ORIGINAL ARTICLE

Diagnostic Patterns in Latino, African American, and European American Psychiatric Patients

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Background: The purpose of this study was to examine whether Latino patients presenting for behavioral health treatment showed major systematic differences in presenting symptoms, clinical severity, and psychiatric diagnosis compared with European American and African American patients. Documenting such differences should have important implications for evidence-based clinical practice.

Methods: Data were drawn from a large behavioral health service delivery system in New Jersey, and included administrative data, clinical diagnosis, a clinician-rated global level of functioning, and a self-reported symptoms and functioning scale. The study involved a clinical sample of all new admissions into the system between January 1, 2000, and August 31, 2001. To examine the main effects of ethnicity, in the context of other independent variables, logistic regression was performed for each of 3 dependent binary variables: presence or absence of major depression, a schizophrenia spectrum disorder, and bipolar disorder.

Results: Consistent with previous studies, we found that African Americans were diagnosed as having a disorder in the schizophrenic disorders spectrum more frequently than did Latinos and European Americans (odds ratio, 1.80; 95% confidence interval, 1.62-2.00). Latinos were disproportionately diagnosed as having major depression, despite the fact that significantly higher levels of psychotic symptoms were self-reported by Latinos (odds ratio, 1.74; 95% confidence interval, 1.56-1.93).

Conclusions: Latinos in this study were more likely to be clinically diagnosed as having major depression than were other ethnic groups. Further research is needed to determine the reasons for these systematic differences. Possible explanations include (1) self-selection, (2) culturally determined expression of symptoms, (3) difficulties in the accurate application of *DSM-IV* diagnostic criteria to Latinos, (4) bias related to lack of clinicians' cultural competence, and (5) imprecision inherent in the use of unstructured interviews, possibly combined with clinician bias. Additional research is required to determine the generalizability, accuracy, and applicability of these findings and their possible mechanisms.

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According to reports by the US Census Bureau,[1] Latinos are the largest ethnic minority group in the country, numbering more than 35 million, and have the lowest socioeconomic status among minority groups. The Latino population increased by 58% between 1990 and 2000, and similar growth is anticipated in the future, making the need for accurate clinically relevant information more urgent, because demand for mental health services can be expected to increase in this population.

SERVICE USE AND DIAGNOSTIC DISPARITIES

Public policy considerations and standards of care require that all ethnic groups have access to behavioral health care, and that the same criteria are applied to their diagnostic assessment and treatment. However, prior research has revealed differential use patterns and diagnostic disparities in African Americans. Based at least on anecdotal information, it has been suggested that Latinos also share these disparities. Evidence regarding patterns of use, diagnosis, and self-reported symptom severity by Latinos has been scant and sometimes conflicting.

Recent research[2,3] documents that African Americans and Latinos are underrepresented in mental health service systems across the nation, compared with European Americans. While epidemiological studies[4-7] show that individuals in the general population are not likely to receive mental health treatment even when

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they have a current psychiatric disorder, this discrepancy is especially notable for Latinos.

ETHNICITY AND DIAGNOSIS OF PSYCHOSIS

In routine clinical assessments, African Americans were described in several studies[8-16] as having higher rates of diagnosed schizophrenia spectrum disorders and lower rates of depression than European Americans. Some researchers[17,18] theorize that the same may be true for Latinos. However, to our knowledge, there is no empirical evidence to support this assertion. In fact, to our knowledge, there have been no systematic studies of Latino clinical samples that examine these issues.

In the available clinical studies, it is not clear how the presence of psychotic and mood symptoms influences the assignment of a given diagnosis (schizophrenia vs a mood disorder), given that such symptoms may appear in both syndromes. Strakowski et al[15] have suggested 2 sources of potential misdiagnoses of African Americans as contrasted with European Americans: information variance and criterion variance. The former refers to differences between clinicians and researchers in the availability of clinical information recorded by clinicians and used by them to form a diagnostic judgment. The latter refers to differences between clinicians and researchers in the application of diagnostic criteria to the same information, thus leading to potentially discordant diagnoses. Strakowski et al[15,19] reported that mood symptoms were less likely to be recorded in routine clinical assessments of African Americans, and suggest that possibly a greater emphasis is being placed on schneiderian first-rank symptoms of psychosis. Researchers conducting structured interviews report no differences in the expression of mood symptoms by African Americans and European Americans. While not conclusive by any means, this analytical model provides a strong rationale for examining whether Latino psychiatric patients are also subject to similar diagnostic inconsistencies.

