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Journal

Cognitive and behavioral practice, 25(1)

ISSN

1077-7229

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Publication Date

2018-02-01

DOI

10.1016/j.cbpra.2017.03.002

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Cognitive and Behavioral Practice xx (2017) xxx-xxx

**Cognitive and
Behavioral
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www.elsevier.com/locate/cabp

Implementing Group CBT for Depression Among Latinos in a Primary Care Clinic

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Depression in low-income Latino populations can be treated using group cognitive behavioral therapy (GCBT). However, effective delivery of GCBT for depression in primary care settings is often impeded by high dropout rates and poor homework adherence. In this study, we describe the structure, processes, and outcomes (including attendance, homework completion, and symptom measures) of GCBT for Spanish-speaking Latino patients with depression in an urban public sector primary care setting. For this study, 96 Latino patients in a primary care clinic participated in at least 1 session of GCBT. Although depressive symptoms among these patients, as measured by the PHQ-9, significantly decreased during treatment, attendance and homework completion were limited. Even with a strategy in place to allow patients to continue in treatment after missing several sessions, 23% of patients dropped out of therapy following their initial session, and approximately half of all patients completed less than 50% (or 8) therapy sessions. Homework was only completed 23% of the time it was checked. Greater session attendance prospectively predicted lower depressive symptoms over time. We discuss potential strategies to increase engagement, treatment effects, and symptom reduction for depression in primary care settings.

EVEN though depression continues to be a leading cause of disability for persons aged 1 to 44 ([World Health Organization, 2008](#)), it continues to be under-treated in racial-ethnic minority populations, including Latinos. Due to various factors including cost, lack of insurance, language barriers, and limited availability of culturally competent providers, Latinos are overall less likely to seek specialty mental health care than Whites ([U.S. Department of Health and Human Services, 2001](#)). Furthermore, Latinos are more likely to report mental health issues, such as depressive symptoms, to a primary care physician than to a mental health professional ([U.S. Department of Health and Human Services, 2001](#)). Unfortunately, primary care physicians are less likely to diagnose depression in Latinos ([Borowsky et al., 2000](#)), and when depression is identified and treated with evidence-based treatments, these treatments are often not delivered as tested in clinical trials ([Shafran et al., 2009](#)). Taken together, the primary care setting may be a critical link to identifying and addressing mental health problems and a way of ameliorating mental health disparities among Latinos.

Cognitive behavioral therapy (CBT) interventions for depression are generally efficacious but rarely available in low-income and public sector settings, and when they are, they are often not delivered as tested in clinical trials ([Shafran et al., 2009](#)). Our goal in this paper is to characterize the implementation of a group CBT intervention for depression among Spanish-speaking Latino patients treated in a public sector, safety-net primary care clinic. We describe the implementation of the intervention and report data on engagement and treatment outcomes. Our findings highlight potential methods of improving the delivery of CBT for Spanish-speaking Latino patients treated for depression in public sector primary care settings.

Implementation of CBT in Low-Income Settings

Randomized controlled trials (RCTs) have provided foundational information about the efficacy of CBT interventions in controlled lab or clinical settings (for an overview of psychosocial interventions for depression in primary care, see [Linde et al., 2015](#); [Westbrook & Kirk, 2005](#)); however, the translation of evidence to practice has not always been clear. Comparisons of CBT outcomes in RCTs vs. naturalistic settings have been mixed, with some finding better outcomes in RCTs ([Hans & Hiller, 2013](#); [Kushner, Quilty, McBride, & Bagby, 2009](#); [Westbrook & Kirk, 2005](#)) and others finding no difference in outcomes ([Merrill et al., 2003](#); [Minami et al., 2008](#); [Schindler, Hiller,](#)

Keywords: depression; CBT; Latinos; implementation; homework

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Please cite this article as: Aguilera et al., Implementing Group CBT for Depression Among Latinos in a Primary Care Clinic, *Cognitive and Behavioral Practice* (2017), <http://dx.doi.org/10.1016/j.cbpra.2017.03.002>

& Witthöft, 2011). Of note, only one of these studies (Merrill, Tolbert, and Wade, 2003) reported sample ethnicity, and the values ranged from 89% to 92% Caucasian. In fact, real-world implementation of interventions for low-income minority populations has been shown to be very different from that of highly resourced interventions delivered in RCTs (Westen, Novotny, & Thompson-Brenner, 2004). For example, mental health interventions in clinical trials tend to have more fidelity checks and increased efforts to retain patients in treatment (Miranda, Chung, et al., 2003). Implementation rates of CBT tend to be highest in academic medical centers, where much of the research on CBT has taken place (McAlpine, Schroder, Pankratz, & Maurer, 2004). Patients in real-world, public sector settings are likely to differ in severity and/or comorbidity from research participants, as they have not been subject to the same types and levels of inclusion criteria as those within RCTs. In particular, the logistics and specifics of implementation in primary care settings serving low-income Latinos remains less understood (Organista, Muñoz, & Gonzalez, 1994).

