activities in turn were associated with better drug/alcohol abstinence outcomes, independent of other behaviors or attitudes of the members (Magura, et al., 2003b).

Social Support in Relation to Outcomes for DTR

Higher levels of social support and attendance/involvement with DTR in the previous year were significantly associated with lower levels of substance use and mental health distress and higher level of feelings of well-being (Laudet et al, 2000b). Longitudinal analysis using structural equation modeling examined the relations between DTR attendance, social support, and substance use over the 2 year study period. Higher DTR attendance during the

first year of the study had a unique association with lower substance use during the second year. Higher social support at the one year follow-up had a unique association with lower on substance use during the second year and partially mediated the effect of DTR attendance on substance use. The mediation effect seemed to be attributable to the maintenance of high social support for those with greater DTR attendance over time (Laudet, 2004b).

Attitudes towards and Obstacles to Pursuing Employment among DTR Members

Employment status is commonly used as a sign of stability in recovery and an outcome measure for addiction treatment. However, there has been little attention in the literature on the topic of work for the persons diagnosed with both an addiction and a psychiatric disorder. The DTR study collected data on expressed interest in and perceived barriers to pursuing employment and on the utilization of vocational rehabilitation among unemployed members (N= 130). While unemployed members generally expressed high interest in working, they also cited multiple obstacles to attaining and maintaining employment. A structural equation model of interest in working was specified and tested. Significant contributors to interest in working were substance use status and physical health rating. Mental health symptoms and greater perceived obstacles (e.g., stigma, fear of failure, and insufficient skills) were significant contributors to perceived difficulty in pursuing work, whereas substance use, physical health, and recency of employment were not. Finally, those who perceived less difficulty in pursuing work were more likely to utilize vocational rehabilitation services, and men were more likely than women to use such services; but interest in work was not significantly associated with utilizing vocational rehabilitation. The paper discusses the roles of mental health disorders and substance use in relation to pursuit of employment, as well as that of perceived obstacles such as stigma (Laudet et al., 2002).

Participation in “traditional” 12 step groups by DTR members

Twelve-step groups are a useful recovery resource, but are believed to be underutilized by persons dually diagnosed with addiction and psychiatric disorders. The study examined the frequency and patterns traditional 12-step participation (e.g, Alcoholics Anonymous, Narcotics Anonymous) and DTR participation among the DTR members over a one year period. The study found that DTR members do engage in both types of fellowships, but patterns of engagement differed across the fellowships, suggesting different comfort levels. Three-quarters of DTR members attended traditional 12 step meetings during the previous year, almost all of whom attended at least weekly. However, the respondents were significantly more likely to share at DTR meetings and to consider DTR meetings more important for their own as well as others’ recoveries. Respondents also related “very well” significantly more often to other DTR members than to traditional 12 group members. Both types of fellowships were used to deal with addiction. However, those diagnosed with schizophrenia as compared with other psychiatric diagnoses were more likely to attend DTR regularly and less likely to attend traditional 12 step groups (Laudet et al., 2003). Open-ended items were used to learn about what members saw as the differential benefits of DTR compared with traditional 12-step meetings. Mental health issues were mentioned more often for DTR than fro AA or NA, e.g., “freedom to talk about mental illness,” “information about mental health,” “talking about medications.” Only 18% reported no perceived difference between DTR and traditional 12-step groups (Laudet, et al, 2003a).

DISCUSSION

Implications for Fostering Recovery from Co-occurring Disorders

The study documents that the point of entry for most DTR members is their treatment program and that the main reasons for first attending DTR were to achieve or maintain abstinence and to affiliate with other dual-diagnosed persons in a supportive environment.

Recovery from addiction and fellowship with other dually diagnosed persons were also cited as the main reasons for sustained attendance at DTR groups. Members experienced DTR participation as beneficial with most reporting that they found it useful as a source of hope, support and information about dual diagnosis. These perceptions are consistent with the study's finding that greater DTR involvement at baseline predicted more positive mutual aid processes at follow-up. Further, these processes (helper-therapy and reciprocal learning) were associated with better drug/alcohol abstinence outcomes. Thus, specific elements of mutual aid participation contribute to progress in recovery for members of DTR and presumably, other dual-focus recovery groups; facilitating such mutual aid processes should be encouraged by clinicians and senior fellowship members.

