

Mental Health Service Patterns among Medicaid-Eligible Children: Disparities and Differences in Beliefs and Service Access

Agency for Health Care Administration series 220-117



Authors:
Paul E. Greenbaum, Ph.D.
Svetlana Yampolskaya, Ph.D.
Mario Hernandez, Ph.D.
Richard Briscoe, Ph.D.
Debra Mowery, Ph.D.

Louis de la Parte Florida
Mental Health Institute



June 2008

This publication was produced by
Louis de la Parte Florida Mental Health Institute
The College of Behavioral and Community Sciences
University of South Florida
13301 Bruce B. Downs Blvd.
Tampa, FL 33612-3807
For more information, call 813-974-7995
or visit the website: www.fmhi.usf.edu
©June 2008

Louis de la Parte Florida Mental Health Institute Publication
Agency for Health Care Administration (AHCA) series 220-117 Tampa, Florida

*This document may be reproduced in whole or part without restriction
as long as the Louis de la Parte Florida Mental Health Institute,
University of South Florida is credited for the work.*

*Submitted to the Florida Agency for Health Care Administration as a
deliverable under contract MED078.*

Greenbaum, P. E., Yampolskaya, S., Hernandez, M., Briscoe,
R., & Mowery, D. (2008). *Mental Health Service Patterns
among Medicaid-Eligible Children: Disparities and
Differences in Beliefs and Service Access* (Agency for Health
Care Administration (AHCA) series, 220-117). Tampa,
FL: University of South Florida, Louis de la Parte Florida
Mental Health Institute.



University of South Florida

The University of South Florida is one of the nation's top 63 public research universities and one of 39 community- engaged, four-year public universities as designated by the Carnegie Foundation for the Advancement of Teaching. USF was awarded more than \$360 million in research contracts and grants in FY 2007/2008. The university offers 219 degree programs at the undergraduate, graduate, specialist and doctoral levels, including the doctor of medicine. The university has a \$1.8 billion annual budget, an annual economic impact of \$3.2 billion, and serves more than 46,000 students on campuses in Tampa, St. Petersburg, Sarasota-Manatee and Lakeland. USF is a member of the Big East Athletic Conference.

College of Behavioral and Community Sciences

The College of Behavioral and Community Sciences enrolls nearly 2,200 students and includes the Departments of Aging and Mental Health, Child and Family Studies, Communication Sciences and Disorders, Criminology, Mental Health Law and Policy, and Rehabilitation and Mental Health Counseling as well as the School of Aging Studies and School of Social Work. In addition, the college includes the Louis de la Parte Florida Mental Health Institute, a research, knowledge dissemination, and policy institute with a special focus on mental health and substance abuse.

Louis de la Parte Florida Mental Health Institute

The Louis de la Parte Florida Mental Health Institute at the University of South Florida has a mission to strengthen mental health services throughout the state. The Institute provides research, training, education, technical assistance, and support services to mental health professionals and agencies as well as consumers, consumer organizations, and behavioral health advocates statewide. At the state level, the Institute works closely with the Departments of Children and Families (DCF), Corrections (DOC), Elder Affairs (DOEA), Education (DOE), and the Agency for Health Care Administration (AHCA), as well as with members and staff of the State Legislature and providers of mental health services throughout Florida.

Mental Health Services Patterns among Medicaid Eligible Children: Disparities and Differences in Beliefs and Service Access

Table of Contents

Executive Summary	1
Background	6
Study Issues/Hypotheses	8
Research Questions	8
Methods	9
Participants.....	9
Outcome Measures	10
Sampling Procedures	12
Results/Discussion	13
Conclusions	24
References	27

List of Tables

Tables

Table 1. ICD-9 Codes for DSM-IV Mental Health Disorders	29
Table 2. Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, All Ethnic Groups.....	30
Table 3. Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, African American	31
Table 4. Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, White	32
Table 5. Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, Hispanic	33
Table 6. Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, Other	34
Table 7. Summary of Logistic Regression Analysis for Predictors of Depression Disorder.....	35
Table 8. Summary of Logistic Regression Analysis for Predictors of Attention Deficit Disorder.....	36
Table 9. Summary of Logistic Regression Analysis for Predictors of Conduct Disorder.....	37
Table 10. Summary of Multiple Regression Analysis for Number of Outpatient Services for All Children Who Received Outpatient Mental Health Services	38
Table 11. Summary of Multiple Regression Analysis for Number of Outpatient Services for All Children with Depression Disorder Who Received Outpatient Mental Health Services	38
Table 12. Summary of Multiple Regression Analysis for Number of Outpatient Services for All Children with Attention Deficit Disorder Who Received Outpatient Mental Health Services	39
Table 13. Summary of Multiple Regression Analysis for Number of Outpatient Services for All Children with Conduct Disorder Who Received Outpatient Mental Health Services	39
Table 14. Summary of Multiple Regression Analysis for Number of Visits for Children Who Received Outpatient Mental Health Services.....	40
Table 15. Summary of Multiple Regression Analysis for Number of Visits to Mental Health Providers for Children with Depression Disorder.....	40
Table 16. Summary of Multiple Regression Analysis for Number of Visits to Mental Health Providers for Children with Attention Deficit Disorder.....	41

Table 17. Summary of Multiple Regression Analysis for Number of Visits to Mental Health Providers for Children with Conduct Disorder	41
Table 18. Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for White, Hispanic and African American Children.....	42
Table 19. Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Depression Disorder	42
Table 20. Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Attention Deficit Disorder	43
Table 21. Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Conduct Disorder.....	43
Table 22. Summary of Multiple Regression Analysis for the Number of Hospital Episodes for All Children Who Had a Mental Health-Related Hospitalization Children	44
Table 23. Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Depression Disorder	44
Table 24. Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Attention Deficit Disorder.....	45
Table 25. Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Conduct Disorder.....	45
Table 26. Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization for All Children Who Had a Mental Health-Related Hospitalization Attention Deficit Disorder	46
Table 27. Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization for Children with Depression Disorder	47
Table 28. Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization for Children with Attention Deficit Disorder	48
Table 29. Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization for Children with Conduct Disorder	49
Table 30. Summary of Cox Regression Analysis for Total Number of Days to Second Hospitalization of All Children Who Had a Mental Health-Related Hospitalization	50

Table 31. Summary of Cox Regression Analysis for Total Number of Days to Second Hospitalization of Children with Depression Disorder.....	51
Table 32. Summary of Cox Regression Analysis for Total Number of Days to Second Hospitalization of Children with Attention Deficit Disorder	52
Table 33. Summary of Cox Regression Analysis for Total Number of Days to Second Hospitalization of Children with Conduct Disorder	53
Table 34. Overall Means and Ethnicity/Racial Group Comparisons for the Mail Survey Questions.....	54

Figures

Figure 1. Mean Number of Outpatient Services for Children with Different Mental Health diagnoses by Race/Ethnicity	61
Figure 2. Mean Number of Visits to Mental Health Providers for Children with Different Mental Health Diagnoses by Race/Ethnicity	62
Figure 3. Mean Number of Outpatient Hospital-Based Services for Children with Different Mental Health Diagnoses by Race/Ethnicity	63

Mental Health Services Patterns among Medicaid-Eligible Children: Disparities and Differences in Beliefs and Service Access

Executive Summary

Healthy People 2010 (U.S. Department of Health and Human Services [US DHHS], 2000) documented various health disparities in access to mental health services, quality of mental health care, and mental health service utilization for children in different racial/ethnic groups. The initiative defined health care disparities as differences among US populations according to gender, race or ethnicity, education, income, disability, geographic location, and sexual orientation.

Several studies have shown that there are different patterns of mental health service utilization for youth with different race/ethnicity (i.e. African American, Hispanic, white), as well as differences in clinical diagnosis. Although racial and ethnic disparities in mental health service utilization have been well documented, only a few studies have examined possible reasons for service underutilization. As a result, there is a need for enhanced knowledge about causes, correlates, and determinants of these disparities so that new policies can be developed to reduce them. Therefore, this study was intended to:

- (a) Determine how race/ethnicity factors affect patterns of mental health prevalence and service utilization among Medicaid-eligible children in Florida
- (b) Identify race/ethnicity factors associated with parents' beliefs and perceptions of mental health related issues and services
- (c) Link disparities in mental health status and service utilization with group differences in parental beliefs about mental health and service access.

The study design had two parts. The first part included multigroup comparisons based on longitudinal and cross-sectional analyses using mental health service indicators from the administrative data sets. The second component was a multigroup comparison of responses to the mail survey. Here, differences were examined in beliefs about mental health issues and service effectiveness as expressed by parents of Medicaid-eligible children from white, Hispanic, and African American families.

For the analyses of the administrative databases, participants included all children age 18 and younger who were Medicaid eligible in Florida during FY 2006-2007. Participants in the mail survey were randomly selected from the FY 2006-2007 Medicaid data sets.

Among the 666 respondents who completed the survey, 593 self-reported themselves within one of the three ethnic/racial groups, (African Americans, $n = 215$, whites, $n = 208$, Hispanic/Latino, $n = 170$), along with 76 “others.” Sixteen percent ($n = 97$) of the respondents answered the survey using the Spanish language form.

Administrative data. The following indicators of mental health service utilization were calculated from the administrative data sets:

- (a) Prevalence of attention deficit disorder, conduct disorder, and depression
- (b) disorder
- (c) Number of office-based outpatient mental health services
- (d) Number of visits to mental health providers
- (e) Number of hospital-based outpatient services
- (f) Number of mental health–related hospitalization episodes
- (g) Length of stay during the first hospitalization episode
- (h) Time before readmission to an inpatient treatment facility

Mail survey. The survey consisted of 99 items comprising nine content areas that have been associated with service utilization. Content areas included:

- (a) Respondent and child demographic and other information--7 items
- (b) Child’s mental health and treatment history--6 items
- (c) Beliefs about what would be effective treatment for their child
- (d) Initial pathways to service--15 items
- (e) Beliefs about the causes of their child’s emotional/behavioral difficulties--43 items
- (f) Cultural competence of providers--7 items
- (g) Barriers to service--9 items
- (h) Reasons not to seek mental health service--6 items
- (i) Negative experiences with mental health services and provider--6 items.

Results of analyses of the administrative data

Prevalence of Mental Health Disorders

- Among all Medicaid-eligible children, the three most prevalent disorders were found to be: attention deficit disorder, conduct disorder, and depression.
- Children who were either Hispanic or African American were significantly less likely to have received the diagnosis than their white counterparts with one exception; children who were African American had a higher prevalence of conduct disorder.

- Older children were more likely to have a disorder. Males were likely to receive an attention deficit or conduct disorder diagnosis, whereas females were more likely to be diagnosed with depression.

Outpatient Office-Based Mental Health Service Use

- Hispanic children received significantly fewer services compared to children who have other race-ethnicity when all eight mental health disorders were aggregated.
- In contrast, African American children received a significantly greater number of these services.
- African American children who were diagnosed with either conduct disorder or depression received significantly more outpatient office-based services compared to children who were white. However, both Hispanic and African American children diagnosed with attention deficit disorder received significantly more services compared to children who were white.
- African American children visited a mental health provider more often in all of the diagnostic categories. Meanwhile, Hispanic children had fewer overall visits to a mental health provider and had fewer visits for the two most prevalent disorders other than depression.
- Additionally, older children had more visits to a mental health provider and females had fewer visits than males.

Mental Health Service Use Provided by Institutional Facilities

- African American children received significantly less outpatient hospital-based services than children who were white when youth with all diagnoses were examined.
- Older children and females also received more outpatient hospital-based services compared to younger children and boys.
- Hispanic children diagnosed with conduct disorder had significantly fewer hospitalization episodes than children who were white.
- Hispanic children stayed significantly fewer days in the hospital than children who were white.
- African American children with a depression disorder were more likely to be discharged sooner than their white counterparts.