CBT With Latinos

Latinos are the fastest-growing ethnic group in the U.S. and are disproportionately of low-income backgrounds (Steppler & Brown, 2016). Psychosocial interventions such as CBT for depression have been shown to be effective for Latinos (Miranda, Azocar, et al., 2003; Miranda, Chung, et al., 2003). There are a variety of models and interventions for addressing depression in primary care, and group cognitive behavioral therapy (GCBT) is one approach that can help reach larger numbers of patients with fewer provider resources. GCBT is a good fit for Latino patients served in public sector settings because it is easily standardized and, in a group format, can be administered to large numbers of patients, using less time and fewer resources than other treatment therapies (Oei & Dingle, 2008), while offering support from other group members throughout the course of treatment (Balabanovic, Ayers, & Hunter, 2012). In primary care settings, CBT can be especially advantageous for Latino patients because they tend to prefer psychotherapy to psychopharmacology (Dwight-Johnson, Lagomasino, Aisenberg, & Hay, 2004).

Barriers to Engagement

Although effective, because of barriers at both the system and patient levels, GCBT may not always be utilized. At the system level, GCBT is often not available in primary care settings—or when it is, it is not often available in non-English languages or tailored to the appropriate educational level of the patients (Villalobos et al., 2016).

At the patient level, most Latinos with mental disorders do not utilize treatment relative to their need (Alegria et al., 2014; Cabassa, Zayas, & Hansen, 2006). At the system level, when they do receive care it is often via primary care and in public sector settings (Dwight-Johnson & Lagomasino, 2007). Systemically, clinics have generally not adapted their services to reduce barriers to treatment.

Implementation of psychosocial interventions for depression aimed at low-income Latino populations served in urban primary care settings appears to be especially marred by challenges related to patient retention and delivery of the full intervention (Zayas, McKee, & Jankowski, 2004). Patient-level barriers specific to low-income populations are inflexible employment schedules, stigma, and difficulty grasping concepts due to low literacy and education levels. In a trial of CBT in primary care, Miranda, Chung, et al. (2003) reported that psychologists spoke to low-income women an average of 10.2 times ($SD = 12.2$) before they attended a therapy session. These women were provided with transportation and child care reimbursements to enable attendance. This level of outreach is not feasible in most public sector clinics, where a sizable portion of Latinos receive care, due to resource and time constraints. Even after that outreach, only 53% of those assigned to CBT received 4 or more sessions and 36% received 6 or more sessions. For women who were referred to community partners instead of CBT, only 17% attended at least 1 session (Miranda, Chung, et al., 2003).

Once in treatment, engagement, as measured by session attendance, is low among low-income Latinos compared to non-Latino populations (Organista et al., 1994). Given that session attendance is vital for learning and practicing the skills taught in CBT, it is important to understand how this variable relates to outcomes. Homework completion is another engagement factor that is a critical ingredient in CBT, but homework completion rates have not been reported specifically for Latinos with depression, nor do we understand the relationship between homework and outcomes in this population. It is important to learn more about patients' dosage of treatment as measured by attendance and homework completion, since we know those elements are related to improved outcomes in the general population (Kazantzis, Whittington, & Dattilio, 2010; Neimeyer, Kazantzis, Kassler, Baker, & Fletcher, 2008). Nevertheless, few studies investigate the implementation, process, and outcomes associated with GCBT offered to Latino patients with depression in public sector primary care settings. This information can help us understand how evidence is translated into practice, identifying barriers to ideal implementation, especially as the evidence and support for integrated care proliferates (World Health Organization, 2008).

Present Study

In order to improve implementation of CBT interventions with Latino populations, it is important to quantify engagement in treatment (attendance and homework completion) as well as the relationship between engagement and outcomes outside of rigorously controlled clinical trials. This information can help improve the dissemination of evidence-based CBT interventions into the community, as well as inform adaptations of treatment protocols to ensure that Latino populations receive the highest standard of care for depression. The current study aims to fill the gap in the literature on key aspects of how evidence-based CBT interventions are implemented with Latino patients in low-income public sector, primary care settings.

