

Use of Mental Health Services and Subjective Satisfaction With Treatment Among Black Caribbean Immigrants: Results From the National Survey of American Life

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Racial and ethnic disparities in access to mental health care continue to pose significant equity concerns for many population groups in the United States.¹⁻³ Data from the Epidemiological Catchment Area and the National Comorbidity Survey Replication reveal that there is greater unmet need for mental health care among US Blacks and Hispanics than for non-Hispanic White Americans.⁴⁻⁶ However, most current publications on use of mental health services lack community epidemiological data on within-race ethnic differences in mental health and use of services. We address this gap with data on immigration and use of mental health services from our recently completed National Survey of American Life (NSAL). The NSAL was a comprehensive study of US Blacks and was unique in that it included representative samples of African Americans and Blacks of Caribbean descent.⁷ These data facilitate, for the first time, an investigation of the influences of immigration and ethnicity on use of mental health services among representative national samples of the US Black population.⁸

Previous studies of mental health in Black populations have not had large enough sample sizes to investigate within-group ethnic variation. Much of the research to date on immigration and Blacks of Caribbean descent has been conducted in the United Kingdom.^{9,10} There, reports of higher rates of schizophrenia among West Indian versus native White populations began to emerge in 1965, after large-scale migration from the Caribbean during the early 1950s to mid-1960s.¹⁰ Since then, elevated rates of schizophrenia, compared with the general population, have been consistently reported for first- and second-generation Caribbean Blacks.¹¹⁻¹³ Similarly, in the Netherlands, Caribbean immigrants have rates of schizophrenia that are 3- to 4-times higher than those of the native Dutch population.¹⁴ To test

Objectives. We examined the use rates and correlates of formal psychiatric services among the US-born and immigrant Caribbean Black population.

Methods. We compared overall mental health service use in samples of Caribbean Blacks and African Americans and examined the within-sample ethnic variation among Caribbean Blacks, including for ethnic origin (Spanish Caribbean, Haiti, and English Caribbean), nativity status (those born in or outside the United States), number of years spent living in the United States, age at the time of immigration, and generational status.

Results. African Americans and Caribbean Blacks used formal mental health care services at relatively low rates. Among Caribbean Blacks, generational status and nativity showed the greatest effects on rates of reported use, satisfaction, and perceived helpfulness. Of those study participants who met the criteria for disorders as defined by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*, about one third used formal mental health care services. The US-born subjects were more likely to receive care than were first-generation immigrants.

Conclusions. Our study underscores the importance of ethnicity, immigration, and migration-related factors, within racial categorization, as it pertains to the use of mental health services in the United States. Our findings suggest that timing of migration and generational status of Caribbean Black immigrants and ancestry groups contribute to important differences in rates and sources of use, relative satisfaction, and perception of helpfulness, with regard to formal mental health services. (*Am J Public Health.* 2007;97:60-67. doi:10.2105/AJPH.2006.088500)

whether these elevated rates were linked to immigration experiences, 3 studies¹⁵⁻¹⁷ investigated the incidence of first contact with mental health service providers for schizophrenia in Trinidad, Jamaica, and Barbados, and compared those to rates for White populations in the United Kingdom. Rates for citizens living in the 3 Caribbean countries were similar to those for Whites in the United Kingdom, which suggests that the higher rates of schizophrenia for Caribbean Blacks seen in the United Kingdom are the result of immigration and postimmigration experiences.¹⁸

There are also differences between Black Caribbean immigrants and Whites in the use of mental health services. Specifically, Black Caribbean immigrants are less likely to use outpatient services but are overrepresented in institutions when compared with the White population in the United Kingdom.¹⁹⁻²¹

Explanations proposed to explain the relative underuse of outpatient services among Black Caribbean immigrants include language barriers,²² cultural incompetence on the part of the services staff,²³ ethnocentric stereotyping,²⁴ and poor previous experiences within the mental health system.^{21,25} Blacks of Caribbean descent are also more likely than White patients to be involuntarily detained under the Mental Health Act of 1983.²⁵⁻²⁷ Detention includes incarceration in both prisons and mental health institutions, which becomes the point of first contact with service providers.²⁸ In addition, satisfaction levels of mental health care among consumers reveal that Blacks of Caribbean descent had significantly lower satisfaction scores when compared with Whites,^{19,29,30} especially over time.²⁹

Our study followed a stress-coping conceptual framework that describes the ways in

which the discrepancies between life demands and personal capacities to respond to those demands lead to various strategies to alleviate distress. The variables included in this study's statistical models were based upon this framework. We focused more specifically on 1 component of that framework: the use of formal mental health services. The stress model is applicable to mental health services research because "going to the doctor" to receive help for a mental disorder is one of the more salient coping responses used by US Blacks; yet paradoxically, despite this relative salience, significant numbers of US Blacks with symptoms of serious mental health disorders do not seek treatment. Consequently, there is potential for increasing access to mental health care for US Blacks by examining the complex relationships among the variables chosen for inclusion in the statistical models.

Our previous work used this framework to build upon national samples that were not ethnically diverse and raised questions about the uniqueness of the US Black mental health experience and the meaning of such seemingly simple terms as "race" and "ethnicity."^{31,32} As a result, the stress model was expanded in the NSAL to include additional measures, such as migration and generational status. In previous analyses,³³ these measures were shown to provide additional context and a deeper meaning to the simplistic population group comparisons that seem to dominate much of the racial disparities research landscape.

Very little is known about use of mental health services by Blacks of Caribbean descent in the United States. As noted previously, practically all that is known about this population is from studies conducted in the United Kingdom. Our review of the available literature did not uncover any studies comparing use of mental health services by Blacks of Caribbean descent to other population groups in the United States. Our study is the first to examine within-race ethnic differences in use of mental health services and correlates within a US population sample similar to those examined in the United Kingdom. Specifically, we examined formal service use among national probability samples of Caribbean Black and African American adults. We were especially interested in ethnic variation,

nativity, age at time of immigration, years spent in the United States, and generational status differences in formal mental health services use within the Caribbean Black sample.

