Ethnic Disparities in Use of Public Mental Health Case Management Services Among Patients With Schizophrenia

Concepcion Barrio, Ph.D.
Ann Marie Yamada, Ph.D.
Richard L. Hough, Ph.D.
William Hawthorne, Ph.D.
Piedad Garcia, Ed.D.
Dilip V. Jeste, M.D.

Objectives: **This study examined case management service use by ethnic group in a sample of 4,249 European-American, Latino, and African-American patients with a diagnosis of schizophrenia or schizoaffective disorder who were receiving services in the public mental health sector of San Diego County during fiscal year 1998–1999.** *Methods:* **Data on demographic and clinical variables were obtained from the public mental health services database of the San Diego County Mental Health Department. Multivariate logistic regression analyses were used to determine the relationship between the demographic and clinical variables and use of case management services.** *Results:* **The ethnic composition of the sample was 64 percent European American, 20 percent Latino, and 17 percent African American. Overall, 1,100 patients (26 percent) received case management services. A disproportionately greater percentage of service use occurred among European Americans (30 percent) than among patients from ethnic minorities (19 percent for Latinos and 17 percent for African Americans). The results also indicated that Spanish-speaking Latinos underused case management services; however, the underuse was less dramatic than anticipated.** *Conclusions:* **The results of this study underscore the need for continuing concern about the use of case management and other mental health services by persons from ethnic minorities. (*Psychiatric Services* 54:1264–1270, 2003)**

Case management is widely considered to be an essential component of public mental health care for persons with schizophrenia (1,2). Case management consists of a variety of activities aimed at coordinating treatment and ensuring the continuity and integration of services for persons with severe mental illness (3).

Dr. Barrio is affiliated with the School of Social Work at San Diego State University, 5500 Campanile Drive, San Diego, California 92182-4119 (e-mail, cbarrio@mail.sdsu.edu). Dr. Yamada, Dr. Hough, Dr. Hawthorne, and Dr. Jeste are with the department of psychiatry at the University of California, San Diego. Dr. Jeste is also with the department of psychiatry at the Veterans Affairs San Diego Healthcare System. Dr. Hough is also with the child and adolescent services research center at Children's Hospital, San Diego. Dr. Hawthorne is also executive director of the Community Research Foundation in San Diego. Dr. Garcia is with San Diego County Mental Health Services.

Although persons from ethnic minority groups are increasingly being served in the public mental health system (4–6), research has not systematically examined patterns of use of case management services among persons from ethnic minority groups who have schizophrenia. Several studies have examined the relationship of severe mental illnesses to type of mental health service or treatment outcomes. However, such studies have not specifically examined use of case management. Some studies have focused on ethnicity (7,8); others have adjusted for ethnicity and therefore have not reported ethnic disparities in service use (9).

The work of Hu and colleagues (6) is the one study that included case management in an analysis of mental health care and service use among persons from ethnic minorities. African Americans and Asians used case management less than Latinos and European Americans. These researchers reported greater use of case management by patients with schizophrenia than by those with other psychiatric disorders. However, that study did not include a cross-ethnic examination within the subset of patients with schizophrenia.

Given that specific data on the use of case management are lacking, we reviewed studies on the general use of mental health services in various ethnic groups. Research has consistently shown ethnic disparities in the

use of most types of services (4,5). Generally, studies have indicated underuse of services among Latinos (10–13). Moreover, disproportionately low service use has been reported among Spanish-speaking Latinos with low levels of acculturation to U.S. society (1,8,14,15). Although overuse has been reported for African Americans (8,16), those findings pertained only to certain types of treatment (6,7,11). African Americans have been found to use more crisis services and less outpatient care (4,6) and to be more likely to be hospitalized than European Americans (17).

In this study, we examined the use of case management services by European-American, Latino, and African-American patients with a diagnosis of schizophrenia. A secondary goal of the study was to identify patient characteristics related to service use. We hypothesized that use of case management services would be lower among Latino and African-American patients than among European-American patients. We further hypothesized that the use of case management services would be lower among Spanish-speaking Latinos than among English-speaking Latinos.

