

ABSTRACT

Title of Document: BRIEF BEHAVIORAL ACTIVATION
TREATMENT FOR DEPRESSION IN SPANISH-
SPEAKING LATINOS: ACCEPTABILITY AND
PRELIMINARY EVALUATION

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Although depression is highly treatable, disparities in mental health treatment in the US have prevented Latinos who lack English language proficiency from accessing efficacious interventions. Reasons cited for these disparities include language barriers, high cost of services, lack of culturally sensitive treatments, and stigma toward mental health treatment. A direct Spanish translation of the Brief Behavioral Activation Treatment for Depression (BATD) may be well-equipped to address the existing barriers through its focus on individual and cultural values, its efficiency and straight-forward nature, its focus on developing existing and new strengths, and conceptualization of depression as a consequence of clients' environments and not of cognitive processes. The current study sought to establish preliminary efficacy and acceptability of BATD in a group of depressed Spanish-speaking Latinos ($N=10$). Results showed that over time there was a significant decrease in self-reported depression and a significant increase in activation as indicated by multiple self-report measures. Further, increases in activation corresponded to decreases in depression. Sustained clinical gains through a one-month follow-up were observed. Taken together, these results provide preliminary support for BATD as an efficacious treatment for depression. Consideration of the results combined with interview-based feedback obtained from participants provide several domains for modification of this treatment for future studies.

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EVALUATION

by

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Chapter 1: Introduction

1.1 Introduction

Major Depressive Disorder (MDD) is a highly prevalent affective disturbance across race and ethnicity (Kessler, Chiu, Demler, Walters, 2005). MDD is characterized by episodes of depressed mood and/or loss of interest in activities for at least two weeks or more (DSM IV TR, 2000; Klerman, 1988). The core MDD symptoms consist of any combination of five criteria, including shifts in eating behaviors, weight or sleep, difficulty concentrating, decreased energy and changes in body movement activity, feelings of worthlessness or guilt, and recurrent suicidal ideation (DSM IV TR, 2000: 356). Suicide attempts or completions are the most severe consequence of a depressive episode (DSM IV TR, 2000). MDD has been estimated to be the primary cause of disability worldwide (Murray & Lopez, 1997), impairing physical, social, and economic life areas (Ciechanowski, Katon & Russo, 2000; Lustman, Clouse & Freedland, 1998).

Although depression is a highly treatable condition, disparities in mental health treatment have been implicated in preventing low-income, ethnic, and immigrant populations from accessing effective interventions (Blanco et al, 2007; Brown, Ahmed, Gray, & Milburn, 1995). Among minorities, Latinos, who represent 16% of the US population (US Census Bureau, 2010), are less likely to utilize mental health services (Hu, Snowden, Jerrell & Nguyen, 1991; Wells, Klap, Koike, & Sherbourne, 2001). A report by Blanco et al. (2007) concluded that between 1993 and 2002, mental health-related visits decreased from 12.2% to 11.7% among Latinos while it increased from 13.1% to 15.7% among non-Latinos. One plausible interpretation of these findings could be that during this decade the occurrence of MDD among Latinos was lower than for

other groups, but such an explanation is contradicted by research suggesting that mental health morbidity is equivalent for Latinos. In fact, in the United States, the lifetime prevalence of MDD has been reported between 6-17% for the general population and between 3-18% among Latinos residing in the United States (Mendelson, Rehkopf & Kubzansky, 2008; Kessler et al., 2003; Vega et al., 1998). With the exception of a few studies suggesting that Latinos in the United States are twice as likely to experience depression relative to non-Hispanic White Americans (Alegria, Canino, Stinson & Grant, 2006; Oquendo et al., 2001), the majority of the literature indicates that there are no significant differences in the prevalence of the disorder between these groups (Dunlop et al., 2003; Kessler et al., 1994; Kessler et al., 2003).

When examining the occurrence of MDD within specific Latino groups, higher prevalence of the disorder has been observed in Latinas relative to White and African American women (Bromberger, Harlow, Avis, Kravitz, & Cordal, 2004; Shatell, Smith, Colwell & Villalba 2008). Even higher rates of MDD are speculated to occur among Latinos who lack English language proficiency. Although there is insufficient research in this area, it is predicted that depression rates are higher among monolingual Spanish-speakers, who represent 12.3% of the total population in the United States that is at least 5 years old, or approximately 80% of all Latino immigrants (Census Bureau, 2007 American Community Survey; Hakimzadeh & Cohn, 2007). In a sample of 6,321 White non-Hispanics, English-speaking Latinos, and Spanish-speaking Latinos, Folsom et al. (2007) found the highest prevalence of MDD in the latter group. In earlier research, Muñoz and colleagues (1993) also found rates of current major depression to be as high as 25% in Spanish-speaking primary care patients, which is higher relative to the general

population (Kessler et al., 2003). Altogether, these findings highlight the pressing need for depression treatment delivery in this group.

1.2 Barriers to Treatment

As mentioned previously, treatment-related disparities often prevent proper care for minority groups (e.g., Department of Health & Human Services [DHHS], 2001). Psychosocial treatments for depression have been found to benefit Latinos; nevertheless, Latinos exhibit lower utilization of mental health services in comparison to other ethnic minorities and non-Hispanic Whites (Wells, Klap, Koike & Sherbourne, 2001). For example, a study of the quality of care for depression and anxiety disorders indicated that only 24% of Latinos received appropriate mental health care, compared to 34% of non-Hispanic White Americans (Young, Klap, Sherbourne & Wells, 2001). In the 1990s fewer than 1 in 5 Latinos born in the United States who suffered from mental health disorders sought help from general practitioners, decreasing to 1 in 11 who contact specialized mental health services (DHHS, 2001). The statistics worsened when estimating utilization of services among Latino immigrants, in which less than 1 in 10 individuals sought these services from general health practitioners and 1 in 20 from mental health professionals (Hough et al., 1987; Vega et al., 1999). These findings are further exacerbated by reports indicating that not only is there less access to mental health services for this group and that services are often delayed when available (Wells, Klap, Koike & Sherbourne, 2001), but that when service is actually delivered, it is substandard; Latinos who seek help for depression in primary care settings are less likely to receive evidence-based depression care than non-Hispanic White patients (Young, Klap, Sherbourne & Wells, 2001). Subsequent research has indicated that Hispanics are more

likely than non-Hispanic White clients to have persistent and recurring psychiatric disorders, suggesting inadequate treatment practices for this group (Breslau, Kendler, Su, et al., 2005)

Common reasons postulated for treatment inequalities are language barriers, the inability to afford the cost of services, and lack of culturally sensitive treatment services (DHHS, 2001). In a population survey that examined the prevalence of psychiatric disorders in 3,012 respondents of Mexican origin, 33% of U.S. born adults indicated a language preference towards Spanish, rising to 64% and 75% for immigrant males and females, respectively (Vega et al., 1998). The US Census Bureau (2000) approximates that 50% of the Hispanic adult population in the United States have limited English proficiency. This is notable given reports suggesting that when disparities in both language and culture are reduced, Latinos' utilization of mental health services is similar to that of the general population (Alegria, Mulvaney-Day, Woo, et al., 2007; Cabassa et al., 2006). In general, as a result of English literacy requirement exclusions, Latinos have historically been highly underrepresented in both clinical and research samples (Miranda et al., 1996; Wells et al., 2001) which is in line with studies suggesting that there is paucity of mental health illness research within this population (Delgado et al., 2006; Schraufnagel, Wagner, Miranda & Roy-Byrne, 2006). As many as 30% of Latinos report difficulty in communicating with health care providers due to language barriers (Vega, 2007). Thus, it is not surprising that findings suggest higher rates of depression among Spanish-speaking Latinos relative to other ethnic groups given research indicating that language barriers promote Latinos' social isolation and limited access to health care, resulting in distress, low perceived self-efficacy, and higher depression prevalence (Ding

& Hargraves, 2009; Woodward, Dwinell & Arons, 1992). These reports underscore the high need for delivery of services in this language as well as for treatments that are culturally-sensitive.

Intra-community impediments to obtaining mental health services should also be considered. Cultural values and stigma-related concerns towards depression and its diagnosis are believed to play a fundamental role in the underutilization of mental health resources. For example, viewing the disorder as somatic-based or attributing its causes to god's interference (Link, Phelan, Bresnahan, Stueve & Pescosolido, 1999; Rogler & Cortes, 1993) would lead to questioning the need for specialized psychological assistance and to request support for depression from informal and often unqualified sources, such as family members, religious leaders, and curanderos (healers). These practices however, may not only lead to untreated and thus chronic depression, but have also shown to reduce confidence in the effectiveness of antidepressants and psychosocial treatment (Cabassa & Zayas, 2007), possibly as a result of receiving conflicting advice (Mitchell & Romans, 2003).

Stigma-related fears in this population have also been well-established. Common fears include being negatively perceived by mental health professionals or believing that personal problems should not be disclosed to others outside the home (Alvidrez & Azocar, 1999; Edge & Rogers, 2005; Eisenman et al., 2008; Van Hook, 1999). In Latinas, stigma towards mental illness has also been identified as stemming from the fear of being perceived as "loca" or crazy (Collins et al., 2008; Pincay & Guarnaccia, 2007). Immigrant Latinas' reports of stigma towards mental health services are higher relative to non-Hispanic White American women (Nadeem et al., 2007). This is concerning given

that in immigrant Latinas stigma is predictive of decreased interest in receiving psychological services and of treatment noncompliance, even after controlling for socioeconomic variables (Nadeem et al., 2007). Increased stigma has also been associated with less likelihood of disclosing depression to either family or friends (Vega, Rodriguez & Ang, 2010). Therefore, treatments that conceive depression as originating from external factors (i.e., individual's environmental context) in contrast to internal factors, such as cognitions, or genetics have been proposed as more appropriate for this population (Kanter, Santiago-Rivera, Rusch, Busch, & West, 2010; Santiago-Rivera, Kanter, Benson, DeRose, Illes & Reyes, 2008).

1.3 Attitudes towards Depression Treatment

With the goal of reducing depression treatment disparities among Latinos, it is critical to first examine general attitudes toward mental health treatment endorsed by this group. In general, Latinos' attitudes towards the use of medication for the treatment of depression have been predominantly negative. Findings by Cabassa and colleagues (2007) indicated that almost 50% of patients in their sample believed that using antidepressants would result in addiction and reported apprehension and ambivalence toward their use. Similarly, Cooper et al. (2003) showed that Latinos preferred antidepressant medication significantly less than non-Hispanic Whites. A comprehensive literature review regarding the use of antidepressants noted that depressed Latinos were more likely to be noncompliant than depressed non-Latino White Americans (Lanouette, Folsom, Sciolla & Jeste, 2009). Further, a study comparing adherence to medication treatment among a sample of Latino patients showed that those who described their English proficiency to be less than "good" or "excellent" were more likely to discontinue

the use of antidepressants in comparison to their more proficient counterparts, even after controlling for other demographic and clinical variables (Hodgkin, Volpe-Vartanian & Alegría, 2007), which underscores the need for additional treatment options for this group.

Fortunately, not all findings about depression treatment for this population have been negative. In fact, despite the many documented impediments related to seeking treatment that have been mentioned previously, research suggests that Latinos endorse positive attitudes towards the psychosocial treatment for depression. Karasz and Watkins (2006) found that Latinos receiving treatment in primary health facilities expressed hope regarding the effectiveness of depression treatments available to them, including physician consultation, medication, but most of all, psychotherapy. Patients believed that physicians could most assist them through supportive talk, including advice, guidance, and comfort. In general, speaking intimately in a supportive setting was most commonly considered to be helpful for depression. Research by Cooper et al. (2003) supported these results and complemented them by adding that Latinos were more likely than non-Hispanic White individuals to regard counseling as acceptable. In another study, after being presented with a vignette of an individual experiencing depression, 75% of a Latino sample agreed that counseling would help restore this individual's functioning to a normal level (Cabassa, Lester & Zayas, 2007). Additionally, it has been reported that in comparison with non-Hispanic White American women, immigrant Latinas are more likely to want treatment (Nadeem et al., 2007). Furthermore, patients who reported visiting a general medical provider for a mental health problem in their lifetime endorsed more positive attitudes toward feeling that their doctor listened to them than those who

had not consulted a general medical provider for a mental health (Cabassa, Lester & Zayas, 2007).

As a possible reason to the overall expressed resistance toward taking medication, Organista (2000) explained that using medication would go against the much-valued belief of being able to “poner de su parte” (put effort or do their part) in this group. Medication therefore, is thought of as interfering with the process of “helping oneself,” whereas psychotherapy offers this opportunity. Given the current state of evidence and in order to promote treatment adherence and prevent both treatment dropout and stigma related concerns, it may be more beneficial to focus on the use of effective psychosocial treatments with Latinos. In support of this statement, a sample of low-income, depressed Latinos perceived their depression as having a social or environmental origin (e.g., as caused as an emotional reaction to life stressors) or as a psychological problem (e.g., low self-image, low-self esteem) and had more favorable attitudes toward psychotherapy than to antidepressant medication to treat depression (Karasz, Sacajiu & Garcia, 2003).

1.4 Attrition in Psychosocial Depression Research

The experience of barriers associated with the underutilization of mental health services mentioned previously may also lead to other complications that can hinder the process of informing effective depression treatment practices for Latinos. Although Latino patients have endorsed more positive attitudes toward psychotherapy overall, high treatment attrition rates remain problematic. Though scant, when research has been conducted with Latino participants, attrition rates reported have been higher than those established for White non-Hispanic participants (Organista, Muñoz & Gonzales, 1994). In their CBT depression study, Organista and colleagues (1994) reported dropout rates of

58%. The authors speculated that such high attrition rates could be in part due to half of the sample having serious medical conditions. In other studies however, similar dropout rates have been evidenced. Miranda et al. (2003) reported only 32% of low-income minority women (approximately half of whom were Hispanic) attended 6 or more sessions of an 8-session CBT intervention. This pattern has also been observed in individual counseling settings, in which it has been estimated that 50% of Latino clients who seek these services do not return after the first session (La Roche, 2002; Sue, Zane & Young, 1994.; Walitzer, Dermen, & Connors, 1999). In general, attrition rates of Latinos from research studies are disproportionately large in comparison to reports ranging from 0% to 43% in the overall population across different psychosocial therapies (Cuijpers, van Straten, Andersson, & van Oppen, 2008).

Several studies have proposed different strategies to address the high dropout rates evidenced in these populations. In earlier research, Sue, Fujino, Hu, Takeuchi & Zane (1991), found that for clients whose primary language was not English, ethnic and language match was a predictor of length and outcome of treatment. In a more recent study, a trial comparing Motivational Enhancement Therapy (MET) and Counseling as Usual for Spanish-speaking substance users, 66% of participants ($n = 405$) completed the 3-session protocol. Retention rates were attributed to the delivery of services in Spanish, and the client-centered, collaborative-style of MET (a derivative of Motivational Interviewing) (Carroll et al., 2009). The few treatment sessions required in this study could have also accounted for the low attrition rates.

A meta-analytic review determined that mental health treatments were 4 times more effective when they were tailored to a specific group and when they were attentive

to cultural context and values (Griner & Smith, 2006). In a pilot study ($n = 15$) that delivered a 12-session Spanish version of CBT for major depression to primary care Hispanic patients, only 4 participants dropped out, which the authors believed to be favorable in comparison to higher attrition rates reported in the literature. The researchers recommended understanding clients' unique cultural characteristics and hypothesized that retention and treatment success was a result of utilizing fluent, culturally-relevant Spanish and their various efforts in promoting treatment attendance, such as contacting clients at their scheduled appointment time if they had not arrived (Interian, Allen, Gara & Escobar, 2008). Addressing low retention in this group has shown to be crucial as revealed by reports that participants who remained in treatment significantly reduced their depressive symptoms (Miranda et al., 2003). An important consideration in tailoring psychosocial treatments is that in the United States, Latinos are comprised of heterogeneous subgroups that possess different cultures and values. Therefore, it is important to find an appropriate balance in maintaining cultural sensitivity by tailoring treatment to diverse cultural groups while accounting for individual differences. This tracks with Bernal, Jiménez-Chafey, and Domenech Rodríguez' proposal (2009) that empirically based treatments should be systematically modified to "consider language, culture, and context in such a way that it is compatible with the client's cultural patterns, meanings, and values."