METHODS

Sample Selection

The NSAL was part of the National Institute of Mental Health Collaborative Psychiatric Epidemiology Surveys initiative that included 3 national representative surveys: (1) the NSAL, (2) the National Comorbidity Survey-Replication, and (3) the National Latino and Asian American Study.³⁴ The NSAL obtained an integrated national household probability sample of 3570 African Americans, 1621 Blacks of Caribbean descent (Caribbean Blacks), and 891 non-Hispanic Whites, aged 18 years and older.⁷ In the NSAL, the term "African American" was used to describe persons who self-identified as Black but did not identify ancestral ties to the Caribbean. Caribbean Blacks were persons who self-identified as Black and answered affirmatively when asked if they were of West Indian or Caribbean descent, indicated they were from a country included on a list of Caribbean area countries presented by the interviewers, or indicated that their parents or grandparents were born in a Caribbean-area country.

We focused primarily on the Caribbean Black sample, which was selected from geographic segments that reflected the distribution of the African American population and from additional metropolitan segments that were sampled on the basis of having a population concentration of more than 10% Blacks of Caribbean descent.³⁵ Most (86%) interviews were conducted face-to-face and the remainder (14%) were either partially or entirely conducted by phone; both interview types used a computer-assisted instrument and lasted an average of 2 hours and 20 minutes. Data were collected between February 2001 and June 2003. The overall response rate was 72.3%: 69.7% for Whites, 70.7% for African Americans, and 77.7% for Caribbean Blacks.

Measures

A slightly modified version of the World Mental Health Composite International

Diagnostic Interview was used to ascertain mental disorders as defined by the *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-IV)*.³⁶ This instrument was developed for the World Mental Health Project³⁷ and was also used in the National Latino and Asian American Study and the National Comorbidity Survey Replication. We examined mental health service use during the previous 12 months in relation to mood disorders (major depressive disorder, dysthymia), anxiety disorders (panic disorder, agoraphobia, social phobia, generalized anxiety disorder, posttraumatic stress disorder), substance disorders (alcohol abuse, alcohol dependence, drug abuse, drug dependence), and any disorder (a composite of any of the included 12-month *DSM-IV* disorders).

The sample of Caribbean Blacks was divided into 3 ethnic groups: people from the Spanish-speaking Caribbean, people from Haiti, and people from English-speaking Caribbean countries. Four respondents from French-speaking countries other than Haiti and 7 from the Dutch-speaking Caribbean were combined with the respondents from the English-speaking Caribbean.

Four measures of migration status were included in the sample of Caribbean Blacks: (1) nativity status, determined as whether or not the respondent was born in the United States; (2) number of years in the United States; (3) age at time of immigration to the United States; and (4) generational status. The first generation included respondents who were not born in the United States, the second generation category included those born in the United States but with at least 1 foreign-born parent, and the third generation category included US-born respondents with US-born parents, but with at least 1 Caribbean-born ancestor.

Formal Treatment for Mental Disorder

All African Americans and Caribbean Blacks in the NSAL were asked if they had seen any of an extensive list of treatment providers for problems with their emotions, nerves, mental health, or use of alcohol or drugs in the past 12 months. Treatment providers were categorized into 3 sectors: specialty mental health (psychiatrists and non-psychiatric mental health therapist classifications that represent mental health hotlines,

psychologists, and other professionals, as well as counselors or social workers seen in mental health settings), general medical (general practitioners, family doctors, nurses, occupational therapists, and other health professionals), and any services, which included the 2 previously mentioned sectors plus 2 nonhealth sectors: use of human services (religious and spiritual advisors; counselors and social workers seen in non-mental health settings) and complementary alternative medicine providers (herbalists, chiropractors, spiritualists, self-help groups, internet support groups). Twelve-month service use within a particular treatment sector was defined as making at least 1 visit to a member of the treatment sector within the 12 months before the respondent's interview. The treatment sectors were not mutually exclusive, because it was possible for individuals to have received help from more than 1 sector.

Measures of Satisfaction

Measures of subjective satisfaction and of perceived helpfulness were created for each service sector. Subjective satisfaction was measured as those who responded being "very satisfied" or "satisfied" with their service provider. Perceived helpfulness was determined as being helped "a lot" by their service provider. If a respondent utilized more than 1 type of service provider within a given sector, we selected the service provider used most often to determine the respondent's measure of satisfaction and helpfulness for that sector.

Analysis Strategy

The NSAL used a multistage sample design that involved both clustering and stratification.³⁵ Thus, we calculated variance estimates that accounted for the complexity of the design.³⁸ Because standard errors that have been adjusted for complex designs are usually larger than nonadjusted standard errors, differences between groups may appear to be large yet not statistically significant. Also, because of the relatively small subsample sizes, especially for Caribbean Blacks, we used bivariate analyses to examine the ethnic origin- and immigration-related factors associated with 12-month mental health service use. We calculated population-weighted estimates (adjusted for sample design, nonresponse, and poststratification) and complex design-adjusted 95%

confidence intervals. Unweighted sample sizes are reported; the weighted sample size of those who used mental health services is about 30% higher than the size of the unweighted sample. We performed the Rao-Scott χ^2 test of association to obtain corresponding design-corrected F statistics and actual P values. We conducted all analyses with SAS version 9.13

(SAS Institute Inc, Cary, NC), using the Taylor-series expansion technique for calculating the complex-design-based estimates of variance.

RESULTS

Table 1 presents overall rates of 12-month mental health service use for the samples of

TABLE 1—Prevalence of Mental Health Service Use in the Previous 12 Months Among African Americans and Caribbean Blacks Living in the United States, by Ethnicity, Immigration Status, and Service Sector: National Survey of American Life (NSAL), 2001-2003

