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Objective: A systematic literature review of randomized clinical trials (RCTs) assessing depression treatments in primary care for Latinos is conducted. The authors rate the methodological quality of studies, examine cultural and linguistic adaptations, summarize clinical outcomes and cost-effectiveness findings, and draw conclusions for improving depression care among this diverse population. Method: Electronic bibliographic databases, Web sites, and manual searches are used to identify nine peer-reviewed articles covering four RCTs. Results: Across trials, collaborative care models were more effective than usual care in reducing depression and improving functioning and accessibility to guideline-congruent care. Conclusion: The use of evidence-based treatments in primary care seems to be an effective and cost-effective strategy to reduce mental health care disparities among Latinos served in primary care.

Keywords: *Latinos; depression; literature review; primary care; randomized clinical trials; depression treatments; Hispanics*

Depression is a common and disabling disorder among Latino adults served in primary-care settings (Olfson et al., 2000). However, this diverse population faces considerable disparities in the recognition and treatment of major depression (Lewis-Fernández, Das, Alfonoso, Weissman, & Olfson, 2005). Compared to non-Latino Whites with similar mental health needs, Latinos have less access to mental health care and are less likely to receive guideline-congruent depression care (U.S. Department of Health and Human Services [USDHHS], 2001; Young, Klap, Sherbourne, & Wells, 2001). Moreover, Latinos are more likely to seek mental health services from the primary health care sector than from mental health specialists (Vega, Kolody, & Aguilar-Gaxiola, 2001; Wells, Klap, Koeke, & Sherbourne, 2001). This pattern of care seeking suggests that primary-care settings are an important source of mental health care for this underserved population (Cabassa, Zayas, & Hansen, 2006). Given the inequities in depression care faced by Latinos, the implementation of effective and sustainable depression treatments for Latinos in primary health care settings has been proposed as a strategy to reduce mental health care disparities (USDHHS, 2001).

Studies show pharmacological and/or psychosocial treatments (e.g., cognitive-behavioral therapy [CBT]) can be effectively used to treat depression in primary-care patients (e.g., Brown & Schulberg, 1995). Until recently, few randomized clinical trials testing the effectiveness of depression treatments have included adequate numbers of Latinos to evaluate the quality and outcomes of these treatments in this underserved population (USDHHS, 2001). This lack of empirical evidence poses a serious threat to the ecological validity of depression treatments and places this growing minority population at considerable risk for receiving inadequate depression care (Bernal, Bonilla, & Bellido, 1995). This article addresses this gap in knowledge by systematically reviewing recent published randomized clinical trials examining the effectiveness of depression treatments in primary care for Latino adults.

Effectiveness trials evaluate the outcomes and responses of treatments delivered in real-world settings (Wells, 1999). These trials differ from efficacy studies in that they (a) are conducted in community settings employing usual providers to deliver the intervention, (b) draw a heterogeneous sample of patients who come from a variety of socioeconomic and ethnic backgrounds and often have different comorbidites, (c) compare two or more active treatments, and (d) examine an array of outcomes (e.g., functioning, quality of life, costs, cost-effectiveness) during

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longer periods (Lagomasino, Dwight-Johnson, & Simpson, 2005). Evidence generated from effectiveness trials help clinicians and policy makers make informed decisions about how to deliver high-quality and cost-effective mental health care to different populations (Lagomasino et al., 2005). Results of effectiveness studies that test the adequacy and outcomes of depression treatments are essential for developing and implementing evidence-based practices aimed at improving the quality of depression care for Latinos.

The aims of this literature review are (a) to rate the methodological quality of studies, (b) to examine the cultural and linguistic adaptations used in these effectiveness studies, (c) to summarize and discuss studies' clinical outcomes and cost-effectiveness findings, and (d) to draw conclusions from this growing body of research for improving depression care among this diverse population.

