TREATMENT OF COMORBID DEPRESSION AND ALCOHOL USE DISORDERS IN AN INPATIENT SETTING: COMPARISON OF ACCEPTANCE AND COMMITMENT THERAPY VERSUS TREATMENT AS USUAL

A Dissertation by

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TREATMENT OF COMORBID DEPRESSION AND ALCOHOL USE DISORDERS IN AN INPATIENT SETTING: COMPARISON OF ACCEPTANCE AND COMMITMENT THERAPY VERSUS TREATMENT AS USUAL

I have examined the final copy of this Dissertation for form and content and recommend that it be accepted in partial fulfillment of the requirement for the degree of Doctor of Philosophy with a major in Clinical Psychology

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DEDICATION

To my family.

Especially to you, Jeff, thank you for your love and support over the years.
To live in the moment
never regretting the past
nor dwelling on the future
ACKNOWLEDGEMENTS

First, I would like to thank the professors at Wichita State University, especially Dr. Robert Zettle for educating me about Acceptance and Commitment Therapy (ACT) and for keeping me grounded during this arduous journey. I would also like to thank Dr. Elsie Shore for sparking my interest in the substance abuse field and for enlightening me on the delicacies of comorbidity.

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Finally, I would like to thank the 2005-2006 Internship class and MSH Clinical Supervisors for their support and assistance over the year.
ABSTRACT

Depression and alcohol use disorders are the most frequently identified problems within outpatient and inpatient mental health and substance abuse treatment facilities. As a result, the identification of an effective approach for the treatment of these comorbid conditions has become essential. The goal of this study was to compare a treatment, acceptance and commitment therapy (ACT), which sought to weaken experiential avoidance as a potentially common pathogenic process that may help support comorbid disorders to a treatment as usual (TAU) approach.

Individuals committed to the Mississippi State Hospital with diagnoses of comorbid depressive and alcohol use disorders were randomly assigned to receive either TAU \((n = 12)\) or ACT \((n = 12)\). They were administered a battery of measures at pretreatment, during treatment, and prior to discharge, which assessed level of depression and alcohol use and alcohol-related issues as outcome variables, as well as level of experiential avoidance and therapeutic alliance between counselor and participants as process measures.

Results indicated that ACT participants required a smaller dose of treatment until they met criteria for discharge and were significantly less depressed than their counterparts who received TAU. An analysis of the process measures suggested that both a reduction in experiential avoidance as well as enhancement of therapeutic alliance contributed to the differential treatment effect associated with ACT.

Implications of the findings for the treatment of comorbid depression and alcohol use disorders, in particular, are discussed as well as those for dealing with co-occurring presenting problems more broadly. Weaknesses and limitations of the current study are discussed with the goal of strengthening future related research.
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CHAPTER I

INTRODUCTION & LITERATURE REVIEW

It is estimated that approximately 50% of those suffering with severe mental health disorders, such as major depression or schizophrenia, are also affected by substance use disorders, such as alcohol or cocaine abuse or dependence (Kessler, 1994; Kessler et al, 1996; Regier et al., 1990). Approximately 41% of individuals with a lifetime substance abuse disorder also have a lifetime history of at least one psychiatric disorder (Judd, Thomas, Schwartz, Outcalt, & Hough, 2003). Individuals with more than one disorder, for example with both a mental health and a substance use disorder, are frequently referred to as having a “dual diagnosis” or as exhibiting a “comorbid” condition. In the United States alone in 2002, 33.2 million (or approximately 11%) individuals suffered from a serious psychiatric or a substance use disorder, while four million (or approximately 4%) people suffered from both a serious psychiatric and a substance use disorder (SAMHSA, 2004). The prevalence of dually diagnosed persons is estimated between 30-60%, and as high as 86% for particular subgroups (Dixon et al., 1989; Ford, Snowden, & Walser 1991; Galanter, Castenda, & Ferman, 1988; Greenfield, Weiss, & Tohen, 1995; Lehman, Myers, Corty, & Thompson, 1994; Regier et al.; Warner et al., 1994).

In order to understand the terminology used throughout this document, some commonly used terms will first be defined. The terms “psychiatric disorder” or “mental health disorder” refer to disorders listed in the Diagnostic and Statistical Manual of Mental Disorders, 4th Edition Text Revision (DSM-IV-TR; American Psychiatric Association, 2000). “Substance use disorders” is one of the categories of psychiatric disorders listed in the DSM-IV-TR and refers to both abuse and dependence of substances.
According to the *DSM-IV-TR* (2000), substance abuse is the “maladaptive pattern of substance use manifested by recurrent and significant adverse consequences related to the repeated use of substance. The substance-related problem must have occurred repeatedly during the same 12 month period or been persistent” (p. 198). According to the *DSM-IV-TR*, substance dependence, by contrast is a:

cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems. There is a pattern of repeated self-administration that can result in tolerance, withdrawal, and compulsive drug taking behavior….occurring at any time in the same 12-month period (p. 192).

Of the mental health disorders in the *DSM-IV-TR* (2000), this project specifically focused on the comorbidity of alcohol use disorders and unipolar depression. For clarity, “alcohol use disorders” encompass both alcohol abuse and alcohol dependence as delineated by the *DSM-IV-TR*. “Unipolar depression” includes major depressive disorder, dysthymic disorder, and depressive disorder not otherwise specified. In subsequent sections, the following topics will be covered: (a) costs of dual diagnosis; (b) prevalence of both alcohol use disorders and unipolar depression; (c) prevalence of comorbidity of alcohol use disorders and unipolar depression; (d) treatment issues and approaches for alcohol use disorders, unipolar depression, and comorbidity of both; and finally (e) a rationale for the current study.

**Costs of Dual Diagnosis**

Mental health issues appear to extract a significant cost to society. According to the National Institute on Drug Abuse (NIDA) and National Institute on Alcohol Abuse and Alcoholism (NIAAA) (1998) estimates, alcohol abuse cost the nation $166.543 billion in 1995. By updating
NIDA and NIAAA’s 1995 estimates of alcohol abuse, and figuring in population growth and inflation, it is estimated that alcohol abuse cost the nation $212.680 billion in the year 2000.

The costs related to depression are considerable as well. According to the Health Services Research and Development Service (2004), the United States spends about $44 billion per year in both direct (i.e., medical care) and indirect (i.e., lost productivity) costs related to depression. According to a recently issued report by the World Health Organization (WHO; 2001), serious mental illness (including depression, bipolar disorder and schizophrenia) ranks first in terms of causing disability in the United States, Canada, and Western Europe.

While both categories of disorders cause a significant financial strain on society, the combination of mental health and substance abuse disorders presents an even greater burden. Individuals with a dual diagnosis tend to have even more problems than individuals with a single, “pure” psychiatric disorder (Johnson, 2000); such as worsened psychiatric symptoms, lack of treatment compliance, and poorer prognosis (Addington & Addington, 1997; el-Mallaka, 1998; Lehman, Myers, Thompson, & Corty, 1993; Lesswing & Dougherty, 1993); increased use of treatment and service resources (Bartels et al., 1993; Brunette, Mueser, Xie, & Drake, 1997; Schmidt, 1992); increased risk of harmful behaviors, such as suicide, self-destructive behaviors, and poor physical health habits (el-Mallaka; Hofman & Dubovsky, 1991); fewer social supports or financial resources to utilize for treatment, other than on an outpatient basis (Rice, Kelman, Miller, & Dunmeyer, 1990; Sloan & Rowe, 1995; U.S. Dept. of Health and Human Services, 2000); increased expenditure on hospitalization and criminal justice involvement (el-Mallaka; Grossman, Haywood, Cavanaugh, Davis, & Lewis, 1995; Lehman et al.; Swindle, Phibbs, Paradise, Recine, & Moos, 1995); and decreased work productivity and unemployment (el-Mallaka; Kessler, 1995).
In addition to the financial costs, one of the greatest risks for individuals with either a substance use disorder or a depressive disorder is an increase in suicidality. In 1999, an estimated 730,000 people in the U.S. attempted suicide and 29,199 persons succeeded in doing so (Hoyert, Arias, Smith, Murphy, & Kockaneck, 2001). Suicide is the eleventh leading cause of death overall and the third leading cause among 15 to 34 year olds (Hoyert et al.; Mann, 2002). The majority of people who attempt suicide and about 90% of suicide victims have a diagnosable psychiatric disorder (Mann). Alcohol is the number one drug of abuse found among those who commit suicide, and alcohol dependence is a common diagnosis among people who attempt suicide (Berglund, 1984). Major depression and alcohol dependence are the most frequent comorbid psychiatric disorders in patients who commit suicide (Berglund). Seventy percent of alcoholics with comorbid depression report that they have made a suicide attempt at some point in their lives and as many as 85% of individuals who commit suicide suffer from alcohol dependence or depression (Cornelius, Salloum, Day, Thase, & Mann, 1996).

Prevalence Rates

Prevalence of Alcohol Use Disorders

In the general population, the lifetime prevalence of alcohol use disorders is reportedly between 13.5-15% (DSM-IV-TR, 2000; Mueser, Noordsy, Drake, & Fox, 2003) and new cases of alcohol dependence are approaching 5% every year. Approximately 10% of women and 20% of men will meet the diagnostic criteria for alcohol abuse, while 3-5% of women and 10% of men will meet the diagnostic criteria for alcohol dependence during their lifetime (Sadock & Sadock, 2003). Lapham et al. (2001) reported that 50% of women and 33% of men with a specific history of an alcohol use disorder have at least one other psychiatric disorder. According to
Sadock and Sadock, about 30-40% of individuals with an alcohol-related disorder, also meet the diagnostic criteria for major depressive disorder during their lifetime.

Prevalence of Unipolar Depression

According to the *DSM-IV-TR* (2000), the lifetime prevalence of major depressive disorder varies depending on gender. For women, the lifetime prevalence rate is between 10-25%, while the point prevalence rate is between 5-9%. By contrast, for men, the lifetime prevalence rate is between 5-12%, while the point prevalence rate is between 2-3%. While the mean age of onset for major depressive disorder is about 40, 50% of all patients have an onset of this disorder between 20-50 years old. However, recent epidemiological data suggest that the incidence of major depressive disorder may be increasing among people younger than 20, and this increase, in turn, may relate to the increase use of alcohol and drugs in this age group (Sadock & Sadock, 2003). When looking at prevalence rates of adults who develop dysthymic disorder, women have a two to three times greater prevalence rate than men (*Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*; American Psychiatric Association, 1994). Dysthymic disorder appears to be more common among the unmarried, young, and those with low incomes (*DSM-IV-TR*). The lifetime prevalence of dysthymia is approximately 6%, while the point prevalence is approximately 3% (*DSM-IV-TR*). The lifetime prevalence of depressive disorder not otherwise specified is on average 5% of the general population (Sadock & Sadock). According to the National Epidemiologic Survey on Alcohol and Related Conditions, the prevalence for substance-induced mood disorder is less than 1% of the population (Grant et al., 2004). The study did not encounter any instances of substance-induced mood disorder.
Prevalence of Dual Diagnosis

The lifetime prevalence of dual disorders is collectively much higher than the rates of single disorders. Of individuals suffering from a severe mental illness, approximately 50% also experience a diagnosable substance use disorder at some point in their lifetime, and 25-35% of those individuals exhibit an active substance use disorder (Kessler, 1994; Kessler et al., 1996; Mueser et al., 2003; Regier et al., 1990). According to the Epidemiologic Catchment Area (ECA) Study, the lifetime prevalence of any mood disorder and any alcohol use disorder is 21.8%. For major depression and any alcohol use disorder the prevalence is 16.5%, and for dysthymic disorder and any alcohol use disorder the prevalence is 20.9% (Regier et al.). No data are available on the prevalence of depressive disorder not otherwise specified and any alcohol use disorder. Of those individuals specifically diagnosed with alcohol related disorders, 30-40% will also meet the diagnostic criteria for major depressive disorder sometime during their lifetime. Recent data indicate that alcohol dependence is more strongly associated with a coexisting diagnosis of depression in women than in men (Sadock & Sadock, 2003).

According to Regier et al. (1990), alcohol use disorders have the highest prevalence rates (5.6-7.9%) of any substance use disorders. Of psychiatric disorders, the prevalence rates for affective disorders (8.3%) are the second most common form of psychiatric disorder following anxiety disorders (14.6%). However, when comorbidity rates of anxiety disorders and depressive disorders are compared with alcohol use disorders, the prevalence rate is reversed. According to Regier et al., the rates of comorbidity between alcohol use disorders and anxiety disorders is 17.9%, while the rates of comorbidity between alcohol use disorders and any depressive disorder is as high as 20.9%. According to research conducted on both outpatient and inpatient mental health and substance abuse treatment services, major depression was the most prevalent Axis I
diagnosis (60%) and alcohol was the most prevalent substance of abuse (47%; Judd, Thomas, Schwartz, Outcalt, & Hough, 2003). When prevalence rates are combined, the most common combination of comorbid psychiatric problems would be expected to be clients presenting with symptoms of both unipolar depression and an alcohol use disorder (Regier et al.). This presents an obvious challenge to mental health care providers attempting to treat individuals with these comorbid disorders. For example, alcohol use disorders may accelerate the exacerbation of depressive symptoms and contribute to the continued course of the unipolar depressive symptoms. Alternatively, depression may precipitate abuse of alcohol with it used as a way to alleviate the depressive symptoms. Based on the purported prevalence of the two disorders, this study examined further the challenge of providing efficacious services to clients exhibiting both depression and alcohol use disorders.

Relationship Between Depression and Alcohol Use Disorders

As already suggested, there may be several possible processes that account for comorbidity between depressive symptoms and alcohol use disorders (Daley & Moss, 2002). As described above, the alcohol use disorder may precipitate the symptoms of unipolar depression due to the chemical effects of the alcohol itself, as a central nervous system depressant (McNeece & DiNitto, 2005). A second possible process is that alcohol use disorders may develop after the symptoms of unipolar depression, possibly as a way to alleviate (i.e., “self medicate”) depressive symptoms. Another possible process may be that alcohol use disorders and unipolar depression occur simultaneously, possibly due to an environmental influence (Daley & Moss), such as death of a loved one, sudden unemployment, or a significant stressor within the family. A fourth possible process is that depression may be an emotional reaction to harm or damage associated with an alcohol use disorder, such as loss of job, divorce, alienation of friends, financial
difficulties, and so on. It is also possible that an individual with an alcohol use disorder may experience symptoms of depression following a prolonged period of abstinence, which Daley and Moss explain as resulting from biological causes. Finally, it is also possible that depressive symptoms and alcohol use may develop independent of each other and not be interrelated at all yet still be presented as comorbid conditions by clients.

**Treatment Issues**

Although there has been increasing research on strategies for treating alcohol use disorders, most of the research has focused on treatment of clients with a single diagnosis of alcohol abuse or alcohol dependence and not on the treatment of dual diagnoses. Likewise, more extensively researched therapies for the treatment of psychiatric disorders, for the most part, have not been evaluated in patients with comorbid alcohol use disorders.

*Treatment of Alcohol Use Disorders*

While many approaches have been used in treating alcohol use disorders, including individual and group therapy, inpatient and outpatient treatment, Alcoholics Anonymous and other self-help groups, and pharmacotherapy, only a handful have received empirical support. Moreover, approaches that have been suggested by Volkow (2003) as possible treatments for alcohol use disorders, (i.e., relapse prevention, the matrix model, supportive-expressive psychotherapy, and motivational enhancement therapy) generally lack sufficient empirical support.

**Community reinforcement approach.** One approach to the treatment of alcohol use disorders receiving some empirical support is the community reinforcement approach (CRA; Azrin, 1976; Hunt & Azrin, 1973). The community reinforcement approach aims to achieve abstinence by eliminating positive reinforcement for drinking by enhancing positive reinforcement for sobriety.
This approach integrates several treatment components, including building the client’s motivation to quit drinking, helping the client initiate sobriety, analyzing the client’s drinking pattern, increasing positive reinforcement for abstinence, learning new coping behaviors, and involving significant others in the recovery process. Building motivation to quit drinking is done through identification of positive reinforcers (i.e., praise and shared pleasant events) as well as identification of negative consequences of past drinking patterns obtained through an empathetic motivational interviewing style (Miller & Rollnick, 1991).

The next stage is to assist clients in initiating sobriety by identifying specific goals for achieving abstinence through the use of a sobriety sampling technique. For example, one week the client’s goal may be to strive toward abstaining from alcohol for one week. Once clients are able to show mastery of the initial goal, future goals are aimed at increasing the abstinence rate. Increasing positive reinforcement for abstinent behaviors is attained through a process of reengaging clients in social activities unrelated to drinking and helping them to organize their daily lives. Coping behaviors are not only learned in therapy sessions, but are also assigned as homework to practice outside of the sessions. All of the components of this approach are adjusted to the individual’s needs.

Numerous studies have demonstrated the efficacy of CRA in the treatment of alcoholism (Azrin, Sisson, Meyers, & Godley, 1982; Hunt & Azrin, 1973; Mallams, Godley, Hall, & Meyers, 1982). For example, in a study by Hunt and Azrin, CRA was compared with a traditional disease model approach for alcohol dependent clients in inpatient treatment. Individuals who received CRA improved more than those who received traditional treatment. In particular, the CRA clients drank substantially less and less often, had fewer institutionalized days and more days of employment, and exhibited a greater level of social stability compared
with individuals treated with the traditional approach. Another study, by Smith, Meyers, and Delaney (1998), compared CRA with standard 12-step oriented group therapy. Individuals treated with CRA showed significantly improved outcomes during a 1-year follow up period. Alcohol consumption of individuals in the CRA group was almost completely suppressed during the 1-year follow up, whereas individuals in the standard care group reported drinking on about 40% of the days as well as high levels of intoxication.

*Cue exposure adjunctive to inpatient treatment for alcohol dependence.* Another approach that has received empirical support in addressing alcohol use disorders is the use of cue exposure adjunctive to inpatient treatment for alcohol dependence. Cue exposure is a technique that considers tolerance, withdrawal, and cravings for drugs/alcohol as conditioned states that are amenable to change or extinction (Eliany & Rush, 1992). Cue exposure treatments expose individuals to alcohol-related cues, (i.e., exposing an alcohol abuser to a bottle of beer) allowing the individual to practice responses to alcohol-related situations that are likely to occur in real-life situations. Cue exposure is often taught in conjunction with coping skills for dealing with urges to drink, which are often elicited by cues. There are many reported advantages to using cue exposure, such as reducing the desire to use, providing the opportunity to practice coping responses (i.e., relaxation) realistically, and increasing self-efficacy, that may increase the likelihood that the response will be utilized in future real-life cue exposures (Monti, Abrams, Kadden, & Cooney, 1989).

Rohsenow et al. (2001) compared the efficacy of cue exposure/coping skills to a meditation-relaxation control condition. The cue exposure/coping skills intervention appeared to be effective in decreasing the number of heavy drinking days at 6 and 12-month follow-ups. The utilization of cue exposure/coping skills also resulted in reports of more use of coping skills during follow-
up, and many of the strategies were associated with reduced drinking. Another study by Sitharthan, Sitharthan, Hough, and Kavanagh (1997) compared cue exposure to “standard” cognitive behavioral therapy consisting of goal-setting, self-monitoring, and behavioral and cognitive strategies to moderate drinking. Cue exposure produced significantly greater reductions than the comparison approach in individual reports of drinking frequency and consumption at 6-month follow-up.

*Project CALM for mixed alcohol abuse and dependence.* Another approach that has received empirical support is Project CALM (also known as The Harvard Counseling for Alcoholics Marriage or behavioral marital therapy plus pharmacotherapy) for mixed alcohol abuse and dependence (O’Farrell, Cutter, Choquette, Floyd, & Bayog, 1992; O’Farrell, Cutter, & Floyd, 1985). The purpose of Project CALM and behavioral marital therapy (or behavioral couples therapy) is to build support for abstinence and to improve relationships among married or cohabiting individuals seeking help for alcoholism or drug abuse. The substance abusing client and the spouse are seen together in behavioral marital therapy, typically for 12-20 weekly outpatient couple sessions over a 3-6 month period. Therapy starts with substance-focused interventions (i.e., daily sobriety contract, identifying triggers to substance use, and crisis intervention strategies) that help promote abstinence. Once abstinence and attendance in therapy have stabilized for a month or so, relationship-focused interventions, (i.e., increasing positive activities in the relationship and teaching effective communication skills) are introduced. Behavioral marital therapy has been shown to be more effective than individual therapy in the treatment of substance abuse issues (Stanton & Shadish, 1997).

*Social skills training adjunctive to inpatient treatment for alcohol dependence.* Finally, social skills training adjunctive to inpatient treatment for alcohol dependence (Eriksen,
Social skills training is based on the premise that drinking has become a way of coping with interpersonal stress, and therefore aims to provide alternative strategies to cope with social skills deficits by teaching clients to deal with interpersonal stress without drinking to excess. Social skills training packages generally include communication skills; listening techniques; problem solving, assertiveness training, and drink refusal skills training; relaxation training; and stress management skills training. A comprehensive review of alcohol treatment studies concluded social skills training as the fifth most effective treatment for alcohol disorders (Miller et al., 1995).

*Treatment of Unipolar Depression*

Over the years, many approaches also have been used in treating unipolar depression, including electroconvulsive therapy (Pagnin, de Queiroz, Pini, & Cassano, 2004), pharmacological treatments (Elkin et al., 1989), expressive therapies (Wong & Licinio, 2001), behavior therapy (Jacobson et al., 1996; McLean & Hakstian, 1979), cognitive therapy (Beck, Rush, Shaw, & Emery, 1987), and interpersonal therapy (Klerman, Weissman, Rounsaville, & Chevron, 1984). However, as with the treatment of alcohol use disorders, only a handful have shown empirical support. The two most extensively researched approaches for the treatment of unipolar depression have been interpersonal therapy (Klerman et al.) and cognitive therapy (Beck et al.).

*Interpersonal therapy.* Interpersonal therapy is a short-term psychotherapy, normally consisting of 12 to 16 weekly sessions. It focuses on correcting social dysfunction, by focusing on the “here and now” factors that directly interfere with social relationships and may be implicated in the initiation, maintenance, exacerbation of depression, or all of the above.
Interpersonal therapy assists clients to build better social support through the identification of interpersonal dispute resolution strategies and unhealthy relationships, by obtaining a sense of a sense of mastery in new interpersonal roles, and by improving social skills and providing opportunities to develop and maintain supportive relationships.

The National Institute on the Mental Health Treatment of Depressive Collaborative Research Program (NIMH-TDCRP; Elkin et al., 1989) compared interpersonal therapy, cognitive behavior therapy, imipramine, and a placebo-clinical management for the treatment of major depression. In this study, interpersonal therapy was found to be superior to placebo and equal to cognitive behavior therapy and imipramine in alleviating mild to moderate depression. Interpersonal therapy has also been found to be an efficacious treatment for depressed people of various ages ranging from adolescence (Mufson, Weissman, & Moreau, 1999) to the elderly (Reynolds, Frank, & Perel, 1992) and to reduce relapse rates and prolong periods between depressive episodes (Frank et al., 1990; Reynolds et al., 1999).

*Cognitive therapy.* According to the cognitive theory of depression, depressed clients typically have a negative view of themselves, of their environment, and of the future; often distorting their interpretation of events to maintain the negative view (Beck et al., 1987). Cognitive therapy seeks to correct negative thoughts or dysfunctional attitudes thought to constitute a core process in depression. It utilizes techniques for eliciting automatic thoughts, testing automatic thoughts, and identifying schemas to understand the client’s world. Cognitive therapy also incorporates behavioral components to include scheduling activities that encompass mastery and pleasure exercises, cognitive rehearsal, self-reliance training, role playing, and diversion techniques. Homework is frequently assigned to encourage clients to apply the skills they learn in therapy to the outside world, thereby facilitating long-term change.
Even though both interpersonal and cognitive therapy have been shown to be efficacious treatments for depression, the breadth and depth of research providing empirical support for cognitive therapy exceeds that for interpersonal therapy. For example, extensive research, at least dating back to 1977 (Rush, Beck, Kovas, & Hollon) has documented the relative efficacy of cognitive therapy over antidepressants in the treatment of depression (Antonuccio, Danton, & DeNelsky, 1995; Blackburn, Bishop, Glen, Whalley, & Christie, 1981; DeRubeis, Gelfand, Tang, & Simons, 1999; Evans et al., 1992; Kovacs, Rush, Beck, & Hollon, 1981; Rush et al., 1977; Rush, Beck, Kovacs, Weissenburger, & Hollon, 1982). In particular, cognitive therapy compares favorably to antidepressant medication (i.e., Prozac) because of its ability to produce lasting effects and prevent relapse, making it both economically and clinically a viable alternative to pharmacotherapy. In comparison, individuals receiving antidepressants often relapse once their medication stops and may require a lifetime of expensive pharmacotherapy (Clay, 2000). Segal, Williams, and Teasdale (2002) also pointed out another limitation with antidepressant medication by identifying distinct groups of individuals for whom long-term drug treatment is not suitable, such as pregnant women or those undergoing major surgery. As a result, cognitive therapy has been suggested as the first choice over long-term pharmacotherapy for the treatment of depression (Antonuccio et al.).

As already alluded to, a common problem for individuals experiencing symptoms of depression is relapse. Research shows that approximately 50% of individuals suffering from depression experience a relapse of their depressive symptoms (Segal et al., 2002). Due to the high rates of relapse among this population, a more recent movement within cognitive therapy is to incorporate within it mindfulness and acceptance based approaches (Segal et al.) to address this issue.
Mindfulness and acceptance-based approaches more broadly represent a “third wave” of behavioral and cognitive interventions (Hayes, 2004). According to Hayes, the first wave of cognitive-behavioral approaches, such as systematic desensitization (Wolpe, 1958), focused on the development of well-specified and rigorously tested principles that guided the application of the therapy. The second wave approaches, such as cognitive therapy, focused on first-order change strategies and dealt with irrational thoughts and feelings in a more direct way, by attempting to weaken or eliminate them. Lastly, the third wave approaches emerged in an attempt to revisit older clinical traditions, focus more on second-order change strategies, and place the focus on the function rather than the form of problematic behavior. Some examples of these third wave approaches include dialectical behavioral therapy (DBT; Linehan, 1993); functional analytic psychotherapy (Kohlenberg & Tsai, 1991); integrative behavioral couples therapy (Jacobson & Christensen, 1996); mindfulness-based cognitive therapy (Segal et al., 2002); and acceptance and commitment therapy (ACT; Hayes, Strosahl, & Wilson, 1999).

Acceptance and commitment therapy. Of the third wave approaches, the one that has perhaps received most attention recently is ACT (Hayes, 1987, 2004), warranting an entire special issue of Behavior Therapy (Haaga, 2004) devoted to it. The model of psychopathology upon which ACT is based can be explained using the acronym FEAR (fusion, evaluation, avoidance, and reasons). ACT proposes that psychopathology in part arises from “fusion” with one’s thoughts and feelings. When fusion occurs, individuals take on the identity of their thoughts and feelings, versus responding to them as mere behavior. For example, instead of simply having the thought “I feel depressed”, depressed individuals identify with their feelings and respond to them as facts, believing “I am depressed, because I feel depressed.”
The “evaluation” component within the model focuses on responding to evaluations as if they were descriptions that reflect something inherent about whatever is being evaluated. This becomes especially damaging psychologically when self-evaluations are held as descriptions of oneself. For example, individuals may evaluate themselves by having the thought that “I’m no good” and respond to this evaluative thought as being descriptive of themselves instead of as merely an evaluation. Therapeutically, the ACT model encourages clients to respond to their self-evaluations as simply thoughts. A client who indicates “I’m no good” may be instructed to restate what was said as “I have the thought that my evaluation of myself is no good.” In doing so, clients refrain from passing judgment on their self-worth and then responding to such evaluations as a declarative statement about their core nature.