1.5 Depression Treatment Research and Outcomes for Spanish-Speaking Latinos

Depression treatment studies that have included Spanish-speaking Hispanic samples are noticeably scarce and the few that have been conducted have exclusively tested the efficacy of CBT. Such studies have generally concluded that CBT is an

effective treatment intervention for Latinas. In 1995, Muñoz and colleagues were the first to develop and evaluate a CBT depression manual for use in Spanish-speaking Latino populations, further editing it in 2000 to incorporate sessions that placed an emphasis on interpersonal relationships (Muñoz et al., 1995). In their first trial, 45 impoverished Puerto Rican participants with low levels of education were randomized to either CBT delivered in group format, to treatment as usual, or to a medication group. Findings indicated that group CBT showed superior results in relation to the other treatments (Reyes, Vera, Bernal & Huertas, 2002 as cited in Bernal & Reyes, 2008).

Miranda and colleagues (2003) have also found evidence that CBT was effective in reducing depressive symptoms in a sample that consisted of mostly low-income, young, Latinas. In their study, they compared the effectiveness of traditional cognitive-behavioral group therapy and the same therapy with a supplemental case management for impoverished Latina medical outpatients. The Spanish- and English-speaking patients in this sample responded equally well to cognitive-behavioral therapy alone (Miranda et al., 2003). In another study, Lara, Navarro, Rubí, & Mondragón (2003) recruited participants in Mexico to evaluate the effectiveness of a 6-week psychoeducational group approach and a one-time individual orientation that also included psychoeducational material. The researchers saw an overall reduction in depressive, anxiety, and somatic symptoms in both conditions. Further, in a sample of 5 Latinas, Gelman et al. (2005) saw a significant reduction in BDI scores after a 12-session CBT intervention. Finally, in a sample of low-income African American ($n = 117$), White American ($n = 16$), and Spanish and English-speaking Latina women ($n = 134$) with mild to moderate depressive symptoms, Miranda et al. (2003) found that treatment gains of 6-month pharmacotherapy and 8-week CBT

(but not for the control group that consisted of providing community referrals) were sustained as indicated by a 1-year follow-up. More than 50% of participants who completed at least 6 weeks of CBT did not endorse criteria for depression at the year follow-up. Despite the encouraging results, authors have discussed disparities in mean reductions of depressive symptomatology in Latinos relative to those evidenced in non-Latino White samples (Interian, Allen., Gara & Escobar, 2008).

Higher attrition rates and lower reductions in depressive symptomatology in this group relative to the overall population indicate the need to consider Latinos' preference toward mental health services prior to the implementation of psychosocial treatments for depression. Miranda (1976) and Gelman (2004) advocated for short-duration treatments that provide direct problem-focused guidance given the various life circumstances that require immediate attention in this group. A second consideration is to utilize treatments that are in accordance with the view of "poner de su parte" which was introduced in a previous section. Among this population it is considered favorable to put effort into one's recovery by being an active participant of the therapeutic process. A third consideration is the role of stigma toward mental health treatment, which has been frequently recognized as an important deterrent toward seeking services among Latinos (e.g., Vega, Rodriguez & Ang, 2010) and cause of attrition (Sirey et al., 2001). Evidently, treatments that reduce stigma should be selected. For example, interventions that explain depression as a result of individuals' internal processes contribute to this stigma and to the fear of being perceived as "crazy" (Collins et al., 2008; Pincay & Guarnaccia, 2007) among Latinos. In line with strategies to reduce stigma, researchers have encouraged the use of chalk boards, therapy manuals and homework assignments for clients to think of therapy as

more of a classroom experience (Organista & Muñoz, 1996) and less as a psychological intervention.

Even though the evidence points to CBT as an efficacious psychosocial treatment for depressed Spanish-speaking samples, it can be speculated that a more behavioral treatment approach may be of particular utility in this group in terms of practicality, emphasis in taking responsibility and accountability for living according to one's values, and making life changes as opposed to addressing illness. Support for this type of treatment was first provided by Comas-Diaz (1981). In this study, the researcher evaluated the efficacy of group-format behavioral therapy, group-format cognitive therapy, and a waitlist control was assessed in a small sample of Latinas ($n = 26$). Study results showed a 64% and 51% mean reduction of depressive symptoms for those assigned to cognitive therapy and behavioral therapy, respectively. Both of these treatments demonstrated superior results relative to the waitlist control group, and comparable results to each other in reducing depressive symptomatology. Nonetheless, at a 5-week follow-up treatment gains were reduced for those randomized to cognitive therapy, but maintained for participants in the behavioral therapy condition. An explanation for sustained improvement in the behavioral treatment condition proposed by the researcher posited that through scheduling rewarding activities, participants were able to perceive control over everyday situations in contrast to the lack of control that minorities often experience when confronting marginalizing situations, including poverty and racism. More recently, numerous studies have demonstrated the effectiveness of the behavioral component of CBT, referred to as Behavioral Activation, as a depression treatment in varied samples.

1.6 Behavioral Activation

The theoretical framework of Behavioral Activation (BA) is based on the principles of operant conditioning, for which positive and negative reinforcement play a significant role. BA conceptualizes depression as originating from a lack of positive reinforcement for healthy, nondepressive behaviors (Ferster, 1973; Lewinsohn, 1974; Skinner, 1953), while being maintained by sources of positive reinforcement towards unhealthy, depressive behavior (e.g., receiving sympathy from others) as well as through negative reinforcement, such as avoiding unpleasant situations or responsibilities (Lewinsohn, 1974). According to this model, by decreasing engagement in pleasant activities, depressed individuals create an environment deplete of positive reinforcement possibilities (MacPhillamy & Lewinsohn, 1974). Lewinsohn and Graf's research (1973) suggested a negative association between depressed mood and frequency of pleasant activities. Through BA, clients learn to schedule positive healthy activities and monitor their respective mood. It is expected that there will be a proportional increase between the frequency of pleasant activities in which the individual engages and positive interactions with their environment, resulting in elevated mood and subsequently, in improvements in cognitions (Hopko, Lejuez, Ruggiero & Eifert, 2003).

In a randomized controlled trial conducted by Jacobson and colleagues (1996) three components of CBT were evaluated to determine the contribution of each in treating depression. The components were: 1) the behavioral activation part of CBT (BA), 2) BA in addition to skills training, which are thought of as assisting in modifying dysfunctional automatic thoughts (AT), and 3) the full cognitive behavioral treatment, which included the two previous components in addition to addressing core beliefs and

the schema associated with depression. The authors concluded that contrary to previous hypothesized outcomes, no one treatment was more effective than the others. A 6-month and 2-year follow-up indicated sustained progress of the interventions (Jacobson et al., 1996; Gortner et al., 1998). This seminal study provided evidence for a parsimonious version of CBT and against the necessity to directly address dysfunctional thinking with additional cognitive components. In a subsequent randomized trial consisting of 241 depressed adults, participants were randomly assigned to one of four treatment conditions: BA, CBT, antidepressant medication or a medication placebo (Dimidjian et al., 2006). BA and the antidepressant medication were most effective for moderately to severely depressed patients but as effective as the other interventions for mildly depressed patients. However, those randomized to BA sustained progress and remained in treatment longer than those randomized to antidepressant medication.

Currently, two major BA approaches are widely used. One of these approaches was developed by Lejuez and colleagues (2001; 2011) and has been referred to as the Brief Behavioral Activation Treatment for Depression or BATD, for short. The other major approach was proposed by Jacobson, Martell and Dimidjian (2001). In contrast to the latter intervention, BATD offers a more behavior-based treatment; the treatment model does not employ practices that are associated with other psychosocial treatment approaches, including cognitive rehearsal (e.g., Jacobson et al., 1996), skill building, such as assertiveness and communication skills (e.g., Jacobson et al., 1996), mindfulness (e.g., Dimidjian et al., 2006; Coffman, Martell, Dimidjian, Gallop & Hollon, 2007), or exposure to situations that the client would usually avoid. In addition, BATD consists of 10 sessions, more than half the number traditionally required by the BA approach utilized

by Jacobson et al. (2001). BATD has been described as being more efficient, less costly and more straightforward than the other BA approach (Barraca Mairal, 2009; Hopko, Lejuez, LePage, Hopko & McNeil, 2003). In addition, BATD has been identified as a treatment suitable for the incorporation of clients' ideographic needs (for a more extensive review of the differences between the two BA techniques, please see Barraca Mairal, 2009 and Hopko et al., 2003).

Both BA approaches have shown success with depressed samples. The effectiveness of BATD has been established with a variety of samples, including patients in a community mental health center (Lejuez, Hopko, LePage, Hopko, & McNeil, 2001), patients in an inpatient psychiatric facility (Hopko, Lejuez, LePage, Hopko, & McNeil, 2003), as a supplemental intervention for patients with coexistent Axis II disorders, (Hopko, Sanchez, Hopko, Dvir, & Lejuez, 2003), and cancer patients (Hopko, Bell, Armento, Hunt & Lejuez, 2005). Jacobson and colleagues' BA has shown success with a representative community outpatient sample (Jacobson et al., 1996), children and adolescents (e.g., Chu, Colignori, Weissman & Bannon, 2009), dementia patients (e.g., Teri et al., 1997), as a supplemental intervention for patients with coexistent Axis I (Jakupcak et al., 2006) and Axis II disorders, and more recently with a small sample of Latinas (Kanter, Santiago-Rivera, Rusch, Busch & West, 2010).

To date, 4 meta-analyses have revealed the effectiveness of BA in treating depression. Cuijpers, van Straten, Warmerdam (2007) found that pleasant activity scheduling was superior to other psychological treatments and equal to the full CBT at end of treatment and follow-ups, reporting an effect size of 0.87. A later meta-analyses conducted by Ekers, Richards, and Gilbody (2008) included 17 studies and concluded

that BA was superior to controls, brief psychotherapy, supportive therapy, and equal to CBT. These results were confirmed by a more recent meta-analysis that compiled 34 studies and explored whether more complex versions of BA accounted for more variance in comparison to more parsimonious versions of the approach (Mazzucchelli, Kane & Rees, 2009). In this recent meta-analysis, BA also showed superiority to control conditions in addition to suggesting that the variants of BA did not differ significantly from each other ($p = .23$). Finally, a review by Sturmev (2009) indicated that there is support for BA for individuals for whom CBT is less effective, such as for individuals with severe, lifelong depression.

1.7 Behavioral Activation for Spanish-Speaking Latinos

Following the work of Comas-Diaz (1981) two decades earlier, Kanter et al. (2010) developed a culturally-modified version of BA in Spanish from the original approach proposed by Jacobson et al. (2001). The researchers conducted an initial evaluation of the culturally adapted version of BA in an open label trial pilot study with 10 Latinas. In this version of BA, in addition to scheduling pleasant activities, clinicians utilize cognitive rehearsal, skill building, mindfulness, exposure to activities for which avoidance is displayed, and role-playing. In their modified treatment, Kanter's team indicated paying close attention to values commonly attributed to Latinos that would affect the course of treatment. Among these values were the centrality of family in individuals' lives, the establishment of differential matriarch and patriarch roles, and sympathy in daily interactions. During the treatment, the benefits of including family members were also discussed by the therapist (Kanter et al., 2010) The results indicated a significant decrease in depression severity on the Beck Depression Inventory-II at post-

treatment which represented a large effect size ($d = 1.67$). Additionally, there was a significant reduction in depressive symptoms for the intent-to-treat sample that also indicated a large effect ($d = 1.07$). Although the authors speculated that BA's effectiveness was possibly a result of the cultural modifications, a lack of a comparison group prevented empirical support to this statement. Despite the promising results, retention in this study was low: only 3 clients completed the 12-session treatment. The authors noted that the rate of session attendance was high in comparison to other psychosocial depression interventions delivered at the same mental health facility. The authors attributed the relative success of retention rates to the treatment's simplicity and straightforward rationale, which compared to CBT have been regarded as easier to explain and to implement into clients' daily lives (Hollon, 2000).

Building on the strengths of utilizing behavioral activation as a depression treatment for Latinos, there may be particular utility in using BATD specifically, as it has been described as the most straightforward and uncomplicated behavioral activation approach (Barraca Mairal, 2009). Additionally, BATD is considerably shorter than other approaches of behavioral activation, which aligns with recommendations of using short-term therapies for low-income clients who confront "pressing life circumstances," which may interfere with their participation in long-term treatment (Organista and Muñoz, 1996). Therefore, BATD's succinct 10-session length (Lejuez, Hopko, Acierno, Daughters & Pagoto, in press) may prove optimal for this group.

Although the culturally modified BA evaluated by Kanter and colleagues (2010) showed great promise, a specific anticipated strength of BATD for use with Latinos is the treatment's idiographic approach (Hopko, Lejuez, LePage, Hopko & McNeil, 2003),

which may contribute to cultural sensitivity.. Generally, it has been proposed that for a treatment to be deemed culturally sensitive it should be 1) accessible, 2) congruent with the client's cultural values, thereby acknowledging individual differences among subgroups, and 3) inclusive of the client as an active participant of his or her intervention development (Muñoz & Mendelson, 2005 as cited by Comas-Diaz, 2006; Rogler, Malgady, Costantino & Blumenthal, 1987). BATD, which follows these requirements may be characterized as a culturally-sensitive approach. In BATD, clinicians are able to tailor treatment and take into account clients' cultural differences (Barraca Mairal, 2009), which constitutes a repeated recommendation when working with Latinos (e.g., Interian, Allen, Gara & Escobar, 2008; Gelman, Lopez & Foster, 2005). As part of the treatment, clients are encouraged to identify life values that are important to them and to engage in activities that correspond to these values. Further, BATD allows the easy incorporation of personal values stemming from cultural principles that are deemed important to the client. For example, the extensively documented cultural value of "familismo," which refers to centrality of family in Latinos' identity and everyday life (e.g., Zayas, Lester, Cabassa & Fortuna, 2005; Sabogal, Marín, Otero-Sabogal, Marín, & Perez-Stable, 1987) can be incorporated into treatment to the extent that "family" is an important and relevant life area to the client. The client may then select activities that match this value (e.g., going to the park with a son or daughter). An additional component particular to BATD and that may also effectively integrate the value of "familismo," is the inclusion of contracts. Through the use of contracts, clients may recruit a support network to assist them in specific ways to complete activities that may prove difficult for them. Clients may select to enlist close family members to help them, maintaining the centrality of family as a

primary source of support (Gloria & Rodriguez, 2000) by encouraging their involvement in the treatment process. In addition, other cultural values widely identified within this population, including *simpatia* (warm and positive interactions; Triandis et al., 1984) and “*respeto y formalismo*” (respect and formality; Miranda et al., 1996) shown to impact treatment outcomes (Añez, Silva, Paris Jr. & Bedregal, 2008) may also be integrated into BATD.

1.8 Current Study

The paucity of psychosocial treatment outcome and feasibility research for depressed Latinos, specifically for those with English-language deficits, highlights the need for increased research efforts to determine the appropriateness of treatment interventions. A first logical step involves conducting additional research on treatments that have shown initial success in Latino samples. Therefore, the current study sought to extend previous efforts to evaluate BA by establishing preliminary efficacy of BATD with depressed Latinos by utilizing an existing, untested Spanish translation of the current Brief Behavioral Activation Treatment for Depression (BATD; Lejuez, Hopko, Acierno, Daughters & Pagoto, 2011). An additional purpose of the present study was to evaluate the extent to which individuals perceived the direct translation of BATD as an acceptable, feasible treatment for Spanish-speaking Latinos, as well as to examine the efficacy of this translation in this group .

In service of the treatment development goals here, we followed Carroll and Nuro’s (2001) sequential model for psychotherapy manual development. In this manner, as part of our primary goals we piloted the BATD manual, assessed its feasibility, and checked for therapist adherence and competence throughout administration. These

evaluation components are part of the Stage I treatment development process (Carroll & Nuro, 2001). We delivered BATD to a small community sample of depressed Latinos and gathered these data by conducting in-depth interviews with these participants. Generally, when treatment manuals have been modified to fit Latinos' treatment needs, these changes have been made without sufficient or any evidence supporting them. Therefore, we considered that this step-by-step evaluation process would help identify overall treatment acceptability and factors that may contribute to the success of BATD for this population, based on actual participants' reports.