METHOD

Selection of Studies

Studies were identified through electronic bibliographic databases, Web sites, and manual searches. Databases searched included Medline, PsycINFO, Social Science Abstracts, and the Cochrane Database of Systematic Reviews. Web sites, such as the National Institute of Mental Health (www.nimh.nih.gov), ClinicalTrial.gov (www.clinicaltrial.gov), and the Agency for Healthcare Research and Quality (www.ahrq.gov), were searched. Manual searches of the reference sections of identified articles, pertinent published books, and government reports were also conducted. Keywords used to guide our search included the following: *effectiveness studies*, *randomized controlled trials*, *controlled clinical trials*, *major depression*, *depression*, *dythymia*, *dysthymic disorder*, *depression treatment*, *psychosocial treatments*, *cognitive behavior therapy*, *interpersonal therapy*, *problem solving therapy*, *pharmacological treatments*, *antidepressant treatments*, *primary care*, *Latinos*, *Hispanics*, *Puerto Ricans*, *Cubans*, *Mexicans*, *Mexican Americans*, *Central Americans*, and *South Americans*. Abstracts of 60 articles were retrieved and reviewed for relevance. Studies were chosen for review if they met the following criteria: (a) compared the effectiveness between one or more depression treatments and usual care in primary health care settings, (b) randomized patients and/or clinics to treatment conditions, (c) reported treatment effectiveness and/or cost-effectiveness findings for Latinos. Nine peer-reviewed articles published between 2003 and 2006 reporting findings from four randomized clinical trials met these criteria and were included in this review. Seven of the 9 articles reported treatment effectiveness findings from these trials. The other 2 articles included in this review reported cost-effectiveness findings.

Analytical Strategies

An adapted version of Miller and colleagues' (1995) Methodological Quality Rating Scale (MQRS) was used to evaluate studies' methodological characteristics. This instrument assesses studies' methodological quality across 12 dimensions (e.g., study design, enumeration of baseline data, follow-up rate, analyses; see Table 1), and it has been used in previous systematic reviews of intervention studies (e.g., Burke, Arkowitz, & Menchola, 2003; Vaughn & Howard, 2004). One dimension was added to the scale to assess the absence or presence of cultural and/or linguistic adaptations of depression treatments for Latino patients. This added dimension enabled us to rate whether studies explicitly discussed strategies used to adapt depression treatments to the needs of Latino patients. Each study MQRS score could range from 0 (*poor quality*) to 17 (*high quality*).

The two authors, working independently, rated each of the 7 studies that reported effectiveness findings across the 13 dimensions of the MQRS. Of the 182 ratings (13 ratings per article × 7 articles × 2 raters) completed by the two raters, only 6 (3%) were in disagreement. In these cases, minor differences were identified by the two raters and were resolved through consensus. For example, the follow-up length of a particular study was rated by one rater to be 6 to 11 months, and 12 months or longer by the other rater. Both authors then met to resolve this disagreement by rereading the study in question and identifying the correct follow-up length, which in this case was 6 to 11 months. Last, a review form following Lipsey and Wilson's (2001) recommendations was used to systematically code study-level characteristics, such as study aims, designs, sampling and randomization strategy, intervention components and control groups, outcome measures, data analysis, findings, study limitations, and conclusions.

RESULTS

Studies Characteristics

The trials reviewed included (a) Women Entering Care (Miranda, Chung, et al., 2003; Miranda et al., 2006), (b) the San Francisco General Hospital Depression Clinic trial (hereafter, the San Francisco Trial; Miranda, Azocar, Organista, Dweyer, & Areáne, 2003), (c) Partners in Care (PIC; Miranda, Duan, et al., 2003; Miranda, Schoenbaum, Sherbourne, Duan, & Wells, 2004;

TABLE 1: Adapted Methodological Rating Scale

Methodological Attributes	Points Awarded
1. Study Design	1. Single group pretest-posttest 2. Quasi-experimental (nonequivalent control group/nonrandomization) 3. Randomization with control group
2. Replicability	0. Intervention or follow-up description insufficiently detailed 1. Procedures contain sufficient detail
3. Baseline	0. No baseline scores, client characteristics or measures reported 1. Baseline scores, client characteristics or measures reported
4. Quality control	0. No intervention standardized specified 1. Intervention standardized by manual, procedures, specific training and so forth
5. Follow-up length	0. Less than 6 months 1. 6-11 months 2. 12 months or longer
6. Follow-up rate	0. Less than 70% completion 1. 70% to 84.9% completion 2. 85% to 100% completion
7. Collaterals	0. No collateral verification of participant self-report 1. Collaterals interviewed
8. Objective verification	0. No objective verification of participant self-report 1. Verification of records (paper records, insurance claim, medical charts, diagnostic interviews)
9. Dropouts	0. No discussion or enumeration of dropouts or dropout excluded from analysis (no intent to treat analysis) 1. Intervention dropout enumerated
10. Independent	0. Follow-up conducted nonblind or by an unspecified method 1. Follow-up conducted by person blind to participants' treatment conditions
11. Analyses	0. No statistical analyses conducted or clearly inappropriate analyses 1. Appropriate statistical analyses
12. Multisite	0. Single site study 1. Parallel replication at two or more sites
13. Cultural and linguistic adaptations to depression treatments	0. Cultural and linguistic adaptations not reported or discussed. 1. Cultural and linguistic adaptation reported or discussed