This study describes the structure, process, and outcomes (including symptom measures, attendance, and homework completion) of GCBT for Latinos treated in an urban, public sector clinic. We focus on implementation with low-income Latinos as this is a rapidly growing population that tends to underutilize services for depression relative to other groups (Alegria et al., 2014) and for whom treatment processes and outcomes are less well understood (Cabassa et al., 2006). The present study describes cultural considerations made to a standardized GCBT protocol in an effort to make this protocol more responsive to the needs of a low-income Latino patient population. It also assesses patients' levels of attendance and homework completion, changes in patients' depressive symptoms over the course of therapy, and the relationship between session attendance and reductions in depressive symptoms. The overarching goal of this study is to report outcomes in real-world practice with Latino populations.

Method

Participants

Participants were 96 patients (79 women, mean age = 53.28 years, $SD = 12.07$ years) referred by their primary care provider (PCP) to an embedded mental health service at a safety-net hospital. Over 80% of the patient population at the hospital receives public insurance or is uninsured. All patients identified as Latino/a, were Spanish speaking, and all emigrated from a Latin American country. Patients were enrolled in therapy between January 2011 and October 2013 (see Table 1 for additional sample characteristics). The study was approved by the Institutional Review Boards of the affiliated universities and clinical settings. All participants provided informed consent to include data in research reports.

Patients were referred by their PCP to a behavioral health clinician (i.e., a social worker, psychologist or trainee, or medical assistant) when patients reported depression symptoms in conversations with their PCP or via a symptom checklist. The PCP conducted a "warm

Table 1
Patient Characteristics at Baseline

Basic Demographic Characteristics	
Age (n = 91)	$M = 53.3$ years, $SD = 12.1$ years
Gender (n = 96)	79 females; 17 males
Baseline PHQ-9 (n = 76)	$M = 13.88$, $SD = 5.71$

Number and (Percentage) of Patients in Each PHQ-9 Category at Baseline	
Minimal depression (score of 0-4)	5 (6.6%)
Mild depression (score of 5-9)	14 (18.4%)
Moderate depression (score of 10-14)	17 (22.4%)
Moderately severe depression (score of 15-19)	27 (35.5%)
Severe depression (score of 20-27)	13 (17.1%)

Note. The sample size is smaller for age versus gender due to missing data. Additionally, only 76 of 96 patients had the PHQ-9 administered at baseline (i.e., at the beginning of their first therapy session).

handoff" (e.g., in-person introduction) to the behavioral health clinician, after which the behavioral health clinician further assessed symptoms and patients' eligibility and interest in group therapy. The warm handoff allowed for an in-person interaction with the behavioral health clinician, who at times was also a group cofacilitator. In order to reduce stigma, the group was often described as a place to learn skills to manage stress or to help with managing comorbid chronic conditions like diabetes, rather than "group psychotherapy" or "treatment for depression."

The Patient Health Questionnaire-9 (PHQ-9; Kroenke, Spitzer, & Williams, 2001) has been used as a screening and diagnostic tool and as an outcome measure. Scores of 5, 10, 15, and 20 represent cut points for "mild," "moderate," "moderately severe," and "severe" depression, respectively (Kroenke et al., 2001). The guiding criteria for referral to group therapy was a score of 10 or above, representing moderate depression symptoms or higher. However, this score was sometimes lower by the time patients attended their first group session. All referred patients were diagnosed with another chronic medical condition such as diabetes and chronic pain. Patients with severe substance abuse disorders or with severe and active psychosis were not considered for group therapy and were referred to specialty mental health services.

Group CBT Intervention

GCBT was based on the Healthy Management of Reality treatment manual (Muñoz, Ghosh Ippen, Rao, Le, & Dwyer, 2000), which comprises four modules, each composed of four sessions (for a total of 16 weekly, hour and a half sessions). The sessions are based on cognitive,

behavioral, and interpersonal strategies for mood management (Lewinsohn, Muñoz, Youngren, & Zeiss, 1978). Each of the four modules has a theme: the first focuses primarily on cognitive restructuring techniques; the second focuses on behavioral activation to improve depressive symptoms; the third focuses on improving interpersonal relationships through assertive communication and conflict resolution; and the last focuses on managing one's health and how healthy habits, such as exercise and regular sleep, can reduce depressive symptoms.