| | Specialty Mental Health | | General Medical | | Any Service ^a | |
|---------------------------------------|-----------------------------|---------------------|-----------------------------|---------------------|-----------------------------|---------------------|
| | No. ^b | % (95% CI) | No. ^b | % (95% CI) | No. ^b | % (95% CI) |
| Ethnic groups | | | | | | |
| African Americans (n = 3414) | 176 | 5.59 (4.57, 6.60) | 134 | 4.28 (3.63, 4.93) | 324 | 10.12 (8.80, 11.45) |
| Caribbean Blacks (n = 1579) | 65 | 5.94 (1.95, 9.92) | 37 | 3.74 (0.66, 6.82) | 118 | 9.95 (5.96, 13.94) |
| Group difference ^c | $F_{1,57} = 0.03, P = .86$ | | $F_{1,57} = 0.1, P = .75$ | | $F_{1,57} = 0.01, P = .93$ | |
| Caribbean ethnic origins | | | | | | |
| Spanish-speaking Caribbean (n = 175) | 17 | 15.11 (0.00, 36.84) | 7 | 2.79 (0.00, 6.25) | 23 | 18.23 (0.00, 39.45) |
| Haiti (n = 290) | 5 | 1.23 (0.00, 2.87) | 5 | 6.02 (0.00, 16.19) | 13 | 8.15 (0.00, 18.61) |
| English-speaking Caribbean (n = 1100) | 41 | 4.22 (0.89, 7.55) | 25 | 3.73 (0.36, 7.10) | 79 | 7.94 (4.32, 11.56) |
| Group difference ^c | $F_{2,52} = 3.44, P = .04$ | | $F_{2,52} = 0.36, P = .7$ | | $F_{2,52} = 1.21, P = .31$ | |
| Nativity status | | | | | | |
| US-born (n = 432) | 38 | 13.09 (2.55, 23.62) | 14 | 7.63 (0.00, 16.21) | 54 | 18.65 (8.16, 29.14) |
| Foreign-born (n = 1141) | 26 | 1.91 (0.07, 3.75) | 23 | 1.63 (0.74, 2.52) | 62 | 4.90 (2.29, 7.51) |
| Group difference ^c | $F_{1,26} = 13.83, P < .01$ | | $F_{1,26} = 7.77, P < .01$ | | $F_{1,26} = 12.93, P < .01$ | |
| Years in the United States | | | | | | |
| ≤5 (n = 118) | 1 | 0.45 (0.00, 1.39) | 3 | 2.49 (0.00, 5.68) | 4 | 3.59 (0.00, 7.48) |
| 6-10 (n = 163) | 3 | 0.65 (0.00, 1.54) | 4 | 1.80 (0.00, 4.00) | 8 | 2.64 (0.62, 4.66) |
| 11-20 (n = 353) | 8 | 1.70 (0.04, 3.37) | 3 | 0.25 (0.00, 0.53) | 18 | 3.15 (1.32, 4.98) |
| ≥21 (n = 501) | 14 | 3.05 (0.00, 7.17) | 13 | 2.46 (0.54, 4.38) | 32 | 7.69 (1.65, 13.73) |
| Group difference ^c | $F_{3,78} = 1.52, P = .22$ | | $F_{3,78} = 2.14, P = .10$ | | $F_{3,78} = 2.47, P = .07$ | |
| Age at time of immigration, y | | | | | | |
| ≤12 (n = 222) | 9 | 5.82 (0.00, 13.95) | 2 | 0.42 (0.00, 1.07) | 16 | 10.95 (2.08, 19.81) |
| 13-17 (n = 159) | 5 | 1.66 (0.00, 3.67) | 8 | 3.05 (0.78, 5.33) | 16 | 6.30 (2.70, 9.89) |
| 18-34 (n = 543) | 9 | 0.96 (0.00, 1.92) | 8 | 1.75 (0.00, 3.52) | 20 | 2.87 (0.95, 4.80) |
| ≥35 (n = 183) | 1 | 0.35 (0.00, 1.08) | 4 | 2.12 (0.12, 4.13) | 6 | 2.62 (0.45, 4.80) |
| Group difference ^c | $F_{3,78} = 5.32, P < .01$ | | $F_{3,78} = 1.45, P = .24$ | | $F_{3,78} = 6.63, P < .01$ | |
| Generational status | | | | | | |
| First (n = 1142) | 26 | 1.91 (0.07, 3.75) | 23 | 1.63 (0.74, 2.52) | 62 | 4.90 (2.29, 7.51) |
| Second (n = 310) | 27 | 11.85 (0.00, 27.40) | 6 | 0.97 (0.15, 1.78) | 34 | 13.32 (0.00, 28.85) |
| Third or later (n = 122) | 11 | 14.90 (0.00, 29.88) | 8 | 17.43 (0.00, 37.69) | 20 | 26.49 (7.62, 45.35) |
| Group difference ^c | $F_{2,52} = 4.05, P = .02$ | | $F_{2,52} = 20.62, P < .01$ | | $F_{2,52} = 4.60, P = .01$ | |

Note. CI = confidence interval; OR = odds ratio.

^aAny Service includes both specialty mental health and general medical services as well as services received from religious or spiritual advisors and complementary or alternative service providers.

^bNumber of unweighted case participants who received services in the given service sector.

^cAll F statistics were adjusted for complex sample design. The denominator degrees of freedom represents the number of clusters minus the number of strata used for a given analysis.

African Americans and Caribbean Blacks and shows the relation of Caribbean Blacks' ethnic origins and migration status to the 3 mental health service sectors. There were no significant differences in mental health service use between African Americans and Caribbean Blacks. Ethnic origins were related to specialty mental health service use: those from Spanish-speaking countries were much more likely to report mental health service use than were Haitians or respondents from the English-speaking Caribbean ($P=.04$). Service use varied significantly by nativity: Blacks born in the United States were significantly more likely to receive mental health services from all 3 service sectors than were those born in the Caribbean. Immigrants who had lived more than 21 years in the United States ($P=.07$) reported the highest usage of services.

Similarly, there were significant relationships between age at immigration and mental health service use. The data suggest that those who arrived in the United States when they were aged 12 years or younger were more likely to receive any mental health service ($P<.01$) and specialty mental health services ($P<.01$). Finally, there were strong and consistent relationships with generational status: Caribbean Blacks who were third generation or later were much more likely to report mental health service use in all 3 sectors than were second-generation natives and first-generation immigrants.

Table 2 presents the relationship between subjective satisfaction with treatment and ethnicity and migration for those who received treatment. Caribbean Blacks reported significantly greater satisfaction for specialty mental health services than did African American respondents. Ethnic origins were related to subjective satisfaction for use of any services: Spanish-speaking Caribbean and Haitian respondents were more likely to report satisfaction than were respondents from the English-speaking Caribbean. There was a trend for Caribbean Blacks born outside of the United States to report higher levels of satisfaction for any mental health services and general medical services received than for those born in the United States; however, these differences were not significant. Tests for associations between satisfaction and number of years in the United

States and between satisfaction and age at time of immigration for all sources of care were not possible because of small sample sizes. There was a significant relationship between satisfaction with use of any mental health services and generational status: Caribbean Blacks who were third generation or later reported significantly lower satisfaction with services received than did those who were first or second generation. It is also noteworthy that Caribbean Blacks who were third generation or later reported lower levels of satisfaction with care received from any mental health services and from general medical care than did African Americans.