NOTE: Scores could range from 0 (low) to 17 (high). Adapted from Miller et al. (1995) and Vaughn and Howard (2003).

Wells et al., 2004), and (d) Improving Mood-Promoting Access to Collaborative Treatment (IMPACT; Areán et al., 2005). An overview of the 7 articles presenting effectiveness findings from these 4 trials is shown in Table 2. The other 2 articles included in this review reported cost-effectiveness evaluations of the Women Entering Care (Revicki et al., 2005) and PIC (Schoenbaum, Miranda, Sherbourne, Duan, & Wells, 2004) trials. Women Entering Care was the only trial to recruit from county health and welfare services. The rest of the trials were conducted in primary health care clinics within different health care organizations (e.g., private group practices, health maintenance organization). Women Entering Care and the San Francisco trials included patients who were uninsured. The remaining studies recruited patients with private or public insurances.

Studies Methodological Characteristics and Ratings

The total QRS score for each study ranged from 13 to 16, with a mean of 14 (*SD* = 1.1). Three of the four trials randomized individuals into different treatment conditions. In contrast, PIC used a group-level randomized controlled trial design in which 46 primary-care clinics from six managed-care organizations were divided into clusters of group practices and then randomized into usual care or one of two quality improvement (QI) programs (QI-therapy and QI-medication). QI sites received study materials, staff training, and limited support during the implementation of the trials. The goal of the QI programs was to train staff and provide the necessary resources to improve depression care under naturalistic conditions. Throughout the PIC trial, patients and clinicians retained choice of treatment, and it was optional for them to use intervention resources.

All studies provided sufficient detail to replicate the intervention, reported detailed baseline patient characteristics (e.g., gender, ethnicity/race, age, marital status, education, clinical status), and used manualized psychosocial depression treatments and/or guideline-congruent pharmacological treatment protocols. Follow-up periods ranged from 6 to 57 months, and follow-up rates ranged from 73% to 83%, with an average rate across studies of 80% (*SD* = 4.01%). One study (the San Francisco Trial) used collateral information from medical chart abstractions to derive a chronic disease score, and case manager records were

TABLE 2: Overview of Effectiveness Studies of Latino Depression Treatments in Primary Care