The most recent version of the manual (BRIGHT; Miranda, Woo, Lagomasino, Hepner, Wiseman, & Muñoz, 2006), available in both Spanish and English, was developed iteratively with patients in this and other similar clinical settings. The groups were led by two therapists at a time: a licensed clinical psychologist and/or a licensed clinical social worker with expertise in CBT and in treating low-income Latino/a patients. There were a total of four clinicians that led groups during this time in various pairings. They included a male Latino psychologist, a female Asian-American psychologist, a female Latina social worker, and a female Euro-American social worker. All clinicians were bilingual. The average duration of clinical experience at the start of the intervention was 2.75 years.

Group therapy was conducted as part of standard clinical practice within the clinic. Patients were admitted to the group on a rolling basis. The BRIGHT manual is designed so that patients begin therapy at the beginning of a new module and continue for all four modules. However, since recruitment and retention can be a challenge, patients were allowed to enter at any point during the 16-session treatment in order to minimize wait times. Some patients were allowed to continue to attend group therapy after completing 16 weeks of treatment if they were still symptomatic, if they felt that they could benefit from the group's support to sustain their treatment gains, and/or if there were low numbers of patients attending or on a waiting list. These procedures are a departure from the standard protocol of the treatment manual, but reflective of clinical practice in community settings.

Group size varied from as few as 1 patient to as many as 13 per session. The average group size was 5.37 patients ($SD = 2.92$ patients) and the median group size was 5 patients. Based on the BRIGHT manual, a target number is about 5 to 6 patients at a time. Patients were scheduled by behavioral health clinicians and meetings were held in a conference room in the same building as the primary care clinic. Patients typically received a call from one of the cotherapists the day before session to remind them to attend their group appointment. All group visits were billed to insurance as group therapy and notes were entered into the electronic health record postsession.

Cultural Considerations

The treatment protocol took into account language and cultural considerations to make it more appropriate for a low-income, immigrant Latino population. Most obviously and importantly, all clinicians spoke Spanish. Additionally, at least one clinician running the group was a bicultural Latino/a. This is in line with evidence from literature on client-therapist ethnic match, which shows that patients tend to have a strong preference for therapists of their own ethnic/racial background (Cabral & Smith, 2011). We also applied cultural considerations recommended by researchers to improve engagement in CBT with Latinos. These include integrating cultural values such as respect of social roles and beginning sessions with warm and informal interpersonal conversation (Aguilera, Garza, & Muñoz, 2010; Miranda, Azocar, Organista, Muñoz, & Lieberman, 1996). Additionally, the language surrounding cognitive restructuring implemented more concrete terms such as "helpful" and "unhelpful" thoughts instead of more complex ABC (antecedent-behavior-consequence) language. Religion is also a theme that appears regularly when working with Latino patients and can be integrated into a CBT framework. For example, religious activities and thoughts were encouraged when deemed helpful. Activity scheduling often needs to be modified due to economic or even living space limitations (Organista & Muñoz, 1996).

Measures

Attendance

Attendance data for each patient was collected every week that the patient was enrolled in group therapy, from the first session that a patient attended to the last session he/she attended before therapy was discontinued. Therapy discontinuation was defined as a period of absence from weekly group sessions spanning 16 weeks or longer—the equivalent of an absence of an entire cycle of group therapy. Patients received an attendance score of either 1 (attended) or 0 (absent) for each week in which they were enrolled in therapy.

Several indices of attendance were derived from these data. We first computed the number and percentage of sessions that each patient attended out of the first 16 sessions offered to them. This captured the extent to which patients were engaging with therapy "as intended"—that is, completing all four modules of therapy within a 16-week period. However, more than half of the sample (54.2%) continued to attend group therapy after this 16-week mark. To better capture this pattern of extended attendance, we also calculated the total number of therapy sessions each patient attended from their first therapy session to the point at which they discontinued group therapy (regardless of the 16-week mark).

Eight participants (approximately 8% of the sample) eventually returned to group therapy after an absence of longer than 16 weeks (i.e., after discontinuing their first round of therapy). This subsample of returning participants did not differ significantly from the rest of the sample in their age, gender, baseline depressive symptoms, earlier patterns of attendance, or homework completion (all $ps > .18$). Due to the small sample size, the data from these patients' second round of therapy was not further analyzed and only the first round of data was included in analyses.