Therefore, among our primary aims was to recruit a community sample of 10 depressed Latinos who indicated a Spanish language preference into an open-label trial to test the efficacy of the BATD translated manual. Following exposure to the treatment, we hypothesized that participants would evidence:

Hypothesis 1a: Reduction in depressive symptoms over time

Hypothesis 1b: Increase in levels of activation and contact with reinforcement in the environment over time

Hypothesis 1c: Correspondence of an increase in level of activation, as well as availability of and contact with reinforcement in the environment, with a decrease in level of depression

Hypothesis 1d: Maintenance of clinical gains from post-treatment to follow-up

An additional primary aim of the study was to conduct in-depth interviews consisting of participants who received BATD to gain insight into their personal treatment experience. The principal objective of the interviews was to evaluate participants' perceptions of the following treatment characteristics:

- *Acceptability*, consisted of questions eliciting feedback about the intervention's fairness, reasonableness, and appropriateness (Kazdin, French, & Sherick, 1981) as a depression treatment.
- *Feasibility*: Within this domain, we considered *barriers* and challenges that impeded participants' implementation of various treatment components, session attendance, and overall adherence to BATD. Specifically, feasibility of completing the daily monitoring, contracts, planned activities, and homework was explored. Additionally, we queried participants about their plans of continuing to apply BATD components into their daily lives.
- *Comprehension*: Participants' overall understanding of BATD was assessed. Particular attention was given to comprehensibility of the treatment rationale, daily monitoring, life areas, values, and respective activity selection, and the perceived aims of the assigned homework. We also included questions to determine the clarity of language utilized throughout the sessions. In addition, we included questions about the treatment's format and organization and how these related to comprehension.
- *Treatment effectiveness*: The overall objective of this domain was to evaluate if BATD was a useful depression treatment from which participants benefited, related to both depressed mood and activation.
- *Treatment suggestions*: Participants were asked to provide recommendations for ways in which the treatment could become more acceptable, feasible, comprehensible and effective for future clients.

- *Treatment satisfaction*: Participants' perceptions of the treatment utility and the treatment's perceived benefit to future BATD clients was examined. We also evaluated the extent to which BATD met participants' needs.

These data were collected after participants' treatment course was completed in order to guide the authors' efforts in making informed and data-driven modifications to the BATD manual. The feedback received was used to modify the BATD manual for future larger scale randomized control trials. The in-depth interview we used can be found in the Appendix.

Chapter 2: Research Design and Methods

2.1 Overall Design

The present study sought to evaluate the efficacy of Behavioral Activation in an open-label trial with a depressed Spanish-speaking Latino community sample ($N=10$) using BATD, designed by Lejuez and colleagues (2001; 2011) for which we received a Spanish translation. The translation was performed by 4 psychologists in Argentina: Fabian Maero (team leader), Carolina Principi, María Inés Mathot y Rebolé, and Juan Pablo Coletti (reviewer). As mentioned earlier, given the current literature, we expected that this 10-session version of BA would meet the needs of this group based on shorter treatment length, uncomplicated nature and straightforward rationale (Lejuez, Hopko, & Hopko, 2001), pragmatism, major emphasis placed on client values (Lejuez et al., 2011), the potential for recruitment of family members as sources of social support, and the treatment's idiographic nature. We examined the effect of the intervention on participants' level of depression, activation, and contact with environmental reinforcement by administering assessments prior to the initiation of every treatment session. To assess maintenance of clinical gains after treatment completion, we conducted a one-month follow-up session at which we administered the same assessments used prior to each treatment session. Subsequent to the completion of these measures at the one-month follow-up, we conducted in-depth interviews with each study participant to determine the treatment's acceptability, perceived effectiveness, feasibility, associated implementation barriers, and comprehensibility.

2.2 Recruitment

Participants ($N = 10$) were primarily recruited through flyers in the District of Columbia Metro area, from the Montgomery and Prince George's counties in Maryland. The current Latino population in the DC Metro Area was estimated to be 700,000, in 2010, an increase of 62% from the previous decade (Fraga et al., 2010; U.S. Census Bureau, 1990; U.S. Census Bureau, 2000). Six participants were recruited through the use of flyers posted in grocery stores, bus stops, public libraries, and community centers. Three participants were recruited from referrals provided by two different community centers serving Latinos and one participant was referred to our study by an already-enrolled participant. Authorization was sought prior to the distribution of recruitment materials and was in accordance with all local and national laws, as well as with the guidelines of the University of Maryland Institutional Review Board (IRB).

2.3 Procedures

All individuals who called to express interest in participating in the study were screened for eligibility by Ms. Collado-Rodriguez or a research assistant (RA) in the Center for Addictions, Personality, and Emotion Research (CAPER). Ms. Collado-Rodriguez and the CAPER RA both possess native fluency in Spanish.

Participants were excluded from the study if they did not meet the following inclusion criteria: 1) be a minimum of 18 years of age, 2) be of Latino descent, 3) have a self-reported Spanish-language preference, 4) have a cut-off score of 10 or higher in the Beck Depression Inventory, 5) have completed the 4th grade or higher either in their country of origin or in the United States, 6) not have current substance abuse or dependence, 7) not meet diagnostic criteria for a current psychotic disorder, and 8) not

meet diagnostic criteria for bipolar disorder, 9) if taking antidepressants, demonstrate medication stability as indicated by three or more consecutive months of use. Preliminary eligibility was determined over the telephone. Participants were excluded from the study if they did not meet all inclusion criteria. These individuals were provided contact information for mental health resources within the community that offered services in Spanish or English, depending on callers' language preference.

A total of 42 callers contacted CAPER expressing interest in our study. Out of those callers, 13 could not be recontacted after they left a message expressing interest for the study. At least five attempts were made by study staff to contact these 13 potential participants, with messages left at each contact attempt. Out of the 29 remaining callers that were screened, 5 were excluded from participation based on our study criteria. Of the remaining 24 potential participants, nineteen were scheduled for a baseline appointment and the other 5 eligible callers indicated that they were unsure of their schedule and chose not to make an appointment during the initial screening phone call. These five callers were recontacted at least five times by study staff and left messages to call the Center. Two of the five eligible callers whose appointment was not scheduled returned our Center's phone calls and indicated they were no longer interested in participating, and the remaining three were unable to be reached. Of the 19 callers who scheduled a first appointment, ten participants showed up to their initial meeting. Efforts to reschedule the 9 no-show potential participants also included calling them five times as well as sending them a letter to call CAPER. All ten participants were enrolled within a 4-month period. Please see Figure 1 for a Flow Diagram of the study.

After a participant was deemed eligible, he or she was provided a description of the study including treatment procedures and the in-depth interview component.

Participants were then scheduled for an appointment at the University of Maryland's CAPER to complete the baseline assessment and to attend the first BATD session.

Participants did not receive monetary compensation for attending therapy. However, they earned \$10 for completing questionnaires at each of the scheduled assessment points. In addition, participants earned \$20 for their participation in an individual in-depth interview one month after completing the treatment. Participants were assessed prior to each session and at a one-month follow-up session, for a total of 11 assessment points. Participants completed the questionnaires prior to the initiation of the in-depth interview.

When participants attended the first session to complete the assessments, the RA fluent in Spanish met them at CAPER. At the beginning of the appointment, the RA reviewed study procedures, answered any questions regarding the study, and obtained verbal informed consent. Ms. Collado-Rodriguez was available to answer questions about the treatment, if needed. Along with the verbal informed consent approved by the IRB, participants were informed about the certificate of confidentiality obtained to protect their identifiable information from forced disclosure. Of particular concern was protecting participants' immigration status, whose disclosure could have potentially resulted in adverse legal consequences. After providing verbal informed consent, participants were asked to complete various Spanish-language questionnaires in a private room. Due to limited literacy, three participants requested that the questions be read to them at every session. The completion of the assessments during the first session took up to 70 minutes.

The duration of subsequent assessments lasted approximately 20 minutes. After completion of the questionnaires, participants were compensated. They then attended the first BATD treatment session. The duration of BATD sessions was approximately 60 minutes.

At the end of the first session, participants were provided a schedule outlining their appointment times and dates for subsequent sessions. Prior to the end of each session, participants were asked about expected scheduling conflicts. Appointments were rescheduled respectively. Every effort was made to accommodate participants' schedules. During the first session, the study RA informed all participants that in the event they were 15 minutes late for an appointment, they would be contacted by the therapist to attempt to reschedule the session, following Interian and colleagues' (2008) techniques for promoting treatment retention.

At a participant's last BATD session, the individual was scheduled to attend an in-depth interview session at CAPER. The duration of the interview was approximately 60 minutes and was scheduled to correspond with the one-month follow-up assessment point. During the one-month follow-up, participants completed the questionnaires first and then participated in the in-depth interview portion of the study. The study RA was fully trained in interview methodology based on standard practices (Kvale, 1996) and followed a predetermined script. Questions posed to participants during the in-depth interview concentrated on their experience with the treatment. Specific domains assessed were: 1. treatment acceptability, 2. treatment feasibility, including barriers of implementing BATD, 3. clarity of the rationale of BATD treatment components, 4. comprehensibility of language and manual organization, 5. treatment suggestions, and 6.

overall treatment satisfaction. Overall, 9 participants completed the one-month follow-up. The remaining participant had discontinued treatment three months earlier and was not able to be reached after multiple telephone calls. Of the nine participants who completed the in-depth interview, six agreed to be audiotaped and their feedback was transcribed. Immediately after transcription by the RA, the recording was destroyed to protect participants' privacy. Participants' privacy was further protected by assigning pseudonyms following transcription. For the remaining three participants who refused to be recorded, the RA conducting the interview wrote down participants' responses verbatim. As part of the in-depth interview, participants were also asked to complete an "Exit Survey" consisting of general ratings for the specific domains assessed in the in-depth interview.

2.4 Treatment Overview

The therapist followed the Spanish translation of the BATD manual (Lejuez et al., 2001; 2011). As suggested in this manual, during the first session of BATD, the therapist reviewed common depressive symptoms, provided the treatment's rationale, discussed the importance of monitoring daily activities, outlined session attendance policies, and explained the relationship between treatment adherence and the likelihood of treatment success. As the homework assignment for this first session, participants were asked to monitor their daily activities until the subsequent session. In the second session, the counselor briefly reviewed the content of the previous session, reviewed the activities listed by participants and assessed any difficulties associated with homework completion. The remainder of the session was devoted to a thorough discussion on values and life areas that were important for participants. Participants then selected activities in which

they would have liked to engage that reflected their values. During the third session, the therapist worked with participants to select fifteen activities they found rewarding. Participants proceeded to rank the activities in terms of difficulty. Participants completed easier activities toward the beginning of treatment and progressed towards more complicated activities. In the fourth session, participants worked toward accomplishing 3 activities on their list. Session 5 introduced “contracts”, which provides participants the opportunity to request specific assistance from friends and family in order to accomplish their selected activities. Sessions 6 through 10 consisted of continued engagement on meaningful activities and daily monitoring, as well as discussions of an individualized post-treatment plan.

2.5 Therapist Competence, Adherence, and Fidelity

Ms. Collado-Rodriguez served as the sole therapist for the present study. Treatment integrity was ensured through extensive therapist training. Although the original proposal planned for random competency checks of audio recorded sessions, participants expressed discomfort in being recorded. For each session, a therapist adherence form was used to assess competency with the treatment protocol and adherence to the components of the manual for each session. The therapist brought the BATD manual for reference to every session. Additionally, if any clarification specific to the translation was needed, Fabian Maero and the team of psychologists who translated the BATD manual were contacted. Ms. Magidson, who has extensive experience in the delivery of BATD and is also fluent in Spanish, performed weekly supervision to the therapist. In addition, Drs. Lejuez and MacPherson also provided weekly supervision with a focus on treatment standardization.

2.6 Measures

In line with our study aims, questionnaires were selected to assess 6 principal areas. The first area focused on participants' characteristics including their demographic information, current antidepressant use, immigration status, income, and depression treatment history. These variables were treated as covariates in the case that they were related to our main treatment outcomes (depression, activation, and/or contact with environmental reinforcement). To measure the second area, we utilized a self-report questionnaire to identify individuals' depressive symptomatology and its variation through the duration of the study. The third area of interest consisted of participants' self-reported activation and self-reported receipt of positive reinforcement from the environment. To assess the fourth area we included treatment adherence measures, such as homework completion, and treatment attendance. The fifth area consisted of measuring participants' attitudes toward treatment. Within this area we explored participants' perceived therapeutic alliance and stigma associated with depression treatment. If there were changes across time in these measures, we treated them as covariates of treatment outcome. Finally, the sixth area focused on qualitative information regarding participants' experience with and perception of BATD. To assess this area we created an in-house questionnaire consisting of specific semi-structured questions and an "Exit Survey" (described more thoroughly in *section 1.8*) with more general, close-ended items, both of which are included in the Appendix. Please see a description of each of the measures administered below.

The following table offers a summary of the questionnaires that were used, the area being assessed, and the time-point at which they were administered:

Area	Measure	Time of Administration
1. Participant Characteristics	<i>General Information</i>	Baseline
	<i>Medication Use</i>	All sessions & follow-up
2. Depressive Symptomatology	<i>BDI-II</i>	All sessions & follow-up
	<i>SCID-IV</i>	All sessions & follow-up
3. Behavioral Activation and Contact with Environmental Reinforcement	<i>BADS</i>	All sessions & follow-up
	<i>RPI</i>	All sessions & follow-up
4. Treatment Adherence	<i>Completed homework</i> <i>Total assigned homework</i>	All sessions beginning at session 2
5. Attitudes Toward Treatment	<i>Stigma Checklist</i>	Every other session
	<i>TAC</i>	Every other session
6. BATD Experience	<i>In-depth interview</i>	Follow-up

Area 1- Participant Characteristics

General Information: A standard demographics questionnaire used at CAPER was modified to include items regarding participants' education, income, years of residence in the United States, depression treatment history, immigration status, and reason(s) for immigrating (if applicable).

Medication use: To determine study eligibility and the potential effect of pharmacotherapy or other medications on the results of the treatment, we collected information on participants' medication use, including the names and length of use. Participants were excluded from the study if they were taking medication but did not demonstrate psychotropic stability as indicated by 3 or more months of consistent use.

Area 2- Depressive Symptomatology

For diagnostic inclusion as well as to identify depressive mood variations through the study trial, we utilized the *Beck Depression Inventory-II (BDI-II;* Beck, Steer & Brown, 1996). The inventory consists of 21 items that assess severity of depressive symptomatology. *BDI* cumulative scores range between 0 and 63; scores ranging between 14 and 19 are indicative of mild depression, scores between 20 and 28 are indicative of moderate depression, and scores of 29 or above are indicative of severe depression. The

Spanish version of the *BDI-II* was developed by Sanz, Perdigón & Vázquez (2003) and was evaluated with a sample of 470 Spanish community adults.

Additionally, to establish an MDD diagnosis, the presence of psychotic symptoms, and other diagnoses that may be relevant to our study and general eligibility criteria, we administered the *Structured Clinical Interview for DSM-IV (SCID-IV, non-patient version; First, Spitzer, Gibbon, & Williams, 1995)*. For the current study, specific modules of the *SCID-IV* were used to assess for: 1) primary affective disorders, including major depression and manic episodes, 2) substance use disorders, including abuse and dependence, 3) primary anxiety disorders, including panic disorder, generalized anxiety disorder, and posttraumatic stress disorder, and 4) and psychotic symptoms.

Area 3- Behavioral Activation and Reinforcement/Punishment Derived from the Environment

We utilized two different measures of activation in our study given purported differences between the constructs they are intended to assess: *The Behavioral Activation for Depression Scale (BADS; Kanter, Mulick, Busch, Berlin, & Martell, 2007)* and the *Reward Probability Index (RPI; Carvalho et al., 2011)*.