Overall, the findings indicate that DTR participation has both direct and indirect effects on several important outcomes: drug/alcohol abstinence, psychiatric medication adherence, self-efficacy for recovery, and quality of life. The study also identified several "common" therapeutic factors (e.g., internal motivation, social support) and unique mutual aid processes (helper-therapy, reciprocal learning) that mediate the influence of DTR participation on outcomes for members. For clinicians, these results underline the importance of fostering stable affiliation with specialized dual focus 12-step groups for their patients with co-occurring disorders, as part of a comprehensive treatment approach.

Study Limitations

The study also has several limitations. The main limitation is the non-experimental, observational design that requires caution in making causal inferences from the findings.[7] Specifically, there is no control group of individuals who were not exposed to DTR and study participants essentially self-selected themselves into different degrees of affiliation with DTR. This characterizes virtually all existing research on 12 step and other mutual aid groups. Although the study attempted to identify and statistically control for potential confounders, i.e., subject characteristics that might be correlated with both degree of DTR affiliation and the outcome variables, there remains the possibility that unmeasured confounders could account for the relationships observed in this study. Future research should focus on randomized and quasi-experimental designs to better address this issue. A second limitation is that the study participants had varying amounts of exposure to DTR at study intake and could only be followed-up for two years. This could lead to biased conclusions about DTR's level of effectiveness, because the recruitment method may under-represent individuals who dropped out after short periods of attendance. Cohort studies of new members of mutual support groups could overcome this limitation. A third limitation is that the data are based on self-reports of behavior, which could be biased even though the interviews were confidential and DTR and other 12-step fellowships place a premium on honesty about oneself.

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[7]The reader is referred to Sir Bradford Hill's ***nine criteria*** for assessing causality which were created in 1965 to help assist researchers and clinicians determine if *risk factors* were **causes** of a particular disease or **outcome** or **merely associated**. The nine criteria include: strength of association, consistency between studies, temporality, biological gradient, biological plausibility, coherence, specificity, experimental evidence, and analogy. and are defined below. (Hill, A. B. (1965). The environment and disease: associations or causation? *Proceedings of the Royal Society of Medicine 58:* 295–300.)

Glossary

Mutual aid	An organization or group of individuals who meet together to provide each other with support to deal with specific "problems in living."
12 step fellowships	Mutual aid organizations that accept the 12 Steps and (usually) the 12 Traditions originally articulated by Alcoholics Anonymous.http://www.alcoholics-anonymous.org
Dual focus recovery fellowships	Mutual aid organizations usually following the AA model that are tailored to address members' co-occurring substance use and mental health issues
Double Trouble in Recovery (DTR)	A specific dual focus recovery fellowship with a national presence. http://www.doubletroubleinrecovery.org
Consumer	A preferred term used by many individuals in the substance user and mental health treatment systems to refer to themselves
Dual diagnosis	Usually refers to co-occurring substance use and mental health disorders, although it can refer to other combinations of diagnoses
Helper-therapy	Taking a helping role is believed to strengthen a mutual aid group member's emotional and behavioral commitment to change
Reciprocal learning	The process by which mutual aid group members learn new attitudes, skills and behaviors both through information sharing at meetings and the example of specific role models
Recovery	This has been defined most broadly as the "*process in which people are able to live, work, learn, and participate fully in their communities*" (New Freedom Commission on Mental Health, 2003). In this paper, it specifically refers to achieving abstinence from alcohol and other drugs subject to misuse, adherence to prescribed psychiatric medications and attaining a good quality of life

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Biography

Stephen Magura, Ph.D., C.S.W., is the Director of the Evaluation Center, Western Michigan University, Kalamazoo, MI, and former Director of Science and Research at National Development and Research Institutes, Inc., New York City. He has designed and directed drug dependency clinical trials, treatment evaluation studies, health services research, social epidemiology studies, HIV prevention research and policy analyses. He has been the Principal Investigator of many studies sponsored by the National Institutes of Health and other agencies. He has published 150 peer-reviewed articles and authored or edited several books and special journal issues, including Outcome Measures for Child Welfare Services (Child Welfare League of America), Experimental Therapeutics in Addiction Medicine (Haworth Press), a special issue of *Health and Social Work* on "Chemical Dependency" and special issues of *Substance Use & Misuse* on "Program Quality in Substance Dependency Treatment" and "Contemporary Vocational Rehabilitation for Substance Users." Dr. Magura is a member of the editorial board of Substance Use and Misuse and is a faculty member of the Middle Eastern-Mediterranean Summer Institute on Drug Use in Italy and Israel. He enjoys reading science fiction and playing volleyball.

