Managing Depressive Symptoms in Substance Abuse Clients During Early Recovery:

A Review of the Literature—Updates*

A Treatment Improvement Protocol

TIP 48

*This document is available online only (http://kap.samhsa.gov) and supports TIP 48, *Managing Depressive Symptoms in Substance Abuse Clients During Early Recovery.*

Treatment Improvement Protocol (TIP) 48,

Managing Depressive Symptoms in Substance Abuse Clients During Early Recovery

Updated Findings From the Literature

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Introduction

The following updates were developed to keep current the literature review component of Treatment Improvement Protocol (TIP) 48, *Managing Depressive Symptoms in Substance Abuse Clients During Early Recovery*, published in 2008. The literature review update period for this TIP spanned 4 years post-publication and concluded with the January–June, 2012 update. The same search methodology used in developing the literature review for TIP 48 was used for the updates.

Part 3 of TIP 48, A Review of the Literature, is available at http://kap.samhsa.gov/products/manuals/tips/pdf/TIP48_LitReview_200910update.pdf

Literature reviews and literature review updates for other TIPs can be found at http://kap.samhsa.gov/products/manuals/tips/review.htm

October 1, 2009, Through December 31, 2010

Screening and Diagnostic Issues

Most articles on this topic reiterated the previous findings that people entering substance abuse treatment are not adequately screened for depression.

A study performed by Hepner and colleagues (2009) noted that practitioners working in substance use disorder (SUD) treatment programs generally do not have training in the diagnosis and treatment of depression, and that fewer than 7 percent of individuals entering substance abuse treatment are screened for depression. To assess screening instruments that could be used in a treatment setting, the researchers compared two commonly used assessment instruments designed to diagnose depression: the Beck Depression Inventory Second Edition (BDI-II), and the Patient Health Questionnaire (PHQ-9), a nine-item depression scale originally developed for use in primary care settings. The researchers administered the instruments to 240 residents in 4 residential SUD treatment facilities. These instruments were highly correlated with each other.

The measures revealed similar rates of symptoms of moderate to severe depression. However, the PHQ-9 seemed to detect a higher rate of mild depressive symptoms than the BDI-II, which was more likely to categorize clients as having minimal symptoms. Results suggest that both measures can be used to assess depression symptoms in patients who have an SUD. However, the PHQ-9 may be more sensitive in identifying patients with fewer depression symptoms. In addition, this measure is shorter than the BDI-II, easier to administer, and available at no cost. One limitation of the study was that only 65 percent of the sample was screened within the recommended 14–30 days after admission to an SUD treatment facility.

In another study of depression and SUDs, Niciu and colleagues (2009) differentiated subtypes of major depressive episodes (MDE) using secondary data in people diagnosed with SUDs. The researchers looked at records of 1,929 subjects with SUDs and found 863 subjects who experienced one or more MDEs. The people who had MDEs were categorized by the type of MDE, which resulted in three groups:

- Subjects who had experienced MDEs independent of SUDs
- Those with substance abuse-induced MDEs
- Those who had experienced both types of MDEs

The study found that patients in the third category (i.e., those who had experienced both types of MDEs) who experienced both independent and substance abuse-induced MDE have more severe depression than those in the other two categories. The authors suggested that these patients may need more intensive and longer duration psychiatric care than the patients in the other two groups. Furthermore, the study verified earlier research that found that individuals with depression often self-medicated with alcohol. The authors also found that those patients who had both substance-induced MDE and MDE independent of SUDs along with an anxiety disorder, were more likely to have attempted suicide than other study subjects.

Gamble et al. (2010) studied 1,726 patients who had participated in Project MATCH (Matching Alcoholism Treatment to Client Heterogeneity), a clinical trial of behavioral treatments for alcohol use disorders (AUDs). The study attempted to assess whether depressive symptoms predicted the level of alcohol use following completion of treatment. Patients were from two groups: an outpatient group composed of those who had not recently completed any inpatient care; and an aftercare group of patients who had completed at least 7 days of inpatient or intensive outpatient care.

The researchers measured depressive symptoms and alcohol use (i.e., drinking frequency and intensity) at the end of the treatment and during the following year. They found that pretreatment BDI-II scores were significantly associated with percentage of days abstinent and average number of drinks per drinking day, although the effect was not significant if posttreatment BDI scores were factored in. Posttreatment depressive symptoms were significantly associated with the measures of alcohol consumption; patients with more severe depressive symptoms showed increased alcohol consumption after treatment. Therefore, the researchers recommended that patients completing treatment for AUD be screened for depression before being discharged from treatment. However, the study did not address the effects of drinking on depressive symptoms. Furthermore, the study relied on self-reports and did not address whether the depressive symptoms were related to intoxication or withdrawal. It is also not clear *why* posttreatment depression is related to frequency and duration of drinking after treatment discharge.

Rodriguez and colleagues (2010) performed a similar study using data from the Brief Intervention and Treatment for Elders (BRITE) project, a Florida program that provided brief interventions for older adults who screened positive for misuse of alcohol or medication. The study addressed the extent to which higher levels of depressive symptoms were associated with greater levels of alcohol use. The 366 subjects who had positive alcohol screens ranged in age from 53 to 100, with a mean of 73.8. Nearly 71 percent of the subjects had no or mild depressive symptoms. The study found that people with either moderate or severe depressive symptoms were at greater risk for problems with alcohol use than those without. However, this association decreased with age and virtually disappeared by the age of 80.

Having a high school education also reduced the risk of being a problem drinker. The authors concluded that patients in the age range of 53 to 100 years should not be treated as a homogeneous group, and that special screening and intervention are warranted. The authors identified the reliance on self-reporting as a limitation of the study, although they referred to research that has found this data-collection approach to be reliable. They also note the cross-sectional design and methods that providers used to select participants as being potential design limitations.

Nonpharmacological Treatment

Five of the articles focused on treatment of co-occurring SUDs and depression in a treatment setting, and the effect that one condition has on the treatment of the other, particularly the effect of depression on SUD treatment.

Lydecker et al. (2010) performed a longitudinal study that followed 206 veterans who had co-occurring depression and SUDs who were randomly assigned to receive 24 weeks of either

integrated CBT (ICBT) and medication for depression (ICBT + P) or 12-Step facilitation therapy (TSFT + P) plus medication for depression (TSFT + P). Participants agreed to random toxicology screening and 135 participants completed the study. Substance use and depression symptoms were measured at intake and every 3 months during treatment and 1 year after completing 24 weeks of treatment. The study found that participants in both groups had decreased substance use and depressive symptoms compared to measures at the start of the study. However, the ICBT + P group had less substance use and depressive symptoms than the TSFT + P group. Better attendance at treatment sessions was associated with improvements in substance use and depressive symptoms. One limitation of the study was that it consisted of veterans who were mostly male and cannot be generalized to other treatment populations.

