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A systematic review of depression psychotherapies among Latinos

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Abstract

For decades, the literature has reported persistent treatment disparities among depressed Latinos. Fortunately, treatment development and evaluation in this underserved population has expanded in recent years. This review summarizes outcomes across 36 unique depression treatment studies that reported treatment outcomes for Latinos. Results indicated that there was significant variability in the quality of RCT and type/number of cultural adaptations. The review suggested that there might be a relation between cultural adaptations with treatment outcomes; future studies are warranted to confirm this association. Cognitive Behavioral Therapy was the most evaluated treatment (CBT; $n = 18$, 50% of all evaluations), followed by Problem Solving Therapy (PST; $n = 4$), Interpersonal Therapy (IPT; $n = 4$), and Behavioral Activation (BA; $n = 3$). CBT seems to fare better when compared to usual care, but not when compared to a contact-time matched control condition or active treatment. There is growing support for PST and IPT as efficacious depression interventions among Latinos. IPT shows particularly positive results for perinatal depression. BA warrants additional examination in RCT. Although scarce, telephone and in-home counseling have shown efficacy in reducing depression and increasing retention. *Promotora*-assisted trials require formal assessment. Limitations and future directions of the depression psychotherapy research among Latinos are discussed.

Keywords

Latinos; depression; psychotherapy; empirically supported treatments

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Major Depressive Disorder and Treatment Barriers among Latinos

Major Depressive Disorder (MDD) is highly prevalent and impairing across race and ethnicity. MDD afflicts an estimated 16% of the U.S. population in their lifetime (Kessler, Chiu, Demler, Walters, 2005). Although depression is highly treatable, disparities in psychosocial treatment, such as a limited access to mental health specialists and substandard quality of care, prevent ethnic and immigrant populations from accessing effective interventions (Alegria et al., 2008; Blanco et al, 2007). Latinos, who represent the largest ethnic minority population in the U.S., have similar MDD rates relative to non-Latino White Americans (Mendelson, Rehkopf & Kubzansky, 2008) yet face disproportionate treatment disparities (e.g., Alegria et al., 2008; Wells, Klap, Koike, & Sherbourne, 2001). Mental health barriers including limited English language proficiency, treatment attrition, and stigma-related fears have historically precluded Latinos from accessing and utilizing treatment (U.S. Department of Health and Human Services, 2011; Hodgkin, Volpe-Vartanian & Alegria, 2007). Further, research suggests that when psychotherapy is available to Latinos, it is often substandard (Wells et al., 2001) and does not meet the criteria of empirically supported treatments (La Roche & Christopher, 2008). The high prevalence of depression among Latinos, the current state of treatment disparities, and emerging healthcare reform such as the Affordable Care Act underscore the need to identify efficacious treatments that address this underserved population's depression care needs. Additionally, focusing on treatment outcomes for Latinos is necessary in light of reports that outcomes from extant clinical trials cannot be generalized beyond samples comprised primarily of non-Latino White Americans (Bernal & Scharron-Del-Rio, 2001; Chambless & Ollendick, 2001).

Meta-analyses examining treatment outcomes for U.S. ethnic minority populations have generally indicated that individuals from ethnic minority communities benefit more from culturally-adapted psychotherapy relative to non-adapted treatment protocols (Smith, Domenech Rodriguez & Bernal, 2010; Griner & Smith, 2006). Systematic reviews that have focused on treatments for depressed U.S. Latinos have been limited by the relatively few studies conducted on these populations, but have found that group CBT is efficacious for depressed Latinas (Stacciarini, O'Keefe & Mathews, 2007), that CBT is preferred in primary care populations (Miranda et al., 2005), and that collaborative care is better than usual care in reducing depression among primary care Latino patients (Cabassa & Hansen, 2007). Fortunately, since these reviews were published, the number of depression clinical trials recruiting Latinos from primary care or community settings have both expanded and used an increasing variety of treatment approaches. Therefore, the current review of the literature will focus on available depression treatments among Latino adults and update the current state of the treatment literature.

Aims of the Current Review

In an effort to present a thorough account of the current state of the psychosocial treatment literature for depression in adult Latinos, this review will cover a wide range of psychotherapies and treatment evaluation initiatives, including those still in their formative stages. While it is true that these investigations lack the level of methodological rigor of

randomized controlled trials (RCT), uncontrolled studies and treatments early in development yield clinically-relevant information that may advance theory about possible mechanisms of change, moderators of treatment outcome (e.g., Matusiewicz, Hopwood, Banducci & Lejuez, 2010) and opportunities for cultural modification. Finally, formative treatment development work may produce findings that are sufficiently promising to generate a focused line of research for a specific intervention approach. Within this framework, the goals of the current review are to: 1) determine the types of depression treatments that have been evaluated in depressed Latino adults and identify effective forms of psychotherapy, 2) rate the quality of RCT and open label trials (OLT), 3) evaluate the type and extent of cultural modifications made to the extant treatments, 4) delineate limitations and future directions in treatment outcome research in this population.

Method

The review was conducted following guidelines by the Cochrane Collaboration's (2011) handbook and the Preferred Reporting Items for Systematic Reviews and Meta-Analyses [PRISMA] checklist (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009).

Search Criteria

We conducted a search of PsycInfo, PubMed, Medline, Scopus databases from 1950 to July 2015. For the current review, we identified psychosocial treatments for inclusion using the following keyword variations including: *depression, depressive, psychotherapy, therapy, treatment, intervention, antepartum, postpartum, perinatal, cultural adaptation/modification, Latino/a, Hispanic, minority, Mexico, Puerto Rico, Cuba, Latin/Central/South America, Spanish, multicultural, cross-cultural, and ethnic*. We also examined reference sections to locate other relevant studies not initially found in our search of databases. We created a bibliographical database in which we stored and managed each of the references.

Selection Criteria

To be included in the systematic review, studies needed to 1) be classified as a RCT or OLT, 2) include a sample of Latinos exclusively, or conduct analyses to determine whether Latino ethnicity moderated treatment results, or compare outcome differences between Latinos and individuals of other ethnicities, or include ethnicity as a covariate, 3) be published in a peer-reviewed journal, 4) focus on the evaluation of a depression psychotherapy, 5) focus on depressive symptoms or depression, 6) describe pre- and post-treatment depression outcomes, 7) have been conducted in the U.S., U.S. territories, or U.S. border with Mexico or Canada, and 8) comprise an adult sample (ages 18 and over). In cases in which the study samples only included a subset of Latinos and it did not meet selection criterion 2, we contacted the first author of the publication and inquired about differences in treatment outcomes between Latinos and other individuals. We focused solely on adults due to developmental differences in symptom manifestation with children and adolescents. The reader is referred to Miranda and colleagues (2005) and Huey and Polo (2008) for comprehensive reviews of treatment studies with Latino children and adolescents. No restrictions were placed in date or language of publication. Figure 1 depicts a flow-chart for

the selection of studies included in this systematic review. We report data specific to the Latino sample whenever possible.

Study Quality Assessment

We assessed quality of RCT according to recommendations by the Cochrane Collaboration's tool for measuring risk of bias that assesses problems with the design and execution of healthcare studies that may undermine the validity of results (Higgins & Green, 2011). For the purposes of this review, we noted whether studies reported depression outcomes specific to Latinos. We rated the quality of OLT based on guidelines proposed by Rounsaville and colleagues (2001). The guidelines were intended to assess the rigor of such trials to progress to stage II RCT, and thus evaluate similar topics as the Cochrane risk of bias tool.

Cultural Adaptations

We identified cultural adaptations delineated by researchers as efforts to meet participants' needs. Although there are various frameworks to contextualize cultural adaptations (see Castro, Barrera Jr. & Holleran Steiker, 2010 for a review), we classified the nature of adaptations as *surface* or *deep structure* (Resnicow et al., 2000), as they characterize qualitatively different components of therapy adaptation and cultural sensitivity. Defined by Resnicow and colleagues' surface structure adaptations involve making changes to the protocol and/or study procedures to address observable aspects of the target population's culture (e.g., language, music, clothing). Surface changes include providing Spanish versions of therapy manuals, transportation to the clinic, and/or including bilingual or bicultural therapists. Deep structure adaptations, on the other hand, include changes enacted to treatment protocols that consider sociocultural, historical and environmental influences that affect the meaning and course of psychopathology and its treatment (e.g., values, religion, and historical references). Examples of deep structure adaptations include the use of focus groups or in-depth interviews to inform manual changes that may address immigration issues, and/or extensive cultural training for therapists on the therapeutic use of values that are relevant to Latinos (Kalibatseva & Leong, 2014; Castro et al., 2010).