Table 1

Total adult population of San Diego County and population of patients with schizophrenia in the county mental health management information system (MHMIS), by ethnic group[a]

Ethnicity	San Diego County (N=2,090,172)		MHMIS (N=6,297)	
	N	%	N	%
European American	1,249,632	59.8	3,641	57.8
Latino	475,519	22.8	1,060	16.8
African American	107,228	5.1	1,108	17.6

[a] The percentages do not total 100; the ethnic groups noted as Asian, "other," or "two or more races" are included in the population totals but are not shown because of small proportionate size.

Methods

Data

The data for the study came from the public mental health services database of the San Diego County Department of Mental Health—the Mental Health Management Information System (MHMIS)—during fiscal year 1998–1999. San Diego County is the sixth largest county in terms of population in the United States and has considerable ethnic diversity, as can be seen from Table 1.

The MHMIS contains information on client characteristics and service use for persons enrolled in any service delivered by the county or by contracted providers. The InSyst software application is used to track client registration and service use data.

In the study reported here, data originating from level-of-care files for each service episode were aggregated at the patient level into a single data file. To ensure patient confidentiality, an outside agency linked the files with unique patient identifiers. Approval for the study was obtained from the county and from the institutional review board of the University of California, San Diego.

Sample

Of 5,809 patients aged 18 years or older with a diagnosis of schizophrenia or schizoaffective disorder, 1,560 (27 percent) were excluded because of missing data for one or more independent variables. Analysis of missing values indicated no meaningful sample bias. The resulting study sample comprised 4,249 adults—2,698 European Americans (63.5 percent), 834 Latinos (19.6 percent), and 718 African Americans (16.9 percent). The numbers of Asian-American patients and those in mixed racial categories were too small for inclusion in multivariate analyses. *DSM-IV* diagnoses were made by county clinicians.

Study variables

Use of case management services. In San Diego County, case management services include "activities provided by program staff to access needed Medi-Cal, educational, social, prevocational, vocational, rehabilitative, or other needed community services for eligible individuals" (18). Although case management includes a wide variety of linkage, consultation, and placement services, case management services exclude skill development, assistance with daily living, and training to promote clients' independence in obtaining services. Traditional case management is characterized by the coordination of individualized care and ongoing contact with identified key personnel (19). Case management provided in the county is a common group of public mental health services made available to persons with schizophrenia who may have difficulty managing their illness and their life (3,20). The variability in the conceptualization of case management is a limitation inherent in the use of MHMIS data. Nonetheless, the wide scope of services provided in the county is consistent with case management approaches in community practice (19).

The dependent outcome measure—receipt of case management services—was operationalized as use of at least one billable case management service, according to Medicaid reimbursement guidelines, during the fiscal year. The case management variable was created by aggregating data for each client into a dichotomous measure—use of the service versus no use. Additional analysis of the number of billed case management visits was also conducted.

Ethnicity. The MHMIS data were not broken down into specific ethnic heritage groups. Thus we defined the European-American category as anyone endorsing white, Caucasian, or European race; the category excluded anyone reporting Hispanic heritage. The African-American category was defined as endorsement of the black racial category without endorsement of the Latino category. The Latino category included anyone who en-

dorsed Latino as their race or who indicated Hispanic heritage in a follow-up question. European-American ethnicity was used as the reference group.

Demographic variables. Demographic variables included age, gender, education, marital status, living situation, and language preference. Marital status was categorized as never married, currently married, and formerly married; never married served as the reference group. Living situation referred to residence reported within the last period of service use, when residence was unavailable, the modal type of residence during the fiscal year. Living situation was classified into five categories: independent; with family; in institutional settings, including hospitals, skilled-nursing facilities, and board-and-care facilities; unstable, including being confined by the criminal justice system or being homeless; and other. Independent living was the reference group. Language preference was based on client self-report.

