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Does Integrated Behavioral Health Care Reduce Mental Health Disparities for Latinos? Initial Findings

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Abstract

Integrated behavioral health care (IBHC) is a model of mental health care service delivery that seeks to reduce stigma and service utilization barriers by embedding mental health professionals into the primary care team. This study explored whether IBHC service referrals, utilization, and outcomes were comparable for Latinos and non-Latino White primary care patients. Data for the current study were collected from 793 consecutive patients (63.8% Latino; M age = 29.02 years [$SD = 17.96$]; 35.1% under 18 years; 65.3% women; 54.3% uninsured) seen for behavioral health services in 2 primary care clinics during a 10.5 month period. The most common presenting concerns were depression (21.6%), anxiety (18.5%), adjustment disorder (13.0%), and externalizing behavior problems (9.8%). Results revealed that while Latino patients had significantly lower self-reported psychiatric distress, significantly higher clinician-assigned global assessment of functioning scores, and fewer received a psychiatric diagnosis at their initial visit compared to non-Latino White patients, both groups had comparable utilization rates, comparable and clinically significant improvements in symptoms (Cohen's d values $> .50$), and expressed high satisfaction with integrated behavioral services. These data provide preliminary evidence suggesting integration of behavioral health services into primary care clinics may help reduce mental health disparities for Latinos.

Keywords

Latino; Hispanic; integrated behavioral health; primary care; health disparities

Research consistently shows Latinos experience disparities in mental health care utilization and quality of care (U.S. Department of Health & Human Services, 2001; Young, Klap, Sherbourne, & Wells, 2001). Nationally representative studies of adults residing in the United States find Latinos, particularly recent immigrants from Central America, are less likely to meet criteria for a mental disorder than non-Latino Whites or Latinos born in the United States (Alegría, Chatterji, et al., 2008; Kessler, Chiu, Demler, & Walters, 2005; Ortega, Rosenbeck, Alegría, & Desai, 2000). However, even when controlling for differences in the prevalence of mental health difficulties, Latinos are less likely to utilize

mental health services than non-Latino Whites (for a review, see Cabassa, Zayas, & Hansen, 2006).

Regarding quality of care, Latinos are less likely to receive evidence-based treatments than non-Latinos (Department of Health and Human Services [DHHS], 2001). For individuals with a symptomatic depressive or anxiety disorder, Young and colleagues (2001) assessed appropriate care in the form of efficacious psychotropic medication or counseling with a mental health specialist or primary care provider. Results showed that among those who visited a provider in the past year, Latinos (24%) were less likely than non-Latino Whites (34%) to receive appropriate care for their disorder. Likewise, pooled data from the Collaborative Psychiatric Epidemiological Surveys (Alegría, Jackson, Kessler, & Takeuchi, 2008) revealed that Latinos were significantly less likely to receive adequate depression care in the past year compared to non-Latino Whites (Alegría, Canino, et al., 2008). Adequate care was defined as having four or more visits with a provider while taking antidepressant medication or eight or more visits with a specialty mental health provider.

Clinical outcomes are often worse for Latinos than non-Latinos, in part due to premature termination. For instance, a national representative study found Latinos were three times more likely to drop out of treatment prematurely than non-Latinos (Olfson, Moitabai, Sampson, Hwang, & Kessler, 2009). For those who are referred to specialty mental health care and stay in treatment, the question remains whether outcomes are comparable for ethnic groups. Miranda and colleagues (2005) reviewed numerous studies of psychotherapy interventions for children and adults and found that evidence-based interventions were equally effective for African American and Latino children and adults as they were for non-Hispanic Whites. For Mexican Americans in the Los Angeles, California mental health system, Sue, Fujino, Hu, Takeuchi, and Zane (1991) found that they showed better treatment outcomes and lower probability of premature treatment termination when they were ethnically and linguistically matched with their therapist.

Care providers may contribute to early drop-out through unintentional biases. Studies have suggested that ethnic minority psychiatry patients are perceived as functioning at a lower level (West et al., 2006) than similarly diagnosed White patients. Related to this, ethnic minority patients may not establish as strong a therapeutic alliance with their care provider as majority White patients, particularly if the care provider is White (Vasquez, 2007).

The mental health service disparities Latinos experience are likely due to myriad factors, including concerns about cost of services, lack of insurance, lack of Spanish-speaking providers, fears of deportation, lack of transportation, and cultural responsiveness of interventions (Bridges, Andrews, & Deen, 2012; Kouyoumdjian, Zamboanga, & Hansen, 2003; Sanchez, Chapa, Ybarra, & Martinez, 2012). As part of a needs assessment survey, Bridges and colleagues (2012) interviewed Hispanic immigrant adults residing in Arkansas about their utilization of mental health services. The most frequently cited reasons for not accessing mental health services were cost, lack of health insurance, and linguistic barriers. Another issue is the fear that seeking formal health care services will lead to questions about citizenship and immigration status and a risk of deportation (Dutton, Orloff, & Aguilar Hass, 2000; Shattell, Hamilton, Starr, Jenkins, & Hinderliter, 2008). In an epidemiologic study by

Aguilar-Gaxiola and colleagues (2002), researchers assessed the mental health needs and utilization of mental health services by Mexican Americans in Fresno, California. Of those with at least one mental disorder in the past year, 19% reported that they did not have transportation to mental health services. In terms of cultural responsiveness, a lack of providers who speak Spanish or are familiar with the cultural values and traditions of Latino clients can serve as a barrier to service use (Bridges et al., 2012). Indeed, Griner and Smith (2006) have shown culturally adapted interventions lead to significant improvement in service outcomes for Latinos. For instance, interventions given to non-English speaking clients were more effective if they were conducted in the client's native language than if they were conducted in English.