The *Behavioral Activation for Depression Scale (BADS; Kanter, Mulick, Busch, Berlin, & Martell, 2007)* consists of 25 items and was designed to measure the extent to which individuals become more activated and less avoidant through the course of the BA intervention. Among the questionnaire subscales are Activation, Avoidance/Rumination, Work/School Impairment, and Social Impairment. Given that examining participants' activation levels through treatment course is highly relevant to our study hypotheses, we examined increases in the total *BADS* scale as well as in the *BADS Activation* subscale

specifically. The *Activation* subscale contains items related to the engagement in focused, goal-directed activities as well as to the completion of scheduled activities (Kanter et al., 2006) which allows examining activation changes while isolating impairment elicited by avoidance or rumination (also measured within the *BADS*). Items comprising this subscale include “I am content with the amount and types of things I did” and “I engaged in a wide and diverse array of activities.” The internal consistency of the Spanish version of the complete *BADS* scale has been reported at .80 and at .81 for the *BADS Activation* subscale when administered to a sample comprised of students at a Spanish university (Barraca, Pérez-Álvarez, & Bleda, 2011). Further, the reported magnitude of the correlation between the scale and the *BDI-II* was large ($r=.73$). In the current sample, Cronbach’s alpha for the total *BADS* scale ranged from .80 to .94 across sessions and from .81 to .96 for the *BADS Activation* subscale across all BATD sessions.

The *Reward Probability Index (RPI)*; Carvalho. et al., in press) is a 20 item scale that was developed to assess availability of reinforcement in the environment. The total *RPI* consists of two subscales: 1) the Reward Probability Index, which includes items measuring the likelihood to which individuals are able to obtain reinforcement through instrumental behaviors, and 2) the Environmental Suppressors Index, consisting of items that describe the availability of aversive and unpleasant experiences in respondents’ environment (Carvalho et al., 2011). Total RPI score is calculated by adding scores of the items measuring Reward Probability Index with reversed scores of the items measuring Environmental Suppressors. Internal consistency of the total *RPI scale* was $\alpha = .90$ and the test-retest reliability $r=.69$ in the original validation study. Because there is no existing Spanish translation of the *RPI*, the same team that translated BATD into

Spanish (headed by Fabian Maero) and Ms. Collado-Rodriguez collaborated in this translation. The team headed by Mr. Maero translated the original version of the *RPI* into Spanish and Ms. Collado-Rodriguez was responsible for back-translating the items into English (please see Fouad & Bracken, 1986 for more information about this procedure). Discrepancies between the back-translation and the original version of the questionnaire were discussed among the parties and addressed. In the original validation study, psychometric properties of each subscale suggested a strong internal consistency ($\alpha = .82-.90$) as well as strong test-retest reliability ($r = .83- r=.86$) (Carvalho et al., 2011). In the current sample, the Cronbach's alpha for the total *RPI* scale ranged between .83 and .89. Further, Cronbach's alpha for the *Reward Probability Index* ranged between .84 and .95 and between .73 and .88 for the *Environmental Suppressors Index*.

Our rationale for administering both the *BADS* and the *RPI* was based on the purported differences between the constructs they assess. Manos, Kanter and Busch (2010) indicated that the *BADS* measures frequency of activation, escape, and avoidance, whereas the *RPI* measures the probability of obtaining reinforcement through access to environmental rewards. Further, throughout the course of our study we observed differing magnitudes between the correlations among our activation measures, which may support the argument that these questionnaires are tapping into different constructs; correlations ranged from .39 and .82 for the *RPI* and *BADS*, across our treatment sessions.

Area 4- Treatment Adherence

Homework Completion and Attendance: Participants' homework adherence was calculated by dividing the total number of completed homework by the total number of

assigned homework. This number included completions of Daily Monitoring Forms and Contracts. Session attendance was logged for every client.

Area 5- Attitudes Toward Treatment:

To measure stigma-related concerns associated with depression treatment, participants completed the *Stigma Checklist Questionnaire* (Vega, Rodriguez & Ang, 2009), which was specifically designed for use with low income Spanish speaking or bilingual primary care Latino patients. The questionnaire consists of 7 items designed to identify participants' perceptions of others who have depression and take medication, as well as their fear of relatives learning that they are dealing with depression. The reliability of the scale has been reported at a Cronbach's alpha of 0.69.

The Therapeutic Alliance with Clinician Questionnaire (TAC; Neale & Rosenheck, 1995) assesses the strength of the therapeutic relationship using a 9-item Likert scale format. The Spanish version of the questionnaire (Bedregal, Paris, Jr., Añez, Shahar & Davidson, 2006) was evaluated with a sample predominantly comprised of depressed individuals and achieved high internal consistency ($\alpha=.96$) and an item component correlation of 0.70. The authors concluded that the measure has both clinical and research utility.

Area 6- BATD Experience

We created an interview script containing questions about treatment acceptability (e.g., "how appropriate was BATD as a depression treatment?"), implementation feasibility (e.g., "how easy was using contracts with your family and friends"), rationale clarity of treatment components (e.g., "how easy was it to understand the importance of monitoring your activities daily?;" "in your own words, can you give reasons for

monitoring your activities daily?”), comprehensibility of language and manual organization (e.g., “which parts of the treatment were difficult to understand? which were easy?”), treatment suggestions (e.g., “thinking about the explanation of life areas, values and activities that we discussed, in what ways could we improve the explanation for more clarity?”) and overall treatment satisfaction (e.g., “what are some things that you liked about the treatment? what were some things that you didn’t like about it?;” “in what ways did the treatment meet your needs? In what ways did it not meet your needs?”).

2.7 Data Analytic Plan

All self-report and interview data were entered using the statistical package SPSS version 19.0. All data were double-entered, compared, cleaned and verified by Ms. Collado-Rodriguez and the study RA. Descriptive statistical analyses such as central tendency and cross-tabs were performed to check distributional assumptions. Box plots were performed on all continuous variables to investigate distributional properties and check for outliers. We explored the skew and kurtosis of each of our continuous variables. All analyses were conducted with a two-tailed alpha of .05.

Our first study aim involved the evaluation of the Spanish BATD intervention with 10 participants. Within this aim, we hypothesized reductions in participants’ depressive symptomatology, increases in activation (as measured by the total *BADS* and the *BADS Activation* subscale scores) and increases in contact with environmental reinforcement (indexed by the total *RPI* and its two subscales, the *Reward Probability* and the *Environmental Suppressors Index*) through the course of treatment.

We conducted repeated measures analyses utilizing Hierarchical Linear Modeling (HLM; Raudenbush & Bryk, 2002) to examine within-subject change over the course of

treatment. The nature of HLM analyses allowed us to control for baseline scores of each measure. We specified all of our HLM Level-1 intercepts and slopes as random, given that we expected first session depressive symptomatology, activation, and availability of reinforcement in the environment as well as each individual's slope of these constructs to differ across our participants. We centered all variables of interest around the mean of respective scores to avoid multicollinearity.

To test changes in depressive symptomatology (as measured by *BDI*) (Hypothesis 1a), activation (as measured by the *BADS* composite and the *BADS Activation* subscale scores) and availability of reinforcement derived from the environment (as measured by the *RPI* composite and its subscale scores, the *Reward Probability* and the *Environmental Suppressors Index*) (Hypothesis 1b) through treatment course, we examined if there was a linear effect of time for each of these constructs independently.

To test the correspondence between the hypothesized increases in activation and contact with environmental reinforcement, and decreases in depression through treatment progression (Hypothesis 1c) we tested four different models. Given the close association between depression, and activation we first tested whether depressive symptoms and activation corresponded concurrently over time. In the same way, we tested the hypothesized relationship between depressive symptoms and receipt of reinforcement in the environment. The first set of models treated depressive symptoms as the outcome and the second set of models treated activation and availability of reinforcement in the environment independently as the outcomes (using the complete *BADS* and *RPI* scale, the *BADS Activation subscale*, *RPI's Reward Probability* and *Environmental Suppressors Index*).

For the third set of models testing this hypothesis, we lagged activation (indexed by the *BADS* and the *BADS Activation* subscale) and contact with environmental reinforcement (indexed by the *RPI* and its subscales), such that activation and contact with environmental reinforcement at a preceding treatment session would correspond to depressive symptomatology scores at the subsequent assessment point. That is, level of activation at session three for example, would predict depression levels at session four. Our rationale for conducting these analyses is in accordance with the Behavioral Activation treatment framework, in which increases in activation and availability of reinforcement in the environment are hypothesized to precede reductions in depression levels and it is not until clients increase their activation and their contact with positive environmental reinforcement that decreases in depression occur. However, we were also interested in testing the alternative possibility; that depression levels precede individuals' activation levels and contact with positive reinforcement in the environment. That is, it is possible that before the engagement in activities can occur there first needs to be a reduction in depression. This approach also provides a more rigorous test of the hypothesized directionality of the relationship between activation/contact with reinforcement in the environment and depressive symptoms. Therefore, lagged depression scores, activation scores, and contact with environmental reinforcement independently served as the outcome. A relationship between these variables would suggest that changes in depression correspond with subsequent changes in activation/contact with environmental reinforcement. Please see Figure 2 depicting the different models tested as part of hypothesis 1c.

Finally, we analyzed the extent to which clinical gains were sustained from post-treatment to follow-up (Hypothesis 1d). This specific hypothesis focused on depression, activation, and contact with environmental reinforcement. We conducted paired t-tests to compare end-of-treatment depression levels (assessed with the *BDI*), end-of-treatment activation (assessed by the *BADS* and the *BADS Activation* subscale), and contact with reinforcement in the environment (measured by the *RPI*, and its subscales) with these constructs' scores at the 1-month follow-up period.

For each of the above models data were used from all participants, making this approach a full intent-to-treat analysis. For participants who dropped out prior to completion of the 10 treatment sessions only those data gathered prior to the date of attrition were used.

Although standard HLM involves a within-subject (time-variant) level (Level 1) and a between-subject (time-invariant) level (Level 2), our main interest was on analyses containing Level 1 data (depression and activation). However, in the case that depression scores, activation, or contact with environmental reinforcement scores did not vary over time (as indicated by a *p*-value greater than .05 when time is the predictor), we tested the models using the baseline scores of these measures as time-invariant predictors.

Our second aim was to conduct in-depth interviews with participants regarding their experience with BATD to make appropriate modifications to the untested Spanish translation of the manual. For data organization and interpretation, broad themes were derived at the outset to categorize participant responses in an open-ended, in-depth interview questionnaire (e.g., acceptability, feasibility, treatment satisfaction, comprehension, treatment suggestions) for each of the components that were covered

over the course of treatment (e.g., daily monitoring, contracts, activity scheduling). Ms. Collado-Rodriguez and the study RA reviewed the transcription of the audio recording and compared line-by-line the statements of each participant to identify consistent and inconsistent responses. Those responses that recurred between subjects were of particular interest and were classified using Elliot's guidelines (1989, 1993 as cited in Hill et al., 1997) in which a statement that applies to all participants is labeled "general," one that applies to half or more participants is labeled as "typical" and statements that are consistent between two but less than half participants, are labeled as "variants." For these analyses, we used data from 9 participants, which included a participant who dropped out of treatment.

Chapter 3: Results

3.1 Participants

The DC metro area has a diverse Latino population, largely represented by individuals from El Salvador, Guatemala, Bolivia, and Honduras (2006 Latino Survey). As a result, study participants differed from those recruited in the Comas-Diaz' (1981) and the Kanter and colleagues' (2010) sample given the various countries of origin represented in our sample and participants' gender composition.

3.1.1 Demographic Characteristics

Of the 10 participants in the sample, we recruited two participants born in each of the following countries: Guatemala, El Salvador, Honduras, and Mexico. The remaining two participants were born in Nicaragua and Peru. Participants reported being in the United States for a mean of 17.82 years ($SD= 13.42$). As shown in Table 1, participants' ages ranged from 23 to 62 and the sample's mean age was 41.45 years ($SD = 14.99$). Our sample consisted of seven females and three males. Seven participants reported earning a yearly income of less than \$15,000; four reported being unemployed, three reported being employed half-time, two were employed full-time, and one was retired. Participants' mean education level was 7th grade ($SD=3.99$). Nine participants reported having limited English speaking and reading abilities. In terms of their marital status, three participants reported being married and three participants reported being single and all participants but two, had children. Further, four participants reported having received depression treatment in the past.

3.1.2 Clinical Characteristics at Treatment Onset

To assess for clinically-relevant characteristics, we administered the *SCID-IV*. Overall, participants demonstrated high levels of comorbidity. Six participants met criteria for current and past MDD, two participants met criteria for double depression, three participants for past dysthymia, five participants met criteria for Generalized Anxiety Disorder, two participants met criteria for current Posttraumatic Stress Disorder, and one participant for Panic Disorder. Further, one person met criteria for Lifetime Alcohol Abuse. Regarding psychotropic medication, two people were stabilized on antidepressants at baseline and the rest were not taking depression medication (Please see Table 2 for a complete summary of participants' clinical diagnostic information). Further, in terms of participants' depressive symptomatology, the sample's mean *BDI* score at the first assessment was 27.60 ($SD = 10.84$), indicating moderate to severe depression. Participants' total mean activation score as indexed by the *BADS*, was 75.3 ($SD = 25.24$) on a 0 to 150 scale. The mean scores of the *BADS Activation* subscale was 20.29 ($SD = 15.21$) out of 42, with higher scores indicating more activation. The total mean reinforcement derived from the environment assessed by the *RPI* was 47.6 ($SD = 6.32$) in a 0 to 80 scale, with higher *RPI* scores indexing higher access to environmental reward probability. The baseline mean score for *Environmental Suppressors* was 24.37 ($SD = 2.97$) with higher scores representing a higher likelihood of punishment derived from the environment and 27.62 ($SD = 7.89$) for *Reward Probability*, with higher scores indicating a higher likelihood of reward obtained from the environment. The maximum score for each Index is 40.

3.2 Potential Treatment Covariates

Prior to study initiation, we identified a set of potential covariates that could have an effect on our outcomes of interest (depression, activation, and contact with environmental reinforcement scores). Among these variables were individuals' marital status, immigration status, receipt of depression treatment in the past, current use of psychotropic medication for depression, yearly income, stigma toward depression treatment (measured by the *SCQ*) and therapeutic alliance (assessed by the *TAC*). These variables did not achieve significance when entered individually into HLM models (all p 's $>.13$) and thus were not included in the models examining the primary study hypotheses.

3.3 Treatment Attendance

Averaging across clients, a mean of 7.8 sessions were completed over a mean of 10.7 weeks. The least amount of sessions completed was four, by two participants. The remaining participants ($n = 8$) completed all sessions. Adding across participants, 88% of BATD sessions were completed.

3.4 Test of Primary Study Hypotheses

3.4.1 Hypothesis 1a- Depression Over Time

To test hypothesis 1a, we examined depressive symptomatology changes over time using HLM analyses. In this HLM model, the linear effect of time on depressive symptomatology assessed with the *BDI* was significant ($\beta = -1.64$ $SE = 0.21$, $p < .0001$), indicating a reduction in symptoms from the first through the tenth week of treatment. Please see Figure 3 for a representation of depressive symptomatology decrease over time.

3.4.2 Hypothesis 1b- Activation and Availability of Reinforcement in the Environment Over Time

To test hypothesis 1b, we examined changes across time in clients' activation and access to reinforcement derived from the environment using HLM. In the present study, we administered a measure of total activation level (the *BADS*) and a measure assessing participants' contact with total reinforcement in their environment (the *RPI*) and examined the linear effect of time on each of these constructs as well as on the *BADS*' *Activation* subscale and the *RPI* subscales, the *RPI Reward Probability* and the *RPI Environmental Suppressors*.

Total *BADS* Activation level ($\beta = 1.91, SE = .079, p = .04$) showed a significant linear effect of time suggesting that this construct increased over the course of treatment. Please see Figure 4 depicting these increases. Similarly, results indicated that there was a linear increase over time in *BADS*' *Activation* subscale ($\beta = 0.86, SE = 0.35, p = .04$), suggesting that activation scores indexed by this subscale also increased over the course of treatment. Please see Figure 5 depicting these changes.