ETHNICITY AND SEVERITY OF SYMPTOMS

Data regarding the severity of clinical presentation by different ethnic groups have been mixed. Chu et al[20] found that African Americans present with more severe psychotic symptoms, and anecdotal accounts suggest that Latinos present for treatment with higher levels of impairment, possibly because of delays in seeking treatment. On the other hand, Weisman et al[21] reported that schizophrenic patients from a European American background had a higher frequency of persecutory delusions, nervous tension, and blunted affect than did Mexican Americans with the same diagnosis. Similarly, Brekke and Barrio[22] reported that schizophrenic patients from minority groups were less symptomatic than were nonminority patients.

DIAGNOSTIC PREVALENCE IN THE COMMUNITY

Community studies,[23-25] such as the Epidemiologic Catchment Area Study and the national comorbidity surveys, determined that there were few differences in the prevalence of major psychiatric diagnoses across US ethnic groups. However, as previously noted, large race-related diagnostic differences have been reported in clinical populations. These differences were attenuated when diagnoses were based on structured interviews.[15,26]

LANGUAGE AND DIAGNOSIS

The accuracy of the clinical assessment and diagnosis of Latinos may be affected by the prominence of Spanish-language use among Latino patients and the scarcity of Spanish-speaking therapists. This issue is complicated by the many variations in the type and amount of Spanish used in daily life by Latinos in the United States. There is some evidence that diagnostic inaccuracies in Latinos may be attributable to language use and such cultural factors as different symptomatic expressions and cultural idioms of distress.[27,28]

The research literature offers only a superficial view of the role of language in diagnosis. It has been reported that use of Spanish in a diagnostic interview elicits more personal and revealing information from patients; more aspects of the clinical picture, including psychotic symptoms; and disclosure of more severe forms of psychiatric disorders.[29-31] Thus, it is likely that the scarcity of bilingual therapists may result in less patient self-disclosure.[32] Rogler et al[33] noted that the greater the degree of cultural distance in the therapeutic dyad, the greater was the potential for clinical error. They also warn that the observation of higher levels of pathologic conditions among Latino patients may be simply a linguistic phenomenon rather than a representation of true psychiatric symptoms. However, opposite findings have also emerged from other studies,[34-36] suggesting that it is English-language use in diagnostic interviews that results in greater symptom expression.

In an effort to contribute to this understudied area, we compare the diagnostic and symptom severity patterns of Latinos with those of African Americans and European Americans being enrolled in a large mental health care system. A large database that collects standardized administrative, treatment, and outcome data made this systematic view possible. To our knowledge, these data represent the largest multiethnic cohort to date that provides data on clinician diagnoses and severity ratings in tandem with self-assessed psychological status.

This study addresses 3 central research questions: Are previous findings reporting disproportionate rates of schizophrenia among African Americans replicated in a large behavioral health care system in the northeastern United States? Do Latino diagnostic patterns show a similar pattern of disproportionate diagnosis of schizophrenia? And, are diagnostic patterns for both groups consistent with other information (eg, self-reported symptoms) in the same patients?

METHODS

SITE AND STUDY PARTICIPANTS

The subjects in this study were patients presenting for inpatient and ambulatory services at University Behavioral Health-Care (UBHC) of the University of Medicine and Dentistry of

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Table 1. Demographic Characteristics of Subjects With Intake BASIS-32 Data*