Many of the cost barriers may be multifaceted (Kouyoumdjian et al., 2003). For example, the typical schedule of weekly therapy sessions used in traditional care may require patients miss work or make childcare arrangements, both of which can inflate the cost of service utilization. Systemic barriers (e.g., lack of transportation, few Spanish speaking providers) that occur in areas with historically large Latino populations (Vega, Kolody, Aguilar-Gaxiola, & Catalano, 1999) may be especially pronounced in more rural areas where the Latino population has recently expanded (Bridges et al., 2012). Patient characteristics such as cultural values, perceptions and interpretations about mental illness, and acculturation may also influence rates of service utilization and outcomes for Latinos (Bernal & Sáez-Santiago, 2006; Garcés, Scarinci, & Harrison, 2006). For instance, Latinos who are highly acculturated access health care services at higher rates than those who have recently immigrated to the United States (Lara, Gamboa, Kahramanian, Morales, & Hayes Bautista, 2005). In addition, Latinos tend to express somatic complaints in response to psychological distress and, in response, utilize medical services over mental health services (Escobar et al., 1987).

Integrating mental health care into primary care service delivery systems may reduce many of the above-mentioned barriers to providing mental health care to the Latino population (Sanchez et al., 2012). Latinos seek mental health care services more frequently from primary care than any other resource, including specialty mental health care (Bridges et al., 2012; Vega et al., 1999). However, primary care physicians are limited in the amount of time spent with each patient and lack extensive training in mental health diagnosis and treatment (Mitchell, Vaze, & Rao, 2009). As a result, many mental health needs of patients, particularly Latino patients, may go undetected (Borowsky et al., 2000; Lagomasino et al., 2005). Indeed, a meta-analysis showed that primary care physicians fail to detect mental health problems in approximately half of patients with depression (Mitchell et al., 2009). Detection rates are significantly worse for patients who are ethnic or racial minorities, including Latinos, compared to White patients (Borowsky et al., 2000). On the other hand, once treatment is accessed, studies suggest Latinos and Whites benefit at comparable rates (Sue, 1988; Tonigan, 2003; Voss Horrell, 2008).

Several models of mental health integration into primary care have been proposed. Blount (1998), for example, proposed five different levels of integrated care (see Table 1), where every level involved increased collaboration between mental health professionals and primary care practitioners. At the lowest level of integration, mental health providers are

situated off-site, accept referrals from primary care providers on occasion, but communication and collaboration are formal and at a minimum. At the highest level of integration, mental health and primary care practitioners work as members of the same health care team, chart in the same patient medical record, use the same examination rooms to provide patient care, and even see patients together when warranted.

The integrated behavioral health care (IBHC) model of collaborative care (Level 5, see Table 1) capitalizes on innovations that reduce disparities in other collaborative care models while reducing barriers to service utilization even further by changing the manner in which care is delivered. In particular, session frequency and length and procedures for patient referrals shift dramatically at this level. Mental health specialists are available “on demand” to see patients at the moment mental health needs are identified (Blount, 1998). During the same-day referrals, also called “warm handoffs,” the physician introduces the mental health professional, referred to as a behavioral health consultant (BHC), to the patient as a member of the treatment team. Initial sessions with the BHC often occur at the time of the “warm handoff” and last between 15 and 30 min. An initial treatment plan is developed collaboratively between the BHC and the physician, along with other members of the health care team involved in patient care. Follow-up visits, when scheduled, typically occur every 3 to 4 weeks and usually remain brief (e.g., under 30 min).

Although the IBHC model reduces the overall time a patient spends with a mental health professional, it has already garnered some evidence suggesting it is effective in treating a variety of mild to moderate psychiatric disorders such as depression (Katon, 1995) and anxiety (Roy-Byrne, Katon, Cowley, & Russo, 2001), with treatment gains being maintained 2 years after interventions (Ray-Sannerud et al., 2012). Still, much of this evidence has been obtained through Veterans’ Affairs or active military primary care clinics and in primarily non-Latino White samples (Corso et al., 2012) or samples with unknown ethnic distributions (Bryan et al., 2012). However, over the past decade, the Latino population is expanding into more rural regions of the United States with historically small Latino populations (Ennis, RiosVargas, & Albert, 2011). Seven of the nine states in which the Latino population doubled (Alabama, Arkansas, Kentucky, Mississippi, South Carolina, South Dakota, and Tennessee) previously had Latino populations that comprised 3% or less of the overall population. These demographic shifts highlight the increased importance of adequately addressing the mental health needs of Latinos. Therefore, this study explored whether IBHC service referrals, utilization, and outcomes were comparable for Latinos and non-Latino White primary care patients in Arkansas, a relatively rural state whose Latino population has grown significantly in the past two decades (U.S. Department of Commerce, Economics and Statistics Administration, U.S. Census Bureau, 2003). We proposed the following hypotheses.

Hypothesis 1: Given likely differences in base rates of psychiatric disorders (Kessler et al., 2005), we hypothesized Latino patients would be referred less often than non-Latino White patients for BHC services.

Hypothesis 2: Consistent with data from the National Comorbidity Survey Replication (Kessler et al., 2005), we hypothesized Latinos would have higher rates of externalizing disorders compared to non-Latino Whites. We further expected Global Assessment of

Functioning score (GAF; Jones, Thornicroft, Coffey, & Dunn, 1995) scores to be lower in Latino patients compared to non-Latino White patients (West et al., 2006).

Hypothesis 3: We hypothesized Latino patients would report lower therapeutic alliance with their BHC than non-Latino patients (Vasquez, 2007).

Hypothesis 4: We hypothesized Latino behavioral health patients would be less likely to return to a scheduled follow-up appointment than non-Latino White patients (Olfson et al., 2009).

Hypothesis 5: Consistent with Sue (1988), we hypothesized Latino patients would demonstrate improvement rates similar to non-Latino patients.