The “fusion” with negatively evaluated private events (e.g., “it’s bad to feel depressed”) within the ACT model is held to be associated with so much discomfort that individuals engage in experiential “avoidance” to reduce, numb, or escape from such private events (Hayes, Wilson, Gifford, Follette, & Strosahl, 1996). For example, in individuals exhibiting symptoms of both depression and an alcohol use disorder, clients may use alcohol in excess in an attempt to escape from unwanted depressive thoughts, emotions, and memories, thereby constituting an instance of experiential avoidance. Similarly, clients may use alcohol in excess in an attempt to escape from dissatisfaction with a current life situation, but may become depressed as a result of such unsatisfactory attempts. For individuals suffering from comorbid depression and alcohol use disorders, this stage may focus on the their struggle with needing to feel in control of their unwanted thoughts and emotions, but ultimately feeling even more out of control in being unable to stop alcohol use.
The final component of the psychopathological process is “reason-giving” (Zettle & Hayes, 1986). Reason giving functions to justify dysfunctional behaviors and thus keeps clients “stuck”. For example, “I’m too depressed to get out of my house” may be offered as a justification for individuals staying in bed all day. Some clients may also identify their own histories (i.e., growing up in an alcoholic home, being intensely teased by classmates) as a cause of their current dysfunctional behaviors (i.e., alcohol use or depressive thoughts). For example, clients may offer, “I became an alcoholic because I grew up in an alcoholic home” as a reason for their dysfunctional behaviors. Clients may additionally invest themselves in “being right” as a particularly dysfunctional form of reason-giving that sets themselves up for “playing the martyr” (“I’ve been so mistreated that anyone who had to grow up in an alcoholic home would have the same problems as me.”) (Zettle, 2004). From a functional perspective, because such reasons are given as the cause of their dysfunctional behaviors, and they (that is, the reasons) cannot be changed, clients must maintain their dysfunctional behaviors to validate the associated reasons. In effect, clients may spend so much time and energy justifying the reasons for their behaviors, that they are unable to move in any valued direction, therefore hindering goal attainment and psychological flexibility (Hayes et al., 1999).

With regard to treatment, the approach taken by ACT can be understood by reference to the acronym ACT (accept, choose, and take action). Strategically, ACT seeks to weaken experiential avoidance while encouraging clients to be willing to wholly “accept” negative thoughts, feelings, impulses, and sensations. Several therapeutic processes are engaged in the service of acceptance. For example, what is referred to in ACT as “engendering a state of creative hopelessness” focuses on helping clients see that what they have taken to be solutions to their problems (i.e., continued experiential avoidance and other forms of exerting control over
unwanted private events) may themselves be part of the problem. Acceptance is also facilitated
through cognitive defusion involving the use of metaphors, paradox, and mindfulness exercises,
presented in the context of goal-setting, values clarification, and overt behavior change strategies
(Hayes et al., 1999).

The next element in the treatment process is for clients to “choose” a valued direction
towards which to move. For example, clients may indicate they want to become closer to their
family, but their alcohol use and depressive behaviors may have been getting in the way of this.
Value identification may be attained through an exercise called “What Do You Want Your Life
to Stand For?” (Hayes et al., 1999). During this exercise, clients are asked to think about how
they would like people to remember them and what they would hope others would say about
them. For example, clients may be asked to think about what they would like their friends and
family to say about them during the eulogy at their funeral or what they would like engraved on
their tombstone. During the value identification process, clients may say they hope others
remember them as “a good parent” or “a dedicated worker”. This process allows clients to
identify areas of their lives that they value most deeply.

Values are distinguished from goals by encouraging clients to not think about these areas of
importance as having a specific endpoint, but instead, as constituting an endless process of
moving in a valued direction. For example, clients who identify “being a good parent” as a core
value may be encouraged to think about their parental involvement as a lifelong process that has
no specific end point. In short, one who values being a “good parent” never reaches a place
where the process of engaging this value can be discontinued. Once core values have been
identified and clarified, the next step is to assist clients in identifying the goals and specifying the
actions that need to take place to generate movement in a valued direction and the possible
barriers that may prevent such movement. In the case of clients hoping others view them as a “good parent”, the clients may be assisted in identifying specific tasks and actions (i.e., spending one-on-one time with their children every day) that would assist in moving them in the valued direction of “being a good parent”.

The final element in the treatment process is to “take action” as evidenced by overt behaviors that move clients in a valued direction. For example, clients may exhibit behaviors that will move them in the direction of becoming closer to their family (i.e., abstaining from alcohol). Another more specific example may be found in clients with comorbid depression and an alcohol use disorder who have identified becoming a better parent as a value. In this case, clients may make a commitment to stay sober, not to stay sober in and of itself, but because staying sober will allow clients to participate in family activities and become more involved with their families, thus moving them closer to being a better parent. For a more detailed explication of ACT, the interested reader is referred to the book, *Acceptance and Commitment Therapy: An Experiential Approach to Behavior Change* by Hayes et al. (1999).

While the overall amount of research investigating the efficacy of ACT is rapidly growing but still is rather modest at present, at least two studies suggest that ACT may provide a viable alternative to cognitive therapy in the treatment of depression. In the first study (Zettle & Hayes, 1986), 18 depressed women received 12 weekly sessions of either cognitive therapy or an early version of ACT. While individuals in both groups showed improvement in self-reported depression from pretreatment through posttreatment and at a 2-month follow-up, participants treated with ACT were rated by a blind, independent evaluator as less depressed at follow-up than those receiving cognitive therapy.
In a subsequent study, ACT was compared with one of two variants of cognitive therapy when all treatments were delivered in a group format over 12 weeks (Zettle & Raines, 1989). All three groups showed significant and equivalent reductions in depression at posttreatment and 2-month follow-up, when measured by an independent rater and through the use of a self-report measure.

*Treatment of Comorbid Conditions*

The treatment of individuals presenting with co-occurring mental health and substance abuse issues presents a challenge to both mental health professionals and substance abuse professionals who typically are either trained to deal with one or the other disorder, but not both. In addition, state and federal funding sources usually pay for either chemical dependency or mental illness treatment, but not both (McNeece & DiNitto, 2005). Many individuals with co-occurring disabilities are offered standard outpatient individual therapy, but denied access to other services. Other services, for example group therapy, may be denied to clients due to concerns that their substance abuse will interfere with their treatment or that somehow they will be disruptive to other clients receiving similar treatment.

Another barrier to the treatment of comorbid conditions is the treatment provider’s avoidance of the “whole” picture. Treatment providers either avoid clients with comorbid conditions or fail to address both disorders because of lack of training in how to deliver the services, either mental health or substance dependency services (McNeece & DiNitto, 2005). According to Kessler et al. (1996), this “artificial separation” results in a divided rather than integrated approach to treatment, is not in the best interests of clients, and often causes serious gaps in service implementation and utilization.
Although there have been attempts (Cross-Drew, 2002) to treat individuals with both psychiatric and substance abuse issues, minimal research has been conducted on the concurrent treatment of both issues (Mueser et al., 2003). In the United States, clinicians treating substance abuse issues traditionally have often employed emotionally charged, confrontational strategies in order to address “denial” and convince clients that they have a substance use disorder. Some of these strategies may include direct confrontation during individual and group sessions, as well as conducting an “intervention” in which various family members and friends are convened at a surprise meeting with the client to express their concern over the client’s substance abuse and the importance of addressing the problem (Mueser et al.). While these treatment strategies are generally seen as ineffective in treating a substance-abusing client in complete denial, these methods would be seen as barbaric and unheard of being used with an individual suffering from depression.

Dual Diagnosis Treatment Models

Mueser et al. (2003) discussed three treatment models (sequential, parallel, and integrated treatment) frequently used to treat comorbid issues.

*Sequential Treatment*

In the sequential treatment model, the client is not eligible to receive subsequent treatment for any coexisting disorder until the “primary” disorder is first resolved or suitably stabilized. This treatment approach has a considerable number of problems and is not a realistic way to treat individuals dealing with both depression and an alcohol use disorder. One of the biggest problems with this approach is that it ignores the interactive and cyclical nature of dual disorders. For example, alcohol is a central nervous system depressant (McNeece & DiNitto, 2005), so alcohol’s effects may intensify the depressed mood of an individual following a drinking binge.
On the contrary, a dysphoric mood may intensify the desire to want to drink in order to cope with the depression. Accordingly, if an individual’s “primary” disorder is an alcohol use disorder, neglecting the symptoms of depression may further exacerbate the symptoms of the alcohol use disorder. This may then lead to the possibility that the alcohol use disorder is never fully treated and, therefore, the “secondary” disorder (i.e., depression) is never treated as well.

Another problem with the sequential method of treatment is the lack of follow-through in making referrals for additional services once the “primary” disorder is either resolved or successfully stabilized (Mueser et al., 2003). For example, clients may be encouraged to initiate the referral process to additional providers themselves, but poor follow-through is often a result. The third problem lies in the definition of the “primary” issue that may lead one disorder to go untreated, and the difficulties deciding when an issue has been successfully resolved or stabilized.

Parallel Treatment

The second therapeutic model is parallel treatment where both mental health and substance use disorders are treated simultaneously by different professionals. These different professionals often work for different agencies and communication between providers is frequently an issue (Kavanagh et al., 2000). Another problem with this approach is that the burden of insuring open communication between service providers is often placed on clients as their responsibility.

Mueser and Noordsy (1996) presented several possible explanations for the poor integration of services between substance abuse counselors and mental health professionals. One explanation involves differences in philosophies of treatment. While the substance abuse counselor generally employs confrontational methods, mental health professionals may see these methods as ineffective or even iatrogenic in treating depression. Strategies employed by mental
health professionals to help clients achieve their goals while assisting them to maintain stable housing, benefits, and social networks, may be seen by substance abuse counselors as “enabling” clients to maintain their substance use. Finally, one of the largest barriers to integrated services is the funding issues described earlier. Some funding sources prohibit simultaneous utilization of both services, while others rely on clients to seek services from both professions.

While limited research has examined the natural history of substance use disorders in people with severe mental illnesses, available data suggest that outcomes of clients with dual disorders who receive services from the traditional, nonintegrated treatment system are bleak (Mueser et al., 2003). Overall, research has identified poor prognosis for clients with dual disorders treated with traditional sequential or parallel approaches (Drake, Mueser, Clark, & Wallach, 1996; Havassy, Shopshire, & Quigley, 2000), showing higher rates of costly service utilization (Bartels et al., 1993).

Integrated Treatment

Integrated treatment attempts to treat both disorders at the same time, taking into consideration how each may affect the other. The impact that each disorder has on the other may take many forms. For example, one way that each may impact the other is by an exacerbation of symptoms, whether it be depressive symptoms or increased cravings for alcohol. Another possible impact may be the use of alcohol to “self-medicate” and minimize the depressive symptoms. The interaction of alcohol and medication may also be a concern because the alcohol could either minimize or intensify the effectiveness of the antidepressant medication. Finally, the combination of depression and alcohol use disorder could cause increased problems in the individual’s environment (i.e., create family problems, decreased work productivity or loss of job, financial strain).
According to Mueser et al. (2003), integrated treatment has been shown to be a better approach to the treatment of dual disorders than the sequential or parallel treatment approaches (Bartels et al., 1993; Drake & Mueser, 1996, 2000; Havassy et al., 2000), for several reasons. Integrated treatment allows for a minimal need for coordination between different service providers to be mediated by clients, because either the treatment provider is the same individual, or multiple providers work together on the same treatment team. In integrated treatment, both disorders are viewed as “primary” disorders and both are targeted for concurrent treatment. It also appears that the conflict over different philosophical perspectives of mental health and substance abuse professionals on treating dual disorders is minimized, because the clinicians work collaboratively to treat all of the clients’ issues.

While a literature search revealed a lack of controlled experimental trials for an integrated treatment approach, the following studies reported improvements in individuals receiving such an approach. RachBeisel, Scott, and Dixon (1999) and Drake, Mercer-McFadden, Mueser, McHugo, and Bond (1998) reviewed four outcome studies that compared integrated treatment with standard substance abuse treatment for severely mentally ill substance abusers. The integrated treatment showed better outcomes than comparison conditions in reduced psychiatric hospitalization, decreased drug use, and in two studies, reduction in psychiatric symptoms. However, while both RachBeisel et al. and Drake et al. believe the results are promising, the studies lacked randomization, sufficient controls, and adequate sample sizes.

Jerrell and Ridgely (1995) conducted a quasi-experiment comparing integrated behavioral skills training or integrated intensive case management with or without a 12-step program. They found that the integrated behavioral skills training group had fewer substance abuse symptoms
than the nonintegrated program. Overall, both integrated intervention groups experienced better symptom reduction than the nonintegrated groups.

Drake, Bartels, Teague, Noordsym, and Clark (1993) conducted research on the effects of the integrated treatment model on substance abuse in clients with schizophrenia. Individuals were randomly assigned to either cognitive-behavioral case management, focusing on training skills that would enable clients to cope with urges to use and skills to resist use, or social network case management, focusing on working with clients’ social networks to enhance their ability to support abstinence. A matched comparison group received usual community services. Both of the experimental groups showed positive results in terms of decreased hospitalization and homelessness, increased stable community housing, and decreased substance abuse over 18 months (Mueser, Drake, & Miles, 2004). The treatment model used case managers and “continuous treatment teams” that provided crisis intervention, housing, skills training, vocational rehabilitation, supportive psychotherapy, medication monitoring, and family psychoeducation (Drake, Osher, & Wallach, 1991).

The components of a solid integrated treatment approach include (a) integrating all of the clients’ services, (b) providing treatment for all of their issues, (c) being assertive in engaging clients in services, and (d) providing a location where services can adequately be provided. Other components of an integrated treatment approach include attempts to reduce the negative consequences of the dual disorder and provide ongoing treatment for both disorders.

A seemingly logical starting point in pursuing an integrated treatment approach with clients exhibiting comorbid depression and alcohol use disorders would be to identify a therapeutic approach that has been shown to be efficacious for each of the disorders when treated separately. In the case of the comorbid issues under investigation in this project, minimal research has been
done identifying any one therapeutic approach as being effective in treating both depression and alcohol use disorder together. However, evidence suggests that ACT may be an efficacious approach to the treatment of both depression and substance use disorders individually. Earlier, two studies were reviewed investigating the efficacy of ACT for the treatment of depression.

Research has also been conducted on the efficacy of ACT for the treatment of substance use disorders. Hayes, Wilson, et al. (2004) and Bissett (2002) used ACT to treat polysubstance abusing opiate dependent individuals using a randomized controlled trial, looking at both objectively assessed and self-report measures of addiction. Specifically, the study compared methadone maintenance alone to methadone maintenance in combination with 16 weeks of either intensive twelve-step facilitation (ITSF) or ACT. ACT, in combination with methadone maintenance, produced a greater decrease in opiate and total drug use during the follow-up than methadone maintenance alone. ACT has also been shown to be significantly more efficacious than nicotine replacement therapy in smoking cessation at the end of a 1-year follow up (Gifford, 2002; Gifford et al., 2004; Wilson & Bryd, 2004).

Most recently, ACT was used in a case study of a male in treatment for alcohol dependence. The primary focus during the case study was on the valued direction component of ACT (Heffner, Eifert, Parker, Hernandez, & Sperry, 2003). Once the client defined a valued direction (i.e., “to start living”), goals, such as “stop drinking”, were set to move the client in his valued direction.

Finally, a recent case study that utilized ACT in the treatment of comorbid substance abuse and posttraumatic stress disorder (Batten & Hayes, 2005) demonstrated significant improvement in the individual’s overall functioning. While this suggests promise for the utilization of ACT in the treatment of comorbid mental health and substance abuse, additional research on comorbid
issues is needed, specifically identifying an effective treatment approach for individuals suffering from both unipolar depression and alcohol use disorders.

Another possible strategy in pursuing an integrated treatment approach with clients exhibiting comorbid depression and alcohol use disorders would be to address a similar function that both disorders might serve. For example, experiential avoidance, as targeted by ACT, has been proposed as one functional dimension that cuts across traditional diagnostic criteria (Hayes et al., 1996). For example, an individual may present with varying symptoms indicative of two distinct disorders, (i.e., a depressive disorder and an alcohol use disorder). However, in actuality, the individual’s seemingly heterogeneous behaviors may serve a common purpose or function (i.e., to avoid or escape from unwanted sensations, feelings, or thoughts).

To summarize, there would appear to be several reasons why ACT may be an appropriate integrative treatment approach for working with clients with comorbid disorders. For one, as already mentioned, it enjoys increasing empirical support as an efficacious treatment for both depression and substance use disorders. The results of the Heffner et al. (2003) study showed potential in utilizing ACT as an effective therapeutic approach for alcohol use disorders more specifically. The second reason that ACT was utilized in the current study is based on the positive results of the case study conducted by Batten and Hayes (2005) on the treatment of comorbid posttraumatic stress disorder and substance abuse. This research showed promise for the use of ACT with individuals suffering from comorbid psychiatric and substance use disorders. The third reason that ACT was utilized in the current study is because both depression and alcohol use disorders can be conceptualized as disorders that share experiential avoidance as a common pathogenic process. ACT is one treatment. Accordingly, an approach such as ACT
that targets such a common process may constitute a viable integrative approach for the
treatment of both disorders.

Current Study

The current study applied ACT as an integrated treatment for both depression and alcohol use
disorders. The study assisted in the identification and treatment of individuals with comorbid
disorders, specifically unipolar depression and alcohol use disorders. The project was conducted
at the Mississippi State Hospital (MSH; an inpatient hospital) in Whitfield, MS. Patients
admitted to the Mississippi State Hospital were court committed by someone who recognized a
problem in the patient’s life, either due to a psychiatric condition or a substance use problem.
Depending on the type of problem identified, the patient was either committed under a
psychiatric order or a chemical dependency order. Some patients with comorbid psychiatric and
substance using problems who are committed under a psychiatric order may volunteer to transfer
to the Chemical Dependency Unit (CDU) after their psychiatric condition has stabilized.

Alternatively, some patients with comorbid substance using and psychiatric problems may be
committed under a chemical dependency commitment. Patients with comorbid conditions
admitted under a chemical dependency commitment are ineligible to transfer to an acute
psychiatric building if their psychiatric symptoms are exacerbated. Instead of transfer, a
psychiatric commitment must be obtained. According to the usual course of hospitalization, more
often than not, a psychiatric commitment is not obtained and instead the patient’s psychiatric
symptoms are managed on the chemical dependency unit.

While comorbid conditions are usually identified upon admission regardless of the type of
commitment, the current treatment of MSH patients admitted to either the acute psychiatric units
or the chemical dependency units (CDU) tends to be of a sequential or parallel nature. Substance
abuse issues on the acute psychiatric buildings are generally thought of as the “secondary”
problem. The treatment staff tends to hold a belief that substance use should minimize or
diminish upon stabilization of the psychiatric condition. The psychiatric condition is treated
primarily with pharmacotherapy and secondarily with process group therapy. Conversely,
psychiatric conditions on CDU are generally thought of as the “secondary” issue exacerbated by
the patient’s chemical dependency. The treatment staff tends to hold a belief that psychiatric
conditions should minimize or diminish once the patient gains insight and learns new skills to
overcome their substance abuse problem. Psychiatric conditions are therefore treated primarily
through the use of psychotropic medications.

In looking at the nature of the current system, it appeared that a more efficient treatment
approach was in need of exploration. To do so, the current study compared the efficacy of an
integrated treatment approach using ACT versus the “usual” or “customary” therapeutic
strategies of the chemical dependency units at the Mississippi State Hospital [i.e., “treatment as
usual (TAU)” incorporating the Minnesota Model, often referred to as a “12-step” program
(Owen, 2000)], in the treatment of comorbid unipolar depression and alcohol use disorders.

Research Hypotheses

It was hypothesized that individuals who received the integrated ACT approach, which
focused on the comorbid issues concurrently, would have a more rapid treatment response.
Consequently, it was expected that the ACT participants would no longer meet the commitment
criteria (i.e., no longer be deemed a danger to self or others due to psychiatric or substance-
related issues). This hypothesis was based on the assumption that if a provider continued to treat
an individual’s “primary” disorder until it was “resolved” prior to beginning treatment on a
“secondary” disorder, the individual would likely be in treatment longer than another who was treated for both disorders concurrently.

It was also hypothesized that individuals who received the ACT approach would show significantly greater improvement in their overall level of depression by the end of treatment as evidenced by related outcome measures. This hypothesis was based on the differences in the implementation of treatment approaches (i.e., TAU therapists used sequential treatment methods focused primarily on alcohol problems and secondarily on depression, whereas the ACT therapist used integrated treatment methods focused on both disorders simultaneously). It would be logical to assume that if depression was addressed simultaneously during the treatment of an alcohol use disorder, that the ACT participants would show significantly greater improvement compared to TAU participants, at the end of treatment on measures of depression. No additional hypotheses were suggested with regards to information obtained from alcohol use measures during treatment due to the unlikely probability of the participants obtaining alcohol during their hospitalization.

Finally, it was hypothesized that individuals who received the ACT approach would show a significantly greater decrease in their overall level of experiential avoidance. This hypothesis was based on research supporting ACT as an effective treatment for depression and substance use disorders, separately. Because the ACT approach targets experiential avoidance, it would be likely that during the course of treatment, individuals receiving it would display greater reductions in a process measure of experiential avoidance.
CHAPTER II

METHODOLOGY

Research Design

Participants

Thirty individuals were referred to participate in the study between November 16, 2006 and March 1, 2006. All were either circuit-court involuntarily committed to the acute psychiatric unit \( n = 1 \) or the chemical dependency unit (CDU; \( n = 29 \)) at MSH. An involuntary commitment occurred when an individual was identified by a circuit-court to be an imminent threat of harm toward themselves or others. Individuals were judged to be in need of long-term care and treatment beyond a level that could be obtained at another facility. While the researcher hoped to obtain referrals from both the chemical dependency and acute psychiatric units, only one patient was referred from the acute psychiatric unit and he (Subject 8) dropped out of the study following the pretreatment assessment. Therefore, all patients who consented to participate in the study were recruited from the chemical dependency unit and the generalization of results from this study to individuals apart from those hospitalized primarily for drug and/or alcohol problems should be done cautiously.

Participants eligible for the study met the following criteria: (a) DSM-IV (1994) diagnostic criteria for Major Depressive Disorder, Dysthymic Disorder, or Depressive Disorder NOS; (b) DSM-IV diagnostic criteria for Alcohol Abuse, Alcohol Dependence, or Polysubstance Dependence with alcohol being a substance of issue; (c) capacity to provide informed consent and complete a questionnaire battery meaningfully; and (d) no signs of substance intoxication at any time during the assessment or therapy phases (Carey, Roberts, Kivlahan, Carey, & Neal, 2004). Participants diagnosed with substance-induced depression were excluded from the
project. Individuals under the age of 18 or civil-court committed individuals to forensic services were also excluded from the study. All patients were discharged when they no longer met the commitment criteria (i.e., no longer deemed a danger to self or others due to psychiatric or substance-related issues). While any decisions to discharge a participant were discussed by the entire treatment team, the medical staff on the unit made the final determination about a participant’s readiness for discharge.

Pretreatment assessments were completed no later than 11 days ($M = 5.90$, $SD = 2.50$) following the referral of a potential participant to the study. The number of days between referral and pretreatment assessment were roughly equivalent and not statistically significant ($p = .75$) for both groups (ACT: $M = 6.00$; $SD = 2.70$; TAU: $M = 5.67$; $SD = 2.23$). Of the 30 individuals identified as eligible for the study, 80% ($N = 24$) completed all requirements of the study, including the weekly (or bi-weekly) assessments provided by their assigned therapist, and a pretreatment and posttreatment assessment conducted by an independent evaluator not affiliated with the acute psychiatric or chemical dependency units.

Of the six individuals who withdrew from the study, 33% ($n = 2$; Subjects 12 and 13) were unexpectedly discharged and 67% ($n = 4$) reported a desire to withdraw prematurely from the study, two (Subjects 8 and 28) following the pretreatment assessment and two (Subjects 20 and 35) following ACT session one (see Appendix A). The unexpected discharges were a result of administrative decisions to discharge the two patients due to their severe violation of building rules, as well as their overall lack of commitment to the treatment process. Both individuals received one individual therapy session of ACT and TAU, respectively. One of the individuals discharged prematurely was sent home, whereas the other individual was sent to a homeless shelter. The two individuals who withdrew from the study following the pretreatment assessment
continued to receive services from the building staff until their discharge, but completed no
further documentation or assessments as a part of this study. The two individuals who withdrew
from the study following ACT session one continued to receive individual therapy from their
case managers on the units, but completed no further evaluations as a part of this study.

Table 1 presents the demographic information of the subjects who withdrew from the study.
Table 2 contains the psychiatric and substance abuse treatment history and medications
prescribed prior to and during the course of hospitalization for the subjects who withdrew from
the study. Table 3 reflects the length of hospitalization, initial assigned treatment approach, and
post-discharge locations. The rest of the study will reflect only data obtained from the 24
participants who completed all portions of the study.

**Demographic Variables**

In order for the reader to understand the study participants ($N = 24$) more fully, Table 4 and
Table 5 list the gender, ages, marital status, race, and educational levels of the TAU and ACT
groups, respectively. A series of Fisher’s exact probability tests, chi-square analyses, and t-tests
detected no significant differences between the two groups on any of these demographic
variables.

**Treatment Histories**

Tables 6 and 7 present the diagnoses, history of psychiatric and substance abuse treatment,
previous suicide attempts, and whether antidepressant medications were prescribed prior to
hospitalization for the TAU and ACT groups, respectively.

**Diagnoses.** The two groups did not differ from each other diagnostically. A majority of the
participants were diagnosed with Depressive Disorder Not Otherwise Specified (TAU: $n = 10$;
ACT: $n = 10$). In comparison, a minority of the participants were diagnosed with Dysthymic
Disorder (TAU: \( n = 1 \)) or Major Depressive Disorder (TAU: \( n = 1 \); ACT: \( n = 2 \)). A majority of the participants were also diagnosed with substance dependence versus substance abuse (TAU: \( n = 8 \); ACT: \( n = 7 \)).

**History of psychiatric treatment.** The two groups also did not differ significantly with regards to their histories of previous psychiatric treatment. Seven TAU participants reported a previous psychiatric treatment history, whereas 4 of the ACT participants reported previous psychiatric treatment. When inpatient psychiatric treatment histories were compared between groups, 6 TAU participants and 3 ACT participants reported inpatient treatment. The mean number of previous psychiatric treatment episodes between groups (TAU = .83, ACT = .33) were analyzed using a t-test and did not yield statistically significant results (\( p = .12 \)).

**History of substance abuse treatment.** The two groups also did not differ significantly from each other in their experiences with previous substance abuse treatment. Ten TAU participants reported a previous substance abuse treatment history, whereas 8 of the ACT participants reported previous substance abuse treatment. No participants reported a history of outpatient substance abuse treatment. The difference in mean number of previous substance abuse treatment episodes between groups (TAU = 3.42, ACT = 1.25) was not statistically significant (\( p = .10 \)).

**Suicidality.** The two groups did not differ significantly from each other in past suicidality. Three TAU participants reported a previous suicide attempt, whereas 4 ACT participants reported a similar history. The mean number of suicide attempts made by participants within the two groups (TAU = .67, ACT = .42) did not significantly differ (\( p = .56 \)).

**History of pharmacotherapy.** Finally, the two groups also did not differ significantly from each other in their histories of treatment with antidepressant medications prior to hospitalization.
(TAU = 2, ACT = 2). Any differences between groups on whether medications were prescribed prior to treatment were analyzed using a Fisher’s exact test and were not statistically significant ($p = .71$). All participants, including those with no previous history of such treatment, were prescribed at least one antidepressant medication at some time during the study.

Summary of Pretreatment Comparisons

In summary, the TAU and ACT groups appeared to be equivalent on all background variables analyzed at pretreatment. More specifically, the groups did not differ significantly from each other in gender composition, age, marital status, race, or educational levels. Moreover, the groups were also equivalent in regards to current diagnoses, history of psychiatric and substance abuse treatment, previous suicide attempts, and whether antidepressant medications were prescribed prior to treatment.

Treatment

Acceptance and Commitment Therapy (ACT)

Two treatment approaches were utilized in the delivery of individual therapy to participants presenting with comorbid depression and alcohol-related issues. One of the approaches, ACT, was delivered in approximately six 30-minute individual sessions ($M = 5.17$, $SD = .58$) on a bi-weekly basis. The ACT individual therapy sessions simultaneously addressed both depressive and alcohol-related issues.

ACT followed a treatment protocol (see Appendix A) that incorporated mindfulness metaphors and exercises, goal-setting, values clarification, and overt behavior change, as outlined in the corresponding book by Hayes et al. (1999). However, the treatment protocol deviated somewhat from that presented in this book by engaging in values clarification during the first session. As suggested by Zettle (2004), conducting values work during the beginning
sessions may facilitate guidance throughout the therapeutic process. For example, if the value of clients is to “become a better parent”, but their behaviors are leading them away from the identified value, being reminded of their valued direction may assist in bringing them back on course.