Characteristic	African Americans		Latinos		European Americans	
	Males (n = 2579)	Females (n = 3896)	Males (n = 1010)	Females (n = 1421)	Males (n = 4359)	Females (n = 5980)
Age, y						
15-18	248 (10.4)	226 (6.2)	86 (9.1)	112 (8.5)	305 (8.4)	376 (7.5)
18-34	778 (32.6)	1251 (34.2)	353 (37.4)	510 (38.6)	1062 (29.1)	1622 (32.5)
35-64	1320 (55.3)	2036 (55.6)	484 (51.3)	666 (50.4)	2097 (57.5)	2640 (52.9)
≥65	39 (1.6)	149 (4.1)	20 (2.1)	34 (2.6)	180 (4.9)	355 (7.1)
Mean	35.5	37.7	35.1	35.9	38.3	38.9
Employment						
Full-time	681 (26.6)	1152 (29.6)	372 (36.9)	460 (32.6)	1382 (31.7)	1720 (28.8)
Part-time	37 (1.4)	73 (1.9)	18 (1.8)	34 (2.4)	126 (2.9)	290 (4.9)
Not in the workforce	187 (7.3)	332 (8.5)	66 (6.5)	116 (8.2)	358 (8.2)	640 (10.7)
Unemployed	710 (27.7)	997 (25.6)	244 (24.2)	351 (24.9)	763 (17.5)	1007 (16.8)
Unknown or missing data	944 (36.9)	1342 (34.4)	309 (30.6)	449 (31.8)	1730 (39.7)	2322 (38.8)
Marital status						
Married or living as married	554 (21.6)	804 (20.6)	343 (34.0)	457 (32.4)	1443 (33.1)	2164 (36.2)
Divorced, separated, or widowed	309 (12.1)	862 (22.1)	147 (14.6)	326 (23.1)	582 (13.4)	1229 (20.6)
Never married	1623 (63.4)	2114 (54.3)	487 (48.2)	603 (42.7)	2202 (50.5)	2404 (40.2)
Unknown or missing data	73 (2.9)	116 (3.0)	33 (3.3)	25 (1.8)	132 (3.0)	183 (3.1)
Education (last grade)						
<High school	552 (21.6)	618 (15.9)	227 (22.5)	271 (19.2)	568 (13.0)	655 (11.0)
High school	760 (29.7)	1168 (30.0)	260 (25.7)	421 (29.8)	1685 (38.7)	2396 (40.1)
College	594 (23.2)	1047 (26.9)	279 (27.6)	332 (23.5)	1335 (30.6)	1932 (32.3)
Postgraduate school	24 (0.9)	62 (1.6)	11 (1.1)	27 (1.9)	199 (4.6)	205 (3.4)
Unknown or missing data	629 (24.6)	1001 (25.7)	233 (23.1)	360 (25.5)	570 (13.1)	792 (13.2)

Abbreviation: BASIS-32, 32-item Behavior and Symptoms Identification Scale.
*Data are given as number (percentage) of subjects unless otherwise indicated. Percentages are based on the totals for each category, and may not total 100 because of rounding.

New Jersey. University Behavioral HealthCare is one of the largest mental health specialty providers in the United States, serving about 20 000 individuals per year. The UBHC mental health delivery system has 22 clinics, primarily located in the northern and central areas of the state, where most Latinos reside. The US Census 2000[1] for New Jersey reported that African Americans and Latinos constituted 13.6% and 13.3% of the population, respectively, compared with 12.3% and 12.5% of the US population, respectively. The Latino population in New Jersey has increased substantially during the past decade (from 9.6% to 13.3%), while the African American population remained stable. The UBHC client base is composed of about 40% Medicaid-insured patients.

The data in this study include information from the initial contact of 19 219 patients between January 1, 2000, and August 31, 2001. The data reflect an unduplicated count (full census) of inpatients and outpatients who were enrolled in services and were administered a symptom and functioning scale (the 32-item Behavior and Symptoms Identification Scale [BASIS-32]) on being enrolled in the system.

INSTRUMENTS

Two instruments, the Carter and Newman Global Level of Functioning (GLOF) and the BASIS-32, were used to determine symptom and functioning status in this study. The GLOF is a clinician-administered scale widely used within the mental health system of New Jersey.[37,38] Scores range from 01 to 10, where levels 06 to 08 describe persons who are usually functioning satisfactorily in the community but are still in need of some form of therapeutic intervention. In a study[38] of 7 functioning scales, the GLOF performed best, based on multiattribute criteria, including construct validity, reliability, sensitivity to treatment-related change, and other criteria.

