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Journal of Emotional and Behavioral Disorders 2009; 17; 3 originally published online Jul 18, 2008;
DOI: 10.1177/1063426608317710

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Journal of Emotional and Behavioral Disorders
Volume 17 Number 1
March 2009 3-16
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10.1177/1063426608317710
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Understanding Racial/Ethnic Disparities in Youth Mental Health Services

Do Disparities Vary by Problem Type?

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The authors examined racial/ethnic disparities in mental health service use based on problem type (internalizing/externalizing). A diverse sample of youth in contact with public sectors of care and their families provided reports of youth's symptoms and functional impairment during an initial interview. Specialty and school-based mental health service use during the subsequent 2 years was assessed prospectively. Greater disparities in mental health service receipt were evident for internalizing problems, with non-Hispanic White youth more likely to receive services in response to internalizing symptoms than minority youth. Fewer disparities in rates of unmet need emerged for externalizing problems, but minority youth were more likely to have need for externalizing problems met and African American youth were particularly likely to receive services in response to such problems. Findings highlight the importance of considering problem type when examining racial disparities in mental health services and underscore concerns about the responsiveness of mental health services for minority youth with internalizing disorders.

Keywords: *internalizing; externalizing; racial/ethnic disparities; mental health services*

It has been estimated that 21% of U.S. children ages 9 to 17 have a diagnosable mental or substance abuse disorder associated with impairment in functioning (Shaffer, Fisher, Dulcan, & Davies, 1996). According to the Medical Research Council (Bebbington, Brewin, Marsden, Lesage, & Lesage, 1996), need for mental health services (MHS) exists when functional impairment is present and due to a preventable or treatable cause (i.e., psychopathology or emotional distress). The term *unmet need* is therefore used when psychopathology and impairment are present but MHS are not received. Rates of unmet need are high, as estimates indicate that only 14% to 40% of youth with demonstrable mental health need receive care (Burns et al., 1995; Kataoka, Zhang, & Wells, 2002; Leaf, Alegría, Cohen, & Goodman, 1996; Pihlakoski et al., 2004).

Growing evidence suggests that barriers to treatment disproportionately affect minority youth and families. African American, Hispanic, and Asian American children from both community and at-risk samples are less likely to receive MHS (Slade, 2004; Wood et al., 2005), are more likely to have unmet need (Garland et al., 2005; Hough et al., 2002; Kataoka et al., 2002; Yeh, McCabe, Hough, Dupuis, & Hazen, 2003), and experience greater delays to treatment (McMiller & Weisz, 1996) than non-Hispanic White children. Epidemiological studies indicate that racial disparities in mental health service utilization

Authors' Note: The *Patterns of Youth Mental Health Care in Public Service Systems Study* (Richard L. Hough, principal investigator) was supported by NIMH Grant #U01 MH55282. The preparation of this article was supported by a National Science Foundation Graduate Research Fellowship awarded to the first author. Please address correspondence to Omar G. Gudiño, Department of Psychology, University of California, Los Angeles, 1285 Franz Hall, Box 951563, Los Angeles, CA 90095-1563; e-mail: ogudino@ucla.edu.

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are not attributable to ethnic differences in prevalence of mental disorders, levels of severity, or functional impairment (Garland et al., 2005; Slade, 2004). Racial/ethnic disparities in health care are consistently found across a wide range of clinical problems and are generally associated with poorer outcomes for minorities (Institute of Medicine, 2002).

Racial/ethnic disparities in receipt of children's MHS may be attributable to practical, attitudinal, and cultural barriers encountered by minority families. Practical concerns such as lack of insurance coverage, transportation problems, or lower accessibility to MHS in the community may affect minority families disproportionately. Likewise, a lack of linguistically appropriate services or ethnic minority MHS providers can affect minority parents disproportionately, resulting in inordinate access barriers (e.g., Kodjo & Auinger, 2004; Slade, 2004; Yeh et al., 2003). Cultural barriers can also reduce the likelihood of help-seeking among minority families. Generally speaking, service use for child mental health problems is triggered by adult caregiver recognition of need. Minority parents are less likely than non-Hispanic Whites to recognize child mental health problems (e.g., Roberts, Alegría, Roberts, & Chen, 2005), and when problems are recognized, minority parents often hold explanatory models that divert help-seeking to sources other than MHS (Bussing, Schoenberg, Rogers, Zima, & Angus, 1998; Yeh et al., 2005). Minority parents are also less likely to expect MHS to be helpful and are more likely to be concerned about potential negative effects of MHS compared with non-Hispanic Whites (Bussing, Zima, Gary, & Garvan, 2003; McCabe, 2002; Thompson, 2005). As such, cultural factors concerning beliefs about mental health problems and treatments may contribute to MHS disparities over and above practical barriers.

Thus, overall rates of unmet need are high and there is ample evidence of greater unmet need among minority youth, driven in part by cultural and familial factors. However, levels of unmet need may also differ depending on the type of youth psychopathology in question. Studies indicate that children with externalizing disorders, such as oppositional defiant disorder or conduct disorder, are more likely to receive treatment than children with internalizing disorders, such as depression and anxiety (Finkelhor, Wolak, & Berliner, 2001; Kazdin & Weisz, 2003). Although the prevalence of externalizing disorders is higher than that of internalizing disorders in community and high-risk samples, externalizing problems are more likely to trigger MHS use than internalizing problems. In a longitudinal study of high-risk youth, Thompson (2005) reported that 7% of children with internalizing problems received MHS, whereas 22% of those with externalizing problems received services. In their prospective cohort study, Pihlakoski et al. (2004) reported that parent report of externalizing behavior was the strongest predictor of both parents' perceptions of need for treatment and eventual service use. Externalizing problems are generally more disturbing to others and are more readily identified by parents, whereas internalizing symptoms involve greater subjective distress for youngsters (Phares & Compas, 1990) but may be more difficult for parents to detect (Cantwell, Lewinsohn, Rohde, & Seeley, 1997). Thus, overall risk of unmet need may be greatest for youth with internalizing problems.

Furthermore, it can be argued that the gap in service receipt between minority and majority group youth may be most pronounced for internalizing problems compared with externalizing problems. This supposition is fueled by evidence suggesting that, for African American youth, extrafamilial sources of influence may actually promote receipt of certain services for problems of an externalizing nature. There is growing overrepresentation of African American children and underrepresentation of Hispanic and Asian children in special education services for emotional disturbance (Coutinho & Oswald, 2000; Losen & Orfield, 2002; Yeh, Forness, Ho, McCabe, & Hough, 2004). Likewise, African American youth represent 15% of U.S. children but are represented disproportionately in all stages of juvenile justice involvement, making up 26% of arrests and 45% of cases resulting in confinement (Office of Juvenile Justice and Delinquency Prevention, 1999). Concern is growing about minority overrepresentation in special education, child welfare, and juvenile justice systems (Crane & Ellis, 2004; National Research Council, 2002), where externalizing problems typically trigger service involvement.