Clinical status. Inpatient status was defined as any inpatient stay during the year. Level of functioning was represented by the mean Global Assessment of Functioning (GAF) score at discharge from episodes of service during the year. Possible scores on the GAF range from 1 to 100, with higher scores representing better functioning. A secondary diagnosis of substance use disorder was classified as present or absent.

Financial status. Studies have found that eligibility for government-sponsored programs can have predictive value for patterns of service use (4,5,8,21). The Medi-Cal program in California corresponds with the federal Medicaid program. Medi-Cal requires that indigent persons meet eligibility requirements in addition to those of Medicaid, such as having a disability. We used Medi-Cal eligibility as a proxy for financial status (22).

Data analysis

Frequency distributions were calculated, and two-tailed chi square tests of independence or analysis of variance tests were used to examine variability across ethnic groups. The cross-tabulation of case management use, including no use, by ethnic group was examined with use of chi square tests. Guided by previous research on ethnic disparities (23), we used multivariate logistic regressions to assess the association of the dependent variable—case management use—with ethnicity while controlling for covariates. Ethnicity and other demographic independent variables were entered in the first model.

Clinical variables were added in the second model, and the financial variable was added in the third model. Subsequently, separate multivariate models were estimated for each ethnic group, then again for Latinos, stratified by language preference. An indicator for missing education values was calculated and entered along with the demographic variables to investigate bias associated with data imputation for missing values. A finding of no significant association between the indicator variable and the dependent variable would suggest that there were no effects from the mean substitution procedure (24).

Results

Sample characteristics

As can be seen from Table 2, we found considerable differences in demographic variables between ethnic groups but little difference in clinical or financial variables. Education, age, living situation, marital status, and secondary diagnosis of substance use disorder each differed across ethnic groups ($p<.001$ for all). Patients in the Latino group were younger than those in the European-American and African-American groups. Although independent living arrangements were the most prevalent, the percentage of Latinos living with family was twice that of the other ethnic groups. A higher percentage of Latinos were married; approximately two-thirds of each ethnic group reported never having been married. Comorbid substance use disorder was less frequent among Latino patients than in the other two ethnic groups.

Case management use

A significant difference between ethnic groups was found in the proportions of patients receiving case management services ($\chi^2=71.66$, df=2, $p<.001$). Overall, 1,100 patients (26 percent) received case management services. A disproportionately greater percentage of service use occurred among European Americans (814 participants, or 30.2 percent) than among patients from ethnic minorities (161 Latino participants, or 19.3 percent, and 125 African-American participants, or 17.4 percent). The range of discrete occurrences of case management, as measured by the use of a billable case management service, was 1 to 173 per patient during the year. We found a slight difference across ethnic groups in the number of visits ($F=3.15$, df=2, 936, $p<.05$). The mean±SD number of visits for European Americans was 30±26; for Latinos, 27±25; and for African Americans, 23±27. The difference between European Americans and African Americans was significant ($p<.05$).

Multivariate analysis of ethnicity and case management

The effects of ethnic group and other sociodemographic indicators on the use of case management services are illustrated in Table 3. After sociodemographic variables were adjusted for, Latinos and African Americans were less likely than European Americans to receive case management services. Compared with independent living arrangements, living with family was associated with a significantly lower likelihood of using case management services; institutional placement was associated with a fivefold odds of using case management services.

In model 2, we controlled for clinical as well as demographic characteristics. Although GAF scores were associated with the use of case management services ($p<.01$), the effect was slight. The consideration of these clinical variables did not alter the lower likelihood of Latinos' and African Americans' receiving case management. In model 3 we also considered the effects of a gross indicator of financial status—Medi-Cal eligibility. Clients who were eligible for Medi-Cal were 4.6 times as likely to use case management services. Despite the powerful relationship between service use and Medi-Cal eligibility and the continuing influence of insti-

Table 2

Demographic, clinical, and financial status characteristics of European-American, African-American, and Latino persons with a diagnosis of schizophrenia recorded in the San Diego County mental health database[a]