The BASIS-32 is a self-report questionnaire, widely used and previously tested with the ethnic groups included in this study.[39-41] This scale assesses levels of symptoms and functioning in inpatient and outpatient settings.[39,40] The instrument measures the degree of difficulty experienced by the patient during a 1-week period on a 5-point scale (no difficulty, little difficulty, moderate difficulty, quite a bit of difficulty, and extreme difficulty). Once scored, the BASIS-32 yields an overall average or severity score and 5 symptom and functioning subscale scores (relation to self and others, daily living or role functioning, depression or anxiety, impulsive or addictive behavior, and psychosis). Full-scale reliability for the BASIS-32 was 0.95, with item scale correlation ranging from 0.32 to 0.76. Discriminant and construct validity were tested, as was sensitivity to change.[40] A recent study[41] of the BASIS-32 showed that its performance from a psychometric standpoint was acceptable for multiethnic patients, including Latinos. At UBHC, a Spanish translation is in use, which has been reviewed and refined by bilingual senior clinicians (J.E. and others) at our medical school.

RESULTS

The demographic characteristics for the subjects are listed in **Table 1**. The race and ethnic composition of the sample was 33.6% African American, 12.6% Latino, and 53.8% European American. As expected in largely outpatient clinical samples, females constituted most of the sample for all groups (60.1% for African Americans, 58.6% for Latinos, and 57.8% for European Americans).

Table 2 presents the clinical diagnosis by ethnicity and sex. As reported in previous studies, African American subjects were more likely than European American or

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Table 2. Diagnostic Grouping for 19 213 Subjects With Intake BASIS-32 Data by Ethnicity and Sex*

	African Americans		Latinos		European Americans	
Diagnostic Grouping	Males (n = 2559)	Females (n = 3896)	Males (n = 1010)	Females (n = 1409)	Males (n = 4359)	Females (n = 5980)
Anxiety	274 (10.7)	646 (16.6)	153 (15.1)	307 (21.8)	739 (17.0)	1333 (22.3)
Major depression	277 (10.8)	964 (24.7)	225 (22.3)	462 (32.8)	703 (16.1)	1193 (19.9)
Organic disorder	21 (0.8)	33 (0.8)	7 (0.7)	11 (0.8)	37 (0.8)	58 (1.0)
Other depression	294 (11.5)	720 (18.5)	132 (13.1)	255 (18.1)	672 (15.4)	1175 (19.6)
Other diagnosis	389 (15.2)	275 (7.1)	128 (12.7)	72 (5.1)	414 (9.5)	363 (6.1)
Psychotic disorders	489 (19.1)	440 (11.3)	95 (9.4)	87 (6.2)	431 (9.9)	362 (6.1)
Unassigned	328 (12.8)	453 (11.6)	113 (11.2)	146 (10.4)	631 (14.5)	839 (14.0)
Bipolar disorder	80 (3.1)	172 (4.4)	41 (4.1)	40 (2.8)	291 (6.7)	442 (7.4)
Substance abuse	407 (15.9)	193 (5.0)	116 (11.5)	29 (2.1)	441 (10.1)	215 (3.6)

Abbreviation: BASIS-32, 32-item Behavior and Symptoms Identification Scale.
*Data are given as number (percentage) of subjects. Percentages may not total 100 because of rounding.

Table 3. Global Level of Functioning by Ethnicity, Sex, and Diagnostic Grouping*

	African Americans		Latinos		European Americans	
Diagnostic Grouping	Males (n = 1421)	Females (n = 2217)	Males (n = 591)	Females (n = 808)	Males (n = 1917)	Females (n = 2429)
Anxiety	6.5 (166)	6.4 (420)	6.5 (109)	6.3 (188)	6.5 (382)	6.5 (636)
Major depression	5.9 (165)	5.9 (630)	5.6 (142)	5.9 (288)	5.9 (349)	6.0 (512)
Organic disorder	5.1 (12)	5.0 (17)	3.7 (3)	3.4 (9)	4.3 (21)	4.0 (33)
Other depression	6.2 (193)	6.3 (472)	6.4 (80)	6.2 (171)	6.1 (349)	6.3 (612)
Other diagnosis	6.3 (263)	6.2 (187)	6.3 (85)	6.5 (48)	6.5 (193)	6.5 (176)
Psychotic disorders	5.2 (228)	5.2 (206)	4.9 (54)	4.7 (47)	4.7 (182)	4.8 (123)
Unassigned	6.3 (67)	6.4 (61)	6.6 (12)	6.3 (19)	6.7 (30)	6.6 (30)
Bipolar disorder	5.7 (50)	5.7 (91)	6.0 (32)	5.7 (21)	5.2 (162)	5.6 (199)
Substance abuse	6.2 (277)	6.1 (133)	6.2 (74)	6.3 (17)	6.2 (249)	5.8 (108)
Overall mean	6.0	6.0	6.0	6.0	6.0	6.1

*Data are given as mean scores (number of subjects affected).