Method

Setting

The current study took place in two primary care clinics, both part of a federally qualified health center (FQHC). The clinics are located in a medically underserved area, with a ratio of one primary medical care physician per 4,000 to 4,999 residents (Health Resources and Services Administration, 2012). Patients pay for services based on a sliding fee scale discount using household size and income; no one is turned away, regardless of insurance status or ability to pay. The two primary care clinics employ over 200 people, including approximately 30 health care providers who provided health care to over 25,000 patients in 2011.

Participants

Data for the current study were collected from consecutive patients seen for behavioral health services during a 10.5 month period (from August 1, 2011 to June 22, 2012). According to the clinics' electronic medical records and summary clinic reports, during that 10.5 month time, the two primary care clinics saw a total of 17,460 patients. During that same time period, a total of 1,964 patients were seen for behavioral health services, representing 11.2% of all primary care patients. Complete data from electronic medical records and behavioral health care provider notes were collected for 823 patients (41.9% of all BHC patients) seen by two clinical psychology trainees (one bilingual non-Latino White male and one monolingual English speaking Latina female) who were asked to keep more detailed records of their patients for training purposes.

Table 2 provides demographic information for all primary care medical patients seen during the 10.5-month time period, all behavioral health patients seen during that time period, and all study participants for whom complete data were obtained. Analyses comparing study participants to all behavioral health patients, detailed in Table 2, suggested differences between the two groups were of very small magnitude (all Cohen's d values $< .024$, $\phi < .073$, Cramer's $v < .075$).

Data for this study were obtained from only the Latino ($n = 506$) and non-Latino White ($n = 287$) patients seen by the behavioral health trainees. Demographics for Latino and non-Latino behavioral health trainee patients are detailed in Table 3. Non-Latino White patients

were significantly older ($M = 32.64$ vs. $M = 26.96$ years), $t(791) 4.33, p .001$ and more likely to speak English as their primary language (99.3% vs. 15.6%), $\chi^2(1) 516.53, p .001$, but were as likely as Latino patients to be female (64.1% vs. 66.0%), $\chi^2(1) 0.29, p .590$ and to lack health insurance (58.5% vs. 51.5%), $\chi^2(1) 2.13, p .144$. Sessions were conducted in Spanish for 54.1% of patients and translators (trained medical assistants) were used for 21.0% of these sessions. Patients ranged in age from 1 to 75 years, with a mean age of 29.02 ($SD = 17.96$). Of the pediatric patients (patients under 18 years of age; $n = 278$), the average age was 8.60 years ($SD = 4.39$). Of the adult patients ($n = 515$), the average age was 40.03 years ($SD = 11.81$). Indeed, 75.9% of pediatric patients, but only 57.3% of adult patients, were Latino, $\chi^2(1) 27.10, p = .001$. With regard to insurance status, 18.1% of pediatric patients were uninsured, compared to 71.4% of adult patients, $\chi^2(1) 112.69, p = .001$.

Procedures

During primary care visits, medical providers could refer patients with an identified behavioral health issue (most commonly attention deficit/hyperactivity disorder or behavioral problems, adjustment disorder, anxiety, depression, dietary concerns, sleep difficulties, and sexual disorders) to one of the four BHCs for a same-day appointment. Patients were seen for an average of 1.53 visits ($SD = 1.00$, range 1–8). Visits generally lasted 15 to 30 minutes and were spaced approximately 2 to 4 weeks apart. Behavioral health sessions were problem focused and generally employed brief cognitive-behavioral interventions such as behavioral activation, exposure therapy, psychoeducation, and parent management training. Follow-up visits were scheduled if the BHC and patient felt one would be helpful or appropriate. After each behavioral health visit, if the BHC felt it was appropriate and the patient had time, he or she provided the patient with a self-report measure of psychiatric distress and therapeutic alliance (for youth, caregivers, usually mothers, were asked to complete this measure). Patients who were unable to read the items were given assistance by office staff or medical assistants. The BHCs were not present while patients completed the self-report measures. Patients who completed the self-report measures ($n = 173$) were then instructed to return them to the front office staff when they checked out. At the time of check-out, patients also scheduled any necessary follow-up appointments. All procedures were approved by the executive director of the FQHC and the university Institutional Review Board.

Measures

Table 4 provides a description of all data sources utilized for this study. Specific information about key study variables is provided in the following sections.

Psychiatric distress—At their first and all subsequent behavioral health appointments, patients were instructed to complete the A Collaborative Outcomes Resource Network (ACORN; Brown, 2011) questionnaire. To assess patient symptoms and functional impairment, one of four versions of the ACORN questionnaires was utilized (Brown, 2011). The 18-item ACORN is a self-report measure that assesses global levels of psychiatric symptoms. The ACORN is also available in Spanish. The adult version (for people 18 years or older) asks questions about mood, anxiety, sleep, alcohol and drug use, and functional impairment. The youth version (for people 12–17 years of age) asks questions about mood

and anxiety, but also behavior problems, attentional difficulties, social problems, and drug and alcohol use. The child version (for youths 11 years of age or younger) asks questions about mood, anxiety, disruptive behaviors, and attentional concerns. Items inquire about how often the patient has experienced each of the symptoms in the past 2 weeks. Responses are scored on a 5-point Likert scale ranging from 0 (*never*) to 4 (*very often*). Items are then averaged to form a global score. In the current study, 43 of the completed ACORN questionnaires were for child patients, one was for an adolescent patient, and the remaining 129 were for adult patients.

According to the ACORN manual, Cronbach's alpha for the global distress items was .92 in clinical samples. In the current study, Cronbach's alphas for the ACORN were .92 for the adult version, .80 for the youth caregiver version, and .93 for the child caregiver version. Concurrent validity was demonstrated with a significant relation between ACORN global distress scores and the Beck Depression Inventory ($r = .78$; Beck, Steer, & Carbin, 1988). Average scores for people currently in treatment is 2.1 ($SD = 0.7$). The ACORN manual specifies that benchmarks for clinically meaningful improvement are a Cohen's d of .50 or greater.

