

Racial and Ethnic Differences in Utilization of Mental Health Services Among High-Risk Youths

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Objective: Racial and ethnic disparities in mental health service use have been identified as a major public health problem. However, the extent to which these disparities may be accounted for by other confounding sociodemographic or clinical predictors of service use (e.g., family income, functional impairment, caregiver strain) is relatively unexplored, especially for youth services. The goal of this study was to test for racial/ethnic disparities in use of a variety of outpatient, inpatient, and informal mental health services among high-risk youths, with the effects of other predictive factors controlled.

Method: Participants were 1,256 youths ages 6–18 years who received services in a large, publicly funded system of care (including the child welfare, juvenile jus-

tice, special education, alcohol and drug abuse, and mental health service sectors). Youths and caregivers were interviewed with established measures of mental health service use, psychiatric diagnoses, functional impairment, caregiver strain, and parental depression.

Results: Significant racial/ethnic group differences in likelihood of receiving any mental health service and, specifically, formal outpatient services were found after the effects of potentially confounding variables were controlled. Race/ethnicity did not exert a significant effect on the use of informal or 24-hour-care services.

Conclusions: Racial/ethnic disparities in service use remain a public health problem.

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Children and adolescents significantly underutilize mental health services, and unmet need for services appears to be greatest among racial/ethnic minority groups (1–3). The Surgeon General's 2001 report on mental health identified racial/ethnic disparities in mental health service use as a major public health problem (4). However, not all studies have found racial/ethnic discrepancies in mental health service use among youths (5–7). This inconsistency may be related to geographic and/or methodological differences, such as varying attention to potentially confounding predictors or variation in the definition of mental health services across studies.

Analyses of nationally representative survey data revealed lower rates of mental health service use for African American and Latino American children, compared to non-Hispanic white children; follow-up analyses accounting for potentially confounding variables (e.g., insurance status) indicated that unmet need was greatest among Latino American children, compared to non-Hispanic white children (2). However, studies in urban areas with families of relatively homogeneous socioeconomic status found no racial/ethnic differences in service use (6, 7). Likewise, data from a study in a largely rural area revealed no difference in specialty or general service use between African American and non-Hispanic white children (5).

All of these studies included community samples of children and families, as opposed to selected high-risk

youths. Very little is known about mental health service use rates for high-risk youths in public service sectors such as child welfare, juvenile justice, and special education services. Youths in these service sectors exhibit high rates of psychiatric disorders and are at high risk for a variety of other maladaptive outcomes (8–10); racial/ethnic minority youths tend to be overrepresented in some of these service sectors (3, 10). Given that they have already been identified in a service sector, these youths are likely to have substantially higher rates of mental health service use, compared to community samples, but the extent to which there is differential utilization by race/ethnicity for different types of services is not known. Service use disparities among high-risk youths would be particularly concerning, given the poor prognosis for youths with untreated psychopathology (11).

Multiple youth-, family-, and system-level factors have been shown to predict youth mental health service use, and many of these factors are associated with race/ethnicity. For example, one of the most consistent predictors of child mental health service use is the caregiver's perception of the strain of caring for the child (12, 13). Recent evidence has identified significant and robust racial/ethnic differences in caregiver strain (14). Contact with the justice system may be a negative predictor of service use (5, 15), and certain racial/ethnic minority groups are more likely to make contact with the juvenile justice system

(16). In addition, socioeconomic status and insurance coverage are strongly associated with race/ethnicity and are predictors of service use (2, 17). Therefore, among high-risk youth involved in public service sectors, it is important to examine whether racial/ethnic differences in mental health service use are actually attributable to these potentially confounding variables and/or to clinical factors such as psychiatric diagnoses or functional impairment, which, as expected, are associated with the likelihood of service use (2, 5, 7, 18).

Most studies of racial/ethnic differences in service use have included assessment of some of these potentially confounding variables, but, to our knowledge, this study is the first to make a comprehensive assessment of these variables in a rigorous test of the robustness of racial/ethnic differences, to examine use of a variety of formal and informal types of mental health service use, and to have adequate representation across four major racial/ethnic groups (non-Hispanic white, African American, Latino American, Asian American/Pacific Islander). The purpose of this study was to 1) test for racial/ethnic group differences in mental health service use among high-risk youths in a public system of care and 2) to test whether identified differences persisted when the effects of other factors known to be associated with service use were taken into account.