Latino subjects to be diagnosed by the clinicians as having a psychotic disorder (mainly schizophrenia). However, Latinos, males and females, were much more likely to be diagnosed as having major depression compared with the other 2 ethnic groups. There was a tendency for European Americans to be more frequently diagnosed as having bipolar disorder compared with the other 2 ethnic groups.

FUNCTIONAL LEVEL

Overall, the level of functioning for Latinos, measured by the GLOF score, was comparable to that of European Americans and African Americans (6.0, 6.1, and 6.0, respectively). In addition, African Americans diagnosed as having a disorder within the psychotic disorder spectrum had higher GLOF scores (denoting higher functioning) than any other group with the same diagnosis (**Table 3**). The mean GLOF score for the entire sample was 6.0, which is consistent with what would be expected in a predominantly outpatient sample.

OVERALL PSYCHIATRIC SYMPTOMS

To compare the 3 ethnic groups in terms of psychiatric symptoms, the BASIS-32 self-report questionnaire was analyzed using an analysis of variance. The independent variables in this analysis of variance were educational level (consisting of 4 categories: <high school, high school diploma or general equivalency diploma, some college, and missing data), age (young adults to the age of 34 years, adults to the age of 64 years, adults ≥64 years, and missing data), sex, ethnicity, and the sex × ethnicity interaction. The extent of missing data was 11.73% for age and 18.64% for educational level. (Patients for whom there were missing data for the age or educational level variables were not discarded from the various regression analyses because there would be a considerable decrease in the total sample size. No formal data imputation methods for missing data were used [the extent of the problem was judged too large for this kind of correction], but it did seem that the patients with missing data, as a group, had similar response profiles to younger patients and/or patients with less education.) In general, for each subscale of the BASIS-32 (eg, psychosis) and for the BASIS-32 average score, most of the effects in the analysis of variance model, including the effect for ethnicity, were statistically significant at $P<.001$. However, no significant ($P>.05$) sex × ethnicity interactions were found in these analyses.

Table 4 presents least squares means for the BASIS-32 variables, organized by ethnicity and sex and adjusted for the other effects (eg, educational level and age) in the analy-

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Table 4. BASIS-32 Least Squares Means by Sex and Ethnicity*

BASIS-32 Subscales	African Americans		Latinos		European Americans	
	Males	Females	Males	Females	Males	Females
Relation to self and others	1.4	1.6	1.5	1.7	1.6	1.7
Daily living or role functioning	1.4	1.6	1.5	1.7	1.5	1.7
Depression or anxiety	1.5	1.9	1.8	2.1	1.6	1.8
Impulsive or addictive behavior	1.0	0.9	1.0	1.0	0.8	0.8
Psychosis	0.8	0.7	0.9	0.9	0.6	0.5
Overall average	1.2	1.4	1.4	1.5	1.3	1.4

Abbreviation: BASIS-32, 32-item Behavior and Symptoms Identification Scale.

*All multiple comparisons among ethnic groups, collapsed across sex, are significant ($P<.001$), after Bonferroni adjustment. For relation to self and others, European Americans scored higher than African Americans and Latinos; for daily living or role functioning and depression or anxiety, Latinos and European Americans scored higher than African Americans; for impulsive or addictive behavior, African Americans and Latinos scored higher than European Americans; and for psychosis and the overall average, Latinos scored higher than African Americans and European Americans.

sis of variance model previously described. African Americans and European Americans presented with similar degrees of self-reported clinical severity (average BASIS-32 score), while Latinos scored higher ($P<.001$). Latinos also scored higher than did the 2 other ethnicity groups on the psychosis and depression subscales ($P<.001$). As for sex effects in Table 4, females scored higher than males on all subscales except impulsive or addictive behavior and psychosis; on these subscales, males scored equally as well or higher. Finally, the ethnicity × sex interaction was not significant ($P>.05$) for any subscale, after Bonferroni adjustment.