Author and Study	Intervention	Control Group	Sample	Outcome Measures	Follow-up	Quality Rating Scale Score
Miranda, Chung, et al. (2003), Women Entering Care[a]	Pharmacotherapy (e.g., paroxetine switched to bupropion, if lack response) or CBT	Referral to community care	267, 6% White, 51% Latinas, 44% African Americans	Depressive symptoms (HDRS) Instrumental role functioning (Social Adjustment Scale) Social Functioning (Short-form 36-item Health Survey)	6 months	14
Miranda, Azocar, Organista, Dwyer, and Areáne (2003), San Francisco Trial	CBT supplemented with case management	CBT alone	199, 33% White, 39% Spanish-speaking Latinos/as, 25% African American, 4% Other	Severity of depressive symptoms (BDI) Social adjustment (SAS)	6 months	13
Wells et al. (2004), PIC	Quality improvement programs (QI): QI-medication (antidepressants) or QI-therapy (CBT)	Usual care	991 completed 57-month telephone follow-up, 61% Whites, 27% Latinos/as, 5% African Americans, 7% Other	Rates of probable major depression in previous 6 months (modified CIDI stem items) Mental health-related quality of life (MCS12) Primary care or mental health specialist visits Counseling or antidepressant medication in previous 6 months Unmet need: depressed and not receiving appropriate care	57 months	14
Miranda, Duan, et al. (2003), PIC	QI: QI-medication (antidepressants) or QI-therapy (CBT)	Usual care	938, 64% White, 27% Latinos/as, 6% African Americans, 3% Asian or Native Americans	Rates of receiving guideline-congruent depression care Rates of probable major depression (modified CIDI stem items) Employment status	6 months	13
Miranda, Schoenbaum, Sherbourne, Duan, and Wells (2004), PIC	QI: QI-medication (antidepressants) or QI-therapy (CBT)	Usual care	1,269, 61% White, 31% Latinos/as, 7% African Americans	Rate of receiving guideline-congruent depression care Rates of probable major depression (modified CIDI stem items) Employment status	12 months	14
Areán et al. (2005), IMPACT[b]	Collaborative care (antidepressant or problem-solving therapy adapted for primary care, based on patients' preference)	Usual care	1,801, 77% White, 8% Latinos, 12% African Americans, 3% Other	Use of antidepressants medication or psychotherapy Satisfaction with depression care Depressive symptoms (HSCL-20) Treatment response (50% or more decrease in HSCL) Treatment remission (HSCL-20 score smaller than .05)Health-related functional impairment (SDS)	12 months	16
Miranda et al. (2006), Women Entering Care	Pharmacotherapy (e.g., paroxetine switched to bupropion, if lack response) or CBT	Referral to community care	267, 6% White, 51% Latinas, 44% African Americans	Depressive symptoms (HDRS) Instrumental role functioning (Social Adjustment Scale) Social Functioning	12 months	15

NOTE: CBT = cognitive-behavioral therapy; HDRS = Hamilton Depression Rating Scale; BDI = Beck Depression Inventory; PIC = Partners in Care; QI = Quality Improvement; CIDI = Composite International Diagnostic Interview; MCS12 = Mental Health Composite Score; HSCL-20 = Hopkins Symptoms Checklist-20; SDS = Sheehan Disability Scale.
a. Recruited exclusively women from Women, Infants, and Children food subsidy programs and Title X family planning clinics.
b. All Latinos in this study were English-speaking elders (60 years of age or older).

used to describe case-management services received during a 6-month period. The rest of the studies reported no use of collateral information (e.g., medical records, insurance claims, interviewing family members) to corroborate and/or supplement self-report measures and service use patterns. Objective verification of patients' depression and other mental health conditions was done in all studies through the use of structured diagnostic instruments, such as the World Health Organization Composite International Diagnostic Interview (Robins et al., 1988) and the Structured Clinical Interview (Spitzer, Williams, Gibbon, & First, 1990). All studies enumerated drop-out rates and used appropriate statistical analyses. Statistical procedures used to evaluate treatment outcomes for Latinos and other racial and ethnic groups included mixed-effects repeated-measure analysis, repeated-measure analysis of variance and covariance, multivariate regression, and logistic regression, among others. Follow-up measures were collected through a combination of mail surveys and blind telephone interviews in PIC, and the rest of the studies used blind personal or telephone interviews. The San Francisco Trial was the only single-site study; the rest were multisite studies. All studies, some in more detail than others, discussed cultural and/or linguistic adaptations to treatment programs.

Depression Treatment Programs

All trials used manualized, short-term psychotherapy and/or standardized medication-management protocols based on published depression treatment guidelines. CBT was delivered in individual or group sessions by trained clinical staff (licensed clinical psychologist or social worker) supervised by a licensed clinical psychologist with expertise in CBT. The manualized protocol ranged from 8 to 12 weeks of sessions, and patients' improvements were regularly assessed with standardized depression scales (e.g., Hamilton Depression Rating Scale). In the San Francisco trial, CBT was enhanced by adding a case-management program. The program was developed by licensed clinical social workers and was designed to help patients during a 6-month period to cope with psychosocial problems affecting their depression care.

The IMPACT trial used problem solving therapy adapted for primary care (PST-PC settings; Areán, Hagel, & Unützer, 1999), a brief psychotherapy derived from CBT, delivered within a collaborative care program (CC). Trained depression clinical specialists (nurses or clinical psychologists) delivered PST-PC and monitored depression symptoms with standardized instruments following the Agency for Health Care Policy and Research depression treatment guidelines.