Results of Mail Survey

When compared to African Americans and whites, respondents who were Hispanic

- Had more foreign-born family members (i.e., child, mother, father)
- Reported fewer prescriptions written by mental health providers for their child's mental health difficulties
- Reported filling marginally fewer prescriptions from mental health providers for their child's mental health difficulties
- Were less likely to agree that *Take medication* was an effective treatment while *Meet with a family advisor/family friend* was endorsed as more effective
- Believed *The influence of American culture* was more likely a cause of their child's emotional/behavioral difficulties
- Agreed more that providers should *Provide an interpreter when translation was needed*
- Were more likely to believe that they experienced the following barriers to services: *Treatment was too lengthy*, and *Services were too far away*. Also, they agreed more that *Services were not available in preferred language*

When compared to Hispanics and whites, respondents who were African American

- Had fewer children's visits to a physician or pediatrician for physical health reasons
- Reported that church was more often their initial pathway to services
- Agreed less that *Conflict within your family* was a cause of their child's emotional/behavioral difficulties
- Agreed less that barriers such as *Services were too expensive* and *Long wait time for appointment* were encountered when receiving services

When compared to Hispanics and African Americans, respondents who were white

- Had significantly greater number of hospitalization episodes than Hispanic children
- Had significantly longer length of stays or more days in the hospital than Hispanic children
- Had a shorter readmission period to an inpatient treatment facility than Hispanic children
- Received significantly fewer hospital-based outpatient services compared to Hispanic children (particularly those with attention deficit disorder)

Finally, the following policy recommendations may reduce the differences in service utilization and prevalence among Hispanic and white children observed in this study. Specifically, developing an education campaign could increase awareness that medication is an efficacious procedure in treating a child's mental health difficulties. The primary audience for this campaign

would be Hispanic parents, particularly Spanish-speakers, although English-speaking parents also might benefit. This message should be delivered at both the doctor's office and schools, since they are the two most frequent reported pathways to receiving information about services for their child. Another important outcome of this study was that participants did not perceive significant problems existed in how services are organized and delivered. This suggests that observed differences among African American, Hispanic, and white children do not derive from the current service delivery system.

Background

Eliminating health disparities among U.S. populations was a major goal of the *Healthy People 2010* initiative (US DHHS, 2000). The initiative defined health care disparities as differences that occur by gender, race or ethnicity, education, income, disability, geographic location, and sexual orientation.

Healthy People 2010 (US DHHS, 2000) documented various health disparities for children in different racial and ethnic groups. Categories include access to mental health services, quality of mental health care, and the utilization of mental health services. For example, it was reported that minority children had less access to mental health services, were less likely to receive needed care, and often received poorer quality care during treatment (US DHHS, 1999).

Findings from several studies have shown that different patterns of mental health service utilization are found in youth depending on their race and ethnicity (e.g. African American, white), as well as differences in clinical diagnosis (Fabrega, Ulrich, & Mezzich, 1993; Kilgus, Pumariega, & Cuffee, 1995). Wu and colleagues (2001) reported that African American children did not receive adequate treatment for depression compared to their white counterparts. There also was consistent evidence that the mental health of Hispanic youth may be worse than that of youth from other groups (Roberts, Alegria, Roberts, & Chen, 2004). In addition, studies by Zwiilich (2000) and McCabe, Yeh, Hough, Landsverk, Hurlburt, and Culver (1999) have demonstrated that more than 80% of Hispanic adolescents with mental health issues did not receive care, and that they were underrepresented in public mental health services by a factor of approximately one third. Kataoka, Zhang, and Wells (2002) also have shown that the rate of unmet mental health needs was greater among Hispanic than white children, and that they also had greater odds of having no care and unmet need for their mental health problems. Based on a sample of 2,528 junior and high school students, Pumariega and colleagues (2004) found that Hispanic youth had significantly lower mental health service utilization rates than non-Hispanic whites. Among Hispanic Medicaid-eligible children in Florida, Greenbaum and colleagues (2006) found similar results compared to white children.

Although racial and ethnic disparities in mental health service utilization have been well documented, only a few studies have examined possible reasons for this trend, particularly among different racial and ethnic groups. For example, results of the study done by Wu and colleagues (2001) indicated that parental perception of a child's mental health service need was associated with receiving professional help.

Meanwhile, findings from the study by Owens and colleagues (2004) showed that among 116 families with children in the 7th grade, more than 35% reported having a significant barrier to receiving mental health services. These barriers included structural constraints, perceptions of mental health, and perceptions of services.

In a study by Pumariega Glover, Holzer, and Nguyen, (2004), results of multiple regression analyses indicated that socioeconomic status and family composition had a greater impact on utilization than any other nonclinical factor. This existed for all children as well as Hispanic children in particular. Moreover, their analysis showed that ethnicity may play a significant role in the utilization of child mental health services through its close association to socioeconomic status.

Parental beliefs about mental health and the need for services also can be an important factor. In a sample of 1,285 parent/youth pairs, Flisher et al. (1997) found that unmet mental health needs were significantly associated with parental opinions that the child would want to solve the problem unassisted, would refuse to attend mental health services, or would be hospitalized or taken away against the parent's will.

Finally, it was documented that stigma surrounding mental illness is a powerful barrier to receiving treatment. Furthermore, parents of children with mental illness feel shame and fear of discrimination about a condition that is as real and disabling as any other serious health condition (U.S. DHHS, 1999)

Enhanced knowledge about causes, correlates, and determinants of the phenomenon is needed to create policies that reduce treatment disparities. Identifying high-risk populations for disparities also is needed to develop targeted interventions toward this end. Therefore, the goals of the current study were:

- (a) To determine how race/ethnicity factors affect patterns of mental health prevalence and service utilization among Medicaid-eligible children in Florida
- (b) To identify race/ethnicity factors associated with parents' beliefs and perceptions of mental health related issues and services
- (c) To link disparities in mental health status and service utilization with group differences in parental beliefs about mental health and service access.

Study Issues/Hypotheses

The study design combined a quantitative analysis of data from the Florida Medicaid claims administrative datasets and a mailed questionnaire survey involving parents of Medicaid-eligible children. The administrative datasets contain information on children's mental health status and health related services paid by Medicaid, which was analyzed for ethnic/racial disparities. This part of the design replicated prior analyses of the Medicaid datasets that found children's mental health disparities.

The mail survey obtained information concerning access to services along with identifying parental beliefs and perceptions about issues related to mental health. Its purpose was to examine if the mental health disparities observed in the Medicaid datasets could be attributed to different ethnic/racial beliefs about mental health treatment, services, and differential access to services.

Specific Aims of the study were as follows:

AIM 1: To determine if there are disparities in any of seven indicators of mental health status and services from the Medicaid FY2006-2007 administrative datasets.

AIM 2: To determine if there are differences among Hispanic, African American, and white parents in their perceived access to Medicaid services and in their beliefs about mental health treatment and services.

AIM 3: To determine if the disparities in mental health status and services in the Medicaid datasets can be explained by ethnic/racial differences. These specifically include beliefs and perceptions about mental health and access to services as identified by the mail survey.

Research Questions

1. Are there significant differences in *prevalence of mental health disorders* by race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
2. Are there significant differences in the *number of office-based outpatient mental health services* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
3. Are there significant differences in the *number of visits to mental health providers* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?

4. Are there significant differences in the *number of hospital-based outpatient services* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
5. Are there significant differences in the *number of mental health-related hospitalization episodes* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
6. Are there significant differences in the *length of stay during the first hospitalization episode* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
7. Are there significant differences in the *time to readmission to an inpatient treatment facility* by children's race/ethnicity (i.e., African American, Hispanic, and white) among Medicaid eligible youth in Florida?
8. Are there significant differences in *perceived access and barriers to mental health services* by children's race/ethnicity (i.e., African American, Hispanic, and White) among parents of Medicaid eligible youth in Florida who have a mental health diagnosis?
9. Are there significant differences in *beliefs about mental health issues (e.g., causes, treatment, services)* by children's race/ethnicity (i.e., African American, Hispanic, and white) among parents of Medicaid eligible youth in Florida who have a mental health diagnosis?

Methods

Participants

The administrative database analysis involved all children between birth and age 18 in Florida who were Medicaid eligible during FY 2006-2007. Mail survey data was compiled from participants who were randomly selected from the FY 2006-2007 Medicaid data sets. The initial sample included 2,400 parents who were equally split among African American, white, and Hispanic parents. Each parent had children who were diagnosed with a mental health disorder and had received mental health services. Among the 2,400 participants who were mailed surveys, 678 were undeliverable or returned and 672 were completed for a 39% return rate. Among the 672 returned surveys, 666 were usable with six unusable surveys being less than 10% complete. Among the 666 respondents who completed the survey, 593 reported themselves within one of the three ethnic/racial groups, (African Americans, $n = 215$, whites, $n = 208$, Hispanic/Latino, $n = 170$). Another 76 listed themselves as "others" (missing ethnicity/race, $n = 14$, other ethnicity/race, $n = 62$). Sixteen percent ($n = 95$) of the respondents answered the survey using the Spanish language form.

Outcome Measures

Administrative data. The administrative data sets provided these indicators of mental health service utilization:

- (a) Prevalence of attention deficit disorder, conduct disorder, and depression disorder
- (b) Number of office-based outpatient mental health services
- (c) Number of visits to mental health providers
- (d) Number of hospital-based outpatient services
- (e) Number of mental health–related hospitalization episodes
- (f) Length of stay during the first hospitalization episode
- (g) Time to readmission to an inpatient treatment facility

Mail survey. The survey consisted of 99 items comprising nine content areas that have been associated with service utilization. Content areas included:

- (a) Respondent and child demographic and other information--7 items
- (b) Child's mental health and treatment history--6 items
- (c) Beliefs about what would be effective treatment for their child
- (d) Initial pathways to service--15 items
- (e) Beliefs about the causes of their child's emotional/behavioral difficulties--43 items
- (f) Cultural competence of providers--7 items
- (g) Barriers to service--9 items
- (h) Reasons not to seek mental health service--6 items
- (i) Negative experiences with mental health services and provider--6 items

Table 34 displays a listing of the survey questions. Participants could complete either an English or a Spanish version of the survey based on their preference.

Survey items concerning parental beliefs about the causes of their child's emotional/behavioral difficulties were adapted from the Belief About Causes scale--Parent version (Yeh & Hough, 2005). These questions included 43 items covering 10 different factors or types of causes:

- (a) Physical (8 items)
- (b) Personality/emotional struggles (4 items)
- (c) Getting along with others (3 items)
- (d) Trauma (2 items)
- (e) Family/parenting issues (6 items)
- (f) Child's friends (3 items)
- (g) American culture (3 items)
- (h) Discrimination/prejudice (1 item)
- (i) Economic problems (3 items)
- (j) Spiritual/cosmic/religious (7 items)
- (k) Imbalance/disharmony with nature (3 items)

The multiple items queried specific causes associated with each factor. Survey items concerning structural barriers to services, reasons not to seek services, and negative experiences with services were adapted from the Services Assessment for Children and Adolescent Parent Report (SACA, Horwitz et al., 2001). All items were rated on a 5-point scale with 1 indicating *strong agreement* and 5 indicating *strong disagreement*.

Study Design. The study design had two parts. The first part included multi-group comparisons based on longitudinal and cross-sectional analyses. Mental health service indicators from the administrative data sets were used. Differences in mental health service utilization patterns among Medicaid-eligible children from white, Hispanic, and African American families were examined. The second component was a multigroup comparison of responses to the mail survey. Here, differences were examined in parental beliefs about mental health issues and service effectiveness among Medicaid-eligible children from white, Hispanic, and African American families.

Analytic Approach. Several analytical techniques were used to address the research questions of the project. Research question 1 utilized logistic regression to determine the prevalence of the various mental health disorders and to examine racial and ethnic differences in the prevalence of particular mental health disorders, while also controlling for gender and age. Multiple regression analyses for either continuous or count dependent variables were used in research questions 2-5. Cox regression (i.e., proportional hazards modeling) was used to examine the time-to-event indicators (i.e. length of stay during the first hospitalization episode, time to re-hospitalization) in research questions 6 and 7 (Cox, 1972; Muthen & Muthen, 1998-2006; Singer & Willett, 2003).

For research questions 8 and 9, the survey question responses were tested for significant differences among the three ethnicity/ racial groups. Depending on the level of measurement of the particular survey question (e.g., categorical [*yes/no*] vs. continuous [e.g., 5-point Likert scale, with 1 = *strongly agree*, 5 = *strongly disagree*]), either a chi-square test for independent groups or a one-way ANOVA was used to test for significant differences.