Method

Participants

Participants were a subsample of 1,256 of the 1,715 youths in the Patterns of Youth Mental Health Care in Public Service Systems study (9). The study was approved by the human subjects protection committees at Children's Hospital and Health Center in San Diego, San Diego State University, and the University of California, San Diego. The study participants were randomly selected from an enumeration of all youths "active" in one or more of five San Diego County public sectors of care (alcohol and drug abuse, child welfare, juvenile justice, mental health, and public school special education services) for youths with serious emotional disturbance during the first half of 1997 (total population=12,662). The sample was selected by simple random sampling techniques and stratified by race/ethnicity and restrictiveness of care (care in aggregate setting versus the home residence). Data were obtained for 67% of the eligible sample in interviews completed between late 1997 and early 1999. The participants did not differ significantly from the nonparticipants in age, gender, sector affiliation, or racial/ethnic distribution, except that slightly fewer Asian American/Pacific Islanders participated, relative to the eligible sample.

The 1,256 participants who provided data for the analyses reported here included those with complete diagnostic and service use data from adult and child interviews and those who were in one of the following four largest racial/ethnic groups: non-Hispanic whites (N=554, 44%), Latino Americans (N=332, 26%), African Americans (N=282, 22%), and Asian American/Pacific Islanders (N=88, 7%). Race/ethnicity was self-identified for youth ages 11 years and older and was parent-identified for children ages 6–10 years. Eight percent of the total sample of 1,715 (N=135) were excluded because they were identified as biracial or in a category other than the four largest racial/ethnic groups. Nine percent (N=156) were missing adult interview diagnostic data because the interviewee was not English speaking (5%, N=88) or because of

other reasons (4%, N=68), and 8% (N=145) were missing child interview data because of inability to contact the child or language differences/difficulties.

Two-thirds of the participants were male. The mean age was 13.7 years (SD=3.3). Most of the parent/caregiver informants (hereafter labeled "parents") were biological parents (72%). Others included adoptive or foster parents, stepparents, and a small number of professional caregivers.

Procedure and Measures

After complete description of the study, written informed consent was obtained from the parent and assent was obtained from the youths. Parents and youths were interviewed individually (usually in their home) about the youth's mental health use, needs, and a variety of factors potentially associated with mental health service use (e.g., caregiver strain, family income). Parents and youths were compensated (up to \$40) for their time, which averaged 3 hours. Interviewer training and reliability checks have been described previously (8, 9).

The measures used in this study were as follows:

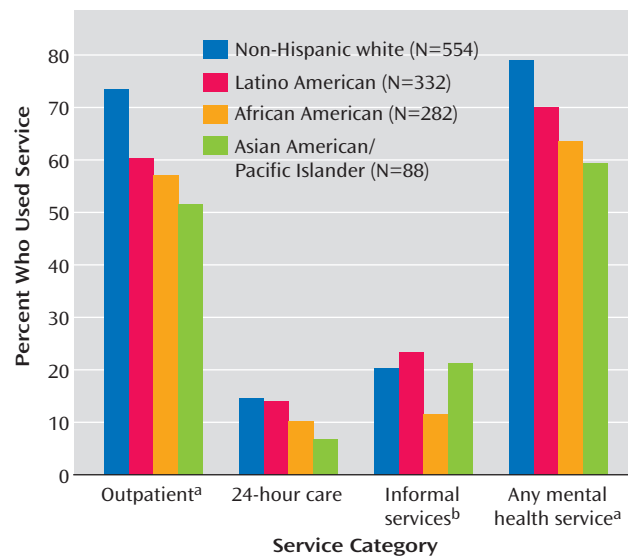
Services Assessment for Children and Adolescents. Parent and youth versions of the Services Assessment for Children and Adolescents (19) were used to assess utilization of different types of mental health and substance abuse services. Only past-year service use was examined in this study. A previous analysis showed that the test-retest reliability of the Services Assessment for Children and Adolescents for past-year service use is excellent for parent informants and is good for youth informants age ≥ 10 years (19). In the current study, service use was considered present if it was reported by either the parent or the youth. The following types of services were assessed:

1. Outpatient services, including specialty outpatient care (e.g., specialty mental health clinics or private providers), nonspecialty outpatient care (e.g., visit to a pediatrician for emotional/behavioral issues), and outpatient alcohol and drug abuse treatment.
2. Twenty-four-hour-care services, including inpatient care in a psychiatric hospital or psychiatric unit within a hospital, residential treatment center/group home services, and inpatient alcohol and drug abuse treatment.
3. Informal services, including self-help groups/peer counseling, counseling from clergy, and services of alternative healers.

National Institute of Mental Health Diagnostic Interview Schedule for Children Version IV. The computer-assisted parent and youth versions of the National Institute of Mental Health Diagnostic Interview Schedule for Children Version IV (20) were used to assess the presence of past-year DSM-IV psychiatric diagnoses. The reliability and validity of the Diagnostic Interview Schedule for Children are well supported (20). To reduce interview duration, the mood and anxiety modules were administered only to the youths, because youths are likely the best informants for internalizing disorders (21). The disruptive behavior disorder module was administered to both parents and youths, and diagnoses were considered present if either respondent's report met the diagnostic criteria detailed in the Diagnostic Interview Schedule for Children scoring algorithms (including diagnosis-specific functional impairment).

Composite International Diagnostic Interview substance abuse module. The Composite International Diagnostic Interview substance abuse module (22) was administered to youths age 11 years and older. It was used to identify past-year DSM-IV substance use disorders, including abuse and dependence diagnoses for alcohol, marijuana, hallucinogens, and stimulants. Children younger than age 11 years were assumed to have no substance use

FIGURE 1. Mental Health Service Use Among Youths Age 6–18 Years in a Large, Publicly Funded System of Care by Racial/Ethnic Group (N=1,256)



^a Significant difference among racial/ethnic groups ($p < 0.001$, chi-square test).

^b Significant difference among racial/ethnic groups ($p < 0.02$, chi-square test).

disorder. The reliability of the Composite International Diagnostic Interview substance abuse module is strong (22).

Children's Global Assessment Scale. The Children's Global Assessment Scale (23) was used to assess global functional impairment. Interviewers assigned ratings on the Children's Global Assessment Scale after completion of the youth and parent interviews. The standard cutoff of 60 was used to designate clinically significant functional impairment (24).

Columbia Impairment Scale. The Columbia Impairment Scale (25) was used to assess parent- and youth-reported functional impairment. The scale has strong psychometric characteristics, and the recommended clinically significant cutoff score of 15 was used to identify youths with significant functional impairment (25). In this study, youths were considered functionally impaired if they met the cutoff criteria for either the Children's Global Assessment Scale or the Columbia Impairment Scale.

Caregiver Strain Questionnaire. The Caregiver Strain Questionnaire (13) was used to assess the parents' perceptions of the burden or impact of caring for a child with behavioral problems. The reliability and validity of this 21-item self-report measure are well supported (13). Because there is no recommended clinically significant cutoff score, scores were dichotomized for the analyses by splitting at the median.

Center for Epidemiologic Studies Depression Scale. The Center for Epidemiologic Studies Depression Scale (26) was used to assess caregiver depressive symptoms. The 20-item self-report scale has demonstrated strong reliability (coefficient alphas=0.85–0.90) and validity for use with diverse populations.

Police contact. Parents were asked whether the youth had ever been arrested, picked up by police, or given a warning by police. This variable was dichotomized to reflect any versus no lifetime police contact.

Parental education. Parents reported on their highest level of education. This variable was also dichotomized to represent those with and without any college-level education.

Family income. Total family income was reported by parents on an incremental scale of annual incomes from $\leq \$1,000$ to $\geq \$200,000$. For these analyses, the distribution was divided into quartiles, as follows: first quartile, $\leq \$13,000$; second quartile, $\leq \$25,000$; third quartile, $\leq \$45,000$; and fourth quartile, $> \$45,000$.

Insurance status. Parents reported on their insurance coverage for mental health care. Coverage was categorized as follows: private insurance, government insurance coverage (e.g., MediCal), or no insurance coverage.