The reasons for overrepresentation are widely debated. The central controversy concerns the relative contributions of differential need versus systematic bias or discriminatory practices in the identification and treatment of disruptive behavior among African American youth. Differences in the offending rates of non-Hispanic White and minority youth cannot explain minority overrepresentation in arrest, conviction, and incarceration counts (Office of Juvenile Justice and Delinquency Prevention, 1999). In schools, African American students are more likely than non-Hispanic Whites to receive severe disciplinary penalties for similar behavioral offenses (Marwit, 1982; Skiba, Michael, Nardo, & Peterson, 2002). Some data suggest that teachers' evaluation of student classroom behavior may be biased by race, with a greater tendency to perceive disruptive behavior among African American children (e.g., Downey & Pribesh, 2004; Pigott & Cowen, 2000; Taylor, Gunter, & Slate, 2001), although

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evidence of such bias is not consistent (e.g., Chang & Sue, 2003; Cullinan & Kauffman, 2005). Teacher and parent impressions of African American student behavior tend to diverge markedly, with teachers perceiving significantly more externalizing problems and more need for special education services than parents (Gottlieb, Gottlieb, & Trongone, 1991; Lau et al., 2004).

In review, overall racial disparities in youth MHS may be driven by familial, practical, and cultural factors that reduce the likelihood of minority families accessing care. In contrast, factors operating outside the family may actually increase the likelihood that problems of a disruptive nature exhibited by some minority youth (i.e., African Americans) will receive the attention of other gatekeepers of MHS (e.g., juvenile justice, special education, and child welfare). Because externalizing problems are troubling to others and because minority youth appear to come under more scrutiny for disruptive behavior, racial disparities may be less apparent in the treatment of externalizing problems. In contrast, because treatment for internalizing problems may be more contingent on parental identification of symptoms and mobilization of care, minority youth may be significantly less likely to receive treatment for internalizing problems. Thus, we will examine two hypotheses. First, racial disparities in MHS use for externalizing problems will be less prominent compared with racial disparities in MHS use for internalizing problems. Second, there will be a stronger association between internalizing problems and MHS receipt among non-Hispanic Whites than among minorities, but the association between externalizing problems and MHS will be at least as strong among minorities as it is among non-Hispanic Whites. This differential disparities hypothesis is examined with regard to specialty MHS as well as school-based MHS. This affords an opportunity to observe whether delivering MHS in the schools reduces disparities by addressing some of the practical and cultural barriers that often prevent minorities from accessing specialty care (Allensworth, Lawson, Nicholson, & Wyche, 1997; Garrison, Roy, & Azar, 1999).

Method

The Patterns of Care Study

The *Patterns of Care* (POC) study was a 2-year longitudinal study designed to examine the pathways into and through public services sectors of care and short-term outcomes for youth at high risk for significant mental health problems. The POC study included a representative sample of children and adolescents (N = 1,715) age 6 to 18 years who had active cases in one or more public sectors of care in San Diego County (alcohol/drug treatment, child welfare, juvenile justice, mental health, and public school services for youth with Serious Emotional Disturbance [SED]) during the second half of fiscal year 1996–1997. From the child welfare sector, only court-ordered dependents were included, whereas only adjudicated delinquents were included from the juvenile justice sector. A random sample from the complete enumeration cohort including all five sectors of care was then drawn, stratified by race/ethnicity, sector of care, and level of restrictiveness of youth's placement. Participants did not differ from nonparticipants with regard to age or gender, although Asian American/Pacific Islanders were somewhat less likely to participate in the study than members of other racial/ethnic groups. A more complete description of the sample and methods can be found in Garland et al. (2001).

Current Sample

Youth from the POC sample were included in this study if they met inclusion criteria for race/ethnicity and completion of primary measures. Of the 1,715 youth in the overall sample, 1,580 (92.1% of total sample) belonged to one of the four major racial/ethnic groups of interest. Information concerning MHS use in the 2 years following the initial interview was available for 1,558 youth (90.8% of total sample). Of these, 1,108 youth completed the diagnostic interview, which was administered to youth ages 11 to 18, during the baseline assessment (86.4% of youth age 11 to 18). Analyses suggested that nonresponse on the primary measures was not associated with gender, family income, or the type of service sector involvement. Because this sample only included youth who provided self-reports of psychiatric symptoms (those age 11 and older), youth in this sample were older (mean age = 15.24 years) than those who were not included (mean age = 11.47 years), $t(1578) = 28.35$, $p < .001$. However, age was not associated with nonresponse on the primary measures when restricting analyses to youth ages 11 to 18. Nonresponse on the measures of interest in this study was less likely among Asian American/Pacific Islanders than among other racial/ethnic groups, $X^2(3) = 21.68$, $p < .001$.

The 1,108 participants in this study included 38.7% non-Hispanic Whites (NHW; n = 429), 29.3% Hispanic Americans (HA; n = 325), 22.7% African Americans (AA; n = 251), and 9.3% Asian American/Pacific Islanders (API; n = 103). The sample had a mean age of 15.24 years (SD = 2.11; range = 11–18 years) and included more males (n = 741, 66.9%) than females. The median household income was between $20,000 and $24,999 per year. Table 1 displays descriptive statistics of the central study variables by race/ethnicity.