Results

Available Treatments

The review yielded a total of 36 studies. Studies were published between 1981 and 2015. Latinos represented between 8% and 100% of the study samples reviewed. We found a total of 22 RCT and 14 OLT in the published literature. Eleven RCT (50%) solely recruited Latinos, seven examined whether Latino ethnicity moderated the findings (32%), three compared treatment outcome differences between the Latino and non-Latino sample (14%), and one controlled for ethnicity (4%). Five therapeutic approaches have been evaluated among Latinos: Cognitive-Behavioral Therapy (CBT), Problem-Solving Therapy (PST), Interpersonal Therapy (IPT), Behavioral Activation (BA), and Structural Ecosystems Therapy (SET). Control groups showed significant heterogeneity. Usual Care (UC) and Treatment as usual (TAU) consisted of referrals upon request (e.g., Muñoz et al., 2007), care provided by a primary care physician (e.g., Simoni et al., 2013), or an intervention selected at the therapist's discretion (e.g., Kanter et al., 2015). Other control conditions included

waitlist control (Comas-Díaz, 1981), parenting education (e.g., Spinelli & Endicott, 2003), or conditions in which fewer sessions of therapy were offered (e.g., Eisdorfer et al., 2003; Gallagher-Thompson et al., 2008; Foster, 2007).

The number of sessions also varied greatly and ranged from two (e.g., Bedoya et al., 2014) to 16 (e.g., Miranda et al., 2003). Some studies offered booster sessions that ranged from two (e.g., Simoni et al., 2013) to four sessions (e.g., Muñoz et al., 2007). A total of 15 studies evaluated group treatment, 18 studies evaluated individual treatment, three studies presented participants with the option to enlist in either modality, and one did not specify. Individual psychotherapy showed better outcomes than the control condition in nine RCT (82%), while group psychotherapy fared more positively relative to the control condition in three RCT (43%). When participants could choose between individual and group modalities, active treatment was superior to control in one of the two RCT. Eleven studies recruited clients who met criteria for MDD, six recruited individuals with probable MDD or dysthymia, 17 focused on clients with elevated depressive symptoms, and the remaining focused on individuals at risk for depression as a result of life stress or medical conditions. Follow-up assessments were conducted as early as one month post-treatment (Beeber et al., 2010) through 24 months post-treatment (Ell et al., 2008). Therapy was delivered most frequently in hospitals or depression clinics ($n = 16$), followed by community health centers ($n = 10$). Table 1 summarizes key elements of the studies reviewed.

Cultural Adaptations

Table 1 indicates the types of cultural adaptations performed for each study. All but one study indicated having performed cultural adaptations to accommodate Latino participants. The most commonly reported adaptation was the provision of therapy in Spanish ($n = 34$). Twenty-two studies (61%) stated that therapists had received training on the values that are commonly ascribed to Latinos as these may impact therapy and/or rapport. These values included *machismo*, the notion of the father as a patriarchal and protective figure who provides financial and emotional stability; *marianismo*, the value that women are responsible for maintaining the well-being of their family, and are self-sacrificing and submissive to males; *respeto*, which encompasses obedience to authority, deference, and decorum; *simpatía*, an emphasis on warm and positive interactions; and *familismo*, the concept that both nuclear and extended family are central to and more important than the individual (Andrés-Hyman et al., 2006).

Recent studies have incorporated innovative treatment delivery methods to improve access to and utilization of mental health services in the form of *promotoras* ($n = 3$). These lay health advisors, community health advocates, and/or patient navigators serve as bridges between Latino community members and health care providers to promote mental health care (Tran et al., 2014). *Promotora* studies include unique deep structure changes that focus on practical considerations of treatment dissemination within Latino social networks, including the use of peer support to engage and maintain treatment utilization in Latinos (Green et al., 2012). Beyond the described adaptations, 13 studies allowed for different types of flexibility in therapy appointments for client convenience in the form of childcare, telephone-based therapy, and home visits to increase retention. Generally, the availability of these

accommodations and resources has shown to increase treatment acceptance among Latinos (Dwight-Johnson, Lagomasino, Aisenberg, Hay, 2004).

Of the RCT that incorporated at minimum surface level changes, eight also included deep structure changes. Of these eight RCT, five examined CBT, one IPT, one BA, and one *promotora*-based treatment. Every RCT that included deep changes and 13 of 17 studies (76%) with surface structure changes produced significantly improved outcomes for the active treatment relative to the control. Future studies are warranted to compare whether the type of adaptation (i.e., deep and surface level) is related to therapy outcomes.

Quality of Randomized Controlled Trials and Open-Label Trials

Table 2 shows that 95% of RCT contained at least one risk bias. The majority of RCT (55%, $n = 12$) did not include adequate descriptions of the procedures used to conceal treatment allocation. Other domains of insufficient reporting included specifying whether treatment outcome assessors were masked to participants' treatment assignment ($n = 10$), not describing the randomization procedures ($n = 8$), reporting data specific to Latinos ($n = 8$), and specifying whether methods to assess fidelity/adherence/supervision were utilized ($n = 5$). Other possible sources of bias outside of these rubrics that could have impacted RCT results included: providing therapy that differed in time and/or content across conditions, not accounting for different baseline depression levels for one condition relative to another, and a discrepancy in the quality of depression care between multiple treatment sites. From a close visual inspection of RCT risk bias assessment, trials that did not mask participants' condition from assessors appeared to favor the active treatment relative to the control condition, except in one case (i.e., Foster et al., 2007). Future studies should compare formally the association between RCT risk biases and treatment outcomes.

Table 3 shows that OLT tended to conform to the guidelines provided by Rounsaville and colleagues (2001). The domains that deviated from adequate quality were a lack of description of procedures for training/supervising/monitoring therapists ($n = 4$), and unspecified theoretical mechanisms of change ($n = 3$).

Cognitive Behavioral Therapies

Our literature review indicated that CBT has received the most frequent evaluation in depression treatment studies among Latinos, representing 50% of all evaluations ($n = 18$) that comprised this review. The studies included 11 RCT and 7 open label studies. Of all trials, 72% ($n = 13$) were conducted exclusively in a group format. These RCT contained between zero and six (mean = 2.6) risk biases and between zero and five surface cultural adaptations.

Randomized Controlled Trials

Treatment in Primary Care Settings: A series of studies referred to as Quality Improvement Studies for Depression (QI), which included a large sample of Latinos (31%; $n = 451$), suggested that when CBT is implemented into primary care, clients' opportunities to receive services, quality of care, and depression outcomes improve substantially (Wells et

al., 2001). The authors reported no treatment differences between Latinos and other groups, although specific outcomes were not detailed.

An important RCT that was solely comprised of primary care Latino patients ($N = 199$) showed that Spanish-speaking Latinos who received CBT and a supplemental case management exhibited greater depression reductions and retention relative to a CBT-alone condition ($n = 77$). These findings underscore the importance of language as a moderator of treatment outcomes (Miranda, Azocar et al., 2003). A separate primary care RCT ($N = 118$) demonstrated that after two sessions of CBT-focused psychiatric consultations, Latinos evidenced greater decreases in depression symptoms related to those in a UC condition (Bedoya et al., 2014). Altogether, the studies suggest that brief, low-cost depression interventions delivered in primary care may address depression treatment disparities among Latinos. Implementing treatments in primary care may be particularly beneficial among Latinos given reports that these patients tend to seek treatment from primary care rather than from mental health providers (Wells et al., 2001; Miranda et al., 2005).

Home-Based and Telemental Health Treatment: To address barriers associated with depressed Latinos' treatment access and utilization, researchers have evaluated CBT delivered in clients' homes or via teletherapy through RCT that contained few risk biases. One RCT implemented home-based therapy for women who provided care to elderly relatives with dementia ($N = 184$; 89 Latinas). CBT participants showed greater depression symptom reductions from pre- to post-treatment relative to control participants. Ethnicity did not impact treatment outcomes and Latinos' depression scores decreased significantly in the CBT condition ($t = 3.16$, $p = .003$) (Gallagher-Thompson et al., 2008). Similarly, two telephone-administered CBT interventions showed greater improvements in depression over a follow-up period relative to UC in samples consisting solely of low-income Latinos (Dwight-Johnson et al., 2011; Alegria et al., 2014). Teletherapy and home-delivered CBT appear to reduce treatment access barriers and promote impressive retention rates, ranging from 77% to 89%.

Perinatal Treatment: Two CBT RCT that comprise this review emerge from the perinatal depression treatment literature. One study that favored CBT relative to UC ($N = 41$; 70% Latinas) did not show between-group differences at the end of treatment [$F(3, 33) = .06$, $p = .98$] but at the follow-up; CBT reduced the incidence of MDD (14%) relative to UC (25%), which represented a small effect size (Muñoz et al., 2007). A subsequent trial with high methodological rigor that built upon the RCT conducted by Muñoz and colleagues indicated that CBT was comparable to TAU (Le et al., 2011). The mixed CBT outcomes in treating or preventing perinatal depression may suggest that CBT in its current form may be neglecting crucial aspects of perinatal mental health needs for this group.

Other Studies Consisting of Low-Income Latinos: Low-income individuals face a number of unique challenges when it comes to utilizing mental health treatment, including migratory living situations and hectic work schedules that often affect treatment fidelity and attendance (Levy, 2010). A methodologically rigorous RCT showed that Latinas ($n = 134$; 50%) who were randomized to receive CBT and pharmacotherapy evidenced sustained clinical gains over a one-year period than those who received community referrals (Miranda, Chung et al.,

2003). Contrary to these results, a less rigorous RCT ($N = 91$; 53% Latinas) did not show differences between CBT and an exploratory/supportive group ($p = 0.47$). The researcher concluded that non-specific treatment effects, such as therapeutic alliance, may have been responsible for non-significant results (Foster, 2007). In a more recent, high-quality study, CBT was evaluated in 40 HIV-positive Mexicans in the U.S. border (Simoni et al., 2013); CBT decreased depression and increased medication adherence relative to UC participants. While not a large clinical trial, these results indicate the feasibility and efficacy of adapting CBT interventions to address depression and co-occurring chronic medical conditions in low-income Latinos.