Homework Completion

Homework was assigned at the end of every group therapy session. Assignments were aimed at putting into practice the skills learned during that day's therapy session. Every assignment included a mood-monitoring component that would be completed over the course of the week, along with an additional task such as recording thoughts that had triggered positive and negative mood states. For this study, we are only focusing on adherence to the mood-monitoring homework, as that was the most commonly assigned homework component, and was a consistent assignment throughout. Homework assignments were then reviewed at the beginning of the following group session, with a focus on whether patients completed the mood-monitoring component of the homework. Daily mood ratings were charted visually on a white board and specific low and high instances were discussed with an emphasis on the theme of that week (e.g., Thoughts, Activities, People, Health). Patients were assigned a score of "1" if they completed some or all of their mood-monitoring homework, and a "0" if they completed none of their mood-monitoring homework from the previous week. Homework completion data was not collected regularly until 2 years into data collection, thus only a subset of the sample (33 patients) has homework completion data.

Depressive Symptoms

To monitor the severity of depressive symptoms as well as treatment outcomes, the Spanish-language version of the PHQ-9 (Kroenke et al., 2001) was administered at the beginning of most therapy sessions. This 9-item self-report tool assesses DSM-IV symptoms within the previous 2-week period, with patients rating their symptoms on a 0 (*never*) to 3 (*almost everyday*) scale. The PHQ-9 yields a score between 0 to 27, with higher scores indicating greater depressive symptomatology. The PHQ-9 is a valid and sensitive measure of depression symptoms over time (Löwe, Kroenke, Herzog, & Gräfe, 2004).

The PHQ-9 was administered at the beginning of most (89%) therapy sessions. PHQ-9 data is missing on some occasions because it was collected monthly rather than weekly in the initial period of data collection. Addition-

ally, some patients are missing PHQ-9 scores from sessions to which they arrived late and from which they departed early. Ninety-two (96%) patients completed the PHQ-9 at least once, and 76 (79%) patients completed a baseline measure of the PHQ-9 at the beginning of their first day of group therapy. The average PHQ-9 score at baseline was 13.88, $SD = 5.71$, $\alpha = .79$, and baseline PHQ-9 scores were not related to patients' age or gender (both $ps > .51$). Additional information about baseline depression is available in Table 1.

Analytic Plan

We first characterized patterns of attendance and engagement with GCBT through descriptive analyses of patients' attendance and homework completion data. We then examined whether patients improved while in therapy by testing whether depressive symptoms significantly decreased across the course of their treatment. Finally, we explored whether greater therapy attendance was related to decreases in depressive symptoms.

Results

Attendance

We first explored the extent to which patients attended therapy "as intended" by examining their rates of attendance across their first 16 weeks of therapy. As in prior primary care interventions (Miranda, Azocar, et al., 2003), dropout across the first 16 weeks of therapy was high. Twenty-two patients (23% of the sample) did not return to group therapy following their initial session—making "1" the modal number of therapy sessions attended, which is reflective of findings in community mental health settings (Gibbons et al., 2011). An additional 21 patients (22% of the sample) dropped out before the first 16 weeks of therapy had ended.

Patients attended, on average, less than half of the first 16 therapy sessions ($Mean = 6.67$ sessions or 41.7%, $Median = 5$ sessions or 31.3%), with considerable individual variation around this mean ($SD = 5.06$ sessions). Only two patients (2% of the sample) had perfect attendance across the first 16 weeks of therapy.

We also examined the number of sessions patients attended from their first therapy session to the point at which they discontinued group therapy (including beyond the 16 weeks; see Figure 1). All patients were included in these analyses, regardless of when they left treatment. Across this broader time frame, patients attended an average of 10.79 therapy sessions ($Median = 9$ sessions), with considerable individual variation around this mean ($SD = 9.21$ sessions). Fifty-two of the 96 patients (54%) attended one or more psychotherapy sessions beyond the 16th week of treatment, and 33 patients (34% of the sample) did eventually attend 16 or more therapy sessions. However, even when considering this broader

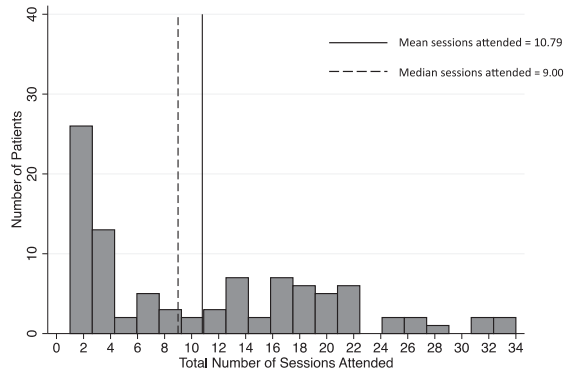


Figure 1. Cumulative number of psychotherapy sessions attended by each patient across treatment

time frame, group attendance was still relatively poor, with 46 patients, or approximately half the sample, attending fewer than 8 sessions.