Van Zaane and colleagues (2010) assessed the effect of alcohol use on the treatment of bipolar disorder. The prospective 1-year study evaluated alcohol use by 137 subjects who were being treated for bipolar disorder. By assessing alcohol consumption over a 4-week period, researchers divided the subjects into three groups according to level of alcohol consumption: none or incidental, moderate, or extensive. Researchers tracked the subjects' alcohol consumption for 1 year based on their self-reports. Contrary to previous research findings, drinking at any level had no effect on the effectiveness of treatment of bipolar disorder in this study. The authors hypothesized that the results' contrast from previous studies resulted from differences in research methodology and characteristics of the subject population, such as illness severity and substance usage. They stated that, "close monitoring with monthly assessments of the patients may have had a positive effect on outcome, and a possible reason why the negative effects on outcome of excessive drinking were nullified" (p. 891).

In assessing a less commonly used treatment approach, Witkiewitz and Bowen (2010) studied mindfulness-based relapse prevention (MBRP) to determine whether this approach would lessen the conditioned response of cravings. MBRP combines cognitive–behavioral relapse prevention with mindfulness practice. In this approach, clients meditate for 30–45 minutes in a group session and 45 minutes individually with audiotaped instructions. The purpose of this approach is was to increase clients' awareness and acceptance of negative emotions and cognitions related to depression. The authors hypothesized that the increased awareness and acceptance, in turn, would reduce cravings through lowered reactivity to depression-related emotions and thoughts. The study population consisted of 168 clients completing treatment for SUDs, 73 percent of whom completed the 4-month assessment. The control group completed the same treatment regimen, and then underwent a standard aftercare program, which was based on the 12-Step model. The subjects reported their cravings and use at the beginning of the study, at the end of the 8-week course, and at 2 and 4 months following the study. The study showed that MBRP could help clients cope more effectively with affective discomfort during early abstinence by reducing cravings. However, the authors did not assess the impact of MBRP on long-term abstinence; they recommended additional study regarding the uses and benefits of this treatment modality, as well as development of more objective measurements.

Secora et al. (2010) studied psychosocial and cognitive functioning related to cannabis dependence among 108 patients, half of whom also had depression, and half who did not. The subjects had sought treatment in response to public solicitations. The authors used the Addiction Severity Index (ASI) to measure psychosocial limitations and dependence and the California Computerized Assessment Package to measure cognitive functioning. As found in previous

studies, the researchers found that patients with both depression and cannabis addiction showed a decrease in psychosocial functioning. Unexpected, however, was the finding that these patients actually scored slightly *higher* on tests measuring cognitive functioning than those in the group not addicted to cannabis. The authors, therefore, recommended increased intervention related to psychosocial functioning, but not increased intervention related to cognitive functioning.

Pharmacological Interventions

Pettinati et al. (2010) assessed the effectiveness of naltrexone and the antidepressant sertraline as treatments for co-occurring AUDs and depression. Patients were recruited from the general community and screened for AUDs and depression. The 170 subjects were randomly assigned to four groups:

- Patients taking naltrexone only
- Patients taking sertraline only
- Patients taking both medications
- A placebo group

All patients received weekly CBT sessions; 57 percent completed the study. After 14 weeks, the researchers found that the patients receiving both naltrexone and sertraline were more likely than those taking only one of the medications to have been abstinent from alcohol, had delayed relapse to heavy drinking, and tended to not be depressed. However, the researchers cautioned that the results could not necessarily be generalized to a treatment population, because the patients were recruited from the community and self-selection bias may have affected the outcome.

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January 1, 2011, Through June 30, 2011

Overview

Numerous articles were published during the 6-month period of this review, and seven were selected for this update because of their emphasis on co-occurring depression and substance use disorders (SUDs).

Cognitive–Behavioral Therapy for Co-occurring SUDs and Depression

The articles included in previous literature reviews presented favorable findings regarding cognitive–behavioral therapy (CBT) as a treatment for depression and SUDs. This review includes two articles that present new findings about the effectiveness of an adapted CBT intervention led by substance abuse counselors.

Watkins et al. (2011) conducted a nonrandomized, community-based trial of CBT treatment for residential substance abuse patients who also had persistent depressive symptoms (i.e., symptoms that were measured on two separate occasions after at least 2 weeks of sobriety). The study was designed to compare the effectiveness of residential substance abuse treatment—termed usual care (UC)—with UC plus an adapted CBT group treatment program for depression called Building Recovery by Improving Goals, Habits, and Thoughts (BRIGHT).

UC comprised individual substance abuse treatment counseling, group therapy, vocational skills training, participation in 12-Step programs (i.e., Alcoholics Anonymous, Narcotics Anonymous, and Cocaine Anonymous), recreational therapy, and family services. The UC-plus-BRIGHT program also included sixteen 2-hour sessions, conducted twice per week for 8 weeks, and one 45-minute individual orientation session, designed to increase client retention and motivation. The BRIGHT program was divided into four modules: thoughts, activities, people, and substance abuse. The first three module topics are common to most CBT programs, and the researchers developed the fourth based on the CBT principles used in the first three modules. The fourth module emphasizes the connections among thoughts, behaviors, mood, and substance abuse.

Five outpatient substance abuse counselors were trained to deliver the BRIGHT program. These counselors received 2 days of didactic training, one opportunity to lead the BRIGHT program in their outpatient setting, weekly supervision by a licensed clinical psychologist, and a 1-day booster training before providing the program to study participants. All BRIGHT group sessions were recorded and coded for counselor adherence and competence; the average adherence rate was 94 percent, and the average competence score was 4.1 (on a 7-point scale), which suggests the counselors adhered to, and competently administered, effective CBT.

Four residential treatment programs were used in this study. The type of treatment offered at each site alternated every 4 months for 2.5 years to ensure the findings were not affected by differences among the sites. Findings from the study evaluations, which included program assessment, anonymous staff questionnaires, and qualitative interviews, suggested the sites did not significantly differ from one another or across study years.

In total, 299 patients with co-occurring SUDs and persistent depressive symptoms were included in the study: 159 received UC only, and 140 received UC plus BRIGHT. Study participants each had to have a Beck Depression Inventory-II (BDI-II) score higher than 17, indicating moderate-to-severe depression; had to have the ability to speak English; and had to be in residential substance abuse treatment. No statistically significant demographic, mental health, or substance use differences were found among participants in either type of treatment. Participants who were on antidepressant medications were allowed to keep taking them, but Watkins et al. stated that inclusion of antidepressant use as a covariate did not change the statistical significance of treatment outcomes.

Initially, participants at the largest of the four sites were assigned to UC plus BRIGHT, and participants at the remaining three sites were assigned to UC only. After completion of the study's first 4 months, the assignments were reversed (i.e., participants from the largest site received UC only and those at the three smaller sites received UC plus BRIGHT). This pattern of alternating assignment continued until the final year of the study when, for logistical reasons, the BRIGHT intervention was delivered at only one site.

The primary mental health outcomes assessed in this study were changes in participants' depression symptoms (as measured by the BDI-II) and mental health functioning (as measured by the Short Form Health Survey 12, version 2.0). The primary substance abuse outcomes were the number of days of alcohol and substance use as a percentage of the total days available for use (i.e., days not in residential treatment) during the previous 30 days. Study participants were also interviewed at baseline and at 3- and 6-month intervals to assess their levels of depression and substance abuse.