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Table 1
Descriptive Statistics for Study Variables by Racial/Ethnic Group

	Overall (N = 1,108)		NHW (N = 429)		AA (N = 251)		HA (N = 325)		API (N = 103)	
Variable	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Age	15.24	2.11	15.05	2.15	14.92	2.12	15.51	2.03	15.99	1.94
CBCL internalizing *T*-score	57.42	12.69	59.61	12.18	55.68	12.95	56.15	12.77	56.01	12.74
CBCL externalizing *T*-score	60.03	12.35	62.61	11.61	59.56	11.69	58.09	12.97	55.40	12.76
YSR internalizing *T*-score	50.29	12.07	50.33	12.04	49.69	12.40	49.95	11.73	52.77	12.39
YSR externalizing *T*-score	54.74	12.06	56.09	11.84	53.23	12.35	54.20	12.03	54.53	11.84
Parent-rated impairment (CIS-P)	15.69	10.67	18.40	10.29	14.45	9.96	14.58	10.91	9.72	9.88
Youth-rated impairment (CIS-Y)	12.55	8.90	13.07	8.46	12.02	9.59	12.64	8.97	11.41	8.63
	Overall Median		NHW Median		AA Median		HA Median		API Median	
Household income	$20,000–$24,999		$25,000–$34,999		$18,000–$18,999		$14,000–$14,999		$18,000–$18,999	
	Overall Percentage		NHW Percentage		AA Percentage		HA Percentage		API Percentage	
ADM sector	58.8		60.6		53.8		59.7		61.2	
Specialty MHS use	47.6		57.1		45.8		43.4		25.2	
School-based MHS use	59.7		66.2		63.7		54.2		40.8	
No clinically significant problems	54.0		48.7		60.2		55.1		57.3	
Internalizing problems	8.9		10.7		7.6		7.7		8.7	
Externalizing problems	20.8		20.7		18.3		20.9		27.2	
Comorbid problems	16.2		19.8		13.9		16.3		6.8	

Note: NHW = non-Hispanic Whites; AA = African Americans; HA = Hispanic Americans; API = Asian American/Pacific Islanders; CBCL = *Child Behavior Checklist*; YSR = *Youth Self-Report*; CIS-P = *Columbia Impairment Scale–Parent*; CIS-Y = *Columbia Impairment Scale–Youth*; ADM = alcohol, drug, and mental health; MHS = mental health services.

Procedures

The conduct of the POC 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. Parents provided written consent and youth provided assent after receiving a complete description of the study. Interviews were completed between October 1997 and March 2001 and usually took place in the participants' homes. During the initial interview (Time 1), parents and youth provided reports of youth's psychological symptomatology and level of impairment; parents were also interviewed about the child's demographic characteristics. Parents and youth provided reports of the youth's past-year service use history during a second interview (Time 2) conducted 2 years later. Information about past-year service use history was also obtained during interim telephone interviews conducted at 6-month intervals (6, 12, and 18 months after Time 1). At each assessment point, parents and youth were interviewed separately and every effort was made to ensure the privacy and independence of the responses. For their participation, parents received $40 whereas youth received $10 to $40, depending on their age.

Measures

Demographic variables. Participants provided demographic information including age, sex, race/ethnicity, and annual household income. In addition, we created a dichotomous indicator of sector involvement because youth recruited from the alcohol/drug treatment or mental health (ADM) sectors are more likely than youth from other sectors to receive MHS (Garland et al., 2005).

Internalizing/externalizing diagnosis and impairment. To assess past-year *Diagnostic and Statistical Manual of Mental Disorders–Fourth Edition* (*DSM-IV*; American Psychiatric Association, 1994) psychiatric diagnoses, youth completed the computer-assisted youth version of the *National Institute of Mental Health Diagnostic Interview Schedule for Children, Version IV* (DISC-IV; Shaffer, Fisher, Lucas, Dulcan, & Schwab-Stone, 2000) at the Time 1 interview. The DISC-IV is a structured diagnostic interview and its reliability and validity are well supported (Shaffer et al., 2000). A diagnosis for an internalizing disorder was considered to be present if youth met diagnostic criteria and at least moderate diagnosis-specific functional impairment for one or more of the following disorders: Major Depressive Disorder, Dysthymic

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Disorder, Generalized Anxiety Disorder, Panic Disorder, Posttraumatic Stress Disorder, Obsessive-Compulsive Disorder, Separation Anxiety Disorder, and Social Anxiety Disorder. A diagnosis for an externalizing disorder was considered to be present if youth met diagnostic criteria and at least moderate diagnosis-specific impairment for one or more of the following disorders: Attention-Deficit/Hyperactivity Disorder, Conduct Disorder, and Oppositional Defiant Disorder. In the POC study, youth completed all relevant modules of the DISC-IV, whereas parents only completed modules on externalizing disorders. Because we did not want to confound problem type with the number of informants, only youth DISC-IV reports are considered here.

Internalizing/externalizing symptoms. During the baseline interview, the *Child Behavior Checklist* (CBCL; Achenbach, 1991a) and the *Youth Self-Report* (YSR; Achenbach, 1991b) were administered to parents and youth, respectively, to assess youth symptomatology during the previous 6 months. The CBCL and YSR are standardized measures with well-established reliability and validity (Achenbach, 1991a, 1991b). In this study, we used internalizing and externalizing broadband *T*-scores produced by the CBCL and YSR as dimensional measures of child symptomatology. When determining clinically significant symptomatology, we used the recommended clinical cutoff of $T \geq 70$ (Achenbach, 1991a).

Youth functional impairment. Parents and youth completed the *Columbia Impairment Scale* (CIS; Bird, Shaffer, Fisher, & Gould, 1993), a 13-item measure covering four major areas of functioning (interpersonal relations, broad psychopathology domains, functioning in job or schoolwork, and use of leisure time) that reliably assesses a child's level of functional impairment. Using a 5-point scale, participants indicate the extent to which each item was a problem for youth during the previous 6 months. The CIS has demonstrated excellent psychometric properties when used with youth in the age range of interest (Bird & Gould, 1995). Our data produced an adequate level of internal consistency ($\alpha = .84$ for youth CIS; $\alpha = .88$ for parent CIS). When used in dimensional analyses, higher scores on the CIS indicate greater functional impairment. In categorical analyses of need, the clinically significant cutoff score of 15 was used to identify youth with significant functional impairment (Bird et al., 1993).

Classification of mental health need. Psychopathology with associated functional impairment was considered present if at least one of the following criteria were met: (a) internalizing or externalizing diagnosis with diagnosis-specific moderate impairment on the DISC-IV, (b) internalizing or externalizing CBCL broadband *T*-score ≥ 70 with parent-rated CIS score ≥ 15, and/or (c) internalizing or externalizing YSR broadband *T*-score ≥ 70 with youth-rated CIS score ≥ 15. Based on these criteria, youth were classified as having clinically significant internalizing (INT), externalizing (EXT), comorbid (COM), or no clinically significant problems.