Table 3 presents the bivariate differences for the correlates of perceived helpfulness of each treatment sector. Similar relational patterns existed for perceived helpfulness and subjective satisfaction. There were no overall differences between African Americans and Caribbean Blacks in perceived helpfulness of treatment in any of the 3 sectors of care. Caribbean Blacks from English-speaking countries were less likely than those from the Spanish-speaking Caribbean and Haiti to have perceived care in any sector as being helpful. Those born in the United States tended to report lower rates of perceived helpfulness, with significant differences for general medical care and the overall use of mental health services. There were no significant relationships between number of years in the United States and age at time of immigration with perceived helpfulness. Finally, Caribbean Blacks who were third generation or later tended to report much lower perceived helpfulness than did those in the first and second generations, and they reported even lower perceived helpfulness than did African Americans for treatment from any service and general medical sectors.

Table 4 displays the rates of overall use of any type of mental health service disaggregated by whether the respondent had 1 of the 11 psychiatric disorders as defined by *DSM-IV* criteria. African Americans and Caribbean Blacks did not differ in mental health service use, regardless of whether they met criteria for any disorder. There were no significant differences across ethnic origins for subjects with or without a disorder; however, subjects from Spanish-speaking Caribbean countries reported higher treatment use than did those from Haiti or the

English-speaking countries who met criteria for 1 of the disorders. US-born Caribbean Blacks who had a disorder used significantly more services than did foreign-born Caribbean Blacks ($P<.01$). Although there was no significant relationship between service use and number of years living in the United States among respondents who met disorder criteria, there was a borderline effect ($P=.07$) among those who did not: a higher percentage of respondents who lived in the United States 21 years or more used mental health services more than did those in lesser categories of tenure.

A similar relationship was found for age at time of immigration: individuals who immigrated to the United States when aged 12 years or younger were much more likely than were individuals in any of the other age categories to use mental health services in the absence of a disorder ($P<.01$). The rates varied for respondents who met criteria for a disorder: those who were aged 13 to 17 years and 35 years or older when they immigrated had higher rates of mental health service use than did those who immigrated when they were aged 12 years or younger or aged 18 to 34 years.

Finally, among those respondents who met the criteria, both second- and third-generation Caribbean Blacks reported higher service use than did first-generation respondents. Among Caribbean Blacks who did not meet criteria for a disorder, third-generation Caribbean Blacks were much more likely than either first- or second-generation immigrants to use mental health services ($P=.02$).

DISCUSSION

Our findings reveal that combining data for Caribbean Black immigrants or US-born Caribbean Blacks with data for native African Americans will obscure a great deal of variability in patterns and frequency of formal mental health service use. Although there were no overall differences between Caribbean Blacks and African Americans in formal mental health service use, satisfaction, and perceived helpfulness of the services provided, notable differences were found among Caribbean Blacks of different ethnic backgrounds, nativity status, age at time of immigration, years since immigration, and generational status. Among immigrants, longer time

TABLE 2—Subjective Satisfaction with Treatment Among African Americans and Caribbean Blacks Living in the United States Who Used Mental Health Services in the Previous 12 Months, by Service Sector, Ethnicity, and Immigration Status: National Survey of American Life (NSAL), 2001–2003

| | Specialty Mental Health | | General Medical | | Any Service ^a | |
|--------------------------------------|------------------------------------|-------------------------|-----------------------------------|-------------------------|------------------------------------|-------------------------|
| | No. ^b | % (95% CI) | No. ^b | % (95% CI) | No. ^b | % (95% CI) |
| Ethnic group^c | | | | | | |
| African Americans (n = 294) | 132 | 77.49 (69.82, 85.17) | 109 | 82.67 (75.06, 90.29) | 254 | 85.19 (80.26, 90.12) |
| Caribbean Blacks (n = 110) | 53 | 93.93 (89.11, 98.75) | 32 | 72.85 (30.68, 100.00) | 96 | 86.89 (69.55, 100.00) |
| Group difference ^d | F _{1,35} = 15.71, P < .01 | | F _{1,33} = 0.22, P = .65 | | F _{1,52} = 0.03, P = .86 | |
| Caribbean ethnic origins | | | | | | |
| Spanish-speaking Caribbean (n = 22) | 13 | 95.38 (87.99, 100.00) | 6 | 90.56 (69.23, 100.00) | 19 | 97.37 (93.16, 100.00) |
| Haiti (n = 11) | 3 | 88.09 (61.34, 100.00) | 5 | 100.00 (100.00, 100.00) | 10 | 98.35 (94.48, 100.00) |
| English-speaking Caribbean (n = 75) | 36 | 94.57 (88.23, 100.00) | 21 | 62.60 (6.10, 100.00) | 66 | 79.86 (51.71, 100.00) |
| Group difference ^d | F _{2,18} = 0.15, P = .86 | | F _{1,2} = NA | | F _{2,38} = 12.26, P < .01 | |
| Nativity status | | | | | | |
| US-born (n = 51) | 31 | 96.33 (92.21, 100.00) | 12 | 65.47 (6.10, 100.00) | 44 | 84.17 (58.98, 100.00) |
| Foreign-born (n = 58) | 22 | 91.52 (80.43, 100.00) | 20 | 91.84 (80.48, 100.00) | 52 | 95.41 (90.99, 99.82) |
| Group difference ^d | F _{1,10} = 1.32, P = .28 | | F _{1,7} = 0.83, P = .39 | | F _{1,20} = 1.53, P = .23 | |
| Years in the United States | | | | | | |
| ≤ 5 (n = 3) | 1 | 100.00 (100.00, 100.00) | 2 | 81.84 (44.40, 100.00) | 3 | 100.00 (100.00, 100.00) |
| 6–10 (n = 7) | 2 | 66.16 (11.07, 100.00) | 4 | 100.00 (100.00, 100.00) | 6 | 90.99 (72.52, 100.00) |
| 11–20 (n = 18) | 6 | 84.80 (57.71, 100.00) | 3 | 100.00 (100.00, 100.00) | 15 | 88.82 (74.29, 100.00) |
| ≥ 21 (n = 30) | 13 | 95.53 (85.90, 100.00) | 11 | 92.38 (78.99, 100.00) | 28 | 97.44 (93.36, 100.00) |
| Group difference ^d | F _{1,2} = NA | | F _{1,2} = NA | | F _{1,2} = NA | |
| Age at time of immigration, y | | | | | | |
| ≤ 12 (n = 14) | 7 | 90.48 (76.44, 100.00) | 1 | 32.83 (0.00, 100.00) | 12 | 94.56 (86.11, 100.00) |
| 13–17 (n = 14) | 4 | 87.54 (58.37, 100.00) | 7 | 94.89 (83.79, 100.00) | 12 | 92.93 (82.23, 100.00) |
| 18–34 (n = 20) | 9 | 100.00 (100.00, 100.00) | 7 | 92.48 (76.95, 100.00) | 19 | 97.71 (92.91, 100.00) |
| ≥ 35 (n = 6) | 1 | 100.00 (100.00, 100.00) | 4 | 100.00 (100.00, 100.00) | 6 | 100.00 (100.00, 100.00) |
| Group difference ^d | F _{1,2} = NA | | F _{1,2} = NA | | F _{1,2} = NA | |
| Generational status | | | | | | |
| First (n = 58) | 22 | 91.52 (80.43, 100.00) | 20 | 91.84 (80.48, 100.00) | 52 | 95.41 (90.99, 99.82) |
| Second (n = 32) | 23 | 97.50 (93.43, 100.00) | 6 | 100.00 (100.00, 100.00) | 29 | 97.98 (94.90, 100.00) |
| Third or later (n = 19) | 8 | 94.96 (87.07, 100.00) | 6 | 62.66 (0.00, 100.00) | 15 | 74.21 (34.49, 100.00) |
| Group difference ^d | F _{2,20} = 0.78, P = .47 | | F _{1,2} = NA | | F _{2,40} = 4.24, P = .02 | |