Both the 3- and 6-month interviews showed the UC-plus-BRIGHT participants reported significantly fewer depressive symptoms and increased overall mental health functioning when compared with the UC-only participants. However, participants in both types of treatment reduced their depressive symptoms from baseline levels.

Because all participants were in residential treatment, the substance abuse outcome was examined only at the 6-month interval and only in those who had "days available for use" within the specified window of 30 days (which was 64.8 percent of the sample). However, among the participants with days available for use, those who received the BRIGHT intervention reported fewer days of substance abuse, compared with those who received UC only. In fact, the 6-month postbaseline interview showed that UC-plus-BRIGHT participants reduced their substance use by more than half when compared with the UC-only participants.

Watkins et al. concluded that the BRIGHT trial demonstrated that providing UC plus BRIGHT in residential substance abuse treatment settings decreases both depression and substance use. The study also provided evidence that substance abuse counselors can effectively deliver BRIGHT, when adequate training and supervision are provided.

The authors identified possible limitations in using the BRIGHT intervention in other substance abuse treatment facilities:

- **Training and Supervision.** The substance abuse counselors who led the BRIGHT program received significant training and supervision, which may not be feasible in many public substance abuse programs. Substance abuse counselors do not typically have experience, involvement, or training in CBT for behavioral health issues such as depression, so they would need substantive training to be qualified to lead CBT sessions.
- **Number of Counselors and Group Size.** In this study, BRIGHT sessions were led by two counselors and limited to 10 patients. Many public programs may be unable to provide a second counselor or to limit the number of patients per session, because of financial constraints.
- **Setting.** This study was conducted in four residential programs that provided treatment over a 3- to 6-month period, so it remains unknown whether the BRIGHT approach is feasible and effective in a 28-day program or outpatient setting.

Watkins et al. noted that the study itself had limitations, including its being a nonrandomized trial. Study results were also limited because patients' self-reports of problem substance abuse and depression were not confirmed through urinalysis or a clinical interview, and the study lacked a thorough screening process for comorbid conditions. The authors stated that a question in need of further study is whether CBT influences both substance abuse and depression directly or whether the reduction in depression itself leads to reduced substance abuse. Despite the study's limitations, it supported previous research that demonstrated the effectiveness of CBT in treating patients with co-occurring depression and SUDs.

A companion article by Hepner, Hunter, Paddock, Zhou, and Watkins (2011) assessed the effectiveness of training addiction counselors to lead group CBT sessions for depression, specifically the BRIGHT program discussed in Watkins et al. (2011).

In selecting the substance abuse counselors to be trained to lead the BRIGHT program, the study researchers looked for those who had an interest in learning CBT, had been employed as substance abuse counselors at their agencies for at least 1 year, were willing to co-lead CBT groups, and were open to using a structured approach based on the adapted treatment manual the researchers developed. Of the five counselors chosen, only one had previous CBT training, experience, and supervision.

The previously described four-module training manual was used to train the counselors in providing CBT to people with co-occurring SUDs and depression. (See the above review of Watkins et al. [2011] for more details about the counselor training.) Throughout the 2.5-year study period, counselors received weekly group support from a doctorate-level psychotherapist who had experience in CBT treatment for SUDs. These sessions addressed (1) individual clients' progress, based partially on regularly administered Patient Health Questionnaires; (2) the psychotherapist's review of previous sessions—all sessions were digitally recorded and randomly selected for fidelity coding; and (3) preparation for upcoming sessions.

Two measures showed the BRIGHT therapy to be effective: (1) counselor fidelity to the treatment, based on adherence and competence measures developed for the BRIGHT therapy; and (2) patients' perception of the treatment's effectiveness as measured by self-reports.

The authors concluded that the study demonstrated that SUD counselors can be trained to effectively lead group CBT sessions for patients with depression. The authors noted, however, that although the counselors' skills improved over time, it remains unknown whether this improvement is the result of increasing experience, ongoing feedback from a clinical supervisor, or both. In addition, the counselors all had experience in the group-treatment approach typical of addiction treatment programs, so this familiarity with a group setting may have given them skills transferrable to the group approach used in the BRIGHT program.

The first limitation of this study is that fidelity-measurement tools were established specifically for this project. Although they were based on previously validated measures, the adapted tools have not been formally validated. Second, although the study showed that SUD counselors were effective at leading group CBT for depression, these counselors received more training and supervision than most public programs are likely to offer. The training also included resources that supported high-quality implementation (such as supervision and weekly support from an experienced psychotherapist), and such resources may not be available to other programs. Thus, the positive study results cannot be guaranteed at all substance abuse treatment facilities implementing a similar program. Third, only five SUD counselors were trained and studied, and their experience with leading BRIGHT may not be generalizable to all SUD counselors.

The authors noted that a major consideration in implementing such a project is that it demands significant time and effort from SUD counselors that are outside their typical job role and daily responsibilities (and it involves CBT treatment for depression, which may be outside their scope of practice). Many programs could not give counselors the extra time needed to receive proper training or to offer them the clinical supervision that helped make the BRIGHT study so effective. Therefore, substance abuse treatment centers that plan to train counselors in CBT for depression may want to train only selected counselors.

Additional Treatments for Depression

Magidson et al. (2011) conducted a randomized controlled trial to assess the effectiveness of a short-term group behavioral activation-based approach—called Life Enhancement Treatment for Substance Use (LETS ACT)—on residential substance abuse treatment retention, changes in patients' depression severity, and behavioral activation outcomes. *Behavioral activation* refers to measurable changes in behavior stemming from increased levels of positive reinforcement. LETS ACT centers on reinforcement theory, which is based on the premise that positive reinforcement in a patient's life can lessen depressive symptoms. LETS ACT measures the *environmental rewards* of potentially rewarding goals and activities to positively reinforce patients as they change behaviors (termed *overall activation*) that are related to depression and substance abuse. LETS ACT is adapted from the Brief Behavioral Activation Treatment for Depression.

Study participants were 58 adults who were receiving treatment in an inner-city residential substance abuse treatment facility and who had co-occurring SUDs and depression. Participants were randomly divided into two groups: one received LETS ACT, and the other (the control group) received only supportive counseling (SC). The LETS ACT group sessions focused on goals that can be set across many life areas to reinforce positive behavior and lifestyle changes, and participants were given pocket-sized manuals that included all treatment forms and homework exercises. SC included group sessions, unconditional support and reflective listening during those sessions, and the opportunity for participants to set the session discussion topics. Participants in both groups were similar demographically and in levels of depression and substance abuse.

Each treatment group attended five sessions over a 2.5-week period, and 48 of the subjects completed the study. The end-of-treatment assessment showed that participants in the LETS ACT group were significantly less likely to drop out of substance abuse treatment than those in the SC group—3.4 percent compared with 24.1 percent (which was the typical dropout rate for this substance abuse treatment center). However, a limitation of the study is that it did not assess the patients who dropped out of treatment, so it remains unknown why the LETS ACT group had a much higher retention rate than the SC group.