Mental health service use. Use of MHS between the initial interview (Time 1) and 2-year follow-up interview (Time 2) was assessed using the *Services Assessment for Children and Adolescents* (SACA; Horwitz et al., 2001). The SACA is a semistructured interview administered to parents and youth to assess child and adolescent service use across a variety of service systems. For this study, we examine specialty outpatient and school-based MHS for children's emotional or behavioral problems. *Specialty MHS* included visits to a professional psychologist, psychiatrist, counselor, community mental health clinic, and/or partial hospitalization or day treatment program for children's emotional or behavioral problems. S*chool-based MHS* included school counseling, placement in a special classroom, and/or placement in a special school for children's emotional or behavioral problems. In this study, "special help in a regular classroom" was not included in the school-based services composite variable because of our concern that these may be limited or informal interventions for children's emotional or behavioral problems. Test–retest reliability of the SACA for past-year service is excellent for parent informants and good for youth informants age 10 or older (Horwitz et al., 2001). The accuracy of parent past-year reports on the SACA compared to service records is good to excellent (Hoagwood et al., 2000), and parent–youth agreement on the SACA is fair to excellent (Stiffman et al., 2000). In this study, MHS use was considered present if either the parent or youth informant endorsed the SACA variable indicating past-year use during any of the interviews conducted 6, 12, 18, or 24 months after the initial (Time 1) interview.

Data Analysis

To examine racial/ethnic disparities in MHS use, we first conducted two sets of chi-square analyses. First, we examined specialty and school-based MHS service use by mental health need classification (internalizing, externalizing, comorbid, or no clinically significant problems at Time 1) for each of the racial/ethnic groups. Within each racial/ethnic group, follow-up pairwise contrasts compared

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MHS use for those in each need category relative to those without need. Here, significant pairwise contrasts would indicate that service use was associated with a particular category of need in a given racial/ethnic group. The second set of chi-square analyses examined differences in MHS use by race/ethnicity for each need group. Within each mental health need group, follow-up pairwise contrasts compared MHS use for each minority group relative to NHW youth. Here, significant pairwise contrasts could indicate racial/ethnic disparities in service use for a given type of mental health need.

Having examined overall differences in MHS use based on dichotomous mental health need classification variables, we then conducted hierarchical logistic regression analyses to test a multivariate model of MHS use. Separate models were constructed for parent-reported and youth-reported symptomatology and impairment, with all continuous variables mean centered. In the first step of each model, predictors included youth race/ethnicity, age, sex, family income, and service sector involvement. Mental health need, operationalized with continuous variables including internalizing and externalizing symptom severity as well as functional impairment, was also entered in the first step. Model coefficients at this step represent overall main effects of the variables while controlling for other variables in the model. For categorical predictors, the odds ratio represents the estimated odds of MHS receipt for the group coded 1 over the estimated odds of MHS receipt for the reference group. However, for continuous variables, the odds ratio represents the multiplicative factor by which the predicted odds of MHS receipt change given a 1-unit increase in the predictor.

In the second step, interaction terms between race/ethnicity and the symptom severity variables were added to the model. Here, the odds ratios associated with symptom severity no longer represent a main effect but instead represent the effect of symptom severity for the reference group only (NHWs). To test for racial/ethnic disparities, the odds ratio for each interaction term compares the multiplicative factor associated with symptom severity for the relevant racial/ethnic minority group with the multiplicative factor for NHWs. An interaction term with an odds ratio of 1 would suggest that symptom severity has the same effect in both racial/ethnic groups, but divergence from 1 would suggest that symptom severity was related to service use differently for a minority group relative to NHW youth. Therefore, racial/ethnic disparities would be indicated by main effects of race/ethnicity after controlling for need and demographics or by significant interactions between race/ethnicity and symptom severity in predicting service use at Step 2.

For all analyses, a poststratification weighting procedure (Henry, 1990) was used to ensure that the data reflected the characteristics of the total population of service users. Reported odds ratios are statistically significant when the associated 95% confidence interval does not include the value of 1. However, due to rounding, some confidence intervals for statistically significant odds ratios reported below include the value of 1.

Results

Overall rates of MHS use varied depending on the type of service in question. Rates were highest for school-based services for emotional or behavioral problems (59.7% of the overall sample, $N = 662$), followed by specialty outpatient MHS (47.6% of the overall sample, $N = 527$). Descriptive statistics for the overall sample as well as for each racial/ethnic group are presented in Table 1.

Hypothesis 1: Racial/ethnic disparities in MHS use will be more pronounced for internalizing problems than for externalizing problems.

MHS use by problem type within racial/ethnic groups. Table 2a presents weighted percentage rates of MHS use by need classification for each racial/ethnic group as well as results from chi-square analyses. Follow-up pairwise contrasts were conducted to compare service use for those in each need category relative to those without need within each racial/ethnic group. There was a significant association between need classification and specialty MHS use for NHW youth, $X^2(3) = 9.38$, $p = .025$; AA youth, $X^2(3) = 9.11$, $p = .028$; and HA youth, $X^2(3) = 10.76$, $p = .013$, but no such association for API youth. Pairwise contrasts indicated that NHWs were the only group for whom there was increased likelihood of receiving specialty MHS for internalizing problems relative to youth without clinically significant problems, $X^2(1) = 7.46$, $p = .006$. Among AA youth, contrasts indicated that those with comorbid problems were more likely to receive specialty services than AA youth without clinically significant problems, $X^2(1) = 8.37$, $p = .004$. HA youth with externalizing, $X^2(1) = 4.47$, $p = .035$, or comorbid, $X^2(1) = 8.82$, $p = .003$, problems were more likely to receive services than HA youth without clinically significant problems. Thus, consistent with Hypothesis 1, when only internalizing need was present, NHWs appeared more likely to receive specialty MHS whereas HA and AA youth were more likely to receive specialty MHS when purely externalizing and/or comorbid problems were present.

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Table 2a
Weighted Percentage of Service Use by Diagnostic Classification Within Race/Ethnicity

Race	Need Classification (*N*)	Specialty MHS[a] % (*N*)	School Services[b] % (*N*)
NHW	no need (202)	47.5 (96)	59.1 (120)
	internalizing (36)	72.2 (26)[c]	72.2 (26)
	externalizing (80)	55.0 (44)	61.3 (49)
	comorbid (66)	60.6 (40)	69.7 (46)
	total (384)	53.6 (206)	62.6 (241)
	analysis	$X^2(3) = 9.38$*	$X^2(3) = 3.96$
AA	no need (149)	40.3 (60)	54.4 (81)
	internalizing (16)	56.3 (9)	62.5 (10)
	externalizing (48)	45.8 (22)	54.2 (26)
	comorbid (27)	70.4 (19)[c]	61.5 (16)
	total (240)	45.8(110)	55.6 (133)
	analysis	$X^2(3) = 9.11$*	$X^2(3) = .81$
HA	no need (192)	33.9 (65)	38.5 (74)
	internalizing (27)	40.7 (11)	55.6 (15)
	externalizing (73)	47.9 (35)[c]	60.3 (44)[c]
	comorbid (45)	57.8 (26)[c]	71.1 (32)[c]
	total (337)	40.7 (137)	49.0 (165)
	analysis	$X^2(3) = 10.76$*	$X^2(3) = 21.39$**
API	no need (51)	29.4 (15)	31.4 (16)
	internalizing (11)	9.1 (1)	18.2 (2)
	externalizing (23)	21.7 (5)	60.9 (14)[c]
	comorbid (6)	50.0 (3)	50.0 (3)
	total (91)	26.4 (24)	38.5 (35)
	analysis	$X^2(3) = 3.91$	$X^2(3) = 8.21$*