A second measure of psychiatric distress, the GAF (Jones, Thornicroft, Coffey, & Dunn, 1995), was obtained for each patient's initial behavioral health visit through the session note in the patient's electronic medical record. GAF scores are rated on a 0 to 100 scale, with higher scores indicating lower levels of psychiatric symptomatology. The scale demonstrates high interrater reliability (intraclass correlation .86) and criterion validity (correlation between GAF scores and the global severity index of the Symptom Checklist 90 was $r = -.46$; Hilsenroth et al., 2000).

Therapeutic alliance—In each version of the ACORN, there are four questions assessing therapeutic alliance, all scored on a 5-point Likert scale ranging from 0 (*do not agree*) to 4 (*agree*). These four items assess whether the patient believed the information discussed during the behavioral health visit was relevant to them, whether the patient believed the session was helpful, whether the patient felt liked and understood by the BHC, and the patient's perceptions of the working relationship with the BHC. These items were averaged to form a session alliance score, with higher scores indicating greater therapeutic alliance. In the current study, Cronbach's alpha for the therapeutic alliance questions was .85.

Statistical Analyses

Prior to analyzing study aims, descriptive statistics were computed for all demographic variables. In addition, chi-square analyses and t tests explored demographic differences between Latino and non-Latino patients, between patients at the two clinics, and between patients of the two behavioral health trainees. None of the comparisons by clinic location or trainee were significant. Because Latino patients were significantly younger than non-Latino patients (see Table 3), some analyses controlled for age. Because there were significant gender differences in rates of psychiatric diagnoses: 74.4% of men and 82.1% of women received a diagnosis, $\chi^2(1) = 6.78, p = .009$; and likelihood of following up with a scheduled appointment, 29.2% of men and 24.1% of women kept a scheduled follow-up appointment,

29.2% of men and 10.3% of women were not scheduled for a follow-up appointment, $\chi^2(2) = 15.50, p < .001$, analyses also included gender as a covariate. For the evaluation of Hypotheses 3 through 5, we further included psychiatric diagnosis as a covariate, as it could influence therapeutic alliance, likelihood of needing a follow-up visit, and degree of improvement (Bryan et al., 2012).

Results

Hypothesis 1 (H1): Patterns of Referral

Although a chi-square test was consistent with our first hypothesis and suggested that the proportion of Latinos PCPs referred to BHC services was smaller than the proportion of Latinos in the overall patient population, $\chi^2(1) 18.65, p = .001$, the two proportions were relatively similar. In particular, Latinos comprised 54.5% of the patient population and 52.2% of behavioral health patients (see Table 2).

H2: Diagnostic Profiles of Patients Referred for IBHC Services

Latinos were significantly less likely to receive a psychiatric diagnosis than non-Latinos, $\chi^2(1) = 18.27, p < .001$ (see Table 5). In particular, 75.1% of Latino patients received an Axis I diagnosis (or a diagnostic rule out) at their initial IBHC appointment, compared to 87.8% of non-Latino Whites. Even after controlling for gender and age, Latino patients were 48.9% as likely to receive a diagnosis as non-Latino Whites (see Table 6).

There were no significant differences in the proportion of Latino (20.2%) and non-Latino (24.0%) behavioral health patients who received a depressive disorder diagnosis, $\chi^2(1) 1.63, p = .20$ (see Table 5), even after controlling for gender and age (see Table 6). Although the proportion of non-Latino White patients (22.3%) diagnosed with an anxiety disorder at the first session was larger than that of Latino patients (16.4%), $\chi^2(1) = 4.22, p = .04$, this effect was no longer significant once age and gender were entered as control variables (see Table 6). Latino patients (14.8%) were significantly more likely to be diagnosed with an adjustment disorder than non-Latino patients (9.8%), $\chi^2(1) 4.16, p = .04$, and this was true even after controlling for age and gender (see Table 6). Contrary to our hypothesis, the proportions of patients diagnosed with an externalizing disorder (attention deficit/hyperactivity disorder, oppositional defiant disorder, or conduct disorder) were similar for Latino (8.7%) and non-Latino (11.8%) patients, $\chi^2(1) 2.05, p = .15$. After controlling for gender and age, the proportion of patients diagnosed was significantly different for the two ethnicities, with Latino patients being 3.57 times more likely to receive an externalizing disorder diagnosis than non-Latino patients (see Table 6).

As detailed in Table 3, and contrary to our hypothesis, Latinos ($M 55.2, SD 7.3$) were assigned higher GAF scores at their first behavioral health visit compared to non-Latinos ($M = 52.1, SD = 8.2$), $t(769) = -5.48, p = .001$. This was true even after controlling for age, gender, and diagnostic status (see Table 7). Likewise, Latino patients ($M = 1.82, SD = 0.83$) rated their global psychiatric distress significantly lower than non-Latino patients ($M = 2.29, SD = 0.77$), $t(171) = 3.62, p = .001$. When controlling for age, gender, and diagnostic status,

ethnicity continued to significantly predict self-reported psychiatric distress on the ACORN measure (see Table 7).

When comparing ethnic groups on their previous 12-month service utilization, non-Latinos ($M = 6.31$, $SD = 7.32$) had significantly more telephone encounters than Latino patients ($M = 3.13$, $SD = 4.31$), $t(209) = 3.92$, $p = .001$, but there were no group differences for in-person clinic encounters, $t(209) = 0.18$, $p = .86$ (Latino $M = 5.51$, $SD = 3.73$; non-Latino $M = 5.63$, $SD = 5.52$). After controlling for age, gender, and diagnostic status, ethnicity continued to relate significantly to prior year telephone encounters (see Table 7).