In addition, results indicated that total availability of reinforcement in the environment as measured by the total *RPI* score showed a significant linear effect of time ($\beta = 0.45, SE = .16, p = .02$) suggesting an increase in total contact with reinforcement in clients' environment over the course of treatment. Please see Figure 6 for a representation of the increase in contact with environmental reinforcement over time. Contrary to these findings, results indicated that there was not a linear change over time for *RPI Environmental Suppressors* ($\beta = -0.14, SE = 0.18, p = .46$), or for *RPI Reward Probability* ($\beta = 0.32, SE = 0.17, p = .10$), demonstrating that scores on the subscales that comprise the *RPI* did not change over the course of treatment. As outlined in the *Data*

Analytic Plan, we specified the baseline scores of these subscales in subsequent analyses as time-invariant variables (Level 2 variables in HLM) in predicting depressive symptomatology throughout the course of treatment.

3.4.3 Hypothesis 1c- Correspondence Between Depression, and Activation and Contact with

Environmental Reinforcement

As stated in the *Data Analytic Plan*, we conducted four different sets of analyses to test this overarching hypothesis. First, we were interested in examining the simultaneous correspondence between activation level and contact with environmental reinforcement with depressive symptomatology, each in independent analyses. Thus, our first model included depression as the dependent variable and activation and environmental reinforcement as the independent variables, each in separate models. In our second model, depression was specified as an independent variable and activation and environmental reinforcement as dependent variables, again each in independent models. Models 1 and 2 allow the examination of the concurrent effect of depression on activation and environmental reinforcement and of activation and environmental reinforcement on depression, in separate models. Second, because potential causal associations cannot be made with concurrent analyses, we lagged independent variables in determining if activation and environmental reinforcement at prior assessments predicted depression in separate models, or whether conversely depression at prior assessments predicted activation and environmental reinforcement. Please see Figure 2 for a diagram representing the different models examined to test hypothesis 1c.

In all of these models, each of the constructs that changed significantly over the course of treatment (that is, depressive symptomatology, total *BADS* total activation

level, *BADS' Activation* subscale, and total *RPI* contact with reinforcement in the environment) were independently tested as outcomes and predictors in separate models. Those constructs for which change over the course of treatment was not observed (i.e., *RPI Environmental Suppressors* and *RPI Reward Probability*) were independently tested as time-invariant predictors of depressive symptomatology over time only.

Our first models examined depressive symptomatology as the outcome and activation and contact with environmental reinforcement as predictors in separate analyses. Results showed that there was a concurrent relationship between depressive symptoms and *BADS* total activation ($\beta = -0.14$, $SE = 0.04$, $p = .01$) with higher levels of *BADS* total activation corresponding to lower levels of depression. We also examined the relationship between depressive symptomatology as the outcome and *BADS' Activation* subscale entered as a predictor. Results indicated that *BADS' Activation* subscale corresponded to depression levels ($\beta = -0.208$, $SE = 0.094$, $p = .05$), with higher activation scores corresponding with lower levels of depression over the course of treatment.

This concurrent relationship however, was not observed for *RPI* total contact with reinforcement in the environment ($\beta = 0.22$, $SE = 0.15$, $p = .17$). Nevertheless, we did find a significant relationship when *RPI Reward Probability* was specified as a time-invariant predictor of depressive symptomatology ($\beta = -0.90$, $SE = 0.32$, $p = .03$), suggesting that baseline level of this construct predicted depression scores over the course of treatment. We did not find the same relationship with *RPI Environmental Suppressors* ($\beta = -1.26$, $SE = 1.35$, $p = .38$), indicating that baseline levels of this construct did not predict depressive symptomatology scores across treatment sessions.

Our second model (for which total activation score and contact with environmental reinforcement were treated as dependent variables and depressive symptomatology as the independent variable in separate models) showed that both constructs independently corresponded simultaneously with depressive symptomatology ($\beta = -1.52$, $SE = 0.34$, $p = .002$ and $\beta = -0.36$, $SE = .13$, $p = .02$, respectively), with lower depressive symptomatology corresponding to higher *BADS* total activation and *RPI* total contact with positive reinforcement from the environment. We did not observe a significant relationship between depressive symptomatology and *BADS' Activation* subscale ($\beta = -0.27$, $SE = 0.14$, $p = .09$) suggesting the lack of a concurrent relationship between depressive symptoms and *Activation* as measured with this subscale, over time.

Our third analytic model consisted of lagging activation and availability of environmental reinforcement to test whether these constructs corresponded to depressive symptomatology at a subsequent session; that is, whether activation and contact with environmental reinforcement predicted depressive symptoms over the course of treatment. Total contact of reinforcement in the environment demonstrated a significant relationship with depressive symptomatology in this model ($\beta = -0.26$, $SE = 0.11$, $p = .04$), with higher scores on the construct predicting lower depressive symptomatology. In turn, *BADS* total activation did not predict depressive symptomatology ($\beta = -0.08$, $SE = .04$, $p = .22$). Consistent with this result, our findings showed that *BADS' Activation* subscale did not predict depression over time ($\beta = -0.18$, $SE = 0.105$, $p = .12$).

Our final set of models consisted of testing the premise that depressive symptomatology could precede activation and contact with environmental reinforcement. Thus, we specified activation and contact with environmental reinforcement

independently as the outcome in our HLM equations and lagged depressive symptomatology as the predictor in each of these analyses. The goal of this last model was to evaluate the possibility of depressive symptomatology preceding activation and contact with environmental reinforcement. We found that depressive symptomatology predicted participants' *RPI* total contact with reinforcement in the environment ($\beta = -0.35$, $SE = 0.10$, $p = .01$), demonstrating that over time, lower depressive symptoms predicted higher levels of overall reinforcement obtained from the environment. The same effect was not observed with *BADS* total activation ($\beta = -0.40$, $SE = 0.33$, $p = .26$), indicating that depressive symptoms did not predict this construct. We observed similar results when testing the correspondence between *BADS*' *Activation* subscale ($\beta = -0.33$, $SE = 0.18$, $p = .11$) when depressive symptomatology was lagged.

Please see Table 3 for a complete summary of these analyses.

3.4.4 Hypothesis 1d- Maintenance of Clinical Gains Over a One-Month Follow-up

Finally, as part of our hypothesis 1d, we sought to examine whether improvements made during the course of treatment were sustained from the last treatment session to the one-month follow-up. Toward this end, we conducted paired *t*-tests and expected to find that clinical gains would be sustained. Paired *t*-tests of depressive symptomatology, *BADS* total activation level and *BADS*' *Activation* subscale from post-treatment to the one-month follow-up were not significant, indicating non-significant changes subsequent to treatment completion (all *p*'s > .25). However, results of *t*-test analyses indicated that *RPI* total contact with reinforcement in the environment differed significantly between these two time points ($t = -2.63$, $df = 7$, $p = .03$), with higher scores observed at the one-month follow-up relative to the last BATD session ($M = 59.75$, $SD = 10.11$; $M = 55.50$, $SD = 9.20$). These results indicate that clinical gains obtained

during treatment were sustained after treatment had ended. This was reflected both by the one-month follow-up more generally and clinical improvement specifically in the case of *RPI* total contact with environmental reinforcement, that there was clinical improvement. Please see Table 5 for a summary of these analyses.

3.4.2 In-Depth Interview Data

As an additional primary aim, we collected information from nine of the 10 participants who underwent treatment through in-depth interviews, with the goal of modifying the treatment based on these recommendations subsequent to study conclusion. The theme categories to inform these changes had been identified from the outset, and included treatment feasibility, acceptability, satisfaction, suggestions, comprehension, and perceived effectiveness. Questions under each area were asked for each treatment component as well as for treatment overall. Responses are discussed in terms of their frequency. Therefore, the discussion of results will begin with “general” statements, that is, statements that were common for all participants will be discussed first, followed by “typical” statements, which reflect responses made by half or more participants, and ending with “variant” responses which are consistent between two but less than half of the participants. Please see a description of this classification in the *Data Analytic Plan*.

Feasibility: In this section of the questionnaire, we specifically asked participants about the extent to which completing each of the treatment components ranged from difficult to easy. In line with the aforementioned coding schemes, a “general” statement indicated that for participants, completing the homework (e.g., contracts, daily monitoring, and scheduling activities) was considered to be easy. When participants were

not able to do so, they reported that it was a result of a busy schedule. A “typical” experience for participants included reports that at the beginning of treatment, it was challenging to complete the daily monitoring and the activities that they had scheduled, which they perceived as being a direct consequence of depression. As treatment progressed however, these participants indicated that it was much easier to complete their activities. Specific to contracts, six participants indicated using them. A “typical” comment elicited by participants was that this treatment component was very useful and easy to implement. A “variant” statement was that through monitoring, participants were able to feel proud of themselves after completing their scheduled activities. This was something that was incorporated toward the last sessions of BATD in order to highlight participants’ successes and progress. These same participants reported that they enjoyed comparing their daily monitoring forms from one week to the next, which motivated them to continue completing homework. Finally, another “variant” comment in this section was that at times it was challenging to complete activities given participants’ limited economic resources.

Acceptability: Overall, general statements surrounded the acceptability of all of BATD’s treatment components. Specifically, participants indicated that their favorite parts of treatment included monitoring their behaviors and scheduling activities. Another “general” comment pertaining to the acceptability of the treatment was participants’ liking of the relationship that they established with the study RA and the therapist

Our in-depth interview also contained a question that assessed acceptability of treatment from the perspective of family members and close friends. Generally, participants indicated that people around them, specifically friends and family had

noticed positive changes in participants' mood and had complimented them for their efforts to stay active and to fight depression by putting a high degree of effort into their wellness, which supports the value of “poner de su parte” in this group.

Regarding their acceptability, contracts elicited “typical” comments, that indicated their usefulness although only six participants reported having used them with approximately two to three people. These six participants indicated that they used contracts with others for encouragement to complete their activities. Two participants however, reported that they did not have friends or family to whom they could request support or recruit to complete their activities. These participants stated that for contracts to work, individuals need to first have people around them that they trust.

Three participants used the daily monitoring form created for people with limited literacy. These participants reported that although writing was difficult for them, they felt a sense of accomplishment when completing these forms.

Perceived Effectiveness: All participants perceived to be much improved after undergoing the treatment. Another “general” statement provided by participants regarding their perception of treatment effectiveness was reports that they would continue to use what they learned from the treatment again in case they experienced another episode of depression. When asked if participants had changed any behaviors or activities as part of the treatment, typical responses included changing their excessive “sleeping” and “spending too much time in bed.”

Treatment Satisfaction: The in-depth interview revealed general satisfaction with BATD. Further, as mentioned in the “Acceptability” section, participants indicated that they valued greatly the therapeutic relationship. Particularly, participants indicated that

they appreciated being heard throughout treatment and that they felt a sense of relief through talking. Further, all participants indicated that the BATD treatment had met or exceeded their expectations.

A “typical” statement for this theme included participants’ belief that scheduling activities was the treatment component that most helped. These participants reported that scheduling activities led to breaking their routine and living a life that they valued. Another typical response about what was most useful about activity scheduling was that it brought a sense of “relief” (“desahogo.” in Spanish) in that they allowed a form of expression as well as the ability to plan their days. These participants reported that their schedule had changed substantially as a result of treatment by adding more activities that they enjoyed.

Comprehensibility: This theme contained “general” statements of the ease of comprehensibility of BATD’s treatment components. Other general statements indicated that the format of the forms (i.e., daily monitoring form, activity ranking, contracts) was easy to understand. Finally, participants indicated that the language used in the forms as well as during therapy was comprehensible. A therapist observation was that throughout treatment, participants used the word activation (“activación” in Spanish) and monitoring (“monitoreo”), words that do not exist in the Spanish language or do not have this literal translation. Participants’ adoptions of these words suggest that the language used during treatment was not only comprehensible but also became a part of their colloquial speech.

Suggestions: There were no “general” or “typical” comments issued in this section. Three participants suggested that treatment would be most beneficial if it were delivered in a group setting. Another “variant” statement included making the treatment

longer. A final “variant” suggestion involved decreasing the number of questionnaires that we administered at each session. Please see Table 6 for a summary of these results.

Individuals that participated in the in-depth interview portion also completed an exit survey which asked 11 questions pertaining to treatment satisfaction. Ten of 11 questions ranged on a scale from 1 to 6, where higher scores indicated greater treatment satisfaction. All items obtained scores of 5.67 and greater. Please see Table 7 for a summary of the scores for each question.

Chapter 4: Discussion

4.1 Summary of Project Aims

The current study evaluated the efficacy of the Behavioral Activation Treatment for Depression (BATD; Lejuez et al., 2001; 2011) in an open-label trial consisting of 10 Latinos with elevated depressive symptomatology who reported a Spanish language preference. Additionally, the study sought to examine the need for cultural modifications of the treatment through in-depth interviews regarding BATD's acceptability, feasibility, perceived satisfaction, comprehensibility and suggestions with every participant in the treatment. Our study aims were strongly aligned with efforts to expand the mental health treatment literature for this underserved group as well as to create an empirical framework for making cultural modifications to the treatment based on the reported needs of our sample.

4.2 Summary of Main Findings

4.2.1 Changes over Time in Depression, Activation, and in Availability of Reinforcement in the

Environment

Our study findings supported our hypothesis that depressive symptomatology would decrease over the course of the BATD program. In addition, findings indicated that activation level and the contact with environmental reinforcement (both of which are proposed mechanisms of BA and reductions in depressive symptomatology) increased over the course of the 10-week treatment.

4.2.2 Relationships Between Depression, and Activation and Contact with Environmental Reinforcement

4.2.2.1 Concurrent Relationships

Next, we assessed concurrent bidirectional relationships between change in *BADS* total activation, *BADS' Activation* subscale, and participants' *RPI* total contact with reinforcement in the environment independently, and change in depressive symptomatology. To our knowledge, this is the first study that has looked at potential bidirectional relationships between these proposed BA treatment mechanisms and depressive symptomatology.

The concurrent analyses indicated that when depressive symptomatology was specified as the dependent variable, higher *BADS* total activation and *BADS' Activation* subscale corresponded to lower depressive symptomatology over time. We did not find a significant relationship between contact with *RPI* total reinforcement in the environment and depressive symptomatology over time in this model. In the second set of models, we tested the concurrent correspondence of depressive symptomatology when this construct was entered as the independent variable and both activation and *RPI* total availability of reinforcement in the environment were specified as outcomes of two separate models. Results indicated that these constructs corresponded simultaneously, with lower depressive symptomatology corresponding to higher scores of activation and availability to environmental reinforcement. Of note, is that when examining correspondence between *BADS' Activation* subscale and depression, the results did not show significance.

In general, the bidirectional relationships between activation and depressive symptomatology suggest that participants' reported engagement in daily activities (measured with the total *BADS*) and depressive symptomatology are constructs that correspond with each other and systematically co-occur over time. The consistent

observed relationships between activation and depressive symptomatology in each of these models suggests the dynamic, and concurrent relationship between these two constructs; as activation changes in one direction, depressive symptomatology systematically changes in the opposite direction.

The significance of the relationship of *BADS' Activation* subscale (with depressive symptoms as the outcome, but not when the subscale was specified the outcome, may indicate that *Activation* influences depression but that this construct is not impacted by depression. A possibility for this finding could be rooted in BATD's rationale; in therapy, participants are encouraged to engage in rewarding positive activities despite their low mood. Therefore, these results could suggest that depressive symptomatology decreases when participation in these activities increases, but that depression does not play a role in clients' engagement in these activities (given therapists instructions). However, given the concurrent nature of depressive symptomatology and *Activation*, it is not possible to infer causation between these two constructs.

Additionally, the finding that depressive symptomatology and *RPI* total availability of reinforcement in the environment were associated when the latter was specified as the outcome could be interpreted as suggesting that the extent to which an individual is depressed impacts their ability to obtain reinforcement from their environment. However, the lack of relationship between these two constructs when depressive symptomatology was specified as the outcome is less clear. A possible reason for the absence of a significant finding for this analysis may be due to the weaker magnitude of change over time in *RPI* total availability of reinforcement in the environment relative to depressive symptomatology. As a result, *RPI* total availability of

environmental reinforcement does not correspond to depressive symptomatology above and beyond the effect of time. Another explanation for this finding could be that our small sample size prevented the detection of a significant relationship. Future research should explore the bidirectional relationship of these two constructs.