Because of the large number of statistical tests conducted, the conventional alpha level for the omnibus test was adjusted to .001 to reduce the incidence of chance results caused by multiple testing. When an omnibus test indicated significant differences, the alpha level for the follow-up comparisons was set at the conventional .05 level. Table 34 displays the survey questions.

Sampling Procedures

For the administrative data analyses, the entire cohort of FY 2006-2007 Medicaid eligible children was used. For the mail survey, a stratified random sample of 593 parents was obtained from the Medicaid dataset. Stratification was based on race/ethnicity so that there was an approximately equal number of Hispanic, African American, and white parent respondents. All respondent had a child with a mental health diagnosis. The survey was translated into Spanish and a Spanish-language version was included. Initial contact with respondents was by mail, with systematic reminders to complete and return the survey.

Specifically, the mail survey used a highly systematic and structured approach to survey design and follow-up similar to those recommended by Dillman (1978) and Salant & Dillman (1994). In total, five separate mailings were conducted. The first mailing consisted of a pre-notification postcard informing participants that we are conducting a study examining children's mental health care service needs, and that they will receive a questionnaire in the mail in about a week.

One week later, a second mailing was conducted. This mailing included a personalized cover letter and questionnaire, an explanation of the purpose of the study, a notice that respondents will be paid \$10.00 for returning a completed questionnaire, and information about the days and hours of operation of the toll-free telephone number. A preaddressed stamped return envelope also was included in the mailing.

After another week, a postcard reminder was sent to each person who had not yet responded. This reminder emphasized the importance of the study and again included information on the toll-free telephone number participants can call. Two weeks after the postcard reminder was mailed, a fourth mailing containing a cover letter, questionnaire, and return envelope was mailed to each non-respondent.

Finally, four weeks later, a fifth mailing was sent via certified mail four weeks later to individuals who still had not responded. As with the first and fourth mailing, enrollees received a personalized cover letter, questionnaire, and a preaddressed, stamped return envelope. As recommended by Dillman (1978), first class postage was used on both the outgoing and return envelopes of each mailing and address correction was requested from the post office so that mailing lists could be updated. These mailing procedures were

based on the findings of a feasibility study that assessed the validity of using mail survey procedures with Medicaid-enrolled populations. Findings from this feasibility study have been summarized in Boothroyd and Shern (1998).

Results/Discussion

Prevalence

Prevalence of mental health disorders among children. The eight most prevalent childhood disorders as identified by the Center for Mental Health Services for their relative frequency of occurrence among Medicaid eligible children were examined. Included disorders were the following: (a) attention deficit, (b) conduct, (c) depression including major depression and dysthymic disorders (d) bipolar, (e) post traumatic stress, (f) substance abuse, (g) schizophrenia, and (h) eating. Table 1 lists the ICD-9 diagnostic codes that were included in each of the disorders.

Among all Medicaid-eligible children, the three most prevalent disorders were found to be: attention deficit (3.90% had the disorder), conduct (0.77%), and depression (0.26%). Table 2 lists the eight disorders in descending prevalence. A separate examination of prevalence for each racial/ethnic group separately (see Tables 3 to 8) revealed a consistent trend: the same three disorders that were most prevalent overall were also the three most prevalent and in the same rank order of prevalence without regard to race or ethnicity. The only exception to this trend was among children classified as “Other race/ethnicity.” For these children, bipolar disorder was third most prevalent (0.37) with depression disorder being the fourth most prevalent (0.28).

Differences in prevalence for the three most prevalent disorders. Logistic regression was used to examine the prevalence of each disorder for significant differences among racial/ethnic groups. The differences were only examined for African Americans, Hispanics and whites (the reference group) because the frequencies for the other ethnic groups were too small for meaningful statistical analyses. Additional covariates employed as control variables in these analyses were gender and age.

Results indicated that each of the three most prevalent disorders had a similar pattern of racial/ethnic differences. Children who were either Hispanic or African American were significantly less likely to have received the diagnosis than their white counterparts with one exception; a higher prevalence of conduct disorder among African American children. More specifically, children who were either Hispanic or African American were 2.20 or 1.82 times less likely to receive an attention deficit disorder diagnosis (the most prevalent) than children who were white. Similarly, children who were either Hispanic or African American were 1.30 or 1.52 times, respectively, less likely to be diagnosed with depression than their white counterparts. For

conduct disorder (the second most prevalent), Hispanic children were 1.25 times less likely and African American children were 1.20 times more likely to receive the diagnosis than white children.

In all of these analyses, age and gender were significant predictors, with older children being more likely to have the diagnosis (Odds Ratios (OR) = 1.15, 1.40, and 1.16, respectively) for each additional year of age. Males were 2.55 and 2.32 times, respectively, more likely to receive an attention deficit and conduct disorder diagnosis. Meanwhile, females were 1.39 times more likely than males to receive a diagnosis of depression (see Tables 7 to 9).

Outpatient Office-Based Mental Health Service Use

Number of outpatient services. The mean number of outpatient services per year received by children for all eight of the mental health disorders ($N = 643,340$) averaged 25.56. The mean numbers for children by race/ethnicity were white (23.16), African American (33.57), and Hispanic (20.87), respectively (see Figure 1). For each of the two most prevalent disorders, the average number of services received was considerably greater, averaging 46.99 for conduct and 36.08 for depression. However, the average number of services received for children with attention deficit disorder was lower (17.94). Figure 1 displays the mean number of outpatient services received for the disorder types by race/ethnicity.

Separate multiple regression analyses were conducted for all children with any mental health disorder, and for children with each of the three most prevalent mental health disorders. These analyses revealed significant differences in the number of services received by children who were African American or Hispanic when compared to children who were white. Hispanic children received significantly fewer services when all eight mental health disorders were aggregated. In contrast, African American children received a significantly greater number of services. Specifically, African American children who were diagnosed with either conduct disorder or depression received significantly more outpatient office-based services compared to children who were white. When children with attention deficit disorder were examined, Hispanic and African American children each received significantly more services compared to children who were white (see Table 13).

Number of visits to mental health providers. When only outpatient visits to a mental health provider were considered, the mean number of visits for children with any of the selected mental health disorders was 19.57. Figure 2 displays the means for white, African American, and Hispanic children.

When visits to a mental health provider were analyzed for each of the three most prevalent disorders, the means were considerably greater than they were for all disorders except for attention deficit disorder. The overall mean for conduct disorder was 48.68 (see Figure 2); and 28.86 for depression. However, it was only 12.19 for attention deficit disorder (see Figure 2).

The multiple regression analyses indicated that African American children visited a mental health provider more frequently than white children in all of the diagnostic categories. In general, an opposite pattern was observed for Hispanic children. They made fewer visits to a mental health provider for the eight mental health disorders and fewer visits for the two most prevalent disorders except for depression. Additionally, for all groups, older children had more visits to a mental health provider and females had fewer visits than males (see Tables 14 to 17).

Mental Health Service Use Provided by Institutional Facilities

Number of hospital-based outpatient services. The number of hospital-based outpatient service episodes for children with any of the eight mental health disorders averaged 7.04 per year. Figure 3 graphically displays the mean number of hospital-based outpatient services by type of disorder and race/ethnicity.

Multiple regression analyses were conducted to examine whether significant differences existed in the total number of outpatient hospital-based services received during the year based on race/ethnicity. When youth with all diagnoses were examined ($N = 6,859$), African American children received significantly fewer outpatient hospital-based services than children who were white. However, no significant differences were found between Hispanic and white children. Older children and females also received more outpatient hospital-based services compared to younger children and boys (see Tables 18 – 21).

Similarly, among children with attention deficit disorder, African American children were found to have significantly fewer hospital-based outpatient services than their white counterparts. No significant differences were found between Hispanic and white children, nor were any differences found among the race/ethnicity groups for children when children with depression or conduct disorder were considered. Females and older children with depression also received more outpatient hospital-based services compared to younger children and males.

Number of hospital episodes. During FY 2006-2007, 3,682 children were admitted into a hospital-based treatment facility with a diagnosis of at least one of the eight mental health disorders examined in this study. These children averaged 1.5 hospital episodes per year. Figure 4 shows the means for children who were white, African American, and Hispanic, respectively. When the three most prevalent disorders were examined, hospitalization episodes averaged 1.51 for attention deficit, 1.56 for conduct, and 1.43 for depression. Figure 4 graphically shows the mean number of hospitalization episodes by disorder type and race/ethnicity.

Multiple regression analyses were conducted separately for each of the three disorders and overall for all eight disorders. These analyses indicated that only Hispanic children had significantly fewer hospitalization episodes for conduct disorder than children who were white. In all of these analyses, there were no significant differences between white and African American children. Age and gender were only significant predictors for attention deficit, with older children and females having greater admissions. Tables 22 to 25 summarize these analyses.

Utilization of hospital-based services was further examined by measuring the median length of stay in the hospital during a child's first hospitalization, and the number of days that elapsed between the end of the first hospitalization and their second hospitalization episode. Because inpatient treatment is considered more restrictive and more expensive compared to outpatient services, a shorter length of stay is associated with more positive outcomes. In contrast, fewer days between hospitalization episodes reflect undesirable outcomes for children.

Number of hospital days for first hospitalization. For the eight mental health disorders ($N = 3,682$), the mean number of hospital days for a first hospitalization was 21. Broken down by race/ethnicity and disorder, the medians ranged between 5 and 26 days per hospitalization. Figure 5 graphically shows the mean number of days for the first hospitalization by disorder type and race/ethnicity.

Cox regression analyses were used to examine if the length of stay for the first hospitalization episode differed significantly by racial/ethnic group membership while controlling for age and gender differences. These analyses were done separately for the aggregated eight mental health disorders, and for each of the three most prevalent disorders. Results indicated that children who were Hispanic had significantly shorter stays or fewer days in the hospital than children who were white. When the eight mental health disorders were aggregated, Hispanic children were 1.11 times more likely to be discharged sooner than white children (see Tables 26 to 30).

When conduct disorder, attention deficit disorder, and depression were examined separately, African American children with a depression disorder were more likely to be discharged sooner than white children. Meanwhile, younger children stayed significantly longer. Gender was only significant for depression disorder, with females having shorter stays than males.

Number of days till second hospitalization. Among white, African American, and Hispanic children who received a second hospitalization ($N = 2,754$), the mean number of days until a second hospitalization was 21 for all eight mental health disorders. Figure 6 shows the mean number of days until the second hospitalization by disorder type and race/ethnicity. Results of the Cox regression analyses indicated a consistent pattern of statistical nonsignificance

by race/ethnicity, age, or gender (see Table 30 to 33).

Mail Survey

Demographics and respondent information

The three ethnic/racial groups were compared by age, grade, and gender of the child diagnosed with a mental health disorder. Additionally, the country of birth (US/Foreign) for the child, mother, and father was queried. There were no significant differences among groups for child's gender (68% were males) or school grade ($M = 6.09$, $SD = 3.71$). Meanwhile, Hispanic children, mothers, and fathers were significantly more likely to be foreign-born than the other ethnicity/racial groups. More Hispanic children were foreign-born (14%) vs. white (1%) and African American (0%), $p < .001$. The percentage for foreign-born Hispanic mothers was 60% vs. white (3%) and African American (3%), $p < .001$. A majority (60%) of Hispanic fathers were also foreign-born vs. white, (5%) and African American (8%), $p < .001$ (See Table 34).

Child's treatment history

Respondents were asked:

- (a) At what age they first noticed their child's emotional/behavioral difficulties
- (b) The seriousness of their child's difficulties before they sought help
- (c) The age at which their child first received treatment
- (d) Whether the physician or pediatrician wrote a prescription for medication for the child's emotional /behavioral difficulties
- (e) Whether the prescription was filled.

Additional questions were asked to determine the treatment history for physical health problems (i.e., the number of child visits to a physician for a physical health problem during the last year).