Data Analysis

All analyses were conducted by using Stata (27), with data weighted to represent the enumerated system-of-care population. Chi-square analyses were used initially to test for overall racial/ethnic group differences in rates of service utilization by service category and individual service type. To account for the survey design, the chi-square statistic was converted to an F statistic with noninteger degrees of freedom by using a second-order Rao and Scott's correction (27, 28). Follow-up logistic regression analyses were used to test for racial/ethnic differences for each service category after the effects of potential confounding variables were controlled. The significance level was set at an alpha of 0.05, and all tests were two-sided.

Results

The youths in this study had high rates of mental health service utilization. Overall, 72% ($N=904$) had utilized some type of mental health service within the past year. The most commonly used services were professional outpatient services (64% of the total sample, $N=803$). Twenty percent ($N=251$) of the participants had used informal services such as self-help groups, and 13% ($N=163$) had used inpatient or residential treatment services. Figure 1 displays the rates of any reported mental health service use, as well as rates for outpatient, 24-hour-care, and informal services, for each racial/ethnic group. There were significant differences across racial/ethnic groups for use of any mental health service ($\chi^2=37.1$, $df=3$, $p < 0.001$), outpatient services ($\chi^2=43.0$, $df=3$, $p < 0.001$), and informal services ($\chi^2=20.1$, $df=3$, $p < 0.02$), but not for 24-hour-care services ($\chi^2=7.3$, $df=3$, $p=0.23$). Non-Hispanic whites had the highest rates of service use for any mental health service and for outpatient services; Asian American/Pacific Islanders had the lowest utilization rates for these categories of service. For informal services use, Latino Americans, Asian American/Pacific Islanders, and non-Hispanic whites had relatively similar rates, and African Americans had the lowest rate.

Table 1 lists the utilization rates by racial/ethnic group for specific types of services within the broad categories reported earlier. Significant differences across racial/ethnic groups were found for specialty mental health outpatient services ($\chi^2=60.6$, $df=3$, $p < 0.001$), outpatient alcohol and drug abuse treatment ($\chi^2=22.1$, $df=3$, $p < 0.001$), inpatient psychiatric hospital treatment ($\chi^2=10.1$, $df=3$, $p < 0.02$), and use of self-help groups ($\chi^2=23.1$, $df=3$, $p < 0.02$). There were no significant racial/ethnic group differences for other nonspecialty outpatient services (e.g., pediatrics/primary care, emergency room, etc.), residential treatment or group

TABLE 1. Past-Year Mental Health Service Utilization by Youths Age 6–18 Years in a Large, Publicly Funded System of Care by Racial/Ethnic Group (N=1,256)^a

Service	Weighted Percent				Analysis			
	Non-Hispanic White (N=554)	Latino American (N=332)	African American (N=282)	Asian American/Pacific Islander (N=88)	χ^2	df	Design-Based F	p
Outpatient services								
Specialty mental health services ^b	67.6	53.4	51.8	32.8	60.6	3	11.4	<0.001
Other nonspecialty services ^c	20.2	15.6	16.5	19.6	4.6	3	0.97	0.40
Alcohol and drug abuse treatment services	5.4	3.7	1.2	11.3	22.1	3	6.7	<0.001
Any outpatient service	73.5	60.3	57.1	51.5	43.0	3	7.8	<0.001
24-hour-care services								
Inpatient psychiatric hospital or inpatient psychiatric unit services	6.5	4.6	2.2	3.6	10.1	3	3.7	<0.02
Residential treatment center or group home services	7.4	5.9	7.4	1.9	4.9	3	1.0	0.38
Alcohol or drug abuse treatment ^d	3.5	4.4	1.2	2.0	7.3	3	1.2	0.30
Any-24-hour-care service	14.4	14.0	10.2	6.8	7.3	3	1.5	0.23
Informal services								
Self-help groups, peer counseling	17.5	18.5	7.4	16.7	23.1	3	3.7	<0.02
Counseling from clergy	4.1	5.7	4.4	8.6	4.7	3	1.0	0.39
Alternative healer	1.0	1.9	0.0	1.0	2.7	2	1.7	0.19
Any informal service	20.3	23.5	11.4	21.2	20.1	3	3.5	<0.02
Any mental health service ^e	79.0	70.1	63.7	59.3	37.1	3	6.7	<0.001

^a Youths were identified from the active services rolls of one or more of five San Diego County public sectors of care (alcohol and drug abuse services, child welfare services, juvenile justice services, mental health services, and public school special education services for youths with serious emotional disturbance) during the first half of 1997.