Medication management based on depression treatment guidelines were used in 3 of the 4 trials. A stepped-care approach in which a trained clinician (e.g., nurse or psychologist) in consultation with a psychiatrist managed and monitored patients during the acute and maintenance phase of depression treatment was used in these trials. For instance, in the IMPACT study, the depression care specialist monitored depressive symptoms, side effects, and adherence every 2 weeks during the acute phase of treatment and then monitored patients through monthly contacts for 1 year after stabilization of depression. The DCS met weekly with a consulting psychiatrist to discuss cases and revised treatment plan. If after 4 to 6 weeks patients did not show improvements, either treatment was changed to another antidepressant or PST-PC was given. If the patient still did not improve, other treatments were considered (e.g., referral to specialty mental health).

Before starting treatment (psychotherapy or medication), all treatment programs included education meetings into their protocols. In these meetings, patients were educated about depression and its treatments with short educational videos, printed media (brochure, educational pamphlets), and/or discussions with their clinicians. For instance in Women Entering Care, up to four education sessions could be scheduled to help participants with the decision to initiate treatment. Miranda, Chung, et al. (2003) reported that 96% of women attended a mean of 1.89 education sessions before beginning medications and 67% attended 2.37 education visits before beginning psychotherapy.

Cultural and Linguistic Adaptations of Depression Programs

Cultural and linguistic adaptations used in the trials are presented in Table 3. The most common adaptations included employing bilingual and bicultural clinicians (e.g., social workers, nurse practitioners, psychologists) to deliver care, having educational and intervention materials available in English and Spanish, and including references to minority groups in educational materials (e.g., brochures, videos). All trials, aside from IMPACT, used a CBT protocol that was specifically developed and previously tested with low-income, Spanish- and English-speaking medical patients (Muñoz & Mendelson, 2005). Staff cultural sensitivity training that directly discussed cultural norms (e.g., *simpatia*, *respeto*, *marianismo*) believed to influence the treatment of Latinos was used in PIC and the San Francisco Trial. PIC also used minority investigators to provide consultations to treatment teams in the intervention sites and employed experts in mental

TABLE 3: Cultural and Linguistic Adaptations to Depression Treatment Programs

Trial	Cultural and Linguistic Adaptations
Women Entering Care	CBT manual was adapted from a 12-session protocol, developed and tested for low-income Spanish- and English-speaking medical patients. Bilingual providers treated all Spanish-speaking women. All written materials, including psychotherapy manuals, were available in Spanish. All psychotherapists and nurse practitioners had extensive experience working with low-income minority patients. Transportation and child care funds were provided to participants in the two interventions groups.
San Francisco Trial	CBT manual, developed and tested for low-income Spanish- and English-speaking medical patients, was used. Employing bilingual and bicultural providers. Having educational materials and interventions material available in Spanish. Staff training on how to show *respeto* and *simpatia* to patients and create warmer, more personalized interactions than were typical for English-speaking patients.
Partners in Care	CBT manual developed and tested for low-income Spanish- and English-speaking medical patients was used. Experts in mental health intervention for minority patients participated in the design of quality improvement educational materials. All educational and intervention materials were available in Spanish and English. Latino and African American providers were included in the depression education video. Bilingual and bicultural staff were used to treat minority patients. Minority investigators provided supervision to local experts throughout the intervention. All staff received cultural sensitivity training.
IMPACT	Few cultural adaptations were made to the treatment model. Written and video materials included references to older adults from varying ethnic groups. No linguistic adaptations were made because all participants were English speaking.

NOTE: CBT = cognitive-behavioral therapy;

health interventions for minorities to design all educational materials used in the trial.

Treatment Outcomes

Clinical outcomes and functioning. Instruments used to measure clinical outcomes and functioning are listed in Table 2. Six-month outcomes showed that CBT and antidepressants were superior to usual care in reducing the rates of patients with probable depression in PIC and lowering depression and improving functioning in the Women Entering Care trial. Miranda, Chung, et al. (2003) found that in the Women Entering Care trial medication was superior to CBT in lowering depressive symptoms and improving instrumental role functioning among their sample of low-income minority women. They partially attributed this finding to the fact that more women engaged in a sufficient duration of medication treatment than in CBT. Moreover, a higher proportion of women received appropriate care in the medication group compared to those in the CBT group (76% vs. 36%, respectively). Appropriate care in the medication group was defined as receiving at least 9 weeks of guideline-congruent medication treatment, whereas appropriate care for CBT was defined as receiving at least 6 CBT sessions.

