Collaborative Care for the Treatment of Depression in Primary Care With a Low-Income, Spanish-Speaking Population: Outcomes From a Community-Based Program Evaluation

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ABSTRACT

Objective: This study sought to (1) evaluate the effectiveness of a collaborative care model with a predominantly Hispanic, low-income population in a primary care setting and (2) examine depression outcomes with a subpopulation of preferentially Spanish-speaking patients compared with non-Hispanic white participants.

Method: The data were collected from September 2006 through September 2009 at the study site, the People's Community Clinic, Austin, Texas. Data collection was part of an evaluation of the Integrated Behavioral Health program, a collaborative care model of identifying and treating mild-to-moderate mental disorders in adults in a primary care setting. A bilingual care manager provided supportive counseling and patient education and systematically tracked patient progress in a patient registry. A consulting psychiatrist evaluated patients with diagnostic or treatment concerns. The study retrospectively examined changes in depression scores among 269 subjects as measured by the Patient Health Questionnaire (PHQ-9), the primary outcome measure. The PHQ-9 is a self-report of frequency of symptoms for each of the 9 *DSM-IV* criteria for depression. Logistic regression models compared race/ethnicity and language group combinations on their odds of achieving clinically meaningful depression improvement when background characteristics were controlled for.

Results: Spanish-speaking Hispanic patients had significantly greater odds of achieving a clinically meaningful improvement in depression at 3-month follow-up (odds ratio [OR] = 2.45, $P = .013$) compared to non-Hispanic whites. The finding for greater improvement in the Spanish-speaking population remained after controlling for age, sex, medical comorbidities, prior treatment, and baseline depression scores.

Conclusions: The results suggest a model of care that is effective for a population at great risk for marginal mental health care, non–English-speaking Hispanics. Attention to patient preferences in primary care is essential to improve quality of depression treatment and may improve outcomes. In light of previous research that demonstrates insufficient evidence-based guidelines for patients with limited English proficiency and evidence that evaluation of patients in their nonprimary language or through an interpreter can lead to inaccurate mental health assessments, this study suggests an opportunity to improve the quality of mental health care for non–English-speaking Hispanics in the United States.

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The largest minority group in the United States, Hispanics, is projected to triple in size in the next half century[1] and will account for most of the nation's population growth from 2005 to 2050. Hispanics are projected to make up 30% of the US population in 2050, compared with 14% in 2005.[1,2] In some border states and those with large metropolitan areas, the numbers are considerably higher, projected to reach nearly 50% by 2050.[2] It is estimated that 40% of Hispanics in the United States have limited English proficiency, and that percentage is increasing.[3] Although the lack of English proficiency may create substantial barriers to accurate diagnosis and treatment of mental illness, relatively few studies have examined the relationship between limited English proficiency and mental health disorders or disparities in access to services, treatment, compliance, or outcomes.[4,5]

Poverty and poor health are associated with higher rates of mental disorders.[6] Data from a number of studies suggest that people from ethnic minority groups and underserved populations are particularly unlikely to have health insurance or receive quality psychiatric care.[7–9] Hispanics and other ethnic minorities experience a disproportionate burden of disability associated with mental disorders because of these disparities in access to quality mental health care.[10,11]

Co-occurring mental and medical illnesses are common. Adults with common medical disorders have high rates of depression and anxiety that often impair self-care and compliance with treatment of their chronic diseases.[12–14] Major depression increases the burden of chronic illness by increasing the perception of symptoms, causing additional impairment in functioning, and increasing medical costs through overutilization of the health care system.[12,15] By 2003, 54% of people with mental health issues were served in the general medical sector only, that is, without referral to specialty mental health services,[12,16,17] supporting the description of primary care as the de facto mental health care system.[18]

Hispanics, in particular, are more likely to receive mental health care in primary care settings.[19] Many reasons have been cited for this trend, from lack of access to mental health specialists and income and insurance issues to the stigma surrounding mental illness and the trust of the relationship with the family physician.[12,20] Additionally, low English proficiency is associated with reports of poor quality of primary care, an absence of a source of care, and a lack of continuity.[21,22] Other studies conclude that treatment and linguistic barriers are likely to be even more pronounced at the community level for Hispanics.[8,9,23,24]