Significant differences were found among the three groups concerning whether the physician or pediatrician prescribed medication for the child's emotional /behavioral difficulties. Fewer prescriptions were written for children who were Hispanic ($M = 67\%$) vs. African American ($M = 80\%$) and white ($M = 82\%$), $p = .001$. There also was a nonsignificant trend for fewer prescriptions being filled for Hispanic children ($M = 91\%$) vs. African American ($M = 99\%$) and white ($M = 97\%$), $p = .002$. There were no significant differences among the three ethnicity/racial groups on the remaining questions of mental health treatment history: *age first noticed*, $M = 5.08$, $SD = 2.92$; *age first received treatment*, $M = 6.49$, $SD = 2.98$; *seriousness of child's difficulties before seeking help*, $M = 3.29$, $SD = 1.15$. With regard to *physical*

health visits, African American children had significantly fewer visits than children who were either white or Hispanic, $p < .001$, $M = 4.11$ ($SD = 3.38$) vs. 5.60 ($SD = 4.22$) and 5.27 ($SD = 3.96$), respectively (See Table 34).

Beliefs about what would be effective treatment

Seven potential treatments were rated for effectiveness on a 5-point scale with a rating of 1 being best. The treatments included *Take medication*, *Meeting with mental health professionals*, *Meeting with medical doctor*, *Meeting with priest/spiritual advisor*, *Meeting with acupuncturist/chiropractor/nutritionist*, *Meeting with family advisor/family friend*, and *Stronger enforcement of family rules*. Among the seven treatments, *Taking medication* was rated as the most effective option ($M = 2.03$, $SD = 1.14$) and *Meeting with an acupuncturist/chiropractor/nutritionist* was rated as least effective ($M = 3.31$, $SD = 1.21$).

Among the three ethnicity/racial groups, Hispanic respondents rated *Taking medication* significantly lower in effectiveness, $p < .001$, $M = 2.39$, ($SD = 1.26$) vs. white $M = 1.84$, ($SD = 1.01$) and African American $M = 1.95$, ($SD = 1.11$). On the other hand, Hispanic respondents rated *Meeting with a family advisor/family friend* significantly more effective ($M = 2.27$, $SD = 1.11$) than whites ($M = 3.01$, $SD = 1.14$) and African Americans ($M = 2.65$, $SD = 1.17$), $p < .001$ (See Table 34).

Pathways to services

Respondents identified where they first received information about available services for their child's emotional/behavioral difficulties from among 14 listed sources of information (see Table 34 for the list of sources). The *Physician's Office* was most frequent (52%) followed by *School* (47%). At a lower level of endorsement were *Psychiatrist's/Psychologist's Office* (21%), *Social Worker or Counselor's Office* (19%), *Family* (19%), *Friend* (15%), and *DCF* (15%). The most infrequent pathways to services were *Community Clinic/Community Mental Health Center* (8%), *Church* (7%), *In-Home Therapist* (9%), *Support Group* (4%), *Hospital/Emergency room*, (2%), *Community Recreation Center* (1%). Eleven percent reported their initial pathway as *Other*.

In comparing sources of initial information about mental health services for their child, African Americans were significantly more likely to have received information from a Church (12%) than were white (3%) or Hispanic parents (5%) respectively, $p < .001$.

Parents reported that there was approximately a two-week period between the time they were informed about services and when their child received them. There were no significant differences in ratings by ethnicity/racial groups (See Table 34).

Beliefs about causes of mental health difficulties

Physical causes. Among the eight items measuring the physical cause factor, only *Heredity or genetics* was thought to contribute to their child's mental health difficulties based on its overall mean rating ($M = 2.35$, $SD = 1.58$). White parents agreed that *Heredity or genetics* was a cause significantly more than did Hispanic and African American parents, $p < .001$, $M = 1.97$ ($SD = 1.13$), versus 2.52 ($SD = 1.39$) and 2.34, ($SD = 1.43$) respectively. The other seven items had overall mean ratings above the midpoint on the 5-point scale, which indicated disagreement that the specified item was a cause. Means ranged from 3.40 (*A lack of imbalance of chemicals, proper vitamins, hormones, or other nutritional elements*) to 4.22 (*Something [not alcohol/drugs] eaten by your child*). None of the other physical cause factors showed significantly ($p < .001$) different responses by ethnicity/racial group (See Table 34).

Personality/emotional struggles. There was overall agreement that the four items within this factor contributed to their child's mental health difficulty. Means ranged from 2.51, $SD = 1.30$ (*Emotional struggles or inner conflicts*) to 2.88, $SD = 1.25$ (*Child's character or personality*). Analysis by ethnicity/racial group indicated no significant differences (See Table 34).

Getting along with others. Among the three items for this factor, only one (*Problems with social skills*) had a mean score indicating parental agreement that the item was a cause ($M = 2.98$, $SD = 1.31$). When ethnicity/race was considered, none of the items was significantly different (See Table 34).

Trauma. Mean ratings indicated mild disagreement that the two items associated with trauma were a cause of the child's emotional/behavioral difficulties, *Trauma suffered by the child*, $M = 3.49$, $SD = 1.56$ and *Trauma suffered by the family*, $M = 3.53$, $SD = 1.39$. Neither of these items differed significantly by ethnicity/racial group (See Table 34).

Family/parenting issues. Among the six items associated with the Family/parenting factor, only *Absence of, or being separated from, one or both parents* had a mean rating indicating agreement that this item contributed to their child's mental health problems $M = 2.78$, $SD = 1.49$. The remaining means indicated that parents did not believe the other five items were causes, though there were differences by race and ethnicity. For instance, white parents significantly agreed more than African American or Hispanic parents that *Drug, alcohol, or mental health problem of a parent*, ($M = 3.00$, $SD = 1.62$ vs. $M = 3.45$, $SD = 1.49$ and $M = 3.54$, $SD = 1.50$), $p < .001$; and *Something related to parenting skills*, ($M = 3.17$, $SD = 1.43$ vs. $M = 3.60$, $SD = 1.33$ and $M = 3.73$, $SD = 1.36$), $p < .001$ were causes. Meanwhile, African American parents disagreed significantly more than white and Hispanic parents that *Conflict within your family* was a cause ($M = 3.46$, $SD = 1.39$ versus $M = 2.92$, $SD = 1.43$ and $M = 3.03$, $SD = 3.03$), $p < .001$ (See Table 34).

Friends. The three items associated with the Friends factor had overall mean ratings indicating mild to strong disagreement that they were causes (See Table 34). The race/ethnicity comparisons indicated that one item, *Child not having enough friends, being teased, or being bullied*, was more strongly endorsed as a cause by white parents than by Hispanic or African American parents ($M = 2.97$, $SD = 1.40$ versus $M = 3.42$, $SD = 1.37$ and $M = 3.53$, $SD = 1.30$) respectively (See Table 34).

American culture. The three items associated with American culture had overall means ranging from 3.72 to 4.24, thus indicating general disagreement that they were causes of the child's emotional/behavioral difficulties. For one of the three items, *Influence of American culture, which is different from his/her family's culture*, Hispanic parents had significantly lower disagreement scores than did African American parents, $M = 3.77$, $SD = 1.25$ versus $M = 4.23$, $SD = 0.93$, respectively. Meanwhile, the scores of white parents did not differ significantly from those of Hispanic or African American parents, ($M = 4.05$, $SD = 1.04$ [See Table 34]).

Discrimination/Prejudice. The overall mean rating on this single item factor (*Racial or ethnic discrimination or prejudice*) indicted general disagreement that this factor was a cause ($M = 4.03$, $SD = 1.10$). There were no significant differences in ratings by ethnicity/racial groups (See Table 34).

Economic problems. Overall mean ratings of the three items for this factor ranged from 3.43 (*Not having enough money for extra things your child wants*) to 3.99 (*Not having the necessary books/school materials at home to help your child succeed in school*) indicating disagreement that these items were causes. There were no significant differences in ratings by ethnicity/racial groups (See Table 34).

Spiritual/cosmic/religious. All of the overall means for these seven items, which ranged from 4.05 (*Not having enough faith, spirituality, or involvement with religion*) to 4.46 (*Spirit possession, the influence of spirits or ghosts, someone casting a spell, magic, or witchcraft*), indicated disagreement that these items were causes. There were no significant differences in ratings by ethnicity/racial groups (See Table 34).

Imbalance/disharmony with nature. The overall means for these three items ranged from 4.24 (*Disruption of child's energy or vitality flow*) to 4.46 (*An arrangement of physical elements or objects [e.g., in the home] that is not in line with nature or natural forces*) indicating strong disagreement that any of these items were causes. There were no significant differences in ratings by ethnicity/racial groups. (See Table 34).

Cultural competence of providers

Seven items on the survey assessed if parents agreed that mental health providers acted in a culturally competent manner when treating their child's emotional/behavioral difficulties. The overall means for these items ranged

from 1.92 (*Talk to you using words you understood?*) to 2.82 (*Ask questions about your family's customs and traditions that might affect your child's treatment?*), thus indicating agreement that providers exhibited cultural competence. When analyzed for ethnicity/racial group differences, Hispanic parents agreed more with the item *Provide an interpreter when translation was needed?* than did African American or white parents ($M = 2.26, SD = 1.05$ versus $M = 2.88, SD = 1.30$ and $M = 2.91, SD = 1.11$), respectively (See Table 34).

Barriers to services

Nine survey questions queried the extent that parents agreed or disagreed about whether they encountered barriers or complications in getting services for their child. The overall means for the nine items ranged from 3.41 (*Long wait time for appointment*) to 4.20 (*Services were not available in preferred language*), which placed these items in the neutral/disagree to disagree/strongly disagree range of the scale. Ethnicity/racial group comparisons indicated that Hispanic parents were more likely to agree about three items (*Long wait time for appointment*, *Services were too far away*, *Services were not available in preferred language*), than their white or African American counterparts (see Table 34). For two items (*Services were too expensive*, *Services were too far away*), African American parents indicated greater disagreement than Hispanic or white parents (See Table 34).

Reasons not to seek mental health services

The overall means for the six items that asked about why parents might not seek services ranged from 3.36 (*Did not think problem was that serious*) to 4.11 (*Afraid of what physician would say*). These figures are in the neutral/disagree to disagree/strongly disagree part of the scale, and there were no significant differences in ratings by ethnicity/racial groups (See Table 34).

Negative experiences with mental health services and providers

The overall means for the six items that asked about negative experiences ranged from 3.62 (*Had negative experience with providers*) to 3.83 (*Thought treatments would not help my child*). Responses were in the neutral/disagree part of the scale, and there were no significant differences based on ethnicity or race (See Table 34).

Summary of the mail survey results

Results are summarized by the various areas of inquiry represented on the survey.

- Six of the seven treatments were rated effective overall, with *Take medication* considered most effective. The seventh treatment, *Meet with an acupuncturist/chiropractor/nutritionist* was rated as neutral to ineffective.