Table 2b
Weighted Percentage of Service Use by Racial/Ethnic Group Within Diagnostic Classification

Need Classification	Race (*N*)	Specialty MHS[a] % (*N*)	School Services[b] % (*N*)
No need	NHW (203)	47.5 (96)	59.1 (120)
	AA (149)	40.3 (60)	54.4 (81)
	HA (192)	33.9 (65)[d]	38.5 (74)[d]
	API (51)	29.4 (15)[d]	31.4 (16)[d]
	total (595)	39.7 (236)	48.9 (291)
	analysis	$X^2(3) = 10.18$*	$X^2(3) = 24.77$**
Internalizing	NHW (36)	72.2 (26)	72.2 (26)
	AA (16)	56.3 (9)	62.5 (10)
	HA (27)	40.7 (11)[d]	55.6 (15)
	API (11)	9.1 (1)[d]	18.2 (2)[d]
	total (90)	52.2 (47)	58.9 (53)
	analysis	$X^2(3) = 15.50$**	$X^2(3) = 10.38$*
Externalizing	NHW (80)	55.0 (44)	61.3 (49)
	AA (48)	45.8 (22)	54.2 (26)
	HA (73)	47.9 (35)	60.3 (44)
	API (23)	21.7 (5)[d]	60.9 (14)
	total (224)	47.3 (106)	59.4 (133)
	analysis	$X^2(3) = 7.99$*	$X^2(3) = .70$
Comorbid	NHW (66)	60.6 (40)	69.7 (46)
	AA (27)	70.4 (19)	61.5 (16)
	HA (45)	57.8 (26)	71.1 (32)
	API (6)	50.0 (3)	50.0 (3)
	total (144)	61.1 (88)	67.8 (97)
	analysis	$X^2(3) = 1.50$	$X^2(3) = 1.67$

Note: NHW = non-Hispanic Whites; AA = African Americans; HA = Hispanic Americans; API = Asian American/Pacific Islanders; MHS = mental health services.
a. Includes visits to professional psychologist, psychiatrist, counselor, community mental health clinic, and/or partial hospitalization or day treatment program.
b. Includes school counseling, placement in special classroom, and/or placement in special school.
c. Chi-square comparing service use relative to youth without clinically significant problems (no need) significant at $p < .05$.
d. Chi-square comparing service use relative to NHW youth significant at $p < .05$.
*$p < .05$. **$p \leq .001$.

When examining school-based MHS services, there was a significant overall association between mental health need classification and MHS use only for HA, $X^2(3) = 21.39$, $p < .001$, and API youth, $X^2(3) = 8.21$, $p = .042$. Pairwise comparisons indicated that HA youth with externalizing, $X^2(1) = 10.11$, $p = .001$, or comorbid, $X^2(1) = 15.62$, $p < .001$, problems were more likely to receive school-based services than HA youth without clinically significant problems. Likewise, API youth with externalizing, $X^2(1) = 5.72$, $p = .017$, problems were more likely to receive school-based services than API youth without clinically significant problems. Internalizing need in the absence of externalizing problems was not associated with increased probability of school-based MHS for any racial/ethnic group. In the school-based context, both externalizing and comorbid need appeared to predict MHS use for HA youth whereas only externalizing need was associated with MHS use for API youth.

MHS use by race/ethnicity within problem type groups. Table 2b presents weighted percentage rates of MHS use by racial/ethnic group for each mental health need classification along with results from chi-square analyses. Among youth without clinically significant problems based on this study's definition, NHW youth were more likely to receive specialty MHS compared with HA, $X^2(1) = 7.61$, $p = .006$, and API, $X^2(1) = 5.43$, $p = .020$, youth. Among youth with internalizing need, HA, $X^2(1) = 6.31$, $p = .012$, and API, $X^2(1) = 13.74$, $p < .001$, youth were significantly less likely to receive specialty MHS relative to NHW youth. API youth with externalizing problems were also less likely to receive specialty MHS relative to NHW youth with externalizing problems, $X^2(1) = 7.92$, $p = .005$. Thus, consistent with Hypothesis 1, NHWs were more likely to receive specialty MHS for internalizing problems than were HAs and APIs. Conversely, only API youth were less likely than NHWs to receive specialty MHS for externalizing problems.

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Table 3
Logistic Regression Analyses Predicting Specialty and School Mental Health Service Use Based on Parent-Reported Need

	Specialty Services[a]		School Services[b]	
Variable	Odds Ratio	95% CI	Odds Ratio	95% CI
Step 1				
Age	0.75**	0.70–0.81	0.75**	0.69–0.80
Sex: female	1.54**	1.13–2.11	0.60**	0.44–0.81
Household income	1.03*	1.01–1.05	1.02	1.00–1.04
ADM sector	1.14	0.84–1.54	0.97	0.72–1.30
Race/ethnicity (NHW)				
AA	1.14	0.77–1.68	1.07	0.73–1.57
HA	0.83	0.58–1.20	0.79	0.55–1.12
API	0.60	0.32–1.12	0.67	0.38–1.20
CBCL internalizing symptoms	1.04**	1.02–1.06	1.02*	1.00–1.04
CBCL externalizing symptoms	0.98*	0.96–1.00	1.02*	1.00–1.04
Parent-rated impairment	1.05**	1.03–1.08	1.02†	1.00–1.04
Step 2				
Age	0.75**	0.70–0.80	0.74**	0.69–0.80
Sex: female	1.55**	1.13–2.12	0.58**	0.42–0.79
Household income	1.03*	1.01–1.05	1.02	1.00–1.04
ADM sector	1.13	0.84–1.54	1.00	0.74–1.35
Race/ethnicity (NHW)				
AA	1.10	0.74–1.64	1.06	0.71–1.57
HA	0.81	0.56–1.16	0.79	0.55–1.12
API	0.63	0.33–1.19	0.80	0.43–1.48
CBCL internalizing symptoms	1.05**	1.02–1.08	1.04**	1.01–1.07
CBCL externalizing symptoms	0.96**	0.94–0.99	1.01	0.98–1.04
Parent-rated impairment	1.05**	1.03–1.07	1.02	1.00–1.04
AA × internalizing symptoms	0.98	0.94–1.02	0.95*	0.91–0.99
HA × internalizing symptoms	1.00	0.96–1.04	1.00	0.96–1.03
API × internalizing symptoms	0.97	0.90–1.03	0.92*	0.86–0.98
AA × externalizing symptoms	1.06**	1.01–1.11	1.05†	1.00–1.09
HA × externalizing symptoms	1.01	0.98–1.05	1.00	0.96–1.03
API × externalizing symptoms	1.04	0.97–1.11	1.07†	1.00–1.15