Although members of the LETS ACT group also showed significant increases in their overall levels of activation when compared with SC participants, no significant differences were found between the groups in relation to changes in environmental rewards from baseline to posttreatment. However, the authors noted that the facility used for the study was an inner-city center with limited resources, so it was difficult to diversify potentially rewarding activities. The authors suggested that the lack of diversity in potentially rewarding activities may explain the lack of an effect on reinforcement derived from these activities (i.e., environmental rewards).

In regard to depressive symptoms, both groups demonstrated a five-point reduction in depression scores on the BDI-II, but the authors hypothesized that the reduction in both groups may have resulted from the patients' abstinence from substance use rather than the group therapy sessions. Accordingly, the authors recommend that a long-term study be conducted to assess depression levels after treatment and to determine relapse rates among those who complete the LETS ACT program.

The authors suggest that, although LETS ACT may have promise in treating people with co-occurring SUDs and depression, additional research is needed to determine its value in increasing treatment retention rates.

Predictors and Causation of Co-occurring SUD and Depression

As evidenced in TIP 48, depression can contribute to substance abuse treatment dropout. Tate et al. (2011) analyzed predisposing factors (e.g., age, race, and gender) that make a person with an SUD and co-occurring depression more likely to remain in treatment. Although multiple studies have been conducted about factors predicting retention among patients who are either abusing substances or have depression, little research exists regarding such factors in people with co-occurring SUD and depression.

This study used two types of psychotherapy interventions—one that addressed depression and another that did not. The study group comprised 253 adults in an outpatient treatment program for veterans with co-occurring SUDs and depression. All participants received antidepressant medication, random toxicology screens, and assessment interviews. Participants also had to forgo any additional formal treatment for depression or substance dependence during the study, other than medication appointments with their psychiatrists and community 12-Step meetings.

On admission, eligible participants were sequentially assigned to the treatment group with the next starting date (starting dates occurred every 4 weeks, staggered by treatment type). Both groups received 36 treatment sessions over a 24-week period. One group received treatment using Integrated CBT (ICBT), a new group treatment that combines elements of CBT treatment for depression and CBT for developing coping skills related to addiction. The other group was treated through Twelve-Step Facilitation (TSF) therapy, based on the TSF intervention in Project MATCH (Matching Alcoholism Treatments to Client Heterogeneity). The approach was modified for a group format and solely addressed alcohol and drug use. Both ICBT and TSF have been empirically validated. The study tracked participant attendance and reasons for nonattendance.

After evaluation, researchers found that the main factors affecting session attendance were age, ethnicity, pretreatment substance used, level of social support, and a recent acute *health event* (e.g., a heart attack or stroke). Older adults attended significantly more sessions than younger patients, with the number of sessions attended increasing with a subject's age: 47.2 percent of subjects ages 20–39 dropped out of treatment compared with 26.5 percent of subjects ages 40–49, 22.9 percent of subjects ages 50–59, and 7.1 percent of subjects ages 60–69. Caucasians attended more sessions than did minorities (19.1 sessions compared with 14.8). Subjects who used only alcohol in the 30 days before treatment attended more sessions than those who used either only drugs or both alcohol and drugs (20.0 compared with 16.1). Those who had experienced a recent acute health event also attended more sessions than those who had not (23.6 compared with 19.5), as did participants with low social support as opposed to high support (22.1 compared with 18.9). Many other possible factors were found *not* to have a significant effect in either group, including severity of depression, neuropsychological functioning, and motivation for treatment.

Tate et al. acknowledged some limitations to the study, including that the sample comprised veterans, most of whom were male, Caucasian, and recipients of prior treatment; thus, the findings may not be generalizable to a larger population, particularly for first-time clients. Also, the study included only outpatients, so it may not be possible to generalize findings to people receiving other types of substance abuse treatment. In addition, the impact of random group assignment, as opposed to taking client preferences into account, is not known. The authors noted that the study was performed under the auspices of the Department of Veterans Affairs, so clients' treatment was free. Therefore, it is unknown whether dropout rates could be lowered if patients became responsible for some, or all, of the cost of care and would then, perhaps, feel more motivated to attend.

Najt, Fusar-Poli, and Brambilla (2011) support the original TIP 48's findings that depression at treatment intake is predictor of negative long-term treatment outcomes. The authors reviewed 27

articles about potential predictors and clinical outcomes of people with co-occurring disorders (CODs), including depression and substance abuse. The articles were located through an electronic search of medical and psychological databases and a manual search of bibliographies.

The articles reviewed supported the hypothesis that people with CODs have a poorer outcome prognosis (i.e., chance of a negative course of mental health or SUDs, such as relapse) than those with a single diagnosis. The articles also demonstrated that people who exhibit symptoms of an SUD prior to experiencing those of depression have better clinical outcomes than those who have a primary mood disorder (i.e., a mental disorder that occurs before an SUD). In addition, the articles suggested that poor outcomes in people with CODs were most likely in those with comorbid major depressive disorder or post-traumatic stress disorder. Other predictors were noted, but they were not specifically related to depression. Because major depressive disorder (MDD) could be a predictor of CODs, the authors noted that substance abuse prevention that is focused on this (or other mood disorders) could help prevent future COD problems.

Cohn et al. (2011) conducted a study to evaluate the distinctions between *primary depression* (a past or current depression episode that met the *Diagnostic and Statistical Manual of Mental Disorders*, Third Edition, Revised [DSM-III-R] [American Psychiatric Association, 1987]) criteria for MDD or dysthymia and which occurred independent of an SUD, or at least after 6 months of substance use abstinence) and *secondary depression* (a current or past depressive episode that met DSM-III-R criteria for MDD or dysthymia, and which happened after onset of an SUD or within 3 months of heavy alcohol or drug use) in persons receiving substance abuse treatment. This study was designed to examine whether people with primary depression have unique clinical and vulnerability characteristics.

For this study, the researchers recruited 286 individuals who had taken part in a larger study of 418 participants in four treatment outcome studies at the Rutgers University Center for Alcohol Studies. All patients had sought treatment for substance abuse, 76 percent were male, and 82 percent were undergoing inpatient treatment. The individuals had been screened for SUDs through the use of several standard objective tests, including the Structured Clinical Interview for DSM-III-R, the NEO Personality Inventory–Revised (NEO-PI-R), and several substance abuse-related measures. The subjects were assessed at the start of the study through retrospective reports to determine whether they had primary (21 percent of subjects), secondary (24 percent), or no depression (55 percent). Followup assessments took place 6 and 12 months after baseline. No actual treatment was provided to the participants; the study's goal was simply to determine distinctions between the subject groups.

Researchers found that subjects in the primary and secondary depression groups had equally severe SUDs and more severe SUDs than those subjects without depression. In addition, treatment-seeking patients who had primary depression had more severe and disruptive depression, higher levels of family risk for a MDD, and higher personality vulnerabilities (specifically, lower extraversion and higher neuroticism on the NEO-PI-R). The authors concluded that this study suggests that people with primary depression may need unique treatment that targets depression symptoms in addition to the SUD. In addition, early identification and targeted prevention could help people with primary depression prevent SUDs from developing.