Informed consent was obtained from only the ACT participants to audiotape a selection \((n = 24)\) of the total number of ACT sessions \((n = 62)\). To ensure services were being provided in a manner consistent with ACT, a selection \((50\%)\) of the taped sessions were reviewed by a master’s level psychologist at MSH, not affiliated with this study, who had knowledge and skill in the implementation of ACT to similar populations. The individual completed a questionnaire (see Appendix B) regarding whether the session number could be discriminated as well as the extent to which the dialogue from the taped sessions corresponded with the ACT treatment protocol (see Appendix A). The assessor reviewed 12 ACT session tapes, representing different participants and different sessions, and was able to appropriately discriminate the corresponding session from the dialogue on all 12 tapes. Using a 10-point Likert scale, where 1 represented “Does not Correspond” and 10 represented “Corresponds Well”, the assessor deemed the dialogue corresponded adequately well with the ACT manual \((M = 8.17, SD = .84)\).

**Treatment as Usual (TAU)**

As outlined above, the other intervention utilized in this study was a treatment as usual (TAU) approach. The TAU approach utilized by the drug and alcohol counselors was neither time-limited nor was there an assurance of weekly sessions. Ultimately, the frequency of therapy sessions was determined by availability in the therapist’s schedule.

The TAU therapists were instructed to provide the type of treatment they deemed appropriate for the clients based on their presenting issues. However, it should be noted that the philosophy
of the chemical dependency unit at MSH is patterned, for the most part, after the Minnesota Model, often referred to as a “12-step” program (Owen, 2000). This philosophy of the Minnesota Model is based on Alcoholics Anonymous (Alcoholics Anonymous World Services, 1976), of total abstinence from substances through meeting attendance, sponsorship, and an active and daily employment of the principles of recovery. This approach was frequently emphasized by the drug and alcohol counselors at MSH.

It should be noted that the 12-step program, the main treatment approach of CDU, focused primarily on the treatment of substance-related issues, not the treatment of mental health issues. Therefore, it was unlikely that the depressive symptoms experienced by the TAU participants were addressed using the 12-step approach. Instead, depressive symptoms of the TAU participants were addressed through the use of antidepressant medications. Tables 8 and 9 reflect treatment information, including number of hospitalization days, length of time participated in study, and amount of participation in individual therapy of the TAU and ACT participants, respectively.

The amount of time each participant spent in the study from the moment of referral to discharge was tracked across both groups. The number of days from referral to pretreatment assessment between groups, were not statistically significant; \( p = .75 \). However, the difference in number of days participants were involved in the study (i.e., number of days from pretreatment to posttreatment assessment) between groups (TAU: \( M = 33.33, SD = 12.27 \); ACT: \( M = 22.67, SD = 6.00 \)), was statistically significant, \( t(22) = -2.71, p = .01 \) (two-tailed). The number of days from posttreatment assessment to discharge did not differ significantly between groups (\( p = .54 \)), nor did the total number of days in the hospital (\( p = .25 \)). The amount of individual therapy received by both groups was also analyzed. The difference in number of individual therapy
sessions between groups was not statistically significant, \( p = .10 \). However, the total hours of individual therapy between groups (TAU: \( M = 4.33, SD = 1.56 \); ACT: \( M = 3.13, SD = .31 \)) did differ significantly; \( t(22) = -2.64, p = .02 \) (two-tailed).

*Common Therapeutic Interventions*

Even though participants were randomly assigned to receive either individual sessions of TAU or ACT, all participants were also involved in a variety of common services while hospitalized on CDU. All participants were involved in at least 5-hours of alcohol and drug group therapy per week focused primarily on the 12-steps of recovery (Alcoholics Anonymous World Services, 1976). For at least 10 hours per week, all participants were involved in educational services dealing with chemical dependence, relapse prevention, medical issues, personal growth, social skills, anger management, coping skills and information concerning the process of recovery. All participants attended nightly 12-step based meetings (Alcoholics Anonymous & Narcotics Anonymous; Alcoholics Anonymous World Services, 1976, World Service Office, 1988). All participants also attended medically-related groups and lectures intended to aid in each individual’s health promotion. Weekly spirituality-based meetings, daily meditations, and daily therapeutic recreation and leisure activities, including art and music therapy, were provided to all individuals. All participants were involved in four seminars/study groups per week involved in learning about recovery and relapse prevention. Any decisions about the administration of prescription medications was made by the medical or psychiatric provider involved in the participant’s treatment. Finally, as noted previously, all participants, regardless of treatment approach, were prescribed at least one antidepressant medication during their hospitalization.
Procedure

Formal approval for this study was obtained from the MSH Institutional Research and Review Board (IRRB; see Appendix C) as well as the Institutional Review Board (IRB) at Wichita State University. After the initial psychiatric assessment by the treatment team (specifically the assessment by the psychiatric nurse practitioner and the psychology staff), individuals who exhibited comorbid depression and alcohol use disorders were referred for potential participation in the “Depression/Alcohol Study”. Once the primary investigator received a referral from the psychiatric or chemical dependency unit, the potential participant was assigned a number and randomly assigned to receive either ACT, provided by the primary investigator, or TAU, provided by the case manager (i.e., alcohol/drug counselor or psychology staff) assigned upon the patient’s admission to the hospital.

Random assignment was completed by writing the number of the potential participant on two pieces of paper followed by either “ACT” or “TAU”. Both pieces of paper were put into a container and an individual, not affiliated with the study, drew one piece of paper from a container that designated the treatment approach for the potential participant. The primary investigator met in person with each potential participant to give an overview of the research project and to obtain verbal consent to proceed with scheduling the pretreatment assessment. If any participant would have declined further participation in the study, they would have been scheduled to continue receiving therapeutic services from their MSH case manager/psychology staff assigned at admission and would have exited the study at this time. After meeting with the primary investigator, all individuals (N = 30) indicated willingness and verbal consent to participate further in the study. At this time, they were informed of the treatment approach they
were randomly assigned to receive. Upon verbal consent to proceed, a pretreatment assessment was scheduled and completed within 11 days (ACT: $M = 6.00$, $SD = 2.70$; TAU: $M = 5.67$, $SD = 2.23$) following the referral of the participant to the study.

At the onset of the pretreatment assessment battery, the participants were asked to complete a more thorough consent (see Appendix D) that presented additional information about the treatment process. The consent form was reviewed with and the pretreatment assessment battery completed by an independent evaluator not affiliated with the chemical dependency unit. This evaluator was blind to the treatment approach the participant would later receive. The consent form described the voluntary nature of participation in the project, and therefore, the ability to withdrawal from the study at any time. Information was also provided on the risks and benefits of treatment. In addition, the consent form underscored the requirement that participants not attend any scheduled assessment or therapy sessions while under the influence of nonprescription drugs or alcohol. Finally, the total number of hours clients should anticipate participating in the research study was reviewed prior to engaging in the study.

After reading the consent form, all referred individuals ($N = 30$) verbally consented to participate in the pretreatment assessment. The pretreatment assessment battery included: (a) Hamilton Rating Scale (HRS; see Appendix E; Hamilton, 1960, Hedlund & Vieweg, 1979; Williams, 1988); (b) Beck Depression Inventory (BDI-II; see Appendix F; Beck, Steer, & Brown, 1996); (c) Problems Assessment for Substance-Using Psychiatric Patients (PASUPP; see Appendix G; Carey et al., 2004); (d) Alcohol Timeline Followback Calendar (Alcohol-TLFB; see Appendix H; Sobell & Sobell, 1992, 2000), and (e) Acceptance and Action Questionnaire (AAQ; see Appendix I; Hayes, Strosahl, et al., 2004).
In addition to completing the BDI-II and Alcohol-TLFB Calendar as a part of the pretreatment assessment battery, participants were also administered the BDI-II and the Alcohol-TLFB Calendar following every session, regardless of the type of treatment received. While it was not anticipated that the participants would have access to alcohol due to their inpatient status, it was believed there was a slight possibility that alcohol could be obtained through hospital visitors. At the end of the fourth session and last session, both the clients and therapist completed the Working Alliance Inventory-Short Form (WAI-S; see Appendices J and K; Tracey & Kokotovic, 1989). Out of 24 participants who completed the study, one TAU participant (Subject 15) received only 1 session and, therefore, did not complete the WAI-S. Another TAU participant (Subject 30) received fewer than 4 sessions; however, the participant completed the WAI-S prior to discharge. A total of 15 participants (63%) completed the last session WAI-S as they had received more than 4 individual therapy sessions prior to discharge.

Once the treatment team and medical staff deemed a participant appropriate for discharge, the discharge date was provided to the primary researcher so that a posttreatment assessment could be scheduled. The posttreatment assessment battery was again completed by an independent evaluator not affiliated with the chemical dependency unit, who was again blind to the treatment approach the participant received during their hospitalization. The posttreatment assessment included the readministration of the HRS, the BDI-II, PASUPP, Alcohol-TLFB Calendar, and the AAQ. The posttreatment assessment was completed following the last individual therapy session and prior to the participant’s scheduled discharge date. Table 8 and Table 9 reflect the number of days each participant remained in the hospital following the posttreatment assessment. The participants who remained in the hospital longer than 17 days past the posttreatment assessment were delayed in their discharge due to unexpected difficulties with
discharge placement. Posttreatment assessments were completed on average no earlier than one week prior to discharge ($M = 7.08, SD = 9.60, N = 24$). The number of days from posttreatment assessment to discharge did not differ ($p = .54$) for the two groups (ACT: $M = 8.33, SD = 6.29$; TAU: $M = 5.83, SD = 12.23$).

**Measures**

*Outcome Measures of Depression*

*Hamilton Rating Scale (HRS).* The HRS (Hamilton, 1960; Hedlund & Vieweg, 1979) is a 21-item structured interview used to assess the severity of depression. The HRS includes questions relating to common signs and symptoms of depression such as dysphoric mood, guilty feelings, suicidal thoughts, sleep disturbances, anxiety, and weight loss. The interviewer completed the instrument during the course of the interview or shortly after its completion. Assessors were asked to utilize the semi-structured interview format by Williams (1988) as a guide to determine the HRS score. The HRS utilizes a Likert scale creating a linear relationship between scores on the HRS and levels of depression. According to Hellerstein et al. (2001), the HRS scores were stratified according to asymptomatic (<14) versus symptomatic level ($\geq 14$) of depression. Bagby, Ryder, Schuller, and Marshall (2004) conducted a meta-analysis of 70 studies utilizing the HRS. The study found the HRS to have internal reliability ranging from .46 to .97 and interrater reliability ranging from .82 to .98. According to Williams (1998), the 4-day retest reliability was .82, whereas, according to Akdemir et al. (2001), the 5-day retest reliability was .85.

The HRS was utilized during the pretreatment and posttreatment assessment, yielding internal consistency alpha coefficients of .71 and .88, respectively. The HRS was administered by a master’s or doctoral level psychologist, blind to the assignment of the therapist on the case.
The evaluators were trained in the administration and scoring of the instrument as an independent evaluator of the participant’s level of depression. The administration of the HRS was audiotaped at both pretreatment and posttreatment. Using the audiotapes, independent evaluators conducted reliability checks on the administration and scoring of 50% (n = 24) of the HRS audiotaped interviews. Collectively, HRS scores of the initial rater and those of the second rater, correlated significantly, \( r = .89; \ p < .01 \). Separate analyses of pretreatment (\( r = .80; \ p < .01 \)) and posttreatment (\( r = .84; \ p < .01 \)) HRS scores also indicated acceptable levels of interrater reliability.

HRS scores were not provided to the treating therapist and were not used as a criterion for participation in the study, but as a measure of depression severity over the course of treatment. It should be noted that all individuals were diagnosed with a depressive disorder by the medical staff and treatment team prior to referral to the study. The HRS and BDI scores were not used in determining a depressive diagnosis. If scores from either the HRS or BDI had been used to determine diagnostic eligibility, two participants (Subjects 26 and 36) would have been excluded from the study.

*The Beck Depression Inventory-II (BDI-II).* The BDI-II (Beck et al., 1996) is a 21-item self-report questionnaire assessing severity of depressive symptoms. According to Beck et al., the BDI-II scores may be categorized as asymptomatic (scores of 0-13), mild depression (scores of 14-19), moderate depression (scores of 20-28) and severe depression (scores \( \geq 29 \)). Scores from the BDI-II were stratified into asymptomatic (\(<14\)) and symptomatic (\( \geq 14 \)) for depression. The BDI-II is widely used and is highly correlated (\( r = .71 \)) with other measures of depression such as the HRS (Beck et al.). The BDI-II has excellent psychometric properties and high internal reliability. Among college samples, internal reliability of the BDI-II has ranged from .89 (Steer
& Clark, 1997; Whisman, Perez, & Ramel, 2000) to .93 (Beck et al.). Among psychiatric samples, the internal reliability has ranged from .89 (Steer, Rissmiller, & Beck, 2000) to .92 (Beck et al.). A 1-week test-retest reliability of the BDI-II has been reported to be .93 (Beck et al.).

The BDI-II was completed during pretreatment and posttreatment assessments, yielding internal consistency alpha coefficients of .90 and .94, respectively. The BDI-II was also completed by all participants following each individual therapy session with their assigned therapist.

Pretreatment Measures of Alcohol Use Disorders

Problems Assessment for Substance-Using Psychiatric Patients (PASUPP). The PASUPP (Carey et al., 2004) was developed as a self-report measure sensitive to the range of substance-related problems experienced by dually diagnosed persons. The PASUPP was designed to reflect the psychosocial impact of substance use separate from dependence symptoms. The PASUPP assesses whether dually diagnosed individuals experience any of 50 substance use related consequences across two time intervals (lifetime and past 3 months).

While minimal research (Carey et al., 2004) has been conducted on the reliability and validity of the PASUPP, the research to date shows promise in utilizing this instrument for dually diagnosed populations. Item-total correlations ranged from .29 to .75, suggesting good item discrimination. The coefficient alpha was .97 and combined with the moderate average inter-item correlation, there appears to be strong evidence of internal consistency (Carey et al.). At 3-month administration, the PASUPP was internally consistent with an alpha level of .97 (Carey et al.). The PASUPP was chosen for use in this study because of sensitivity to assessing substance-related issues in individuals with comorbid conditions. PASUPP was administered
with the assessment battery at pretreatment, yielding an internal consistency alpha coefficient of .94, and again at posttreatment. Obtaining alpha coefficients from the posttreatment assessment would have been unscientific as the two assessments were completed within an approximate 1-month timeframe. As a result, minimal change in the overall outcome would be expected as a result of the measure identifying problems in the previous 3-months and across a lifetime. For these reasons, posttreatment PASUPP results are not reported in this study.

*Alcohol Timeline Followback (Alcohol TLFB).* The Alcohol TLFB (Sobell & Sobell, 1992) interview is the most widely used calendar method for assessing substance use. The Alcohol TLFB uses a calendar and other memory aids (i.e., calendar with key dates to serve as anchors and standard drink conversion charts) to gather retrospective estimates of an individual’s daily substance use over a specified time period. The Alcohol TLFB has been shown to have good psychometric properties with high temporal stability, with most test-retest correlations exceeding .85 (Sobell & Sobell, 2000).

The Alcohol TLFB was utilized in this study due to the relative ease in administration and ability for behaviors to be monitored on a weekly (or bi-weekly) basis. In the present study, the Alcohol TLFB was completed during the pretreatment and posttreatment assessment batteries and following every individual therapy session. As alluded to earlier, while the researcher did not anticipate that the participants would have access to alcohol during their hospitalization, it was believed there was a slight possibility that alcohol could be obtained. However, no participants reported the use of alcohol during their hospitalization.

The percentage of drinking days and amount of alcohol consumed per drinking day over the 3 months prior to treatment are presented in Tables 10 and 11. The percentage of drinking days during the 3-month pretreatment period was comparable between groups ($p = .90$), with TAU
participants consuming alcohol on 54% ($SD = 34.02$) of the drinking days and ACT participants on 52% ($SD = 24.88$) of the drinking days. The number of drinks consumed per drinking day were also similar ($p = .69$), with TAU participants consuming 12.89 ($SD = 13.96$) drinks per drinking day and ACT participants consuming 11.07 ($SD = 7.03$) per drinking day.

To put these drinking data in perspective, they were compared to TLFB measures completed for primary alcoholics by Brady, Myrick, Henderson, and Coffey (2002). The results of the present study were both similar to and differ from those of Brady et al. The percentage of drinking days in the 3 months prior to treatment reported by Brady et al.’s primary alcoholics was 74.05% ($SD = 22.40, N = 29$) and the mean number of drinks per drinking day during this time was 12.1 ($SD = 5.2, N = 29$). There was a statistically significant difference between participants in the two studies in the percentage of drinking days during the 3 months prior to treatment, $t(51) = 2.93, p = .01$ (two-tailed). However, there was not a similar difference between participants in the average number of drinks consumed per drinking day, $t(51) = .06, p = .95$ (two-tailed).

In the present study, the percentage of drinking days in the 3 months prior to treatment did not significantly correlate with the HRS ($p = .08$) or the BDI-II ($p = .69$); but did correlate with the AAQ-9 ($p = .02$), suggesting that alcohol consumption may have served an experiential avoidant function. The number of drinks per drinking day during this time period, however, did not significantly correlate with any of the three measures (HRS, $p = .83$; BDI-II, $p = .62$; AAQ, $p = .81$).

Process Measures

Acceptance and Action Questionnaire (AAQ). The AAQ (Hayes, Strosahl, et al., 2004) is composed of 9 items rated on 7-point scales (1 = never true; 7 = always true) and is commonly
used as a process measure to assess experiential avoidance in research with ACT, with higher scores reflecting higher levels of experiential avoidance. Because of the hypothesis that both depressive disorders and alcohol use disorders may be a function of attempts to avoid negative thoughts and sensations, the AAQ was used to measure any changes that occurred in experiential avoidance/acceptance over the course of treatment. In a college population, the AAQ obtained a 4-month test-retest reliability of .64. Its internal consistency was .70 (Hayes, Strosahl, et al.).

Level of experiential acceptance versus avoidance was analyzed both at pretreatment and at posttreatment. Differences in pretreatment AAQ scores between groups in the present study, as reported in Tables 10 and 11, were not statistically significant \( (p = .75) \). However, both groups of individuals in the current study showed significantly higher levels of experiential avoidance at pretreatment \( [\text{TAU}: M = 45.50, SD = 6.30; \text{ACT}: M = 44.75, SD = 5.12; \]

\[ t(22) = -.32, p = .75 \text{ (two-tailed)} \]) than individuals in the clinical populations \( (M = 42.0) \) from the Hayes, Strosahl, et al. (2004) study \( [t(44) = 3.00, p = .01 \text{ (two-tailed)}] \). The clinical population in the Hayes, Strosahl, et al. study consisted of individuals receiving counseling services from a university counseling center, psychiatric clinic outpatients, and agoraphobics in treatment who were solicited through a self-help group. Therefore, a higher level of experiential avoidance would be expected from participants in the present study who were in need of more intensive treatment at an inpatient treatment facility.

In the present study, the AAQ administered during pretreatment revealed a low level of internal consistency \( (\alpha = .29) \); however, the posttreatment AAQ yielded an acceptable level of internal consistency \( (\alpha = .71) \) comparable to that reported by Hayes, Strosahl, et al. (2004). Also similar to the findings of Hayes, Strosahl, et al., the AAQ was significantly correlated with both depression measures \( (\text{HRS}, p = .02; \text{BDI-II}, p = .01) \) at pretreatment.
Working Alliance Inventory-Short Form (WAI-S). The WAI-S (Tracey & Kokotovic, 1989) is composed of 12 items rated on 7-point scales (1 = never, 7 = always). Responses can be scored on three subscales: (a) therapeutic bond, (b) agreement on tasks, and (c) agreement about goals (4 items for each subscale) as well as full-scale WAI-S scores. The WAI-S is a psychometrically sound instrument with internal consistency estimates ranging from .90 to .92 (client version) and .83 to .91 (counselor version; Tracey & Kokotovic, 1989).

Horvath and Greenburg (1986, 1989) recommend administering the Working Alliance Inventory after either the third, fourth or fifth sessions, because alliance qualities are fairly well established by then, and therapy outcomes can be predicted with reasonable accuracy. Busseri and Tyler (2004) reported significant intercorrelations at Session 4 and at the final ratings points. Based on this body of research, the WAI-S was administered to both participants and counselors following the completion of the fourth session and again after completion of the last session. The WAI-S at the fourth session yielded internal consistency alpha coefficients of .95 and .79 for client and counselor, respectively. The WAI-S administered after the last session yielded alpha coefficients of .97 for client and .92 for counselor, respectively.

The WAI-S was used in the current study as a way to identify the level of therapeutic alliance the participants had with their respective therapist, and as a potential method of ruling out the possibility that improvements made in one group over another was not simply related to a higher level of therapeutic alliance versus the type of treatment implemented.

Other Sampling Issues

An issue that arose during the course of the study was the successful completion of the program and subsequent discharge of three participants (TAU; n = 2; ACT; n = 1) prior to the completion of the posttreatment assessments. All three participants (Subjects 17, 31, and 33)
were discharged after the treatment team and the medical provider deemed them appropriate for discharge. Unfortunately, on all three occasions, the primary investigator received notification from treatment team members after the patients were discharged from the facility. The MSH IRRB committee chair was contacted and agreed to allow communication with the individuals over the phone post-discharge to complete posttreatment measures. All three individuals were contacted within 2 days of their discharge and an independent evaluator conducted the posttreatment assessments over the phone. As a result, the HRS scores from the three individuals may be somewhat imprecise given that an objective assessment of 2 of the 21 questions could not be accurately obtained over the phone.

There were also difficulties in obtaining all of the WAI-S Client and Counselor forms. One TAU subject (15) reportedly only received one individual therapy session. Therefore, the participant’s therapist never provided a WAI-S Client form to complete, nor did the therapist complete a WAI-S Counselor form. Another TAU subject (23) reported dissatisfaction in the way mental health issues were addressed, stating “…(counselor) only focuses on my problems with alcohol, that’s not my only problem.” The participant’s dissatisfaction was reflected on his WAI-S Client form, resulting in the univariate outlier on the fourth WAI-S Client. The handling of this and other univariate outliers are discussed in the next section. In addition, the TAU therapist of this participant did not complete a WAI-S Counselor form for either the fourth or last session.

Method of Data Analysis

The statistical method for identifying and excluding univariate outliers included a statistical procedure (i.e., \(z\)-scores > 3.29) and graphical depictions (i.e., boxplots) of all variables, as suggested by Tabachnick and Fidell (2001). Graphical depictions (i.e., boxplots) and statistical
procedures (i.e., Mahalanobis distance) for identifying multivariate outliers were also employed. Three univariate outliers (Subject 23, WAI-S Client 4; Subject 16, PASUPP Pre; Subject 31, BDI-II Post) and two multivariate outliers (Subjects 23 and 31) were identified using the above screening methods. Data substitution was considered for all outliers. Data substitution followed guidelines from Tabachnick and Fidell to substitute the true score with a score one standard deviation from the minimum or maximum score within the group. This method allowed for continued understanding of the data, but lessened the overall deviation from the mean. Two of the univariate outliers were also multivariate outliers; therefore, with data substitution, both were no longer multivariate outliers. With regard to the final univariate outlier, several methods for handling this outlier were considered; however, mean substitution produced the clearest results given the range of scores. Following the completion of data/mean substitution, the assumptions of analysis of variance and analysis of covariance were met.

It was concluded that given the small sample size and in order to provide the clearest understanding of the individual scores on each of the measures, analyses were conducted on the measures with and without data substitution. However, significant differences were only noted with the analyses of the BDI-II. Accordingly, the analyses of BDI-II scores are presented with and without data substitution. With regards to the PASUPP and WAI-S, the original data were utilized in their analyses.

The Statistical Package for the Social Sciences (SPSS 11.0.1 for Windows, Standard Version) software program was used for all of the statistical calculations. Descriptive statistics and group comparisons are presented in narrative and table format, whichever method facilitates easier comparisons between groups.
CHAPTER III
RESULTS

Analyses of Pretreatment Differences

Tables 10 and 11 present pretreatment data for the TAU and ACT participants, respectively. There were no statistically significant differences between those two groups on pretreatment HRS ($p = .08$), BDI-II ($p = .10$), Alcohol TLFB ($p = .69$), or AAQ ($p = .75$). While the difference on the HRS was not statistically significant, the difference posed a potential threat to the validity of the results. Pretreatment HRS scores were considered as a covariate in further analyses; however, using this method might have pulled out potential true effects of the treatment and could have resulted in a misinterpretation of the findings. Consequently, 2 x 2 [Time (pre vs. post) x Treatment (TAU vs. ACT)] analyses of variance (ANOVA) were conducted on the HRS, as well as on the BDI-II (both original and substitute scores) and the AAQ.

Depression Measures: Analysis of Statistical Significance

**HRS.** Table 12 reports the analysis of HRS scores indicating a significant main effect for time ($p < .01$) alone. There was no main effect for treatment ($p = .23$) nor interaction effect for Time x Treatment ($p = .17$).

**BDI-II.** Table 12 also presents the analyses of the BDI-II from pretreatment to posttreatment, with both original and substitute scores. Both analyses revealed significant main effects for time ($p < .01$). While both groups reported significantly lower levels of depression at posttreatment than pretreatment, the analysis of both sets of BDI-II scores also indicated a significant effect for treatment [$p = .04$ and $p = .02$ (one-tailed), respectively], with ACT participants reporting lower levels of depression than those who received TAU. Posttreatment analyses of original BDI-II
scores (TAU: $M = 15.17$, $SD = 11.46$; ACT: $M = 8.00$, $SD = 10.41$) detected no statistically significant differences ($p = 0.12$) between groups, but did so for substitute BDI-II scores [(TAU: $M = 15.17$, $SD = 11.46$; ACT: $M = 6.30$, $SD = 5.63$; $t(22) = 2.41$, $p = 0.01$ (one-tailed)].

Because the BDI-II was administered at the end of each session as well as at pretreatment and posttreatment, it was also possible to conduct an analysis of any differences in self-reported levels of depression between the two treatment conditions at each session. The only significant results obtained were for Session 4, $t(20) = 2.10$, $p = 0.02$ (one-tailed) with ACT participants reporting significantly lower levels of depression than the TAU participants.

**Depression Measures: Analysis of Clinical Significance**

In addition to statistical significance, the clinical significance of posttreatment reductions in levels of depression was also considered.

*Asymptomatic status.* Based on HRS cutoffs (<14) used by Hellerstein (2001), 7 TAU and 9 ACT participants were asymptomatic for depression at the posttreatment assessment, a proportional difference that was not statistically significant ($p = 0.33$, one-tailed) according to Fisher’s exact probability test (Siegel, 1956). Based on BDI-II cutoffs (<14) used by Beck et al. (1996), 7 TAU participants were asymptomatic for depression at the posttreatment assessment, compared to 11 ACT participants, a proportional difference that was not statistically significant ($p = 0.08$, one-tailed) according to Fisher’s exact probability test (Siegel).

*Recovered and/or improved status.* Reductions in level of depression were also evaluated for clinical significance according to criteria of recovery and improvement suggested by Jacobson and Truax (1991). On the HRS and BDI-II, each participant was categorized as either recovered and/or improved. To be considered recovered, a participant’s score had to fall within the range of the functional or normal population, where range was defined as within two standard
deviations from the mean of that population. Normative data on the HRS (Hellerstein et al., 2001) was used in a formula provided by Jacobson and Truax to determine cutoff scores reflective of recovery for the HRS. Normative data on the BDI-II (Fireman, Indest, Blackwell, Whitehead, & Hauser, 2005) was used in a formula provided by Jacobson and Truax to determine cutoff scores reflective of recovery for the BDI-II.

Reliable change indices were also calculated for the HRS and BDI-II to determine if improvement exceeded that which could be attributed to limited instrument reliability. Test-retest reliability coefficients reported by Williams (1998) for the HRS and Beck et al. (1996) for the BDI-II were used in the calculations of the reliable change indices. Participants were categorized as improved if their reliable change index scores exceeded the cutoff of 1.96 recommended by Jacobson and Truax (1991).

The clinical status of the participants based upon their level of depression at posttreatment as assessed by the HRS is summarized, according to treatment groups, in Tables 13 and 14. Table 15 reflects the number of subjects in each group who met the criteria for either improved and/or recovered based upon interviewer-rated levels of depression. At posttreatment, a majority and equivalent proportion of participants in each treatment condition displayed recovery and/or improvement. The proportion of participants who could be categorized in this manner at posttreatment was not significantly different between the two treatment conditions according to Fisher’s exact probability test (Siegel, 1956).

The clinical status of the participants based upon self-reported levels of depression at posttreatment on the BDI-II is summarized, according to treatment groups, in Tables 16 and 17. Table 18 reflects the number of subjects in each group that met the criteria for either improved and/or recovered on the BDI-II. At posttreatment, a majority of participants in each treatment
condition displayed recovery and/or improvement. The proportion of participants who could be
categorized in this manner at posttreatment was not significantly different between the two
treatment conditions according to Fisher’s exact probability test (Siegel, 1956).