Characteristic	European American (N=2,698)		Latino (N=834)		African American (N=718)		Test statistic	df	p[b]
	N or mean	%	N or mean	%	N or mean	%			
Demographic characteristics									
Gender							χ^2=1.29	2	.53
Male	1,642	60.9	491	58.9	427	59.5			
Female	1,055	39.1	343	41.1	291	40.5			
Education (mean±SD years)	12±2.23		10.39±2.96		11.47±2.11		F=146.85	2, 4,246	.001
Age (mean±SD years)	41.04±11.96		37.47±12.13		39.47±10.84		F=30.2	2, 4,246	.001
Living situation							χ^2=189.53	8	.001
Independent	1,193	44.2	444	53.2	356	49.6			
With family	246	9.1	161	19.3	59	8.2			
Institution	630	23.4	118	14.1	91	12.7			
Unstable[c]	396	14.7	72	8.6	160	22.3			
Other	232	8.6	39	4.7	52	7.2			
Marital status							χ^2=18.29	4	.001
Never married	1,791	66.4	560	67.1	476	66.3			
Married	179	6.6	88	10.6	55	7.7			
Formerly married	727	27	186	22.3	187	26			
Clinical characteristics									
Inpatient stay in the past year)	638	23.7	219	26.3	188	26.2	χ^2=3.51	2	.17
Global Assessment of Functioning (mean±SD score)[d]	38.44±10.44		38.71±9.46		38.61±10.28		F=.26	2, 4,246	.77
Comorbid substance use disorder	797	29.6	194	23.3	222	30.9	χ^2=14.74	2	.001
Medi-Cal eligibility[d,e]	2,104	78	634	76	582	81.1	χ^2=5.8	2	.06

[a] Only patients self-reporting ethnicity as European American, African American, or Latino were represented in large enough numbers for inclusion in this sample.

[b] Post hoc comparisons with Bonferroni statistics were used to correct for multiple analyses within a large sample.

[c] Confined by the justice system or homeless

[d] As of entry into the service system

[e] Used as a proxy for financial status

tutional placement, ethnic disparities remained: European Americans continued to be more likely to receive case management.

Ethnic differences in case management use

Multivariate logistic regression analyses of case management use, regressed on all indicator variables, were conducted after stratification by ethnic group. As can be seen from Table 4, living situation was the only sociodemographic variable significantly associated with use of case management services. Residence in an institutional setting as opposed to independent living increased the odds of case management use for all ethnic groups. The relationship was strongest among African Americans, who were 7.5 times as likely to use case management if they lived in an institutional as opposed to a noninstitutional setting. Only in the European-American group were participants who lived with family less likely than those living independently to use case management services. As in the previous models, higher GAF scores were associated with slightly lower odds of case management use for each ethnic group. Medi-Cal eligibility was associated with a substantially higher probability of service use in each ethnic group.

Role of language preference

Spanish was the preferred language of 294 (35 percent) of the Latino patients. Of the 537 English-speaking Latino participants, 115 (21 percent) were receiving case management services, compared with 46 (15.6 percent) of those whose preferred language was Spanish (χ^2=4.05, df=1, p<.05). The overall likelihood of receiving case management services in the English-speaking Latino group was related most strongly to Medi-Cal eligibility (odds ratio [OR]=6.46, 99 percent percent confidence interval [CI]=1.82 to 22.93, p<.01) and institutional living (OR=4.40, CI=2.09 to 9.27, p<.01).