Note: NHW = non-Hispanic Whites; AA = African Americans; HA = Hispanic Americans; API = Asian American/Pacific Islanders; ADM = alcohol, drug, and mental health; CBCL = *Child Behavior Checklist*.
a. Includes visits to professional psychologist, psychiatrist, counselor, community mental health clinic, and/or partial hospitalization or day treatment program.
b. Includes school counseling, placement in special classroom, and/or placement in special school.
†$p \leq .10$. *$p \leq .05$. **$p \leq .01$.

Significant overall school-based MHS racial/ethnic differences in rates of use were evident for youth without clinically significant problems, $X^2(3) = 24.77$, $p < .001$, as well as for youth with internalizing problems, $X^2(3) = 10.38$, $p = .016$. Contrasts revealed that HA, $X^2(1) = 16.71$, $p < .001$, and API, $X^2(1) = 12.61$, $p < .001$, youth without clinically significant problems were less likely to receive school-based MHS compared with NHW youth without clinically significant problems. When internalizing problems were present, API youth were significantly less likely to receive school-based MHS relative to NHW youth, $X^2(1) = 10.22$, $p = .001$. Thus, in school-based MHS, there was only evidence of disparities in unmet internalizing need for API youth relative to NHWs.

Hypothesis 2: There will be a stronger relationship between internalizing symptoms and MHS for NHWs compared with minorities. The association between externalizing symptoms and MHS use will be at least as strong among minorities as among NHWs.

Parent-reported symptoms and MHS receipt. Hierarchical logistic regression analyses examined demographic variables, parent-reported symptoms, and impairment as predictors of subsequent MHS use (see Table 3, Step 1). In terms of demographic predictors, older youth were less likely to receive both types of MHS. Girls were more likely to receive specialty MHS than boys but were less likely

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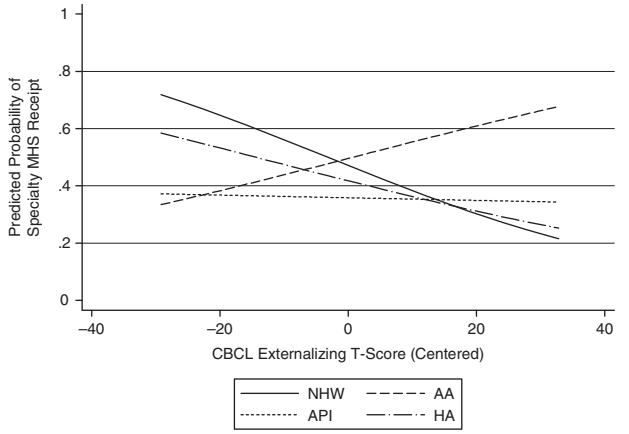
to receive school-based MHS. Higher annual household income was associated with increased likelihood of receiving specialty MHS. After accounting for demographic variables and parent-rated symptom severity and impairment, race/ethnicity was not an independent predictor of MHS use. However, parent-reported internalizing symptoms positively predicted receipt of specialty and school-based MHS. Contrary to expectations, parent-reported externalizing symptoms on the CBCL negatively predicted receipt of specialty MHS but positively predicted receipt of school-based MHS. In addition, parent-rated impairment was significantly associated with receipt of specialty MHS.

To examine racial/ethnic disparities in MHS use based on problem type, we included interaction terms between race/ethnicity and internalizing and externalizing symptoms in Step 2. Whereas the multiplicative factors for externalizing and internalizing symptoms reported in Step 1 represent overall main effects, the corresponding factors in Step 2 represent the effect of symptom severity for the reference group (NHWs) only because symptom severity is also included in the product terms. To examine racial/ethnic disparities, the interaction terms test the ratio of the multiplicative factor for the relevant minority group to that of NHWs. Results indicated that the association between parent-reported externalizing symptoms and specialty MHS was different for NHW youth compared with AA youth (see Table 3). Whereas the odds of specialty MHS receipt given a 1-unit increase in externalizing symptoms change by a factor of 1.02 (95% CI = .99–1.06) for AA youth, the odds of MHS receipt for NHWs change by a factor of .96 (95% CI = .94–.99). Figure 1 presents the predicted probability of receiving specialty MHS as a function of externalizing symptoms, after controlling for youth age, sex, household income, ADM sector, internalizing symptoms, and parent-rated impairment. As depicted, externalizing symptoms were associated with an increased probability of subsequent specialty MHS receipt only for AA youth. In contrast, externalizing symptoms appeared to be negatively associated with specialty MHS receipt for NHW, HA, and API youth. Race/ethnicity did not moderate the association between parent-reported internalizing symptoms and specialty MHS receipt.

When examining school-based MHS, the interaction terms for AA race/ethnicity × internalizing symptoms and API race/ethnicity × internalizing symptoms were statistically significant (see Table 3). Whereas the odds of school-based MHS receipt given a 1-unit increase in internalizing symptoms change by a factor of .99 (95% CI = .96–1.02) for AA youth, the odds of MHS receipt for NHWs change by a factor of 1.04 (95% CI = 1.01–1.07). Similarly, the odds of school-based MHS receipt given a 1-unit increase in internalizing symptoms change by a factor of .96 (95% CI = .90–1.01) for API youth, whereas the odds for NHW youth change by a factor of 1.04 (95% CI = 1.01–1.07). As depicted in Figure 2, internalizing symptom severity positively predicted school-based MHS receipt for NHWs but was negatively related to use among AA and API youth when controlling for demographic variables, externalizing symptom severity, and parent-rated impairment.