Collaborative care is a systematic approach to patient care that involves integration of care managers, with psychiatrist consultation and primary care physician oversight to more proactively treat mental health disorders such as depression and anxiety.[12,25] Numerous randomized clinical trials have indicated the effectiveness of collaborative care over usual care.[26–32]

Clinical Points

- Depression care managers in primary care settings can ensure that a treatment plan is being followed, monitor symptoms and medication side effects, educate patients about their disease, encourage self-management techniques, and provide time-limited psychotherapy.
- Hispanics are more likely to receive mental health care in primary care settings than at specialized mental health facilities for a variety of reasons, from lack of access to mental health specialists and income and insurance issues to the stigma surrounding mental illness and the trust of the relationship with the family physician.
- Non–English-speaking individuals are less likely to receive needed mental health treatment, and when they do, fewer than 20% receive care that meets minimally adequate standards. However, when treated in a collaborative care model adapted for Spanish-speaking populations, patients with limited English proficiency showed significant improvement in their mental health.

However, participants in these studies were predominantly insured patients in large health care organizations. Recent research suggests that similar care management strategies are needed to engage low-income, minority populations in the treatment of mental illness[33,34]; however, little is known about their effectiveness with different ethnic groups.[7] With the changing demographics of the United States, it has become a public health imperative to understand and address barriers to the detection and treatment of mental health disorders in the Hispanic population.[11]

In 2006, the Hogg Foundation for Mental Health, Austin, Texas, launched a 3-year demonstration project on implementing collaborative care practices for the treatment of depression and anxiety in primary community clinics. The purpose of the present retrospective study is to evaluate the effectiveness of a grant-funded, multidisciplinary collaborative care program in a primary care setting that served a predominantly Hispanic, low-income patient population. In particular, this study sought to examine patient outcomes from a collaborative care model for the treatment of depression with a subpopulation of Hispanics who primarily speak Spanish.

METHOD

Setting

The data were collected from September 2006 through September 2009 at the study site, the People's Community Clinic, Austin, Texas. Data collection was part of an evaluation of the Integrated Behavioral Health (IBH) program,[35] a collaborative care model of identifying and treating mild-to-moderate mental disorders in adults in a primary care setting. Institutional review boards at the affiliated universities approved this study. The People's Community Clinic is a community-based, primary care clinic that provided care to uninsured and underinsured (Medicaid and low-income Medicare) people in central Texas. The clinic served predominantly low-income Hispanic populations (71%). Most of the clinic staff could speak Spanish, including the physicians. This private, nonprofit primary care clinic delivered a full range of services including medical assessment and treatment, prevention services, on-site laboratory and pharmacy, social work services, and nutrition and dietary counseling.

Collaborative Care Model

The IBH program at the People's Community Clinic received funding from the Hogg Foundation for Mental Health as 1 of 7 sites in Texas designed to provide integrated mental health services on-site and in collaboration with primary care physicians. Figure 1 illustrates the IBH program patient services flowchart. For enrollment in the IBH program, the primary care physicians initially identified the patients in need of mental health services. Based on the clinical interview and physical evaluation of the patient, the physicians gave the patients a preliminary diagnosis, then referred them to the clinic's medical social worker, who acted as a gatekeeper to the care manager for the IBH program. The care manager then conducted a psychosocial history and a mental status examination and made a decision about enrollment in the program.

The patients were offered up to 6 sessions with the clinical care manager, a Master's-level clinical social worker. The clinical care manager was bilingual and provided services in Spanish for patients who preferred it. The clinical care manager functioned as a depression care specialist, provided supportive counseling and patient education, systematically followed up with patients for assessment, and tracked patient progress and contacts in a patient registry. The follow-up schedule was established at the first visit with the care manager, during the assessment and enrollment. The care manager could also make follow-up contact with the patients by telephone, which often occurred during the initial treatment, after medication had been initiated by the provider.

A consulting psychiatrist with the IBH program provided consultation for 4 hours per week to review cases with the care manager. The psychiatrist evaluated patients with diagnostic or treatment concerns and made treatment recommendations to the clinical care manager and the primary care physician. The care manager acted as a liaison between the psychiatrist and the primary care physician, communicating the psychiatrist's recommendations back to the primary care physician. The primary care physician prescribed all medications to the patients enrolled in the IBH program.