H3: Therapeutic Alliance

Finally, we explored differences in therapeutic alliance ratings between Latino and non-Latino patients after the first behavioral health session. Results revealed significant group differences between Latinos ($M = 3.86$, $SD = 0.35$) and non-Latinos ($M = 3.69$, $SD = 0.60$) on therapeutic alliance, $t(153) = 2.26$, $p = .03$, but in the opposite direction of our hypothesis (see Table 8). Latino patients reported being more satisfied with their BHC and initial visit than did non-Latino patients. When controlling for age, gender, and diagnostic status, ethnicity was no longer significantly related to therapeutic alliance scores (see Table 9).

H4: Attendance at Follow-Up Appointments

Of the 217 patients with follow-up appointment data, 16.6% ($n = 36$) were not specifically scheduled for a follow-up, 1.9% ($n = 4$) were scheduled within 1 week of their first appointment, 16.1% ($n = 35$) were scheduled for a 2-week follow-up, 43.8% ($n = 95$) were scheduled for a 3-week follow-up, 20.3% ($n = 44$) were scheduled for 4 or more weeks out, and 1.4% ($n = 3$) were asked to follow-up at their next scheduled primary care provider appointment. Of the 181 patients who had a follow-up appointment, 30.9% ($n = 56$) kept the appointment as scheduled.

Contrary to our hypothesis, when comparing Latino ($n = 149$) and non-Latino ($n = 61$) patients, there were no significant differences in likelihood of having a follow-up appointment scheduled, $\chi^2(1) = 0.56$, $p = .46$. In particular, 84.6% ($n = 126$) of Latino patients and 80.3% ($n = 49$) of non-Latinos were scheduled for a second behavioral health appointment. When comparing the likelihood of attending that scheduled second appointment by ethnicity, no significant differences emerged, $\chi^2(1) = 0.75$, $p = .39$. Scheduled follow-up appointments were kept by 28.0% ($n = 35$) of Latino and 34.7% ($n = 17$) of non-Latino patients. Attendance was not predicted by therapeutic alliance ($M_{\text{attended}} = 3.78$, $SD = 0.62$, $M_{\text{missed}} = 3.78$, $SD = 0.54$), $t(30) = 0.00$, $p > .99$, or global distress scores at baseline ($M_{\text{attended}} = 2.31$, $SD = 0.60$, $M_{\text{missed}} = 2.14$, $SD = 0.82$), $t(35) = -0.58$, $p = .57$.

No significant differences were found between Latinos ($M = 1.57$, $SD = 1.01$) and non-Latinos ($M = 1.48$, $SD = 0.99$) on their total number of behavioral health visits, $t(791) = -1.21$, $p = .23$. This was true even after controlling for age, gender, and receiving a psychiatric diagnosis at the first behavioral health visit (see Table 9).

H5: Patient Improvement

Consistent with our expectations, there were no significant group differences between Latinos ($M = 0.48$, $SD = 0.70$, $n = 40$) and non-Latinos ($M = 0.33$, $SD = 0.61$, $n = 30$) on symptom improvement in ACORN self-report scores, $t(68) = 0.96$, $p = .34$. Both groups demonstrated clinically meaningful improvement, with Cohen's d values exceeding .50. Partial correlations between change scores and ethnicity remained nonsignificant even when controlling for age ($r_{\text{partial}} = .08$, $p = .71$), gender ($r_{\text{partial}} = .08$, $p = .71$), and having received a psychiatric diagnosis at the first behavioral health session ($r_{\text{partial}} = .08$, $p = .70$).

Discussion

The primary contribution of this study is its comprehensive assessment of service utilization disparities for Latino and non-Latino primary care patients accessing IBHC services. Disparities were assessed at multiple levels, from initial physician referral to diagnostic findings and symptom improvement. To the best of our knowledge, this is the first published study examining whether the IBHC model addresses mental health care disparities for newly established U.S. Latino populations that tend to experience significant barriers to service utilization (DHHS, 2001).

Analyses comparing the percentage of Latino and non-Latino patients referred to BHC services versus the overall clinic patient population revealed that Latino patients were referred by physicians at significantly lower rates than non-Latino patients. Although the difference was statistically significant, the difference between the percentage of Latino patients referred (52.5%) and the overall percentage of Latino patients seen by the clinic (54.0%) was relatively small. These data suggest two possibilities. First, it may be that some disparities, albeit small, persist in either provider referral or patient acceptance of referral for Latino individuals in the IBHC model. It is interesting that this disparity remains present in a model where mental health specialists are completely integrated into the primary care setting and are readily available for consults. Second, the disparity in referral rates may be due to better functioning by Latino behavioral health patients, as those who were referred utilized telephonic services less often in the prior year, received a psychiatric diagnosis less often, were rated as less distressed by clinicians, and rated themselves as less distressed than non-Latino White patients referred for behavioral health services. About a quarter of Latino patients were not given an Axis I diagnosis at their first BHC appointment, compared to approximately 12% of non-Latino behavioral health patients. These differences in referral rates and the provision of diagnoses persisted even after controlling for age and gender. The non-Latino patients were significantly older and had lower functioning than the Latino patients, indicating more psychopathology and thus a greater need to make referrals to BHC and other professional mental health service providers. After further examination of patient profiles, Latinos were found to differ from non-Latinos in the kinds of diagnoses they received from BHC. In particular, Latino patients received more adjustment disorder and externalizing disorder diagnoses. This also may be due to higher levels of functioning in the Latino population, as Latino patients tended to rate themselves as less distressed and received higher GAF scores when compared to non-Latino Whites.

Although other researchers find evidence that Latinos tend to terminate treatment early in traditional mental health (Olfson et al., 2009), our findings showed comparable rates of attendance for Latino and non-Latino patients. Furthermore, our follow-up rates were similar to those found in other IBHC models (Bryan et al., 2012; Corso et al., 2012). In particular, we found that approximately 28.0% of Latino patients and 34.7% of non-Latino White patients attended their scheduled follow-up sessions, which is similar to the 29.8% attendance rate found by Bryan and colleagues (2012) and the 28.4% found in Corso and colleagues (2012). In addition, the total number of BHC visits attended was comparable for Latino and non-Latino patients ($M_{\text{Latinos}} = 1.57$, $M_{\text{non-Latinos}} = 1.48$) and similar to that of other studies of the IBHC model (e.g., 1.59 visits; Corso et al., 2012).