Alcohol Use

No participants reported consuming any alcohol during their hospital stay; therefore,
posttreatment data were not reported.

Experiential Avoidance versus Acceptance

Analysis of statistical significance. The results of the 2 x 2 ANOVA on AAQ scores as
presented in Table 12 revealed significant main effects for both time ($p < .01$) and treatment
($p = .02$) as well as a significant Time x Treatment interaction effect ($p = .02$). While the study
sample collectively showed a significant reduction in AAQ scores $t(23) = 2.81, p = .01$, when the
groups were analyzed separately, a significant difference in scores from pretreatment to
posttreatment was only detected for the ACT group, $t(22) = 2.33, p = .03$. A significant
difference was noted when posttreatment AAQ scores were compared between groups (TAU:
$M = 44.08, SD = 5.68$; ACT: $M = 34.42, SD = 10.55$), $t(22) = 2.79, p < .01$ (one tailed); however,
this could be due to the minimal change from pretreatment to posttreatment AAQ scores for the
TAU group.

Analysis of clinical significance. In addition to statistical significance, the clinical
significance of posttreatment AAQ scores was also considered by again using the Jacobson and
Truax (1991) criteria. Normative data on the AAQ (Hayes, Strosahl, et al., 2004) were used to
determine a posttreatment cutoff score reflective of recovery ($AAQ \leq 21$). A test-retest
reliability coefficient also reported by Hayes, Strosahl, et al. was used in the calculation of the
reliable change indices to determine if pre to posttreatment reductions on AAQ scores exceeded that which could be attributed to limited instrument reliability.

The clinical status of the participants based upon their self-reported levels of emotional acceptance at posttreatment is summarized, according to treatment groups, in Tables 19 and 20. Table 21 reflects the number of subjects in each group that met the criteria for either improved and/or recovered on the AAQ. At posttreatment, a minority of the participants (TAU, 0; ACT, 3) displayed recovery and/or improvement based upon their self-reported levels of experiential acceptance as assessed by the AAQ. The proportion of participants who could be categorized in this manner at posttreatment was not significantly different \( p = .11 \) between the two treatment conditions according to Fisher’s exact probability test (Siegel, 1956).

**Therapeutic Alliance**

Data provided about therapeutic alliance were obtained from the WAI-S Client and Counselor forms. These data were analyzed from information obtained after the fourth and last sessions. Tables 22 and 23 reflect the WAI-S scores for both client and counselor forms for TAU and ACT groups, respectively. Due to the unequal sample sizes in each group, the nonparametric Mann-Whitney test was utilized in the statistical analyses.

**Fourth session analysis.** The fourth session WAI-S scores were analyzed for difference between groups on both the WAI-S Client and Counselor forms. It should be noted that 12 ACT participants and 11 TAU participants completed the assessment. There was a significant difference between treatment groups on the scores from the fourth session WAI-S Client forms; \( z = 2.02, p = .04 \); with the ACT participants reporting greater therapeutic alliance than the TAU participants. There was also a significant difference between treatment groups on the scores
from the WAI-S Counselor forms; \( z = 2.00, p = .05 \); with the ACT counselor reporting greater therapeutic alliance than the TAU counselors.

*Last session analysis.* The last session WAI-S scores were also analyzed for differences between groups on both client and counselor forms. It should be noted that 11 ACT participants, whereas, only 4 TAU participants completed the assessment. There was a significant difference between treatment groups on the scores from the last session WAI-S Client forms; \( z = 2.40, p = .02 \); with the ACT participants reporting greater therapeutic alliance than the TAU participants. There was also a significant difference between treatment groups on the scores from the last session WAI-S Counselor forms; \( z = 2.03, p = .04 \); with the ACT counselor reporting greater therapeutic alliance than the TAU counselors.

*Treatment Variables*

While the difference in total number of hospital days between groups was not statistically significant (\( p = .24 \)), the number of days from pretreatment to posttreatment assessment was significantly different between the TAU (\( M = 33.33, SD = 12.27 \)) and ACT (\( M = 22.67, SD = 5.98 \)) groups, \( t(22) = 2.71, p = .01 \) (two-tailed). There was not a significant difference (\( p = .10 \)) in the number of sessions participants received in each group. However, because the length of the ACT sessions (30 min) were shorter than those within TAU, the ACT participants received significantly fewer hours of total therapy [ACT: \( M = 3.13, SD = .31 \); TAU: \( M = 4.33, SD = 1.56 \)], \( t(22) = 2.64, p = .02 \) (two-tailed)].
CHAPTER IV
DISCUSSION

The major purpose of this study was to investigate the degree to which inpatients diagnosed with comorbid depression and an alcohol use disorder would respond differently to TAU versus ACT. The Minnesota Model, or 12-step program (Owen, 2000) was the TAU approach utilized by counselors at the MSH. ACT was chosen as an alternative approach for several reasons, as outlined earlier. First, there is increasing empirical support for the use of ACT as a treatment strategy for both depression (Zettle & Hayes, 1986; Zettle & Raines, 1989) and substance abuse disorders (Bissett, 2002; Gifford, 2002; Gifford et al., 2004; Hayes, Wilson, et al., 2004; Wilson & Bryd, 2004) individually. Second, additional research has shown promise in the use of ACT for the treatment of alcohol use disorders individually (Heffner et al., 2003), as well as comorbid posttraumatic stress disorder and substance abuse (Batten & Hayes, 2005). Finally, both depression and alcohol use disorders may be conceptualized as disorders that share experiential avoidance as a common pathogenic process that is targeted by ACT.

It was hypothesized in this study that participants randomly assigned to ACT generally would show a more favorable therapeutic response than those who received TAU. More specifically, it was expected that ACT participants would display (a) a more rapid treatment response and associated shorter length of stay, (b) greater improvement on measures of depression, and (c) greater reduction in levels of experiential avoidance. To varying degrees, all three hypotheses were supported and will be described in more detail in the sections that immediately follow.
Hypothesis 1

It was expected that ACT participants would have a more rapid treatment response and, therefore, meet discharge criteria (i.e., being no longer deemed a danger to self or others due to psychiatric or substance-related issues) sooner than TAU participants. Ultimately, the decision to discharge a particular patient was made by the medical staff. However, information about whether to discharge a particular patient, including participants involved in the study, was based on several sources of information presented during weekly treatment team meetings, and the possibility that both TAU and ACT counselors may have unduly influenced this process cannot be ruled out completely. To better understand this issue, it is necessary to describe the treatment team and the role it played in the discharge process.

The treatment team members consisted of both ACT and TAU counselors, physicians and nurse practitioners, nurses, the clinical psychology supervisor, the CDU coordinator, direct care staff, recreation therapist, education department personnel, and clergymen. All counselors also served as case managers for all patients assigned to them. Thus, personnel who delivered TAU and ACT functioned as both “primary counselors” and case managers for patients both in and out of the study. Because both TAU and ACT counselors worked with individuals in addition to those participating in the study, the medical staff was only aware of a patient’s assignment to a specific counselor as a case manager, not whether they were participating in the study or receiving a specific treatment approach. The medical staff was also not provided information from the pretreatment or session assessment scores.

The assigned TAU or ACT counselor was responsible for developing the weekly treatment team staffing sheets for each participant, which contained the following types of archival data: (a) behavioral observations documented in the patient’s chart, (b) signatures on the patient’s
signature card, and (c) completion of the discharge plan. The presentation of the archival data to the treatment team followed the same order. Behavioral observations that were presented included a patient’s participation during groups and lectures as documented in the patient’s chart by the activity leader or lecturer. Other behavioral observations included completion of step-work as outlined in the 12-Step programming (Owen, 2000), the patients’ reported acceptance of their addiction and willingness to verbalize their addiction in groups, and the identification and utilization of coping skills in the therapeutic milieu.

Counselors also presented archival data regarding behaviors or verbalizations that offset the patient’s progress in treatment. Information about medication noncompliance was obtained from the nurses and documentation in the chart. Denial of problems with addiction was obtained from the patient, the chart, and/or direct observations by the counselor or direct care staff. Information about the lack of attendance or participation in group and noncompliance with homework assignments was obtained from their signature card and archival data in the patient’s chart. Suicidal ideation, suicidal gestures, violent behaviors, threatening behaviors, or rule violations were obtained through archival data in the patients’ charts.

Signature cards, which documented attendance at groups and lectures, were gathered prior to the treatment team meeting and presented as supplemental information to the archival data. In addition to behavioral observations and signature card, the counselors also presented information about the patient’s progress on developing a realistic, recovery-oriented discharge plan. The TAU and ACT counselors assisted each participant in developing a discharge plan which included: (a) a relapse prevention plan, (b) residential placement following treatment, (c) post-discharge employment options, and (d) recovery-oriented groups the participant planned to attend following discharge.
Following the presentation of the archival data, all of the treatment team members were solicited for additional information or clarity regarding observations of the patient’s behaviors in the therapeutic milieu. After all information was presented and clarified as needed, the medical staff would occasionally solicit the opinions of the TAU and ACT counselors about a participant’s readiness for discharge. The TAU and ACT counselors were specifically advised to not offer any opinions about a particular patient readiness for discharge, either during or outside of the treatment team meetings, unless it was solicited in this manner by the medical staff. Thus, the likelihood that either the TAU or ACT counselor could have somehow blatantly biased the discharge process appears to have been remote. While input about discharge from a particular patient’s counselor was valued the most out of the rest of the treatment team members, ultimately the medical staff made the final decision about discharging a patient.

In general, patient improvement in their alcohol use disorder appeared to be weighted more heavily than progress in the alleviation of depression in determining discharge, unless a risk for suicidality remained. To verify the relative weight given separately to improvement in the comorbid disorders, the length of hospitalization was compared for individuals who displayed differing levels of posttreatment depression. Within the study population, 4 TAU participants (33%) and 2 ACT participants (17%) continued to show elevated levels of depression (i.e., maintaining BDI-II scores ≥ 20 and/or HRS scores ≥ 14) at posttreatment compared to other participants in their respective groups. When these 6 participants were compared with others in the study, they remained in the hospital for an equivalent length of time, suggesting that the presence of nonsuicidal signs and symptoms of depression was not a major contributing factor to the discharge decision. However, the participants who continued to be depressed at the end of
the study received significantly greater total hours of therapy \((M = 4.67, SD = 1.47)\) than the rest of the study population \([M = 3.42, SD = 1.05; \, t(22) = 2.29, \, p = .03]\).

As suggested earlier, the feedback solicited from all of the staff members, including both ACT and TAU counselors, poses a potential threat to the validity of the study results. The TAU or ACT counselors could have either intentionally or unintentionally impacted the discharge decision and ultimately the length of treatment for the participants. For example, if the TAU counselors believed that a patient’s length of stay needed to be at least 28-days in order to receive all of the educational lectures and groups as a part of treatment, they may have put less emphasis during treatment team meetings on a given participant’s improvements relative to another patient who had already surpassed the 28-day hospitalization period. Conversely, if the ACT counselor believed that the ACT treatment approach would provide for a quicker recovery and earlier discharge, she may have exaggerated the improvement that an ACT participant was making in their treatment.

As a result, what may be construed as possible experimenter bias from both sets of counselors could threaten the integrity of the discharge data. As discussed, any egregious and deliberate attempts to influence the discharge process were precluded by the manner in which it was overseen by the medical staff. However, more subtle and unintentional counselor influences cannot be completely ruled-out. Future research could address this issue by designing a behavioral grid that could be utilized in documenting a patient’s completion of certain requirements for discharge. Another way of eliminating potentially biased input from treatment team members would be to use a decision rule in which each of several assessment findings are weighted differentially as a determinant of a participant’s readiness for discharge. The findings on the different measures could either be obtained through self-report or assessed by an
independent evaluator. A truly blind panel of experts could also interview patients being considered for discharge and make a judgment about their readiness for discharge independent from archival data. Yet another possibility, which is somewhat more subjective, would be to have an independent assessor review the patient records to determine level of progress and readiness for discharge.

Despite potential threats to the integrity of the readiness for discharge measure, because the medical staff were blind to a patient’s assignment within the study, as well as blind to pretreatment and weekly measures, the discharge decisions of the medical staff may be considered as a crude index of patient responsivity to treatment that was largely independent from the other dependent variables. The overall length of time in the study was utilized as a comparison between groups to investigate the hypothesis that ACT participants would meet discharge criteria sooner than TAU participants. This was confirmed as on average TAU participants were hospitalized for over a month (33 days), while those who received ACT were hospitalized for a significantly shorter period of time (23 days).

In addition to unequal length of hospitalization, the first hypothesis was also confirmed further by a significant difference in the number of hours of individual therapy each group received (TAU: \(M = 4.33, SD = 1.56\); ACT: \(M = 3.13, SD = .31\)). The ACT participants met discharge criteria sooner in their treatment and overall course of hospitalization than individuals in the TAU group, even though they received less individual therapy during the study. The shorter length of hospitalization time and a decreased number of hours of individual therapy, as compared to the TAU group, appears to reflect the speed of recovery for the ACT group.

Thus, ACT appears to be not only a more efficacious intervention, but one that is also more cost-effective than TAU. Given that the daily cost of treating a patient on the Chemical
Dependency Unit at the MSH is reported by the Admissions Department to be approximately $100, this difference on average between TAU and ACT participants represents an average $1,000 savings per participant over the course of their treatment. As a result, not only do the findings from the current research on ACT have potential clinical implications, but also considerable financial ones as well, specifically to the state of Mississippi.

The overall findings that address Hypothesis 1 could be a function of several aspects of the study. First, the speed of recovery for the ACT group may be due to the integrated treatment approach it took with the participants to address both depression and an alcohol use disorder and any integrated approach, despite other differences, might show similar effects. Future research could address this possibility by comparing the ACT approach, as outlined in Appendix A, to another treatment approach that targets both the depressive disorder and alcohol use disorder simultaneously, but by employing differing tactics and methods. If ACT were compared with another alternative approach and no differences between the groups were found, this would suggest that the specific therapy plays less of a role in the overall improvements than one that provides simultaneous treatment of the two disorders. On the other hand, if a difference were found between ACT and another integrated approach, this would suggest that specific therapeutic components that distinguish them may account for differences in treatment efficacy. With such findings, it would be especially important to identify and further understand the associated therapeutic mechanisms (e.g., experiential avoidance if ACT was found to be more efficacious) in order to more effectively facilitate them by making adjustments in the treatment approach.

Second, the speed of recovery for the ACT group could be a function of the specific treatment methods and techniques of acceptance and commitment therapy utilized to address the
comorbid issues. ACT has shown increasing empirical support as a treatment for both depression and alcohol use disorders. Future research, as outlined above, could address whether the speed of recovery was related to any integrated treatment approach independent of its defining components or specific techniques.

Hypothesis 2

It was anticipated that the overall levels of depression, as measured by the HRS and BDI-II, of the ACT participants would be significantly lower at posttreatment than those of the TAU participants. This hypothesis was based on the differences in the implementation of treatment approaches (i.e., TAU therapists used sequential treatment methods that focused primarily on alcohol problems and secondarily on depression, whereas the ACT therapist used integrated treatment methods that focused on both disorders simultaneously).

It would be logical to assume that because depression was addressed simultaneously during the treatment of an alcohol use disorder, that the ACT participants would show significantly greater improvements compared to TAU participants, at the end of treatment on measures of depression. However, additional research could test this assumption by determining whether these results were unique to the ACT treatment approach or whether another treatment approach that equally focuses on depression and an alcohol use disorder would have similar results. For example, if ACT were compared, as suggested above, with another integrated approach that focuses equally on depression and an alcohol use disorder, and no difference was found between the two interventions, it would strongly suggest that addressing both of the issues simultaneously is the critical factor common to both treatment approaches. On the other hand, if ACT were found to be more efficacious than another integrated approach, specific therapeutic components unique to ACT would apparently be instrumental in overall improvement.
No additional hypotheses were formulated about differential reductions in alcohol use measures during treatment due to the unlikely probability of participants obtaining alcohol during their hospitalization. Because alcohol was unobtainable at the state hospital, decisions about a participant’s improvements in their alcohol use disorder were difficult to assess in this setting, so behavioral improvements in life skills areas were often used instead. As discussed previously, positive behavioral improvements in the area of substance abuse treatment, even if depressive symptoms were not resolved, were apparently utilized as the primary justification for a patient meeting discharge criteria.

Because ACT participants were hospitalized for a significantly shorter period of time, it could be argued that such evidence suggests that ACT was more efficacious than TAU in impacting alcohol use disorders as well as depression. However, for the sake of comparison, if this study were performed in a different setting where alcohol was more attainable, the results may have been different. Additional research could investigate this further by utilizing the study procedures with individuals seeking treatment from an outpatient clinic who would thus have the opportunity to continue to engage in alcohol abuse. Biochemical measures, such as breathalyzers, random urine drug screens and/or hair samples (Jacobs, DuPont, & Gold, 2000) could be used as objective measures of a participant’s ability to refrain from using alcohol in between sessions. This would allow for an improved understanding about the participant’s ability to refrain from using alcohol and readiness for discharge.

Hypothesis 2 was partially supported. A discrepancy was identified between “improvements” in level of depression as assessed by an independent evaluator on the HRS versus by self-report using the BDI-II. In particular, an analysis of the HRS did not, as hypothesized, show a differential improvement between groups, whereas analyses of both original and substitute
BDI-II scores did, and in favor of ACT as expected.

Several possible factors may account for the inconsistent findings on the two depression measures. One possibility may relate to the relative vulnerabilities of the two measures to possible demand characteristics. The implication that participants were expected to report lower levels of depression at posttreatment may have been more strongly received by ACT participants. This expectation of a decrease in depression could either be due to the focus placed on the depressive symptoms within ACT relative to TAU or potential biases by the ACT counselor.

This expectation of improvement in depression may not have affected the HRS scores to the same extent as the BDI-II. While the HRS and BDI-II attempt to obtain similar information from the patients, the interview format of the HRS obtains information through a series of questions where ultimately the assessor decides on the severity of the symptoms. The interview format is ambiguous in the sense that participants are less certain how their responses to a series of questions will lead to a particular score on the HRS. In comparison, the BDI-II has scores next to the choices (i.e., 0-3, with all items keyed in the same direction) and forces the participant to make a choice about how they are feeling on a given question. Thus, the scoring is rather transparent and it is not difficult to answer the items in such a way to deliberately produce either a high or low total score.

Because of the differences between the measures in how the information that is used to assess the level of depression is obtained, it is potentially more likely that the BDI-II would be more susceptible to demand characteristics than the HRS. Future research could manipulate the level of “demand” placed on particular groups within a study. For example, a type of control group could be included in which no demands are placed on any of the participants regarding expected effectiveness who, nevertheless, are presented with a particular treatment approach.
Another group could receive a minimal/low level of demand for improvements, while yet another group could receive a high level of demand for improvement. Although it would be atypical within outcome research, in principle, a group could also be included that receives at least a mild counterdemand (e.g., “it seems doubtful that you will find this treatment helpful, but the only way that this can be determined is by evaluating your response to it”)

In addition to the use of the semi-structured interview, the difference between the HRS and BDI-II scores could be a function of the information obtained from the instruments. For example, the BDI-II contains *DSM-IV* (APA, 2000) criteria for depression not included in previous versions of the Beck Depression Inventory (Beck et al., 1996). In comparison, several of the core items (e.g., psychic and somatic anxiety, genital symptoms, hypochondiasis, insight about troubles, fluctuations of mood throughout the day, depersonalization, paranoid symptoms, and obsessional and compulsive symptoms) on the HRS are not among the current *DSM-IV* criteria for depression. In addition, the HRS also fails to include all of the criteria covered by the BDI-II (e.g., past failure, punishment feelings, self-dislike, self-criticalness, indecisiveness, worthlessness, irritability, and concentration difficulties). As a result, the BDI-II and HRS do not assess the same signs and symptoms of depression, and differences between the two measures might be expected as a consequence.

Finally, a small portion of the discrepancy between the HRS and BDI-II may be a result of the level of association between the two measures. As found in research by Beck et al. (1996), while the HRS and BDI-II are highly correlated ($r = .71$) there is some discrepancy between the two measures. In the current study, the correlations between the HRS and BDI-II ($r = .85$) were even higher; therefore, accounting for only a small portion of the lack of consistency between the two measures.
While Hypothesis 2 received at least partial support from a statistical analysis of the two depression measures, it was not supported by analyses of clinical significance. On both the HRS and BDI-II, a majority of the participants in both groups showed clinically significant improvement as evidenced by their lowered scores on the HRS and BDI-II. For the HRS, a majority of the participants \( (n = 16) \) were asymptomatic \((< 14)\) for depression at the posttreatment and also met the criteria for either recovery and/or improvement \((n = 22)\). According to the BDI-II, a majority of the participants \((n = 18)\) were asymptomatic \((< 14)\) for depression at posttreatment and also met the criteria for either recovery and/or improvement \((n = 22)\).

There may be two factors that contributed to the lack of any difference in clinical impact associated with the two treatment approaches. The absence of clinically significant findings may be a function of the relatively small number of subjects in each group as well as the use of fairly liberal criteria for asymptomatic status. For example, if a cutoff of \( \leq 9 \) on the BDI-II was utilized, 5 TAU participants compared to 9 ACT participants would be asymptomatic for depression. While these proportional differences are still not statistically significant given the small sample size, clinically significant differences between the groups might be expected to emerge with a larger sample.

Some possible explanations for clinically significant improvements in both groups may relate to common therapeutic interventions between the participants. For example, all participants received at least one antidepressant medication during the course of treatment. This variable could have alleviated some of the participant’s depressive symptoms resulting in improved levels of depression at posttreatment. Future research could separate the ACT and TAU participants
into those who receive medications and those who do not in order to understand the effect that the medications have on alleviating depression.

In addition to medication, all of the participants were also involved in group therapy and attended lectures pertaining to various life-skill areas. These common interventions may have played a role in clinically significant improvements at posttreatment. Future research could address these issues by minimizing common therapeutic interventions and focusing on the main difference between groups being the type of individual therapy offered to the participant.

Given that the ACT participants received significantly fewer hours of individual therapy, it could be expected that with a “dose” of treatment equivalent to that received by their TAU counterparts, clinically significant differences might emerge in favor of ACT. Future research could address this issue by insuring that both groups receive equivalent but longer trials of individual therapy. For example, future research that allowed for longer treatment phases (i.e., 8-10 sessions) that might increase the likelihood of detecting therapeutic differences of clinical significance.

Hypothesis 3

The final hypothesis investigated by this project was that ACT participants would show a significant decrement in levels of emotional avoidance as measured by the AAQ. This was expected given that experiential avoidance purportedly constitutes a common pathogenic process targeted by ACT that supports both depression and the abuse of alcohol. As anticipated, a significant change in AAQ scores was noted for the ACT participants only.

The role of reductions in experiential avoidance as a therapeutic process was further investigated by analyzing the correlations among HRS, BDI-II, and AAQ change scores. The change scores were obtained by subtracting the posttreatment score from the pretreatment score.
for all three measures with a separate correlation matrix calculated for both groups. When correlations between change scores on the HRS, BDI-II, and AAQ were analyzed, the TAU group showed no significant correlations between the AAQ and the two depression measures (HRS: \( r = .02, p = .95 \); BDI-II: \( r = .07, p = .83 \)). In comparison, the AAQ showed a significant correlation with the HRS (\( r = .57, p = .05 \)), but not with the BDI-II (\( r = .32, p = .31 \)).

Although, the correlations between the TAU and ACT groups did not differ significantly, the overall findings provide some further support for reductions in levels of experiential avoidance serving as a therapeutic change mechanism for participants who received ACT. Both groups showed similar and significant reductions in HRS scores, but this improvement was correlated with similar reductions in AAQ scores for ACT participants only.

Even though Hypothesis 3 was generally supported, the overall findings might also be explainable by demand characteristics. By the very nature of the session content, as outlined in the protocol (see Appendix A), ACT examined individual participant’s unsuccessful attempts at avoiding thoughts and feelings and resulting dysfunctional behaviors (i.e., depressive tendencies and alcohol use). The metaphors, exercises, and homework assignments provided to the ACT participants focused on their active movement towards acceptance of their unwanted thoughts and emotions. Individual questions on the AAQ not only focus on acceptance of unwanted thoughts and emotions (e.g. “I’m not afraid of my feelings.”) but also on positive behavioral changes in spite of unwanted private events (e.g., “I am able to take action on a problem even if I am uncertain what is the right thing to do.”) Therefore, it seems possible that ACT participants may have felt, based on the type of treatment they were receiving, an expectation of improvement on willingness to accept troublesome thoughts and emotions, as well as a willingness to make positive behavioral changes. This expectation of improved levels of
acceptance could have resulted in an improved score on the AAQ, particularly given the transparent nature of its items.

Process research involving ACT (Gifford et al., 2004; Hayes, Bissett, et al., 2004) has become a critical component in understanding the specific mechanisms through which it may lead to therapeutic change. Once the specific process of change is better understood, this opens the door for it to be enhanced in addressing a wide array of psychological difficulties. Inclusion of an instrument, such as the AAQ, that measures changes in therapeutic process is thus warranted in studies similar to the current research if ACT as a transdiagnostic treatment approach is to become further advanced and developed.

In general, existing process research involving ACT is consistent in suggesting changes in experiential avoidance function as a central therapeutic mechanism. While there was no difference between groups in this study in their levels of experiential avoidance pretreatment, posttreatment AAQ scores for the ACT group were significantly improved when compared to their TAU counterparts. Further, when the groups were analyzed separately, HRS and AAQ pretreatment to posttreatment change scores were significantly correlated with each other for the ACT group alone.

The improvement in AAQ scores from pretreatment to posttreatment noted for ACT participants in this study is consistent with findings from a recent meta-analysis of ACT studies utilizing the AAQ as a process measure (Hayes, Luoma, Bond, Masuda, & Lillis, 2006). Similar to this study’s findings, other investigations have also reported a significant correlation between increased psychological flexibility as assessed by the AAQ, and improvement in overall quality of life and related outcome measures.
Self-report measures like the AAQ may be especially vulnerable to response sets and demand characteristics. The AAQ, nevertheless, appears to be the best measure currently available for assessing the mechanism of change in ACT. The movement to develop implicit measures of psychological variables that up until now have been explicitly evaluated through paper-and-pencil means may be a way of eventually minimizing such concerns. One recent approach that may show promise in the development of implicit psychological measures is the Implicit Relational Assessment Procedure (IRAP; Barnes-Holmes, Barnes-Holmes, Power, Hayden, Milne, & Stewart, 2006). The IRAP is a computerized procedure for assessing the strength of an individual’s relational associations between certain stimuli and psychological attributes. It does so by comparing the relative speed with which an individual categorizes stimuli and attributes that are consistent with each other versus when they are presented as inconsistent. For example, in assessing self-esteem with the IRAP, subjects are asked to press one key to indicate that two words go together and another to reflect that they don’t. Individuals with positive self-esteem would be expected to categorize the positive attributes associated with the target stimulus “self” at a quicker rate of speed than negative attributes as these are more inconsistent with what thoughts and feelings the subjects have about themselves. Specifically, subjects would be expected to more quickly press a key that reflects that “self” and “strong” go together than when forced to press another that indicate that they do not. The opposite pattern of response latencies would be anticipated by subjects low in self-esteem.

Because individuals are unaware of what is being assessed, the IRAP is presumably less susceptible to demand characteristics and response sets, although this must be determined by further research. In particular, the IRAP ultimately may be able to assess implicitly the same mechanism of change assessed by the AAQ explicitly; i.e., experiential avoidance. Further
investigation is needed and currently underway (R. D. Zettle, personal communication, November 10, 2006) to understand the extent to which each of the methods - both the AAQ and IRAP - are affected by instructions to “fake good” or “fake bad”. It is anticipated that the IRAP will be less affected by such response sets, when compared to the AAQ, although research needed to definitively address this hypothesis is still in progress. Should the expected findings be obtained, the IRAP may provide an additional tool for conducting process research in ACT that is relatively unaffected by some of the same concerns that impact explicit measures such as the AAQ.

Internal Validity Issues

Internal validity is the extent to which changes in the dependent variables within an experiment can be accounted for by the independent variable. While the overall results of this project favor ACT over TAU, the internal validity of the experiment and whether such differences can, therefore, be unambiguously attributed to ACT warrants further consideration. Anytime alternative hypotheses can be used to explain differential change in dependent measures, the internal validity of the study is potentially compromised. As discussed earlier, demand characteristics and experimenter bias cannot be completely ruled-out as confounding variables. This section will consider other possible threats to internal validity.