Attendance across the first 16 weeks of therapy, as well as attendance beyond 16 weeks, was unrelated to patients' age (both $r_s < .11$, $p_s > .30$). However, female patients attended significantly fewer sessions than did male patients, both across the first 16 weeks of therapy, $F(1, 94) = 7.02$, $p < .01$, and across the entire study, $F(1, 94) = 9.06$, $p < .01$. We also found that baseline depressive symptoms predicted both 16-week and overall attendance, such that patients with higher baseline PHQ-9 scores attended more therapy sessions (both $r_s > .29$, $p_s < .05$).

Homework Completion

Overall, homework completion rates tended to be low, with a mean homework completion rate of 23% ($SD = 30\%$). Of the 33 patients who had their homework completion monitored, 15 patients (45% of the subsample) never completed any homework and only 2 patients (6% of the subsample) completed their homework on every occasion in which it was checked. Homework completion was not significantly related to patients' age or gender (both $p_s > .40$). However, baseline depressive symptoms were positively correlated with homework completion rates ($r = .38$, $p = .03$).

Depressive Symptoms

We examined whether patients' level of depressive symptoms significantly decreased across the course of therapy by predicting patients' weekly PHQ-9 scores from their week in therapy. The data consisted of repeated-measures of the PHQ-9, nested within patients. To model dependencies in the same patients' PHQ-9 scores across time, we utilized a two-level hierarchical linear model (HLM), modeling patient-specific (i.e., random) intercepts and patient-specific slopes for therapy week. Both the

predictor variable (therapy week) and the outcome variable (PHQ-9) varied across time (i.e., at level 1). As anticipated, patients' level of depressive symptoms significantly decreased over the course of therapy ($B = -.15$, $SE = .03$, $z = -4.84$, $p < .001$).¹ On average, PHQ-9 scores decreased 0.15 points for every week that patients were enrolled in therapy, with considerable individual variation around this average (SD of random slope = .20, 95% CI $-.55$, .25).

We next examined whether attendance prospectively predicted depressive symptoms by conducting lagged-week analyses. Specifically, we predicted current week depressive symptoms from prior week attendance, while including patients' week in therapy as a covariate to control for the downward trend in depressive symptoms across time. This analysis allowed us to assess whether patients experienced lower depressive symptoms following weeks in which they attended therapy as compared to weeks in which they missed therapy. We again utilized a two-level HLM, modeling patient-specific intercepts and patient specific slopes for week in therapy. After controlling for week in therapy, prior week session attendance was a significant predictor of current week depressive symptoms ($B = -.97$, $SE = .28$, $z = -3.44$, $p < .01$). On average, patients' depressive symptom scores were almost one scale point lower following weeks in which they attended therapy, as compared with weeks in which they did not attend. This relationship remained significant when controlling for baseline depressive symptoms ($B = -.78$, $SE = .31$, $z = -2.53$, $p < .05$), indicating that prior week attendance predicted lower current week depressive symptoms, independent of how depressed patients were at the start of therapy.

We did not examine the relationship between session attendance and depression within the same week because patients were not administered the PHQ-9 on weeks in which they missed therapy. Likewise, we could not control for prior week depressive symptoms when predicting current week depressive symptoms from prior week attendance, because the PHQ-9 was only administered when patients attended therapy, making prior week attendance and prior week depressive symptoms collinear. Therefore, it is unclear whether session attendance predicted changes in depressive symptoms from week to week. However, we did explore one alternative; that is, that patients with lower depressive symptoms were more likely to attend future therapy sessions. If this were the case, it

¹The statistical software program Stata, which was used for all analyses, provides a z-statistic for multilevel models in place of a t-statistic. The reason the z statistic is favored is because the t distribution is a finite-sample distribution with a shape that varies depending on the degrees of freedom. For multi-level variance-component models, the finite-sample distribution does not have a simple form, so Stata uses a large-sample z distribution rather than approximating the finite-sample t distribution (Rabe-Hesketh & Skrondal, 2012).

could create the appearance that session attendance is lowering depression, when in fact the causal arrow might point in the opposite direction. To explore this possibility, we predicted current week attendance from prior week depressive symptoms while controlling for week in therapy, using a two-level (i.e., hierarchical) logistic regression, modeling patient-specific intercepts and patient-specific slopes for week in therapy. Controlling for week in therapy, prior week depressive symptoms did not significantly predict current week attendance ($OR = .97$, $SE = .02$, $z = -1.47$, $p = .14$). However, the estimated relationship between prior-week depressive symptoms and current week attendance may be biased, as patients who missed scheduled psychotherapy sessions did not provide prior-week depressive symptom data.