Finally, this study explored whether clinical improvement would be related to patient ethnicity. Overall, Latino and non-Latino patients had comparable and clinically significant improvement in symptoms at follow-up (Cohen's d values $>.50$ for both ethnicities). Both Latino and non-Latino patients showed clinically elevated symptoms of distress at baseline. The two groups indicated that they were approaching levels of distress at their last BHC session that were in the mild or normal range of functioning. Given that patients who are more distressed at baseline tend to improve more in IBHC than those who are less distressed (Bryan et al., 2012) and that Latino patients referred for IBHC services showed lower levels of distress at baseline than non-Latino patients, one might have expected Latinos not to improve at a comparable rate with integrated behavioral health interventions. In this regard, our results are consistent with others (e.g., Sue, 1988) who find all patients, regardless of race or ethnicity, benefit similarly from psychological treatment. With regard to therapeutic alliance, contrary to our expectations, we found Latino patients endorsed higher therapeutic alliance compared to non-Latino Whites, and both groups showed high alliance. This is also comparable to other research on alliance in IBHC models (Corso et al., 2012).

Similar to other systems of collaborative care (e.g., Miranda et al., 2003), it may be that IBHC, by virtue of being embedded in primary care clinics, addresses many of the barriers in access to mental health care received by Latino individuals, including location, transportation, and access. This study suggests that the IBHC model is effective at reducing additional disparities. Although replication with larger samples is critical, results suggest Latino individuals are equally likely to continue with care, report high satisfaction with behavioral health care, and achieve comparable and clinically significant improvements in psychiatric functioning when compared to non-Latino Whites. The lack of disparities between these two groups is encouraging, suggesting additional efforts to evaluate ethnic and racial differences in response to IBHC interventions are warranted.

Limitations

The study's findings must be interpreted with attention to its limitation. First, the Latino patients in this study overwhelmingly preferred receiving services in Spanish. This may limit the extent to which results can generalize to samples that are not Spanish dominant. Second, several factors influenced the amount of data that were obtained in this study. Characteristically, follow-up appointments in the IBHC model are spread out over longer periods of time than in traditional models of care. In addition, BHCs often see patients with

a wide array of levels of impairment. As a result, for patients with very low levels of impairment, follow-up appointments may not be requested at all. Conversely, patients with intense mental health needs may be referred out to specialty mental health care providers, in which case follow-up appointments may only be scheduled to ensure the referral was completed by the patient. Accordingly, the total number of visits for Latinos and non-Latinos in this study was on average between one and two visits. Furthermore, pre/post data were obtained only for those patients who were seen for more than one visit and had completed and returned the ACORN questionnaire. Due to this, statistical power for some of the analyses in this study was low. Clearly, further efforts are needed to obtain self-report data from patients at the end of each BHC appointment. Another important limitation to consider is that this study was retrospective in nature and did not employ experimental methods. Future studies evaluating the IBHC model should employ more rigorous experimental and quasi-experimental methods.

The extent to which BHCs took into account culture as it related to Latino patients' expressions of distress is also unknown. Given the tendency for Latino patients to manifest psychological distress with somatic complaints, culture may be one important factor for primary care providers and BHCs to consider in their interpretation of symptoms. Future directions in the assessment of IBHC services might include collecting data from BHCs regarding the degree to which they used this knowledge of culture to guide their conceptualization of patient distress. Future directions with the assessment of IBHC services might also include the collection of data to quantify the cost-effectiveness of the model. It is anticipated that providing mental health services to patients in the primary care setting will prevent the need for psychiatric hospitalizations and eliminate costs of medical services related to emergency room visits and other expensive inpatient care.

Implications

This study demonstrates that both Latinos and non-Latino Whites who access integrated behavioral health services receive interventions that result in comparable positive outcomes. Future efforts to evaluate integrated programs may seek to include perceptions of referring physicians, more detailed and comprehensive evaluations of patients, and an investigation into what interventions occur during behavioral health visits. Furthermore, efforts to explore the extent to which patients find the hypothesized barriers to traditional mental health service utilization are overcome using the integrated care model will help bolster our understanding of how this method of mental health service delivery can help reduce health disparities.

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Table 1

Different Levels of Mental Health and Medical Collaboration and Integration



Degree of integration	Level	Notable features
	5	<ul style="list-style-type: none"> • Shared location/sites • Shared patient charts • Frequent referrals • Regular, informal consultation between health providers
	4	<ul style="list-style-type: none"> • Shared location/sites • Different office space • May or may not share patient charts • Regular referrals • Regular consultation (formal and informal) between health providers
	3	<ul style="list-style-type: none"> • Shared location/sites • Different office space • Different patient charts • Regular referrals • Regular, formal consultation between health providers
	2	<ul style="list-style-type: none"> • Different locations/sites • Different patient charts • Regular referrals • Infrequent, formal consultation between health providers
	1	<ul style="list-style-type: none"> • Different locations/sites • Different patient charts • Infrequent referrals • Infrequent, formal consultation between health providers

Note. See Blount (1998).