LOGISTIC REGRESSION RESULTS

To examine the main effects of diagnostic groupings in the context of other independent variables, logistic regression analyses were performed for each of 3 dependent binary variables: presence or absence of a clinical diagnosis of major depression, a schizophrenia spectrum disorder, and bipolar disorder. The independent variables in these logistic regression analyses consisted of sex, age group, education group, and ethnicity,

For major depression, logistic regression effects were significant for age ($\chi^2_3=295.2$), sex ($\chi^2_1=185.2$), and ethnicity ($\chi^2_2=121.5$) ($P<.001$ for all), but not for educational level ($\chi^2_3=6.4$, $P=.09$). Depression generally increased with age. For sex, an odds ratio (OR) of 1.70 (95% confidence interval [CI], 1.58-1.84) was obtained (ie, females were 70% more likely to be diagnosed as having major depression). An OR of 1.74 (95% CI, 1.56-1.93) was found when comparing Latinos with European Americans (ie, the former were 74% more likely to be diagnosed as having major depression than the latter), whereas an OR of 0.99 (95% CI, 0.91-1.08) was found when comparing African Americans with European Americans, indicating a roughly equal probability of a diagnosis of major depression in these groups.

For schizophrenia, the logistic regression effects were significant for age ($\chi^2_3=342.6$), sex ($\chi^2_1=140.7$), ethnicity ($\chi^2_2=150.7$), and educational level ($\chi^2_3=315.7$) ($P<.001$ for all). Not surprisingly, schizophrenia generally increased with age and decreased with educational level in this sample. For schizophrenia, the OR was 0.55 (95% CI, 0.50-0.61) for sex, 1.80 (95% CI, 1.62-2.00) for African Americans vs European Americans, and 0.86 (95% CI, 0.72-1.02) for Latinos vs European Americans. In other words, females were less likely to be diagnosed as having a disorder in the schizophrenic spectrum than were males, and African Americans were almost twice as likely to be diagnosed as having a disorder in the schizophrenic spectrum than were European Americans and (by implication) Latinos.

For bipolar illness, there was a nonsignificant sex effect (OR, 1.08; 95% CI, 0.95-1.22) and significant age and educational level effects ($P<.001$ for both). However, African Americans (OR, 0.49; 95% CI, 0.43-0.57) and Latinos (OR, 0.42; 95% CI, 0.33-0.53) were less likely to be diagnosed as having bipolar illness than were European Americans ($P<.001$).

The addition of interaction terms (eg, race × sex) to the 3 logistic regression analyses previously discussed added little (<1 percentage point) to the concordances observed for any of the overall model fits. It seems reasonable to conclude that the effects of sex, educational level, age, and ethnicity on diagnosis were relatively independent of one another.

Finally, to each of the 3 logistic regression analyses, we added 2 binary independent variables based on self-reported symptoms using the BASIS-32. These binary variables reflected whether the patient scored in the 75th percentile on the psychosis and depression subscales of the BASIS-32. Interestingly, the addition of these 2 variables had little effect on the ORs associated with ethnicity in accounting for diagnostic patterns. For example, the point estimate for Latinos vs European Americans in predicting major depression decreased from 1.74 to 1.57 when these 2 symptom variables were added to the logistic regression. For schizophrenic spectrum diagnoses, the OR comparing African Americans with European Americans decreased negligibly, from 1.80 to 1.72. Hence, patterns in self-reported symptoms did not seem to account for the ethnic differences in diagnosis observed in this study.

COMMENT

There were 3 research questions addressed by this study. (1) Are African Americans in our clinical population disproportionately diagnosed as having schizophrenia? The answer was affirmative; our findings replicated those of sev-

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eral other studies showing higher rates than anticipated from population epidemiological estimates. (2) Are Latino patients more likely to be similarly disproportionately diagnosed as having schizophrenia? The answer was negative, because we found disproportionately high rates of major depression rather than schizophrenia among Latinos. (3) Are clinical assessments using standardized instruments compatible with traditional diagnostic assessments? We obtained discordant results. On the one hand, Latinos were disproportionately diagnosed as having depression, despite higher levels of self-reported psychotic symptoms. On the other hand, contrary to anecdotal reports in the literature, the clinician-rated level of functioning and self-reported severity scores of Latino subjects were either comparable to those of European Americans and African Americans or more severe.