The primary care physicians in the clinic selected a physician "champion" to serve as a liaison between themselves and the program administrators, the clinical care manager, and the psychiatrist. As part of the IBH program, the clinic also employed 2 additional bilingual social workers to provide the initial screening and address patients' issues other than their mental health concerns, such as referrals to community resources for basic needs.

Sample

For inclusion in the IBH program, the primary care physicians initially identified adult patients, aged 18 years and over, in need of mental health services based on the clinical interview and referred them to the clinic's social worker for screening (Figure 1). If the patients screened positive for depression or anxiety, they were told about the IBH program and scheduled to see the clinical care manager, who was a bilingual licensed clinical social worker. They were then assessed for program inclusion and informed of the program objectives. The clinical care manager referred patients with diagnoses considered beyond the expertise of the clinic staff to a community mental health agency. These diagnoses included substance abuse, severe personality disorders, and chronic psychotic disorders such as schizophrenia, as self-identified by the patients. The remaining patients who agreed to participate were enrolled in the IBH program and consent for use of data was obtained. The final data set for this 3-year evaluation period of the IBH program included all of the participants enrolled from September 2006 through September 2009 (N = 269).

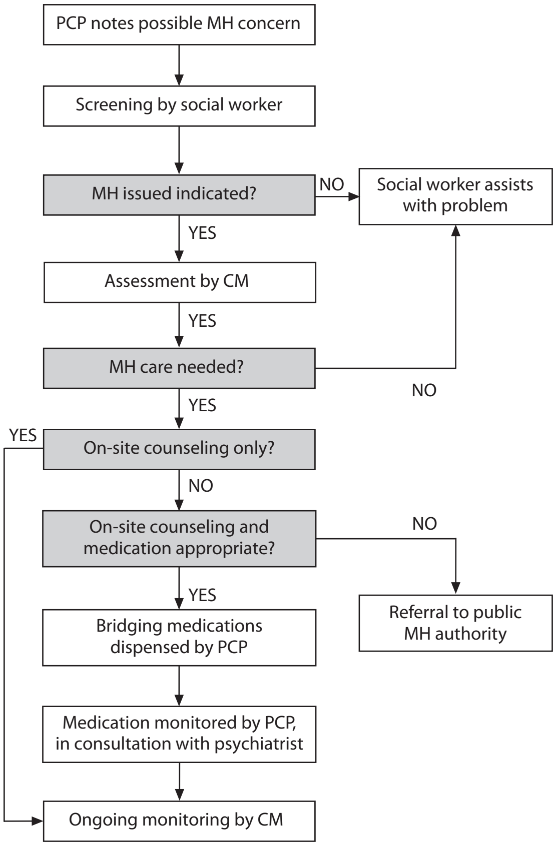
Measures

This study examined changes in the mental health status of patients enrolled in the IBH program. The variables for depression and anxiety were measured by the Patient Health Questionnaire (PHQ-9)[36] depression scale and the Overall Anxiety Severity and Impairment Scale (OASIS)[37] anxiety scale. The clinical care manager administered the scales verbally at initial contact and every subsequent contact, in person or by telephone. When the patient preferred, both of the instruments were administered in Spanish, as were all clinical services.

The dependent variable of depression was measured by the PHQ-9.[38,39] The PHQ-9 is a self-report of frequency of symptoms for "the last 2 weeks" on each of the 9 *Diagnostic and Statistical Manual of Mental Disorders*, Fourth Edition criteria for depression, which results in a range of possible scores from 0 to 27. PHQ-9 scores of 5 to 9 represent mild depression, 10 to 14 represent moderate depression, 15 to 19 represent moderately severe depression, and > 20 represent severe depression.[40] Patients with a PHQ-9 score ≥ 10 are considered to have clinically significant depressive symptoms. Studies in primary care samples indicate the PHQ-9 to be a reliable and valid measure of depression severity, with a Cronbach α of 0.89, and have demonstrated construct validity among African American, Latino, and non-Hispanic white populations.[41,42]

The independent variable indicating the presence of a comorbid anxiety disorder was measured by the OASIS.[37] The OASIS is a 5-item continuous measure of anxiety severity and impairment. Possible scores range from 0 to 20 and an OASIS score of 8 or above is indicative of a probable anxiety disorder and was used as the cutoff point for the dichotomous variable.[43] The scale's brevity has been shown to be useful in primary care settings; and it has demonstrated strong test-retest reliability and convergent validity, with a Cronbach α of 0.80.[37]

Figure 1. Patient Services Flowchart for Integrated Behavioral Health Program



Abbreviations: CM = care manager, MH = mental health, PCP = primary care provider.