Open-Label Trials—OLT hold great value in providing in-depth client case conceptualizations and/or raising important logistical issues and barriers to the effective implementation of treatment. The first documented study evaluating CBT in a sample that included Latinos (44%; Organista and colleagues, 1994) evidenced significant decreases in depression scores [$t(170) = 9.20, p < 0.001$]. The authors noted, however, that the modest treatment outcomes and high dropout rates (58%) relative to previous CBT trials, could be explained by the sample's low-socioeconomic status, high unemployment rates, and co-occurring serious medical conditions. To contend with these types of issues, OLT have utilized creative ways to increase efficacy, reduce attrition, and integrate values associated with Latinos to build a more culturally responsive depression treatment. An OLT ($N = 15$) conducted an in-depth ethnocultural assessment to inform deep and surface structure adaptations to CBT (Interian, Allen, Gara & Escobar, 2008). There was a 57% reduction of depressive symptoms and a retention rate of 73%. Another OLT ($N = 33$) exemplified how to incorporate culturally sensitive retention strategies (e.g., allowing for flexible appointments, an optional family session) into a CBT protocol (Cardemil, Kim, Pinedo & Miller, 2005), which yielded significant depression reductions. Perhaps one of the most important take-home points from the CBT OLT is that many of these researchers have warned against employing a highly-scripted cultural modification of CBT that assumes uniform cultural values for Latinos, as this population constitute a highly heterogeneous group.

Interpersonal Therapy

Randomized Controlled Trials—Four RCT have evaluated IPT in samples with Latinos. One study ($N = 50$; 66% Latinas) evaluated antepartum IPT against parental education (Spinelli & Endicott 2003) and showed superior depression outcomes and greater recovery rates for IPT (IPT: 60%, control: 15%). However, a subsequent RCT ($N = 142$; 37% Latinas) also led by Spinelli, did not replicate these differences (Spinelli et al., 2013) and concluded that using blind raters of depression improvement in their most recent trial reduced therapist bias, which was possibly present in their previous study. The primary author reported that there were no treatment outcome differences between Latinas and women of other ethnicities. One home-based RCT included only Latinos ($N = 80$) and showed that IPT was more efficacious in reducing depression relative to UC, although individuals in UC also showed significant depression decreases (Beeber et al., 2010). Markowitz and colleagues (1998) corroborated the efficacy of IPT in individuals with MDD and HIV ($N = 101$; 22% Latinas). See "RCT comparing two or more active treatments" section. Together, these RCT suggest that IPT produced better outcomes in a 16-session protocol (e.g., Beeber et al., 2010;

Spinelli & Endicott, 2003; Markowitz et al., 1998) relative to shorter IPT. Furthermore, the favorable IPT results for perinatal depression suggest that the therapy may be particularly fitting in this critical period.

Problem-Solving Therapy

The review identified four PST RCT and two OLT. Every RCT evaluated the intervention within a larger collaborative framework and against UC. Generally, the RCT had few risk biases and reported between one and two surface cultural adaptations.

Randomized Controlled Trials—Dwight-Johnson and colleagues (2005) randomized Latina cancer patients ($N=55$) to receive UC or active treatment. If participants were randomized to active treatment, they had the option of receiving medication or PST for eight weeks, although the medication group was not included in the outcome analyses. At eight months post-baseline, PST participants showed 4.51 times greater response on the PHQ-9 than UC participants. Another multisite study conducted in primary care with older adults ($N=1801$; 138 Latinos), showed that Latinos in the PST condition had greater rates of depression remission, treatment response, and depression symptom reduction relative to those assigned to UC at the 12-month follow-up (Areán et al., 2005). Ell and colleagues (2010; 2008) evaluated PST for depression in two separate studies consisting predominantly of Latinos (88% – 97% Latinos) with cancer or diabetes. In both trials ethnicity did not moderate treatment outcomes and two-year follow-up assessments did not show differences in depression between PST and UC. Combined, the results of these studies underscore the efficacy of PST at the very least within the treatment window and within a larger stepped-care model. In most cases, PST studies had high levels of adherence, which may reflect the appropriateness of collaborative treatment to ensure quality care for Latinos.

Open-Label Trials—Two recent, relatively large OLT ($N=189$ and $N=117$) demonstrated the efficacy of PST among Latinos within community health centers and rural primary care clinics (Camacho et al., 2014; Schmaling & Hernandez, 2008). Contrary to PST RCT, both of these trials showed high attrition rates, with less than 20% of participants completing treatment. These researchers highlighted the role that Latino cultural values (e.g., *familismo*, *simpatía*) may play in non-adherence and recommended evaluating the interventions for cultural sensitivity.

Behavioral Activation

Although cognitive and behavioral therapy components from the full CBT package are considered well-established interventions for the treatment of depression (see Chambless et al., 2001) the independent components have not been widely evaluated in Latinos. This lack of research pursuit is surprising given that the earliest RCT that reported on depression outcomes among Latinos dismantled CBT and evaluated the effect of cognitive therapy, behavioral therapy, and a waitlist control group (Comas-Diaz, 1981). See section on “RCT comparing two or more active treatments.” We identified one BA RCT and two OLT.

Randomized Controlled Trials—Recent work by Kanter and colleagues (2015) supported the efficacy of a culturally-modified BA with deep structure adaptations,

including simplified treatment rationale, inclusion of low-cost and culturally sensitive homework assignments, and consideration of values as they impact activation (e.g. *personalismo*, *marianismo*). The RCT compared BA ($n = 21$) and an unstructured TAU condition, chosen at therapists' discretion ($n = 22$) among monolingual Spanish-speaking Latinos. Participants in BA completed more sessions than those in TAU. Further, in one depression measure ($[F(2, 37.2) = 3.35, p = .046]$) participants who completed more sessions of BA showed greater improvements in depression. However, another measure of depression did not show significant treatment differences.

Open-Label Trials—An OLT of a culturally modified BA served as the basis for the aforementioned BA RCT (Kanter et al., 2015) and showed significant decreases in depressive symptoms post-treatment, which represented a large effect size (Kanter et al., 2010). A separate OLT showed that depressive symptoms decreased while self-reported activity level and perception of environmental reward increased concurrently over time (Collado et al., 2013). Increasing treatment evaluations of BA in RCT designs in Latino samples constitute a next logical step.

Novel Treatments

Schema Therapy

Open-Label Trial: The review did not locate pure cognitive therapy evaluations among Latinos, although a combined motivational interviewing/schema therapy (MIST) received empirical support as a promising treatment for depressed Latinas in an open label trial (Heilemann, Pieters, Kehoe & Yang, 2011). In this treatment ($N = 9$), maladaptive schemas are identified and linked to current problems, while motivational interviewing is utilized to reduce treatment ambivalence and increased adherence. MIST improved and sustained depression and resilience after a one-year period. The investigators emphasized the congruence of MIST with *familismo*.

Structural Ecosystems Therapy

Randomized Controlled Trials: The goal of structural ecosystems therapy (SET) is to create adaptive patterns of family interaction that reduce depression symptoms and stress (Eisdorfer et al., 2003). Caregivers of individuals with Alzheimer's disease ($N=225$; 114 Latinos) received telephone support, SET, or SET with a computer-telephone integrated system (SET-CTIS) that enhanced therapist accessibility and other resources. Latinos receiving SET-CTIS maintained significant improvements in depression. Depressive symptoms among Latinos in other conditions worsened, with the exception of Latinas in SET. As strengths, the authors highlighted the provision of active intervention for the control group, sustained improvements over 18 months, and CTIS's cost-effectiveness in being feasibly implemented for an extended period of time.

Promotora-based Treatment

Promotora studies stem from a concerted effort to develop community-based interventions for Latinos that intrinsically incorporate and build upon culturally sensitive methods of treatment delivery. In these studies, *promotoras*, or lay health workers, were trained by

mental health specialists to de-stigmatize mental health care and build social networks through which individuals seek out treatment. This is in contrast to traditional clinical trials that modify existing treatments and/or depend on external study clinicians who leave varying research footprints in populations of interest (Tran et al., 2014).

Open-Label Trials—To date, three OLT have evaluated the use of *promotoras* as a means to disseminate mental health care and have produced mixed findings. In one study ($N = 60$) *promotoras* provided peer support, CBT tools, coping techniques, and psychoeducation in the U.S. border with Mexico (Edelblute et al., 2013). Neither depression nor perceived social support changed over the five-week period. The authors posited that the intervention was in an early stage of development and that an extended version of the treatment could have had yielded significant outcomes. Two studies however, have found that a *promotora*-led intervention reduced depressive symptoms (Tran et al., 2014; Hovey, Hurtado & Seligman, 2014). In theory, *promotora*-based interventions offer great potential in breaking down cultural barriers that inhibit treatment utilization in Latinos. However, the retention rates for these trials have been low. Future clinical treatment research on *promotoras* will benefit from a greater degree of quality control and methodological rigor.