Overall, our results evaluating concurrence of the constructs of interest, suggest that depression and activation (but not contact with environmental reinforcement) are dynamic (and diverging) processes that act in synchrony. A possibility of the concurrence between activation, but not *RPI* total availability of environmental reinforcement, and depressive symptomatology could be that the activation construct, indexed by the *BADS*, may share a great deal of overlap with depressive symptomatology relative to contact with environmental reinforcement in the environment. Conceptually, lack of activation characterizes a person who is depressed. Therefore, the simultaneous correspondence between these two constructs is not surprising. Access to or contact with environmental reinforcement, on the other hand, may be the mechanism through which BATD results in depression reductions. However, future studies with larger sample sizes should examine the temporal relationship between these three constructs in addition to conduct studies that are able to examine activation and contact with environmental reinforcement as the mediators of the relationship between BATD and depression outcomes.

4.2.2.2 Prospective Relationships Between Depression, and Activation and Contact with Reinforcement in the Environment

When lagging our constructs of interest, we found that availability of reinforcement in the environment predicted depressive symptomatology, and that depressive symptomatology predicted contact with reinforcement in the environment.

Interestingly, we did not find the same relationship with activation. There are a few possibilities for this. As stated earlier, the finding may reflect previous assertions that these questionnaires are measuring different things. It is possible that the activation and depression are concurrent processes, but participants' contact with environmental reinforcement predicts decreases in depression and that these changes subsequently lead to additional reinforcement derived in the environment. The order however, may also be reversed, such that reductions in depression predict contact with environmental reinforcement, which further leads to additional reductions in depression. Therefore, availability of environmental reinforcement may act as the mechanism of change between BATD and depressive symptomatology, whereas activation may be something that characterizes (and therefore corresponds simultaneously with) depression. Future studies with a larger sample size should examine these temporal relationships.

4.2.2.3 Relationship Between Time-Invariant RPI Predictors and Depression

Although we found that *RPI Environmental Suppressors* and *RPI Reward Probability* subscales did not demonstrate within-person variability across time, baseline scores of *Reward Probability* predicted depressive symptomatology over the course of treatment, with higher baseline levels of this construct predicting lower depressive symptoms over time. This finding has important implications for treatment outcome, with clients who start with a higher sense of ability to receive reinforcement from their environment showing greater decreases in depression.

The non-significant change in *RPI Environmental Suppressors* over the course of treatment could be due to various reasons. First, the *RPI* has not been validated in our study sample. Consequently, it is uncertain if the scale is just reflecting accurate

experiences of Spanish-speaking Latinos who immigrated to the United States; *RPI Environmental Suppressors* for example includes items such as “things happen that make me feel hopeless or inadequate,” “I have few financial resources, which limits what I can do,” and “People have been mean or aggressive toward me.” If these items do in fact describe the experiences of this group, it would be unlikely to observe changes in the subscale over time. A further possibility for the lack of change in this construct could be due to our small sample size, which could have prevented the detection of significant findings.

4.2.4 Maintenance of Clinical Gains for Time-Varying Constructs

As part of our first aim, we examined the extent to which clinical gains were sustained through the one-month follow-up and found that depressive symptomatology, activation (indexed by the composite *BADS* and its *Activation* subscale) were maintained, but *RPI* total contact with reinforcement from the environment showed a significant increase between the last session of treatment and the one-month follow-up session. These results could reflect that clients’ continued participation in activities serves to increase their perception of their ability to come into contact with such reinforcement.

4.2.5 In-depth Interview Data Summary

Further, as part of our second aim, we conducted in-depth interviews with the goal of potentially making cultural modifications to the treatment to meet the needs of future Latino clients with Spanish speaking preference. Overall, our in-depth interviews suggested that in general, BATD is a treatment that met the needs of our sample given that it was viewed very favorably by all participants who completed the interview ($n = 9$).

Although there were no recommendations to change BATD's components specifically, some of the comments offered by our participants suggested the following:

1. Given the reported difficulty of completing the daily monitoring at the beginning of treatment when mood is low, the therapist should prepare the client for this up front. Further, at each subsequent session, the therapist should assess ease of completing the homework, and comment on the extent to which this task becomes easier for the client.
2. Although participants reported that contracts were useful, it is important that the client's support and trust network is adequate (or expanded, if necessary) to make optimal use of this treatment component.
3. It is important that there is some time allocated during session to provide the client with a safe space to communicate problems/concerns that may not necessarily be part of BATD given participants' reports of their need to vent for relief. This is consistent with previous research examining Latinos' expectations and desires of psychotherapy (Martinez & Guarnaccia, 2007). This also raises a therapist need to discuss the structure of BATD from treatment outset. From a behavioral framework, "desahogo" (or relief through venting) could be used as a reward for client adherence to treatment and active participation during sessions. Further, if this provides a way for clients to feel better, activities meeting this need may be suggested to them. Of note, is that participants brought up that activity scheduling and daily monitoring were avenues for clients to experience this sense of relief. Therefore, the rationale of these treatment components may be explained using the notion of "desahogo."
4. A "variant" comment provided during the interview included delivering the treatment in a group setting and making the treatment longer. The recommendations should be taken into account when designing future, larger studies using BATD.
5. Finally, a "variant" comment for the

feasibility of the treatment, two participants indicated that at times it was difficult for them to come up with activities that they could complete given their economic restraints. This suggests that creating a list of low-cost activities in which these individuals could engage would be beneficial. This is consistent with Kanter and colleagues' own observations (2010).

As further support that clients had positive reactions to the treatment provided, was the high treatment completion rates (8 of 10 participants), which exceed those observed in the literature, even given our small sample (e.g., Kanter et al., 2010; Interian, Allen, Gara & Escobar, 2008; Organista et al., 1994), which not only speaks to the acceptability of BATD, but also to mental health treatment need among this group. Additionally, the examination of treatment completion in our sample is important given that risk factors identified for treatment non-adherence in Latinos include being monolingual Spanish speaking, experiencing access barriers to high-quality care, and having lower socio-economic status (Lanouette, Folsom, Sciolla & Jeste, 2009), which conform to the characteristics of our sample. The high levels of treatment completion suggest that BATD may reduce attrition by offering a treatment platform equipped to address the various challenges associated with obtaining and remaining in treatment in this group. It is important to mention, that even the two participants that dropped out, maintained communication with the study staff even after ending their participation. One participant reported ending treatment early because he considered that he no longer was experiencing depression and the other participant (who completed the in-depth interview) indicated that she had not completed treatment because she lived far in distance from the University.

Homework adherence could also be considered an important component to treatment adherence. In general, homework completion predicts a more positive treatment outcome for depression (Addis & Jacobson, 2000; Burns & Spangler, 2000; Burns & Nolen-Hoeksema, Kazantzis, Deane & Ronan, 2000) and should be taken into account as an important indicator of adherence. In BATD, homework assignments play an important role in the treatment in allowing for clients and therapists to examine how the client spends most his or her day, identify engagement in unhealthy, depression-promoting behaviors as well as healthy, non-depressogenic activities, and identify respective enjoyment and importance of each activity. We specifically focused on the daily monitoring, which was reviewed at every session and assigned for homework every week. Mean percentage rates of homework completion was 86.54 % (completion within each participant ranged between 41.7% to 100%). Although there has not been much research in this area, findings by Reynolds and Coats (1986) reported a 67% completion homework rate for a cognitive-behavioral group whereas Floyd and colleagues reported a completion rate of 80.19% (Floyd et al., 2004), suggesting that homework completion rate in the current study was also high and thus, an acceptable part of treatment.

4.3 Limitations/Future Directions

Following Carroll and Nuro's (2002) suggestions for a sequential model for psychotherapy manual development, the current study consisted of an open label trial with 10 participants. The design carries inherent limitations including a small sample size which not only could have prevented the detection of potentially significant relationships between depressive symptomatology and activation and contact with reinforcement in the environment in the current study, but could also limit the generalizability of our results.

The latter limitation is further exacerbated with the fact that Latinos in the United States are a heterogeneous group, and therefore, significant differences could exist among individuals who participated in our sample, and Latinos living in the United States. Another factor that could potentially limit the generalizability of our results are the high levels of comorbidity that characterized our sample. This comorbidity may reflect the clinical severity of this sample as well as the need for treatments for U.S. Latinos with reported Spanish language preference population. Further, it is uncertain whether the high comorbidity of our sample could have impacted the observed improvements in depression. A second limitation inherent to this Stage Ia study, was the dual role of Ms. Collado-Rodriguez as the student investigator and sole therapist. Although it is typical for investigators to act as therapists during early phases of treatment development, (Rounseville, Carroll & Onken, 2001) future designs should include various therapists who are isolated from research activities pertinent to the investigation.

A third study constraint lies in the absence of a control group which as a result, limits the ability to draw conclusions about BATD's proposed mechanisms (activation and contact with environmental reinforcement) leading to depression reductions, although there were concurrent and prospective associations among these constructs. At this point, we are unable to make statements regarding the extent to which specific BATD components decreased depression or increased activation or contact with environmental reinforcement. This limitation highlights the need to conduct a randomized control trial sample to compare BATD to a control condition.

A fourth limitation of the study is the use of *RPI* and *BADS* (as well as each of these measures' subscales) given that these scales have not been tested or validated in our

sample of interest. The translation of the *RPI* was conducted internally for use in this study. Therefore, it is questionable whether this measure lacking psychometric evaluation in our sample and language of interest accurately reflects the factors proposed by Carvalho and colleagues (2011). Similarly, the *BADS* Spanish translation has been evaluated in a sample of university Spanish students, a sample that may not only differ culturally from our current sample, but also in terms of participants' socio-economic level. Therefore, caution is suggested when interpreting these results. Psychometric tests of these measures are warranted in future studies in our sample of interest.

In addition to these limitations, the weekly administration of questionnaires may have been too proximal to be able to detect effects, specifically when these effects are hypothesized to vary in time. For example, as was supported in our study, activation and depression change concurrently, whereas contact with environmental reinforcement in a depressed individual may occur later in treatment. In addition, as concluded by Manos and colleagues (2010), increases in activation, contact with environmental reinforcement, and in mood may occur so close in time that it may be difficult to determine which came first, impeding the identification of temporal sequence in which the mediator occurs before the outcome. A solution offered by the researchers included the utilization of ecological momentary assessment techniques to track engagement in activities and mood at random or fixed intervals during the day (Manos et al., 2010). Therefore, future studies should utilize this assessment methodology for BA treatment studies, given that their proposed mechanisms of change vary closely.

Finally, although we did see increases in activation as measured by the *BADS* and *RPI*, these increases are not easily interpretable given that the lack of a definition of what

“high” or “low” levels of activation or access to positive reinforcement from the environment constitute in these scales. Related to this last point for example, we observed increases in access to positive reinforcement from the environment, increasing from a mean of 47.6 at the first session to a mean of 55.50 at the last BATD session, and to a mean of 59.75 at the one-month follow-up. The extent to which an increase of 12 points in this scale leads to a clinically significant change is unclear. Finally, the follow-up period should be lengthened to determine if clinical gains are maintained.

Altogether, there exist numerous limitations and opportunities to expand upon and enhance this line of research to further establish the efficacy BATD in improving depression (along with levels of activation and contact with environmental reinforcement) among US Latinos with limited language proficiency. Despite these limitations however, study findings suggest promise of BATD as an efficacious, acceptable treatment for this underserved, understudied group in high need of depression mental health services.

Table 1

Demographic Information

<i>Demographic Characteristics</i>	<i>(N = 10)</i>
Age, mean (<i>SD</i>)	41.45 (<i>14.99</i>)
Gender, <i>n</i> female	7
Marital Status	
Single (never married), <i>n</i>	3
Married	3
Divorced	1
Other, <i>n</i>	3
Years living in the United States, mean (<i>SD</i>)	17.82 (<i>13.42</i>)
Education, grade, mean (<i>SD</i>)	7 (<i>3.99</i>)
Total Annual Income	
≤\$14,999, <i>n</i>	7
\$15,000- \$29,999, <i>n</i>	2
\$30,000- \$44,999, <i>n</i>	1
Employment	
Employed half-time, <i>n</i>	3
Employed full-time, <i>n</i>	2
Retired, <i>n</i>	1
Unemployed, <i>n</i>	4
Family In United States, yes, <i>n</i>	7
Ever received depression treatment, yes, <i>n</i>	4
Limited English Speaking proficiency, yes, <i>n</i>	9

Table 2

Summary of Participants' Clinical Information at Treatment Onset

<i>Clinical Diagnoses and Variables of Interest</i>	<i>(n = 10)</i>
Depression	
Recurrent MDD, <i>n</i>	6
Past MDD, <i>n</i>	6
Current Double Depression, <i>n</i>	2
Past Dysthymia, <i>n</i>	3
Current Generalized Anxiety Disorder, <i>n</i>	5
Current Posttraumatic Stress Disorder, <i>n</i>	2
Past Alcohol Abuse, <i>n</i>	1
<i>BDI</i> Score, mean, (<i>SD</i>)	27.60 (10.84)
<i>BADS</i> Score, mean, (<i>SD</i>)	75.30 (25.24)
<i>BADS</i> -Activation Score, mean (<i>SD</i>)	20.29 (15.21)
<i>RPI</i> Score, mean, (<i>SD</i>)	47.63 (6.32)
Environmental Suppressors, mean (<i>SD</i>)	24.37 (2.97)
Reward Probability Index, mean (<i>SD</i>)	27.62 (7.89)

Note. Means and standard deviations presented for participants. *BDI* = Beck Depression Inventory; *BADS* = total Behavioral Activation for Depression Scale; *BADS*-Activation Score = *BADS* Activation score subscale; *RPI* = Reward Probability Index.

Table 3

HLM Primary Analyses- Hypotheses 1a and 1b

Predicted Variable and Fixed Effects	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>
<i>Hypothesis 1a and 1b</i>				
BDI				
Intercept	7.8308	3.3812	2.316	.046
Time	-1.6390	0.2122	-7.723	<.001
BADs				
Intercept	-7.2070	8.6998	-0.828	.429
Time	1.9131	0.7944	2.408	.039
BADs- Activation				
Intercept	-3.3970	3.7444	-0.905	.389
Time	0.8566	0.3460	2.475	.035
RPI				
Intercept	-1.5472	3.2235	-0.480	.641
Time	0.4520	0.1590	2.843	.019
RPI-Reward Probability				
Intercept	-0.8525	2.6294	-0.324	.753
Time	0.3203	0.1718	1.864	.095
RPI-Environmental Suppressors				
Intercept	0.4065	1.4188	0.286	.781
Time	0.1390	0.1792	0.775	.458

Note. Random intercept and slope values presented for participants ($N=10$). Significant changes over time highlighted using bolded text. BDI = Beck Depression Inventory; BADs = total Behavioral Activation for Depression Scale; BADs-Activation Score = BADs Activation score subscale; RPI = Reward Probability Index.