Discussion

Our analyses support utilizing GCBT for reducing depression among Latinos in public sector settings and are consistent with the possibility that session attendance leads to reductions in depression. Additionally, we found that patients who were more depressed at baseline completed more homework during treatment and attended sessions more frequently. One possible explanation for this finding is that these patients see homework and treatment as more relevant than do those with lower baseline depression, but this hypothesis should be studied further. Although there were many fewer men than women who started treatment, men were more likely to attend over time. It is possible that men are less likely to begin treatment due to factors such as stigma (Griffiths, Christensen, & Jorm, 2008), but once they cross this threshold and enter treatment, they are more motivated to continue in treatment and attend more often. Given the association between attendance and better outcomes, our findings suggest that efforts should be made to increase engagement (homework completion) and attendance to psychotherapeutic interventions.

A primary purpose of this paper is to provide insights into how GCBT for depression is implemented in a public sector primary care setting with Latinos in order to help improve treatment in these settings that often struggle with complicated patient profiles and constrained resources. Implementation of GCBT in this setting looks significantly different from CBT delivered in highly controlled RCTs, academic, and higher resourced settings, where patient attendance and compliance with treatment methods, such as homework, tend to be more consistent. Clinical practice in community-based settings is typically resource constrained, and extended efforts such as case management (Miranda, Azocar, et al., 2003) to maintain engagement with treatment are often not available. Nevertheless, our primary care-based GCBT showed significant reductions in depression scores

despite the expected and notable limitations with regard to attendance and homework completion, key measures of engagement.

The structure of GCBT used in this study was flexible, with rolling admissions allowed in order to serve the most patients possible for the period of time that they were willing to attend. Despite this, attendance was low, which is consistent with other psychosocial interventions implemented with Latinos in primary care (Chavira et al., 2014; Zayas et al., 2004). Attendance was related to improved outcomes; therefore, efforts should focus on increasing engagement with CBT interventions. The length of time patients were in treatment varied greatly, despite the fact that the intervention is meant to last for 16 sessions. These data suggest that systems to track progress in these interventions might inform clinicians' decisions on when to "graduate" patients or when to refer them on to other services. These dynamics are also likely influenced by the demand for group therapy, since it is ideal to maintain a base number of patients per group (Miranda et al., 2006).

Lessons Learned and Recommendations

Cultural Considerations

We took steps to make the CBT content palatable and understandable to our patients, who often had limited educational attainment. Even though the manuals we used were translated, much of the vocabulary of CBT had to be simplified in practice. For example, when discussing assertiveness, a direct translation of *asertivo* was not clearly understood, so we had to change the wording of the concept to *firme* or being firm. Additionally, there are cultural differences in relational styles, and we had to recognize that while being assertive is typically thought of as an ideal in traditional CBT interventions, this concept can be culturally challenging due to the importance of respecting authorities. Therefore, the goal for many patients was recognizing when passivity was helpful and when it was personally harmful. For example, when it maintained harmony and did not create resentment, it was reasonable, whereas when it did create resentment or stress, it was probably best to move toward expressing one's self.

Finally, we made sure to adapt the intervention to integrate and be aware of the low-income status of our patient population. During behavioral activation, we explicitly identify activities that one can engage in that are free or low cost so that they are accessible to all patients. The manual also explicitly addresses the challenges of poverty via the discussion of Maslow's hierarchy of needs, which helps prioritize patient goals based on their individualized needs. We also specifically addressed how living in poverty creates challenges, such as fewer opportunities and resources from which to draw.

A common critique of CBT is that it is too heavily reliant on the individual and it does not consider the social context and its impact on functioning. In the implementation of this intervention, we were very explicit about the limitations and challenges that our social environment can impose on us. We strived to acknowledge these as realities and then move toward coming up with the healthiest reactions. In doing so we found ourselves integrating the concept of acceptance of certain circumstances that are not currently changeable while identifying what was changeable and employing strategies to create healthy change. These are unique aspects of implementing CBT in lower resourced settings.