- Two of the fourteen pathways to services (i.e., where parents initially found information about receiving mental health services for their children) predominated. Slightly over half the respondents (52%) indicated a physician's office was their initial source, while slightly under half of the respondents (47%) first obtained this information at a school. None of the other pathways (i.e., Psychologist/Psychiatrist office) was endorsed by more than 21%.
- Parents agreed with only 7 of the 43 possible causes for their child's mental health difficulties according to mean ratings on the 5-point scale that gauges their overall response. The highest rated cause was *Heredity or genetics*. Also, all four explanations associated with the Personality/emotional struggles factor (i.e., *Child's character or personality*, *Child's lack of self-discipline, self-control, or difficulties with anger*, *Emotional struggles or inner conflicts*, and *Child's difficulties going through a certain age or developmental stage in life*) were endorsed as causes. Additional causes included *Child's problems with social skills* from the Getting along with others factor and *Absence of, or being separated from, one or both parents* from the Family/parenting factor.
- The overall means for the seven items on cultural competence all indicated agreement that providers were delivering culturally competent services.
- All of the other items that measured *Barriers to services*, *Reasons not to seek mental health services*, and *Negative experiences with mental health services* and providers had overall means that indicated parental disagreement concerning whether these items reflected their service experiences.
- Ethnicity/racial group differences
 - When compared to African Americans and whites, respondents who were Hispanic:
 - Had more foreign-born family members (i.e., child, mother, father)
 - Reported fewer prescriptions written by mental health providers for their child's mental health difficulties
 - Reported a marginal trend for filling fewer prescriptions for their child's mental health difficulties written by mental health providers'
 - Agreed less than the other ethnicity/racial groups that *Take medication* was an effective treatment while *Meet with a family advisor/family friend* was endorsed as more effective

- Believed *The influence of American culture* was more likely a cause of their child's emotional/behavioral difficulties than the other ethnicity/racial groups
 - Agreed more that providers *Provide an interpreter when translation was needed*
 - Agreed more than the other ethnicity/racial groups that the following barriers to services were experienced, *Treatment was too lengthy*, and *Services were too far away*. Also, they agreed more that *Services were not available in preferred language*
- When compared to Hispanics and whites, respondents who were African-American:
 - Had fewer children's visits to a physician or pediatrician for physical health reasons than the other ethnicity/racial groups
 - Reported that church was more often their initial pathway to services than the other ethnicity/racial groups
 - Agreed less that *Conflict within your family* was a cause of their child's emotional/behavioral difficulties
 - Agreed less that *Services were too expensive* and *Long wait time for appointment* were barriers encountered when receiving services
- When compared to Hispanics and African Americans, respondents who were white:
 - Agreed more than the other ethnicity/racial groups that the following were causes of their child's emotional/behavioral difficulties: *Heredity or genetics, Drug, alcohol, or mental health problem of the parent, Something related to parenting skills, Child not having enough friends, being teased, or being bullied*

Conclusions

Ethnicity/racial group comparisons of factors associated with service utilization and prevalence. This study examined differences in mental health service utilization and prevalence of DSM-IV mental health disorders among different ethnicity/racial groups of Medicaid eligible youth that had a mental health diagnosis. Measures of service use and prevalence were obtained from the FY 2006-2007 Medicaid administrative data sets. These analyses indicated that prevalence of the three most prevalent children's disorders (i.e., attention deficit, conduct disorder, and depression) was significantly lower for children who were Hispanic or African American compared to children who were white. The only exception was a higher prevalence among African American children who were diagnosed with conduct disorder.

Additionally, for four of the seven selected service use indicators (i.e., number of outpatient office-based mental health services, number of visits to a mental health provider, number of hospitalization days for the first hospitalization, and number of hospital episodes), Hispanic children had significantly lower rates of utilization than white children. These results provide some support for the idea that Medicaid-eligible minority children, particularly Hispanic children, were assessed with lower prevalence of the most common children's mental health disorders and received fewer mental health services than did their white counterparts.

Results for African American children were mixed. They received a greater number of mental health office-based outpatient visits and visits to a mental health provider than did white children, but received fewer hospital-based mental health outpatient services. Meanwhile, African American children with depression received fewer hospitalization days for the first hospitalization than white children did.

Mail survey. The second part of the study, a mail survey, was conducted to explore if there were ethnic or racial determinants for any of eight different factors believed to influence service utilization. Particular attention was paid to examining whether beliefs about causes of mental health difficulties differed by ethnicity/racial group. The purpose was to see if these might be mechanisms that could result in service utilization and prevalence differences according to ethnicity or race. These factors were the following:

- (a) Demographics and child treatment history
- (b) Initial pathways to services
- (c) Beliefs about treatment effectiveness
- (d) Beliefs about causes of mental health difficulties
- (e) Culturally competent services
- (f) Stigma and other reasons for not seeking services
- (g) Structural barriers to services
- (h) Negative experiences with providers

Survey results indicated broad agreement among African American, Hispanic, and white parents that six of the seven treatments were effective. The exception was *Visit with an acupuncturist/chiropractor/nutritionist* was effective. The two most likely initial pathways to services for all groups were the physician's office (52% endorsed) and the school (47% endorsed). Among the 43 selected potential causes of mental health difficulties, only seven were generally thought to be causes. *Heredity or genetics* was the most agreed upon cause. This was followed by (in descending order of agreement): *Emotional struggles or inner conflicts*; *Child's lack of self-discipline, self-control, or difficulties with anger*; *Child's difficulties going through a certain age or developmental stage in life*; *Absence of, or being separated from, one or both parents*; *Child's character or personality*; and *Child's problems with social skills*. Among the other seven factors believed to influence service utilization, there was overall agreement that services were culturally competent. Participants generally disagreed that *Barriers to services*, *Reasons not to seek mental health services*, and *Negative experiences with providers* were present in their child's treatment. Hence, parents indicated that they generally experienced high levels of cultural competence, as well as few negative experiences with providers, structural barriers to services, and reasons not to seek services.

Ethnicity/racial group comparisons of factors associated with service use. Findings from the mail survey indicated that compared to white families, Hispanic parents and children (a) were more likely to be foreign-born, (b) more likely to speak a language other than English, (c) agreed more that American culture is a cause of their child's mental health difficulties, (d) were less likely to have received a prescription for their child's difficulties, (e) tended to be more likely not to fill these prescriptions, and (f) were less likely to agree that medication is an effective treatment. Within the Structural barrier to services factor, parents who were Hispanic agreed more that *treatment was too lengthy*.

Compared to parents who were Hispanic or African American, parents of white children were more likely to agree that *Heredity or genetics* was a cause of mental health problems, though it was the most agreed upon cause overall. Additionally, they agreed more that their child's mental health problems were caused by *Drug, alcohol, or mental health problem of the parent*; *Something related to parenting skill*; or *Child not having enough friends, being teased, or being bullied*. For African American parents, the church was a more likely initial pathway to services and that *Conflict within your family* was less likely a cause of mental health difficulties. Additionally, they were less likely to agree that *Services were too expensive* and *Long wait time for appointment* were barriers to services compared to white and Hispanic parents.

A central question of the current study was whether ethnicity/racial group differences in the eight factors associated with service use could help explain the observed differences by these groups in service utilization and prevalence among Medicaid-eligible children with a mental health diagnosis. Responses from Hispanic parents suggest that lower utilization levels were influenced possibly by the following factors:

- (a) Having a larger proportion of foreign-born
- (b) Higher frequency of a preferred language other than English
- (c) Higher agreement that the influence of American culture differences are a cause of their child's difficulties
- (d) Less belief in medication as effective
- (e) Receiving fewer prescriptions for medication
- (f) Having a higher rate of not filling prescribed medications

Additionally, findings suggested that their more pronounced belief in a structural barrier related to treatment length might be associated with lower service utilization. However, these conclusions are tempered by the fact that this study only establishes associative links between these factors and service utilization. No direct mediational test of the influence of specific factors with service utilization was feasible. Future research should test whether significant mediational pathways exist between the service factors and observed service use and can thereby serve as mediators of lower service utilization for minority children. Only in this way can the factors be empirically identified as the active mechanism(s) by which service use varies among ethnic/racial groups.

The mail survey also indicated a high level of disagreement among respondents about the existence of structural barriers to mental health services, the cultural competence of services, a negative perception of services received, stigma, and other reasons not to seek services. The apparent absence of these factors as contributing to differences in service utilization among all ethnicity and racial groups is an important outcome of this study. It suggests that this disparity does not significantly result from the organization and delivery of mental health services. Instead, other factors that are not specified in the present study may be more likely candidates for explaining these differences.

Finally, in considering how the observed differences in service utilization and prevalence between Hispanic, African American, and white children might be reduced as a result of this study, one policy recommendation would be developing an education campaign to increase awareness that medication is an effective treatment of mental health difficulties in children.

The primary audience for this campaign would be Hispanic parents, with special attention paid to those who speak Spanish. However, English-speaking parents also might benefit. The best locations for delivering this message would be at both the doctor's office and schools, the two most frequently reported pathways for parents to receive information about services for their child.

References

- Boothroyd, R. A., & Shern, D. L. (1998, January). *Assessing the feasibility of using mail survey methodology with Medicaid enrollees: A summary of a pilot study for the member survey*. Tampa, FL: University of South Florida, The Louis de la Parte Florida Mental Health Institute.
- Dillman, D. A. (1978). *Mail and telephone surveys: The total design method*. New York: John Wiley & Sons, Inc.
- Fabrega, H., Ulrich, R., & Mezzich, J. E. (1993). Do Caucasian and Black Adolescents differ at psychiatric intake? *Journal of the American Academy of Child and Adolescent Psychiatry*, 32, 407-413.
- Flisher, A. J., Kramer, R.A., Grosser, R. C., Alegria, M., Bird, H. R., Bourdon, K. H., Goodman, S. H., Greenwald, S., Horwitz, S. M., Moore, R. E., Narrow, W. E., & Hoven, C. W. (1997). Correlates of unmet need for mental health services by children and adolescents. *Psychological Medicine*, 27, 1145-1154.
- Greenbaum P. E., Yampolskaya, S., Wang, W., & Hernandez, M. (2006). *Disparities and patterns of behavioral health service utilization among Medicaid eligible children in Florida*. Department of Child and Family Studies. Louis de la Parte Florida Mental Health Institute, University of South Florida.
- Horwitz S.M., Hoagwood K., Stiffman A.R., et al. (2000). Reliability of the Service Assessment for Children and Adolescents. *Psychiatric Services*, 52, 1088–1094.
- Kataoka, S. H., Zhang, L., & Wells, K.B. (2002). *Unmet need for mental health care among U.S.children: Variation by ethnicity and insurance status*. *American Journal of Psychiatry*, 159, 1548-1555.
- Kilgus, M. D., Pumariega, A. J., & Cuffee, S. P. (1995). Influence of race on diagnosis in adolescent psychiatric inpatients. *Journal of the American Academy of Child and Adolescent Psychiatry*, 34, 67-72.
- McCabe, K., Yeh, M., Hough, R. L., Landsverk, J., Hurlburt, M. S., Culver, S. W. (1999). Racial/ethnic representation across five public sectors of care for youth. *Journal of Emotional and Behavioral Disorders*, 7, 72-82.
- Pumariega, A. J., Glover, S., Holzer, C. E., & Nguyen, H. (2004). Utilization of mental health services in a tri-ethnic sample of adolescents. *Community Mental Health Journal*, 34, 145-156.

Roberts, R., Alegria, M., Roberts, C., R., & Chen, I. G. (2004). Mental health problems of adolescents as reported by their caregivers. *The Journal of Behavioral Health Services & Research*, 23, 1-13.

Salant, P. A., & Dillman, D. A. (1994). *How to conduct your own survey*. New York: John Wiley & Sons, Inc.

U.S. Department of Health and Human Services. (2000) *Healthy People 2010: Understanding and Improving Health*. 2nd ed. Washington, DC: U.S. Government Printing Office.

U.S. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration, Center for Mental Health Services, NIH, NIMH. (1999). *Mental Health: A Report of the Surgeon General, Executive Summary*. Rockville, MD: U.S.

U.S. Department of Health and Human Services. Department of Health and Human Services, Substance Abuse and Mental Health Services Administration. (1999). *Mental Health: Culture, Race, and Ethnicity. A supplement to Mental Health: A Report of the Surgeon General*. Rockville, MD: U.S.

Wu, P., Hoven, C. W., Cohen, P., Liu, X., Moore, R. E., Quyen, T., Okezie, N., Wicks, J., & Bird, H. R. (2001). Factors associated with use of mental health services for depression by children and adolescents. *Psychiatric Services*, 52, 189-195.

Yeh, M., & Hough, R. L. (2005). Beliefs about the causes of child problems questionnaire. Unpublished measure.

Zwillich, T. (2000). US healthcare system missing most mentally ill children and adolescents. Washington, DC: Reuters Medical News. Retrieved June 24, 2007, from <http://psychiatry.medscape.com/reuters/prof/2000/09/09.20/20000920publ009.html>

Table 1*ICD-9 Codes for DSM-IV Mental Health Disorders*

DSM-IV Disorder	ICD Code
Attention deficit disorder	314 (314.0 – 314.9)
Conduct disorder	312 (312.0 – 312.9)
Depression Disorders (Major Depression and Dysthymic Disorders)	296.2 (296.21-296.26) 296.3 (296.31-296.36) 300.4
Bipolar disorder	296.0 296.1 296.4 296.5 296.6 296.7 296.8
Post traumatic stress disorder	309.81
Substance abuse	291 292 303 304 305 (excluding 305.1)
Schizophrenia	295 (295.0- 295.9)
Eating disorder	307.1 307.5 307.51

Table 2.

Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, All Ethnic Groups, (N = 745,034)

Disorder Name	Frequency	Percentage
Attention deficit disorder	29,086	3.90
Conduct disorder	5,724	0.77
Depression	1,917	0.26
Post traumatic stress disorder	1,414	0.19
Bipolar disorder	1,352	0.18
Substance abuse	688	0.09
Eating disorder	511	0.07
Schizophrenia	153	0.02

Table 3.

Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, African American, (N = 190,708)

Disorder Name	Frequency	Percentage
Attention deficit disorder	5,902	3.09
Conduct disorder	1,807	0.95
Depression	434	0.23
Post traumatic stress disorder	326	0.17
Bipolar disorder	198	0.10
Substance abuse	183	0.10
Eating disorder	53	0.03
Schizophrenia	41	0.02

Table 4.

Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, White, (N = 238,385)

Disorder Name	Frequency	Percentage
Attention deficit disorder	12,384	5.19
Conduct disorder	1,823	0.77
Depression	764	0.32
Post traumatic stress disorder	735	0.31
Bipolar disorder	657	0.28
Substance abuse	317	0.13
Eating disorder	181	0.08
Schizophrenia	36	0.02

Table 5.

Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, Hispanic, (N =214,247)

Disorder Name	Frequency	Percentage
Attention deficit disorder	4,812	2.25
Conduct disorder	1,180	0.55
Depression	443	0.21
Eating disorder	197	0.09
Post traumatic stress disorder	179	0.08
Bipolar disorder	145	0.07
Substance abuse	112	0.05
Schizophrenia	30	0.01

Table 6.

Mental Health Disorder Prevalence among Eligible Children, Fiscal Year 2006-2007, Other, (N =93,959)

Disorder Name	Frequency	Percentage
Attention deficit disorder	5,867	6.24
Conduct disorder	882	0.94
Bipolar disorder	348	0.37
Depression	264	0.28
Post traumatic stress disorder	164	0.17
Eating disorder	75	0.08
Substance abuse	73	0.08
Schizophrenia	46	0.05

Table 7.*Summary of Logistic Regression Analysis for Predictors of Depression Diagnosis, Fiscal**Year 2006-2007 (N = 643,340)*

Factors	Logistic Regression Model Parameters				
	β	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval for risk ratio	
				Lower	Upper
Gender (Male)	-.32	41.76*	.72	.66	.79
Age	.33	1778.50*	1.40	1.38	1.42
Hispanic	-.27	49.66*	.77	.68	.86
African American	-.42	48.56*	.66	.58	.74

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 8.

*Summary of Logistic Regression Analysis for Predictors of Attention Deficit Disorder,
Fiscal Year 2006-2007 (N =643,340)*

Factors	Logistic Regression Model Parameters				
	β	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval for risk ratio	
				Lower	Upper
Gender (Male)	.93	3913.86*	2.55	2.47	2.62
Age	.14	9562.03*	1.15	1.14	1.15
Hispanic	- .80	2076.75*	.45	.44	.47
African American	- .59	1312.00*	.55	.54	.57

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 9.

Summary of Logistic Regression Analysis for Predictors of Conduct Disorder, Fiscal Year 2006-2007 (N =643,340)

Factors	Logistic Regression Model Parameters				
	β	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval	
				for risk ratio	
				Lower	Upper
Gender (Male)	.84	706.60*	2.32	2.18	2.47
Age	.15	2450.75*	1.16	1.16	1.17
Hispanic	- .23	36.06*	.80	.74	.86
African American	.18	28.41*	1.20	1.12	1.28

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 10.

Summary of Multiple Regression Analysis for Number of Outpatient Services for All

Children Who Received Outpatient Mental Health Services, Fiscal Year 2006-2007 (N = 55,704)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	4.11*	.46	.04
Age	2.54*	.05	.20
Hispanic	- 1.43*	.57	- .01
African American	9.47*	.53	.08

Note. The reference group for Hispanic and African American children is white children. $R^2 = .22$.

* $p < .05$.

Table 11.

Summary of Multiple Regression Analysis for Number of Outpatient Services for

Children with Depression Disorder, Fiscal Year 2006-2007 (N = 1,641)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	11.93*	3.35	.09
Age	3.49*	.64	.13
Hispanic	3.22	3.96	.02
African American	22.63*	3.98	0.15

Note. The reference group for Hispanic and African American children is white children. $R^2 = .21$.

* $p < .05$.

Table 12.

Summary of Multiple Regression Analysis for Number of Outpatient Services for Children with Conduct disorder, Fiscal Year 2006-2007 (N =4,810)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	14.99*	2.18	6.87
Age	6.67*	.22	29.85
Hispanic	- 9.80	2.59	- .06
African American	6.21*	2.31	.04

Note. The reference group for Hispanic and African American children is white children. $R^2 = .45$.

* $p < .05$.

Table 13.

Summary of Multiple Regression Analysis for Number of Outpatient Services for Children with Attention Deficit Disorder, Fiscal Year 2006-2007 (N =23,098)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	1.59*	.59	.02
Age	1.46*	.08	.12
Hispanic	2.17*	.69	.02
African American	7.53*	.64	.08

Note. The reference group for Hispanic and African American children is white children. $R^2 = .14$.

* $p < .05$.

Table 14.

Summary of Multiple Regression Analysis for Number of Visits for Children Who Received Outpatient Mental Health Services, Fiscal Year 2006-2007 (N = 55,704)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	2.42*	.40	.03
Age	2.30	.05	.21
Hispanic	- 1.22*	.50	- .01
African American	8.86*	.46	.09

Note. The reference group for Hispanic and African American children is white children. $R^2 = .23$.

* $p < .05$.

Table 15.

Summary of Multiple Regression Analysis for Number of Visits to Mental Health Providers for Children with Depression Disorder, Fiscal Year 2006-2007 (N = 1,641)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	11.67*	3.07	.09
Age	3.05*	.58	.13
Hispanic	1.39	3.62	.01
African American	20.52*	3.65	.15

Note. The reference group for Hispanic and African American children is white children. $R^2 = .21$.

* $p < .05$.

Table 16.*Summary of Multiple Regression Analysis for Number of Visits to Mental Health**Providers for Children with Attention Deficit Disorder, Fiscal Year 2006-2007 (N =23,098)*

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	1.20*	.52	.02
Age	1.31*	.07	.012
Hispanic	2.92*	.61	.03
African American	6.46*	.57	.08

Note. The reference group for Hispanic and African American children is white children. $R^2 = .14$.

* $p < .05$.

Table 17.*Summary of Multiple Regression Analysis for Number of Visits to Mental Health**Providers for Children with Conduct Disorder, Fiscal Year 2006-2007 (N =4,810)*

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	15.28*	2.11	.09
Age	6.57*	.22	.41
Hispanic	- 8.69*	2.51	- .05
African American	6.42*	2.24	.04

Note. The reference group for Hispanic and African American children is white children. $R^2 = .45$.

* $p < .05$.

Table 18.

Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for White, Hispanic and African American Children, Fiscal Year 2006-2007 (N =6,859)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	- .22	.27	- .01
Age	.13*	.03	.05
Hispanic	.55	.33	.02
African American	- .81*	.31	- .03

Note. The reference group for Hispanic and African American children is white children. $R^2 = .07$.

* $p < .05$.

Table 19.

Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Depression Disorder, Fiscal Year 2006-2007 (N =436)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	- 7.01	1.19	- .03
Age	.49*	.21	.11
Hispanic	.19	1.67	.01
African American	.78	1.36	.03

Note. The reference group for Hispanic and African American children is white children. $R^2 = .12$.

* $p < .05$.

Table 20.

Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Attention Deficit Disorder, Fiscal Year 2006-2007 02 (N =3,697)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	.02	.23	.01
Age	.12*	.03	.07
Hispanic	.25	.27	.02
African American	- .65*	.25	- .05

Note. The reference group for Hispanic and African American children is white children. $R^2 = .08$.

* $p < .05$.

Table 21.

Summary of Multiple Regression Analysis for Number of Hospital-Based Outpatient Services for Children with Conduct Disorder, Fiscal Year 2006-2007 (N =518)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	.35	.76	.02
Age	.11	.08	.06
Hispanic	- .69	1.02	- .03
African American	- .15	.81	- .01

Note. The reference group for Hispanic and African American children is white children. $R^2 = .07$.

* $p < .05$.

Table 22.

Summary of Multiple Regression Analysis for the Number of Hospital Episodes for All Children Who Had a Mental Health-Related Hospitalization, Fiscal Year 2006-2007 (N =2,790)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	- .04	.04	- .02
Age	.01	.01	.04
Hispanic	.05	.05	.02
African American	.07	.05	.03

Note. The reference group for Hispanic and African American children is white children. $R^2 = .05$.

* $p < .05$.

Table 23.

Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Depression Disorder, Fiscal Year 2006-2007 (N =401)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	- .09	.10	- .05
Age	.01	.02	.03
Hispanic	- .13	.12	- .06
African American	.21	.12	.09

Note. The reference group for Hispanic and African American children is white children. $R^2 = .14$.

* $p < .05$.

Table 24.

Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Attention Deficit Disorder, Fiscal Year 2006-2007 (N = 635)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	-.19*	.10	-.08
Age	.04*	.01	.12
Hispanic	-.03	.13	-.01
African American	.15	.10	.06

Note. The reference group for Hispanic and African American children is white children. $R^2 = .17$.

* $p < .05$.

Table 25.

Summary of Multiple Regression Analysis for the Number of Hospital Episodes for Children with Conduct Disorder, Fiscal Year 2006-2007 (N = 281)

Variable	<i>B</i>	<i>SE B</i>	β
Gender (Male)	-.17	.17	-.06
Age	-.01	.02	-.03
Hispanic	-.47*	.023	-.13
African American	-.05	.17	-.02

Note. The reference group for Hispanic and African American children is white children. $R^2 = .14$.

Table 26.

*Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization
for All Children Who Had a Mental Health-Related Hospitalization, Fiscal Year 2006 –
2007 (N = 2,790)*

Risk factors	Cox Regression Model Parameters				
	B	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval for risk ratio	
				Lower	Upper
Gender (Male)	- .04	.93	.96	.89	1.04
Age	- .02	6.83*	.098	.97	.99
Hispanic	- .10	3.95*	.90	.82	.99
African American	- .06	1.69	.94	.86	1.03

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 27.

*Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization
for Children with Depression Disorder, Fiscal Year 2006-2007 (N =401)*

Risk factors	Cox Regression Model Parameters				
	<i>B</i>	Wald $\chi^2(1)$	Odds	95% Confidence	
			Ratio	interval for risk ratio	
				Lower	Upper
Gender (Male)	- .22	4.09*	.80	.65	.99
Age	- .01	.014	.99	.65	1.04
Hispanic	- .10	.68	.90	.71	1.15
African American	- .42	10.65*	.66	.52	.85

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 28.

Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization for Children with Attention Deficit Disorder, Fiscal Year 2006-2007 (N =635)

Risk factors	Cox Regression Model Parameters				
	B	Wald $\chi^2(1)$	Odds Ratio	95% Confidence	
				interval for risk	
				Lower	Upper
Gender (Male)	-.01	.01	1.00	.84	1.19
Age	-.02	3.74	.98	.95	1.00
Hispanic	.23	3.65	1.26	.99	1.59
African American	-.10	1.14	.91	.76	1.09

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 29.

*Summary of Cox Regression Analysis for Total Number of Days in First Hospitalization
for Children with Conduct Disorder, Fiscal Year 2006-2007 (N =281)*

Risk factors	Cox Regression Model Parameters				
	<i>B</i>	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval for risk ratio	
				Lower	Upper
Gender (Male)	- .14	1.08	.87	.67	1.13
Age	- .04	3.73	.96	.93	1.00
Hispanic	.05	.09	1.06	.74	1.50
African American	- .09	.45	.91	.70	1.19

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 30.