^b Includes visits to professional psychologists, counselors, community mental health clinics, and partial hospitalization or day treatment programs.

^c Includes visits to pediatricians and physicians and in-home therapy or emergency room visits for emotional or behavioral reasons.

^d Includes treatment in an inpatient setting or residential treatment center for substance abuse problems.

^e Includes all outpatient, 24-hour-care, and informal service types listed in the table.

home services, inpatient alcohol and drug abuse treatment, counseling from clergy, or services of alternative healers.

Table 2 presents the racial/ethnic group characteristics that were potentially associated with mental health service use. Given the presence of significant racial/ethnic group effects on some of these variables, logistic regression analyses were used to test whether the racial/ethnic differences in service use identified earlier persisted after the effects of these variables were controlled.

Table 3 presents the results of the regression analyses. The racial/ethnic group variables added significantly to the prediction of likelihood of use of outpatient services and any mental health service, after the effects of all other potentially confounding variables were taken into account. Specifically, the last column indicates that African Americans and Asian American/Pacific Islanders were approximately one-half as likely to receive any mental health service, compared to non-Hispanic whites (African Americans: odds ratio=0.56, 95% confidence interval [CI]=0.37–0.84; Asian American/Pacific Islanders: odds ratio=0.44, 95% CI=0.25–0.77). Outpatient service use was also approximately one-half as likely for African Americans (odds ratio=0.54, 95% CI=0.36–0.80) and Asian American/Pacific Islanders (odds ratio=0.48, 95% CI=0.27–0.85) than for non-Hispanic whites. Race/ethnicity did not contribute to the likelihood of use of 24-hour-care or informal services after the effects of other potentially confounding variables were controlled.

Of secondary interest, many of the potentially confounding variables were associated with likelihood of service use. For example, use of any mental health service was positively associated with female gender, higher caregiver strain, contact with alcohol and drug abuse services or mental health services in the year before the study, a DSM-IV non-substance-use diagnosis, and functional impairment. Use of any mental health service was less likely for youths with families in the middle-range incomes, compared to the highest range.

Discussion

The results of this study indicate that there are significant racial/ethnic differences in parent- and youth-reported utilization of some types of mental health services among high-risk youths and that these differences persist when the effects of other significant predictors of service use are taken into account. Previous research has identified racial/ethnic disparities in service use, but to our knowledge no other study has tested the robustness of these differences as rigorously by including as comprehensive an array of potentially confounding variables. The study also extends the literature by analyzing the use of multiple types of mental health services and by revealing that racial/ethnic differences in service use are not consistent across all service types.

As expected, this group of high-risk youths identified from public service sectors (child welfare, juvenile justice, alcohol and drug abuse, mental health, and public school

TABLE 2. Sociodemographic and Clinical Characteristics of Youths Age 6–18 Years in a Large, Publicly Funded System of Care by Racial/Ethnic Group (N=1,256)^a