One of the study's strengths was that the subject groups were demographically and diagnostically diverse. Limitations of the study included that researchers relied on retrospective reports to determine whether the depression was primary or secondary to the onset of the SUD. In addition, the three depression subtypes were not equally distributed among the four treatment sites from which the participants came, so the authors suggested that site be used as a covariate in future treatment outcome analyses. The authors further recommended that future studies examine causal pathways that connect personality vulnerability (common to those with primary depression) to future risk for SUDs and MDDs in people at risk for both disorders.

Boden and Fergusson (2011) performed a systematic literature review of 13 studies published since 1980 that pertain to a link between alcohol use disorders (AUDs) and MDD. This literature review evaluates arguments that a possible causal relationship exists between the two disorders. The studies reviewed were all longitudinal or cross-sectional epidemiological studies with at least 400 study participants, and all but one reported an adjusted odds ratio for the links between the two disorders. Although the authors acknowledged that the literature does not establish a definitive causal link between AUD and MDD, they argued that control of confounding factors in many of the studies suggests that a link may exist. The authors noted the moderately strong evidence that the presence of one disorder doubles a person's risk of having the other one. The most likely association is one in which AUD increases the risk of MDD. The authors also clearly state, however, that independent association may cause the association between the two disorders.

The article noted three other common explanations for the correlation found between the two disorders: (1) an AUD could activate MDD because of the impact of alcohol abuse on a person's social, economic, and legal circumstances, but this idea was not supported by the literature; (2) the two conditions are genetically linked in relation to neurotransmitter functioning, which was supported by the studies; and (3) alcohol use may lead to metabolic changes that increase the risk of MDD, which was also supported by previous studies.

Although the studies reviewed in this article suggested a causal link between AUD and MDD, the authors stated that additional research is needed regarding the association between the two disorders. For instance, several studies indicated that people with MDD may consume alcohol as self-medication, which suggests a causal pathway from depression to AUD; however, those studies did not assess a possible reversed causal process.

The authors identified several implications of the review's findings, including that some cases of MDD may remit with the treatment of AUD; therefore, treatment of MDD should include assessment and treatment of possible AUD. Similarly, a combination of treatments for AUD and MDD may be beneficial for individuals who have both disorders and report self-medicating with alcohol.

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July 1, 2011, Through December 31, 2011

Overview

Twelve research articles on depression and substance use disorders (SUDs) were identified for inclusion in this literature review update, which is organized around the following topics:

- Depression and SUD screening and assessment
- Efficacy of integrated treatment for alcohol use disorders (AUDs) and depression
- Efficacy of pharmacotherapy intervention
- Efficacy of psychotherapy or psychiatric treatment intervention

Depression and SUD Screening and Assessment

Given the prevalence of depression (or depressive symptoms) in individuals seeking SUD treatment and the negative impact depression can have on SUD treatment outcomes, selecting an effective depression screening tool for people with SUDs is a critical decision for mental health professionals.

Delgadillo et al. (2011) examined the reliability and validity of the Patient Health Questionnaire (PHQ-9) and its shorter version, PHQ-2, in a sample of individuals accessing substance use treatment in the United Kingdom. The PHQ-9 is a widely used nine-item questionnaire validated for depression screening. It yields scores ranging from 0 to 27, with scores of 5–9, 10–14, 15–19, and 20–27 representing mild, moderate, moderately severe, and severe depression, respectively.

The researchers compared the accuracy, reliability, and validity of PHQ-9 and PHQ-2 against the Revised Clinical Interview Schedule (CIS-R). The CIS-R elicits responses related to 14 symptom areas, based on diagnostic criteria of the International Statistical Classification of Diseases and Related Health Problems, 10th Revision (World Health Organization, 1992). The CIS-R can be used to assess six specific nonpsychotic disorders, including mixed anxiety and depressive disorder and depressive episode. It can also provide two (primary and secondary) diagnoses based on a symptom matching and scoring mechanism. A score of 12 or more indicates significant severity of symptoms.

The researchers recruited 103 patients from an outpatient drug treatment facility. The participant pool included individuals at various stages of treatment, and participation was not limited by substance use type (e.g., alcohol, heroin, stimulants). A subgroup of 60 patients participated in a retest 4 to 6 weeks after the initial assessment.

After participants completed the PHQ-9 and PHQ-2, trained clinical staff conducted a diagnostic interview using the CIS-R. The researchers analyzed the data from PHQ-9 and PHQ-2, assessed the performance of the measures relative to CIS-R and, via intra-class correlations, determined test-retest validity.

Almost half (49 percent) of the participants met diagnostic criteria for major depression. Based on their analyses, the researchers concluded that PHQ-9 was a valid and reliable depression

screening tool with a high internal consistency and "fairly robust" test-retest reliability. They also found a significant positive correlation between PHQ-9 and CIS-R (r=.76, p<.001). The shorter PHQ-2 version had modest test-retest reliability.

Study limitations include possible recruitment bias (participants received supermarket vouchers as incentives), although the researchers indicated that demographics, clinical factors, and drug use patterns were comparable to those found in other studies. Second, the CIS-R does not account for the sequencing of symptoms. That is, the temporal relationship between substance use and mental disorders in this group of participants is unknown. Third, while the 4-week period between test-retest was sufficient for the purposes of this evaluation, it did not allow for the observation of longer-term patterns of symptom stability and change.

Despite these limitations, the study results support the use of PHQ-9 as an accurate depression screening tool with strong validity and high internal consistency. The shorter version had only modest reliability and was not recommended based on the study results.

Staiger, Thomas, Ricciardelli, and McCabe (2011) conducted diagnostic interviews in a sample of individuals who were seeking outpatient treatment for SUDs in Melbourne, Australia. Their purpose was to identify and measure the type and severity of high-prevalence mental disorders—such as depression and anxiety—and SUDs.

Ninety-five participants (56 men, 39 women) were recruited. Individuals either responded to advertisements at the SUD treatment facility or were referred by case managers. The goal was to target individuals who were likely to have a high-prevalence mental disorder.

The researchers used a range of screening instruments and measures, including the Composite International Diagnostic Interview (CIDI), Version 2.1; PTSD (Posttraumatic Stress Disorder) Checklist, Civilian Version; Beck Depression Inventory (BDI-II); State-Trait Anxiety Inventory (STAI), Trait Version, Form Y; and Addiction Severity Index, 5th Edition.

The researchers found that more than 50 percent (n=48) of participants had used a drug by the age of 14. Approximately 63 percent (n=60) reported an AUD, the most common type of SUD among the participants. In regard to mental disorders, almost 76 percent (n=72) were diagnosed with a depressive disorder. In terms of the type and severity of high-prevalence mental disorders, 20 percent (n=19) were diagnosed with a single disorder, and 24 percent (n=23) were diagnosed with four or more high-prevalence mental disorders. In addition, those with a drug use disorder (which could include concurrent AUD) had significantly higher depression severity scores compared with the AUD-only group.