Pretreatment Differences

The random assignment of all participants to the two treatment conditions resulted in two groups with very similar pretreatment characteristics. In particular, analyses at pretreatment revealed no statistically significant differences between the two treatment groups in any of the demographic variables, including gender, age, marital status, race, and educational level. Analyses also showed no statistically significant differences between the groups on their current
diagnoses and treatment histories, including history of psychiatric and substance abuse treatment, previous suicide attempts, and whether antidepressant medications were prescribed prior to hospitalization. Similarly, no differences were noted on any pretreatment measures, suggesting that any differential treatment findings cannot be attributed to pretreatment differences between the two groups.

**Treatment Integrity**

A potential threat to the internal validity of any comparative outcome study is compromised treatment integrity. In the current study, a treatment manual (see Appendix A) was developed and utilized with ACT participants. While the ACT manual incorporated treatment specific interventions and tactics, such as mindfulness metaphors and exercises, goal-setting, values clarification, and the promotion of overt behavior change, as outlined in the Hayes et al. (1999) book, no verification from its authors was obtained that the ACT treatment manual as written incorporated ACT philosophy, principles, and techniques. However, the ACT treatment manual was developed with the assistance and approval of Dr. Robert Zettle, Wichita State University, who has been involved with Dr. Steven Hayes since the development of this therapeutic approach (Zettle, 2005).

While the manual as designed appears to have closely followed ACT, it is nevertheless possible that it was not adhered to faithfully in providing the treatment. As a result of possible deviations from the manual, the validity of the current study findings may be compromised. This potential threat to treatment integrity was evaluated by audiotaping a proportion (38.7%) of the total ACT sessions. Following the implementation of the study, an independent evaluator, with knowledge and skill in the implementation of ACT to similar populations, verified that it corresponded to the ACT manual. In future research studies, further examination of the dialogue
of all of the ACT treatment sessions should be conducted to insure that it corresponds with the ACT treatment manual as presented.

In addition to the treatment integrity of ACT, another potential threat to the internal validity of the study is the possibility that the TAU counselors may have compromised the integrity and distinctiveness of this approach by utilizing some of the ACT techniques or strategies learned during a 90-minute presentation prior to the onset of the study. As a result, it is possible that at least a few ACT, or other acceptance-based techniques more generally, may have been utilized with the TAU participants. The likely implication for the use of acceptance-based techniques/strategies with the TAU participants, however, would be a minimized treatment effect between the two groups. If this potentially confounding variable was controlled for in the TAU group, a more prominent difference between groups on the AAQ, as well as measures of depression, might be expected.

Another threat to the integrity of TAU is that the specific therapeutic techniques utilized by the counselors who delivered it also varied. While the philosophy of CDU is the 12-step AA approach, some TAU providers also utilize humanistic and cognitive-behavioral approaches when deemed necessary. While this researcher did not track the specific approaches utilized at every given session, the counselors reported using the 12-step AA approach more frequently than any other approach in working with their assigned patients. In addition to utilizing a 12-step approach, TAU counselors also spent at least some of their session time focusing on case management issues; i.e., discussions about rule-violations and consequences, group attendance, upcoming visitors, and discharge plans, as part of their usual therapeutic intervention.

Finally, the TAU counselors may have had a reaction to the patient’s participation in the study. For example, TAU counselors may have altered the course of treatment as a consequence
of the counselor’s awareness of a patient’s participation in the study. In addition, TAU counselors may have altered the emphasis placed on depression as a result of the patient’s participation in a “Depression/Alcohol Study”.

A possible way of minimizing these concerns would be to make the counselors blind to a particular patient’s participation. This could be done by having TAU counselors complete WAI-S at the fourth and last session on all patients assigned to them. Then, the only information that would be utilized in the study would be what is obtained from the WAI-S that corresponds with a study participant. So ultimately, while the counselor would be aware of their own participation in the study, they would be unaware of the specific patients that were a part of a study. However, even with this arrangement, the counselors would still be aware of their own status as “participants” in research, and as a consequence, might continue to alter their therapeutic approach, making the TAU approach functionally different than what it would otherwise be.

In principle, similar steps that were taken with ACT (e.g., manualized treatment approach and audiotaped sessions) could also have been undertaken to insure the integrity of TAU. These steps, however, might have been so reactive with TAU that it would no longer functionally be the same intervention. For example, “manualizing” and audiotaping TAU sessions might change the “usual” treatment methods and thereby create confounding variables that would alter its efficacy. To address this possibility, future research could compare a manualized and audiotaped TAU approach to the version examined in this study to determine the degree to which such potential confounding variables impact treatment outcome.

In addition to treatment integrity issues for each approach individually, equivalent numbers of ACT and TAU therapists should also be utilized in future research to rule-out the possibility that the ACT counselor and not the approach itself lead to differential improvement in the ACT
participants. However, with an equal number of counselors, the potential for extraneous therapist variables to impact therapeutic outcome may also increase.

When the study was developed, it became apparent that participants in both groups would receive several common therapeutic interventions during the course of the study. As outlined earlier, participants in both groups received several common therapeutic components; i.e., group therapy, seminars/study groups, educational groups, 12-step based meetings, medically-related groups/lectures, spirituality-based meetings, daily spiritual meditations, and daily therapeutic recreation and leisure activities. In addition, all participants were prescribed at least one antidepressant medication during their hospitalization. Overall, the therapeutic interventions provided to TAU participants appear to have been a fair representation of the “usual” treatment methods and approach for patients on the chemical dependency unit at the MSH. Therefore, the main difference between the groups was the type of individual therapy (TAU or ACT) the participants received during the study. However, the number of common factors between the groups may have potentially minimized differential treatment effects and the possibility of attributing any changes in dependent variables to the independent variable. Future studies could address this issue further by minimizing the commonalities between the two interventions.

*Nonspecific Effects*

In order to better understand whether any differential improvement associated with ACT was a result of specific treatment effects, the Working Alliance Inventory was administered at the fourth and last sessions as a way of monitoring possible nonspecific effects. Analyses performed on the WAI-S from the fourth and last session demonstrated that the ACT participants and counselor maintained a significantly greater level of alliance with each other than their counterparts in the TAU group. To put these findings in perspective, the aggregate WAI-S
scores from the current study were compared with normative data (Busseri & Tyler, 2003) of individuals seeking psychological services at a university counseling center. The theoretical orientations of the counselors in the Busseri and Tyler (2003) study were eclectic ($n = 14$), cognitive-behavioral ($n = 3$), and psychodynamic-interpersonal ($n = 1$). The aggregate client WAI-S scores from the fourth and final sessions of this study were equivalent and not significantly different from the Busseri and Tyler study. However, the counselor WAI-S scores from the fourth and final sessions were significantly different; $t(74) = 3.10$, $p < .01$, two-tailed; $t(66) = 2.00$, $p = .05$, two-tailed, respectively, with the counselors in the current study reporting a greater level of therapeutic alliance with their clients than counselors in the Busseri and Tyler study.

To help unpack these aggregate findings, the ACT and TAU groups were compared separately with the Busseri and Tyler study. On both the client and counselor WAI-S forms, the ACT scores were significantly higher at both the fourth and last sessions relative to the Busseri and Tyler study. By contrast, the TAU scores were similar to the results of the Busseri and Tyler study. As a result of these comparisons, the ACT group appears to show a significantly greater level of therapeutic alliance between client and counselor than other normative data as well as relative to the TAU condition.

While it may not be possible to tease out all of the different explanations as to what made ACT different and more effective than TAU, at least four explanations may be plausible. Each of the explanations will be examined in order to better understand the theoretical as well as practical implications associated with each. First, it may be possible that the therapeutic alliance in the ACT group was greater because the ACT approach specifically addressed therapeutic tasks and goals to a greater degree than TAU (shared goals and tasks hypothesis). Second, the
therapeutic alliance may have been stronger because of the focus that ACT placed on the both comorbid problems simultaneously (comorbid treatment effect hypothesis). Third, the therapeutic alliance for ACT might have been greater as a result of ACT simply being a more efficacious treatment (efficacy byproduct hypothesis). Finally, the greater therapeutic alliance within the ACT group may have been a function of having only one therapist work with all of the ACT participants (therapist effect hypothesis).

Shared goals and tasks hypothesis. According to Bordin’s (1979) research, working alliance is a relationship between counselor and client that is composed of a relational bond, agreement on the tasks of the therapy, and agreement on goals. In general, ACT in contrast to TAU, may have placed relatively more focus on all three components of a working alliance. For example, as outlined in the ACT manual (Appendix A), the focus during session 1 was on identifying and clarifying the patient’s values, goals and actions. The session by session discussions and homework assignments also assisted in guiding the tasks throughout treatment. These components of the ACT approach may have added clarity to the goals and tasks of the therapeutic process for both the patient and counselor, and thereby contributed to the relational bond between them. Unfortunately, because the TAU sessions did not follow a manual and were not audiotaped, the level of focus that TAU may have placed on the three components of a working alliance is unknown.

Given the focus that ACT places on these three components of working alliance, improved WAI-S scores would be accordingly expected. Future research may want to compare ACT with a modified version of TAU that uses different specific components, but places the same emphasis upon the “common factors” of task and goal agreement in therapy. The primary difference between the TAU approach and a modified TAU approach would be the extent of the
collaboration between patient and counselor during the development of the patient’s treatment plan. The treatment plan could be used as a tool that would outline specific goals and tasks that both the patient and counselor are expected to work on throughout the patient’s treatment. This research could allow for a greater understanding of whether the collaboration on the treatment plan or the integrated treatment approach plays a larger role in the therapeutic alliance between patient and counselor. If the collaboration on the treatment plan plays a larger role than the specific treatment approach in the therapeutic alliance, the WAI-S scores should be similar for both the ACT and modified TAU approach and higher than “regular” TAU. By contrast, if the integrated treatment approach plays a larger role than collaboration on the treatment plan, then ACT participants should continue to report a greater level of therapeutic alliance than patients receiving either of the TAU approaches.

Comorbid treatment effect hypothesis. It could also be argued, as just suggested, that the ACT group showed higher levels of client-therapist alliance due to the integrated approach it took in treating both disorders simultaneously. Unlike TAU, ACT did not limit the content of the sessions to substance-related issues only. Accordingly, the primary focus on substance-related issues within TAU might have lead to a poorer working alliance especially if the participant disagreed about which disorder was of primary importance.

Perhaps any integrated approach would impact therapeutic alliance in a manner similar to ACT. Future research could address this issue by identifying a treatment approach other than ACT that also integrates the treatment of both disorders simultaneously, but that places less of an emphasis than ACT on task and goal agreement. This would allow for a greater understanding of whether the emphasis on the task and goal agreement or the integrated treatment approach itself might account for the differences between groups. ACT could also be compared to other
treatment approaches that emphasize treatment of disorders sequentially versus utilizing an integrated approach to determine if the critical issue is whether comorbid problems are dealt with concurrently or sequentially.

_Efficacy byproduct hypothesis_. Third, the differences in therapeutic alliance between the two groups may be related to treatment efficacy. That is, participants who received ACT may have reported a better therapeutic alliance with their counselor simply because they generally improved more than their TAU counterparts.

When the groups were analyzed individually, the ACT group showed a positive and significant correlation ($r = .71, p = .01$) between the change scores on the BDI-II and the difference between the fourth to final session of client WAI-S administrations, but no significant correlations with the counselor WAI-S scores. In comparison, the TAU group showed no significant correlations between the client WAI-S, counselor WAI-S or the BDI-II. Neither the HRS nor AAQ change scores significantly correlated with either the client or counselor WAI-S scores for either group.

While a relationship between self-reported level of depression and therapeutic alliance is clear for the ACT group, the uncertainty is whether the alleviated depression leads to a greater therapeutic alliance, whether the therapeutic alliance leads to self-reported improvements on the BDI-II, or whether their relationship is itself explainable through some third variable. The AAQ was analyzed as a possible third variable by examining the correlation between client WAI-S and BDI-II change scores while controlling for differences between pretreatment and posttreatment AAQ scores. When the groups were analyzed separately, the ACT group still showed a significant correlation between the BDI-II and the client WAI-S change scores, that was not affected when the AAQ change scores were partialled out ($r = .68, p = .03$). This suggests that
there is a relationship between self-reported levels of depression and the therapeutic alliance between the client and counselor that is independent of improvements on the AAQ.

As discussed earlier, when the HRS and AAQ change scores for the ACT group were analyzed, the results showed they were significantly correlated. When the client WAI-S change scores were partialled out, the HRS and AAQ change scores continued to be significantly related to each other, $r = .67, p = .04$. This suggests that reductions in experiential avoidance and the therapeutic alliance within ACT, at least as it was delivered in this study, independently and equally contribute to overall patient improvement. Specifically, the therapeutic alliance, independent of reductions in experiential avoidance, accounts for the same variance in reduced self-reported levels of depression, as experiential avoidance, independent of therapeutic alliance, accounts for in improvement assessed by externally evaluated levels of depression. Further research could compare ACT therapists with equivalent nonspecific skills to better understand how AAQ reductions may correlate with therapeutic improvement as assessed by multiple measures of depressive symptomatic relief.

Research findings (Eisen, Dickey, & Sederer, 2000; Tryon & Kane, 1995) more generally on the relationship between therapeutic alliance and treatment outcomes are conflicting. In particular, research by Eisen et al. with inpatients suggests that an increased therapeutic alliance with providers does not necessarily correlate with improvements in treatment outcomes. To better understand the possible relationship between therapeutic alliance and treatment outcome, an analysis of covariance (ANCOVA) was conducted on the HRS and BDI-II change scores using client WAI-S change scores as a covariate, resulting in non-significant findings. These analyses suggest that when the influence of the therapeutic alliance is removed, the difference between groups on depression measures is minimized.
Additional research should ideally compare ACT with another approach which is equally efficacious in treatment of depression and alcohol abuse/dependency, but which places less of an emphasis than ACT on the tasks and goals of the treatment and which uses a sequential treatment rather than an integrated strategy. This would allow for additional comparisons of the efficacy byproduct hypothesis with the two hypotheses already discussed. In particular, the “byproduct hypothesis” would be supported if ACT and another approach equally efficacious in the treatment of depression were associated with equivalent levels of therapeutic alliance. By contrast, if ACT showed a greater level of therapeutic alliance than the other group, support would be provided for the other two hypotheses considered so far.

Another potential issue worthy of further investigation is how the relationship between therapeutic improvement and the alliance between participants and counselor may unfold over the course of therapy, more generally, and within ACT specifically. One possible way that therapeutic alliance and improvement may relate to each other is that participants may become more allied with their counselor as they improve. In relation to the participants’ improvement, a counselor may also feel more allied with the participant as therapeutic progress becomes apparent to both. Future research may provide further understanding of the presumably dynamic relationship between therapeutic improvement and alliance by more closely monitoring changes in both depression as well as therapeutic alliance on a session-by-session basis over a longer trial of therapy. This would allow for greater clarification of whether depressive symptoms or therapeutic alliance improves first.

*Therapist effect hypothesis.* A final possible explanation for the difference between groups on the WAI-S could relate to personal characteristics of the ACT therapist and have nothing to do with the treatment approach. If this explanation were valid, participants working with this
counselor could be expected to improve no matter what the therapeutic intervention; i.e., cognitive-behavioral, humanistic, or a combination of a variety of treatment approaches. In addition to a significant difference in client and counselor WAI-S scores between the two groups, there was considerable variability within the TAU group. In particular, one of the individual client WAI-S scores was considered an outlier (Subject 23) due to an extremely low score which reduced the overall TAU scores.

When the ACT and TAU counselors were compared separately using the fourth session client WAI-S scores, 10 of the 12 TAU clients reported WAI-S scores which equaled or exceeded the lowest score from the ACT group. This suggests that the level of therapeutic alliance was not unique to the ACT therapist. In further analyses of the posttreatment HRS and BDI-II scores, using these 10 TAU participants, no significant differences were found between them and their ACT counterparts. In addition, when HRS and BDI-II change scores of the TAU participants were compared to ACT participants, no significant differences were found, essentially replicating the findings reported earlier in which client WAI-S change scores were used as a covariate.

Additional research could investigate individual differences of counselors as potential variables that could influence therapeutic alliance. For instance, individual counselor differences in nonspecific therapeutic skills could be minimized by having the same therapist deliver both treatment approaches to all of the participants. However, a potential disadvantage of this strategy would be an increased likelihood that the treatment strategies might contaminate each other, causing potential threats to treatment integrity. In addition, the counselor might have allegiance issues relating to a specific treatment approach. Another strategy might compare different ACT counselors known to vary in their nonspecific skills to see if there is an effect on treatment
outcome. This would assist in further understanding whether the therapeutic outcome of ACT is impacted by the nonspecific skills of individual counselors who deliver it or whether it is unique to the therapeutic strategies of ACT.

Summary. The potential threats to the internal validity of the study have been reviewed and suggestions for minimizing these threats through further research have been offered. It seems most useful to consider the threats to the internal validity of this study within the context of this project essentially having been a field experiment. While attempts were made to minimize these potential threats, minimal changes, for example, were made to the “treatment as usual” approach to maintain the overall ecological validity of this project. However, the treatment integrity of the TAU approach may still have been influenced by its inclusion within this study. Because ACT was both manualized and audiotaped, the treatment integrity of this approach could be more easily examined. While both groups of participants received several common therapeutic interventions, the main difference between the two groups was the type of individual therapy the participants received -- TAU or ACT. All things considered, while there were some potential threats to the internal validity of the study, the overall integrity of the study appears to have been sufficiently maintained so that concerns about the degree to which this project’s findings may be generalized can be meaningfully considered.

Threats to External Validity

The external validity of a study is the degree to which its findings can be generalized across multiple domains of subjects, settings, and behaviors. If the internal validity of a study is compromised, caution should be used in extending its findings to these domains. Because the internal validity of this study appears to have been acceptable, but certainly less than ideal, issues of external validity can be considered, but with some degree of caution. The external validity of
research results can be indirectly compromised by a lack of internal validity, but also directly by threats that are unique or specific to it. This section will consider some of these additional threats to the external validity and the limitations they may place on generalizing this study’s findings to other subjects, settings, and behaviors.

Nonrepresentative Sampling

One of the greatest threats to the external validity of any research project is nonrepresentative sampling. The “representativeness” of any sample must be considered in the context of a larger population to which the findings might be generalized. There are several other larger populations to which it would be desirable to extend this study’s findings. The degree to which the findings might extend to each of these additional populations will be reviewed in turn.

Treatment site population. At the very least, it would be useful to be able to generalize the results of this project to other patients with the same problems at the same state inpatient facility where it was conducted. Out of the individuals admitted to the Chemical Dependency Unit (CDU) at the MSH from November 23, 2005 through February 24, 2006, 30 individuals met the diagnostic criteria for inclusion in the current study. Out of those individuals, 80% agreed to participate and successfully completed the study. Thus, this study’s sample represented the entire population of those eligible and willing to participate. While the findings appear to be a fair representation of the specific patient population being studied on the CDU during that period of time, some caution should be exercised in extending the results to the small percentage (20%) of individuals who were eligible, but unwilling to participate in the study.

Although the sample in effect comprised the majority of the inpatients being treated for comorbid alcohol abuse/dependency and depression at the time at the facility where the study was conducted, the entire sample size was, nonetheless, rather modest. Unfortunately, with a
small total sample, minimal deviations on posttreatment scores can considerably change the significance of the analyses. Accordingly, the small sample size may place some constraints on the generalization of findings to subsequent generations of similar patients hospitalized at the same treatment site.

In order to address the small sample size of the current study, this project could be replicated at the CDU at the MSH. Because, the course of treatment at the facility generally only lasts about a month, it wouldn’t take long to get a larger sample of patients which could be used in comparisons. The reason this strategy was not employed in the current study was due to the impracticalities of continuing the research study beyond April, 2006 because of the pending completion of this researcher’s internship year and employment at MSH. However, in future research such an approach may be more practical. For example, several cohorts could be studied to obtain more data on the potential differences between groups throughout a year’s span of time. This would provide further information about whether the results were specific to the inpatients who participated in this study during a given period of time or whether they can be generalized to a larger population of patients exhibiting symptoms of a depressive disorder and an alcohol use disorder and hospitalized at this state facility. The findings from a larger sample of individuals might also provide for a clearer understanding of the process of therapeutic change and potentially strengthen the internal validity of the study.

*Other inpatient populations.* Researchers typically hope to generalize their findings to other similar populations in other similar settings. If inpatients at the MSH were compared to other inpatients at state-funded facilities, it would be expected that minimal differences between the groups would be identified. Any differences that may emerge would likely concern the patients’ race/ethnic background and level of religious/spiritual involvement. According to the 2000
census (U.S. Census Bureau, 2001), the “non-Hispanic White (Caucasian)” group made up roughly 69% of the United States population and were primarily of German, Irish, English or Italian descent. In 2000, Latinos (13%) and African Americans (12%) comprised the next largest group of United States citizens, followed by Asian Americans (4%). According to the 2000 census, the northern states tend to have a larger representation of Caucasians, when compared to the southern and southeastern states (heavier population of African Americans) and southwestern states (greater population of Latinos). In addition, the “Bible Belt” which is defined primarily as a majority of the southern and southeastern states, may place more of an emphasis on the religious/spiritual component of the 12-step approach than states to the north or west. It is then probable that the speed of recovery, when a 12-Step “treatment-as-usual” approach is utilized, may be greater in southern and southeastern states than in other regions of the country.

In addition to research conducted at the same state facility as this current study, research could also be done at another inpatient chemical dependency unit at another state facility. Several cohorts could be studied at the other inpatient state facility and possibly compared to MSH to better understand how the severity of symptoms and patient demographic variables might vary between state facilities. This also would allow for an increased sample size and a greater reassurance of the generalizability to other chemical dependency units in other state facilities. It could be expected that individuals exhibiting comorbid alcohol abuse/dependency and depression within other state inpatient facilities would experience similar treatment results as those in the current study, with ACT being superior to TAU. This is because the treatment as usual condition as outlined in the current study may be quite similar to the most common treatment approaches offered in other state hospitals.
However, not all inpatient treatment, of the sort described in this research study, occur at state-supported facilities, but also at privately-funded hospitals. If inpatients at a state hospital were compared to those at a private facility, there may be differences in the patients’ severity of symptoms, resistance to seeking treatment, and demographic characteristics. The treatment-as-usual provider’s therapeutic approaches may also be different (i.e., methods other than the 12-step program) than the TAU condition at MSH.

While all of the patients hospitalized at MSH were court-ordered to treatment, it is unknown whether this is an anomaly unique to MSH or the rule at other state-funded inpatient facilities as well. In any event, it would be expected that privately-funded inpatient facilities would receive less court-ordered individuals than state hospitals. For this reason, individuals court-ordered to treatment at a state-funded inpatient facility may have a greater severity of problems with their alcohol use when compared to privately-funded inpatients, as evidenced by the need to court order the individuals for their own safety and that of others. An admission initiated by a court order for involuntary commitment versus a voluntary hospitalization also may speak to resistance of the patient towards seeking treatment for their problems. As a result, privately-funded inpatients would be expected to be less resistant to treatment and may respond quicker to any treatment, in effect, potentially minimizing the differences between TAU and ACT observed in this study.

Future research may also allow for increased understanding about how demographic characteristics may play a role in the overall findings. In particular, individuals with varying socioeconomic status (SES) and educational backgrounds may provide more information about how these variables may affect the patient’s overall treatment outcome. One demographic characteristic, whose effect could be better understood should a replication of this project be
completed at a private inpatient facility, is that of socioeconomic status (SES) on treatment outcome. It would be expected that individuals hospitalized at a privately-funded inpatient treatment center would be of a higher SES than individuals hospitalized at a state-funded facility. While the average number years in school, for the current study, was less than a high school diploma ($M = 11.85, SD = 2.33$), it would be expected that inpatient privately-funded treatment center would also have higher levels of education that would correlate with increased SES. Although it is unclear how the SES of patients would affect the overall results, such a determination would provide a better understanding of any limitations to the external validity of this project’s findings.

Another difference between state-supported and private inpatient facilities could be a longer length of stay by patients in the latter. It would be expected that privately-funded inpatient treatment centers may retain their patients beyond the “no longer dangerous to self or others” criteria of a state facility, therefore possibly leading to better treatment outcomes prior to discharge, when compared to the sample of patients in the current study. In addition, the TAU counselors in private inpatient facilities may implement methods other than the “treatment as usual” method described in the present study, as well as possibly even utilizing components of the ACT approach. These issues may minimize the differences between the ACT and “treatment-as-usual” methods as described in this study.

*Outpatient populations.* Because of the severity of their symptoms, inpatients exhibiting comorbid alcohol abuse/dependency and depression may need a more restrictive and intensive therapeutic environment than those seeking similar services on an outpatient basis. Specifically, such inpatients may differ from their outpatient counterparts in the severity of their alcohol abuse and in their levels of depression and experiential avoidance.
The differences in the presentation of alcohol abuse/dependency in outpatients versus inpatients might affect the generalizability of this project’s findings in at least two ways. In particular, while outpatients may not have as severe of a “drinking problem”, they will also have greater access to alcohol during treatment than inpatients. Outpatients with less severe pretreatment problems with alcohol but who also have continued access to it may respond to treatment at a different rate than inpatients. For example, if an outpatient believes that their alcohol use only minimally affects their life, they may remain in denial for a longer period of time than someone at an inpatient facility who has accepted that they are there because their life has become unmanageable as a result of their alcohol use. On the other hand, inpatients may have more secondary issues connected to chronic alcohol use (i.e., medical issues and comorbid psychiatric illnesses) and, therefore, may respond slower to treatment than outpatients.

As noted, as a result of increased accessibility, the Alcohol TLFB calendar may prove to be a more useful tool in gathering information about overall treatment outcomes in outpatient settings. The Alcohol TLFB scores from the current study participants were significantly lower than the Brady et al. (2002) study on the percentage of drinking days, but not on the number of drinks consumed per drinking day. Brady et al. combined information from inpatients from the Veterans Administration Medical Center (VAMC), outpatients from an academic medical center treatment program, and individuals recruited through the use of newspaper advertisements. While the number of drinks consumed per drinking day was comparable in both studies, the percentage of drinking days in the 3-months prior to treatment was significantly greater in the Brady et al. sample.

Data from the present research and the Brady et al. studies can be put in better perspective by comparing them to outpatient research. Anton et al. (1999) reported that individuals receiving
outpatient treatment for their alcohol problems showed a similar number of drinks per drinking day \((M = 11.85, SD = 5)\) as the current and Brady et al. studies, but a considerable decrease in the percentage of drinking days \((M = 18, SD = 23)\) than the other studies. Drobes, Anton, Thomas, and Voronin (2003) in comparing “social drinkers” to non-treatment seeking “alcoholics” found a considerable difference between the two groups on level of alcohol use prior to their participation in the study. Specifically, the percentage of drinking days and drinks per drinking day for the “social drinkers” \((M = 22, SD = 17; M = 2.7, SD = 1.2)\) was considerably less than the “alcoholics” \((M = 75, SD = 20; M = 8.3, SD = 3.1)\). While the “alcoholic” participants from the Drobes et al. study reported an equivalent percentage of drinking days as reported by Brady et al., the drinks per drinking day were less than both the current study and the Brady et al. investigation. In summary, the outpatients in the previously reported studies appear to have less severe levels of alcohol abuse overall than individuals at an inpatient setting.

This difference in drinking levels between inpatients and outpatients may be attributed to the location of the participants prior to their admission to treatment. For example, when individuals are deemed a danger to themselves or others as a result of their psychiatric and/or substance abuse issues, they may be placed in the county jail or another alcohol-free location until a bed becomes available at the state hospital. In the current study, only a minority of the participants (TAU: \(n = 3\); ACT: \(n = 4\)) were placed on a waiting list and remained in an alcohol-free setting prior to their treatment at MSH. As a result, however, the percentage of drinking days in the 90-days prior to treatment would be decreased for the entire sample relative to that of Brady et al. When these 7 participants were removed from the comparisons of the Brady et al. study and the current study, no significant differences were noted between the two studies in both measures of alcohol consumption. Specifically, the percentage of drinking days (62%) among the remaining
participants and mean number of drinks per drinking day (13) were comparable to similar measures compiled by Brady et al. (74% and 12 drinks, respectively).

Another variable of interest would be a possible difference between inpatients and outpatients in their levels of depression. Based on the ability of outpatients to remain in a less restrictive environment than inpatients, it would be expected that their depression levels would in all likelihood also be less. However, when pretreatment BDI-II scores from the current study ($M = 26.29$, $SD = 11.32$) were compared to those of Beck et al.’s (1996) outpatients ($M = 26.57$, $SD = 12.15$), there was not a significant difference. Consequently, the ability to potentially extend this study’s findings to outpatient populations would not appear to be limited by differences in levels of depression.