Characteristic	Weighted Percent				Analysis			
	Non-Hispanic White (N=554)	Latino American (N=332)	African American (N=282)	Asian American/Pacific Islander (N=88)	χ^2	df	Design-Based F	p
Age (years)					86.5	6	8.7	<0.001
6–11	37.1	18.7	30.4	6.2				
12–15	28.3	30.3	32.7	27.6				
16–18	34.6	51.0	32.9	66.1				
Sex					7.1	3	1.4	0.24
Female	32.6	33.5	40.0	29.4				
Male	67.4	66.5	60.0	70.6				
Family income by quartile					92.5	9	5.8	<0.001
First (\leq \$13,000/year)	24.9	44.0	27.8	28.3				
Second (\leq \$25,000/year)	23.0	25.5	35.6	30.5				
Third (\leq \$45,000/year)	24.3	18.4	21.8	20.4				
Fourth ($>$ \$45,000/year)	27.8	12.1	14.8	20.7				
Any college education	41.6	10.1	29.9	22.7	132.4	3	28.8	<0.001
Service sector affiliation					12.9	3	2.5	0.06
Alcohol and drug abuse services, mental health services, or public school–based services	68.2	59.5	59.0	65.4				
Child welfare services or juvenile justice services	31.8	40.5	41.0	34.6				
Diagnosis								
Any DSM-IV diagnosis	62.7	48.3	48.5	45.5	31.9	3	6.3	<0.001
Any Composite International Diagnostic Interview substance abuse module diagnosis	15.5	20.6	10.8	23.4	16.0	3	2.9	<0.04
Functional impairment by either Columbia Impairment Scale or Children's Global Assessment Scale cutoffs	67.5	63.2	63.7	56.8	5.7	3	1.1	0.35
Caregiver strain score above median	49.1	40.6	33.3	44.8	23.4	3	4.6	<0.001
Police contact, lifetime	41.7	52.5	42.8	60.2	21.6	3	4.1	0.004
Caregiver depression score above clinical cutoff point (Center for Epidemiologic Studies Depression Scale)	28.8	32.2	30.6	41.9	7.1	3	1.4	0.24

^a Youths were identified from the active services rolls of one or more of five San Diego County public sectors of care (alcohol and drug abuse services, child welfare services, juvenile justice services, mental health services, and public school special education services for youths with serious emotional disturbance) during the first half of 1997.

special education services for youths with serious emotional disturbance) had very high rates of mental health service use. Nearly three-quarters of the participants used some mental health service within the past year, compared to utilization estimates for community samples ranging from 6% to 21% (2, 24). High utilization rates would be expected in this high-risk sample of youths identified from public service sectors. However, there were significantly different rates of service use across racial/ethnic groups; 79% of non-Hispanic white youths received a mental health service, compared to 59% of Asian American/Pacific Islanders, 64% of African Americans, and 70% of Latino Americans. After the effects of potentially confounding variables were controlled, the youths' race/ethnicity was still a significant predictor of any service use, and African American and Asian American/Pacific Islander youths were approximately one-half as likely as non-Hispanic white youths to receive any service.

Significant racial/ethnic differences were found for only certain types of services. Outpatient services were used most frequently overall, and there was a significant racial/ethnic group difference for this category of service use. After the effects of other predictors were controlled, African

Americans and Asian American/Pacific Islanders were less likely to use outpatient services, compared to non-Hispanic whites. Latino American youths also had lower rates of outpatient service use, compared to non-Hispanic white youths, but the statistical significance of this effect was reduced by the inclusion of other predictor variables. Within the broad category of outpatient services, there were significant bivariate racial/ethnic group differences in utilization rates for specialty mental health and alcohol and drug abuse services but not for other nonspecialty care, which included pediatric visits. Previous research has also found no racial/ethnic difference in receipt of mental health services in primary care pediatric offices (29).

Thirteen percent of the participants used some 24-hour-care service in the past year, including psychiatric hospitalization, alcohol and drug abuse treatment, or residential treatment. There was no overall effect of race/ethnicity on likelihood of use of this category of services, either before or after the effects of other predictors were controlled. There was a significant bivariate group difference in use of psychiatric hospitalization, with non-Hispanic whites reporting the highest rate of use, but this ef-

TABLE 3. Association of Mental Health Service Use With Model Variables Among Youths Age 6–18 Years in a Large, Publicly Funded System of Care (N=1,256)^a