Randomized Controlled Trials Comparing Two or More Active Treatments

There are limited RCT ($N=2$) comparing active treatments among Latinos. In one of these studies, individuals with MDD and HIV received IPT, CBT, supportive psychotherapy, or supportive psychotherapy with Imipramine (Markowitz, 1998). Generally, participants improved compared to baseline depression scores, although those in IPT ($M = 10.6$; $SD = 9.1$) and supportive therapy with Imipramine ($M = 11.8$; $SD = 8.8$) had significantly lower depression scores than those in CBT ($M = 17.1$; $SD = 10.1$) and supportive therapy ($M = 15.5$; $SD = 8.9$). Condition by ethnicity/race analyses indicated that Latinos and non-Latino White Americans fared comparably in depression outcomes (Markowitz, 2000).

A second study (Comas-Diaz, 1981) compared group cognitive therapy, behavioral therapy, and waitlist control among depressed Puerto Rican women ($N = 26$). There was a 64% and 51% mean reduction of depressive symptoms for those assigned to cognitive therapy and behavioral therapy, respectively, and both were superior to the waitlist control. Nonetheless, at a 5-week follow-up, treatment gains were reduced for those in cognitive therapy, but maintained for participants in behavioral therapy. The authors posited that behavioral therapy might be compatible for this population because scheduling rewarding activities empowered participants to perceive greater control over marginalizing experiences that this population often confronts.

Discussion

In an era that emphasizes equal mental health care across individuals, the past decade and a half has witnessed a proliferation in treatment studies designed to bridge the gap between the need for and availability of depression interventions in this population. In fact, published research since the year 2000 accounts for 89% of all studies comprised within this review. Therefore, systematically reviewing and critically examining the current state of the treatment literature is a timely endeavor given health care reform priorities of improving

client outcomes in underserved communities (Andrulis et al., 2010). Within this framework, the goal of the review was to synthesize clinical research on depression psychotherapies and identify those that are garnering strong support for use with Latinos. Additionally, we rated the quality of the clinical trials and evaluated the extent of cultural adaptations that were made. In subsequent sections, we will comment on the limitations and future directions of the extant literature in this population, and summarize the clinical implications of the findings.

The review identified a total of 36 depression treatment studies that differed in design and degree of methodological rigor. In 7 of 8 RCT (88%) CBT showed better depression outcomes in at least on measure of symptom improvement when compared to UC or to minimal treatment. However, CBT did not outperform contact-time matched control conditions or active treatments (e.g., Markowitz et al., 2000; Foster, 2007; Comas-Diaz, 1981; Miranda, Chung et al., 2003). Of the four available RCT on IPT, three showed that the intervention was more efficacious when compared to a control group or another treatment and one showed no differences relative to a control condition. Currently, PST has only been compared to UC and has shown to be superior in three of four cases.

Limitations of the Studies Reviewed

Some overarching challenges in ascertaining the efficacy of depression interventions in Latinos are not limited to the field of clinical research with this population and are primarily rooted on a lack of standardization of study design and methodology. For example, only 31% of the studies recruited individuals with MDD, 47% recruited individuals with elevated depressive symptoms, and the rest focused on probable depression or depression risk. The variability in the samples' initial severity and duration of depressive symptoms could have affected treatment response and recurrence of MDD and/or depressive symptoms (e.g., Hamilton & Dobson, 2002). Furthermore, RCT that used more than one assessment tool to track depression outcomes demonstrated mixed findings (e.g. Muñoz et al., 2007; Simoni et al., 2013; Kanter et al., 2015). This mirrors findings that agreement between depression measures is low at recommended screening cut-off scores (Hansson, Chotai, Nordstrom & Budlund, 2009) and in categorizing depression severity (Titov et al., 2011). Some studies suggest that even the most commonly used scales (i.e. *BDI*, *HRSD*) can differ significantly in effect sizes across treatment studies (Hawley et al., 2013; Zimmerman, Posternack & Chelminski, 2005). One reason for these discrepant findings could be that the measures used in these studies may not be culturally appropriate. For example, the *CES-D* is a widely-used measure that was utilized in 9 studies (five RCT), yet psychometric evaluations of the scale suggest that it may not measure the same construct in Latino men relative to women (Posner, Stewart, Marín & Pérez, 2001) and that it may not address cultural and language gaps in the assessment of depressive symptoms (Rivera-Medina et al., 2010). Notably, three of the five RCT that used the *CES-D* found non-significant depression outcomes between the active intervention and the control condition; in two of these cases, the *CES-D* differed with another assessment (e.g., *BDI*, *HRSD*). These results underscore the importance of using psychometrically-validated, culturally sensitive measures to assess depressive symptoms among Latinos in addition to clinician-rated assessments administered by assessors blind to participants' condition to promote greater objectivity (e.g., Spinelli et al., 2013).

While variability across studies is expected and may make comparisons of outcomes challenging, a greater threat to the literature is the substantial variability in the rigor of RCT. There is a dearth of communication regarding key aspects of depression clinical trials with Latinos. Clarification regarding outcome assessment blinding, formal assessments of therapist adherence and treatment fidelity, randomization procedures, and allocation concealment procedures will yield a necessary data that may help compare different studies and disentangle treatment effects. In fact, our observation that RCT that failed to conceal the condition to which participants were allocated tended to favor the active treatment is consistent with another meta-analysis that found that double-blinded trials produce smaller treatment effects relative to single-blind or unblinded trials (Schulz, Chalmers, Hays, & Altman, 1995). This probable pattern of biases could impede reaching accurate and firm conclusions about the efficacy of depression psychotherapies among Latinos and should be examined further in future studies.

An additional limitation of the studies reviewed is that five RCT were removed from the systematic review because they did not conform to study selection criterion 2 even though most of these trials had arguably sufficient statistical power to examine ethnicity as a moderator of treatment outcome. Of those studies that exclusively included Latinos, only one (e.g., Le et al., 2011) showed no differences between the active compared to the control condition; this may suggest the presence of publication bias, which only a meta-analytic review could assess. A limitation of the current review is that it comprised 36 total studies, of which only 22 were RCT, limiting the extent to which clear conclusions can be reached about the status of these depression psychotherapies as empirically-supported among Latinos. As clinical treatment research in this area continues to increase, there will be greater opportunities to address some of the limitations of the current review and the state of the literature, more broadly.

Beyond the types of therapy used to treat depressed Latinos, it is also important to note the considerable heterogeneity in the number and type of adaptations included in the reviewed trials, a feature of Latino depression treatments that has also been observed elsewhere (e.g., Smith, Domenech-Rodriguez, & Bernal, 2010). Studies incorporated between zero and six cultural adaptations, often a mix of deep and surface structure changes, from a diverse pool of 18 unique types of surface structure changes (e.g. material translated into Spanish, therapist of color, transportation, childcare) and nine unique types of deep structure changes (e.g. piloting of adapted therapy, inclusion of appropriate cultural metaphors and values). While these varied types of adaptations are impressive in their breadth, the field may also benefit from comparisons between unmodified depression treatments and a few standardized cultural modifications (Cardemil, Moreno, & Sanchez, 2011; Castro, Barrera, & Steiker, 2010). Such comparisons would be beneficial in corroborating the use of specific types of modifications, particularly when studied in aggregate trials, as well as in elucidating potential mechanisms through which such cultural modifications act in reducing depression among specific populations (Kalibatseva & Leong, 2014). For instance, understanding the importance of and allegiance to values such as *machismo*, *marianismo*, and *familismo* may provide a level of salience for the therapeutic concept of *maladaptive cognitions*, which in turn may lead to deeper engagement in treatment (Cardemil & Sarmiento, 2009). One additional benefit of modified and unmodified treatment comparisons is the ability to

explore the most suitable modifications for specific therapies; it is possible that the most efficacious, adapted therapies require unique profiles of surface and/or deep adaptation. For instance, principles of PST associated with engaging in recovery and tackling one's problems may be closely aligned with relevant issues for particularly marginalized Latino populations, for whom a sense of control over one's life is deemed critical to treating depression within a context of poverty, chronic medical conditions, and/or immigration (Comas-Díaz, 1981). IPT may be especially palatable for Latinos for whom *familismo* and social structure is closely tied to their depression. There is increasing evidence that cultural contexts dictate individuals' conceptions of depression across different populations (Bernal & Reyes, 2008; Cardemil, Moreno, & Sanchez, 2011). Additionally, therapies like IPT and PST may therefore require greater surface and fewer deep structure adaptations because of the inherent consistency of therapeutic principles with Latinos' framing and experiences of depression (Markowitz et al., 2009). Additional risk-controlled RCT are necessary to assess the benefits associated with surface and deep structure adaptations across therapeutic interventions. Nonetheless, it is worthwhile to note that all studies with deep adaptations and relatively few biases produced positive outcomes for Latinos with depression symptoms.