Finally, outpatients and inpatients may also differ in their levels of experiential avoidance. It would be expected that individuals seeking outpatient treatment would exhibit lower levels of experiential avoidance, when compared to inpatients, which, in turn, would allow them to better cope with life on its terms. As suggested, the AAQ scores reported from inpatients in the current study were significantly higher than those reported by outpatients in the Hayes, Strosahl, et al. (2004) study. As a result of the significantly higher levels of experiential avoidance in inpatients, caution should be used in generalizing the findings from this study to outpatient populations. Future research may address this issue by more closely examining the relationship between levels of experiential avoidance and overall responsivity to treatment.

In addition to differences in the severity of their comorbid problems, demographic variables may also distinguish the two patient groups. It is probable that a larger percentage of the outpatient population would be actively employed and therefore may have a greater SES compared to inpatients. Problems at work may lead to an individual seeking outpatient treatment.
For example, individuals who are having problems with coworkers, have a high rate of absenteeism and/or tardiness, or are caught working under the influence of alcohol may be subject to being placed on probationary status or ordered to seek assistance from an employee assistance program prior to returning to work. If individuals are employed, the employer may be leverage to the individual’s abstinence from alcohol and may lead to a decreased attrition rate for this type of patient population. Another possible reason that individuals may seek outpatient treatment versus inpatient could be due to their employment status. In the current study, none of the participants were actively employed at the time of their hospitalization. On the other hand, active employment, could also be a variable that keeps someone from obtaining inpatient treatment when their symptoms are severe enough to warrant it because of a fear of losing their job.

Finally, it would be expected that in order for someone to maintain outside of an inpatient setting, they would need to have a fairly adequate recovery-oriented support system; i.e., sponsor, AA homegroup, supportive family. It is possible that SES, severity of the disorder, or other factors, may have an effect on the extent of a support system (e.g., spouse, family, children) that the individuals may have during the course of treatment.

Additional research on outpatients, conducted in a similar fashion to the current study, may provide a greater understanding of the extent to which its findings extend to such populations. Some potential differences that may be found with outpatients may include their severity level, employment status, SES, history of suicide attempts, the adequacy of a recovery-oriented support system, and the overall number of hours spent in treatment. Research done on patients at an outpatient facility could then be compared to variables assessed with an inpatient population.
The final limitation on the generalizability of this study’s findings to similar outpatient populations may involve potential TAU differences. The TAU approach, as outlined in the current study, may be quite different if utilized on an outpatient basis. While a 12-step approach may continue to be followed, it is also possible that other techniques may be intertwined into the approach, especially if the philosophy of the treatment facility does not emphasize this approach. It would be expected that the level of patient involvement in the treatment would be much less on an outpatient basis. The outpatient may only be expected to attend groups four or five times a week and an individual session maybe once a week. The individual may attend occasional educational lectures, but not nearly at the same level as the participants in the current study. While the outpatient treatment may be spread over a larger number of months than the inpatients, the total number of hours of therapy should be significantly decreased. Finally, it would be expected that if outpatients began treatment with a lessened degree of overall symptoms, their posttreatment outcomes should be more improved compared to inpatients.

Based on this expectation, the difference in “treatment effect” between the ACT and TAU approaches might be minimized. However, there are three other possible outcomes that may occur if the ACT and TAU approaches were applied to outpatients. First, the ACT approach may exhibit a relatively greater “treatment effect” than that noted in the present study. Because outpatients would have greater access to alcohol, a treatment that focuses on experiential avoidance may prove to be more critical for outpatients than for inpatients to the extent that drinking serves an avoidant function. The second possibility may be that TAU outpatients improve at a faster pace than the ACT approach. In this case, it would suggest that the 12-step approach is a more effective strategy for patients with a lessened severity of their disorder. The third possible outcome is that there would be no difference between ACT and TAU when both
are evaluated with outpatient populations. This could suggest that the difference in therapeutic
components of each the approaches are less critical than the commonalities between them. Under
such circumstances, it could be argued that a third approach may be just as or even more
effective for patients with less severe symptoms than inpatients. Additional research could flesh
out the possible outcomes by randomly assigning outpatients to ACT versus TAU in order to
determine which outcome would actually be found.

Other comorbid populations. In addition to possibly generalizing findings to other inpatient
and outpatient populations that experience the same presenting problems, consideration can also
be given to whether this study’s findings might be extended to psychiatric populations exhibiting
other types of comorbidity. The current research suggests that ACT may be an appropriate
approach among individuals with depression and alcohol problems by targeting a shared process
of experiential avoidance. Experiential avoidance may be a common pathogenic process that
supports a diverse array of psychopathology (Hayes et al., 1996). To the extent that this is the
case, ACT may show promise as a transdiagnostic approach in effectively targeting this process.
Whether this promise would be realized would, of course, have to be addressed empirically.

One way of approaching future research in this area would be to vary only one of the
comorbid disorders investigated in this study. For example, research could be conducted that
select subjects at the same site who display comorbid anxiety and alcohol abuse/dependency
rather than depression. Alternatively, ACT could also be compared against TAU in providing
services for those with a presenting problem of depression and a comorbid abuse/dependency
disorder involving a substance other than alcohol. Finally, both disorders could be varied. For
example, research may investigate individuals with an anxiety disorder and another substance
use disorder.
Studies of the type described could also compare the impact of primary versus secondary status among disorders displaying comorbidity. In the current study, the alcohol use disorder was identified as the primary disorder due to the type of facility to which the individual was being admitted (i.e., an inpatient drug and alcohol program). In another facility, such as one that specializes in the treatment of depression and in which alcohol abuse/dependency is regarded as being “secondary”, the results may be quite different.

Longitudinal Research

This discussion thus far has addressed generalization issues across subjects, settings, and behavior. The last issue which needs to be addressed is the issue of generalizability over time. In addition to limitations in generalizing the results of this study to other populations, the ability to extend its findings over time may also be restricted. This study only captured how each individual was doing during an approximate month-long period of treatment and immediately prior to their discharge. Post-discharge follow-up was discouraged by the IRRB of MSH for several reasons. First, additional consent forms would have been needed to continue to obtain information about patients discharged to another less restrictive environment (e.g., halfway houses, outpatient treatment centers). If patients were followed post-discharge, the state hospital and this investigator would continue to assume, at least partial responsibility for the individual should they became a danger to themselves or others. Finally, follow-up was discouraged due to the general difficulties in locating the individuals post-discharge as most did not have a primary residence to which they were being discharged.

This researcher, however, attempted to obtain anecdotal information about the participants by asking the CDU counselors whether they had received information about any participant being rehospitalized, arrested, relapsing, or passing away. The only information that was received
related to an ACT participant that dropped out of the study following Session 1 (Subject 20). Information provided about the individual involved his post-discharge relapse and subsequent death only weeks after his discharge. Whether changes that were made during the study may generalize over longer periods of time thus remains an unanswered, but empirical question.

A longitudinal study would provide a more in-depth understanding of the overall changes that individuals go through during the course of treatment and following discharge. It is suggested that a longitudinal study encompass similar procedures as the present study, but also included post-discharge follow-up at 3-months, 6-months, and 12-months. In addition, more information could be obtained about an individual’s rate of relapse in both comorbid disorders, employment status, and legal involvement related to alcohol use. The extension of data collection could allow for increased knowledge about the course of recovery for these comorbid disorders. A longitudinal study could allow for a comparison across treatment approaches of re-hospitalization rates, long-term levels of depression and experiential avoidance, and overall functioning obtained from the PASUPP.

If additional information was sought over the course of treatment and at follow-up, a better understanding about the longstanding effects of a treatment could also be obtained. Research (Hayes et al., 2006) suggests that experiential acceptance, as measured by the AAQ, shows improvements over the course of ACT and is maintained over the follow-up period. Because the ultimate goal of ACT is to not only alleviate symptoms but to also increase psychological flexibility and promote commitment to moving life in the direction of one’s values, a global measure of general life functioning would be an integral part of a follow-up assessment. It could be enlightening, for example, to more fully understand the extent to which experiential acceptance has long standing effects on an individual’s future coping abilities. If the study length
was extended past treatment and into a follow-up session, the PASUPP may prove to be an effective method of assessing the overall changes in levels of alcohol abuse and dependency of the participants throughout the study.

**Methodological Limitations**

Often research creates as many questions as it answers. The questions posed throughout this discussion could be answered empirically through further research. Several methodological weaknesses present in this project merit consideration in order to strengthen related research in the future. One limitation of the present study was the premature discharge of 3 of the participants, necessitating posttreatment assessment information to be obtained over the phone. While these 3 individuals did not significantly deviate from the study sample, this created potential threats to the validity of their scores as the administration procedures deviated from the usual methods of data collection. Once the data were obtained, they were compared with other individuals whose scores were obtained by an in-person interview. While this method was not ideal, the information obtained was invaluable in understanding the level of change certain participants made and, in any case, viewed as preferable to conducting no posttreatment assessment at all. Future research should emphasize the need for the administration of the pretreatment and posttreatment measures under similar circumstances.

In addition to limitations with posttreatment measures, missing WAI-S data could have assisted in clarifying the relationship between the two groups on their level of therapeutic alliance. The information could have clarified further therapeutic relationships between participants and counselors. Further research should consider the impact that missing data has on the validity of the findings and the increased threat to the validity of the research as a result.
Future studies should provide more oversight on the counselors to insure that all of the assessment instruments are completed at the appropriate times in the study.

Finally, another threat to the external validity of the research findings is related to the disproportionate number of treatment providers; i.e., one ACT counselor and seven TAU counselors, in the research project. While the disproportionate number of ACT to TAU therapists is representative of the counselors at the MSH, because only one counselor individual (this investigator) provided ACT, it could be argued, as discussed earlier, that the results of ACT may be a function of the therapist’s characteristics and not specific to the therapeutic approach. Future research could address this issue by using equivalent numbers of ACT and TAU providers. However, this strategy was impractical in this project as it would have consumed a considerable amount of counselor resources and time. First, no MSH counselors, other than this researcher, had ever received any training in ACT prior to a 90-minute presentation on the philosophy and techniques of ACT. Second, a considerable number of hours would have been required to thoroughly train a counselor to deliver services as outlined in the ACT approach. Due to a limited timeframe of employment with MSH, it was decided that beginning the study with a disproportionate number of treatment providers was preferable to spending a majority of the research time training providers in ACT.

Conclusions

This study allowed for the examination of ACT as an integrated treatment approach for individuals with depression and alcohol use disorders. As evidenced by the increase in comorbid psychiatric and substance use disorders, there appears to be a rapidly growing need for integrated treatments to address these issues. With the rising costs of mental health and substance abuse services, an integrated, transdiagnostic treatment approach like ACT may be a more efficient and
cost effective way for clients to become healthier, faster. While current research does not identify any efficacious treatment for integrated treatment of depression and alcohol use disorders, the current study may spark an interest in additional research in the area of treatment for comorbid conditions.

Although rather modest and not without limitations, the results of the present study are encouraging. The present study tentatively suggests ACT may help address problems of experiential avoidance more broadly. In the present study, a common pathogenic process; i.e., experiential avoidance, was suggested as a focus of treatment for individuals with comorbid depression and alcohol use disorders. ACT appeared to successfully undermine experiential avoidance and appears to merit at least further consideration as a potentially efficacious treatment for comorbid disorders in the future. Whether this indeed turns out to be the case must await more extensive and intensive research of the sort attempted in this project.
LIST OF REFERENCES
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APPENDICES
Orientation (Prior to tape recording session):

1. Introduction
   Make sure the client understands what he or she has agreed to participate in. The participant will be attending approximately six sessions of therapy (depending on the number of sessions that can reasonably be conducted within the scheduled length of treatment prior to their scheduled discharge date). The sessions will occur twice a week for approximately 30 minutes. The client is expected to attend all sessions and to contact the therapist if he or she cannot attend. At the end of the sessions, the client will be expected to attend a posttreatment assessment. Allow the participant to ask questions concerning the study.

2. Discussion/Clarification of Informed Consent, including Risks and Benefits.

3. Discuss Limits to Confidentiality
   Explain that everything that occurs in session will remain confidential. The exceptions to this are a selected number of audiotapes of individual sessions which will be listened to and evaluated for treatment integrity. The other exception is the audiotaped interviews from which the Hamilton Rating Scale will be derived during pretreatment and posttreatment assessment and which will be listened to and independently evaluated for scoring accuracy. In addition, confidentiality must be broken according to the ethical codes of the American Psychological Association. This includes if the client reports plans of harming themselves or others, or reports harming a child or the elderly.

Session 1 (Values):

1. Discussion of the client’s experience with depression and alcohol; strategies used to cope with depression and alcohol problems, including reasons patient gives for their problems.

2. Discussion of valued life direction
Session 1 (Values) (Continued):

a. Possible Metaphors used during this stage:
   i. “What do you want your life to stand for?” Exercise (pp. 215-218)
   ii. Eulogy or Tombstone Exercises (p. 216) (Have the client hear their eulogy/write down what they would like to see on their tombstone.)

3. Discuss the distinction between valuing as feeling versus valuing as an action.

   a. Possible Exercise used during this stage:
      i. Argyle Sock Exercise (p. 211)

4. Discuss degree of discrepancy between values and reality.
   Assess where the client is at (reality) and where the client wants to be (value).

5. Discuss difference between choices and decisions.

   a. Possible Exercise used during this stage:
      i. Have clients choose between two things: Right/Left Hand, Coke and 7-Up, Two Types of Food (p. 213; Assess reason-giving behaviors.) (Define choices and have clients make a simple one. Then ask why? If there is any content based answer, repeat.)

6. Clarify differences between client’s values, goals and actions.

   a. Possible Metaphors/Techniques used during this stage:
      i. The Skiing Metaphor (pg. 220-221) (There’s more than one way to get to the ski lodge.)
      ii. Pick a point on the horizon (Picking a point on the horizon is like a value; heading toward a specific item in the horizon, i.e., a tree, is like a goal.)
      iii. The Path Up the Mountain Metaphor (p. 222) (Helps client understand hazards of constantly monitoring immediate progress toward concrete goals, rather than connecting with valuing as a process.)

7. Identify barriers to meeting values, goals, action.

   a. Possible Metaphors used during this stage:
      i. Bubble in the Road Metaphor (p. 230)
Session 1 (Values) (Continued):

8. Homework assignment (see attached homework)

   a. Possible homework assignment

      1. Write down everything that your alcohol and depression have cost you. Please be as specific as possible.

      2. Write down a list of everything you have done in an attempt to control and/or eliminate your depression or alcohol problems. Please be very thorough and specific: Identify several examples of strategies you've used in an attempt to solve it. Try to think of several specific examples where you have used these strategies (talking yourself out of it, rationalizing, avoiding, getting help from others, criticizing yourself, etc.).

      3. Now, honestly evaluate how far each strategy has brought you closer to solving the problem.

9. Complete weekly measures

   a. Beck Depression Inventory, 2nd Edition (BDI-II) and Alcohol Timeline Followback
Homework Assignment (From Session #1)

1. Write down everything that your alcohol and depression have cost you. Please be as specific as possible.

2. Write down a list of everything you have done in an attempt to control and/or eliminate your depression or alcohol problems. Please be very thorough and specific: Identify several examples of strategies you've used in an attempt to solve it. Try to think of several specific examples where you have used these strategies (talking yourself out of it, rationalizing, avoiding, getting help from others, criticizing yourself, etc.).

3. Now, honestly evaluate how far each strategy has brought you closer to solving the problem.
**Session 2 (Letting Go of the Struggle):**

1. Review and finish discussion of previous session material, as needed.

2. Review homework.

3. Review client’s experience with their illness.
   a. Discussion of the following questions:
      i. What does the client want from life? (Review values from session 1.)
      ii. What has the client tried? (Review from session 1 and homework.)
      iii. How has it worked? (Review from session 1 and homework.)

4. Begin challenging the client’s attachment to the change agenda.
   a. Discuss workability of the strategies incorporated by the client to have less symptoms/experience less symptoms. Assist the client to see how these strategies keep them “stuck”.

   Review “What brought you in for treatment/What brought you into the hospital?”
   (Bring into sessions sense of being stuck, life being off track.)

   b. Possible Metaphors used during this stage:
      i. *Man in the Hole Metaphor* (pp. 101-102) (Illustrates that clients are doing something and it is not working.)
      ii. *Chinese Handcuffs Metaphor* (p.105) (No matter how hard they pull to get out of them, pushing in is what it takes.)

   c. Discussion of attachment to their change strategies, and “Letting Go of the Struggle”.

   Possible Metaphors used during this stage:
      i. *Use Tug of War with a Monster Metaphor* (p. 109) (The goal is to drop the rope, not win the war.)
      ii. *Feedback Screen Metaphor* (p. 108) (It’s not the noise that is the problem, it’s the amplification.)

5. Homework assignments (possible assignments; see attached homework)
   a. Ask clients to identify any barriers/roadblocks which have impeded movement in their valued direction and which may continue to impede movement.
Session 2 (Letting Go of the Struggle) (Continued):

b. Journaling: Ask clients to journal the strategies they have used to change their situation, including observations of strategies utilized between sessions.

c. Ask clients to become aware of how they struggle against their depression and/or using thoughts. Have them observe the ways they attempt to moderate, regulate, and solve their problems.

6. Complete weekly measures
Homework Assignment (From Session #2)

1. Make a list of all of the barriers or roadblocks that have kept you from moving in the direction you wish to move. What is holding you back from obtaining what you want in life? Please be as specific as possible.

2. Now, make a list of all of the barriers or roadblocks that you anticipate that will continue to keep you from moving in the direction you wish to move. What will continue to stand in your way of what you want in life?
Homework Assignment (From Session #2)

1. Keep a journal, either on this sheet or in a notebook, of the strategies or techniques you use to change your situation. Take note of all of the ways you attempt to control and/or eliminate your mental illness symptoms between sessions. Be as specific as possible.
Homework Assignment (From Session #2)

We talked about the struggles that you have with your mental illness in your daily life. One of the things you can do between now and the next session may be to become aware of how you carry the struggle out in your daily life; for example, how you try to dig your way out of the depression hole. See if you can just notice all the things you normally do; all the ways you dig. Getting a sense of what digging is for you is important because, even if you put down the shovel, you will probably find that old habits are so strong that the shovel is back in your hands only instants later. So we will have to drop the shovel many, many times. You may even want to make a list that we can look at during our next session: All the things you have been doing to moderate, regulate, and solve this problem. I’m not asking you to change these actions; just try to observe how and when they show up. You can either use this sheet or a notebook to write about this.
Session 3 (Willingness):

1. Review and finish discussion of previous session material, as needed.

2. Review homework.

3. Discuss how control is the problem that leads to unworkable outcomes.  
   (The way clients try to control or avoid inner experiences equals the control strategies.)
   
   a. Discuss how the control strategy creates suffering and how the culture supports using 
   control. (If we don’t like something, change it. However, with this issue, changing it 
   leads to an unworkable outcome.)

   **Possible Interventions/Exercises used during this stage:**
   
   i. Rule of Private Events (If you’re not willing to have it, you’ve got it.)
   ii. Chocolate Cake Exercise (p. 124) (An illusion of control.)
   iii. What are the Numbers? Exercise (pp. 126-127) (An illusion of control.)

   b. Discuss how control seems to work in the short term, but fails in the long run. (Give 
   examples, based on client’s experiences, of using alcohol to control unwanted private 
   events.)

   **Possible Metaphor used during this stage:**
   
   i. Polygraph Metaphor (p. 123) (Consequences of control.)

4. Discuss the alternative to control: Willingness

   a. Discuss how willingness undermines the control agenda.

   **Possible Metaphor used during this stage:**
   
   i. Two Scales Metaphor (pp. 133-134) (Willingness versus control.)

   b. Discuss how unwillingness creates distress.

   **Possible Metaphor used during this stage:**
   
   i. Box Full of Stuff Metaphor (pp. 136-137) (Costs of unwillingness; programming of the mind works by adding, not subtracting.)
Session 3 (Willingness) (Continued):

5. Homework assignments (possible assignments; see attached homework)
   a. Identify programming exercise (p. 144): Ask clients to identify a childhood experience, then have them think about conclusions and rules they developed based on this experience.
   b. *Rules of the Game* (pp.146-147): Review the difference between clean and dirty pain, ask client to journal situations where each were used.

6. Complete weekly measures
Homework Assignment (From Session #3) (Identifying Programming Exercise, p. 144)

1. Think about a significant emotionally difficult event in your childhood. Write it down.

2. Now see whether you can identify some programming that you are carrying about this event. What did you conclude about the way the world worked? What did you conclude about yourself? Have you formulated any other rules based on this experience? Write down as many of these as you can identify.

3. Repeat this exercise with at least one other event.

4. Bring this sheet, and other sheets that you complete this exercise on, with you to the session next time.
Homework Assignment (From Session #3) (Rules of the Game Exercise, p. 146-147)

Instructions: Each time you run into a situation in which you feel “stuck” or in which you are struggling with your thoughts or feelings, answer the following questions, either on this sheet or in a separate notebook.

1. Situation: What happened to start this?

2. My first reactions (Clean Stuff): What immediately “showed up” in the way of thoughts, feelings, memories, or physical sensations?

3. Suffering level: How would you rate your immediate distress level on a 1-100 scale (1 = no suffering, 100 = extreme suffering)?

4. What did you do about your reactions (Dirty Stuff): Did you struggle with things you didn’t like? Did you criticize yourself? Did you try to shove your reactions back in, or pretend they weren’t there?

5. New Suffering: Now how would you rate your new suffering level on the same 1-100 scale?
Session 4 (Problem with Language):

1. Review and finish discussion of previous session material, as needed.

2. Review homework.

3. Discuss process of deliteralization (cognitive fusion) of thoughts.
   a. Possible Intervention/Metaphor used during this stage:
      i. *Your Mind is Not Your Friend Intervention* (pp. 151-152) (Ask the client think about their mind being mindless; then ask them, what would they trust, their mind or their experiences.)
      ii. *Finding a Place to Sit Metaphor* (p.153) (Illustrates the futility of descriptions and evaluations, emphasizes the need to evaluate their own experiences as evidence.)

4. Begin deliteralizing language (by undermining fusion of self and language)
   a. Possible Exercise/Metaphor used during this stage:
      i. *Milk, Milk, Milk Exercise* (pp. 154-155) (Demonstrates that literal meanings of words can be weakened and almost disappear.)
      ii. *Passengers on the Bus Metaphor* (pp. 157-158) (Treating scary private events as passengers on a bus you are driving. Illustrates how language works and what the cost is in terms of impeding movement in a valued direction.)

5. Begin teaching strategies for cognitive defusion; introduce mindfulness as a way of having thoughts without buying into them.
   a. Possible Intervention/Metaphor used during this stage:
      i. *Soldiers in the Parade Exercise* (pp. 159-161) (Encourage engagement in awareness exercises that help practice observing the contents of consciousness.)
      ii. *Take Your Mind for a Walk Exercise* (pp.163) (Provides an experience of how busy and evaluative minds can be.)

6. Discussion of reason-giving: (Allow clients to provide reasons for their current situation, explain their problems or cite their personal history as to reasons why things can’t change. Spend time redirecting clients when they attempt to do this; redirect with how their reasons fail to move them in the direction of their values, actual impede their progress.)
Session 4 (Problem with Language) (Continued):

a. Possible Exercise used during this stage:
   i. *Soldiers in the Parade Exercise* (pp. 159-161) (Encourage engagement in awareness exercises that help practice observing the contents of consciousness.)
   
   ii. *And/Be Out Convention* (p. 167) (Encourages clients to replace the use of “but” with “and”)

7. Discussion of the distinction between evaluations and descriptions in language. (Helping the client pull away from responding to their own self-evaluations as descriptions of them)

   a. Possible Metaphor/Intervention used during this stage:
      i. *Bad Cup Metaphor* (pp. 169) (Shows how evaluations can masquerade as descriptions.)
      
      ii. Calling a Spade a Spade (Labeling an evaluative thought by what it is, a person having an evaluative thought; it is not a description of the person.)

8. Teach healthy distancing and nonjudgmental awareness. (Promote willingness skills as alternative to struggle.)

    a. Possible Exercise used during this stage:
    
       i. *Physicalizing Exercise* (pp. 170-171) (Label the physical dimensions of the thought. Repeat with another event that the client struggles with.)
       
       ii. *Tin Can Monster Exercise* (pp. 172-174) (Examines behavioral domains instead of physical attributes.)

9. Homework assignments (possible assignments; see attached homework)

    a. Reasons as Causes Homework (p. 178): Ask clients to notice instances in real life where they are in reason-giving mode. The written experiences are reviewed during the next session, in order to help clients recognize the signals of reason giving and how it affects them.

10. Complete weekly measures

11. Complete additional assessment measure (Working Alliance Inventory-Short Form) (Completed by both client and therapist following session #4.)
Homework Assignment (From Session #4) (Reasons as Causes Homework, p. 178)

1. List some of the reasons you are most likely to give to yourself or others for the areas of your life that are troublesome.

2. Between now and our next session, try to notice several specific instances in which you catch yourself in the reason-giving mode, using reasons like these or others. Write down several examples. Write down how you were feeling in those situations. Then describe how you felt or what you thought when you noticed yourself giving reasons. Bring this in for discussion at our next session. Are the reasons you caught yourself using similar to those listed above?
Session 5 (Understanding the Self):

1. Review and finish discussion of previous session material, as needed.

2. Review homework.

3. Discuss the distinction between conceptualized and observing self

   a. Show how attachment to both positive and negative self-concepts is at times detrimental.

   Possible Exercise used during this stage:

   i. Mental Polarity Exercise (p. 190) (Allows clients to begin noticing the process of consciousness and sense of perspective.)

   b. Help distinguish consciousness from content of consciousness. (Assist clients in distinguishing their thoughts, feelings, sensations, emotions, and memories as things that are experienced, but that they are not the client.)

   Possible Exercises/Metaphor used during this stage:

   i. Chessboard Metaphor (pp. 190-191) (We are not our thoughts.)

   ii. Observer Exercise (pp. 193-195) (Establish a sense of self that exists in the present and provides a context for cognitive defusion. Emphasize transcendent self that preceded struggle with depression and alcohol abuse.)

   c. Contrast the conceptualized self with the observer self. (Undermine the importance ascribed to feeling, thinking, and acting; the discoveries of self-analysis.)

   Possible Exercise/Intervention used during this stage:

   i. Pick an Identity Exercise (p. 196)

   ii. Faking It (pp. 197-198)

4. Discussion of Homework Assignment

   a. Practicing Awareness of Your Experience (p. 179): Allows the client to practice both deliteralization and willingness between sessions.

   b. Accepting Yourself on Faith (pp. 263-264)

5. Complete weekly measures
Homework Assignment (From Session #5) (Practicing Awareness of Your Experience, p. 179)

We reviewed the “Practicing Awareness of Your Experience” exercise today during our session. I would ask you to continue to practice this exercise as your homework between now and our next session. I have listed some of the key components of this exercise for your review.

1. Assume a comfortable sitting position. Try to find a position where you are sitting straight and your shoulders are relaxed.

2. Either close your eyes or arrange yourself so that you are looking at something nondistracting, like a blank wall.

3. Center yourself. Bring yourself to the room you are in, to this space and time. Visualize your physical location: on your block, in your house, in your room, and in this chair. Become aware of your body, of the physical position of your arms and legs, of your feet and hands. Notice the feeling of your body pressing against the chair, of the muscles around your eyes and jaw; notice the feelings of your skin.

4. Become aware of your breathing. Follow a breath as it comes in through your nose, travels through your lungs, moves your belly in and out, and leaves in the opposite direction. Ride the waves of your breathing without attempting to alter it: just notice it and pay attention as it happens.

5. Now, do nothing but observe what comes up. Practice awareness. As sensations emerge in your body, just watch them. As feelings emerge in your awareness, just notice them. As thoughts come into your awareness, just watch them. Watch them come, and watch them go. Don’t grab at anything, and don’t push anything away.

6. If your mind wanders, if you find yourself getting angry or sad or imagining something you want to say to someone and slipping into fantasy, just notice that you have wandered off and bring yourself back in touch. Notice how you get sucked into the content of your thoughts and start to fuse with them; notice your analytical, judgmental mind. Just notice yourself getting sucked in, and bring yourself back again, gently and without judgment. If you have judgments about how well or how poorly you are doing, just notice these too. You “job” is simply to practice awareness. This means that if your mind wanders 100 times, then your job is to gently bring it back to this moment 100 times, starting with the present moment.