Model Variable	Outpatient Services		24-Hour-Care Services		Informal Services		Any Mental Health Service	
	Odds Ratio	CI	Odds Ratio	CI	Odds Ratio	CI	Odds Ratio	CI
Potentially confounding variables								
Demographic characteristics								
Age	0.98	0.93–1.0	1.1	0.98–1.2	1.2***	1.1–1.3	1.0	0.97–1.1
Female sex ^b	1.7**	1.2–2.4	1.6*	1.1–2.5	0.88	0.57–1.4	1.5*	1.1–2.2
Family/social factors								
Caregiver strain	1.8**	1.2–2.7	2.8***	1.6–5.0	1.9*	1.1–3.3	2.2**	1.4–3.5
Caregiver depression	1.1	0.74–1.5	0.86	0.54–1.4	0.92	0.58–1.5	1.0	0.68–1.5
Police contact	0.54**	0.37–0.79	1.3	0.81–2.1	2.7***	1.6–4.3	0.60*	0.40–0.90
Recruitment from alcohol and drug abuse services, mental health services, or public school-based services	1.4	0.99–1.9	7.4***	3.3–16.6	1.1	0.67–1.7	1.5*	1.1–2.2
Family resources								
Income ^c								
First quartile (≤\$13,000/year)	0.69	0.42–1.1	0.70	0.38–1.3	1.3	0.67–2.4	0.68	0.40–1.2
Second quartile (≤\$25,000/year)	0.51**	0.32–0.82	0.57	0.29–1.1	0.90	0.47–1.7	0.52*	0.31–0.87
Third quartile (≤\$45,000/year)	0.50**	0.31–0.83	0.52*	0.27–0.97	1.1	0.58–1.9	0.45**	0.26–0.75
Any college education	1.2	0.81–1.7	0.77	0.48–1.2	0.94	0.58–1.5	1.1	0.73–1.6
Insurance ^d								
None	0.89	0.43–1.8	0.59	0.23–1.5	0.53	0.23–1.2	0.82	0.36–1.9
Government (e.g., MediCal)	1.1	0.72–1.6	0.58*	0.34–0.99	0.67	0.42–1.1	0.86	0.57–1.3
Diagnosis and impairment								
Any Diagnostic Interview								
Schedule for Children diagnosis	1.7**	1.1–2.5	0.88	0.48–1.6	1.2	0.74–2.0	1.6*	1.1–2.5
Any Composite International Diagnostic Interview substance abuse module diagnosis								
Functional impairment	0.90	0.54–1.5	1.3	0.73–2.4	1.6	0.99–2.7	1.0	0.56–1.8
	1.4	0.95–2.0	1.2	0.61–2.5	1.5	0.88–2.7	1.5*	1.0–2.2
	F	p	F	p	F	p	F	p
Logistic regression analysis for potentially confounding variables	6.8	<0.0001	5.3	<0.0001	8.1	<0.0001	6.8	<0.0001
	Odds Ratio	CI	Odds Ratio	CI	Odds Ratio	CI	Odds Ratio	CI
Race/ethnic group ^e								
Latino American	0.71	0.46–1.1	1.0	0.57–1.8	1.1	0.66–1.7	0.77	0.48–1.2
African American	0.54**	0.36–0.80	1.1	0.61–1.9	0.55*	0.30–0.99	0.56**	0.37–0.84
Asian American/Pacific Islander	0.48*	0.27–0.85	0.40*	0.17–0.96	0.70	0.36–1.4	0.44**	0.25–0.77
	F	p	F	p	F	p	F	p
Logistic regression analysis for race/ethnic group variable	4.2	0.0006	1.6	0.19	1.9	0.14	4.1	0.007
Logistic regression analysis for all variables	6.3	<0.001	5.0	<0.001	7.2	<0.001	5.9	<0.001

^a Youths were identified from the active services rolls of one or more of five San Diego County public sectors of care (alcohol and drug abuse services, child welfare services, juvenile justice services, mental health services, and public school special education services for youths with serious emotional disturbance) during the first half of 1997.

^b Reference group: male participants.

^c Reference group: families with income in the fourth quartile (>\$45,000/year).

^d Reference group: participants with private insurance.

^e Reference group: non-Hispanic white participants.

p*<0.05. *p*<0.01. ****p*<0.001.

fect was not statistically significant when the effects of other predictor variables were controlled.

Approximately 20% of the participants used informal services, including self-help or peer counseling groups, counseling from clergy, and alternative healers. There was a significant racial/ethnic group difference in use of this category of services, with Latino American youths exhibiting the highest rates of use and African American youths the lowest. However, after the effects of other predictors were controlled, there was no racial/ethnic group difference. Given that the racial/ethnic minority participants did not

use these services significantly more frequently than did non-Hispanic whites, there was no evidence that higher rates of informal service use among minority groups compensated directly for lower rates of use of professional services. Previous research with adults in the community suggested that Latino Americans with mental health problems often utilize informal or nonspecialty services (30).