Finally, the myriad control conditions across RCT could account for some of the mixed findings observed in this review. For example, control conditions ranged from referrals (e.g., Muñoz et al., 2007) to more active conditions such as supportive group therapy, or therapies selected by clinicians (e.g., Foster, 2007; Kanter et al., 2015). Notably, usual care (UC) has been the most common control condition in perinatal investigations, which may be a more active form of treatment than initially conceptualized. In fact, research suggests that Latinas who are recent mothers tend to utilize multiple sources of mental health and perinatal services when they seek treatment, which is evinced in treatment studies that measured such service utilization (Le et al., 2011). Of the four perinatal interventions reviewed, three showed that UC participants significantly improved their depression symptoms. These findings are consistent with a meta-analysis of psychosocial treatment for postpartum depression (Cuijpers, Brännmärk & van Straten, 2008), which demonstrated that waiting list control groups had a larger mean effect size than studies with a UC control group. Furthermore, the mixed findings of CBT relative to UC in two RCT is consistent with qualitative research (O'Mahen et al., 2012) that reported CBT content should include methods to manage interpersonal relationships and conflict as well as address internalized cognitions surrounding self-sacrifice (which are consistent with the value of *marianismo* among Latinos).

Current State of the Literature and Future Directions

Despite the aforementioned challenges, psychosocial treatments for depression among Latinos show promising results. While it has not undergone deep structure adaptations, PST has shown generally positive outcomes and has been exclusively conducted as part of a collaborative care framework. Because of these specific contexts of PST delivery, it would be difficult to isolate the mechanisms through which the treatment operates and compare its outcomes to those of other psychotherapies. Yet given these limitations and the high levels of comorbid medical conditions and depression in its samples, PST has shown positive depression improvements. Future research is warranted to examine PST as a standalone

treatment for depressive disorders. Such evaluations would benefit from comparing PST to an active or *bona fide* treatment.

IPT has also shown to be more efficacious than control conditions in three studies. Overall, the current IPT literature merits extensions as a result of the positive outcomes in improving depression as well as the high retention rates across studies (63% to 87%). An important next step is to understand the factors that underlie and strengthen IPT outcomes. One reason for the positive results may be IPT's focus on interpersonal problem areas, such as role transitions and interpersonal disputes that may be characteristic of the perinatal period (Stuart & O'Hara, 1995), a primary concern that has been specifically raised by Latina mothers (O'Mahen et al., 2012). The positive results of IPT among Latinas in the perinatal period lie in contrast to those of CBT and are consistent with a meta-analysis that showed superiority of IPT to CBT for the treatment of perinatal depression (Sockol, Epperson & Barber, 2011). Two additional studies that recruited a large portion of Latinos but did not meet selection criteria for this systematic review also suggested that CBT was not superior to UC (Urizar & Muñoz, 2011; McKee et al., 2006) supporting the notion that CBT in its current form may not be equipped to respond to the needs of depressed women in the perinatal period. Overall, research has favored IPT when compared to control conditions and ongoing research is needed to evaluate IPT against other empirically supported treatments among Latinos.

The current review also underscored the potential of other psychotherapies that have undergone less evaluation. For example, support for BA was afforded by a RCT and two OLT. The next logical step would be to test BA against a specified control condition. MIST (Heilemann et al., 2011) and SET-C (Eisdorfer et al., 2003) have been argued to be cultural congruent with *familismo* in their aim to identify and correct dysfunctional familial patterns. These therapies will benefit from future RCT investigations.

Although the rationale behind *promotora*-assisted trials appears ideal for implementation among depressed Latinos, the current review suggests that the design of trials evaluating *promotora*-based interventions need to be refined and tested more rigorously. These studies should include larger samples, treatment fidelity/supervision, longer follow-up periods, and control groups. Nonetheless, the ongoing and novel work on *promotora*-assisted interventions are encouraging; as *promotoras* are inherently embedded within social networks and understand their community's health needs and cultural values, there is great potential in improving client access to care, reducing mental health stigma, and promoting trust with medical providers and therapists (Tran et al., 2014). In a recent CBT trial for anxiety, lay, bachelor-level providers were able to deliver effective treatment relative to Ph.D. level expert providers under supervision of a licensed provider (Stanley et al., 2014), suggesting the possibility of implementing *promotoras* alongside treatments that are gaining a strong empirical base in this population, such as PST and IPT.

Even though depression reductions are reasonably the primary outcome considered when determining an intervention's success, clinical research among Latinos should also attend to treatment adherence. Attrition rates across all investigations ranged from 0 to 64% for CBT, 13 to 30% for IPT, 14 to 56% for PST, 20 to 48% for BA, 11% MIST. Attrition rates were

not reported for SET. These percentages suggest that treatment utilization and adherence continue to be problematic. Low retention is particularly concerning given that there is a treatment-dose effect on depression reduction (e.g., Kanter et al., 2015; Schmaling & Fernandez, 2008). While cultural accommodations have been implemented in revising the content of therapy (See Table 1) those that modified the structure of therapy to provide in-home therapy or teletherapy have offered most promise in overcoming attrition (e.g., Dwight-Johnson et al., 2011; Gallagher-Thompson et al., 2008; Beeber et al., 2008; Alegria et al., 2014).

Although a limited research area, trials that have utilized technology have shown its promise in promoting medication adherence (e.g., Simoni et al., 2013), aiding retention, and improving depression outcomes among Latinos (e.g., Eisdorfer et al., 2003). Overall, these platforms may ease some of the mental health treatment disparities burden and improve functioning. Future treatment research with Latinos would be greatly enhanced by including qualitative assessments administered at regular intervals on treatment satisfaction, treatment preferences, and perceptions of improvement. These assessments could inform how and if these processes change over time and affect treatment engagement.

This review also highlighted specific domains that need to be considered prior to designing future psychotherapy outcome research among Latinos. First, the studies reviewed have not examined whether proposed mechanisms of treatment change over the course of treatment, with a few exceptions mostly coming from OLT (e.g., Edelblute et al., 2014; Tran et al., 2014; Collado et al., 2014) and few RCT studies (i.e., Beeber et al., 2010). Research is warranted to identify specific intervention elements that contribute to positive client outcomes in addition to more common, non-specific factors, such as therapeutic alliance. Second, for good quality treatment research to move forward in this population, control conditions should be able to account for important non-specific influences of treatment, including rapport, expectation of improvement, and sympathetic attention (Seligman, 1995). In Latino populations that have historically faced significant treatment barriers and have significant and immediate mental health care needs, TAU or UC primarily consisting of referrals may not serve as appropriate control conditions. Third, a more thorough examination of treatment moderators relevant to Latinos may afford clarity to some of the inconsistent results surrounding treatment efficacy in this population. Miranda and colleagues' research (2003) underscored the need to examine treatment moderators; in this trial, Spanish-speaking participants evidenced greater depression reductions and adherence to CBT when this intervention was paired with supplemental case management. Measuring variables such as acculturation, perceived stigma, and Spanish-language preference (Kalibatseva & Leong, 2014; Griner & Smith, 2006) would assist in this endeavor. Examining putative treatment moderators is also necessary because the literature among Latinos commonly emphasizes the importance of values such as *familismo* and *marianismo* in dictating treatment engagement and response, yet no formal research has examined their impact. Finally, Latinos represent over 20 countries and as a result of this heterogeneity, it is important that samples note Latinos' country of origin. Even though individual differences should not be disregarded, Latino subgroups share certain historical, political and sociodemographic aspects that could affect mental health treatment and outcomes. Civil war and high levels of violent social conflict have plagued certain Central American countries

for over three decades. Mexican Americans and Puerto Ricans may be at a mental health disadvantage with respect to low educational economic resources relative to Cuban Americans (e.g., Stacciarini et al., 2007). Immigration policies differ significantly across Latino subgroups; while Puerto Ricans have U.S. citizenship and Cubans benefit from specific legislation designed to facilitate their transition to the U.S., nationals of other Latin American countries face substantial immigration barriers. While far from perfect, country of origin represents an important proxy that may help better conceptualize our clients' depression etiologies, comorbidities, trajectories, and treatment outcomes.

Clinical Implications

Although the studies that comprise this review were heterogeneous in terms of design, methodological rigor, sample characteristics, and depressive symptom measures, there are numerous findings that could inform therapeutic choices. The findings suggest that a 16-session IPT protocol may be better suited to meet the mental health needs of women in the perinatal period. Additionally, home- and telephone-delivered treatments appear optimal in increasing treatment access, reducing treatment attrition, and relieving depression. The extant investigations in treatment delivery have focused solely on CBT; it is expected that other psychotherapies, including PST, BA, and IPT may also be amenable to be delivered in-home or over the telephone. As others have noted, when such modalities of treatment delivery are not possible, implementation of treatment in primary care settings may be beneficial for treatment accessibility, as Latino patients tend to seek mental health services from primary care rather than from mental health providers (Miranda et al., 2005; Wells et al., 2001). Use of culturally validated and/or multiple depression assessment instruments during treatment is also encouraged due to low sensitivity of some depression scales for Latinos. Finally, the findings suggest that psychotherapies that have undergone deep cultural adaptations and individual therapies are likely preferable relative to nonadapted and group treatment, respectively, although these findings warrant additional investigation.