7. Allow yourself to deeply experience the present moment. Be deeply present with yourself. Even if you are having thoughts or feelings that you don’t like, try not to push them away. Adopt an attitude of acceptance toward all parts of your experience: treat every experience gently, even if the experience (the thought or feeling) itself is undesirable. Gently be present with yourself.
Homework Assignment (From Session #5) (*Accepting Yourself on Faith*, pp. 263-264)

We reviewed the “*Accepting Yourself on Faith*” exercise today during our session. I would ask you to continue to practice this exercise as your homework between now and our next session.

1. Be aware of the following: Are you OK or not? Are you acceptable or not? Are you whole, complete, and valid or not? If this is a choice, what do you choose? What do you choose to do with your life?

2. Remember: If self-doubt shows up, the questions are still the same: Are you OK or not? Are you acceptable or not?
Session 6 (Acceptance):

1. Review and finish discussion of previous session material, as needed.

2. Review homework.

3. Discuss experiential qualities of applied willingness and choice.
   
   a. Show that willingness cannot be limited qualitatively; safe ways to limit willingness.
      
      Possible Metaphor used during this stage:
      i. Joe the Bum Metaphor (p. 240) (Illustrates reality is that when clients try hard to stop ones reaction, other undesirable reactions follow right behind.)

4. Discussion of willingness and commitment, including the link between the two.
   
   Possible Exercise/Metaphors used during this stage:
   i. Jump Exercise (p. 241)
   ii. Swamp Metaphor (p. 248)
   iii. Take Your Keys With You Metaphor (p. 250)

5. Discussion of barriers to willingness and how to dissolve those barriers.
   
   a. Discuss the FEAR (fusion with your thoughts, evaluation of experiences, avoidance of your experiences, reason-giving for your behavior) and ACT (accept your reactions and be present, choose a valued direction, take action) acronyms
      
      Possible Exercise used during this stage:
      i. Eye Contact Exercise (p. 244)
      ii. Looking for Mr. Discomfort Exercise (p. 247)
      iii. Review the Swamp Metaphor again if needed (p. 248)
      iv. Expanding Balloon Metaphor (p. 248)
   
   b. Show how right and wrong effect willingness.
   
   c. Show how forgiveness and self-worth are choices.
Session 6 (Acceptance) (Continued):

Possible Metaphor/Exercise used during this stage:

i. *High School Sweetheart Metaphor* (p. 252)

ii. The *Empty Chair Exercise* (pp. 257-258)

d. Discussion of how overt action functions in the implementation of chosen values.

6. Review the main points of the ACT approach.

7. Closing Statements

8. Allow time for any follow-up questions by the clients about the ACT approach.

9. Complete weekly measures

10. Complete additional assessment measures (Working Alliance Inventory-Short Form)  
    (Completed by both client and therapist following final session.)
APPENDIX B

Review of ACT Protocol

Subject Number: ______________

1. Can you discriminate what session the tape corresponds with?
   YES  NO

   If yes, what session does the tape most likely correspond with: _________

2. On a rating of 1 to 10, to what extent does the dialogue correspond with the ACT manual.

   1  2  3  4  5  6  7  8  9  10

   1 (Does not correspond) 5 (Corresponds well) 10
October 18, 2005

Connie Petersen
Bldg. 51
MSH, Whitfield, MS

Dear Ms. Petersen:

On October 14, 2005, the Mississippi State Hospital Institutional Research Review Board reviewed and approved the research protocol "Treatment of Comorbid Depression and Alcohol Use Disorders: Comparison of Acceptance and Commitment Therapy (ACT) Versus Treatment as Usual (TAU)." Risk level of the research is considered to be low and benefits include potential for patients to receive relief from symptoms of depression. Protections to ensure confidentiality were documented and adequate. Informed consent covered all required topics. Members recommended that the researcher: 1) clarity that subject exclusion is for circuit court-ordered individuals, not chancery court-ordered individuals 2) add hypothesis section 3) add Dr. Jourdan’s mailing address to the informed consent 4) add signature of the investigator to the informed consent and obtain a witness signature from a staff member who is not associated with the research. Be sure to send all original copies of the informed consent to the health records department. The enclosed confidentiality and data use agreement must be signed by individuals who are involved in conducting the research and returned to me prior to data collection.

Please keep the Board updated on the progress of your research and inform me prior to any changes in procedures. All ongoing research will be reviewed at least annually. Please send me information of any papers, publications or presentations that result from this research.

Sincerely,

Suzanne Jourdan, Ph.D.
Chair, Institutional Research Review Board, (601) 351-8315
You are being invited to participate in a study between Wichita State University and Mississippi State Hospital (MSH) to assist people who are experiencing issues and concerns similar to yourself. This study is part of a dissertation project being completed by Connie Petersen. Ms. Petersen is enrolled at Wichita State University in Wichita, KS as a graduate student, and is also completing her psychology internship at Mississippi State Hospital in Whitfield, MS. You were identified as a potential subject by the psychology staff and subsequently the treatment team coordinating your care here at Mississippi State Hospital.

This next phase of this study is the assessment phase, which will help us gather information to better understand your issues and concerns. The assessment phase will take about one hour and will consist of a brief interview, three brief questionnaires, and a measure of the amount of alcohol you have drank in the past three months. Some of the questions you may be asked to answer today may be of a somewhat personal and sensitive nature. Therefore, it is possible you may experience some discomfort in responding to such questions.

Following the assessment phase today, you will be given a small appointment book which you may use to write down your daily use of alcohol as well as your future appointments with professionals you may be working with here at MSH.

If you agree to participate today in the assessment phase of this study, your responses to the brief interview will be audiotaped. Any information that you provide during the assessment phase, including access to the audiotapes, will only be available to individuals directly concerned with carrying out and assessing this study. From this point on, if you agree to participate in this study, you will be assigned a number which will be used instead of your name to identify any information that you provide about yourself. All information, including this consent form, any other forms or questionnaires you complete, as well as audiotapes of any interviews and/or treatment sessions, will be kept in a locked file cabinet, only available to the researchers conducting this study.

Your agreement to participate in the assessment phase of this study is entirely voluntary. Your decision whether or not to participate will not affect your future relations with anyone connected to this study, including Mississippi State Hospital, Wichita State University, or the Department of Psychology at Wichita State University. If you decide to participate, you may withdraw from the assessment phase at any time. Even if you participate in the assessment phase of the study, it does not mean you have to participate in the treatment phase of this study.
If you agree to participate in the treatment phase of this study, you may be assigned to complete a total of twelve (12) individual therapy sessions and/or encouraged to participate in group therapy as part of your treatment here at MSH. The individual therapy sessions will generally be scheduled on a weekly basis and will last approximately one hour. During the treatment phase of the study, you and your therapist will identify and work on your treatment goals. If you agree to participate in the treatment phase of this study, be aware your therapist may request to audiotape your individual therapy sessions. However, neither your therapist nor anyone connected with the study will audiotape any communication without you knowing and agreeing to being audiotaped. Audiotapes may be used to make sure the therapist followed the appropriate procedures during the treatment sessions.

Every week, you will be asked to complete two brief forms, similar to what you are being asked to complete today. These forms should take approximately 5 minutes to complete. The purpose of gathering this information is to help understand your progress during the course of treatment. One of the forms will ask you to remember whether you used any amount of alcohol since your previous session. The other form will ask you about your mood over the past week. Some of the questions on the brief forms may appear to be of a somewhat personal and sensitive nature. Therefore, it is possible you may experience some discomfort in responding to such questions.

Your agreement to participate in the treatment phase of this project is entirely voluntary. Your decision whether or not to participate will not affect your future relations with anyone connected to this study. If you decide to participate, you may withdraw from the study at any time.

At the end of twelve weeks (or earlier if you meet discharge criteria), you will be asked to participate in a posttreatment assessment phase similar to what you are being asked to complete today. The purpose of the posttreatment assessment phase is to understand your progress during treatment and to evaluate whether continued services are warranted. As you may remember, your responses to the brief interview will again be audiotaped. As with the pretreatment assessment phase, the posttreatment assessment phase will also take approximately one hour.

Following the completion of the posttreatment assessment phase, discussion of your progress and determination of the need for additional treatment will be identified.

While it is our hope that you successfully complete both the pretreatment and posttreatment assessment phases, as well as all therapy sessions, you may withdraw from this study at any time without affecting your future relations with anyone connected to this study.

If you agree to participate in this project, it is the therapist’s and/or assessor’s choice to cancel and reschedule any appointment should you attempt to attend any of the assessment or therapy sessions while under the influence of a substance.

Wichita State University does not provide medical treatment or other forms of reimbursement to persons injured as a result of or in connection with participation in research activities conducted by Wichita State University or its faculty, staff, or students. If you believe you have been injured as a result of participating in the research covered by this consent form, you can contact the Office of Research Administration, Wichita State University, Wichita, Kansas 67260-0007, Phone: (316) 978-3285.
If you have any questions about any aspect of this research, you can direct your questions to Dr. Suzanne Jourdan (Institutional Research Review Board Chair, Mississippi State Hospital), Phone: (601) 351-8315, or Dr. Robert Zettle (Dissertation Supervisor at Wichita State University), Department of Psychology, Phone: (316) 978-3081.

You will be offered a copy of this consent form to keep.

By signing this form, you are making a decision about whether or not to participate in this study, including both the assessment and treatment phases of the study. This form does not deny you any of the rights and responsibilities you have as a patient of Mississippi State Hospital. Instead it explains an additional agreement to participate in a specific study being conducted at Mississippi State Hospital. Your signature indicates that you have read and understand the information provided and have voluntarily agreed to participate.

_____________________________________ _____________ ________
Signature of Client Date

_____________________________________ _____________ ________
Witness Date
## APPENDIX E

### THE HAMILTON RATING SCALE FOR DEPRESSION

(to be administered by a healthcare professional)

**Patient's Name**

**Date of Assessment**

To rate the severity of depression in patients who are already diagnosed as depressed, administer this questionnaire. The higher the score, the more severe the depression.

For each item, write the correct number on the line next to the item. (Only one response per item)

<table>
<thead>
<tr>
<th>1. DEPRESSED MOOD (Sadness, hopelessness, helplessness, worthlessness)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= Absent</td>
</tr>
<tr>
<td>1= These feeling states indicated only on questioning</td>
</tr>
<tr>
<td>2= These feeling states spontaneously reported verbally</td>
</tr>
<tr>
<td>3= Communicates feeling states non-verbally—i.e., through facial expression, posture, voice, and tendency to weep</td>
</tr>
<tr>
<td>4= Patient reports VIRTUALLY ONLY these feeling states in his spontaneous verbal and non-verbal communication</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>2. FEELINGS OF GUILT</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= Absent</td>
</tr>
<tr>
<td>1= Self reproach, feels he has let people down</td>
</tr>
<tr>
<td>2= Ideas of guilt or rumination over past errors or sinful deeds</td>
</tr>
<tr>
<td>3= Present illness is a punishment. Delusions of guilt</td>
</tr>
<tr>
<td>4= Hears accusatory or denunciatory voices and/or experiences threatening visual hallucinations</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>3. SUICIDE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= Absent</td>
</tr>
<tr>
<td>1= Feels life is not worth living</td>
</tr>
<tr>
<td>2= Wishes he were dead or any thoughts of possible death to self</td>
</tr>
<tr>
<td>3= Suicidal ideas or gesture</td>
</tr>
<tr>
<td>4= Attempts at suicide (any serious attempt rates 4)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>4. INSOMNIA EARLY</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= No difficulty falling asleep</td>
</tr>
<tr>
<td>1= Complains of occasional difficulty falling asleep—i.e., more than 1/2 hour</td>
</tr>
<tr>
<td>2= Complains of nightly difficulty falling asleep</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>5. INSOMNIA MIDDLE</th>
</tr>
</thead>
<tbody>
<tr>
<td>0= No difficulty</td>
</tr>
<tr>
<td>1= Patient complains of being restless and disturbed during the night</td>
</tr>
<tr>
<td>2= Waking during the night—any getting out of bed rates 2 (except for purposes of voiding)</td>
</tr>
</tbody>
</table>

6. **INSOMNIA LATE**

- 0 = No difficulty
- 1 = Waking in early hours of the morning but goes back to sleep
- 2 = Unable to fall asleep again if he gets out of bed

7. **WORK AND ACTIVITIES**

- 0 = No difficulty
- 1 = Thoughts and feelings of incapacity, fatigue or weakness related to activities; work or hobbies
- 2 = Loss of interest in activity; hobbies or work—either directly reported by patient, or indirect in listlessness, indecision and vacillation (feels he has to push self to work or activities)
- 3 = Decrease in actual time spent in activities or decrease in productivity
- 4 = Stopped working because of present illness

8. **RETARDATION: PSYCHOMOTOR** (Slowness of thought and speech; impaired ability to concentrate; decreased motor activity)

- 0 = Normal speech and thought
- 1 = Slight retardation at interview
- 2 = Obvious retardation at interview
- 3 = Interview difficult
- 4 = Complete stupor

9. **AGITATION**

- 0 = None
- 1 = Fidgetiness
- 2 = Playing with hands, hair, etc.
- 3 = Moving about, can't sit still
- 4 = Hand wringing, nail biting, hair-pulling, biting of lips

10. **ANXIETY (PSYCHOLOGICAL)**

- 0 = No difficulty
- 1 = Subjective tension and irritability
- 2 = Worrying about minor matters
- 3 = Apprehensive attitude apparent in face or speech
- 4 = Fears expressed without questioning

11. **ANXIETY SOMATIC**

- 0 = Absent
- 1 = Mild
- 2 = Moderate
- 3 = Severe
- 4 = Incapacitating

Avoid asking about possible medication side effects (i.e., dry mouth, constipation)
12. SOMATIC SYMPTOMS (GASTROINTESTINAL)
   0= None
   1= Loss of appetite but eating without encouragement from others. Food intake about normal
   2= Difficulty eating without urging from others. Marked reduction of appetite and food intake

13. SOMATIC SYMPTOMS GENERAL
   0= None
   1= Heaviness in limbs, back or head. Backaches, headache, muscle aches. Loss of energy and fatigability
   2= Any clear-cut symptom rates 2

14. GENITAL SYMPTOMS (Symptoms such as: loss of libido; impaired sexual performance; menstrual disturbances)
   0= Absent
   1= Mild
   2= Severe

15. HYPOCHONDRIASIS
   0= Not present
   1= Self-absorption (bodily)
   2= Preoccupation with health
   3= Frequent complaints, requests for help, etc.
   4= Hypochondriacal delusions

16. LOSS OF WEIGHT
   A. When rating by history:
      0= No weight loss
      1= Probably weight loss associated with present illness
      2= Definite (according to patient) weight loss
      3= Not assessed

17. INSIGHT
   0= Acknowledges being depressed and ill
   1= Acknowledges illness but attributes cause to bad food, climate, overwork, virus, need for rest, etc.
   2= Denies being ill at all

18. DIURNAL VARIATION
   A. Note whether symptoms are worse in morning or evening. If NO diurnal variation, mark none
      0= No variation
      1= Worse in A.M.
      2= Worse in P.M.
   B. When present, mark the severity of the variation. Mark "None" if NO variation
      0= None
      1= Mild
      2= Severe
19. DEPERSONALIZATION AND DEREALIZATION (Such as: Feelings of unreality; Nihilistic Ideas)

   0 = Absent
   1 = Mild
   2 = Moderate
   3 = Severe
   4 = Incapacitating

20. PARANOID SYMPTOMS

   0 = None
   1 = Suspicious
   2 = Ideas of reference
   3 = Delusions of reference and persecution

21. OBSESSIONAL AND COMPULSIVE SYMPTOMS

   0 = Absent
   1 = Mild
   2 = Severe

Total Score __________
## APPENDIX F

### 1. Sadness
- **0** I do not feel sad.
- **1** I feel sad much of the time.
- **2** I am sad all the time.
- **3** I am so sad or unhappy that I can’t stand it.

### 2. Pessimism
- **0** I am not discouraged about my future.
- **1** I feel more discouraged about my future than I used to be.
- **2** I do not expect things to work out for me.
- **3** I feel my future is hopeless and will only get worse.

### 3. Past Failure
- **0** I do not feel like a failure.
- **1** I have failed more than I should have.
- **2** As I look back, I see a lot of failures.
- **3** I feel I am a total failure as a person.

### 4. Loss of Pleasure
- **0** I get as much pleasure as I ever did from the things I enjoy.
- **1** I don’t enjoy things as much as I used to.
- **2** I get very little pleasure from the things I used to enjoy.
- **3** I can’t get any pleasure from the things I used to enjoy.

### 5. Guilty Feelings
- **0** I don’t feel particularly guilty.
- **1** I feel guilty over many things I have done or should have done.
- **2** I feel quite guilty most of the time.
- **3** I feel guilty all of the time.

### 6. Punishment Feelings
- **0** I don’t feel I am being punished.
- **1** I feel I may be punished.
- **2** I expect to be punished.
- **3** I feel I am being punished.

### 7. Self-Dislike
- **0** I feel the same about myself as ever.
- **1** I have lost confidence in myself.
- **2** I am disappointed in myself.
- **3** I dislike myself.

### 8. Self-Criticalness
- **0** I don’t criticize or blame myself more than usual.
- **1** I am more critical of myself than I used to be.
- **2** I criticize myself for all of my faults.
- **3** I blame myself for everything bad that happens.

### 9. Suicidal Thoughts or Wishes
- **0** I don’t have any thoughts of killing myself.
- **1** I have thoughts of killing myself, but I would not carry them out.
- **2** I would like to kill myself.
- **3** I would kill myself if I had the chance.

### 10. Crying
- **0** I don’t cry anymore than I used to.
- **1** I cry more than I used to.
- **2** I cry over every little thing.
- **3** I feel like crying, but I can’t.

---

**Subtotal Page 1**  
**Continued on Back**
11. Agitation
0 I am no more restless or wound up than usual.
1 I feel more restless or wound up than usual.
2 I am so restless or agitated that it’s hard to stay still.
3 I am so restless or agitated that I have to keep moving or doing something.

12. Loss of Interest
0 I have not lost interest in other people or activities.
1 I am less interested in other people or things than before.
2 I have lost most of my interest in other people or things.
3 It’s hard to get interested in anything.

13. Indecisiveness
0 I make decisions about as well as ever.
1 I find it more difficult to make decisions than usual.
2 I have much greater difficulty in making decisions than I used to.
3 I have trouble making any decisions.

14. Worthlessness
0 I do not feel I am worthless.
1 I don’t consider myself as worthwhile and useful as I used to.
2 I feel more worthless as compared to other people.
3 I feel utterly worthless.

15. Loss of Energy
0 I have as much energy as ever.
1 I have less energy than I used to have.
2 I don’t have enough energy to do very much.
3 I don’t have enough energy to do anything.

16. Changes in Sleeping Pattern
0 I have not experienced any change in my sleeping pattern.
1a I sleep somewhat more than usual.
1b I sleep somewhat less than usual.
2a I sleep a lot more than usual.
2b I sleep a lot less than usual.
3a I sleep most of the day.
3b I wake up 1–2 hours early and can’t get back to sleep.

17. Irritability
0 I am no more irritable than usual.
1 I am more irritable than usual.
2 I am much more irritable than usual.
3 I am irritable all the time.

18. Changes in Appetite
0 I have not experienced any change in my appetite.
1a My appetite is somewhat less than usual.
1b My appetite is somewhat greater than usual.
2a My appetite is much less than before.
2b My appetite is much greater than usual.
3a I have no appetite at all.
3b I crave food all the time.

19. Concentration Difficulty
0 I can concentrate as well as ever.
1 I can’t concentrate as well as usual.
2 It’s hard to keep my mind on anything for very long.
3 I find I can’t concentrate on anything.

20. Tiredness or Fatigue
0 I am no more tired or fatigued than usual.
1 I get more tired or fatigued more easily than usual.
2 I am too tired or fatigued to do a lot of the things I used to do.
3 I am too tired or fatigued to do most of the things I used to do.

21. Loss of Interest in Sex
0 I have not noticed any recent change in my interest in sex.
1 I am less interested in sex than I used to be.
2 I am much less interested in sex now.
3 I have lost interest in sex completely.

NOTICE: This form is printed with both blue and black ink. If your copy does not appear this way, it has been photocopied in violation of copyright laws.
APPENDIX G

Problems Assessment Part I

Here are some things that happen to people who drink alcohol or use other drugs. Read each one and check *how often* it has happened to you in the last 3 months **because you used alcohol or drugs**. Then, check YES if it has *ever* happened to you or check NO if it has *never* happened to you personally.

<table>
<thead>
<tr>
<th></th>
<th>In the last 3 months how often did this happen?</th>
<th>In your whole life, did this ever happen to you?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>Once or twice</td>
</tr>
</tbody>
</table>

**Because of your drinking or drug use, did you...**

1. have arguments with a family member, spouse, or friends?
2. get into trouble at work or school because of drinking or drug use?
3. get into physical fights when under the influence?
4. do something illegal to get drugs or alcohol?
5. have withdrawal symptoms (felt sick) when you stopped drinking or using drugs?
6. get arrested because of your behavior when drunk or high?
7. get arrested for possession of illegal drugs?

**Because of your drinking or drug use, did you...**

8. miss appointments or fail to get to places on time?
9. lose your job?
10. lose your housing?
11. spend money on alcohol or drugs that you needed for other things?
12. get sick or vomit?
13. have headaches?
14. skip meals or not eat properly?
15. become confused or disoriented?
**Because of your drinking or drug use, did you...**

16. neglect responsibilities to family members, pets, or others that you take care of?
17. pass out or have a blackout?
18. accidentally injure yourself?
19. cause injury to someone else?
20. damage property or break things?

**Because of your drinking or drug use, did you...**

21. feel suicidal or feel like hurting yourself?
22. cause injury to yourself on purpose?
23. trade sex for money or drugs?
24. have sex with someone you wish you hadn’t?
25. sell your possessions to get alcohol or drugs?
26. get robbed or attacked when drunk or high?
27. get arrested for driving while intoxicated or high?

**Because of your drinking or drug use, did you...**

28. get hospitalized after drinking or using drugs?
29. stop taking your prescribed medication?
30. have a bad reaction from mixing medication with alcohol or drugs?

---

*In the last 3 months*  
how often did this happen?  

<table>
<thead>
<tr>
<th></th>
<th>Not at all</th>
<th>Once or twice</th>
<th>A few times</th>
<th>Many times</th>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

*In your whole life, did this ever happen to you?*  

|  | YES | NO |
### Problems Assessment Part II

This time, please check *how much* each one has happened to you in the last 3 months *because you used alcohol or drugs*. Then check YES if it has *ever* happened to you in your lifetime or check NO if it has *never* happened to you personally.

<table>
<thead>
<tr>
<th></th>
<th>In the last 3 months how much did this happen?</th>
<th>In your whole life, did this ever happen to you?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Not at all</td>
<td>A little</td>
</tr>
</tbody>
</table>

**Because of your drinking or drug use, did you...**

31. feel bad or guilty about your alcohol/drug use?

32. notice a change in your personality that you didn’t like?

33. have trouble remembering things?

34. neglect your appearance?

35. spend too much time alone?

36. have trouble sleeping, staying asleep, or nightmares?

37. have medical or physical problems (such as ulcers or liver problems)?

**Because of your drinking or drug use, did you...**

38. have problems managing your money?

39. have restrictions placed on your income?

40. feel out of control?

41. lose friends?

42. lose contact with your children?

43. become more depressed than usual?

44. become more paranoid than usual?

45. have hallucinations, such as seeing or hearing things that weren’t really there?
**Because of your drinking or drug use, did you...**

46 feel manic, like your thoughts were racing or you were "on top of the world"?

47 become more anxious or fearful than usual?

48 become more bothered by thoughts of past events?

49 get irritated and angry at people?

50 have difficulty concentrating or paying attention?

<table>
<thead>
<tr>
<th>In the last 3 months how much did this happen?</th>
<th>In your whole life, did this ever happen to you?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
<td>A little</td>
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</table>

ID#
APPENDIX H

2005 TIMELINE FOLLOWBACK CALENDAR:

Complete the Following Information
- Number of days to gather information: _______ days
- Start Date (Day 1): _______ _______ _______
- End Date (yesterday): _______ _______ _______

<table>
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<tr>
<th>2005</th>
<th>SUN</th>
<th>MON</th>
<th>TUES</th>
<th>WED</th>
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- New Year's Day
- Easter
- Passover
- Mother's Day
- Memorial Day
- Good Friday
- St. Patrick's Day
- Ash Wednesday
- Valentine's Day
- President's Day
- Company Day
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US TLFB 2005/GL

153
APPENDIX I

Below you will find a list of statements. Please rate the truth of each statement as it applies to you. Use the following scale to make your choice.

1---------------2----------------3----------------4---------------5-----------------6-------------------7
never   very seldom    seldom    sometimes    frequently    almost always    always
true     true          true       true         true          true               true

_______ 1. I am able to take action on a problem even if I am uncertain what is the right thing
to do.

_______ 2. I often catch myself daydreaming about things I’ve done and what I would do
differently next time.

_______ 3. When I feel depressed or anxious, I am unable to take care of my responsibilities.

_______ 4. I rarely worry about getting my anxieties, worries, and feelings under control.

_______ 5. I’m not afraid of my feelings.

_______ 6. When I evaluate something negatively, I usually recognize that this is just a
reaction, not an objective fact.

_______ 7. When I compare myself to other people, it seems that most of them are handling
their lives better than I do.

_______ 8. Anxiety is bad.

_______ 9. If I could magically remove all the painful experiences I’ve had in my life, I
would do so.
APPENDIX J

WORKING ALLIANCE INVENTORY-CLIENT FORM

Below is a list of statements about your relationship with your therapist. Consider each item carefully and indicate your level of agreement for each of the following items. Please write down the rating scale because it makes it easier to answer items.

<table>
<thead>
<tr>
<th>Does not Correspond at all</th>
<th>Corresponds Moderately</th>
<th>Corresponds Exactly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>4</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. My therapist and I agree about the things I will need to do in therapy to help improve my situation. 1 2 3 4 5 6 7

2. What I am doing in therapy gives me new ways of looking at my problem. 1 2 3 4 5 6 7

3. I believe my therapist likes me. 1 2 3 4 5 6 7

4. My therapist does not understand what I am trying to accomplish in therapy. 1 2 3 4 5 6 7

5. I am confident in my therapist's ability to help me. 1 2 3 4 5 6 7

6. My therapist and I are working towards mutually agreed upon goals. 1 2 3 4 5 6 7

7. I feel that my therapist appreciates me. 1 2 3 4 5 6 7

8. We agree on what is important for me to work on. 1 2 3 4 5 6 7

9. My therapist and I trust one another. 1 2 3 4 5 6 7

10. My therapist and I have different ideas on what my problems are. 1 2 3 4 5 6 7

11. We have established a good understanding of the kind of changes that would be good for me. 1 2 3 4 5 6 7

12. I believe the way we are working with my problem is correct. 1 2 3 4 5 6 7
APPENDIX K

WORKING ALLIANCE INVENTORY-CLINICIAN FORM

Below is a list of statements about your relationship with your client. Consider each item carefully and indicate your level of agreement for each of the following items.