Latinos' engagement into psychotherapy was improved in the San Francisco trial by adding supplemental case management to the CBT protocol. In this trial, Miranda, Azocar, et al. (2003) found that Spanish-speaking patients ($n = 77$) in the CBT with supplemental case-management groups reported significantly fewer depressive symptoms and improved functioning at 4 and 6 months compared to Spanish-speaking patients who only received CBT. This finding was not replicated with the English-speaking patients who participated in this trial. Miranda and colleagues concluded that their study provides initial evidence that supplementing CBT with case management may improve treatment retention and outcomes for Spanish-speaking patients.

Twelve-month outcomes from the Women Entering Care, PIC, and IMPACT trials point to sustained treatment gains for those receiving CBT, antidepressants, or PST-PC compared to those in usual care. In Women Entering Care, the CBT and medication groups were significantly better in lowering depressive symptoms than those who were in the community referral group at the 1-year follow-up. The superiority of medication over CBT in decreasing depressive symptoms and improving functioning observed at 6 months was maintained at 12 months. However, the remission rates at 12 months

(defined as HDRS scores ≤ 7 and a 50% change from baseline to 12 months) of the CBT (56.9%) and medication (50.9%) groups were not significantly different, and both were higher than those of the community referral group (37.1%).

The QI and CC programs from the PIC and IMPACT trials improved depression outcomes at 12 months for Latinos and African Americans compared to their counterparts in usual care. For example, in the IMPACT trial, Latinos and African Americans in the CC group had significantly better depression outcomes, higher rates of treatment response, and higher rates of remission than those in the usual care group (Areán et al., 2005). In PIC, the QI interventions significantly decreased the likelihood of probable depression for Latinos and African Americans but did not significantly improve their rates of employment, an indicator of functioning (Miranda, Duan, et al., 2003).

Sustained positive treatment effects for Latinos and African Americans at 57 months were reported for PIC. QI-therapy in particular was related to significantly lowering rates of probable depression rates and unmet needs for appropriate care and to improving health outcomes for African Americans and Latinos but had little effect for non-Latino Whites at the 57-month follow-up (Wells et al., 2004).

Access to guideline-congruent care. In Women Entering Care, PIC and IMPACT, the interventions programs compared to usual care increased Latinos' access to guideline-congruent depression care. Miranda and colleagues (2004) found that the QI interventions (medications or therapy) used in PIC significantly improved for all patients the rates of receiving guideline depression care by 9% to 20% at 6-months follow-up. At 12 months, Latinos in the QI interventions were more likely to receive appropriate depression care than those in usual care (39.4% vs. 26.4%, respectively), with the difference reaching statistical significance (Miranda, Duan, et al., 2003). However, Latino patients still lagged behind non-Latino Whites receiving QI interventions, 62.1% of whom were receiving appropriate depression care at 12 months (Miranda, Duan, et al., 2003).

In IMPACT, patients in the CC group by 12 months used more guideline-congruent depression services than those in the usual care group and reported greater satisfaction with care (Areán et al., 2005). Latinos in the CC group were more likely to use antidepressant medications and psychotherapy than their counterparts in the usual care group.

Cost-Effectiveness Findings

Two studies reported cost-effectiveness findings of depression treatments programs in primary care for Latinos. Schoenbaum and colleagues (2004) compared the societal cost-effectiveness of PIC for Latinos and non-Latino Whites during 24 months. They found that, compared to usual care, the QI-therapy group that enhanced resources for psychotherapy (i.e., CBT) was more cost-effective for Latinos than was the QI-medication group, which provided resources to receive medication-based care for depression. Latinos in QI-therapy had significantly fewer depression burden days compared to those in usual care, and the cost per quality-adjusted years (QALY) was $6,100 or less. This cost per QALY estimate is well below those found in established medical interventions (Gold, Siegel, Russell, & Weinstein, 1996). Latinos in the QI-medication reported no significant improvements in depression burden days compared to those in usual care and had an estimated cost per QALY of $90,000 or more, thus making this intervention not cost-effective for this group of Latinos. For non-Latino Whites, those in QI-medication and QI-therapy groups reported lower depression burden days compared to those in usual care, but the differences were not statistically significant. Whites in the QI-therapy reported a significant increase in the days employed, a finding not observed in Latinos. The estimated cost per QALY for Whites on both interventions was around $30,000 or less.