Conclusions

Overall, there has been a steady growth of treatment research dedicated to assessing depression outcomes and developing culturally appropriate therapies for Latino populations. The majority of this research is dedicated to CBT, however, several therapies, such as IPT and PST are accruing a strong evidence-base among Latinos that should continue to grow. Extant RCT showed wide variation in risk biases, which could have contributed to the mixed treatment outcomes, specifically for CBT. The increase of studies that implemented deep and surface cultural adaptations is encouraging, and future comparisons of adapted and unmodified depression treatments may provide valuable insight into mechanisms through which specific adaptations affect depression outcomes. As high-quality depression treatment literature among Latinos continues to increase, research should focus on elucidating moderators and mechanisms of change, as well as predictors of treatment retention. Latinos represent the largest ethnic minority population in the U.S. with 54 million people (Pew Research Center, 2015) and the cultural heterogeneity of this population will continue to expand. Therefore, it is necessary to identify a variety of empirically supported interventions for depression to address the diverse needs of the Latino population.

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Highlights

- Historically, depressed U.S. Latinos have experienced treatment disparities.
- The review summarizes 35 studies that reported depression outcomes among Latinos.
- There is growing support for PST; CBT data appear mixed.
- RCT quality and number/type of cultural adaptations showed heterogeneity.
- Limitations and future directions of the literature are discussed.

Figure 1.
Flowchart of studies included in the systematic review

Table 1

Characteristics of depression treatment studies among Latinos included in the systematic review

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
Cognitive Behavioral Therapy (CBT)								
Randomized Controlled Trials								
Alegria et al., 2014	1 Community clinic 2 Telephone counseling	1 Individual CBT + Care Management (ECLA-F) - 6-8 wks 2 Individual CBT + Care Management- telephone (ECLA-T) - 6-8 wks 3 UC	1	Therapy available in Spanish*	ITT PHQ-9/ECLA-T = ECLA-F > UC	Overall: 88% ECLA-T: 89% ECLA-F: 79% UC: 96%	4 mths PT	Puerto Rico and others
			2	Therapists of color				
			3	Therapeutic use of values associated with Latinos *				
			4	Telephone therapy (setting 2)				
Dwight-Johnson et al., 2011	1 Telephone 2 Primary Care	1 Telephone CBT: 8 wks 2 UC: medication/referral	1	Telephone-based	Completers 6 wks SCL: CBT = UC PHQ-9: CBT= UC 3 mths SCL: CBT = UC PHQ-9: CBT = UC 6 mths SCL: CBT = UC PHQ-9: CBT > UC	6 mths: CBT: 84%; UC: 70%	6 mths PB	Mexico
			2	Therapy available in Spanish *				
			3	Vignettes matched Latino names/situations *				
			4	Therapeutic use of values associated with Latinos *				
			5	Flexible scheduling				
Foster, 2007	1 Residential shelter for homeless women 2 Municipal outpatient psychiatric clinic for Spanish-speaking patients	1 Group CBT-16wks 2 Group Exploratory/supportive(SG)	1	Therapy in Spanish at setting #2	BDI/CBT=SG CES-D: CBT = SG No treatment outcome differences between setting 1 and 2	NR	4 mths PB	NR
			2	Therapists of color				

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
Gallagher-Thompson et al., 2008	1 Home-based 2 Telephone	1 Group, home-based CBT: 13–16 wks, 2 hrs	1 Therapy available in Spanish	and sociopathic personality. N = 184 women (89 Latinas, 48%); Caregivers for relatives with dementia: >21 years old; CES-D scores: 14–16; no cognitive impairment; Cushing's or Addison's disease, or terminally illness.	CES-D: CBT > Phone Support Ethnicity did not moderate findings	Overall: 85% CBT: 86% Telephone: 84%	6 mths PB	NR
		2 Empathic phone support (caregiving discussions)-15–20 min/2wks/4mths	2 Home-based treatment					
Le, Perry & Stuart 2011	1 Community health center	1 Group CBT: 8 wks, 2 hrs + 3 booster sessions	1 Modifications based on focus groups assessing the needs of Central American families *	N = 217 Latinas; 18–35 year-old mothers; mean CES-D score: 16; > 24 weeks gestation; no MDD, substance use, psychosis, serious medical condition, or psychosocial problems (e.g., homelessness).	ITT BDI: CBT = TAU MDE Incidence: CBT = TAU	CBT: 88% completed 1 session 1 year PP: CBT: 69%; TAU: 70%	12 months PP	El Salvador, Honduras, Guatemala, Mexico
	2 Hospital clinic	2 TAU	2 Therapy available in Spanish *					
			3 Therapists of color					
Miranda, Azocar et al., 2003	San Francisco General Hospital Depression clinic	1 Group CBT:12 wks + 6 mths case management (CM; e.g., telephone outreach)	1 Therapists of color	N = 199 Latinos; MDD diagnosis; 77 (39%) indicated Spanish was their first language; low-income; no psychotic disorders, current substance abuse.	ITT BDI - Spanish-speaking clients (SS)/CBT+ CM > CBT alone BDI - English-speaking clients (ES): CBT + CM = CBT alone	SS: CBT: 60; CBT +CM: 83% ES CBT: 56; CBT +CM: 72%	6 mths PB	Mexico, El Salvador, Nicaragua, Puerto Rico, Cuba, Guatemala
		2 Group CBT only	2 Therapy available in Spanish					
			3 Therapeutic use of values associated with Latinos					
Miranda, Chung et al., 2003	County clinics	1 Individual or group CBT: 8–16- sessions	1 Individual or group CBT	N = 267 women (134 Latinas, 50%); MDD diagnosis; no comorbid disorders. Low-income, mostly uninsured.	ITT HRSD: Medication > CBT; Medication > CR; CBT > CR Results controlled for ethnicity	CR: 83% attended 0 sessions Medication: 75% received 9 wks; 45% received 24 wks CBT: 53% received >4 sessions; 36% received >6 sessions	6 mths PB	NR
		2 Medication 6 mths	2 Home-based sessions available					
		3 Community referral (CR)	3 Childcare					
			4 Transportation funds					

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
5 Psychoeducation about treatment								
Miranda, Duan et al., 2003	Primary Care	1 <i>Quality Improvement</i> (QI): medication + individual/group CBT, 8–12 sessions 2 <i>Usual Care</i> (UC)	1 Therapists of color	N = 1356 (451 Latinos, 33%); Adults with probable depression; >17 years old; insurance or public-pay arrangement for intervention; no acute medical emergencies.	<i>ITT</i> <i>CIDI</i> : CBT > UC Ethnicity did not moderate findings	83% at 6 and 12 mths PB	12 mths PB	NR
			2 Therapy available in Spanish					
			3 Therapeutic use of values associated with Latinos					
			4 Flexibility of choosing group/ individual therapy					
Muñoz et al., 2007	Hospital of prenatal care	1 Group CBT: 12wks + 4 booster sessions	1 Therapy available in Spanish *	N = 41 pregnant women; 70% Spanish-speaking past history of MDD or current depression symptoms (>15 CES-D) pregnant (12–32 wks); >18 years old; no MDD, no major medical or substance abuse problems.	1, 3, 6, and 12 month <i>PP</i> : <i>CES-D</i> : CBT = UC <i>MDE Incidence</i> : CBT > UC	12 mths PP	12 mths PP	Mexico, Central America
		2 UC and referrals upon request	2 Therapeutic use of values associated with Latinos *					
		3 Booster sessions	3					
Simoni et al., 2013	Community clinic - U.S.-Mexico border	1 <i>Individual CBT</i> (CBT-AD): Cultural exploration, depression/HIV education, 4 mths + 2 booster sessions PT + Pillbox reminder intervention	1 Therapy available in Spanish *	N = 40 Mexican women; HIV- positive; prescribed antiretroviral regimen; sub- optimally adherence to treatment; BDI > 9; no substance use, psychosis, or residentially unstable.	<i>ITT</i> <i>6 mths PB</i> <i>BDI</i> : CBT-AD > UC <i>MADRS</i> : CBT-AD = UC <i>9 mths PB</i> <i>BDI</i> : CBT-AD > UC <i>MADRS</i> : CBT-AD = UC	<i>6 mths PB</i> <i>CBT-AD</i> : 85% <i>UC</i> : 85% <i>9 mths</i> <i>PB</i> <i>CBT-AD</i> : 80% <i>UC</i> : 85%	9 mths PB	Mexico
		2 <i>Usual Care</i> (UC): Time-matched care at clinic/referrals	2 Therapeutic use of values associated with Latinos *					
		3 Therapists of color	3					
Open-Label Trials								
Organista, Munoz & González, 1994	Depression clinic	Group/individual/combination CBT: 12 sessions	1 Therapy available in Spanish.	N = 175 (78 Latino, 44.4%); low-income, MDD; no psychosis or Axis	<i>ITT</i> + <i>Completers</i> <i>BDI</i> : Posttreatment > Pretreatment No differences between Latinos and	42%	None	NR