Figure 1
Predicted Probability of Receiving Specialty Mental Health Services (MHS) as a Function of Externalizing Symptoms and Race/Ethnicity



Note: CBCL = *Child Behavior Checklist*; NHW = non-Hispanic Whites; AA = African Americans; API = Asian American/Pacific Islanders; HA = Hispanic Americans.

Youth-reported symptoms and MHS receipt. Similar logistic regression models predicting service use were constructed based on youth-reported symptomatology and impairment (see Table 4). After accounting for demographic variables, symptom level, and youth impairment, API youth were significantly less likely to receive specialty and school-based MHS relative to NHW youth. Levels of youth-reported internalizing symptoms on the YSR positively predicted receipt of specialty MHS, whereas youth-reported externalizing symptoms on the YSR positively predicted school-based MHS. Youth-reported functional impairment was not significantly associated with either specialty or school-based MHS use. Finally, race/ethnicity did not moderate the relationships between youth-reported symptomatology and MHS receipt. Therefore, only the models omitting interaction terms are presented in Table 4.

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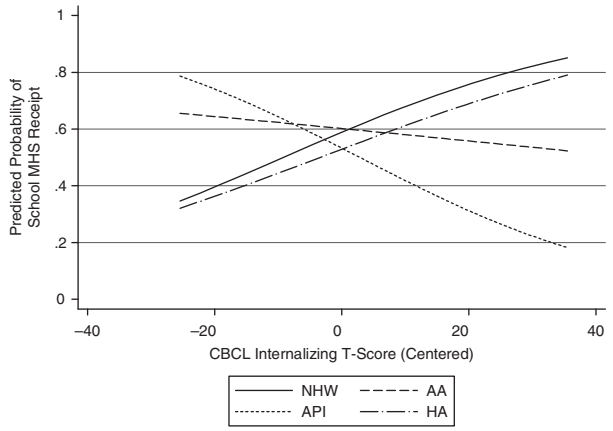
Figure 2
Predicted Probability of Receiving School-Based Mental Health Services (MHS) as a Function of Internalizing Symptoms and Race/Ethnicity



Note: CBCL = *Child Behavior Checklist*; NHW = non-Hispanic Whites; AA = African Americans; API = Asian American/Pacific Islanders; HA = Hispanic Americans.

Discussion

The aim of this study was to clarify our understanding of disparities in youth mental health care by examining whether racial/ethnic differences in utilization of MHS varied by problem type. We hypothesized that disparities in MHS use would be more pronounced in the treatment of youth with internalizing problems and less prominent in the treatment of externalizing problems. Furthermore, we predicted that the association between youth internalizing symptoms and service receipt would be stronger among NHW youth than among ethnic minority youth. In contrast, we expected that the relationship between externalizing problems and service use would be at least as strong among minority youth as it is among NHWs. Overall, the pattern of results provided some support for these specific hypotheses.

When examining service use within racial/ethnic groups, NHW youth were the only group for whom classification of internalizing need was related to increased specialty MHS compared with those with no need. NHW youth exclusively with internalizing problems at baseline had the highest rate of MHS use at follow-up (72.2%) of all subgroups examined in the sample. Conversely, among HA youth, classification of externalizing or comorbid internalizing and externalizing need was associated with increased specialty and school-based MHS relative to no need. Comorbid problems were also associated with specialty MHS relative to no need among AA youth, whereas externalizing need was associated with school-based MHS use relative to no need among API youth. Therefore, among API, HA, and AA youth, those with baseline externalizing and/or comorbid problems were significantly more likely to have received MHS at follow-up than youth without clinically significant problems. This was not true for NHWs. Thus, when considering clinically significant symptoms and functional impairment, services were more likely to be allocated in response to externalizing or comorbid need among minority youth, whereas NHWs appeared most likely to receive MHS in response to internalizing need.

Similarly, examination of service use within mental health need classification suggested that among youth with exclusively internalizing problems, NHWs were more likely to receive MHS than their minority counterparts. Specifically, among youth with impairing internalizing problems, HA and API youth were less likely to receive specialty MHS whereas API youth were less likely to receive school-based MHS compared with NHWs. When problems were exclusively externalizing in nature, API youth received specialty MHS at lower rates than NHWs. Rates of both specialty and school-based MHS were not significantly different across racial/ethnic groups among youth with comorbid problems. Thus, relative to NHWs, APIs appeared to have higher levels of unmet need across service types when they exhibit purely internalizing problems as well as in the specialty mental health sector when they exhibit purely externalizing problems. HA youth evidenced higher levels of unmet need in the specialty MHS sector relative to NHWs when they exhibited purely internalizing problems. In contrast to the evidence for racial disparities in MHS use for youth with internalizing problems (3 significant contrasts out of 6 possible contrasts), bivariate analyses revealed fewer disparities in receipt of MHS among youth with externalizing (1 of 6 possible contrasts) or comorbid problems (0 of 6 possible contrasts). Analyses of youth mental health need based on symptomatology and functional impairment therefore highlighted the potential risk of unmet internalizing need in minority youth.

It is interesting that racial/ethnic differences in MHS utilization were also evident among youth without demonstrable need, based on our definition of psychiatric diagnosis or clinically significant symptomatology plus associated impairment, by either parent or youth report. It appeared that NHWs without clinically significant problems were more likely to receive care than HA and API youth without demonstrable need. Although the reasons for service use in this sample are unknown, it is possible that NHW youth may be more likely to be referred to prevention-oriented

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Table 4
Logistic Regression Analyses Predicting Specialty and School Mental Health Service Use Based on Youth-Reported Need

	Specialty Services[a]		School Services[b]	
Variable	Odds Ratio	95% CI	Odds Ratio	95% CI
Age	0.74**	0.69–0.79	0.72**	0.67–0.78
Sex: female	1.41*	1.04–1.90	0.56**	0.41–0.76
Household income	1.03*	1.00–1.05	1.01	0.99–1.04
ADM sector	1.30†	0.98–1.74	1.16	0.87–1.55
Race/ethnicity (NHW)				
AA	0.81	0.56–1.17	0.92	0.63–1.34
HA	0.73†	0.52–1.04	0.71†	0.50–1.01
API	0.44**	0.25–0.80	0.55*	0.32–0.96
YSR internalizing symptoms	1.03**	1.01–1.04	1.00	0.98–1.02
YSR externalizing symptoms	1.01	0.99–1.02	1.04**	1.02–1.05
Youth-rated impairment	1.01	0.99–1.03	1.01	0.99–1.03

Note: NHW = non-Hispanic Whites; AA = African Americans; HA = Hispanic Americans; API = Asian American/Pacific Islanders; YSR = *Youth Self-Report*; ADM = alcohol, drug, and mental health.
a. Includes visits to professional psychologist, psychiatrist, counselor, community mental health clinic, and/or partial hospitalization or day treatment program.
b. Includes school counseling, placement in special classroom, and/or placement in special school.
†$p \leq .10$. *$p \leq .05$. **$p \leq .01$.

services in the public sectors of care under study, whereas minority youth may be more likely to use the system when tertiary intervention is needed for severe problems. Youth without significant symptoms or impairment may receive services on the basis of other indicators of need such as trauma exposure and chronic and acute family problems. Further research could examine whether there are racial disparities in the receipt of services for addressing these mental health risk factors.