The findings regarding the other (i.e., nonrace/ethnicity) potentially confounding predictors of any mental health service use were generally consistent with previous findings for youths in the community. Positive predictors in-

cluded diagnosis and impairment, caregiver strain, female gender, and involvement with the alcohol or drug abuse treatment, mental health, or school-based service sectors; negative predictors included moderate family income and police contact (5, 17, 31). The only factor associated with all types of service use was parental report of caregiver strain. Previous research has supported the importance of this factor in youth mental health service use (7, 12, 13, 31), and significant racial/ethnic differences in caregiver strain have been identified, with non-Hispanic whites generally reporting higher levels of strain, compared to other groups (14). These results confirm the strength of the association between caregiver strain and service use but indicate that racial/ethnic differences in reported strain do not entirely explain differences in service utilization.

Contact with the police and/or juvenile justice system was associated with a significantly lower likelihood of professional outpatient service use but a higher likelihood of informal service use. The high prevalence of substance abuse problems among these youths is likely to be associated with referral to Alcoholics Anonymous–related services (8, 18). Referral rates from the justice system to formal mental health services are much lower than would be expected, given the high level of need for mental health services in this population (15).

Limitations

This study addressed many of the limitations of previous work in this area by 1) including sufficient representation of youths from four major racial/ethnic groups; 2) using well-established instruments to assess service use, psychiatric diagnoses, and functional impairment; 3) including assessment of most of the other factors known to predict service use, such as caregiver strain, police contact, and family income; and 4) assessing use of a variety of types of mental health services. There are, however, some limitations. The service use data relied on parents' and youths' self-reports, which may be subject to cognitive and culturally influenced biases. Specifically, there may be cultural differences in comfort in disclosing mental health service use and/or labeling of service use. In addition, commonly used school-based services were not included in these analyses. Also, the participation rate was less than optimal (67%), but retrospective analyses did not identify major differences in the basic sociodemographic characteristics of participants, compared to nonparticipants. Although the sample was diverse, it excluded non-English-speaking families and thus may not be representative of all families in each of these four major racial/ethnic groups. Non-English speakers are likely to be less acculturated to the dominant society and less likely to utilize mental health services (32). Thus, exclusion of these families may have actually underestimated the service use disparities for some racial/ethnic minority groups. Finally, the sample was a "hybrid," high-risk sample of youths who had

some contact with the public system of care, and thus the findings do not generalize to general community samples.

The present study was limited to a cross-sectional analysis of self-reported mental health service use and could not elucidate the causes of the racial/ethnic disparities that were identified. More research is needed to examine the dynamic and complex processes that lead to youth mental health service utilization and the specific reasons for these racial/ethnic disparities. The network/episode model of access to care, adapted for children and adolescents, suggests that utilization of services is affected by multiple interacting factors, ranging from individual (child and family) help-seeking preferences to broader system-level factors, including access, availability, referral practices, and funding policies (33). In terms of individual characteristics, culturally influenced cognitive explanatory models for constructs such as problem recognition, etiological attribution, and relevance of mental health services have been hypothesized to help explain racial/ethnic differences in service use in adult populations (34, 35). In support of this theory for youth populations, racial/ethnic differences in parental beliefs about children's behavioral problems have been identified (36, 37), and these differences may partly explain service use patterns.

More research is needed on referral practices and potential biases among "gateway providers" (e.g., case workers, probation officers, school counselors, teachers) in the identification of the mental health needs of youths and referral to services (38). Interdisciplinary approaches are needed to support investigation of how organizational, policy, and funding factors interact with community and family help-seeking preferences to result in differential access and utilization. Newer models of mental health help seeking, such as the network/episode model (33), which include greater attention to the social context, may be very useful in elucidating the contextual factors that influence individual family decisions about service utilization.

Conclusions

Racial/ethnic disparities in use of professional mental health services are robust. The results of this study reinforce the public's and policy makers' concerns about racial/ethnic disparities in mental health service utilization for vulnerable youths and families.

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