Note. CI = confidence interval; OR = odds ratio; NA = not available due to small sample size.

^aAny service includes both specialty mental health and general medical services as well as services received from religious or spiritual advisors and complementary or alternative service providers.

^bNumber of unweighted case participants who reported being "Very Satisfied" or "Satisfied" with the services received in the given service sector.

^cA total of 4 Caribbean Blacks and 19 African Americans used only internet support groups, self-help groups, or hotlines. Satisfaction with these service providers was not assessed. An additional 4 Caribbean Blacks and 11 African Americans did not answer the satisfaction questions.

^dF statistics are adjusted for complex sample design. The denominator degrees of freedom represents the number of clusters minus the number of strata for a given analysis.

living in the United States and younger age at time of immigration were linked to mental health service use, which suggests that socialization and access to mental health services may play an important role in use of those services. Caribbean Blacks who were third generation or later used mental health services at rates that actually exceeded those of African Americans in all of 3 dimensions of mental health service use that we examined.

Our findings underscore the importance of ethnic background among Black immigrants. Previous research in the United Kingdom has reported large differences among ethnic groups in the ways in which they contact providers and receive formal treatment.⁹ Our finding that Blacks from the Spanish-speaking Caribbean were more likely to use specialty mental health services supports these reports. Geography and region may contribute to this

effect. Referral patterns in general medical practice may also vary by measures not included in this study. Although mental health service use in our study was restricted to the previous 12 months, patterns and resources in countries of origin may affect behaviors and attitudes about mental health service use among immigrants in general. A recent World Health Organization publication³⁹ reported notable differences among Caribbean

TABLE 3—Perceived Helpfulness of Treatment Among African Americans and Caribbean Blacks Living in the United States Who Used Mental Health Services in the Previous 12 Months, by Service Sector, Ethnicity, and Immigration Status: National Survey of American Life, 2001–2003

| | Specialty Mental Health | | General Medical | | Any Service ^a | |
|--------------------------------------|-----------------------------------|-----------------------|--|-----------------------|-----------------------------------|-----------------------|
| | No. ^b | % (95% CI) | No. ^b | % (95% CI) | No. ^b | % (95% CI) |
| Ethnic group^c | | | | | | |
| African Americans (n = 295) | 70 | 51.36 (40.79, 61.93) | 182 | 61.01 (52.89, 69.13) | 85 | 49.88 (40.23, 59.53) |
| Caribbean Blacks (n = 110) | 21 | 44.86 (19.96, 69.76) | 72 | 67.64 (47.74, 87.53) | 38 | 67.89 (39.57, 96.21) |
| Group difference ^d | F _{1,33} = 0.24, P = .63 | | F _{1,52} = 0.36, P = .55 ^d | | F _{1,35} = 1.33, P = .26 | |
| Caribbean ethnic origins | | | | | | |
| Spanish-speaking Caribbean (n = 22) | 3 | 72.49 (30.15, 100.00) | 15 | 84.63 (77.44, 91.83) | 11 | 84.44 (78.5, 90.38) |
| Haiti (n = 11) | 3 | 95.36 (85.73, 100.00) | 7 | 92.96 (82.47, 100.00) | 2 | 74.80 (26.07, 100.00) |
| English-speaking Caribbean (n = 75) | 15 | 26.56 (5.17, 47.96) | 49 | 52.51 (19.99, 85.02) | 24 | 50.90 (0.00, 100.00) |
| Group difference ^d | F _{1,2} = NA | | F _{2,38} = 7.63, P < .01 | | F _{2,18} = 8.39, P < .01 | |
| Nativity status | | | | | | |
| US-born (n = 51) | 9 | 31.83 (0.00, 64.34) | 35 | 62.51 (36.27, 88.74) | 22 | 66.26 (29.36, 100.00) |
| Foreign-born (n = 58) | 12 | 78.35 (63.41, 93.30) | 37 | 80.89 (68.18, 93.59) | 16 | 78.76 (56.67, 100.00) |
| Group difference ^d | F _{1,7} = 20.81, P < .01 | | F _{1,20} = 4.20, P = .05 | | F _{1,10} = 0.74, P = .41 | |
| Years in the United States | | | | | | |
| ≤ 5 (n = 3) | 2 | 81.84 (34.54, 100.00) | 2 | 81.84 (42.43, 100.00) | 0 | ... |
| 6–10 (n = 7) | 2 | 72.23 (19.00, 100.00) | 3 | 61.80 (9.70, 100.00) | 1 | 33.08 (2.00, 64.16) |
| 11–20 (n = 18) | 0 | ... | 10 | 61.01 (30.82, 91.20) | 5 | 74.60 (45.61, 100.00) |
| ≥ 21 (n = 30) | 8 | 84.48 (75.68, 93.27) | 22 | 88.90 (80.52, 97.28) | 10 | 86.89 (73.04, 100.00) |
| Group difference ^d | F _{1,2} = NA | | F _{3,39} = 2.01, P = .13 | | F _{1,2} = NA | |
| Age at time of immigration, y | | | | | | |
| ≤ 12 (n = 14) | 0 | ... | 8 | 84.44 (67.89, 100.00) | 6 | 88.12 (74.89, 100.00) |
| 13–17 (n = 14) | 4 | 73.47 (37.71, 100.00) | 11 | 87.76 (74.12, 100.00) | 4 | 87.54 (60.26, 100.00) |
| 18–34 (n = 20) | 4 | 81.12 (59.03, 100.00) | 12 | 77.86 (54.50, 100.00) | 5 | 61.28 (17.18, 100.00) |
| ≥ 35 (n = 6) | 3 | 94.65 (78.17, 100.00) | 4 | 82.17 (66.46, 97.88) | 0 | ... |
| Group difference ^d | F _{1,2} = NA | | F _{3,39} = 0.23, P = .88 | | F _{1,2} = NA | |
| Generational status | | | | | | |
| First (n = 58) | 12 | 78.35 (63.41, 93.30) | 37 | 80.89 (68.18, 93.59) | 16 | 78.76 (56.67, 100.00) |
| Second (n = 32) | 5 | 82.50 (47.86, 100.00) | 23 | 78.82 (71.50, 86.14) | 16 | 76.07 (66.57, 85.57) |
| Third or later (n = 19) | 4 | 27.71 (0.00, 64.22) | 12 | 50.74 (14.32, 87.15) | 6 | 54.87 (0.00, 100.00) |
| Group difference ^d | F _{2,14} = 7.32, P < .01 | | F _{2,40} = 7.64, P < .01 | | F _{2,20} = 0.77, P = .48 | |