Table 2

Descriptive Statistics of Patients by Subgroups

Demographic variable	All clinic patients ^a	All BHC patients ^b	All study participants ^c
	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>
Age (years) ^{d,e}	23.65 (19.45)	31.15 (18.80)	28.72 (18.13)
Sex ^{d,e}			
Female	11,091 (63.5%)	1,370 (69.8%)	530 (64.4%)
Male	6,369 (36.5%)	594 (30.2%)	293 (35.6%)
Race ^d			
American Indian or Alaska native	31 (0.2%)	9 (0.5%)	—
Asian	117 (0.7%)	10 (0.5%)	—
Black/African American	245 (1.4%)	24 (1.2%)	16 (1.9%)
Multiple races	79 (0.5%)	8 (0.4%)	—
Native Hawaiian/Pacific Islander	868 (5.5%)	31 (1.6%)	10 (1.2%)
Other	201 (1.2%)	15 (0.8%)	6 (0.7%)
Unreported/Refused to report	640 (3.7%)	59 (3.0%)	—
White	15,279 (87.5%)	1,808 (92.1%)	791 (96.1%)
Ethnicity ^e			
Latino	9,512 (54.5%)	1,026 (52.2%)	506 (61.5%)
Not Latino	7,425 (42.5%)	888 (45.2%)	317 (38.5%)
Unreported/Refused to report	523 (3.0%)	50 (2.6%)	—
Primary language ^{d,e}			
English	9,176 (52.6%)	1,074 (54.7%)	387 (47.0%)
Spanish	7,647 (43.8%)	864 (44.0%)	429 (52.1%)
Marshallese	579 (3.3%)	21 (1.1%)	6 (0.7%)
Other	35 (0.2%)	2 (0.1%)	1 (0.1%)
Unreported	23 (0.1%)	3 (0.1%)	—

Note. BHC = behavioral health care.

^a $n = 17,460$.

^b $n = 1,964$.

^c $n = 823$.

^d Difference between all clinic patients and all BHC patients is significant at $p < .01$.

^e Difference between all BHC patients and study participants is significant at $p < .01$.

Table 3

Descriptive Statistics of Patients by Ethnicity

Variable	Latino (<i>n</i> = 506)	Non-Latino White (<i>n</i> = 287)
Age (years)***	26.96 (<i>SD</i> = 18.11)	32.64 (<i>SD</i> = 17.13)
Sex		
Female	334 (66.0%)	184 (64.1%)
Male	172 (34.0%)	103 (35.9%)
Primary language***		
English	79 (15.6%)	285 (99.3%)
Spanish	427 (84.4%)	2 (0.7%)
Insurance status		
Insured	130 (48.5%)	76 (42.5%)
Uninsured	138 (51.5%)	107 (58.5%)
No diagnosis at first session***	126 (24.9%)	35 (12.2%)
GAF score at first session***	55.2 (<i>SD</i> = 7.3)	52.1 (<i>SD</i> = 8.2)
ACORN global distress at first session	1.82 ^a (<i>SD</i> = 0.83)	2.29 ^b (<i>SD</i> = 0.77)
Prior 12-month service utilization		
Telephone encounters***	3.13 ^c (<i>SD</i> = 4.31)	6.31 ^d (<i>SD</i> = 7.32)
In-person clinic encounters	5.51 ^c (<i>SD</i> = 3.73)	5.63 ^d (<i>SD</i> = 5.52)

Note. GAF = Global Assessment of Functioning; ACORN = A Collaborative Outcomes Resource Network.

^a *n* = 110.

^b *n* = 63.

^c *n* = 149.

^d *n* = 62.

* *p* < .05.

** *p* < .01.

*** *p* < .001.

Table 4

Data Sources and Samples

Data source	All clinic patients ^a	All BHC patients ^b	All study participants ^c
Uniform data system ^d			
Ethnicity	X	X	X
Age	X	X	X
Insurance status	X	X	X
Electronic medical records			
Gender		X	X
Ethnicity		X	X
Race		X	X
Primary language		X	X
Insurance status		X	X
GAF scores		X	X
Psychiatric diagnoses		X	X
Prior 12-month service utilization		X	X
Practicum tracking sheets			
Language spoken in BHC session			X
Use of interpreter			X
Patient self-report			
Psychiatric distress			X
Therapeutic alliance			X

Note. GAF = Global assessment of functioning; BHC = behavioral health consultation.

^a*N* = 17,460.

^b*n* = 1,964.

^c*n* = 823.

^dUniform Data System (UDS). (2007).

Table 5

Frequency Distribution of Diagnoses by Patient Ethnicity

Diagnoses	Latino N (%)	Non-Latino White N (%)
No disorder	126 (24.9)	35 (12.2)
Depressive disorder (MDD, dysthymia, NOS)	102 (20.2)	69 (24.0)
Adjustment disorder	75 (14.8)	28 (9.8)
Externalizing disorder (ADHD/ODD/CD)	44 (8.7)	34 (11.8)
Anxiety disorders		
Phobia (social, specific)	20 (4.0)	5 (1.7)
Panic and/or agoraphobia	17 (3.4)	21 (7.3)
PTSD/ASD	10 (2.0)	8 (2.8)
OCD	4 (0.8)	1 (0.3)
Other anxiety disorder	32 (6.3)	29 (10.1)
v code	21 (4.2)	4 (1.4)
Sleep disorder	13 (2.6)	11 (3.8)
Other	12 (2.4)	7 (2.4)
Enuresis/encopresis	12 (2.4)	3 (1.0)
Sexual disorder	9 (1.8)	2 (0.7)
Learning disorder/mental retardation/autism	4 (0.8)	5 (1.7)
Psychotic disorder	2 (0.4)	4 (1.4)
Eating disorder	2 (0.4)	3 (1.0)
Bipolar disorder	1 (0.2)	12 (4.2)
Alcohol or substance use disorder	0 (0.0)	6 (2.1)

Note. MDD = major depressive disorder; NOS = depressive disorder, not otherwise specified; ADHD = attention deficit/hyperactivity disorder; ODD = oppositional defiant disorder; CD = conduct disorder; PTSD = posttraumatic stress disorder; ASD = acute stress disorder; OCD = obsessive-compulsive disorder; v code = other conditions that may be the focus of clinical attention.