Although these same variables were associated with use of case management in the Spanish-speaking Latino group, a few notable differences were evident. First, living in an institutional as opposed to an independent setting was associated with a 20-fold likelihood of case management use (p<.001). Second, the effect of Medi-Cal eligibility for Spanish-speaking Latinos was of less conse-

Table 3

Multivariate logistic regression analyses of the association between case management service use and demographic, clinical, and financial variables, in three models[a]

Independent variable[a]	Model 1		Model 2		Model 3	
	OR	99% CI	OR	99% CI	OR	99% CI
Ethnic group						
European American	1		1		1	
Latino	.68	.51–.91*	.67	.5–.9*	.68	.51–.91*
African American	.58	.43–.78*	.58	.43–.78*	.53	.39–.72*
Gender	.92	.74–1.15	.92	.74–1.15	.95	.76–1.2
Education	.96	.92–1*	.96	.92–1	.97	.93–1.02
Age	1.01	1.01–1.02*	1.02	1.01–1.02*	1.02	1.01–1.03*
Living situation						
Independent	1		1		1	
With family	.54	.35–.84*	.61	.39–.96*	.55	.35–.86*
Institution	5.95	4.67–7.58*	5.44	4.42–6.97*	4.5	3.5–5.8*
Unstable[b]	.76	.54–1.08	.7	.49–1*	.77	.54–1.11
Other	4.25	3.05–5.93*	3.83	2.73–5.38*	3.32	2.35–4.69*
Marital status						
Never married	1		1		1	
Married	.72	.46–1.12	.72	.46–1.12	.83	.52–1.31
Formerly married	.95	.74–1.23	.99	.77–1.28	1	.77–1.3
Inpatient stay in the past year	—	—	1.02	.8–1.31	.93	.72–1.19
Global Assessment of Functioning score	—	—	.97	.96–.98*	.97	.96–.98*
Comorbid substance use disorder	—	—	1.02	.8–1.31	1.04	.81–1.34
Medi-Cal eligibility[c]	—	—	—	—	4.64	3.2–6.73*

[a] Model 1 controlled for demographic variables, model 2 added clinical variables, and model 3 added the financial indicator.

[b] Confined by the criminal justice system or homeless

[c] As of entry into the service system; used as a proxy for financial status

*p=.01

quence than institutional placement (OR=5.72, CI=.77 to 42.34, p<.05). Finally, for Spanish-speaking Latino patients only, having an inpatient stay in the past year was significantly related to use of case management services (OR=3.24, CI=.83 to 12.68, p<.05).

Discussion and conclusions

As we predicted, the use of case management services among Latino and African-American clients was significantly lower than among European Americans. Latinos were approximately two-thirds as likely, and African Americans only half as likely, to use these services, even after other variables were controlled for. The results appear to be consistent with those of other studies of ethnic disparities in the use of mental health services (4–7,11).

Our second hypothesis—that the use of case management would be lower among Spanish-speaking than among English-speaking Latinos—was also supported. As in other studies that examined the use of mental health services among Spanish-speaking Latinos with low acculturation to U.S. society (8,14,15), the results of our study indicate underuse of case management services among Spanish-speaking Latinos. However, this underuse was found to be less than we had anticipated from other studies. A possible explanation is the availability of three bilingual mental health centers in the region that provide Spanish-speaking Latino persons with access to case management, but that issue needs further research (25).

Several characteristics associated with the use of case management warrant comment. More Latinos than European Americans were married and lived with family members. Because living with family was associated with a lower probability of use of case management services, we anticipated that Latinos living with family would be less likely to use such services. However, no significant difference was noted in the use of case management services between Latinos who were living with family members and those who were living independently. In contrast, European Americans living with family were less likely to use case management services than those living independently. These findings suggest that for Latino patients, marital and familial living arrangements neither reduce service use nor facilitate it. Thus these two factors cannot be assumed to represent protective cultural dynamics that could explain the lower use (26–28).

Across all ethnic groups, institutional residence and Medi-Cal eligibility were powerfully associated with greater use of case management services. These factors appeared to trigger access to service mechanisms within the system in ways that are otherwise unavailable to patients. Residential placement and insurance coverage seem to facilitate service delivery (29). The powerful effect of Medi-Cal eligibility suggests that this indicator was more than a proxy for financial status; it could also have been an indicator of chronicity of illness. However, the database did not include information about duration of illness.