Note. CI = confidence interval; OR = odds ratio.

^aAny service includes both specialty mental health and general medical services as well as services received from religious or spiritual advisors and complementary or alternative service providers.

^bNumber of unweighted case participants who reported being helped “A Lot” by the services received in the given service sector.

^cA total of 4 Caribbean Blacks and 19 African Americans used only internet support groups, self-help groups, or hotlines. Perceived helpfulness of these service providers was not assessed. An additional 4 Caribbean Blacks and 11 African Americans did not answer the helpfulness questions. These treatment sectors were not mutually exclusive; individuals may have received treatment from more than 1 sector. Therefore numbers across rows may not equal the total number of cases.

^dAll F statistics are adjusted for complex sample design. The denominator degrees of freedom represents the number of clusters minus the number of strata for a given analysis.

countries in mental health programming, financing, facilities, involvement by nongovernmental organizations, and special population emphases, such as children and the elderly. As noted previously, a recent study conducted in the United Kingdom concerning first episode of psychoses reported lower referral rates for Caribbean Blacks and African Blacks in comparison to the general population.^{18,25} This may not be generalizable to the

nonpsychotic disorders examined in this study. In our future studies, we will explore these findings further by using specialized techniques for small sample sizes and by focusing on specialty mental health services and differences in ethnic background among Caribbean Blacks.

Bhugra and Jones⁸ reported that Caribbean Blacks in the United Kingdom were more likely than other ethnic groups to have visited

a general practitioner in the last month. Third-generation Caribbean Blacks in the United States should be similar in many ways to the UK group, where the largest wave of immigration took place before 1965. Comparable to the sample in the United Kingdom, third-generation or later Caribbean Blacks in the United States were much more likely to use any mental health services, which may reflect a greater use of general medical practitioners

TABLE 4—Prevalence of Mental Health Services Use in Previous 12 Months Among African Americans and Caribbean Blacks Living in the United States, by DSM-IV/CIDI Diagnosis and by Ethnicity and Immigration Status: National Survey of American Life (NSAL), 2001–2003

| | Persons Diagnosed With a 12-Month Disorder ^a | | Persons Without a 12-Month Disorder ^b | |
|---------------------------------------|---|----------------------|--|---------------------|
| | No. ^c | % (95% CI) | No. ^c | % (95% CI) |
| Ethnic groups | | | | |
| African American (n = 3414) | 157 | 35.35 (30.53, 40.17) | 167 | 5.76 (4.62, 6.90) |
| Caribbean Black (n = 1578) | 54 | 31.42 (11.61, 51.24) | 64 | 5.77 (3.14, 8.40) |
| Group difference ^d | $F_{1,55} = 0.14, P = .71^d$ | | $F_{1,57} = 0.00, P = .99$ | |
| Caribbean ethnic origins | | | | |
| Spanish-speaking Caribbean (n = 175) | 10 | 43.78 (0.00, 94.92) | 13 | 7.75 (0.25, 15.26) |
| Haiti (n = 290) | 7 | 20.14 (5.47, 34.80) | 6 | 7.20 (0.00, 18.32) |
| English-speaking Caribbean (n = 1100) | 36 | 28.72 (8.87, 48.56) | 43 | 4.22 (1.95, 6.49) |
| Group difference ^d | $F_{2,46} = 0.48, P = .62$ | | $F_{2,52} = 0.60, P = .56$ | |
| Nativity status | | | | |
| US-born (n = 432) | 27 | 46.75 (17.39, 76.10) | 27 | 8.98 (2.09, 15.87) |
| Foreign-born (n = 1141) | 26 | 10.92 (3.17, 18.66) | 36 | 4.15 (1.32, 6.99) |
| Group difference ^d | $F_{1,23} = 29.49, P < .01$ | | $F_{2,26} = 2.17, P = .15$ | |
| Years in the United States | | | | |
| ≤ 5 (n = 118) | 1 | 3.19 (0.00, 11.04) | 3 | 3.65 (0.00, 7.96) |
| 6–10 (n = 163) | 5 | 8.37 (0.00, 17.57) | 3 | 1.75 (0.00, 4.19) |
| 11–20 (n = 353) | 8 | 14.47 (1.14, 27.79) | 10 | 2.03 (0.64, 3.42) |
| ≥ 21 (n = 501) | 12 | 12.59 (3.22, 21.95) | 20 | 7.03 (0.21, 13.86) |
| Group difference ^d | $F_{3,57} = 1.04, P = .38$ | | $F_{3,78} = 2.44, P = .07$ | |
| Age at time of immigration, y | | | | |
| ≤ 12 (n = 222) | 6 | 4.26 (0.00, 9.11) | 10 | 13.57 (1.82, 25.32) |
| 13–17 (n = 159) | 10 | 33.04 (17.76, 48.32) | 6 | 2.90 (0.45, 5.35) |
| 18–34 (n = 543) | 6 | 8.82 (0.00, 19.60) | 14 | 2.38 (0.45, 4.30) |
| ≥ 35 (n = 183) | 3 | 25.44 (0.00, 65.31) | 3 | 1.80 (0.00, 4.30) |
| Group difference ^d | $F_{3,57} = 6.24, P < .01$ | | $F_{3,78} = 11.26, P < .01$ | |
| Generational status | | | | |
| First (n = 1142) | 26 | 10.92 (3.17, 18.66) | 36 | 4.15 (1.32, 6.98) |
| Second (n = 310) | 16 | 44.19 (0.00, 97.13) | 18 | 4.46 (1.49, 7.42) |
| Third or later (n = 122) | 11 | 49.50 (22.63, 76.38) | 9 | 16.42 (0.00, 33.22) |
| Group difference ^d | $F_{2,46} = 2.73, P = .08$ | | $F_{2,52} = 4.32, P = .02$ | |