Due to the small sample size and the use of a nonrandom sampling technique, the researchers cautioned that the study results should not be generalized to the larger population.

Studies have also examined the standard definition and criteria of different types of depression. Dakwar et al. (2011) observed that the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition, Text Revision (DSM-IV-TR; American Psychiatric Association [APA], 2000) makes a distinction between depressive disorders that occur in association with substance use, intoxication, or withdrawal (referred to as *substance-induced depression* [SID]) and depressive disorders that are not associated with substance use (i.e., a primary mood disorder, referred to as

independent depression [ID]). These researchers compared SID and ID in a group of people dependent on cocaine, opioids, and/or cannabis. They hypothesized that:

- The severity of depressive symptoms would differ significantly between the two diagnostic categories of ID and SID.
- Regular drug use in the SID group would have started at a lower age.
- Patients with a history of SID would more likely be male and would be less likely to be contending with psychiatric comorbidities than those with a history of ID.

The researchers recruited 242 adults dependent on cocaine, opioids, and/or cannabis who had co-occurring depression. The subjects were seeking treatment at a university-based clinic. A modified structural clinical interview for DSM-IV-TR disorders (SCID) was administered during initial evaluation. The modification allowed researchers to distinguish between primary and secondary depression.

Of the subjects who met the eligibility criteria, 72.7 percent (n=176) had lifetime ID (dysthymic disorder [DD] or major depressive disorder [MDD]), and 27.3 percent (n=66) had lifetime SID. Further, 48.8 percent (n=118) had active ID, and 24.8 percent (n=60) had active SID.

The results indicated that men in the study sample were more likely than women to have SID, and women were more likely than men to have been diagnosed with ID. The researchers observed that men and women in the study had similar rates of DD, but female gender was a significant predictor of MDD. In addition, participants who were cocaine dependent had the highest prevalence of SID, while participants who were cannabis dependent had the highest prevalence of ID. The findings support other research that indicates that associations between primary and secondary depression vary among individuals affected by different substances of abuse.

The researchers acknowledged several study limitations. First, the design was cross-sectional, and the sample size was small. Second, several variables which may have been important to consider (e.g., the number of depressive episodes, drug use patterns) were not assessed. Third, even though uniform diagnostic procedures were followed, clinicians' subjective judgments may have contributed to the differences in measurements between ID and SID. Relative to this last limitation, interrater reliability was not assessed.

In a cross-sectional survey examining the prevalence of major depression in methamphetamine users, McKetin, Lubman, Lee, Ross, and Slade (2011) also made a distinction between major depression and substance-induced depression. They recruited 400 participants who were seeking treatment for methamphetamine use upon entry into 1 of 41 drug and alcohol treatment agencies located in Australia. Diagnostic measures included the CIDI (to assess major depression and methamphetamine dependence), the Short Form Health Survey (SF-12) (as a measure of physical and mental health), and the Opiate Treatment Index. Face-to-face interviews with each participant were conducted shortly after treatment entry.

Ninety-seven percent of participants met DSM-IV-TR criteria for methamphetamine dependence. Forty percent of the participants met the DSM-IV-TR criteria for a major depressive episode in the prior year. A further 44 percent of participants had what was deemed substance-

induced depression. Symptom profiles between the two groups were similar, but the group diagnosed with major depression exhibited higher levels of suicidal ideation and included more participants reporting depressive episodes that lasted two or more weeks. Both major depression and substance-induced depression were associated with mental health disability, as measured by the SF-12.

Other results of note include the finding of a significant relationship between substance-induced depression and the initiation of methamphetamine use at a young age. Also, cannabis and benzodiazepines were found to be significantly associated with depression. This is similar to the 2011 study by Dakwar et al. (above) that found cannabis dependence to be a significant predictor of MDD. Consistent with earlier studies, major depression was more common among female participants than male participants.

The authors stressed the difficulty in distinguishing major depression from substance-induced depression. The difficulty partly lies with the need to identify a temporal relationship between the onset of the substance use and depressive symptoms. The researchers also noted the difficulty in diagnosing depression when patients were using methamphetamines, as the drugs' acute effects (e.g., insomnia) and withdrawal symptoms (e.g., depressed mood) overlap with the symptoms of depression. The researchers noted that further research is needed to determine whether methamphetamine use increases the risk of major depression.

Pilowsky, Wu, Burchett, Blazer, and Ling (2011) examined the relationship between depressive symptoms, substance use, and HIV-related sexual and injection risk behaviors among people who were opioid dependent and seeking treatment. The researchers recruited 343 participants (233 men and 110 women) from inpatient (n=113) and outpatient (n=230) sites participating in the National Drug Abuse Treatment Clinical Trials Network.

Data were gathered at baseline (i.e., prior to addiction treatment beginning). Depressive symptoms were evaluated using the Psychiatric Domain of the Addiction Severity Index (ASI). Individuals who responded affirmatively to a single question from the ASI about depression (i.e., sadness, hopelessness, lack of interest, and difficulty with daily function) were considered having current symptoms of depression. Anxiety symptoms and suicidal ideation and attempts were also assessed via the ASI (one question and two questions, respectively). The Short Form Health Survey (SF-36) was used to validate the "depressive symptoms" category (i.e., the variables measured in the SF-36 were expected to correlate with depressive symptoms). The 36-item, self-administered form measures health-related quality of life in physical and social functioning, such as role limitations due to physical health and emotional problems. Risky sexual and injection behaviors were measured via the HIV Risk Behavior scale. Substance use was measured via the ASI.

The results showed a significant association between depressive symptoms and increased likelihood of injection risk behaviors among people seeking treatment for opioid dependence. This association—even after adjustment for confounding demographic variables—was shown to be independent of other co-occurring substance use (i.e., amphetamine or cocaine use). No positive association was identified between depressive or anxiety-related symptoms and an increased likelihood of risky sexual behaviors.

The researchers acknowledged several study limitations. First, the participant group included only those who were seeking treatment; the results may not be generalizable to other populations. Second, while the researchers sought to enhance validity via the SF-36, assessment of depressive symptoms consisted of a single question from the ASI. Third, as the study was cross-sectional in design, causality of results cannot necessarily be inferred.

Efficacy of Integrated Treatment for Alcohol Use Disorders and Depression

Farren, Snee, and McElroy (2011) studied the impact of integrated treatments for patients with a mood disorder (either bipolar disorder or depression) and co-occurring substance dependence. Previously, the researchers had studied short-term efficacy of an integrated psychotherapy and pharmacotherapy treatment program for affective disorders and AUDs. For the current study, which took place in Ireland, they developed a program that integrated psychotherapy and pharmacotherapy for co-occurring mental and substance use disorders and followed the treatment population for two years.

The program consisted of three stages:

- Detoxification and mood stabilization
- 4-week inpatient program
- After care on a weekly basis for the first 2 months, biweekly for the second 2 months, and monthly for the last 2 months

Participants underwent followup evaluation at four points—at discharge and 3 months, 6 months, and 2 years after treatment.