When examining overall racial/ethnic differences in MHS use while accounting for the effects of demographic variables, youth-rated symptom severity, and impairment, multivariate analyses indicated that NHW youth were significantly more likely to receive specialty and school-based MHS compared with API youth. We explored whether school-based MHS may be a means for allocating care more equitably across racial/ethnic groups, but similar overall disparities emerged across service types. However, after accounting for the influence of demographic variables, parent-rated symptom severity, and functional impairment, overall racial/ethnic disparities in MHS service use were not evident. By and large, multivariate analyses suggested that race/ethnicity was not strongly related to overall MHS service use in this sample of youth recruited from public sectors of care. These results are in keeping with previous reports suggesting that socioeconomic factors strongly contribute to the presence of disparities (e.g., Institute of Medicine, 2002). The fact that racial differences did emerge for API youth when controlling for youth-rated need but not when parent-rated need was taken into consideration may reflect the crucial role of parent recognition of need for accessing services.

The main contribution of our study, however, was to look beyond these overall disparities in unmet need with an eye toward potential differential disparities by problem type. Having examined racial disparities in unmet need based on a dichotomous indicator of symptom severity and functional impairment, we then examined the association between symptom type and service receipt in multivariate analyses. Our findings suggested racial/ethnic disparities in the associations between dimensional indicators of need and MHS receipt. Consistent with our predictions, notably different patterns of disparities emerged for internalizing versus externalizing symptoms. After accounting for demographic variables, externalizing symptoms and impairment, parent-recognized internalizing symptoms at baseline were more strongly associated with school-based MHS use among NHW youth compared with AA and API youth. Conversely, parent-reported externalizing symptoms at baseline were more strongly associated with subsequent specialty MHS for AA youth relative to NHW youth, after controlling for demographic variables, internalizing symptom severity, and level of impairment. These findings further suggest that internalizing mental health need is more likely to go unmet among certain minorities compared with NHWs, whereas disruptive

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behavior problems are more likely to result in care for AA youth compared with NHWs. This pattern of findings suggests that certain minority youth may have clinically significant internalizing needs ignored. Conversely, there may be increased identification and subsequent referral of externalizing problems when demonstrated by AA youth. Although we observed this pattern for specialty MHS, concerns about increased scrutiny of disruptive behavior among AA youth have been cited in other sectors of care. Bias in treatment and evaluation of AA youth has been implicated as one explanation for the overrepresentation of AA youth in the most restrictive care settings such as special education services for emotional disturbance and juvenile justice (Losen & Orfield, 2002). This study therefore extends our understanding of unmet need by examining not only disparities in service receipt for youth with clinically significant symptoms and impairment but also associations between the type of symptom and receipt of services when all other factors are held constant.

An understanding of how youth come to access services may help elucidate these problem-specific patterns of MHS. Because youth MHS use is typically initiated after an adult recognizes need, influences on adult identification of youth needs are of particular interest. Because problems of an internalizing nature may be difficult to recognize and cultural beliefs may render them less concerning, minority parents may be especially unlikely to seek treatment for these problems. In addition, stereotypic beliefs about minority child behavioral patterns may make the recognition of internalizing symptoms by other adult gatekeepers (e.g., teachers and social workers) less likely. Conversely, problems of an externalizing nature are more easily identifiable and are perceived as troublesome by parents and adult gatekeepers outside the family. Growing evidence suggests that social and institutional factors result in AA youth being more closely scrutinized for disruptive behavior, resulting in disproportionate rates of referral for services in various sectors of care. Thus, patterns of youth MHS utilization are likely influenced by problem recognition processes within and outside the family that result in different thresholds of tolerance for internalizing and externalizing problems across racial/ethnic groups.

Given that youth MHS receipt is triggered by adult recognition and referral, these results have important implications for clinical practice. On one level, it is important that parents, teachers, and other adult gatekeepers of youth MHS are educated about recognizing mental health need, both internalizing and externalizing need, when it is present. Implementing mental health screenings and education in primary care as well as school settings may be one important avenue for reaching minority youth with unmet need. In addition, given potential bias in reasons for referral and high levels of co-occurring problems, the use of empirically based assessment tools to assess need is highly warranted. Although increasing awareness and recognition of mental health need and providing comprehensive, evidence-based assessments of clinical need are not insignificant challenges, they represent the necessary foundation for effectively identifying and meeting the mental health needs of youth.

This study clarified the problem-specific nature of racial disparities in MHS in a large, diverse sample of youth, employing data from multiple informants and indicators of need, within a prospective longitudinal study. Despite these strengths, some limitations are also evident. First, this sample included youth who were known to public sectors of care and thus had a greater likelihood of accessing MHS compared with youth without such contact. It is unclear whether similar problem-specific patterns of racial disparities would emerge in a general community sample. Second, our categorical definition of need for MHS was limited to a diagnosis or clinically significant symptoms plus functional impairment. However, this definition may not be a comprehensive indicator of need. Youth in this study may have required services for a variety of issues (e.g., trauma exposure, family distress, subclinical symptoms with impairment) not captured by our assessment. Finally, although we assessed symptoms and impairment at baseline, we did not investigate the specific reasons that youth used services during the 2-year follow-up period. Further research should examine families' perceptions of need and their reasons for seeking or not seeking services.

Nevertheless, our findings shed new light on the patterns of racial/ethnic differences in youth MHS use that may advance our understanding of disparities. Most important, this study highlights the importance of considering problem type when examining patterns of unmet need. Whereas previous research has found racial disparities in overall rates of unmet need, this study underscores the potential for unmet need among minority youth with internalizing disorders. Further work must focus on reducing barriers to care for minorities, with a particular emphasis on increasing the responsiveness of MHS for minority youth with internalizing problems.

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