<table>
<thead>
<tr>
<th>Does not Correspond at all</th>
<th>Corresponds Moderately</th>
<th>Corresponds Exactly</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

1. My client and I agree about the things he/she will need to do in therapy to help improve his/her situation. 1 2 3 4 5 6 7

2. What my client is doing in therapy gives him/her new ways of looking at his/her problem. 1 2 3 4 5 6 7

3. I believe my client likes me. 1 2 3 4 5 6 7

4. My client does not understand what I am trying to accomplish in therapy. 1 2 3 4 5 6 7

5. I am confident in my client's ability to help him/herself. 1 2 3 4 5 6 7

6. My client and I are working towards mutually agreed upon goals. 1 2 3 4 5 6 7

7. I feel that my client appreciates me. 1 2 3 4 5 6 7

8. We agree on what is important for my client to work on. 1 2 3 4 5 6 7

9. My client and I trust one another. 1 2 3 4 5 6 7

10. My client and I have different ideas on what his/her problems are. 1 2 3 4 5 6 7

11. We have established a good understanding of the kind of changes that would be good for him/her. 1 2 3 4 5 6 7

12. I believe the way we are working with my client's problem is correct. 1 2 3 4 5 6 7


Table 1

Demographic Information of Subjects who Withdrew from the Study (n = 6)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
<th>Marital Status</th>
<th>Education&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>8</td>
<td>39</td>
<td>Male</td>
<td>Caucasian</td>
<td>Married</td>
<td>14 years</td>
</tr>
<tr>
<td>12</td>
<td>22</td>
<td>Female</td>
<td>African American</td>
<td>Married</td>
<td>9 years</td>
</tr>
<tr>
<td>13</td>
<td>34</td>
<td>Female</td>
<td>African American</td>
<td>Single</td>
<td>6 years</td>
</tr>
<tr>
<td>20</td>
<td>51</td>
<td>Male</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>8 years</td>
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<tr>
<td>28</td>
<td>40</td>
<td>Male</td>
<td>Caucasian</td>
<td>Single</td>
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<td>35</td>
<td>26</td>
<td>Female</td>
<td>Caucasian</td>
<td>Separated</td>
<td>12 years</td>
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</table>

<sup>a</sup>Number of years attended school.

\[ M = 35.33 \]

\[ SD = 10.46 \]

10

2.90
### Table 2

*Psychiatric and Substance Abuse History of Subjects who Withdrew from Study (n = 6)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Psychiatric&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Substance Abuse&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Hx of Meds&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Suicide&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Current Meds&lt;sup&gt;e&lt;/sup&gt;</th>
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<td>In&lt;sup&gt;f&lt;/sup&gt;: 4; Out&lt;sup&gt;g&lt;/sup&gt;: 7</td>
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</table>

<sup>a</sup>Number of previous inpatient and outpatient psychiatric treatment episodes.  
<sup>b</sup>Number of previous inpatient and outpatient substance abuse treatment episodes.  
<sup>c</sup>History of prescription for antidepressant medications prior to treatment.  
<sup>d</sup>Number of suicide attempts.  
<sup>e</sup>Antidepressants prescribed during treatment.  
<sup>f</sup>Inpatient.  
<sup>g</sup>Outpatient.
### Table 3

*Treatment Information of Subjects who Withdrew from the Study (n = 6)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Diagnoses(^a) &amp; Diagnoses(^i)</th>
<th>Tx(^b)</th>
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<th>Discharge(^d)</th>
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<tr>
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<tr>
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<td>MDD(^l) &amp; Alc. Abuse(^i)</td>
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\(^a\)Diagnostic composition. \(^b\)Assigned treatment approach (Acceptance and Commitment Therapy: ACT; Treatment as Usual: TAU) prior to withdrawing from study. \(^c\)Total number of days hospitalized. \(^d\)Patient discharge location. \(^e\)Number of days from referral to pretreatment assessment. \(^f\)Number of days patient involved in study prior to withdrawal. \(^g\)Number of days from withdrawal from study to discharge. \(^h\)Depressive Disorder Not Otherwise Specified. \(^i\)Alcohol Abuse. \(^j\)Homeless Shelter. \(^k\)Alcohol Dependence. \(^l\)Major Depressive Disorder.
<table>
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<td>Divorced</td>
<td>14 years</td>
</tr>
<tr>
<td>23</td>
<td>39</td>
<td>Male</td>
<td>African American</td>
<td>Separated</td>
<td>11 years</td>
</tr>
<tr>
<td>27</td>
<td>50</td>
<td>Male</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>12 years</td>
</tr>
<tr>
<td>29</td>
<td>43</td>
<td>Female</td>
<td>African American</td>
<td>Married</td>
<td>13.5 years</td>
</tr>
<tr>
<td>30</td>
<td>44</td>
<td>Female</td>
<td>Caucasian</td>
<td>Separated</td>
<td>12 years</td>
</tr>
<tr>
<td>33</td>
<td>44</td>
<td>Male</td>
<td>Caucasian</td>
<td>Single</td>
<td>12 years</td>
</tr>
</tbody>
</table>

<sup>a</sup>Number of years attended school.
Table 5

*Demographic Information of the ACT Group (n = 12)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Age</th>
<th>Gender</th>
<th>Race</th>
<th>Marital Status</th>
<th>Education(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>24</td>
<td>Female</td>
<td>Caucasian</td>
<td>Single</td>
<td>12 years</td>
</tr>
<tr>
<td>10</td>
<td>20</td>
<td>Female</td>
<td>Caucasian</td>
<td>Separated</td>
<td>12 years</td>
</tr>
<tr>
<td>14</td>
<td>43</td>
<td>Male</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>9 years</td>
</tr>
<tr>
<td>22</td>
<td>42</td>
<td>Female</td>
<td>African American</td>
<td>Separated</td>
<td>10 years</td>
</tr>
<tr>
<td>24</td>
<td>35</td>
<td>Male</td>
<td>Caucasian</td>
<td>Single</td>
<td>14 years</td>
</tr>
<tr>
<td>25</td>
<td>40</td>
<td>Male</td>
<td>Caucasian</td>
<td>Single</td>
<td>15 years</td>
</tr>
<tr>
<td>26</td>
<td>21</td>
<td>Female</td>
<td>African American</td>
<td>Single</td>
<td>7 years</td>
</tr>
<tr>
<td>31</td>
<td>26</td>
<td>Male</td>
<td>Caucasian</td>
<td>Separated</td>
<td>10 years</td>
</tr>
<tr>
<td>32</td>
<td>52</td>
<td>Male</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>16 years</td>
</tr>
<tr>
<td>34</td>
<td>50</td>
<td>Male</td>
<td>African American</td>
<td>Married</td>
<td>10 years</td>
</tr>
<tr>
<td>36</td>
<td>49</td>
<td>Male</td>
<td>African American</td>
<td>Widower</td>
<td>13.5 years</td>
</tr>
<tr>
<td>37</td>
<td>38</td>
<td>Female</td>
<td>Caucasian</td>
<td>Divorced</td>
<td>14 years</td>
</tr>
</tbody>
</table>

\[
M = 36.67 \\
SD = 11.47
\]

\(^a\)Number of years attended school.
Table 6

*Psychiatric and Substance Abuse History of TAU Subjects (n = 12)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Diagnoses</th>
<th>Psychiatric</th>
<th>Sub. Abuse</th>
<th>Suicide</th>
<th>Meds</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Inpatient: 3</td>
<td>Inpatient: 8</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>15</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Inpatient: 2</td>
<td>Inpatient: 3</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>16</td>
<td>MDD&lt;sup&gt;h&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 1</td>
<td>2</td>
<td>No</td>
</tr>
<tr>
<td>17</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Poly. Dep.&lt;sup&gt;i&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 2</td>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td>18</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 5</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>19</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>None</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>21</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 15</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>23</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt;, Alc. Abuse&lt;sup&gt;j&lt;/sup&gt;, PTSD&lt;sup&gt;k&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>None</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>27</td>
<td>Dysth. Dx&lt;sup&gt;l&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>29</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;j&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>30</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;j&lt;/sup&gt;</td>
<td>Out.&lt;sup&gt;m&lt;/sup&gt;: 1</td>
<td>Inpatient: 1</td>
<td>4</td>
<td>No</td>
</tr>
<tr>
<td>33</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>No</td>
</tr>
</tbody>
</table>

|        | Inpatient          | Outpatient        |
|        | M = .75           | M = .08           |
|        | SD = .97          | SD = .29          |

<sup>a</sup>Diagnostic composition.  <sup>b</sup>Number of previous inpatient and outpatient psychiatric treatment episodes.  
<sup>c</sup>Number of previous inpatient and outpatient substance abuse treatment episodes.  
<sup>d</sup>Number of suicide attempts.  
<sup>e</sup>History of a prescription for antidepressant medications prior to treatment.  
<sup>f</sup>Depressive Disorder Not Otherwise Specified.  
<sup>g</sup>Alcohol Dependence.  
<sup>h</sup>Major Depressive Disorder.  
<sup>i</sup>Polysubstance Dependence.  
<sup>j</sup>Alcohol Abuse.  
<sup>k</sup>Post Traumatic Stress Disorder.  
<sup>l</sup>Dysthymic Disorder.  
<sup>m</sup>Outpatient.
Table 7

*Psychiatric and Substance Abuse History of ACT Subjects (n = 12)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Diagnoses&lt;sup&gt;a&lt;/sup&gt;</th>
<th>Psychiatric&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Sub. Abuse&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Suicide&lt;sup&gt;d&lt;/sup&gt;</th>
<th>Meds&lt;sup&gt;e&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Out.&lt;sup&gt;h&lt;/sup&gt;: 1</td>
<td>None</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>10</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Poly. Dep.&lt;sup&gt;i&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 3</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>14</td>
<td>MDD&lt;sup&gt;j&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>22</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;g&lt;/sup&gt;</td>
<td>None</td>
<td>None</td>
<td>0</td>
<td>No</td>
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<tr>
<td>24</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Poly. Dep.&lt;sup&gt;i&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>25</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;k&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 1</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>26</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Poly. Dep.&lt;sup&gt;i&lt;/sup&gt;</td>
<td>None</td>
<td>None</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>31</td>
<td>MDD&lt;sup&gt;j&lt;/sup&gt;, Anx.&lt;sup&gt;l&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 1</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td>32</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;k&lt;/sup&gt;</td>
<td>None</td>
<td>Inpatient: 2</td>
<td>0</td>
<td>Yes</td>
</tr>
<tr>
<td>34</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Dep.&lt;sup&gt;k&lt;/sup&gt;</td>
<td>None</td>
<td>None</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>36</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Poly. Dep.&lt;sup&gt;i&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 1</td>
<td>0</td>
<td>No</td>
</tr>
<tr>
<td>37</td>
<td>Dep. NOS&lt;sup&gt;f&lt;/sup&gt; &amp; Alc. Abuse&lt;sup&gt;g&lt;/sup&gt;</td>
<td>Inpatient: 1</td>
<td>Inpatient: 3</td>
<td>2</td>
<td>No</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Inpatient</th>
<th>Outpatient</th>
</tr>
</thead>
<tbody>
<tr>
<td>(M=0.25)</td>
<td>(M=1.25)</td>
</tr>
<tr>
<td>(SD=0.45)</td>
<td>(SD=4.27)</td>
</tr>
</tbody>
</table>

<sup>a</sup>Diagnostic composition.  
<sup>b</sup>Number of previous inpatient and outpatient psychiatric treatment episodes.  
<sup>c</sup>Number of previous inpatient and outpatient substance abuse treatment episodes.  
<sup>d</sup>Number of suicide attempts.  
<sup>e</sup>History of a prescription for antidepressant medications prior to treatment.  
<sup>f</sup>Depressive Disorder Not Otherwise Specified.  
<sup>g</sup>Alcohol Abuse.  
<sup>h</sup>Outpatient.  
<sup>i</sup>Polysubstance Dependence.  
<sup>j</sup>Major Depressive Disorder.  
<sup>k</sup>Alcohol Dependence.  
<sup>l</sup>Anxiety.
Table 8

Treatment Information of TAU Subjects (n = 12)

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total Hospitalization</th>
<th>Sessions</th>
<th>Discharge&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PreStudy&lt;sup&gt;b&lt;/sup&gt;</td>
<td>Study Length&lt;sup&gt;c&lt;/sup&gt;</td>
<td>PostStudy&lt;sup&gt;d&lt;/sup&gt;</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>42</td>
<td>1</td>
</tr>
<tr>
<td>15</td>
<td>7</td>
<td>57</td>
<td>44</td>
</tr>
<tr>
<td>16</td>
<td>10</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>17</td>
<td>2</td>
<td>57</td>
<td>1</td>
</tr>
<tr>
<td>18</td>
<td>2</td>
<td>28</td>
<td>1</td>
</tr>
<tr>
<td>19</td>
<td>5</td>
<td>24</td>
<td>1</td>
</tr>
<tr>
<td>21</td>
<td>7</td>
<td>27</td>
<td>4</td>
</tr>
<tr>
<td>23</td>
<td>6</td>
<td>28</td>
<td>0</td>
</tr>
<tr>
<td>27</td>
<td>5</td>
<td>25</td>
<td>6</td>
</tr>
<tr>
<td>29</td>
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<td>36</td>
<td>5</td>
</tr>
<tr>
<td>30</td>
<td>5</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>33</td>
<td>7</td>
<td>26</td>
<td>6</td>
</tr>
</tbody>
</table>

<sup>a</sup>Patient discharge location. <sup>b</sup>Number of days from referral to pretreatment assessment. <sup>c</sup>Number of days patient involved in study (pretreatment to posttreatment). <sup>d</sup>Number of days from posttreatment assessment to discharge. <sup>e</sup>Number of individual therapy sessions. <sup>f</sup>Total hours of individual therapy.

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Total</td>
<td>5.67</td>
<td>2.23</td>
<td>33.33</td>
<td>12.27</td>
<td>12.23</td>
</tr>
<tr>
<td>M</td>
<td>5.83</td>
<td>1.56</td>
<td>4.33</td>
<td>1.56</td>
<td></td>
</tr>
</tbody>
</table>

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Table 9

*Treatment Information of ACT Subjects (n = 12)*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Total Hospitalization</th>
<th>Sessions</th>
<th>Discharge(^a)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>PreStudy(^b)</td>
<td>Study Length(^c)</td>
<td>PostStudy(^d)</td>
</tr>
<tr>
<td>9</td>
<td>7</td>
<td>17</td>
<td>10</td>
</tr>
<tr>
<td>10</td>
<td>8</td>
<td>15</td>
<td>9</td>
</tr>
<tr>
<td>14</td>
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<td>22</td>
<td>11</td>
</tr>
<tr>
<td>22</td>
<td>8</td>
<td>20</td>
<td>3</td>
</tr>
<tr>
<td>24</td>
<td>5</td>
<td>29</td>
<td>1</td>
</tr>
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<td>25</td>
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<td>21</td>
<td>9</td>
</tr>
<tr>
<td>26</td>
<td>5</td>
<td>23</td>
<td>0</td>
</tr>
<tr>
<td>31</td>
<td>7</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>32</td>
<td>4</td>
<td>18</td>
<td>17</td>
</tr>
<tr>
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<td>11</td>
<td>18</td>
<td>9</td>
</tr>
<tr>
<td>36</td>
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<td>30</td>
<td>19</td>
</tr>
<tr>
<td>37</td>
<td>5</td>
<td>24</td>
<td>12</td>
</tr>
</tbody>
</table>

\(^a\)Patient discharge location. \(^b\)Number of days from referral to pretreatment assessment. \(^c\)Number of days patient involved in study (pretreatment to posttreatment). \(^d\)Number of days from posttreatment assessment to discharge. \(^e\)Number of individual therapy sessions. \(^f\)Total hours of individual therapy.

\[M = 6.00, SD = 2.70\]
Table 10

Pretreatment Assessment Scores of TAU Subjects (n = 12)

<table>
<thead>
<tr>
<th>Subject</th>
<th>HRS</th>
<th>BDI-II</th>
<th>Alcohol TLFB&lt;sup&gt;a&lt;/sup&gt;</th>
<th>PASUPP&lt;sup&gt;b&lt;/sup&gt;</th>
<th>AAQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>%&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Drinks per day&lt;sup&gt;d&lt;/sup&gt;</td>
<td>3 mo&lt;sup&gt;e&lt;/sup&gt;</td>
</tr>
<tr>
<td>11</td>
<td>7</td>
<td>25</td>
<td>1.11</td>
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<td>20</td>
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<td>15</td>
<td>29</td>
<td>25</td>
<td>95.56</td>
<td>12.21</td>
<td>46</td>
</tr>
<tr>
<td>16</td>
<td>37</td>
<td>37</td>
<td>33.33</td>
<td>4.67</td>
<td>123</td>
</tr>
<tr>
<td>17</td>
<td>31</td>
<td>30</td>
<td>26.67</td>
<td>2.75</td>
<td>85</td>
</tr>
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<td>50</td>
<td>2.80</td>
<td>52</td>
</tr>
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<td>19</td>
<td>15</td>
<td>15</td>
<td>95.56</td>
<td>22.09</td>
<td>54</td>
</tr>
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<td>81</td>
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<td>33</td>
<td>22</td>
<td>24</td>
<td>30</td>
<td>25.41</td>
<td>118</td>
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</tbody>
</table>

| M       | 27.67 | 30.08 | 54.08 | 12.89 | 82.08 | 41.58 | 45.50 |
| SD      | 5.85  | 9.22  | 34.02 | 13.96 | 31.12 | 6.37  | 6.30  |

<sup>a</sup>Alcohol Timeline Followback Calendar. <sup>b</sup>Problems Assessment for Substance Using Psychiatric Patients. <sup>c</sup>Percentage of drinking days in previous 3 months. <sup>d</sup>Drinks per drinking day. <sup>e</sup>Previous 3-month score on Problems Assessment for Substance Using Psychiatric Patients. <sup>f</sup>Lifetime score on PASUPP.
Table 11

Pretreatment Assessment Scores of ACT Subjects (n = 12)

<table>
<thead>
<tr>
<th>Subject</th>
<th>HRS</th>
<th>BDI-II</th>
<th>Alcohol TLFB&lt;sup&gt;a&lt;/sup&gt;</th>
<th>PASUPP&lt;sup&gt;b&lt;/sup&gt;</th>
<th>AAQ</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>%&lt;sup&gt;c&lt;/sup&gt;</td>
<td>Drinks per day&lt;sup&gt;d&lt;/sup&gt;</td>
<td>3 mo&lt;sup&gt;e&lt;/sup&gt;</td>
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<td>44.75</td>
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<sup>a</sup>Alcohol Timeline Followback Calendar. <sup>b</sup>Problems Assessment for Substance Using Psychiatric Patients. <sup>c</sup>Percentage of drinking days. <sup>d</sup>Drinks per drinking day in previous 3 months. <sup>e</sup>Previous 3-month score on Problems Assessment for Substance Using Psychiatric Patients. <sup>f</sup>Lifetime score on PASUPP.
Table 12

Analysis of Variance (ANOVA) for HRS, BDI-II, and AAQ

<table>
<thead>
<tr>
<th>Source</th>
<th>Treatment</th>
<th>Time</th>
<th>Time x Treatment</th>
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<tbody>
<tr>
<td>HRS</td>
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<td>116.79**</td>
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</tr>
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<td>BDI-II (Original Scores)</td>
<td>3.41*</td>
<td>55.51**</td>
<td>.01</td>
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<td>BDI-II (Substitute Scores)</td>
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<td>75.87**</td>
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<td>AAQ</td>
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<td>9.40**</td>
<td>5.41*</td>
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</table>

*Note. Values in table represent F ratios.

*p < .05, one-tailed. **p < .01, one-tailed.
Table 13

Clinical Significance of Hamilton Rating Scale for Depression for TAU Group (n = 12)

<table>
<thead>
<tr>
<th>Subject</th>
<th>PreHRS&lt;sup&gt;a&lt;/sup&gt;</th>
<th>PostHRS&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Improved&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Recovered&lt;sup&gt;d&lt;/sup&gt;</th>
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</thead>
<tbody>
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<td>27</td>
<td>3</td>
<td>-4.95 (Yes)</td>
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</tr>
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<td>29</td>
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<td>-3.71 (Yes)</td>
<td>Yes</td>
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<td>-3.92 (Yes)</td>
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<td>-5.15 (Yes)</td>
<td>Yes</td>
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<td>-4.74 (Yes)</td>
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<td>Yes</td>
</tr>
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<td>32</td>
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<td>32</td>
<td>17</td>
<td>-3.09 (Yes)</td>
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<td>Yes</td>
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<td>22</td>
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<td>-1.44 (No)</td>
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<sup>a</sup>Pretreatment score on HRS.  <sup>b</sup>Posttreatment score on HRS.  <sup>c</sup>Improvement from pretreatment to posttreatment HRS score, using Williams (1988) test-retest reliability coefficient to calculate a reliability change index (RCI).  <sup>d</sup>Categorized as “recovered” if posttreatment HRS cutoff score ≤ 15.93 as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Hellerstein et al. (2001).
Table 14

Clinical Significance of Hamilton Rating Scale for Depression for ACT Group (n = 12)

<table>
<thead>
<tr>
<th>Subject</th>
<th>PreHRS(^a)</th>
<th>PostHRS(^b)</th>
<th>Improved(^c)</th>
<th>Recovered(^d)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
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<td>10</td>
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<td>3</td>
<td>-2.47 (Yes)</td>
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<td>16</td>
<td>6</td>
<td>-2.06 (Yes)</td>
<td>Yes</td>
</tr>
<tr>
<td>22</td>
<td>38</td>
<td>23</td>
<td>-3.09 (Yes)</td>
<td>No</td>
</tr>
<tr>
<td>24</td>
<td>25</td>
<td>11</td>
<td>-2.89 (Yes)</td>
<td>Yes</td>
</tr>
<tr>
<td>25</td>
<td>17</td>
<td>10</td>
<td>-1.44 (No)</td>
<td>Yes</td>
</tr>
<tr>
<td>26</td>
<td>8</td>
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<td>33</td>
<td>31</td>
<td>-.41 (No)</td>
<td>No</td>
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<td>Yes</td>
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<td>-2.89 (Yes)</td>
<td>Yes</td>
</tr>
<tr>
<td>36</td>
<td>24</td>
<td>6</td>
<td>-3.71 (Yes)</td>
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\(M\) 22.08  9.58  Effect Size \(.29\)

\(SD\) 8.85  9.39

\(^a\)Pretreatment score on HRS. \(^b\)Posttreatment score on HRS. \(^c\)Improvement from pretreatment to posttreatment HRS score, using Williams (1988) test-retest reliability coefficient to calculate a reliability change index (RCI). \(^d\)Categorized as “recovered” if posttreatment HRS cutoff score \(\leq 15.93\) as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Hellerstein et al. (2001).
Table 15

*Summary of Clinical Significance of HRS for Both Treatment Groups (N = 24)*

<table>
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Table 16

Clinical Significance of BDI-II for TAU Group (n = 12)

<table>
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<th>PreBDI&lt;sup&gt;a&lt;/sup&gt;</th>
<th>PostBDI&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Improved&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Recovered&lt;sup&gt;d&lt;/sup&gt;</th>
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</thead>
<tbody>
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<td>6</td>
<td>-4.49 (Yes)</td>
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<td>No</td>
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<td>Yes</td>
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<td>-4.72 (Yes)</td>
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</tr>
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<td>-1.65 (No)</td>
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<td>-5.19 (Yes)</td>
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<sup>a</sup>Pretreatment score on BDI-II. <sup>b</sup>Posttreatment score on BDI-II. <sup>c</sup>Improvement from pretreatment to posttreatment BDI-II score, using Beck et al. (1996) test-retest reliability coefficient to calculate a reliability change index (RCI). <sup>d</sup>Categorized as “recovered” if posttreatment BDI-II cutoff score ≤ 16.57 as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Fireman et al. (2005).

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Table 17

Clinical Significance of BDI-II for ACT Group (n = 12)

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<th>Recovered&lt;sup&gt;d&lt;/sup&gt;</th>
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<sup>a</sup>Pretreatment score on BDI-II. <sup>b</sup>Posttreatment score on BDI-II. <sup>c</sup>Improvement from pretreatment to posttreatment BDI-II score, using Beck et al. (1996) test-retest reliability coefficient to calculate a reliability change index (RCI). <sup>d</sup>Categorized as “recovered” if posttreatment BDI-II cutoff score ≤ 16.57 as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Fireman et al. (2005).
Table 18

Summary of Clinical Significance of BDI-II for Both Treatment Groups (N = 24)

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Table 19

**Clinical Significance of AAQ for TAU Group (n = 12)**

<table>
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<th>Post-AAQ&lt;sup&gt;b&lt;/sup&gt;</th>
<th>Improved&lt;sup&gt;c&lt;/sup&gt;</th>
<th>Recovered&lt;sup&gt;d&lt;/sup&gt;</th>
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<tbody>
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<td>No</td>
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<sup>a</sup>Pretreatment score on AAQ.  
<sup>b</sup>Posttreatment score on AAQ.  
<sup>c</sup>Improvement from pretreatment to posttreatment AAQ score, using Hayes, Strosahl, et al. (2004) test-retest reliability coefficient to calculate a reliability change index (RCI).  
<sup>d</sup>Categorized as “recovered” if posttreatment AAQ cutoff score ≤ 20.25 as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Hayes, Strosahl, et al. (2004).

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<sup>M</sup>  
<sup>SD</sup>
Table 20

*Clinical Significance of AAQ for ACT Group (n=12)*

<table>
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<tr>
<th>Subject</th>
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<th>Post-AAQ(^b)</th>
<th>Improved(^c)</th>
<th>Recovered(^d)</th>
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<td>46</td>
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<td>46</td>
<td>.11 (No)</td>
<td>No</td>
</tr>
<tr>
<td>32</td>
<td>42</td>
<td>23</td>
<td>-2.16 (Yes)</td>
<td>No</td>
</tr>
<tr>
<td>34</td>
<td>41</td>
<td>45</td>
<td>.45 (No)</td>
<td>No</td>
</tr>
<tr>
<td>36</td>
<td>44</td>
<td>38</td>
<td>-.68 (No)</td>
<td>No</td>
</tr>
<tr>
<td>37</td>
<td>53</td>
<td>19</td>
<td>-3.86 (Yes)</td>
<td>Yes</td>
</tr>
</tbody>
</table>

\(^a\)Pretreatment score on AAQ. \(^b\)Posttreatment score on AAQ. \(^c\)Improvement from pretreatment to posttreatment AAQ score, using Hayes, Strosahl, et al. (2004) test-retest reliability coefficient to calculate a reliability change index (RCI). \(^d\)Categorized as “recovered” if posttreatment AAQ cutoff score ≤ 20.25 as calculated following the Jacobson and Truax (1991) method of 2SD ± pretreatment sample mean obtained from Hayes, Strosahl, et al. (2004).
Table 21

*Summary of Clinical Significance of AAQ for Both Treatment Groups (N = 24)*

<table>
<thead>
<tr>
<th></th>
<th>Improved and/or Recovered</th>
<th>Neither Improved nor Recovered</th>
</tr>
</thead>
<tbody>
<tr>
<td>TAU</td>
<td>0</td>
<td>12</td>
</tr>
<tr>
<td>ACT</td>
<td>3</td>
<td>9</td>
</tr>
</tbody>
</table>
Table 22

*Client and Counselor Working Alliance Inventory-Short Form scores for TAU Participants*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Session 4 Client (n=11)</th>
<th>Session 4 Counselor (n=10)</th>
<th>Last Session Client (n=4)</th>
<th>Last Session Counselor (n=3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>11</td>
<td>73</td>
<td>75</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>16</td>
<td>71</td>
<td>66</td>
<td>71</td>
<td>60</td>
</tr>
<tr>
<td>17</td>
<td>78</td>
<td>81</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>18</td>
<td>84</td>
<td>75</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>19</td>
<td>80</td>
<td>70</td>
<td>73</td>
<td>72</td>
</tr>
<tr>
<td>21</td>
<td>67</td>
<td>74</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>23</td>
<td>13</td>
<td>-</td>
<td>13</td>
<td>-</td>
</tr>
<tr>
<td>27</td>
<td>60</td>
<td>62</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>29</td>
<td>52</td>
<td>51</td>
<td>50</td>
<td>50</td>
</tr>
<tr>
<td>30</td>
<td>74</td>
<td>72</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>33</td>
<td>84</td>
<td>63</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

\[M = 66.91 \quad SD = 20.39\]
\[M = 68.90 \quad SD = 8.62\]
\[M = 51.75 \quad SD = 27.85\]
\[M = 60.67 \quad SD = 11.02\]

*Note.* Cells with (-) represent missing values due to lack of completion by participant and/or counselor. Higher scores represent a greater level of therapeutic alliance.
Table 23

*Client and Counselor Working Alliance Inventory-Short Form scores for ACT Participants*

<table>
<thead>
<tr>
<th>Subject</th>
<th>Session 4 Client (n=12)</th>
<th>Session 4 Counselor (n=12)</th>
<th>Last Session Client (n=11)</th>
<th>Last Session Counselor (n=11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>82</td>
<td>75</td>
<td>84</td>
<td>83</td>
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<tr>
<td>10</td>
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<tr>
<td>14</td>
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<td>72</td>
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<td>72</td>
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<td>73</td>
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<td>78</td>
</tr>
<tr>
<td>31</td>
<td>59</td>
<td>73</td>
<td>65</td>
<td>56</td>
</tr>
<tr>
<td>32</td>
<td>84</td>
<td>74</td>
<td>84</td>
<td>73</td>
</tr>
<tr>
<td>34</td>
<td>80</td>
<td>79</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>36</td>
<td>73</td>
<td>79</td>
<td>83</td>
<td>81</td>
</tr>
<tr>
<td>37</td>
<td>84</td>
<td>77</td>
<td>84</td>
<td>76</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>M 79.17</th>
<th>75.17</th>
<th>79.36</th>
<th>75.45</th>
</tr>
</thead>
<tbody>
<tr>
<td>SD</td>
<td>7.12</td>
<td>4.84</td>
<td>6.71</td>
<td>8.20</td>
</tr>
</tbody>
</table>

*Note.* Cells with (-) represent missing values due to lack of completion by participant and/or counselor. Higher scores represent a greater level of therapeutic alliance.