Improving Assessment

There were various changes that occurred during the course of the implementation that required changing clinic norms around assessment. We began collecting homework completion data in order to get a more objective sense of the problem of homework nonadherence. Clinicians knew that homework was not being completed regularly and they became discouraged after repeatedly hearing negative responses. Additionally, clinicians were wary of making patients, who are predisposed to negative filters, feel bad about themselves. Collection of data helped the team gain a measurable sense of the problem and led to discussions about emphasizing the rationale for treatment and thinking of other methods to encourage completions.

We also switched from collecting PHQ-9 data on a monthly level to collecting data on a weekly level. This change was made because sporadic attendance meant that patients who missed session or arrived late would not have data for that week. This resulted in long lapses when it was not clear how patients were progressing over time. The switch to weekly PHQ-9 was initially concerning to clinicians due to the time that it takes to complete the measure, particularly with a lower literacy population. However, patients completed the measure more quickly on a weekly basis because they were so accustomed to the questions. In the future, mobile technologies may be able to improve assessment during treatment. For example, recent research suggests that daily mood monitoring ratings via text message between sessions approximate weekly PHQ-9 ratings (Aguilera, Schueller, & Leykin, 2015).

Limitations

Our study was limited by the lack of a comparison group, such as a control group, to better assess the efficacy of the intervention, or a different ethnic/racial or socioeconomic group to assess differences in outcomes based on cultural background or socioeconomic status. Another limitation was that we did not measure homework completion in the first part of the study, thus

limiting our ability to assess the relationship between homework completion and depressive symptoms reduction. We also did not assess clinician or patient satisfaction or barriers to attendance and engagement directly, as these were not part of standard clinical practice that this study reflects. We recommend collecting this data in future studies, as it can help shed light on barriers to attendance and engagement. This study was also limited in that it did not assess other key elements of implementation such as the reach and penetration of the intervention that could be assessed by collecting data on the total number eligible patients, how many were referred, and how many accepted/refused. Finally, while we focused on Spanish-speaking immigrant Latinos, we did not specifically measure cultural variables to assess the specific impact of cultural factors such as immigration, poverty, or acculturation-related stress, because it was not standard practice in our clinical setting. The measurement of vital cultural and sociodemographic variables could help improve the understanding of mental health and response to treatment, and may be improved if included in electronic health records (Matthews, Adler, Forrest, & Stead, 2016).

Future Directions

Future studies should investigate cost-effective ways to improve attendance and homework completion in low-resourced settings. Several strategies derived from cognitive psychology can help remind patients about their treatment sessions, as well as motivate them to attend and to complete their homework assignments (Harvey et al., 2014). In addition, feedback on progress over time may encourage patients to continue improving behavior change (Abraham & Michie, 2008). Mobile technology, such as automated text-messaging prompts or reminders, may be an ideal external memory device for improving attendance, increasing completion of homework and skills application, and providing data to give feedback to patients on progress. There is growing recognition that automated text messaging can be useful as an adjunct to in-person CBT (Aguilera & Muñoz, 2011) and that Latinos, in particular, view automated messages as supportive (Aguilera & Berridge, 2014). Use of these technologies with Latinos is particularly promising in that their limitations, such as technology literacy and accessibility, have seen a marked decline as smartphones and other technologies become more ubiquitous and their costs decline. As these technologies are developed, it is crucial that they attend to the needs of diverse cultural groups (Mohr, Schueller, Araya, Gureje, & Montague, 2014).

Conclusion

We have shown that depression symptoms improve for Latinos in GCBT for depression. However, barriers to

implementation include low ongoing attendance and homework completion. Future studies should explore innovative and cost-effective ways to maintain fidelity and proper dosage in treatments so that standard clinical practice can more closely mirror results from efficacy trials. These findings also suggest the need for adapting treatments to populations that are expected to have sporadic attendance and low homework completion rates. Treatment developers should adapt to the needs of diverse settings and populations to improve dissemination, rather than focusing on making patients conform to existing norms for treatment. Alternative models may include telephone, tele-mental health, and mobile technologies to deliver interventions in combination, or instead of, the traditional, weekly in-person format.

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This study was supported by: an NIMH grant (K23MH094442; PI: Aguilera), a Robert Wood Johnson New Connections grant (PI: Aguilera). The authors would like to thank Alinne Barrera and Ricardo Muñoz for their helpful comments on an earlier draft of this paper. We would also like to thank all of the clinician's and patients who participated in this project.

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Received: April 6, 2016

Accepted: March 30, 2017

Available online xxxxx