Note. CI = confidence interval; CIDI = Composite International Diagnostic Interview. DSM-IV = *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*; OR = odds ratio.

^aA total of 521 African Americans and 189 Caribbean Blacks had at least 1 of 11 psychological disorders as defined by DSM-IV²⁶ within the past 12 months.

^bA total of 2893 African Americans and 1389 Caribbean Blacks had no psychological disorder within the past 12 months.

^cNumber of unweighted case participants in the categorized as having a psychological disorder within the past 12 months who received mental health services.

^dAll F statistics are adjusted for complex sample design. The denominator degrees of freedom represents the number of clusters minus the number of strata for a given analysis.

mental health services than did those who arrived at an older age or had more recently immigrated. We do not fully understand this relationship; our future papers will explore the factors that might help explain these differences. We are particularly interested in trying to understand more about why those who did not meet criteria for a mental disorder used mental health services. It is possible that the assessment instrument may have understated distress and other cognitive difficulties, or may not have included relevant disorders, which may have resulted in individuals seeking preventive care or being involuntarily brought into formal services settings.²⁵ Adequacy of treatment should also be explored further. Initial results showed that Caribbean Blacks reported higher satisfaction in both specialty and any mental health service use; African Americans reported greater satisfaction for medical sector use.

We have noted that a limitation of this study is the relatively small subsample sizes and the lack of multivariate analyses. Although the rates of use, satisfaction, and perceived helpfulness were population-weighted estimates, other factors may account for the observed differences, especially factors pertaining to generational status and ethnicity of Caribbean Blacks. Further research is needed to examine ethnic differences in provider contact and receipt of formal services, the relation of satisfaction and perceived helpfulness to mental health service use, and the ways that acculturation and timing of immigration influence use of mental health services. Our review of current literature found little data related to mental health service use by Caribbean Blacks in the United States and thus, sparse information on which to form workable hypotheses. The research performed in the United Kingdom focuses largely on psychoses and treats Caribbean Blacks as a fairly uniform group with respect to ethnicity and timing of immigration.²⁵

In summary, the results of this study underscore the importance of ethnicity and immigration within racial categorization. The data reveal a complex pattern of ethnicity and migration-related factors that influence service use for mental health problems in the United States. The data suggest that generational status of persons of Caribbean ancestry and immigration contribute to important difference

among this group, as in the United Kingdom, and thus, a greater chance of referral to specialty mental health services.

When a disorder as defined by DSM-IV was present, second- and third-generation Caribbean respondents showed a greater

likelihood than did African Americans of reporting the use of any mental health services. On the other hand, among those without a disorder, those who arrived in the United States at a young age, as well as third-generation Caribbean Blacks, used more

in rates and sources of use and relative satisfaction and perception of helpfulness. ■

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This article was accepted September 10, 2006.

Contributors

J.S. Jackson originated the study, supervised all aspects of its implementation, and coordinated and completed the writing of the article. R. Baser coordinated and completed the analyses. H.W. Neighbors, D.R. Williams, and M. Torres drafted and revised sections of the article. L.A. Martin assisted in the literature review and write-up, and completed the references cited. All authors helped to conceptualize ideas, interpret findings, and review drafts of the article.

Acknowledgments

The National Survey of American Life (NSAL) was supported by the National Institute of Mental Health (grant U01-MH57716) with supplemental support to this grant from the National Institutes of Health Office of Behavioral and Social Science Research; a National Institute on Aging grant (5R01 AG02020282) with supplemental support from the National Institute on Drug Abuse; and the University of Michigan. Preparation of this article was also aided by grants from the National Institute of Mental Health (1p01 MH58565, 1T32 MH67555, and 5TMH16806).

We appreciate the assistance provided in all aspects of the NSAL study by the Program for Research on Black Americans faculty and research staff, including Jamie Abelson, Deborah Coral, Nakesha Faison, Jennifer Lowe, Jane Rafferty, Phyllis Stillman, and Julie Sweetman. We thank the staff at the Survey Research Center's Survey Research Operations department for their assistance with instrumentation and fieldwork for the NSAL study.

Human Participant Protection

Data collection for the NSAL was approved by the Behavioral Sciences institutional review board at the University of Michigan.