A most notable finding of the study is that Latinos diagnosed as having major depression had significantly higher levels of self-reported psychotic symptoms than the other ethnic groups. This finding was not congruent with the pattern of clinical diagnosis. Thus, according to these data, African Americans were more likely to be diagnosed as having schizophrenia, despite rather unremarkable levels of self-reported psychotic symptoms, and Latinos were more likely to be diagnosed as having major depression, despite increased levels of psychotic symptoms and depressive symptoms, as reported on the BASIS-32.

These new findings raise 2 interesting questions of clinical relevance. First, if there is indeed a higher prevalence of major depression in Latinos, what antecedent causes are producing it? Second, if at least some of these patients are being misdiagnosed, as suggested by the higher rates of self-assessed psychotic symptoms, why is this occurring? We reiterate the appropriateness of the model of Strakowski et al[15] for more fully exploring these issues. There are other possible reasons for these findings, including those compatible with an information or a criterion variance explanation. These are described and elaborated on to provide directions for future research.

SELF-SELECTION

Although the population incidence and prevalence of depression is not higher among Latinos,[25] there may be a tendency in this population to seek help for symptoms of depression with greater frequency than for other psychiatric disorders, although a recent article[42] failed to find any evidence of such a tendency. More frequent help seeking for depression may be reinforced by somatization, which increases the likelihood of using physicians as a first source of treatment, with a subsequent referral to mental health care for depression.[43-45]

EFFECTS OF THE INTERVIEW FORMAT

Clinician assessment may systematically produce different appraisals of psychiatric and general health status than indicated by self-assessment. Previous studies[46-48] with Latinos have shown a tendency for clinical assessments performed by bilingual or bicultural physicians or clinicians to result in more accurate ratings of physical health status and mental health functioning than self-ratings. A related possibility is that Latinos may be reporting putative symptoms of psychosis on the BASIS-32 that, rather than true signs of psychiatric symptoms, represent cultural expressions considered normative in Latino culture (eg, hearing the voice or seeing the image of a dead relative). These tendencies would result in a greater likelihood for Latinos, especially new immigrants, to report putative psychotic symptoms on the BASIS-32 that a clinician with knowledge of the culture would disregard as such in a diagnostic interview intended for assessment/treatment purposes. Unfortunately, recent immigrants, the most underrepresented Latinos in mental health care, are also likely to be underrepresented in our sample, and this weakens the latter explanation.

CULTURAL VARIANCE IN THE BEHAVIORAL REPERTOIRE

Certain characteristic signs and symptoms may be more prominent among Latinos. Somatization is one example. Latinos may be viewed by clinicians as presenting in a more subdued, avoidant, and less assertive manner than others, and to evidence an external locus of control that can be interpreted as hopelessness or helplessness.[49] This could jeopardize the validity and reliability of unstructured clinical diagnoses, particularly when they are made by professionals who do not speak Spanish or who have limited knowledge of Latino cultures.[33]

LANGUAGE AS A CONFOUNDING VARIABLE

English-Spanish translation and interpretation issues and the problem of syntax and hybrid English-language use among Latinos conspire against diagnostic equivalence and add to the complexity of clinical interactions leading to diagnoses. The problem is aggravated by the frequent reliance on interpreters given the scarcity of Spanish-speaking clinicians.[50] Obviously, this explanation may apply to some facilities but not to others, such as the one under study, in which there is a strong emphasis on language matching of therapist and patient.

POSSIBLE INTERVIEWER BIAS

Bias may be present when clinicians apply *DSM-IV* criteria to patients, as suggested in the case of overdiagnosis of psychosis in African Americans. Such bias may take the form of cultural stereotypes, such as certain clinical signs presented by women of Hispanic background that in the view of some clinicians represent a depression diagnosis.[51,52] Also, the stereotypical behavioral traits previously reported, such as a subdued and less assertive manner, high compliance with authority, and a passive and hopeless demeanor, can all be framed as behavioral symptoms of depression by clinicians.