In order to understand the role of race/ethnicity and language in predicting outcomes in a collaborative care model, a variable to represent 4 key groups of interest was created: Spanish-speaking Hispanics, English-speaking Hispanics, non-Hispanic whites, and other ethnic groups. Other independent variables used in the data analysis included demographic data and health and treatment variables gathered by the care manager and tracked in the patient registry, such as the presence of comorbid illness and prior treatment with psychotropic medications.

Data Analysis

Frequencies and means were calculated for the sample, and descriptive statistics are reported. χ^2 and analysis of variance tests were used to determine whether key groups of interest, defined by their race/ethnicity and primary language, differed in their demographic characteristics, health, treatment history, and, most importantly, their changes in depression severity over time. A clinically meaningful improvement in depression was calculated as a ≥ 50% reduction in baseline PHQ-9 scores[44] at 3-month follow-up.

Logistic regression models were developed to compare the various race/ethnicity and language group combinations on their odds of achieving clinically meaningful depression improvement when controlling for background characteristics. The estimated β coefficients indicate the relative utility of each characteristic, with positive values indicating greater likelihood of achieving clinically meaningful improvement in depression. The estimated β coefficient represents the odds that a particular characteristic will increase likelihood of treatment response. All the analyses were conducted using PASW statistics software version 18.0 (IBM, Armonk, New York).

RESULTS

Sample Characteristics

The baseline demographic and clinical characteristics of the overall sample (N = 269) are presented in Table 1. Results on the depression measure at the initial assessment indicated that over 60% (n = 168) of the patients had moderately severe to severe major depression (PHQ-9 ≥ 15), with a mean ± SD baseline PHQ-9 score of 16.4 ± 5.0. Results from the anxiety measure at the initial assessment indicated that 78% (n = 209) of patients had a comorbid anxiety disorder. The majority of the patients (60%, n = 161) had received prior treatment with psychotropic medication. Thirty-one percent (n = 84) of patients reported at least 1 comorbid medical problem, and 16% (n = 44) had 3 or more medical problems.

Table 1. Characteristics of Low-Income, Primary Care Patients in a Collaborative Care Program[a]

Characteristic	Overall (N = 269)
Female	219 (81.3)
Age, mean ± SD, y	36.8 ± 13.0
Race/ethnicity by language preference	
Non-Hispanic whites	94 (34.9)
Spanish-speaking Hispanics	75 (27.9)
English-speaking Hispanics	72 (26.8)
Other	28 (10.4)
Depression severity at baseline	
Minimal symptoms	20 (7.4)
Dysthymia	81 (30.1)
Major depression, moderately severe	87 (32.3)
Major depression, severe	81 (30.1)
PHQ-9 score, mean ± SD	16.1 ± 4.5
Comorbid anxiety disorder	209 (77.7)
Prior treatment with psychotropic medication	161 (59.9)
Number of comorbid medical problems	
0	71 (26.4)
1	84 (31.2)
2	27 (10.0)
≥ 3	44 (16.4)

[a] Data are presented as n (%) unless otherwise noted.

Abbreviations: PHQ-9 = Patient Health Questionnaire, SD = standard deviation.

Depression Outcomes by Primary Language and Race/Ethnicity

Table 2 presents the results of the bivariate analyses, which examined comparisons of groups by race/ethnicity and primary language. The non-Hispanic white subpopulation was significantly older (mean= 41.7 years, SD ± 13.1) than any other group ($F_{266} = 7.44$, $P < .001$) and had significantly fewer females (67.0%, n = 63, $\chi^2_{269} = 21.80$, $P < .001$). There were no differences between groups in severity of depression at initial assessment ($\chi^2_{12} = 7.95$, $P = .147$), and no significant difference between groups on baseline PHQ-9 scores ($F_{268} = 1.77$, $P = .153$).