Revicki and colleagues (2005) examined the cost-effectiveness of Miranda, Chung, et al.'s (2003) Women Entering Care clinical trial during a 12-month period. They found that compared to women who received community referrals, both intervention groups (CBT and pharmacotherapy) reported significantly more depression-free days. Furthermore, the cost per QALY was $16,068 for the pharmacotherapy group and $17,624 for the CBT group. The authors concluded that "investment in depression interventions, including the additional outreach, educational attainment, and supportive services (i.e., transportation and babysitting), consistently improves these women's depression and functional outcomes" (pp. 872-873). Therefore, both pharmacotherapy and CBT were cost-effective compared to community mental health services referral for these low-income minority women.

DISCUSSION AND APPLICATIONS TO SOCIAL WORK

Studies included in this review were rigorous randomized controlled trials of high methodological quality. Findings from these studies indicate that depression treatment programs for Latinos delivered in primary care under a CC model were more effective than usual care in reducing depressive symptoms, improving functioning, and increasing accessibility to guideline-congruent care. Two trials (PIC and Women Entering Care) included in this review also reported that these treatment programs were more cost-effective than usual care, even with the added costs associated with cultural and linguistic adaptations and supportive services (e.g., transportation, child care; Revicki et al., 2005; Schoenbaum et al., 2004)

Depression treatments for Latinos in primary care appeared most effective when enhanced treatment was provided. These treatment programs shared the following features: (a) screening or case-finding measures were systematically used to identify depressed patients; (b) patient-education materials that were culturally and/or linguistically adapted for Latino groups were used at the beginning stages of treatment; (c) trained clinicians (e.g., nurses, social workers, clinical psychologists) delivered manualized psychosocial treatments (CBT or PST) and/or coordinated medication management based on published treatment guidelines; (d) a collaborative, interdisciplinary approach among primary-care physicians, clinicians, and consultant psychiatrists was used to manage and make treatment decisions; and (e) standardized, symptom-based depression measures were systematically used to monitor treatment progress and guide treatment decisions.

Several differences between the effectiveness of medication and psychosocial treatments were noted in these trials. In the PIC, QI-therapy was significantly more cost-effective and alleviated depressive symptoms at a significantly higher rate than QI-medication treatment for Latinos compared to non-Latino Whites (Schoenbaum et al., 2004). The QI-therapy treatment gains were sustained at the 57-month follow-up, lowering rates of probable depression and unmet needs for appropriate care and improving health outcomes, but they showed little effect for non-Latino Whites (Wells et al., 2004). These findings support the use of culturally and linguistically tailored CBT as an effective treatment option for depression among PIC Latinos.

The effectiveness of CBT over medication was not supported in the Women Entering Care Trial. In this trial, both treatments (CBT and medication) showed comparable cost-effectiveness when compared to community referrals for these low-income, minority women (Revicki et al., 2005), yet medication-based care was found to increase functioning and decrease depression symptoms more so than CBT. Miranda, Chung, et al. (2003) attributed the effectiveness of medication over CBT to the fact that more women engage in sufficient duration of medication treatment than CBT. However, even with limited exposure and engagement to CBT, these women achieved similar remission rates at 12 months as those in the medication group (56.6% vs. 50.9%, respectively) and were significantly better than their counterparts referred to community mental health services (Miranda et al., 2006).