Table 4

HLM Primary Analyses- Hypothesis 1c

Predicted Variable and Fixed Effects	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>
Model 1 Analyses				
BDI				
Intercept	6.0861	2.9472	2.065	.069
Time	-1.2395	0.2823	-4.391	.002
BADS	-0.1432	0.0412	-3.472	.007
BDI				
Intercept	5.5980	3.1316	1.788	.107
Time	-1.2792	0.2079	-6.154	<.001
BADS- Activation	-0.2080	0.0941	-2.211	.054
BDI				
Intercept	7.6533	3.3572	2.280	.049
Time	-1.3707	0.2899	-4.728	.001
RPI	-0.2166	0.1462	-1.482	.173
BDI				
Intercept	6.3429	2.7708	2.289	.062
Time	-1.7013	0.2437	-6.981	<.001
RPI- Reward Probability	-0.8960	0.3209	-2.792	.031
BDI				
Intercept	12.9411	5.4142	2.390	.054
Time	-1.6562	0.2456	-6.774	<.001
RPI- Environmental Suppressors	-1.2644	1.3473	0.983	.384
Model 2 Analyses				
BADS				
Intercept	-0.1658	6.3723	-0.026	.980
Time	-0.3561	0.7106	-0.501	.628
BDI	-1.5243	0.3413	-4.466	.002
BADS- Activation				
Intercept	-0.8289	2.9660	-0.279	.786
Time	0.4461	0.3783	1.179	.269
BDI	-0.2656	0.1412	-1.881	.093
RPI				
Intercept	-1.3644	3.2768	-0.416	.687
Time	0.0740	0.2294	0.322	.755
BDI	-0.3576	0.1324	-2.701	.024

Table 4

HLM Primary Analyses- Hypothesis 1c Continued

Predicted Variable and Fixed Effects	<i>B</i>	<i>SE</i>	<i>T</i>	<i>P</i>
Model 3 Analyses				
BDI				
Intercept	5.0069	3.2263	1.552	.155
Time	-1.0583	0.2660	-3.979	.003
Lagged BADS	-0.0797	0.0440	-1.810	.104
BDI				
Intercept	3.6896	3.1444	1.173	.271
Time	-1.0101	0.2348	-4.302	.002
Lagged BADS-Activation	-0.1832	0.1051	-1.774	.115
BDI				
Intercept	4.3261	2.9652	1.459	.179
Time	-1.1296	0.2805	-4.027	.003
Lagged RPI	-0.2595	0.1050	-2.471	.036
Model 4 Analyses				
BADS				
Intercept	-0.2600	7.6371	-0.034	.974
Time	0.9626	0.8149	1.181	.268
Lagged BDI	-0.3966	0.3277	-1.210	.257
BADS- Activation				
Intercept	1.4380	2.8598	0.503	.627
Time	0.1894	0.3591	0.528	.611
Lagged BDI	-0.3287	0.1829	-1.798	.106
RPI				
Intercept	2.5259	3.6307	0.696	.504
Time	-0.3788	0.2775	-1.365	.205
Lagged BDI	-0.3523	0.1000	-3.514	.007

Note. Random intercept and slope values presented for participants ($N=10$). Significant changes over time highlighted using bolded text. BDI = Beck Depression Inventory; BADS = total Behavioral Activation for Depression Scale; BADS-Activation Score = BADS Activation score subscale; RPI = Reward Probability Index.

Table 5

Changes in Depressive Symptomatology, Activation, and Contact with Environmental Reinforcement between the Last BATD session and the 1-Month Follow-up (n=8)

Clinical Variables	Last Session Mean (SD)	1-Month Follow-up Mean (SD)	<i>P</i>
<i>BDI</i>	13.71 (7.34)	11.14 (5.70)	.253
<i>BADS</i>	89.00 (21.40)	80.00 (28.05)	.219
<i>BADS-Activation</i>	27.00 (11.72)	29.62 (6.82)	.457
<i>RPI</i>	55.50 (9.20)	59.75 (10.11)	.034

Note. Means and standard deviations presented for participants. BDI = Beck Depression Inventory; BADS = total Behavioral Activation for Depression Scale; BADS-Activation Score = BADS Activation score subscale; RPI = Reward Probability Index.

Table 6

In-Depth Interview Results

<i>Type of Comment</i>			
Theme Category	General	Typical	Variant
Feasibility	<ul style="list-style-type: none"> • Homework completion was easy 	<ul style="list-style-type: none"> • Daily monitoring was challenging at the beginning as a result of low mood but became easier as time progressed 	<ul style="list-style-type: none"> • Experienced pride as a result of completing scheduled activities • Completing activities was at times challenging given limited economic resources
Acceptability	<ul style="list-style-type: none"> • Treatment was acceptable • Family members and friends viewed clients' efforts of "poner de su parte" to combat depression favorably 	<ul style="list-style-type: none"> • Contracts used by 6 participants • Use of contracts to receive encouragement from others to complete their activities 	<ul style="list-style-type: none"> • Could not complete activities because they did not have a supportive network
Satisfaction	<ul style="list-style-type: none"> • Satisfied with treatment • Therapeutic relationship valued • Appreciated being heard and experienced relief through talking • Treatment met or exceeded expectations 	<ul style="list-style-type: none"> • Activity scheduling was most helpful. It led to breaking their routine • Activity scheduling brought a sense of relief • Schedule changed substantially 	<ul style="list-style-type: none"> • Daily monitoring for participants with low literacy (n=3) created a sense of accomplishment
Comprehension	<ul style="list-style-type: none"> • Treatment was easy to understand • Forms and language used in therapy were easy to understand 		
Perceived Effectiveness	<ul style="list-style-type: none"> • Perception of being "much improved" after undergoing treatment • Participants would use what they learned from treatment again if they were to experience low mood. 	<ul style="list-style-type: none"> • Activities changed as a result of treatment: sleeping and spending too much time in bed 	
Suggestions			<ul style="list-style-type: none"> • Delivery of treatment in groups • Make the treatment longer • Decrease the quantity of questionnaires administered at each session

Note. General= Statements applying to all participants; Typical = Statements applying to half or more participants; Variant = Statements applying to between two to half of participants.

Table 7

Exit Survey Results

Questions (n=9)	M	SD
1. How visually appealing were the treatment materials (images, colors, placement of components and font styles)? Very Unappealing (1) to Very Appealing (6)	5.89	.333
2. How likely are you to <u>use</u> this treatment in the future, in the event that you experience depressed mood? Very Unlikely (1) to Very Likely (6)	5.89	.333
3. How likely are you to <u>recommend</u> this treatment to friends or family who experience depressed mood? Not Valuable (1) to Very Valuable (6)	5.78	.441
4. In the long run, how <u>valuable</u> do you think this treatment would be for individuals who experience depressed or low mood? Not Valuable (1) to Very Valuable (6)	5.78	.441
5. To what extent has our program <u>met your needs</u> ? Did Not Meet My Needs (1) to Met My needs (6)	5.78	.441
6. Has the treatment helped you to <u>deal more effectively</u> with your problems? No, it seemed to make things worse (1) to Yes, it helped a great deal (4)	3.78	.441
7. To what extent do you find this treatment <u>acceptable</u> in dealing with someone's depressed mood? Not acceptable (1) to Acceptable (6)	5.78	.441
8. To what extent do you believe this treatment was <u>effective</u> for you? Ineffective (1) to Effective (6)	5.78	.441
9. To what extent do you believe that this treatment will result in <u>permanent improvement</u> ? Short-lived Improvement (1) to Permanent Improvement (6)	5.67	.500
10. To what extent do you believe that this treatment has <u>improved your life</u> ? Little Improvement (1) to Great Improvement (6)	5.78	.441
11. Overall, how <u>satisfied</u> or dissatisfied are you with this treatment? Dissatisfied (1) to Satisfied(6)	5.67	.500

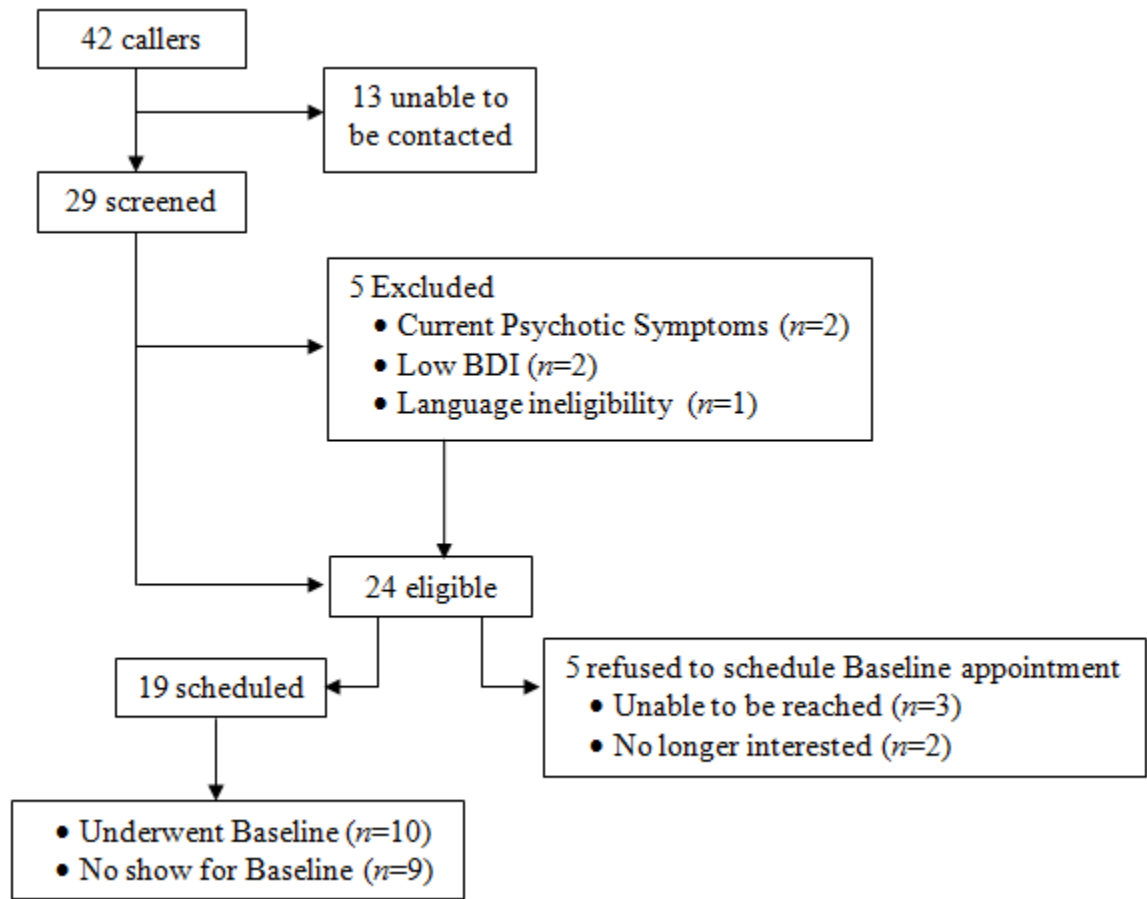


Figure 1. Participant flow diagram.

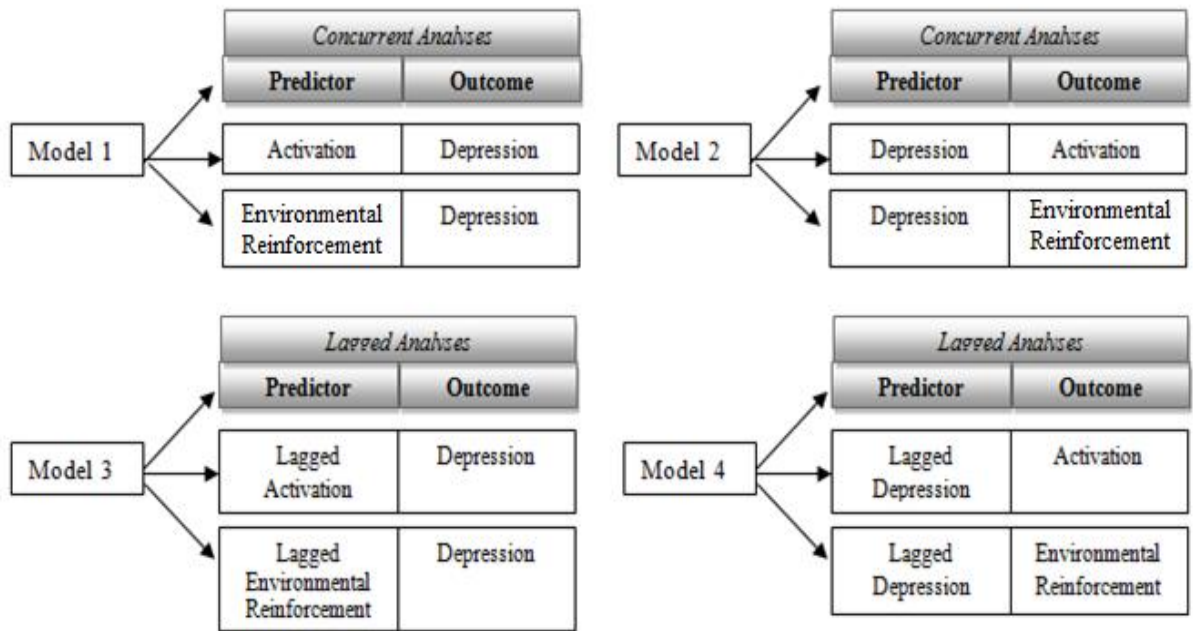


Figure 2. Models tested for hypothesis 1c.

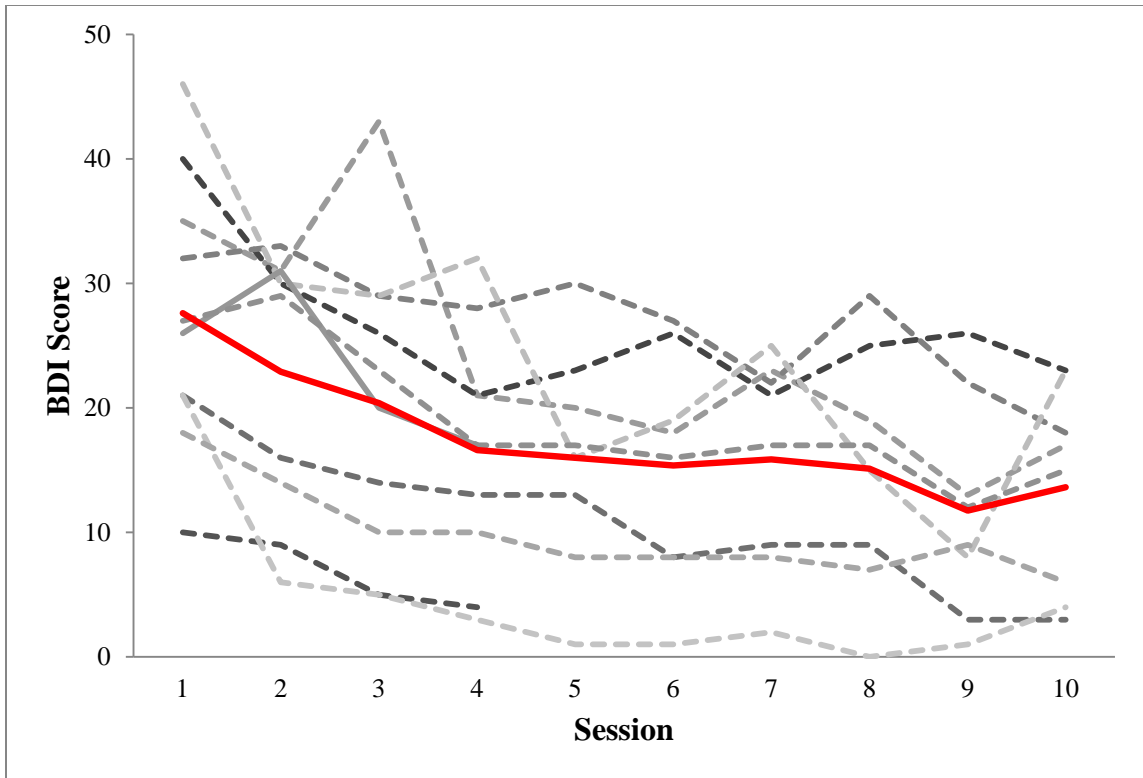


Figure 3. Beck Depression Inventory (*BDI*) mean scores over time. Dashed lines depict each participant's *BDI* score for each session. Solid red line indicates mean *BDI* across participants.