Regardless of ethnic group or language preference, institutional residence was strongly associated with the use of case management services. However, institutional residence was an even more powerful predictor among Spanish-speaking Latino patients. A recent occurrence of increased clinical severity could signal an increased need for case management. This factor may be especially relevant among less acculturated Latino patients because of the reported tendency among ethnic minorities to delay seeking psychiatric treatment until the illness is more severe (4,17,30). In addition, a possible referral bias may account for the lower proportion of ethnic minorities receiving case management. However, underuse among the ethnic groups in our study cannot all be attributed solely to a gatekeeping bias, because one-third of case management services are embedded within other servic-

es, such as outpatient, inpatient, and day treatment services, that do not require referral.

Because case management encompasses a broad category of service activities, providers can bill for several possible brokerage services. A state-required evaluation of care coordination is conducted annually for each patient with a severe mental illness, but it is billed as an assessment. Billing is dependent on the codes used. Thus it would be important to determine whether providers use codes appropriately for case management services, because it is possible that providers use the codes to secure needed resources for patients. This important issue has implications for the interpretation of our findings. Until the MHMIS database distinguishes among types of case management services and billing practices, it will not be possible to fully account for differing patterns of use between ethnic groups. Nonetheless, because case management activities comprise a mixture of types of tasks and services, it was striking that we found significant rates of underuse in the ethnic minority groups we studied.

Table 4

Results of multivariate logistic analyses of associations between use of any case management service and demographic, clinical, and financial variables, by ethnic group

Independent variable	European-American model (N=2,697)		Latino model (N=831)		African-American model (N=718)	
	OR	99% CI	OR	99% CI	OR	99% CI
Gender	.97	.74–1.28	.9	.51–1.58	.86	.46–1.6
Education	.96	.91–1.02	1.01	.92–1.11	.95	.84–1.07
Age	1.02	1.01–1.03*	1.02	.99–1.04	1.01	.99–1.04
Language preference[a]	—	—	.97	.52–1.78	—	—
Living situation						
Independent	1		1		1	
With family	.43	.24–.78*	1.03	.45–2.36	.58	.14–2.48
Institution	3.9	2.9–5.24	5.81	3.04–11.08*	7.53	3.54–16.01*
Unstable	.69	.45–1.08	1.12	.41–3.07	.98	.4–2.38
Other	3.11	2.07–4.67*	2.86	1.06–7.72*	4.64	1.87–11.49*
Marital status						
Never married	1		1		1	
Married	.96	.55–1.67	.43	.13–1.49	.98	.3–3.18
Formerly married	1	.73–1.36	1.1	.56–2.15	.9	.45–1.81
Inpatient stay in the past year	.86	.63–1.16	1.28	.7–2.33	.94	.47–1.87
Global Assessment of Functioning score	.97	.95–.98*	.96	.94–1*	.97	.94–1*
Comorbid substance use disorder	.99	.73–1.33	1.22	.63–2.39	1.25	.62–2.51
Medi-Cal eligibility[b]	4.2	2.78–6.34*	6.22	2.15–18.02*	10.74	1.64–70.51*

[a] English or Spanish

[b] As of entry into the service system; used as a proxy for financial status

*p=.01

Several limitations must be considered in interpreting our findings. First, although the MHMIS data we used were representative of those for persons with schizophrenia seeking public mental health services in urban San Diego County, we do not know how generalizable our findings are to populations served by other public mental health systems. However, these findings have implications for other large cities with growing ethnic and immigrant populations.

A second limitation is that although the data for this study contained basic demographic and clinical information for assessing patterns of use of case management, few variables adequately represented socioeconomic or financial status. A third limitation is the lack of research-based diagnosis. However, the data represent community diagnostic practices. If these data reflect an overdiagnosis of schizophrenia based on racial bias in perceived severity of illness (31,32), it would follow that the rate of use of case management would be higher for ethnic minority members, rather than lower, as found in this study. A fourth limitation is reliance on the GAF score as the indicator of functional status, even though such reliance represents community practice. A final limitation is the lack of certain useful types of data.