The differences observed across these trials highlight how similar treatment approaches (CBT and medication management) may have different outcomes depending on the Latino community being served and suggest that a one-size-fits-all approach to treating depression in primary-care settings may not be appropriate for this diverse population. PIC findings suggest that culturally and linguistically adapted CBT may be more appropriate for Latinos served in managed-care organizations that have a regular source of care. The Women Entering Care trial showed enhance medication management may be more appropriate than eight sessions of individual or group CBT to treat depression among low-income, minority women served in county health and welfare services. Supplementing depression care with case management may also be an appropriate approach to help Latinos, particularly those who are monolingual Spanish speaking, overcome access barriers, improve treatment retention, decrease depressive symptoms, and improve functioning (Miranda, Azocar, et al., 2003). The combination of case-management services and depression care may be particularly helpful and effective for low-income and/or low-acculturated Latinos who may need assistance in navigating the health care system and face multiple social and economic demands that prevent them from accessing and engaging in treatment. More studies testing the effectiveness of supplementing depression treatments with case-management programs are needed to understand the clinical and economic benefits of this combination of services in reducing mental health care disparities among Latinos.

Other strategies used in these trials to accommodate the needs of diverse Latino communities included employing bilingual clinicians, providing supportive (e.g., child care, transportation) and case-management services, culturally and linguistically adapting depression education materials, and adding flexible educational meetings to the treatment protocols to increase patients' understanding of depression and its treatment and enhance trust and acceptance of

depression treatment. To develop effective depression care programs in primary-care settings for the diverse Latino population, treatment programs need to be carefully adapted and modified to fit the social, cultural, and economic realities of the targeted population.

Cultural and linguistic adaptations employed in these trials can be placed within a continuum ranging from minimal to comprehensive modifications of depression treatments. The IMPACT trial stands at one end of this continuum because few cultural and linguistic adaptations were made to their treatment model, and it was the only trial to use a manualized, short-term psychotherapy (i.e., PST) that had not been previously adapted for Latinos. Moreover, the exclusion of Spanish-speaking individuals limits the generalizability of this trial. Even with these limited adaptations, IMPACT showed better depression outcomes and improved accessibility to guideline-congruent depression care than usual care for African American and English-speaking Latino elders. The remaining trials included in this review stand at the other end of the continuum reporting multifaceted efforts to accommodate the linguistic and cultural variance in their sample.

One key question these trials did not address that deserves further research is the following: How are these cultural and linguistic adaptations linked to treatment effectiveness? These trials provide initial evidence indicating that different degrees of cultural and/or linguistic adaptations of depression treatments in primary care significantly improved the quality, effectiveness, and cost-effectiveness of mental health care for Latinos. To move the findings generated from these trials into real-world ethnically and racially diverse practice settings and inform clinical practice, more studies are needed to clarify which adaptation or combination of adaptations produce high-quality and cost-effective depression care for Latinos. The goals of these studies are to examine and understand the causal relationships between cultural and linguistic adaptations and treatment effectiveness. Dismantling and additive intervention designs can be used to empirically test these causal relationships (Borkovec & Miranda, 1999). Bridging this gap in knowledge will help clarify what culturally competent innovations and clinical skills are necessary to produce high-quality mental health care services (Vega, 2005). Evidence generated from these studies will provide practitioners and policy makers a better understanding of which key ingredients are needed to develop effective depression treatment programs in primary-care settings that meet the linguistic and cultural needs of Latino clients.

Our review is limited because of the small number of clinical trials published, the subjective nature of evaluating the methodological quality of studies, our stringent study-selection criteria, and the scarcity of controlled clinical trials testing the effectiveness of other psychotherapeutic approaches (e.g., family therapy, interpersonal therapy) adapted for Latinos to treat depression in primary-care settings. Notwithstanding these limitations, more randomized controlled trials studies are needed to enhance our understanding of how to provide effective and cost-effective depression care to Latino adults in primary care. These trials need to continue drawing diverse Latino samples that include both English- and Spanish-speaking Latinos who vary in acculturation levels and are drawn from different socioeconomic groups. Future studies should also report effect sizes to facilitate comparison across trials and help build a better empirical understanding of how effective these treatment programs are for this diverse population when compared to usual depression care. More research is also needed on how to translate and diffuse the evidence generated from these trials into primary-care settings serving Latino populations. As the Latino population in the United States continues to grow, more research is needed to develop, test, and implement effective and sustainable depression treatments for Latinos in primary health care. The trials included in this reviews generate initial evidence supporting the use of evidence-based treatments in primary care as an effective and cost-effective strategy to reduce the inequities Latino primary-care patients face in the accessibility and quality of depression care.

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