The researchers used the *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition (DSM-IV; APA, 1994) criteria for alcohol dependence and mania/hypomania or major depression, and assessment was based on the SCID (Research Version). The researchers found 189 individuals (ages 17 to 76) who met the study criteria (co-occurring mood and alcohol use disorders). The sample consisted of 51 percent women and 49 percent men.

After participants underwent alcohol detoxification and mood stabilization, a single psychologist assessed the participants using a range of screening instruments; urinary drug screening and blood tests were administered to assess substance use. Assessment tools included a Timeline Followback, Young Mania Rating Scale, Beck Depression Inventory, Beck Anxiety Inventory Scale, Alcohol Use Disorder Test, and Drug Abuse Screening Test. At each followup point, participants completed their assessments. At the 3-month and 6-month followups, they also provided information about their current medications, drug or alcohol use, aftercare attendance, employment, and any self-harming or parasuicide incidents that may have occurred.

The study had an overall retention rate of 75.1 percent at 2-year followup. Study results showed significant abstinence rates at 2-year followup, suggesting efficacy of the treatment program for patients with a mood disorder and co-occurring AUDs. They found that people with co-occurring bipolar disorder or depression and alcohol dependence could be treated successfully in the "triple-integrated" treatment program. They also found significant gender differences in treatment outcomes. Female patients reported higher levels of abstinence (56.3 percent) at 2-year

followup than men (29.3 percent). In addition, women with bipolar disorder reported higher levels of depression and anxiety at 2-year followup than men with bipolar disorder, although this was not the case in the depressed group or in the overall study.

The researchers noted the following study limitations. First, generalization of results is limited in that this was not a randomized controlled study. Second, the program relied on self-reports about substance use at the 2-year followup because collection of blood samples was not possible. Nevertheless, the preliminary findings from this study suggest that people with co-occurring bipolar disorder or depression and alcohol dependence can be treated successfully. It is important to note that although the authors specified that components of the study included psychotherapy and outpatient therapy, they did not include information about the nature of the psychotherapy or outpatient therapy that was included in the program except, perhaps, as it may have been part of "aftercare," which they described as patients meeting with a consultant or attending self-help groups.

In a meta-analysis of supplemental treatment for depressive and anxiety disorders in patients with alcohol dependence, Hobbs, Kushner, Lee, Reardon, and Maurer (2011) synthesized the effects from 15 randomized trials that examined supplementing AUD treatment with a psychiatric treatment for co-occurring anxiety and depressive disorders. To facilitate data analysis, the authors grouped anxiety and depressive disorders under what they termed "internalizing disorders," assuming that both anxiety and depression share the same underlying construct. Their goal was to examine the effect of psychiatric treatment on anxiety/depression outcomes in patients with AUDs and on the improvement of AUD treatment outcomes.

Building on and extending two previous quantitative reviews, one of which was a formal meta-analysis of current literature, the authors designed the current meta-analysis to examine clinical benefits of integrated treatment for both internalizing disorders and AUDs. The authors searched OVID Medline and PsycINFO databases. To supplement the search results, they conducted a bibliographic review of studies and identified additional resources from the current literature. The search identified 15 studies that met the inclusion criteria. Together, the studies had 1,310 subjects randomly assigned to treatment or control groups.

Of the 15 studies, 12 tested a pharmacological treatment and 3 tested a cognitive–behavioral therapy (CBT) intervention for a co-occurring internalizing disorder. Only two of the CBT studies reported usable outcomes in treating panic disorder or depression (both internalizing disorders). Six of the 15 studies treated a co-occurring anxiety disorder and 9 treated a co-occurring depressive disorder.

To assess anxiety outcome measures, the authors used the Hamilton Rating Scale for Anxiety (HAM-A), Social Phobia Inventory, Symptom Checklist-90, and Anxiety Discomfort Scale. For depression outcome measures, they used the Hamilton Rating Scale for Depression (HAM-D), the Beck Depression Inventory, the Profile of Mood States, and the Montgomery and Asberg Depression Rating Scale.

For the study, the authors developed measures of alcohol-related outcomes in four domains—abstinence (absence of alcohol consumption during followup), frequency (number of drinking days and percent days drinking), intensity (number of heavy drinking days per week), and

quantity (number of drinks per drinking day). They also defined an overall alcohol outcome composite measure by averaging the entire alcohol outcome effect sizes. The researchers tested the effects of treatment type, disorder type, and magnitude of the internalizing treatment on the alcohol outcome.

Synthesized effects from the meta-analysis indicate that psychiatric treatments for co-occurring internalizing disorders are moderately effective in populations with AUD and add clinically significant value to AUD treatment even though the overall effects may be small.

The researchers identified typical methodological issues as limitations of the study. Chief among these issues are the stringent inclusion criteria, which excluded many studies that could otherwise be potentially relevant to the study topic. The generalizability of the study results is also limited to those undergoing AUD treatment and thus cannot be applied to those under drug treatment. In addition, the lack of consistency in how different studies reported study outcomes presented a challenge in summarizing and presenting the effect size.

Efficacy of Pharmacotherapy Intervention

Oliveto et al. (2011) looked into the efficacy of sertraline in delaying relapse in individuals with depressive symptoms who were cocaine dependent and recently abstinent. They selected sertraline as they wanted to examine the effects of an antidepressant that would inhibit the reuptake of both serotonin and dopamine (both of which are involved in depression and substance dependence). The study was a rigorous, double-blind, randomized controlled clinical trial.

Individuals were screened for cocaine dependence per DSM-IV criteria via the SCID. Depression was measured via the Hamilton Depression Scale (all participants had a score >15). In addition, the ASI and the Cocaine Selective Severity Assessment were completed at intake. Participants could earn up to $250 for attending required treatment sessions and returning urine collection specimens.

Eighty-six individuals (53 males and 33 females, ages 18 to 52) who were seeking treatment for cocaine dependence met the study inclusion criteria and were randomly assigned to either the sertraline or placebo group.

The 12-week clinical trial was divided into four phases: enrollment, residential stay, outpatient, and analysis. The treatment program consisted of a 2-week residential stay followed by 10 weeks of outpatient participation. During weeks 1–3, participants attended a Department of Veterans Affairs Substance Abuse Day Treatment Program. During weeks 4–12, participants attended a weekly 1-hour, individual CBT session. During weeks 3–12, participants were onsite at the outpatient treatment research program at least 3 days per week. Of the 86 participants enrolled in this study who met inclusion criteria, 27 dropped out prior to week 2. Data from the 59 participants who remained beyond the 2-week residential portion were analyzed. Thirty-four participants completed the 12-week clinical trial.

Results showed that participants in the placebo group relapsed significantly sooner than the sertraline group. Sertraline use did not appear to be related to the decline in depression

symptoms, as the decline was observed in both groups. These findings indicate that sertraline may have efficacy for cocaine dependence and may delay time to relapse, particularly in patients who are recently abstinent from cocaine use.