References

1. *Mental Health: Culture, Race, and Ethnicity: A Supplement to Mental Health: A Report of the Surgeon General*. Rockville, MD: Public Health Service, Office of the Surgeon General; 2001.
2. Smedley BD, Stith AY, Nelson AR, eds. *Unequal Treatment: Confronting Racial and Ethnic Disparities in Health Care*. Washington, DC: National Academies Press; 2003.
3. New Freedom Commission on Mental Health. *Achieving the Promise: Transforming Mental Health Care in America*. Executive Summary. Rockville, MD: DHHS publication SMA-03-3831; 2003.
4. Robins LN, Regier DA. *Psychiatric Disorders in America: The Epidemiologic Catchment Area Study*. New York: The Free Press; 1991.
5. Snowden LR. Barriers to effective mental health services for African Americans. *Mental Health Services Res*. 2001;3:181-187.
6. Wang PS, Lane M, Olfson M, Pincus HA, Wells KB, Kessler R. Twelve month use of mental health services in the United States. *Arch Gen Psychiatry*. 2005; 62:629-640.
7. Jackson JS, Torres M, Caldwell CH, et al. The National Survey of American Life: A study of racial, ethnic, and cultural influences on mental disorders and mental health. *Int J Methods Psychiatr Res*. 2004;13:196-207.
8. Bhugra D, Jones P. Migration and mental illness. *Adv Psychiatr Treatment*. 2001;7:216-223.
9. Bhui K, Stansfield S, Hull S, Priebe S, Mole F, Feder G. Ethnic variation in pathways to and use of specialist mental health services in the UK. *Br J Psychiatry*. 2003;182:105-116.
10. Sharpley M, Hutchinson G, McKenzie K, Murray RM. Understanding the excess of psychosis among the African-Caribbean population in England. Review of current hypotheses. *Br J Psychiatry*. 2001;40(Suppl):S60-S80.
11. Harrison G, Owens D, Holton A, Nielson D, Boot D. A prospective study of severe mental disorder in Afro-Caribbean patients. *Psychol Med*. 1988;18:643-657.
12. van Os J, Castle D, Takei N, Der G, Murray RM. Psychotic illness in ethnic minorities: clarification from the 1991 census. *Psychol Med*. 1996;26:203-208.
13. Bhugra D, Leff J, Mallet R, Der G, Corridan B, Rudge S. Incidence and outcome of schizophrenia in whites, African-Caribbeans and Asians in London. *Psychol Med*. 1997;27:791-798.
14. Selten JP, Slaets JP, Kahn RS. Schizophrenia in Surinamese and Dutch Antillean immigrants to the Netherlands: evidence of an increased incidence. *Psychol Med*. 1997;27:807-811.
15. Bhugra D, Hilwig M, Hossein B, Marceau H. First-contact incidence rates of schizophrenia in Trinidad and one-year follow-up. *Br J Psychiatry*. 1996;169:587-592.
16. Hickling FW, Rodgers-Johnson P. The incidence of first contact schizophrenia in Jamaica. *Br J Psychiatry*. 1995;159:817-821.
17. Mahy GE, Mallet R, Leff J, Bhugra D. First-contact incidence-rate of schizophrenia on Barbados. *Br J Psychiatry*. 1999;175:28-33.
18. Hutchinson G, Haasen C. Migration and schizophrenia: the challenges for European psychiatry and implications for the future. *Soc Psychiatry Psychiatr Epidemiol*. 2004;39:350-357.
19. Bhui K, Christie Y, Bhugra D. The essential elements of culturally sensitive psychiatric services. *Int J Soc Psychiatry*. 1995;41:242-256.
20. Fatimilehin IA, Coleman PG. "You've got to have Chinese chef to cook Chinese food!!" Issues of power and control in the provision of mental health services. *J Community Applied Social Psychol*. 1999;9(2):110-117.
21. Mclean C, Campbell C, Cornish F. African-Caribbean interactions with mental health services in the UK: experiences and expectations of exclusion as (re)productive of health inequalities. *Soc Sci Med*. 2003;56:657-669.
22. Littlewood R. Psychiatric diagnosis and racial bias: empirical and interpretative approaches. *Soc Sci Med*. 1992;34:141-149.
23. Johnson MRD, Sangster DA. *Measure of Equity: Health Needs of African Caribbean People in the City of Peterborough*. Peterborough, England: North West Anglia Health; 1995.
24. Campling P. Race, culture, and psychotherapy. *Psychiatr Bull*. 1989;13:550-551.
25. Morgan C, Mallett R, Hutchinson G, et al. Pathways to care and ethnicity. 2: Source of referral and help-seeking. *Br J Psychiatry*. 2005;186:290-296.
26. Davies S, Thornicroft G, Leese M, Higginbotham A, Phelan M. Ethnic differences in risk of compulsory psychiatric admission among representative cases of psychosis in London. *BMJ*. 312:533-537.
27. Oluwatayo O, Gater R. The role of engagement with services in compulsory admission of African/Caribbean patients. *Soc Psychiatry Psychiatr Epidemiol*. 2004;39:739-743.
28. Burnett R, Mallett R, Bhugra D, Hutchinson G, Der G, Leff J. The first contact of patients with schizophrenia with psychiatric services: social factors and pathways to care in a multi-ethnic population. *Psychol Med*. 1999;29:475-483.
29. Hutchinson G, Gilvarry C, Fahy TA. Profile of service users attending a voluntary mental health sector service. *Psychiatr Bull*. 2000;24:251-254.
30. Parkman S, Davies S, Leese M, Phelan M, Thornicroft G. Ethnic differences in satisfaction with mental health services among representative people with psychosis in south London: Prism study 4. *Br J Psychiatry*. 1997;171:260-264.
31. Neighbors HW, Jackson JS, eds. *Mental Health in Black America*. Thousand Oaks, CA: Sage Publications; 1996.
32. Jackson JS, Antonucci TC. Physical and mental health consequences of aging-in-place and aging-out-of-place among black Caribbean immigrants. *Res Human Develop*. 2006; 2(4):229-244
33. Williams DR, Haile R, Gonzalez HM, Neighbors H, Baser R, Jackson JS. The mental health of black Caribbean immigrants: results from the National Survey of American Life. *Am J Public Health*. 2007; 97:52-59.
34. Pennel B, Bowers A, Carr D, et al. The development and implementation of the National Comorbidity Survey replication, the National Survey of American Life, and the National Latino and Asian American Survey. *Int J Methods Psychiatr Res*. 2004;13:241-269.
35. Heeringa SG, Wagner J, Torres M, Duan N, Adams T, Berglund P. Sample designs and sampling methods for the collaborative psychiatric epidemiology studies (CPES). *Int J Methods Psychiatr Res*. 2004;13:221-240.
36. *Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition*. Washington, DC: American Psychiatric Association; 1994.
37. Kessler RC, Merikangas KR. The National Comorbidity Survey replication (NCS-R): background and aims. *Int J Methods Psychiatr Res*. 2004;13:60-68.
38. Lehotonen R, Pahkinen E. *Practical Methods for Design and Analysis of Complex Surveys*. 2nd ed. New York, NY: Wiley & Sons; 2004.
39. World Health Organization. *Project Atlas: Resources for Mental Health and Neurological Disorders*. Available at: <http://www.who.int/globalatlas>. Accessed September 6, 2006.