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
Cardemil, Kim, Pinedo & Miller, 2005	University psychology department	<i>Group CBT-based treatment</i> : 6 sessions, 90min + 2 family sessions.	1	Therapy available in Spanish	individuals from current alcohol or other substance abuse.	100% attended 1 session, 73% attended 4, Family sessions: 52% attended 1 session; 15% attended both	None	Puerto Rico, Dominican Republic
			2	Topics relevant to low-income Latina mothers *				
			3	Transportation				
			4	Flexible appointments				
			5	Therapists' self-disclosure of cultural background *				
			6	Therapeutic use of values associated with Latinos *				
Hovey, Hurrado, & Seligman, 2014	Community church	1 <i>Group Promotora and clinician-led CBT (PCBT)</i> : 6 sessions	1	Therapy available in Spanish	<i>N</i> = 33 Latina mothers, low-income; mean <i>BDI</i> = 14.4.	<i>Completers BDI</i> /Posttreatment > Pretreatment	6 mths PT	Mexico
			2	Promotora of color *				
			3	Transportation provided				
			4	Therapeutic use of values associated with Latinos *				
González, Muñoz, Pérez-Arce, & Batki, 1993	Methadone maintenance clinic	1 <i>Group CBT</i> : 6 sessions, 2 hrs	1	Therapy available in Spanish	<i>N</i> = 11; Spanish-speaking clients in methadone maintenance.	<i>CES-D</i> : Posttreatment > Pretreatment	None	Mexico, Puerto Rico, Nicaragua
			1	Therapy available in Spanish *				
Interian, Allen, Gara & Escobar, 2008	Primary care	<i>Individual CBT</i> : 12 sessions, 1 hr	1	Therapy available in Spanish *	<i>N</i> = 15; MDD; 18–65 years old; no concurrent psychotherapy, diagnosis of bipolar or psychotic illness, active substance abuse, significant suicidal risk, or	<i>ITT + Completers Posttreatment BDI</i> : Posttreatment > Pretreatment	6 mths PT	Mexico, Caribbean, Central America, South America
			2	Ethnocultural assessment of each member *				
			3	Therapeutic use of values associated with Latinos *				

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin					
Nance, 2012	Outpatient family Medicine Clinic	1	Group CBT: 8 wks, 2 hrs.	unstable medical condition. N = 41 older adults with dysrhythmia	PHQ: Posttreatment > Pretreatment No formal analyses conducted. PHQ-9 means lower at posttreatment relative to pretreatment	NR	None	NR					
Piedra & Byoun, 2012	University Setting	1	Group CBT (Vida Alegre): 10 sessions, 1 hr	N = 19; Spanish-speaking mothers, 21 years old, recruited from health and social service agencies; current or previous history of depression; not currently suicidal, homicidal, psychotic, or substance abusing.	Posttreatment CES-D: Posttreatment > Pretreatment 3-mths FU CES-D: Posttreatment > Pretreatment	58%	3 mths	Mexico, Guatemala, US					
Interpersonal Therapy (IPT)													
Randomized Controlled Trials													
Beeber et al., 2010	Home-based	1	Individual, home-based IPT: 5 mths	N = 80 Latina mothers, low-income, LEP, enrolled in a federal child enrichment program, > 15 years old, CES-D > 16; no concurrent psychotherapy, substance abuse counseling, or	Completers CES-D: IPT > UC	IPT: 87% UC: 90%	1 mth PT	Mexico					
									2	UC (federal child enrichment program).	Interpreters available*	Therapist and nurse training for sensitization to Latino cultural practices*	Home-based therapy

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin	
Spinelli & Endicott, 2003	Outpatient Clinic			psychotropic medication. <i>N</i> = 50 women (25 of 38 Latinas, 66%); Pregnant (6–36 weeks), MDD, HRSD 12, 18–45 years old; no substance abuse, suicidal risk, comorbid axis I disorders, serious medical conditions, or antidepressant use.	<i>ITT</i> <i>HRSD</i> : IPT > Parenting Education <i>BDI</i> : IPT > Parenting Education Author reported no differences between Latinas and non-Latinas	<i>Overall</i> : 76% <i>IPT</i> : 84% <i>Education</i> : 68%	None	Dominican Republic	
		1	Individual IPT: 16 sessions	1	Therapy available in Spanish				
		2	Parenting education: 16 sessions	2	Telephone sessions				
Spinelli et al., 2013	Outpatient Clinic			<i>N</i> = 142 women (53, 37% Latinas, Pregnant 12–33 wks, MDD, 18–45 years old; No substance abuse within 6 mths, suicidal risk, psychosis, or psychotropic medication.	<i>ITT</i> <i>HRSD</i> : IPT = Parenting Education CGI: IPT = Parenting Education EPDS: IPT = Parenting Education Author reported no differences between Latinas and non-Latinas	<i>Overall</i> : 63% <i>IPT</i> : 70.4% <i>Education</i> : 55.7%	None	NR	
		1	Individual IPT: 12 sessions	1	Therapy available in Spanish				
		2	Parenting education: 12 sessions	2	Compensation for participant expenses related to treatment				
Problem Solving Therapy (PST)									
Randomized Controlled Trials									
Areán et al., 2005	Primary Care, multisite	1	Collaborative Care: psychoeducation video, depression monitoring, individual PST; unclear duration	1	Materials included references of elderly Latino individuals	<i>ITT</i> <i>HSCL-20 Remission</i> 3-mths: PST > UC 6-mths: PST = UC 12-mths: PST > UC Results for Latinas	Overall: 86% for Latinas at 12-month follow-up	12 months (unclear whether PT or PB)	Predominantly Mexico
		2	UC: treatment with primary care or nothing						
Dwight-Johnson et al., 2005	Public community clinics	1	Collaborative Care with individual PST: 8 wks + initial assessment and education.	1	Therapy available in Spanish	<i>N</i> = 55 low-income Latina breast or cervical cancer patients (diagnosed >3 mths ago) with MDD or dysthymia. Excluded if: palliative care,			
		2	Medication: 8 wks + meetings with oncologist and cancer/depression specialist	2	Family members could be included in treatment	<i>ITT (8 months)</i> <i>PHQ-9 (50% reduction)</i> : PST > UC	<i>PST</i> : 89% <i>UC</i> : 70%	4, 8 mths PB	NR
		3	Usual Care						

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin	
Ell et al., 2010	Public community clinics	1	Group PST: 8–12 sessions + 12 mths of voluntary support group + optional antidepressant	1	Therapy available in Spanish	<i>ITT</i> <i>SCL-20</i> : PST > EUC <i>PHQ-9</i> : PST > EUC Ethnicity did not moderate findings <i>PST</i> : 6 mths: 78.2% 12 mths: 73.6% 18 mths: 74.6% <i>EUC</i> : 6 mths: 79.4% 12 mths: 71.6% 18 mths: 70.6%	6, 12, 18- mths PB	NR	
		2	<i>EUC</i> : clinic care + depression pamphlets + resource list + optional antidepressant	2	Topics relevant to immigrant difficulties incorporated into treatment.				
		1		1					
		2		2					
Ell et al., 2008	Public community clinics	1	Group PST: 6–12 sessions + 12 mths of relapse prevention	1	Therapy available in Spanish	<i>ITT</i> <i>6 months</i> <i>PHQ-9</i> : PST = EUC <i>12 months</i> <i>PHQ-9</i> : PST > EUC <i>18 months</i> <i>PHQ-9</i> : PST = EUD <i>24 months</i> <i>PHQ-9</i> : PST = EUC Ethnicity did not moderate findings	44% (22% deceased)	12 mths PT	Mexico, El Salvador, Guatemala
		2	<i>EUC</i> : clinic care + depression pamphlets + resource list	2	Telephone sessions				
		1		1					
		2		2					
Open-Label Trials									
Camacho et al., 2014	Public community clinics	1	Individual IPT: unspecified number of sessions	1	Therapy available in Spanish	<i>Completers</i> <i>PHQ-9 (50% reduction)</i> : Posttreatment > Pretreatment	41% completed 4 sessions, 19% completed 7 sessions	6 mths PB	Mexico
		2	Therapeutic use of values commonly associated with Latinos	2					
Schmaling & Fernandez, 2008	Rural primary care clinics	1	Individual PST: 8 sessions	1	Bilingual therapists	HSCL-20: Post-treatment > Pre-treatment for those who completed 4 sessions.	Mean of 1.86 sessions completed. <i>n</i> =17 completed treatment	3 mths PB	Mexico
		2		2	Bicultural staff				

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
disorder not otherwise specified								
Behavioral Activation (BA)								
Randomized Controlled Trials								
Kanter et al., 2015	Community mental health clinic	1	Individual BA: 12 sessions	Therapy in Spanish	ITT BDI: BA = TAU HRSD: BA > TAU	BA: 52% TAU: 18%	NA	Mainly Mexico and Puerto Rico
		2	Individual TAU: depression treatment picked by therapists					
Open-Label Trials								
Collado et al., 2014	Community sample	Individual BA:10 sessions, 60 min	1	Therapy in Spanish	ITT sample Posttreatment and 1- mth FU BDI: Posttreatment > Pretreatment	80%	1 mth	El Salvador, Honduras, Guatemala, Mexico, Peru, Dominican Republic
Kanter et al., 2010	Community clinic	Individual BA: 12 sessions	1	Therapy available in Spanish	ITT and Completers BDI: Posttreatment > Pretreatment HRSD:Posttreatment > Pretreatment	30%	None	Mexico, Puerto Rico
			2	Therapist of color				
			3	Therapeutic use of values associated with Latinos*				
			4	Emphasis on culturally relevant				