One recommendation would be that the MHMIS augment collection of sociodemographic and financial information. More specific ethnic categories and variables on acculturation and linguistic facility would improve the interpretation of ethnic group differences (33). Research has found increased support for intensive case management models (2,3,34,35). Thus recording the specific service components provided to patients would greatly facilitate the assessment of ethnic patterns of use and of the relationship of these patterns to other mental health outcomes.

This study used a large and representative sample of patients with schizophrenia who were receiving services in the public sector in one of the largest and most ethnically diverse county populations in the United States. The main findings illustrate that ethnic minorities with schizophrenia are markedly underserved compared with European Americans. These findings underscore the need for continuing concern about the underuse of case management and other types of mental health services among persons from ethnic minorities. ♦

Acknowledgments

This work was supported in part by grants K01-MH-01954, MH-43695, MH-49671, MH-45131, and MH-19934 from the National Institute of Mental Health and by the Department of Veterans Affairs. The authors thank Margarita Alegría, Ph.D., and Thomas G. McGuire, Ph.D., for their helpful comments. The authors also thank Shah Golshan, Ph.D., for statistical consultation and Michael Hurlburt, Ph.D., for data management.

References

1. Mental Health: A Report of the Surgeon General. Rockville, Md, Center for Mental Health Services, 1999

2. Solomon P: The conceptual and empirical base of case management for adults with severe mental illness, in Advances in Mental Health Research: Implications for Prac-

tice. Edited by Williams JBW, Ell K. Washington, DC, NASW Press, 1998

3. Mueser KT, Bond GR, Drake RE, et al: Model of community care for severe mental illness: a review of research on case management. Schizophrenia Bulletin 24: 37–74, 1998

4. Maynard C, Ehreth J, Cox GB, et al: Racial differences in the utilization of public mental health services in Washington State. Administration and Policy in Mental Health 24:411–424, 1997

5. Cheung FK, Snowden LR: Community mental health and ethnic minority populations. Community Mental Health Journal 26:277–291, 1990

6. Hu TW, Snowden LR, Jerrell JM, et al: Ethnic populations in public mental health: services choice and level of use. American Journal of Public Health 81:1429–1434, 1991

7. Flaskerud JH, Hu L: Racial/ethnic identity and amount and type of psychiatric treatment. American Journal of Psychiatry 149:379–384, 1992

8. Sue S, Fujino DC, Hu L, et al: Community mental health services for ethnic minority groups: a test of the cultural responsiveness hypothesis. Journal of Consulting and Clinical Psychology 59:533–540, 1991

9. Cuffel BJ, Jeste DV, Halpain M, et al: Treatment costs and use of community mental health services for schizophrenia by age-cohorts. American Journal of Psychiatry 153:870–876, 1996

10. Hough RL, Landsverk JA, Karno M, et al: Utilization of health and mental health services by Los Angeles Mexican Americans and non-Hispanic whites. Archives of General Psychiatry 44:702–709, 1987

11. Gallo JJ, Marino S, Ford D, et al: Filters on the pathway to mental health care: II. sociodemographic factors. Psychological Medicine 25:1149–1160, 1995

12. Wells KB, Golding JM, Hough RL, et al: Acculturation and the probability of use of health services by Mexican Americans. Health Services Research 24:327–357, 1989

13. Peifer KL, Hu T, Vega W: Help seeking by persons of Mexican origin with functional impairments. Psychiatric Services 51:1293–1298, 2000

14. Vega W, Kolody B, Aguilar-Gaxiola S, et al: Gaps in service utilization by Mexican Americans with mental health problems. American Journal of Psychiatry 156:928–934, 1999

15. Flaskerud JH: The effects of culture-compatible intervention on the utilization of mental health services by minority clients. Community Mental Health Journal 22: 127–141, 1986

16. Bui K-V, Takeuchi DT: Ethnic minority adolescents and the use of community mental health care services. American Journal of Community Psychology 20:403–417, 1992