Table 1

Summary of Main Measures

Measure	# of items	Definition or example of items	Scoring
DTR Participation			
Attendance	1	Attended DTR at least weekly in the year before each interview	Number of months, 1–12
Involvement	4	Active participation, e.g., how often do you share at meetings; have you ever chaired a meeting? 1/never – 5/always	Mean score, 1 – 5
Affiliation	5	Attendance plus involvement, computed as "percentage of maximum possible" (POMP)	Composite index, 0 – 100
Process Measures			
Helper-therapy	5	E.g., "I learn a lot about myself by helping others. Helping others make me feel good about myself." 1/strongly disagree – 4/strongly agree.	Mean score, 1–4, alpha = .92
Reciprocal learning	5	E.g., how often: did another DTR member give you information on how to do something? have you offered advice about how to deal with something? 1/not at all – 5/almost every day	Mean score, 1–5, alpha = .91
Emotional support	5	E.g., "We all respect each other in this meeting. I don't feel shamed sharing at meetings." 1/strongly disagree – 4/strongly agree	Mean score. 1 – 4, alpha = .81
Internal Locus of Control	3	Composed of three subscales – internal motivation (11 items, alpha= .86), perceived coping (16 items, alpha = .89) and recovery self-efficacy (8 items, alpha = .85).	Sum of the subscales, z-scores.
Spirituality	2	Composed of two subscales – spiritual well-being (12 items, alpha = .87) and importance of spirituality (11 items, alpha = .81)	Sum of the subscales, z-scores
Sociability	14	E.g., "during the past month, how often have you enjoyed being with other people?" 1/never – 5/all the time.	Mean of the items, 1 – 5, alpha = .84.
Installation of Hope	12	Hopelessness Scale (Beck et al. 1974). E.g., "I have great faith in my future." 1/strongly disagree – 4/strongly agree.	Mean of the items,1 – 4, alpha = .75
Social Support	14	Six items in the form, e.g., "to what extent are your friends encouraging you or supporting you in your recovery efforts?" 1/not at all supportive – 4/very supportive. Eight items in the form, e.g., "the people in my life go out of their way to show me support." 1/strongly disagree – 4/strongly agree.	Mean of the items, 1 – 4, alpha at follow-up = .87
Recovery Indices			
Alcohol/drug abstinence	11	Reported abstinence from 11 substances in year before each interview (e.g., alcohol, marijuana, cocaine/crack, heroin, prescription analgesics)	Abstinent vs. not abstinent
Psychiatric medication adherence	1	Report of "always" taking psychiatric medications as prescribed	"Always" vs. other
Health promoting behavior	3	Composed of perceived changes in adherence to prescribed psychiatric medication, adherence to medical care and self-care. 1/much worse – 5/much better.	Mean of the items, 1–5.
Self-efficacy for mental health recovery	16	Mental Health Confidence Scale (Carpinello et al., 2000). E.g., "how confident are you right now that you can: deal with symptoms of your mental illness; face a bad day; stay out of the hospital?" 1/not all confident – 4/very confident	Sum of items, 16 – 64, alpha = .90

Measure	# of items	Definition or example of items	Scoring
Quality of Life - Subjective Feelings of Well-Being	14	E.g., “during the past week, how often have you felt satisfied with your life?’ 1/never – 5/all the time.	Sum of items, 14 – 70, alpha = .94
Quality of Life - Social Relationships	11	E.g., “during the past week, enjoyed talking or being with friends or relatives?” 1/never – 5/all the time.	Sum of the items, 11–55, alpha = .80
Quality of Life - Leisure Time Activities	5	E.g., “how often did you enjoy leisure time activities?” 1/never – 5/all the time.	Sum of the items, 5–25, alpha = .83
Major Covariate			
Psychiatric symptom severity	13	Colorado Symptoms Index (Shern et al., 1994). E.g., “in the past month, how often have you: felt depressed? forgot important things? felt like seriously hurting someone?” 0/not at all – 4/at least every day	Mean score, 0–4, alpha = .85