Significant differences between groups were found in the percentage of patients that exhibited a ≥ 50% reduction in baseline PHQ-9 scores at 3-month follow-up ($\chi^2_3 = 16.75$, $P = .001$). Specifically, Spanish-speaking Hispanic patients had a particularly high level of recovery (77%), followed by English-speaking Hispanics (51%), non-Hispanic whites (50%), and other racial/ethnic groups (46%).

A logistic regression was run to determine if the bivariate differences in recovery observed for the racial/ethnic and language groups persisted when controlling for demographic characteristics, comorbidities, and treatment history. The model (Table 3) predicts the likelihood of achieving a clinically meaningful improvement in depression (≥ 50% reduction in baseline PHQ-9 scores at 3 months). Results reveal that Spanish-speaking Hispanic patients had significantly greater odds of achieving that improvement (odds ratio [OR] = 2.45, 95% confidence interval [CI], 1.21–4.95; $P = .013$) compared to non-Hispanic whites. Prior treatment with psychotropic medication (OR = 1.97, CI, 1.10–3.51; $P = .022$), baseline PHQ-9 scores (OR = 1.05, CI, 0.99–1.11; $P = .090$), and the presence of a comorbid anxiety disorder (OR = 0.48, CI, 0.24–0.96; $P = .039$) were also greater predictors of clinically meaningful improvements in depression.

DISCUSSION

Low-income, uninsured, Spanish-speaking Hispanics in this primary care clinic were significantly more likely to achieve clinical improvement in their depressive symptoms than any other group at 3-month follow-up. The finding for greater improvement in the Spanish-speaking population remained even after controlling for age, sex, medical comorbidities, prior treatment, and baseline depression scores. Previous epidemiologic studies demonstrate that Spanish-speaking Hispanics prefer to remain with primary care providers for treatment,[4,8,19] the majority of whom use language services (interpreters or bilingual providers),[45,46] which suggests that Spanish language adaptation of services and cultural competency are critical to facilitating access to care.[5,45,46]

Without a comparison group, it is difficult to know whether the improvements in scores would have occurred on their own or with primary care alone. Previous studies have found the change in depression scores from primary care alone to be in the 19% to 44% range.[31,44,47] The US Department of Health and Human Services suggests that the objective of collaborative care research should be to have 40% or more of the patients realize a 50% or greater reduction in

Table 2. Comparison of Patient Characteristics and Clinical Outcomes by Language and Ethnicity in a Collaborative Care Program[a]

Characteristic	Spanish-Speaking Hispanics (n = 75)	English-Speaking Hispanics (n = 72)	Non-Hispanic Whites (n = 94)	Other (n = 28)	*P* Value[b]
Female	68 (94.4)	61 (81.1)	63 (67.0)	27 (96.4)	< .001
Age, mean ± SD, y	34.8 ± 10.6	33.2 ± 12.1	41.7 ± 13.1	36.0 ± 13.0	< .001
Depression severity at baseline					.147
Minimal symptoms	9 (12.0)	4 (5.5)	6 (6.4)	1 (3.6)	NA
Dysthymia	25 (33.3)	20 (27.8)	30 (31.9)	6 (21.4)	NA
Major depression, moderately severe	23 (30.7)	23 (31.9)	30 (31.9)	11 (39.3)	NA
Major depression, severe	18 (24.0)	25 (34.7)	28 (29.8)	10 (35.7)	NA
Baseline PHQ-9 score, mean ± SD	15.4 ± 5.1	17.2 ± 5.2	16.5 ± 4.6	17.0 ± 4.8	.153
Comorbid anxiety disorder	51 (68.0)	58 (80.6)	78 (83.0)	22 (78.6)	.115
Presence of comorbid medical problems	36 (48.0)	38 (40.4)	63 (67.0)	18 (64.3)	.059
Prior treatment with psychotropic medication	27 (36.0)	39 (54.2)	74 (78.7)	21 (75.0)	< .001
Treatment response at 3-month follow-up (50% reduction in baseline PHQ-9 score)	58 (77.3)	37 (51.4)	47 (50.0)	13 (46.4)	.001

[a]Data are presented as n (%) unless otherwise noted.
[b]Analysis of variance was used for continuous variables and χ^2 test for categorical variables.
Abbreviations: NA = not applicable, PHQ-9 = Patient Health Questionnaire, SD = standard deviation.