Summary of Cox Regression Analysis for Total Number of Days to Second

Hospitalization of All Children Who Had a Mental Health-Related Hospitalization,

Fiscal Year 2006-2007 (N =2,160)

Risk factors	Cox Regression Model Parameters				
	B	Wald $\chi^2(1)$	Odds Ratio	95% Confidence	
				interval for risk	
				Lower	Upper
Gender (Male)	-.06	.55	.94	.81	1.10
Age	-.02	1.69	.98	.96	1.01
Hispanic	.01	.01	1.01	.82	1.23
African American	.06	.49	1.06	.89	1.23

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 31.

Summary of Cox Regression Analysis for Total Number of Days to Second

Hospitalization of Children with Depression Disorder, Fiscal Year 2006-2007 (N = 329)

Risk factors	Cox Regression Model Parameters				
	<i>B</i>	Wald $\chi^2(1)$	Odds	95% Confidence	
			Ratio	interval for risk ratio	
				Lower	Upper
Gender (Male)	.03	.01	1.03	.65	1.61
Age	.11	3.39	1.12	.99	1.26
Hispanic	.07	.07	1.08	.62	1.86
African American	.46	3.71	1.59	.99	2.55

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 32.

Summary of Cox Regression Analysis for Total Number of Days to 2nd Hospitalization of Children with Attention Deficit Disorder, Fiscal Year 2006-2007 (N = 532)

Risk factors	Cox Regression Model Parameters				
	<i>B</i>	Wald $\chi^2(1)$	Odds Ratio	95% Confidence interval for risk ratio	
				Lower	Upper
Gender (Male)	.04	.05	1.04	.74	1.46
Age	- .02	.72	.98	.92	1.03
Hispanic	.03	.01	1.03	.62	1.72
African American	.01	.01	1.01	.72	1.42

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 33.

Summary of Cox Regression Analysis for Total Number of Days to 2nd Hospitalization of Children with Conduct Disorder, Fiscal Year 2006-2007 (N = 228)

Risk factors	Cox Regression Model Parameters				
	<i>B</i>	Wald $\chi^2(1)$	Odds	95% Confidence	
			Ratio	interval for risk ratio	
				Lower	Upper
Gender (Male)	- .12	.22	.89	.53	1.48
Age	.01	.07	1.01	.92	1.12
Hispanic	.03	.01	1.03	.611	1.74
African American	- .01	.01	.99	.422	2.36

Note. The reference group for Hispanic and African American children is white children.

* $p < .05$.

Table 34.

Overall Means and Ethnicity/Racial Group Comparisons for the Mail Survey Questions

(*N* = 593).

Survey Question	Means/Percentages			Statistical Significance of Omnibus Statistical Test (<i>p</i> <)	Overall Means
	White (<i>N</i> =208)	African American (<i>N</i> =215)	Hispanic (<i>N</i> =170)		
Demographics and Respondent Information					
1. What is your child's age?	11.24	11.09	10.36	.036	10.93 (590)
2. What grade is your child in?	6.44	5.71	6.12	.133	6.09 (588)
3. What is your child's gender? (% Male)	69	66	71	.537	68 (592)
5. Were you and your family born in the United States? (% Yes)					
5a. Child	99 ^a	100 ^a	86 ^b	.001	95 (588)
5b. Mother	97 ^a	97 ^a	40 ^b	.001	81 (576)
5c. Father	95 ^a	92 ^a	41 ^b	.001	90 (553)
Child's Treatment History					
6. During the last year, how many times did your child visit a physician or pediatrician for physical health reasons?	5.60 ^a	4.11 ^b	5.27 ^a	.001	4.99 (568)
7. How old was your child when you <i>first noticed</i> their emotional/behavioral difficulties?	4.96	5.32	4.92	.329	5.08 (565)
8. How serious was your child's emotional/behavioral difficulties before you sought help? (<i>1=Not really serious, 5=Very severe</i>)	3.30	3.29	3.27	.961	3.29 (560)
9. How old was your child when they <i>first received treatment</i> for emotional/behavioral difficulties?	6.49	6.59	6.37	.789	6.49 (538)
11a. Did a physician or pediatrician write a prescription for medication for your child's emotional/behavioral difficulties? (% Yes)	82 ^a	80 ^a	67 ^b	.001	77 (589)

7. How old was your child when you <i>first noticed</i> their emotional/behavioral difficulties?	4.96	5.32	4.92	.329	5.08 (565)
8. How serious was your child's emotional/behavioral difficulties before you sought help? (1= <i>Not really serious</i> , 5= <i>Very severe</i>)	3.30	3.29	3.27	.961	3.29 (560)
9. How old was your child when they <i>first received treatment</i> for emotional/behavioral difficulties?	6.49	6.59	6.37	.789	6.49 (538)
11a. Did a physician or pediatrician write a prescription for medication for your child's emotional/behavioral difficulties? (% Yes)	82 ^a	80 ^a	67 ^b	.001	77 (589)
11b. If yes, did you fill the prescription for the medication for your child's emotional/behavioral difficulties? (% Yes)	97 ^a	99 ^a	91 ^b	.002	96 (449)
Beliefs about What Would Be Effective Treatment					
10. What do you believe would be effective in treating your child's emotional/behavioral difficulties?					
10a. Take medication	1.84 ^a	1.95 ^a	2.39 ^b	.001	2.03 (503)
10b. Meet with mental health professionals	2.36	2.26	1.96	.004	2.21 (519)
10c. Meet with a medical doctor	2.29	2.11	2.16	.238	2.19 (512)
10d. Meet with a priest/spiritual leader	3.01	2.64	2.70	.019	2.78 (416)
10e. Meet with an acupuncturist/chiropractor/nutritionist	3.48	3.22	3.18	.132	3.31 (320)
10f. Meet with a family advisor/ family friend	3.02 ^a	2.64 ^b	2.25 ^c	.001	2.67 (443)
10g. Have stronger enforcement of family rules	2.34	2.19	2.47	.086	2.32 (510)
Pathways to Services					
12. Where did you <i>first get information</i> about receiving mental health services for your child's emotional/behavioral difficulties? (% Yes)					
121. Physician's Office (Family Doctor or Pediatrician)	53	52	50	.860	52 (588)
122. Psychologist/Psychiatrist's Office	18	20	26	.141	21 (587)

123. Social Worker or Counselor's Office	16	21	18	.379	19 (588)
124. Hospital/Emergency Room	1	3	3	.549	2 (588)
125. Community Clinic/Community Mental Health Center	8	11	4	.037	8 (588)
126. Community Recreation Center	0	3	1	.043	01 (588)
127. School	40	56	46	.005	47 (588)
128. Church	3 ^a	12 ^b	5 ^a	.001	7 (588)
129. In-Home Therapist	5	8	14	.009	9 (588)
1210. Family	19	22	15	.294	19 (588)
1211. Friend	12	18	17	.269	15 (588)
1212. Support Group	3	5	5	.476	4 (588)
1213. Department of Children & Families (DCF)	16	17	11	.174	15 (588)
1214. Other	16	9	8	.028	11 (588)
13. After you received information about receiving mental health services for your child's emotional/behavioral difficulties, how long was it before your child received services?	2.65	2.47	2.90	.043	2.66 (530)
Beliefs about Causes of Mental Health Difficulties:					
Physical Causes					
14. When children have emotional/behavioral difficulties, people may have many different explanations for why the problems began. This list shows 43 explanations. Some may apply to your child and some may not.					
141. Heredity or genetics	1.98 ^a	2.51 ^b	2.64 ^b	.001	2.35 (465)
142. Alcohol, drugs, or other substances taken during pregnancy	3.30	3.40	3.84	.008	3.49 (504)
143. Something (not alcohol/drugs) taken by you (or the birth mother) during pregnancy	3.48	3.68	4.03	.006	3.71 (464)
144. Other pregnancy or birth-related complications (e.g., prematurity, no prenatal care)	3.40	3.41	3.68	.202	3.49 (481)
145. A serious physical illness, injury, or condition	3.79	3.68	3.91	.239	3.79 (499)
146. Alcohol, drugs, or other substances taken by your child	4.08	4.19	4.16	.669	4.14 (519)
147. Something (not alcohol/drugs) eaten by your child	4.21	4.19	4.26	.845	4.22 (510)

148. A lack or imbalance of chemicals, proper vitamins, hormones, or other nutritional elements	3.22	3.39	3.64	.033	3.40 (463)
Personality/Emotional Struggles					
149. Your child's character or personality	2.76	3.04	2.84	.096	2.88 (496)
1410. Your child's lack of self-discipline, self-control, or difficulties with anger	2.33	2.69	2.73	.008	2.57 (540)
1411. Emotional struggles or inner conflicts (e.g., self-esteem issues)	2.34	2.50	2.72	.030	2.51 (526)
1412. Your child's difficulties going through a certain age or developmental stage in life	2.64	2.80	2.87	.226	2.76 (522)
Getting Along with Others					
1413. Your child's lack of respect for authority or bad attitude	2.90	3.17	3.33	.016	3.12 (541)
1414. Your child's problems starting or maintaining good relationships	2.97	3.22	3.19	.133	3.12 (526)
1415. Your child's problems with social skills	2.81	3.10	3.06	.070	2.98 (527)
Trauma					
1416. Trauma suffered by the child (e.g., physical abuse, sexual abuse, seeing a violent act)	3.35	3.64	3.39	.139	3.46 (535)
1417. Trauma suffered by the family (e.g., war, poverty, hardship)	3.39	3.73	3.57	.063	3.56 (525)
Family/Parenting Issues					
1418. Conflict within your family (e.g., includes divorce)	2.91 ^a	3.47 ^b	3.02 ^a	.001	3.15 (537)
1419. The absence of, or being separated from, one or both parents (e.g., due to divorce, foster care, incarceration, death)	2.65	2.87	2.83	.295	2.78 (544)
1420. Drug, alcohol, or mental health problem of a parent	3.01a	3.45b	3.58b	.001	3.33 (542)
1421. Something related to parenting skills	3.17a	3.58b	3.72b	.001	3.47 (533)
1422. Not having enough time with a parent or adult	3.21	3.34	3.50	.162	3.34 (535)
1423. Your child not following or disobeying the beliefs and teachings of the family or parents	3.31	3.41	3.40	.742	3.38 (532)

1424. Your child not having enough friends, being teased, or being bullied	2.99 ^a	3.52 ^b	3.43 ^b	.001	3.31 (526)
1425. The negative influence or peer pressure of your child's friends or peers	3.29	3.43	3.43	.539	3.38 (524)
1426. Your child's involvement in gangs	4.24	4.35	4.07	.086	4.23 (525)
American Culture					
1427. The influence of popular American culture (e.g. through television or movies)	3.59	3.91	3.62	.032	3.72 (522)
1428. The influence of American culture, which is different from his/her family's culture	4.05 ^{a,b}	4.23 ^a	3.77 ^b	.001	4.04 (520)
1429. Difficulty adjusting to American culture	4.30	4.32	4.07	.026	4.24 (514)
1430. Racial or ethnic discrimination or prejudice	4.07	4.01	4.03	.846	4.03 (532)
Economic Problems					
1431. Not having enough money for things like food, clothing, housing, etc.	3.54	3.71	3.73	.353	3.66 (546)
1432. Not having the necessary books/school materials at home to help your child succeed in school	4.02	4.00	3.96	.892	3.99 (543)
1433. Not having enough money for extra things that your child wants	3.35	3.41	3.56	.322	3.43 (550)
Spiritual/Cosmic/Religious					
1434. Bad luck or chance	4.06	4.09	4.10	.926	4.08 (515)
1435. Spirit possession, the influence of spirits or ghosts, someone casting a spell, magic, or witchcraft	4.60	4.43	4.31	.006	4.46 (525)
1436. Punishment for the deeds of your child, your family, or your ancestors	4.36	4.32	4.31	.838	4.33 (522)
1437. Not having enough faith, spirituality, or involvement in religion	4.08	3.98	4.11	.540	4.05 (532)
1438. The will of God, gods, deities, or some other supernatural beings	4.30	4.15	4.31	.190	4.25 (517)
1439. Fate	4.24	4.12	4.10	.420	4.16 (497)
1440. Being born during a particular day, year, or cosmic sign	4.51	4.37	4.41	.240	4.43 (524)