A meta-analysis study conducted by Pedrelli et al. (2011) investigated the efficacy of antidepressants in the treatment of MDD and DD in patients receiving methadone maintenance treatment (MMT). After searching Medline/PubMed databases, the authors found four studies for inclusion. The studies were randomized, double-blind, placebo-controlled clinical trials published between January 1, 1980, and June 30, 2010. The studies represented 317 patients, with 164 randomized to receive antidepressant treatment and 153 to receive placebo.

The authors analyzed the clinical response rates of the pooled studies. They found no statistically significant difference in response rates between antidepressant therapy and placebo treatment for patients receiving MMT.

The meta-analysis has several limitations. Only four studies met the selection criteria, and the studies differed from one another in several important aspects, including variability in the amount and type of psychosocial treatment patients received and the different classes of antidepressants used. The small numbers of patients enrolled in the studies (e.g., fewer than 50 in two of the studies) and the potential possibility of drug interactions between antidepressants and methadone (e.g., changes in methadone serum levels could affect antidepressant levels) further limited the findings of this meta-analysis. The authors suggested the need for further study to identify effective classes of antidepressants and psychosocial intervention for patients with co-occurring opioid dependence and depressive symptoms in MMT.

Efficacy of Psychotherapy or Psychiatric Treatment Intervention

Granholm et al. (2011) examined whether neuropsychological functioning was related to the treatment efficacy of two psychotherapy interventions for co-occurring depression and SUDs in a sample of veterans receiving outpatient treatment. The study was a secondary analysis of data from a previous randomized clinical trial performed by the researchers.

The researchers compared the outcomes of Integrated Cognitive Behavioral Therapy (ICBT) and the Twelve-Step Facilitation Therapy (TSF). Based on Cognitive–Behavioral Depression Treatment and Cognitive–Behavioral Coping Skills Training of Addiction (the latter integrated into the former), ICBT consisted of three modules:

- The cognitions module emphasized identifying maladaptive thoughts, creating alternative thoughts, and rehearsing these thought-challenging techniques to help prevent relapse to substance use or increased depressive symptoms.
- The activities module included identifying, scheduling, and assessing the effectiveness of new activities to increase positive affect and help manage pressure to relapse.
- The social module consisted of assertiveness and communication training to help increase positive social interactions and resist social pressure to use.

TSF is a therapist-guided group intervention based on the Alcoholics Anonymous 12-Step principles. As a common form of treatment intervention in different settings, TSF was used as

the control condition in this study. The version used was modified from the manual that was developed and tested in the Matching Alcoholism Treatment to Client Heterogeneity (MATCH) study.

A total of 164 veterans with MDD and co-occurring alcohol, cannabis, and/or stimulant use disorders participated in the study. Participants were randomly assigned to either the ICBT or the TSF group. Both groups received two consecutive 12-week treatments provided in two phases. In Phase I, participants attended an hour-long group session twice weekly for 12 weeks and monthly individual medication management visits. In Phase II, the hour-long group sessions were reduced to once a week for 12 weeks. Assessments took place during intake (baseline), the end of Phase I (12 weeks), the end of Phase II (24 weeks), and thereafter quarterly for an additional 12 months. Participants underwent a diagnostic assessment using the CIDI. Additional assessment instruments included the Timeline Followback for assessing alcohol and drug involvement and the 21-item HAM-D for structured assessments of depression and substance use. Random toxicology screens were conducted to confirm the self-reported data.

The researchers used a variety of measures to test neuropsychological functioning in the following domains:

- Attention and speed of processing
- Verbal IQ
- Verbal learning and memory
- Visuospatial construction and memory

Contrary to the authors' hypotheses:

- Participants with poorer neuropsychological functioning in the ICBT group had better substance use outcomes than participants with poorer neuropsychological functioning in the TSF group.
- The ICBT participants with poorer neuropsychological functioning also showed a greater reduction in depressive symptoms compared with ICBT participants who had better neuropsychological functioning.
- Participants in the TSF group who had poorer neuropsychological functioning showed less of a reduction in depressive symptoms compared with TSF participants with better neuropsychological functioning.

Results suggest that participants with poorer neuropsychological functioning may benefit more from ICBT than TSF in the treatment of substance use and depression.

The study has some limitations. The participants were primarily male and exclusively veterans, and most had histories of multiple treatments for co-occurring depression and SUDs; the results may not be generalizable to other populations. Although all participants were taking prescribed medication, the researchers did not monitor medication compliance or other variables related to pharmacological treatment, so the effects of medication compliance and noncompliance on study results are unknown. Also, research staff members were not blinded to the group treatment assignment, which could have resulted in bias.

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January 1, 2012, Through June 30, 2012

Overview

Many articles about depression and substance use disorders (SUDs) were published during the 6-month period of this review, but only one was selected for this update. TIP 48 mentions the importance of self-efficacy in an individual's recovery from SUDs. Specifically, the selected article addresses how depression can affect abstinence self-efficacy (ASE), which is a person's confidence that he or she can avoid drinking alcohol or using drugs in different situations. It also addresses the role of ASE in relapse.

Depression and Self-Efficacy

Greenfield, Venner, Kelly, Slaymaker, and Bryan (2012) examined how depressive symptoms affect ASE in 302 adults (73.8 percent men, 26.2 percent women) in an inpatient treatment program in Minnesota.

Participants completed several measures at intake, midtreatment, end of treatment, and at 3-month followup. Measures included (but were not limited to) the following:

- Brief Symptom Inventory 18 (BSI 18)—a tool for measuring depressive symptoms
- Structured Clinical Interview (SCID-I/P)—a tool for diagnosing Major Depressive Disorder (MDD)
- Alcohol and Drug Use Self-Efficacy (ADUSE) scale—a tool for establishing an individual's ASE

The authors found that at intake, participants with MDD (or more depressive symptoms) had significantly lower ASE, especially in situations that involved negative affect (e.g., anger, depression, anxiety). They also found that ASE significantly increased during the course of SUD treatment regardless of participants' depression status. At each assessment point throughout the study, participants with higher BSI 18 scores also had lower ASE scores. At the 3-month followup, the ASE predicted abstinence status, whereas neither BSI 18 scores nor depressive status did.

Study results also indicated that although MDD may influence self-efficacy in negative affect situations, it did not appear to be associated with an overall sense of low ASE. They pointed out that when lower ASE manifests in negative affect situations, the combination may become a trigger for relapse. This may be especially important for adults with MDD because they tend to have more frequent negative affect experiences, and the impact of these experiences on their ASE may put them at high risk for relapse. The authors concluded that adults with MDD in SUD treatment might benefit from treatment that focuses on skills for increasing distress tolerance and managing negative affect.

Study limitations include the fact that participants were largely male (73.8 percent), Caucasian (95.3 percent), and relatively young (i.e., the average age was 20.35 years and ranged from 18 to 24), so the results may not be generalizable to the general treatment population.

Reference

Greenfield, B. L., Venner, K. L., Kelly, J. F., Slaymaker, V., & Bryan, A. D. (2012). The impact of depression on abstinence self-efficacy and substance use outcomes among emerging adults in residential treatment. *Psychology of Addictive Behaviors, 26*(2), 246–254.