Table 3. Logistic Regression for Achieving Clinical Improvement in Depression at 3-Month Follow-Up in a Collaborative Care Program[a]

Characteristic	β	*P*	Exp (β)	95% CI
Age	.002	.890	1.00	0.98–1.02
Sex	−.010	.976	0.99	0.50–1.95
Spanish-speaking Hispanic	.896	.013	2.45	1.21–4.95
English-speaking Hispanic	−.672	.060	0.51	0.25–1.03
Other	.130	.793	1.14	0.43–3.00
Prior treatment with psychotropic medication	.676	.022	1.97	1.10–3.51
Baseline PHQ-9 score	.049	.090	1.05	0.99–1.11
Comorbid anxiety disorder	−.734	.039	0.48	0.24–0.96
Presence of comorbid medical problems	.064	.828	1.07	0.60–1.90

[a]Nagelkerke R^2 = .134.
Abbreviations: CI = confidence interval, PHQ-9 = Patient Health Questionnaire.

depression scores.[44] In this study, 77% of Spanish-speaking Hispanic patients achieved a 50% reduction in scores, followed by English-speaking Hispanics (51%) and non-Hispanic whites (50%).

Previous research has found that non–English-speaking individuals are less likely to receive needed mental health treatment,[4] and when they do, fewer than 20% receive care that meets minimally adequate standards.[46] In this study, there were no differences between Spanish-speaking Hispanics and all others on the severity of depression at initial assessment. Additionally, Spanish-speaking Hispanics were less likely to have had previous treatment, which is consistent with evidence demonstrating that non–English-speaking Hispanics are less likely to have accessed lifetime specialty mental health services[46] but may also be consistent with previous studies that suggest slight advantages in mental health (possibly protective factors) among Hispanic populations in spite of otherwise greater economic disparities.[6,10,48]

Lack of language proficiency is a significant determinant of disparities in mental health care.[46] Although numerous studies of the collaborative care model have been conducted,[29–31,49,50] relatively few studies have examined linguistically adapted collaborative care models for Hispanics.[51–53] This study is unique in that we examined the specific effect of language in a collaborative care model for the treatment of depression in primary care. The results, therefore, suggest a model of integrated care effective for a population at great risk for marginal mental health care, non–English-speaking Hispanics.

CONCLUSION

The overall significant improvement in depression after receiving care management in a primary care setting has strong implications for primary care. Care management has been well established as an intrinsic element of chronic disease care.[54,55] The time constraints of primary care physicians have forced them to rely on ancillary providers in the management of depression.[56] Depression care managers in primary care settings can ensure that a treatment plan is being followed, monitor symptoms and medication side effects, educate patients about their disease, encourage self-management techniques, and provide time-limited psychotherapy.[49]

There exists a persistent shortage of Spanish-speaking clinicians. It is estimated that 40% of Hispanics in the United States are not proficient in English, and this number is likely to increase as the population grows.[57] The magnitude of the language barrier as it contributes to disparities in health and mental health care is likely to persist. Attention to patient preferences in mental health care is essential to improve the quality of treatment and may improve outcomes.[58,59] There is a need to train culturally diverse, bilingual primary care clinicians in evidence-based interventions proven effective for depression in Hispanic populations.[11,34]

The findings from this study demonstrate that patients treated in a collaborative care model, adapted for Spanish-speaking populations, show significant improvement in their mental health. In light of previous research that demonstrates insufficient evidence-based guidelines for improving the quality of care for patients with limited English proficiency[4,34] and evidence that evaluation of patients in their non-primary language or through an interpreter can lead to inaccurate mental health assessments,[5] this study suggests an opportunity. Although the design elements of a community-based program evaluation have limitations, the strong evidence base for collaborative care holds promise for future clinical trials of the model adapted for use with a Spanish-speaking population. Future research must focus on the specific needs of populations who prefer treatment from their primary care physician, for whom disparities in mental health care prohibit access and result in poorer quality of care.

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