DIAGNOSTIC BIAS

This study underscores a serious possibility, deserving of future investigation, that clinicians are not using diagnostic criteria effectively to discriminate symptoms

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among Latino patients because of cultural variances in characteristic symptom clusters typically used by clinicians as a template for assigning a diagnosis in a treatment setting. These symptom clusters may be confounded by ambiguous signs, including cultural idioms of distress, somatic symptoms, body language, and verbal idiosyncrasies, that interfere with the appropriate application of *DSM-IV* criteria, leading to clinical error with some Latino patients.[46] For instance, there is the possibility that the psychotic symptoms reported are related to a cultural idiom of distress described in the literature as *ataque de nervios* (attack of nerves).[53,54] Although it is reported more frequently among Latinos from the Caribbean, it is recognized also among subjects from Latin America.[55] Symptoms include uncontrollable shouting, trembling, dissociative experiences, seizurelike or fainting episodes, disorientation, and fear.[54,55] Guarnaccia[56] and Lewis-Fernandez[57] and colleagues report that these episodes could be associated with perceptual distortions that are then rated as psychotic symptoms. A detailed discussion of the problem of inaccurate classification and interpretation of psychotic symptoms among Latinos can be found within the *DSM-IV* manual[55] in the appendix on cultural factors affecting diagnostic evaluation.

Additional hypotheses have been advanced to explain ethnic misdiagnosis among clinical samples. These include a confounding effect of social class, referral bias in relation to access or use, character traits developed by minorities in response to a particular environment, and differences in genetic and biological vulnerability.[58-60] More recently, the finding that a structured interview attenuates race-related diagnostic differences has received attention,[14,15] lending support to the explanation of error attributable to ambiguities in the patient-clinician interaction. Comparing the usual care diagnosis with the structured research diagnosis is the next logical step in addressing the serious clinical issues raised about diagnostic accuracy with Latinos.

LIMITATIONS

There are several limitations in this study. Despite the large sample size (N=19 219) and the relatively large number of clinics represented in the study (n=22), the findings represent clinical experiences in one mental health treatment system. These findings should serve as a basis for future research replication in other treatment settings, and indicate the need for further research to determine the root causes underlying these diagnostic patterns.

Many patients in this study were inner-city residents in north and central New Jersey, and other patients resided in high- and medium-density areas immediately adjacent to these urban areas. This restriction limits the generalizability of the results to similar urban and suburban populations.

In addition, we did not have information on the specific nationalities of the Latino patients or their nativity status. We believe undocumented immigrants are much less likely to be found in the patient population we studied because they are unlikely to possess either public or private insurance, which limits their access. This also implies that fewer Latino patients were unacculturated compared with the general Latino population, but we have no standardized assessments of acculturation to provide confirmation. While some of these problems may be taken into account in future studies, we believe this limitation is inherent in the use of large service system data for research purposes, because service system databases do not routinely include information on nationality acculturation or nativity.

CONCLUSIONS

An examination of a large psychiatric services data set collected in New Jersey showed that on enrollment into the mental health system, minority patients were given disparate diagnoses compared with those given to nonminority patients. Moreover, diagnostic patterns observed in minority patients were markedly discordant with diagnostic traits implied in self-reported symptom profiles. Latinos were more likely to be clinically diagnosed as having major depression, and African Americans were more likely to be diagnosed as having a schizophrenia spectrum disorder, than were European Americans. This occurred despite elevated scores of self-reported psychotic symptoms in Latino patients and, conversely, relatively low levels of self-reported psychosis and overall symptom severity in African American patients. As possible explanations we have suggested the following: (1) self-selection processes that result in Latino patients disproportionately seeking services for symptoms of depression; (2) a culturally determined manner in which Latinos express the core symptoms of various disorders; (3) difficulties in accurately applying *DSM-IV* diagnostic criteria to Latinos; (4) lack of cultural competence of those clinicians making the diagnoses, including language proficiency problems; and (5) imprecision in assigning diagnoses based on unstructured interviews in a busy clinical setting, possibly combined with clinician bias.

Without another source of corroborative data, such as independently obtained diagnoses based on structured clinical interviews, it is not possible to ascertain the accuracy of clinical diagnoses of major depression made in this cohort of treatment-seeking Latinos. The possibility of criterion or information variance leading to diagnostic bias needs to be tested in future empirical studies. Indeed, it is quite possible that ignoring putative psychotic symptoms is clinically sound when clinicians elicit a core of mood disorder symptoms as the primary diagnosis. This may prevent stigmatization and inappropriate therapeutic strategies. Clarifying the reasons for the various diagnostic patterns observed in this study requires carefully controlled empirical studies that are beyond the realm of the administrative data set used for this research. However, the present study, despite limitations, underscores the need and provides a rationale for future research directions.

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