Table 6
 Binary Logistic Regressions Predicting Likelihood of Receiving Psychiatric Diagnoses

Model and predictors	B	SE	W	OR	CI (95%)
No diagnosis					
Step 1: Nagelkerke $R^2 = .078$					
Age < 18 years ***	1.08	0.19	32.01	2.94	2.02, 4.27
Male gender	0.17	0.19	0.78	1.19	0.81, 1.73
Step 2: Nagelkerke $R^2 = .100$					
Latino ethnicity **	-0.72	0.21	11.19	0.49	0.32, 0.74
Depressive disorder					
Step 1: Nagelkerke $R^2 = .200$					
Age < 18 years ***	-2.33	0.34	47.01	0.10	0.05, 0.19
Male gender **	-0.67	0.23	8.42	0.51	0.33, 0.81
Step 2: Nagelkerke $R^2 = .200$					
Latino ethnicity	-0.04	0.19	0.04	0.96	0.67, 1.34
Anxiety disorder					
Step 1: Nagelkerke $R^2 = .036$					
Age < 18 years **	-0.77	0.23	11.46	0.47	0.30, 0.72
Male gender	-0.25	0.21	1.38	0.78	0.51, 1.18
Step 2: Nagelkerke $R^2 = .040$					
Latino ethnicity	0.27	0.19	2.07	1.32	0.91, 1.91
Adjustment disorder					
Step 1: Nagelkerke $R^2 = .026$					
Age < 18 years *	-0.51	0.26	4.00	0.60	0.36, 0.99
Male gender	-0.49	0.26	3.58	0.62	0.37, 1.02
Step 2: Nagelkerke $R^2 = .041$					
Latino ethnicity *	-0.58	0.24	5.79	0.56	0.35, 0.90
Externalizing disorder					
Step 1: Nagelkerke $R^2 = .419$					
Age < 18 years ***	5.07	1.01	25.07	158.90	21.85, 1,155.63

Model and predictors	<i>B</i>	<i>SE</i>	<i>W</i>	<i>OR</i>	<i>CI (95%)</i>
Male gender**	0.79	0.28	7.95	2.20	1.27, 3.81
Step 2: Nagelkerke $R^2 = .457$					
Latino ethnicity***	1.27	0.30	18.14	3.57	1.99, 6.42

Note. Odds reflect probability of being categorized into the no diagnosis group. *B* = logit coefficient; *SE* = standard error; *W* = Wald statistic; *OR* = odds ratio; *CI* = confidence interval.

* $p < .05$.

** $p < .01$.

*** $p < .001$.

Table 7

Multiple Regression Predicting Baseline Global Assessment of Functioning, ACORN Global Distress Scores, and Prior 12-Month Service Utilization

Model and predictors	<i>B</i>	<i>SE</i>	β
Clinician assigned GAF scores			
Step 1: $R^2 = .027$			
Age < 18 years ***	-0.28	.06	-.17
Male gender	0.04	.06	.03
Step 2: $R^2 = .061$			
No diagnosis at first session ***	0.49	.07	.25
Step 3: $R^2 = .019$			
Latino ethnicity ***	0.23	.06	.14
Patient self-reported ACORN global distress scores			
Step 1: $R^2 = .128$			
Age < 18 years **	0.46	.13	.26
Male gender *	0.32	.13	.18
Step 2: $R^2 = .132$			
No diagnosis at first session ***	-0.78	.14	-.37
Step 3: $R^2 = .034$			
Latino ethnicity **	-0.33	.12	-.19
Prior 12-month clinic encounters			
Step 1: $R^2 = .074$			
Age < 18 years ***	2.58	.64	.29
Male gender	-0.89	.64	-.10
Step 2: $R^2 = .013$			
No diagnosis at first session	-1.28	.73	-.12
Step 3: $R^2 = .003$			
Latino ethnicity	0.53	.61	.06
Prior 12-month telephone encounters			
Step 1: $R^2 = .067$			
Age 18 years ***	3.02	.82	.26
Male gender *	-1.86	.82	-.16
Step 2: $R^2 = .015$			
No diagnosis at first session	-1.73	.94	-.13
Step 3: $R^2 = .041$			
Latino ethnicity ***	-2.40	.77	-.21

Note. *B* = unstandardized coefficient; *SE* = standard error; β = standardized coefficient; GAF = Global Assessment of Functioning scale; ACORN = A Collaborative Outcome Research Network questionnaire.

* $p < .05$.

**
 $p < .01.$

 $p < .001.$

Table 8

Outcome Variables by Ethnicity

Outcome variable	Latino	Non-Latino White
	<i>M (SD) or n (%)</i>	<i>M (SD) or n (%)</i>
Therapeutic alliance	3.86 (<i>SD</i> = 0.35)	3.69 (<i>SD</i> = 0.60)
Attended follow-up session	35 (28.0%)	17 (34.7%)
Total number of BHC visits	1.57 (<i>SD</i> = 1.01)	1.48 (<i>SD</i> = 0.99)
Pre/post ACORN change scores	0.48 (<i>SD</i> = 0.70)	0.33 (<i>SD</i> = 0.61)

Note. BHC = behavioral health consultation; ACORN = A Collaborative Outcome Research Network questionnaire.

Table 9

Multiple Regression Predicting Therapeutic Alliance and Number of Behavioral Health Sessions Attended

Model and predictors	<i>B</i>	<i>SE</i>	β
Therapeutic alliance			
Step 1: $R^2 = .031$			
Age < 18 years	-.15	.08	-.15
Male gender	.14	.08	.15
Step 2: $R^2 = .001$			
No diagnosis at first session	.03	.10	.03
Step 3: $R^2 = .022$			
Latino ethnicity	.15	.08	.15
Total number of behavioral health sessions			
Step 1: $R^2 = .000$			
Age < 18 years	-.01	.08	-.01
Male gender	.05	.08	.02
Step 2: $R^2 = .010$			
No diagnosis at first session	-.25	.09	-.10
Step 3: $R^2 = .003$			
Latino ethnicity	.18	.08	.06

Note. *B* = unstandardized coefficient; *SE* = standard error; β = standardized coefficient.