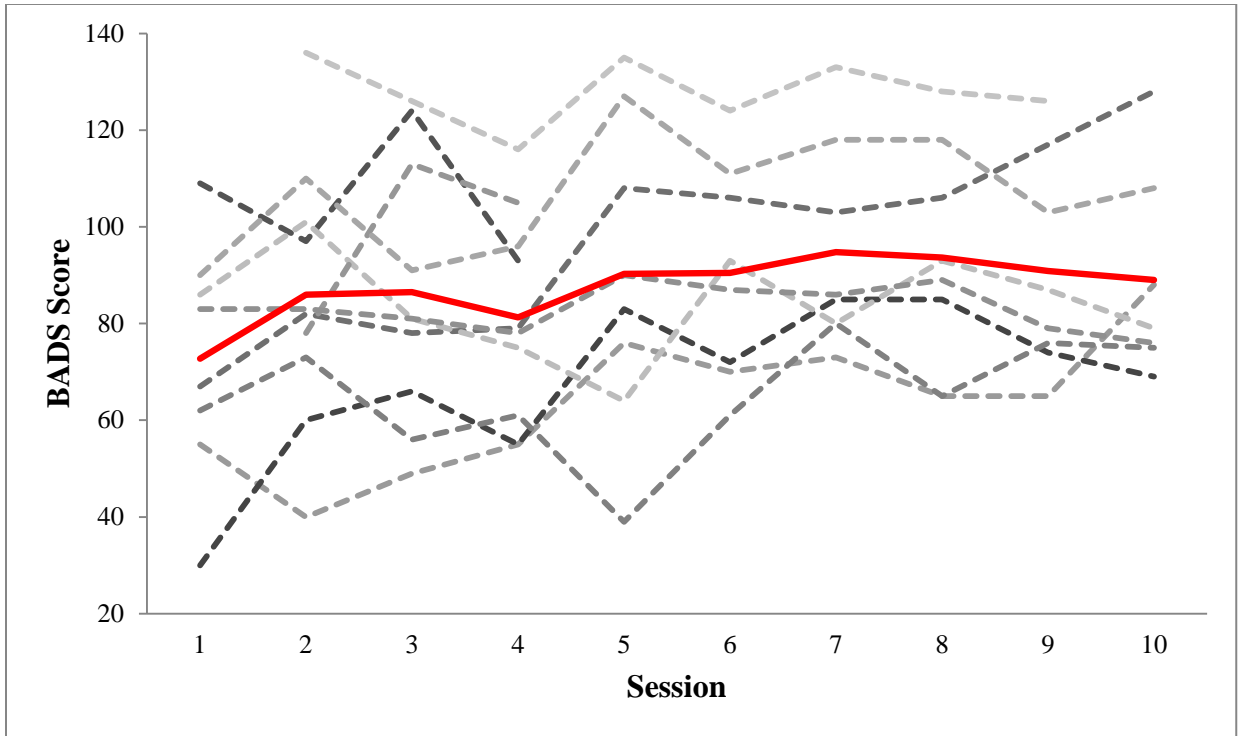


Figure 4. Behavioral Activation for Depression Scale (*BADS* total score) mean scores over time. Dashed lines depict each participant's *BADS* total score for each session. Solid red line indicates mean *BADS* total score across participants.

Figure 5

BADS- Activation Subscale Mean Scores Over Time

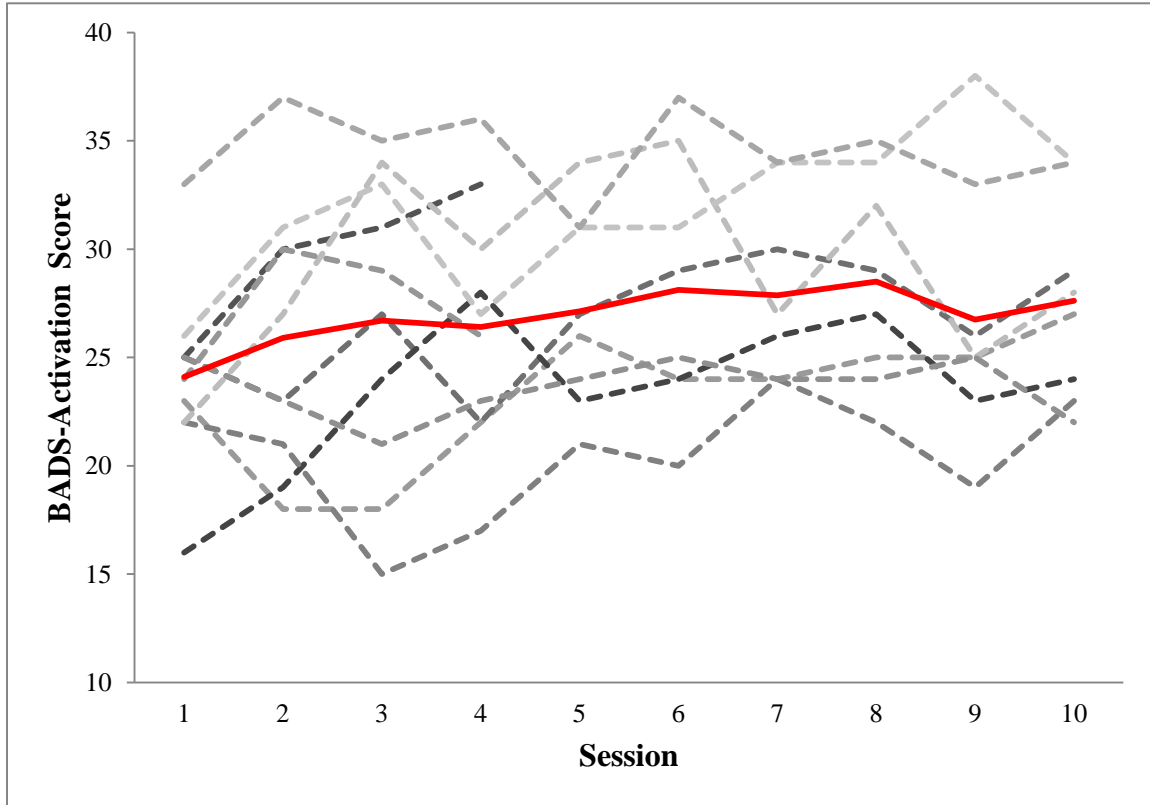


Figure 5. Behavioral Activation for Depression Scale- Activation Subscale (*BADS* Activation subscale score) mean scores over time. Dashed lines depict each participant's *BADS* Activation subscale score for each session. Solid red line indicates mean *BADS* Activation subscale score across participants.

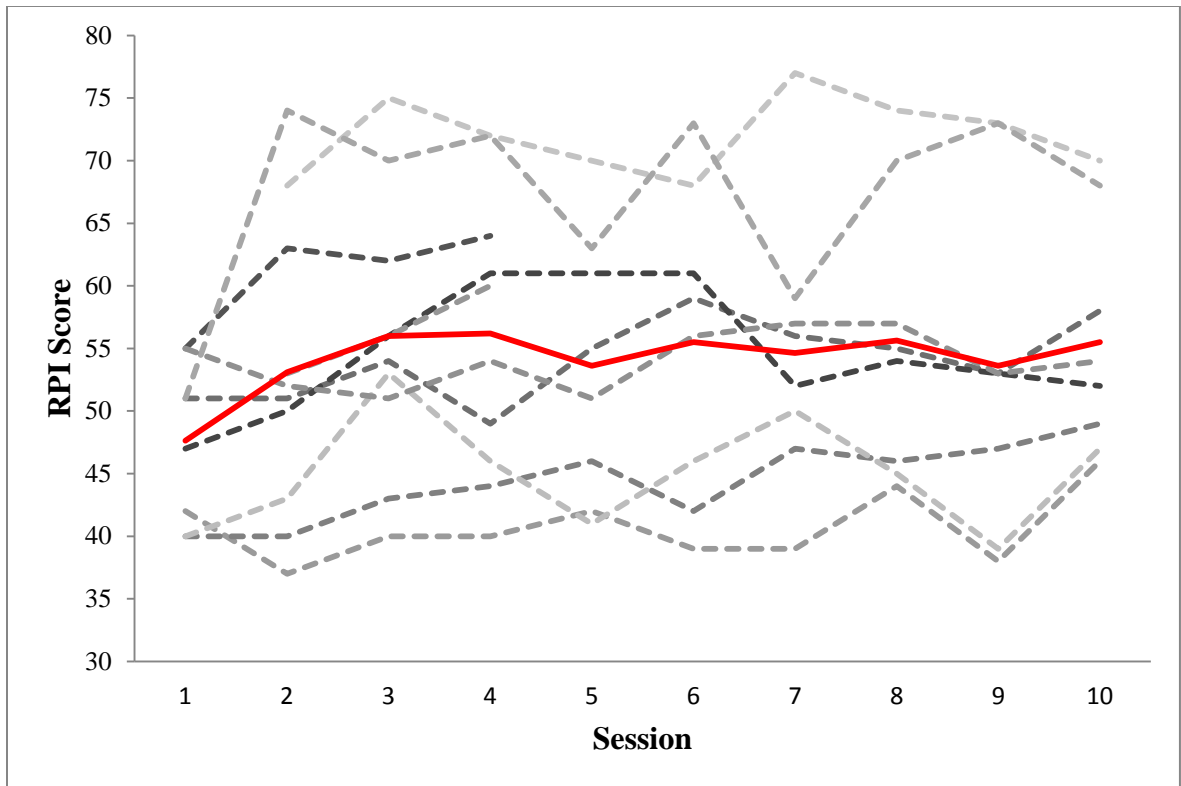


Figure 6. Reward Probability Index (*RPI* total score) mean scores over time. Dashed lines depict each participant's *RPI* total score for each session. Solid red line indicates mean *RPI* total score across participants.

Appendix

FEEDBACK MENU

- Treatment Acceptability
- Treatment Feasibility
- Clarity of the rationale of treatment components
- Comprehensibility of language and manual organization
- Overall treatment Satisfaction
- General Evaluation
- Treatment Exit Survey

EXPLANATION AND INTERVIEW PROCEDURES

Welcome: “Hello and thank you for participating in this part of the study. My name is _____ and I will be asking you several questions about your experience with the treatment. In particular, we will be asking you questions about treatment components and how easy they were to understand, what were some things that you liked the most and what were some things that you liked the least, and questions about how much you liked the treatment in general We are also extremely interested in any suggestions you may have on how to make the treatment better. This information will help us improve the manual so that is may be more helpful in the future for others who participate in this treatment. Your feedback is extremely important to us and therefore, we appreciate your honesty throughout this evaluation process.

Your feedback will be audio recorded only so that we can make sure that we accurately gather the information you provide. We will copy your recommendations of the treatment, and will not include your name in the files. Instead we will use a fake name, such as “participant A” so that we can maintain your privacy and protect your identity. All the information collected today will remain confidential. Just as a reminder, we ask to record this interview. If you don’t feel comfortable and would not like us to record it, please let us know and we will bring a note-taker who will be able to write down what you say so that I don’t forget your comments. Do you give us permission to record this interview? *Proceed depending on the participant’s request.*

Great! This interview will last approximately 60 minutes and you will be paid \$20. Based on this information, are you interested in completing this interview?

If yes, continue the interview. If no, thank the participant for listening and end the interview.

Great! Are there any questions that I can answer before we begin?

I will start the recording now.

INTERVIEW

1. Treatment acceptability

What parts of the treatment did you find helpful in dealing with your depression?

What about *(treatment component)* seemed most helpful to you?

What parts of the treatment seemed to be unhelpful or strange in any way?

What about *(treatment component)* seemed most unhelpful or strange to you?

What parts of the treatment do you feel others who participate in the treatment in the future will find helpful in dealing with depression?

What about *(treatment component)* do you think others will find most helpful?

What parts of the treatment do you feel others who participate in the treatment in the future will find unhelpful or strange in dealing with depression?

What about *(treatment component)* do you think others would find most unhelpful or strange?

In the case you experience depressed or low mood in the future, would you be willing to use the program's components once again?

How much discomfort/ embarrassment did you experience in completing the daily monitoring? What about for contracts? And activity selections?

How much discomfort/ embarrassment did you experience in rearranging your schedule to add pleasant/rewarding activities?

How did this new schedule affect you? (probe for negative and positive consequences to the person)

How did this new schedule affect others in your life? (probe for negative and positive consequences to others)

How could we modify these treatment components (assess for all) to make them more helpful?

What parts of the treatment made sense? What parts didn't make sense?

In general, what do you think of the treatment? (probe for negative and positive reactions)

2. Treatment feasibility

Overall, what treatment component was most difficult to complete? Why?

Overall, what treatment component was easiest to complete? Why?

Did you have any trouble completing the homework assigned in this treatment?

If so, which homework did you have most trouble completing? Why?
(Ask about other homework assignments not mentioned by the client. Examples: daily monitoring, contracts, activity planning, identifying activities, and scheduling activities)?

How easy or difficult was it to structure your life differently by adding or changing your daily activities? Why?

What did you like most about adding or changing your daily activities? What did you like least?

How easy or difficult was it to identify life areas important to you? What about identifying values? And planning activities that you enjoy?

How easy or difficult was it using contracts with your family and friends? Why?

How many people did you complete contracts with?

How helpful were the people that you used contracts with?

If applicable, how did your relationship with the person in your contracts change for the better? For the worse?

How easy was it to complete the daily monitoring forms? What was most difficult about completing these forms?

In your experience, what was the main obstacle to completing the 10 sessions of treatment? Where there others obstacles that got in the way?

3. Clarity of the rationale of treatment components

In your own words, could you tell me why it is important to monitor your activities daily?

Can you tell me why it is important to select values important to you in this treatment?

What about scheduling activities that are consistent with these values?

What was the purpose of using contracts?

All in all, how easy was it to understand why you were doing the things you were doing in treatment? What was easiest to understand? And most difficult?

4. Comprehensibility of language and manual organization

Were there any sections in which the language was not clear?

Was the format of the forms easy to understand? Which form was easiest to understand? Which form was most difficult to understand?

Show clients the four forms used throughout sessions. Ask for each one: "Are there any parts of the form that could be modified to make it more useful?"

5. Overall treatment satisfaction

How satisfied are you with the quality of service you received? Why?

How well did the treatment meet your expectations? Why?

How has the treatment helped you to deal with your depressed mood, if at all?

Overall, what values did you select to work on as part of this treatment?

Did you find that your values changed as treatment progressed? How?

Overall, what were some of the activities that you began engaging in as a result of the treatment?

What were some activities that you removed from your daily schedule? What were the consequences of removing these activities from your schedule?

What are some ways in which the treatment helped you? What are some ways in which the treatment did not help you?

In your opinion, compared to before, has your mood improved, gotten worse, or stayed the same? In what ways would you say that your mood has (improved/gotten worse/stayed the same)?

How does your daily schedule now, compare to your daily schedule before initiating treatment?

What are some good things about this treatment?

What are some bad things about this treatment?

Overall, how has your life changed since you began treatment?

What are some reasons that you think this treatment worked for you?

What are some reasons that you think this treatment did not work for you?

GENERAL EVALUATION

Great! Now I'm going to ask you some general questions about the program...

1. What other features or resources could be added to the program that would make it better?
2. Are there any parts of the program that are especially easy to understand or use?

Great! Do you have any other comments about the treatment? (Wait at least 30 seconds before proceeding).

OK, that's it! Thank you for participating and for all the great feedback! -- you've helped us identify ways to improve our program! In this last part, I will give you an exit survey that asks overall questions about your impressions of the program. Thanks again for your honesty and help in this evaluation process.

TREATMENT EXIT SURVEY

Based on your experience with the treatment, please circle the number that seems most appropriate.

1. How visually appealing were the treatment materials (images, colors, placement of components and font styles)?

Very unappealing 1 2 3 4 5 6 Very appealing

2. How likely are you to use this treatment in the future, in the event that you experience depressed mood?

Very unlikely 1 2 3 4 5 6 Very likely

3. How likely are you to recommend this treatment to friends or family who experience depressed mood?

Very unlikely 1 2 3 4 5 6 Very likely

3. In the long run, how valuable do you think this treatment would be for individuals who experience depressed or low mood?

Not valuable 1 2 3 4 5 6 Very valuable

4. To what extent has our program met your needs?

Did not meet my needs 1 2 3 4 5 6 Met my needs

5. Has the treatment helped you to deal more effectively with your problems?

1	2	3	4
No, it seemed to a make things worse	No, it really didn't help	Yes, it helped somewhat	Yes, it helped great deal

6. To what extent do you find this treatment acceptable in dealing with someone's depressed mood?

Not acceptable 1 2 3 4 5 6 Acceptable

7. To what extent do you believe this treatment was effective for you?

Ineffective 1 2 3 4 5 6 Effective

8. To what extent do you believe that this treatment will result in permanent improvement?

Short-lived Improvement	1	2	3	4	5	6	Permanent Improvement
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9. To what extent do you believe that this treatment has improved your life?

Little Improvement	1	2	3	4	5	6	Great Improvement
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10. Overall, how satisfied or dissatisfied are you with this treatment?

Dissatisfied	1	2	3	4	5	6	Satisfied
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11. What other comments or recommendations do you have about the program?

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