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin		
values and experiences *										
5 Simplified treatment rationale*										
Schema Therapy										
Open-Label Trials										
Heilemann, Pieters, Kehoe & Yang, 2011	Community organization	Individual Schema Therapy + MI, 8 sessions, 2hrs.	1	Flexibility of sessions	<i>N</i> = 9 second-generation Latinas, fluent in English, MDD or Min-D, 18–50 years old, low income; no bereavement, psychosis, active suicidal ideation, current substance use disorders, pregnant or less than four weeks PP, or utilizing other mental health services	Completers BDI: Posttreatment > Pretreatment	89%	12 mth PT	Central America, Mexico	
			2	Childcare						
			3	Therapeutic use of values associated with Latinos						
			4	Additional therapist contact by telephone, if needed						
Dual Treatment Evaluations										
Randomized Controlled Trials										
Comas-Díaz, 1981	University psychology department	1	Group Cognitive Therapy (CT): 5 sessions	1	Therapy available in Spanish	<i>N</i> = 26 Latinas, low income, monolingual, MDD; no psychosis, substance use disorders, organic, or suicidal risk.	Posttreatment BDI: CT > WL; BT > WL; CT = BT HRSD: CT > WL; BT > WL; CT = BT 5-week follow-up BDI: BT = CT HRSD: BT > CT	NR	5 wks PT	Puerto Rico
		2	Behavioral Therapy (BT): 5 sessions	2	Therapist of color					
		3	Waitlist control (WL)	3	Therapeutic use of values associated with Latinos					
Markowitz et al., 1998	Treatment clinic	1	Individual IPT: 16 wks	1		<i>N</i> = 101 (22 Latinas, 22%); MDD, HRSD 15, HIV diagnosis for 6 mths; No history of psychosis, mania, current	ITT BDI: IPT > CBT; IPT > SP; IPT = SWI; CBT = SP; SWI > CBT; SWI > SP HRSD: IPT > CBT; IPT > SP; IPT = SWI;	All: 68%	None	NR
		2	Individual CBT: 16 wks							
		3	Supportive psychotherapy (SP): 8 or 16 wks	NR						

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
<div>CBT = SP; SWI > CBT; SWI > SP</div> <div><i>Completers</i></div> <div><i>BDI</i>: IPT > CBT; IPT > SP; IPT = SWI; CBT = SP; CBT = SWI; SWI > SP</div> <div><i>HRSD-D</i>: IPT > CBT; IPT > SP; IPT = SWI; CBT = SP; CBT = SWI; SP = SWI</div> <div>Ethnicity did not moderate the findings</div>								
Novel Cultural Treatments								
Randomized Controlled Trials								
Bedoya et al., 2014	Primary Care	1	1	N = 118 Latinos, mostly monolingual; likely MDD; no unstable psychiatric illness (e.g. suicidal risk).	QIDS-SR: CFP > EUC	85%	6 mth PB	NR
		2	2					
		3	3					
Eisdorfer et al., 2003	Home- or telephone-based	1	1	N = 225 family caregivers (114 Cuban American). Caregivers lived with the patient and provided care >6 mths. Excluded if involved in another caregiver intervention study, had acute illness, not planning to reside in the Miami, and if care recipients had a terminal or severe illness or disability.	6-months: CES-D: SET + CTIS > MSC > SET 18-months: CES-D: SET + CTIS > MSC > SET Results for Latinos	NR	18 mths (NR)	Cuban
		2	2					
		3	3					
Open-Label Trials								

Citation	Setting(s)	Intervention(s) Tested	Modification(s) to Treatment	Sample Characteristics	Primary Outcomes	Adherence	Follow- up	Countries of Origin
Edelblute et al., 2014	Local community	1 <i>Group Promotora-led therapy</i> (MESA): 5 wks	1	Therapy available in Spanish	<i>Completers:</i> <i>CES-D:</i> Posttreatment = Pretreatment	64%	None	Mexico
			2	Promotoras of color *				
			3	Therapeutic use of values commonly associated with Latinos*				
Tran et al., 2014	Three counties; in-home or quiet community space	1 <i>Group Amigas Latinas Motivando el Alma/Latina Friends Motivating the Soul</i> (ALMA): at least 3 sessions.	1	Therapy available in Spanish	<i>CES-D:</i> Posttreatment > Pretreatment	55%	NR	Mexico, Central and South American
			2	Promotoras of color*				
			3	Therapeutic use of values associated with Latinos *				

Notes. BDI = Beck Depression Inventory - II; CES-D = Center for Epidemiologic Studies Depression Scale; CIDI = Composite International Diagnostic Interview; EUC = Enhanced usual care; HRSD/HAM-D = Hamilton Rating Scale for Depression; HSCL-20 = Hopkins Symptom Checklist-20; MADRS = Montgomery–Åsberg Depression Rating Scale; MDD = Major Depressive Disorder; NR = Not reported; PB = Postbaseline; PHQ-9 = Patient Health Questionnaire; PP = Postpartum; PT = Posttreatment; SUD = Substance use disorder; TAU = Treatment as usual UC = Usual care. “Treatment 1 > Treatment 2” indicates that Treatment 1 showed greater depression reductions than Treatment 2; “Posttreatment > Pretreatment” indicates that depression symptoms decreased from pretreatment to posttreatment; QUIDS-SR = Quick Inventory of Depressive Symptomatology–Self-Report; SDC-20 = Symptom Checklist Depression Scale; *Denotes deep structure (versus surface structure) cultural modificationsas (i.e., Resnicow et al., 2000).

Table 2

Risk bias assessment for depression randomized controlled trials including Latinos

Author, year	Formal depress ion assess ment	Randomiz ation	Allocati on conceal ment	Manuali zed treatme nt	Masked Assess ment	Attrit ion data	Fidelity/Adhe rence/ Supervision	ITT analys is	Latin o- specif ic data	Othe r biase s
Alegria, 2014	●	●	●	●	●	●	●	●	●	●
Areán, 2005	●	●	●	●	●	●	●	●	●	●
Bedoya, 2014	●	●	●	●	●	●	●	●	●	●
Beeber, 2010	●	●	●	●	●	●	●	●	●	●
Comas-Diaz, 1981	●	●	●	●	●	●	●	●	●	●
Dwight-Johnson, 2005	●	●	●	●	●	●	●	●	●	●
Dwight-Johnson, 2011	●	●	●	●	●	●	●	●	●	●
Elli, 2010	●	●	●	●	●	●	●	●	●	●
Elli, 2008	●	●	●	●	●	●	●	●	●	●
Eisdorfer, 2003	●	●	●	●	●	●	●	●	●	●
Gallagher-Thompson, 2008	●	●	●	●	●	●	●	●	●	●
Kanter, 2014	●	●	●	●	●	●	●	●	●	●
Le, 2011	●	●	●	●	●	●	●	●	●	●
Markowitz, 1998	●	●	●	●	●	●	●	●	●	●
Miranda, Azocar, 2003	●	●	●	●	●	●	●	●	●	●
Miranda, Chung, 2003	●	●	●	●	●	●	●	●	●	●
Miranda, Duan, 2003	●	●	●	●	●	●	●	●	●	●
Munoz, 2007	●	●	●	●	●	●	●	●	●	●
Foster, 2007	●	●	●	●	●	●	●	●	●	●
Simoni, 2013	●	●	●	●	●	●	●	●	●	●
Spinelli, 2013	●	●	●	●	●	●	●	●	●	●
Spinelli & Endicott, 2003	●	●	●	●	●	●	●	●	●	●

Note. Green denotes a low risk for bias and red denotes a high risk for bias. ITT = Intent-to-Treat.

Table 3

Risk bias assessment for depression open-label trials including Latinos

Author, year	Specified depression measures	Manualized treatment	Specified theoretical rationale of depression	Specified target population	Specified procedures for therapist training, supervising, and monitoring	Specified treatment mechanisms of change	Preliminary analyses	Attrition on data	Other biases
Cardemil, 2005	●	●	●	●	●	●	●	●	●
Hovey, 2014	●	●	●	●	●	●	●	●	●
Gonzalez, 1993	●	●	●	●	●	●	●	●	●
Interian, 2008	●	●	●	●	●	●	●	●	●
Piedra, 2012	●	●	●	●	●	●	●	●	●
Camacho, 2015	●	●	●	●	●	●	●	●	●
Schmaling, 2008	●	●	●	●	●	●	●	●	●
Collado, 2014	●	●	●	●	●	●	●	●	●
Kanter, 2010	●	●	●	●	●	●	●	●	●
Heilenmann, 2011	●	●	●	●	●	●	●	●	●
Edelblute, 2014	●	●	●	●	●	●	●	●	●
Tran, 2014	●	●	●	●	●	●	●	●	●

Note. Green denotes a low risk for bias and red denotes a high risk for bias.