Imbalance/Disharmony With Nature					
1441. An arrangement of physical elements or objects (e.g., in the home) that is not in line with nature or natural forces	4.52	4.39	4.47	.271	4.46 (518)
1442. A yin and yang imbalance	4.49	4.31	4.36	.154	4.39 (469)
1443. Disruption of child's energy or vitality flow	4.28	4.14	4.31	.236	4.24 (479)
Culturally Competent					
15. When your child received services for their emotional/behavioral difficulties, did providers					
15a. Ask questions about your family's customs and traditions that might affect your child's treatment?	2.78	2.85	2.82	.880	2.82 (485)
15b. Respect your beliefs about forms of treatment for your child that were important to your family?	2.27	2.19	2.25	.765	2.24 (501)
15c. Talk to you using words you understood?	1.84	2.00	1.92	.258	1.92 (542)
15d. Display signs written in a language you understood?	2.08	2.23	2.19	.436	2.16 (487)
15e. Provide printed materials and treatment instruction in your preferred language?	1.98	2.16	2.12	.259	2.08 (512)
15f. Provide someone who speaks your preferred language when calling for an appointment?	2.04	2.18	2.09	.535	2.11 (440)
15g. Provide an interpreter when translation was needed?	2.91 ^a	2.88 ^a	2.26 ^b	.001	2.64 (293)
Structural Barriers to Services					
16. When your child received services for their emotional/behavioral difficulties, were complications encountered by your child in receiving help?					
16a. Services were too expensive	3.29 ^a	3.82 ^b	3.20 ^a	.001	3.46 (487)
16b. Services scheduling was inconvenient	3.47	3.73	3.32	.005	3.52 (548)
16c. Treatment was too lengthy	3.88 ^a	3.96 ^a	3.54 ^b	.001	3.82 (532)
16d. Services were too far away	3.54 ^{a,b}	3.81 ^a	3.33 ^b	.001	3.58 (551)
16e. Not sure where to go for help for child	3.45	3.68	3.31	.018	3.50 (555)
16f. Lack of transportation	3.84	3.76	3.61	.214	3.75 (557)
16g. Long wait time for appointment	3.34 ^a	3.77 ^b	3.02 ^a	.001	3.41 (560)

16h. No one to accompany child for services	4.08	4.06	3.92	.241	4.03 (553)
16i. Services were not available in preferred language	4.25 ^a	4.33 ^a	3.98 ^b	.001	4.20 (521)
Reasons Not to Seek Mental Health Services					
17. What are your opinions about why you would not seek services?					
17a. Did not think problem was that serious	3.47	3.36	3.24	.266	3.36 (554)
17b. Decided to handle problem on own	3.53	3.48	3.60	.679	3.53 (559)
17c. Afraid of what family would say	4.20	3.87	4.04	.007	4.04 (559)
17d. Afraid of what physician would say	4.24	4.07	4.01	.061	4.11 (559)
17e. Afraid of what friends would say	4.16	3.96	4.10	.155	4.07 (561)
17f. Afraid child would be taken away	4.13	4.04	3.86	.083	4.02 (561)
Negative Experiences with Mental Health Services and Providers					
18. What are your experiences with mental health services and providers?					
18a. Lacked confidence in who recommended help	3.77	3.75	3.68	.726	3.74 (545)
18b. Had negative experience with providers	3.54	3.73	3.57	.242	3.62 (550)
18c. Thought treatment would not help my child	3.95	3.77	3.76	.173	3.83 (551)
18d. People trusted most did not recommend help	3.83	3.76	3.80	.844	3.79 (541)
18e. Did not know who to trust	3.75	3.59	3.61	.309	3.65 (545)
18f. Child did not want to go for treatment	3.61	3.73	3.73	.527	3.69 (551)

Note. Numbers in parentheses equal the number of respondents who answered the question. Within a row, values with different super scripted letters are significantly different at $p < .05$.

Figure 1.

Mean number of outpatient services for children with different mental health diagnoses by race/ethnicity

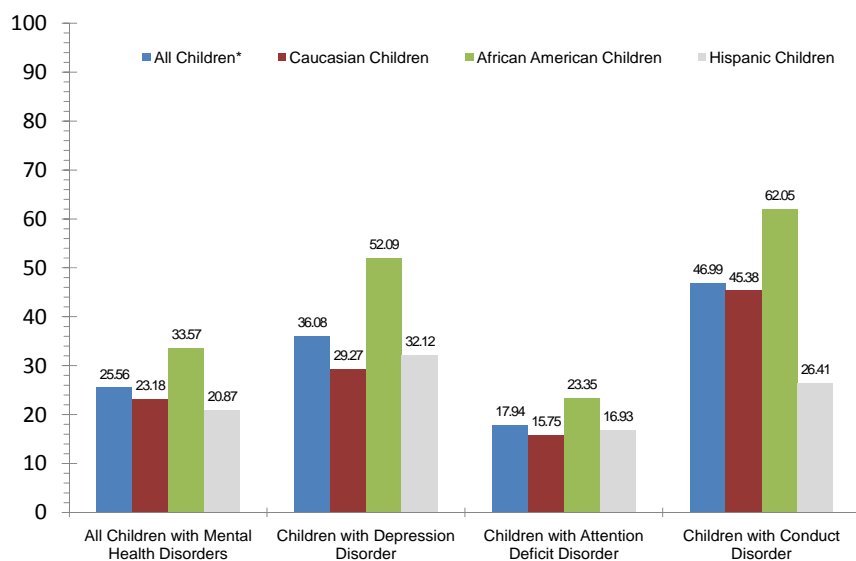


Figure 2.

Mean number of visits to mental health providers for children with different mental health diagnoses by race/ethnicity

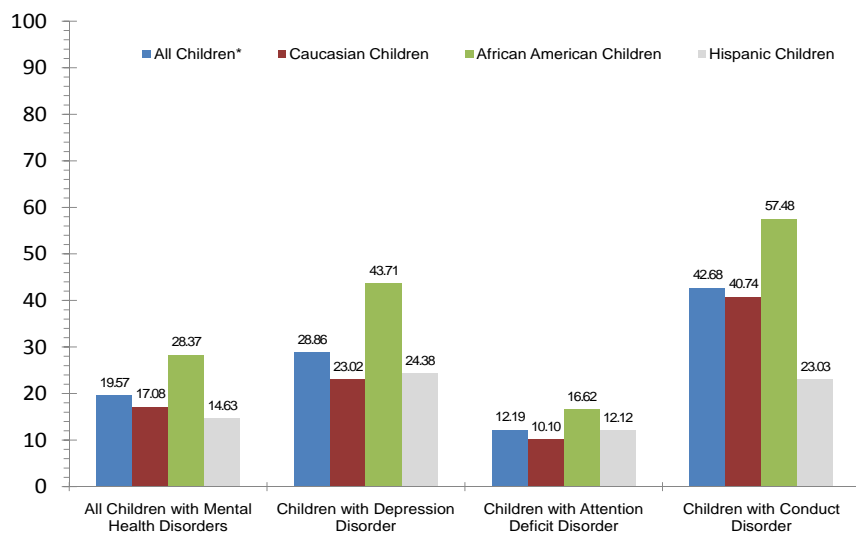


Figure 3.

Mean number of outpatient hospital-based services for children with different mental health diagnoses by race/ethnicity

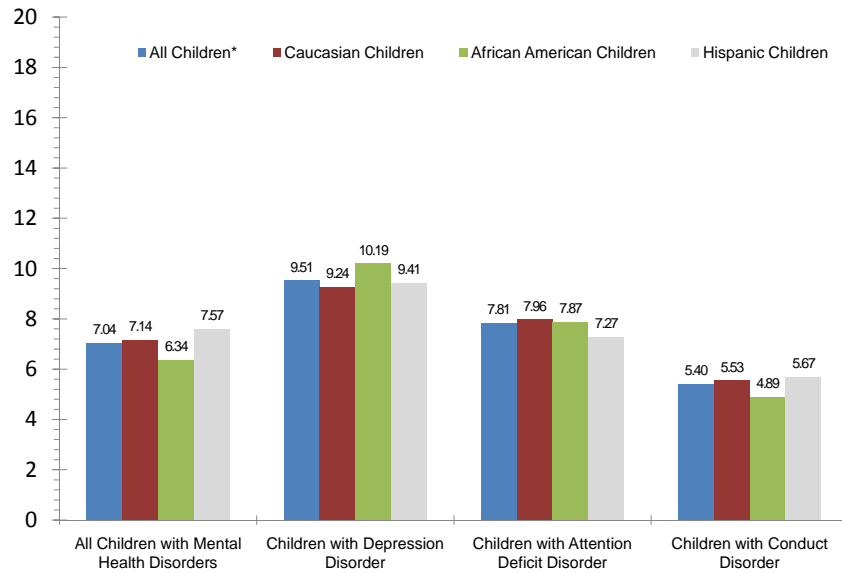


Figure 4.

Mean number of hospital episodes for children with different mental health diagnoses by race/ethnicity

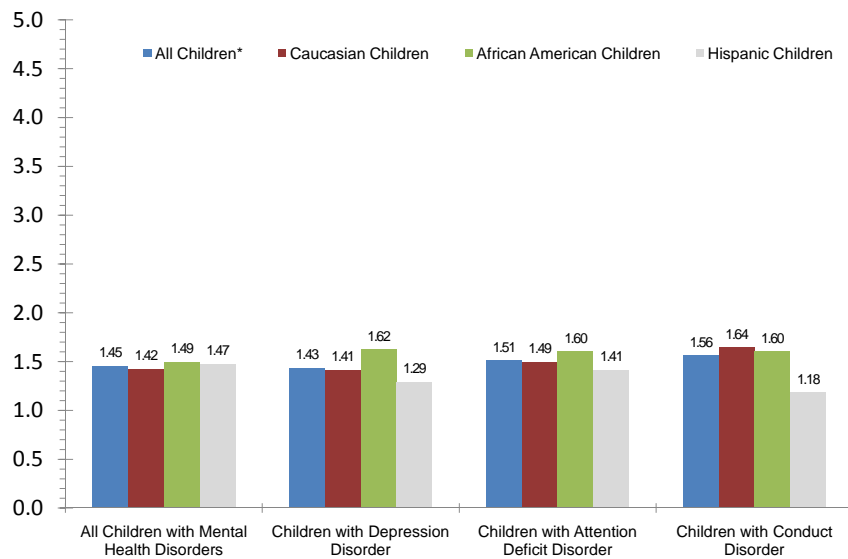


Figure 5.

Mean number of days between first and second hospitalization for children with different mental health diagnoses by race/ethnicity

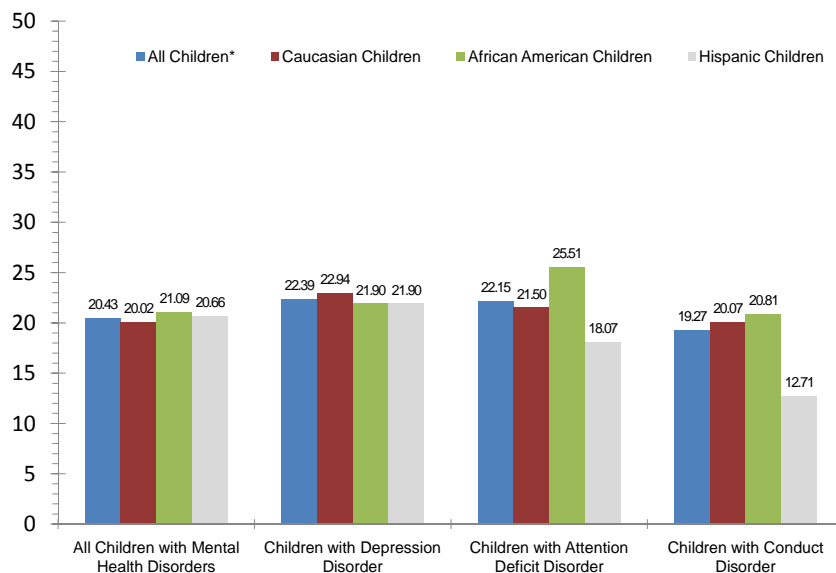


Figure 6.

Mean number of days during the first hospitalization episode for children with different mental health diagnoses by race/ethnicity