17. Snowden LR, Cheung FK: Use of inpatient mental health services by members of ethnic minority groups. American Psychologist 45:347–355, 1990

18. San Diego Medi-Cal Rehabilitation Option Manual, section 8–2. Pub no DMH 95–14. San Diego, Calif, San Diego County Department of Mental Health, 1994

19. Ziguras SJ, Stuart GW: A meta-analysis of the effectiveness of mental health case management over 20 years. Psychiatric Services 51:1410–1421, 2000

20. Intagliata J: Improving the quality of community care for the chronically mentally disabled: the role of case management. Schizophrenia Bulletin 8:655–674, 1982

21. Rosenheck RA, Desai R, Steinwachs D, et al: Benchmarking treatment of schizophrenia: a comparison of service delivery by the national government and by state and local providers. Journal of Nervous and Mental Disease 188:209–216, 2000

22. Lindamer LA, Bailey A, Hawthorne W, et al: Gender differences among patients with schizophrenia in a public mental health system: demographic and clinical characteristics and service utilization. Psychiatric Services, in press

23. Alegria M, Canino G, Rios R, et al: Inequalities in use of specialty mental health services among Latinos, African Americans, and non-Latino whites. Psychiatric Services 53:1547–1555, 2002

24. Cohen J, Cohen P: Applied Multiple Regression/Correlation Analysis for the Behavioral Sciences. Hillsdale, NJ, Lawrence Erlbaum, 1983

25. Lopez SR: A research agenda to improve the accessibility and quality of mental health care for Latinos. Psychiatric Services 53:1569–1573, 2002

26. Barrio C: The cultural relevance of community-support system programs. Psychiatric Services 51:879–884, 2000

27. Guarnaccia P: Multicultural experiences of family caregiving: a study of African American, European American, and Hispanic American families. New Directions for Mental Health Services 77:63–73, 1998

28. Lin K-M, Inui TS, Kleinman AM, et al: Sociocultural determinants of the help-seeking behaviour of patients with mental illness. Journal of Nervous and Mental Disease 170:78–85, 1982

29. Caton CLM: Mental health service use among homeless and never-homeless men with schizophrenia. Psychiatric Services 46:1139–1143, 1995

30. Primm A, Lima B, Rowe C: Cultural and ethnic sensitivity, in Integrated Mental Health Services: Modern Community Psychiatry. Edited by Breakey W. New York, Oxford University Press, 1996

31. Bell CC, Mehta H: The misdiagnosis of black patients with manic depressive illness. JAMA 72:141–145, 1980

32. Lawson WB, Hepler N, Holladay J, et al: Race as a factor in inpatient and outpatient admissions and diagnosis. Hospital and Community Psychiatry 45:72–74, 1994

33. Yamada AM, Marsella AJ, Yamada SYY: The development of the Ethnocultural Identity Behavioral Index: psychometric properties and validation with Asian Americans and Pacific Islanders. Asian American and Pacific Islander Journal of Health 6: 35–45, 1998

34. Quinlivan R, Hough RL, Cowell A, et al: Service utilization and costs of care for severely mentally ill clients in an intensive case management program. Psychiatric Services 46:365–371, 1995

35. Test MA: Community-based treatment models for adults with severe and persistent mental illness, in Advances in Mental Health Research: Implications for Practice. Edited by Williams JBW, Ell K. Washington, DC, NASW Press, 1998

Submissions for Datapoints Invited

Submissions to the journal's Datapoints column are invited. Areas of interest include diagnosis and practice patterns, treatment modalities, treatment sites, patient characteristics, and payment sources. National data are preferred. The text ranges from 350 to 500 words, depending on the size and number of figures used. The text should include a short description of the research question, the database and methods, and any limitations of the study.

Inquiries or submissions should be directed to Harold Alan Pincus, M.D., or Terri L. Tanielian, M.S., editors of the column. Contact Ms. Tanielian at Rand, 1200 South Hayes Street, Arlington, Virginia 22202 (terri_tanielian@rand.org).