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A Pilot Investigation of the Rates and Predictors of Mental Health Services Utilization Among Depressed African American Mothers and Their Children

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Abstract

Objective—Depressed mothers, especially those who are African American, are likely to underutilize mental health services. Children of depressed mothers are an at-risk population with mental health needs that are often unmet. This prospective pilot study examined 3-month frequency rates and predictors of mental health utilization for a sample of African American depressed mothers and their children.

Methods—Mothers and 1 of their children completed assessment interviews. Three months later, mothers completed a telephone interview of maternal and child mental health utilization.

Results—Overall, 65.3% of depressed mothers and 36.7% of their children had utilized mental health services. Logistic regression analyses indicated that initial mental health treatment significantly predicted maternal mental health utilization. Maternal reports of child behavioral problems significantly predicted child mental health utilization.

Conclusions—The findings were consistent with other research and showed evidence of mental health use among African Americans who are in need of such services.

Keywords

mental health; obstetrics/gynecology; depression; race/ethnicity; minority health

Depression is a serious psychiatric disorder, as it has the highest ranked cause of disability among all medical conditions found in women according to the World Health Organization.^{1,2} Studies internationally indicate that major depression is of high prevalence in women of childbearing and child-rearing years.³ Depression is particularly salient for African American women for several reasons. Evidence suggests that African American women have higher risks for depression due to factors such as socioeconomic status, chronic medical issues, and stigma of mental illness that continue in some African American communities.⁴ Although the 12-month prevalence rate of major depressive disorder (MDD) for African Americans is similar to the rates for other racial ethnic groups, the chronicity and severity of depression is greater for African Americans.⁵ A growing evidence base describes a health disparity in mental health services utilization for African Americans.^{6,7}

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National surveys of African Americans suggest that 2.5% of women received mental health services for any psychiatric condition within the past year⁷ and that 45% of African Americans with MDD received any treatment.⁵ The underutilization of mental health services by African American women is deleterious for their own functioning as well as for their families.

MENTAL HEALTH UTILIZATION FOR DEPRESSED MOTHERS

Utilization rates for depressed mothers are relatively low, which is especially concerning given the impact of the disorder. In a study investigating mental health treatment rates for a community sample of mothers (7.4% being African American women) with postpartum depression symptoms, 12% of the women who screened high on depression received psychotherapy and between 3.4% to 6% received medication at 3 and 4 months post-partum.⁸ In a study using an urban primary care sample of mothers (93% of the sample were Hispanic and 6% were African American) aged 25 to 55, only 49% of the depressed mothers had received mental health treatment in the past month prior to the study enrollment.⁹ In another study of new mothers, only 17% of African American mothers who exhibited at least moderate depressive symptoms reported talking to a mental health professional.¹⁰ These studies suggest that depressed mothers of diverse ethnic backgrounds underutilize mental health services. Available studies further suggest that African American mothers in particular are more at risk for underutilization of services when compared to other ethnic groups. In a study examining Medicaid records of perinatal non-Hispanic white and African American mothers in an urban area, African American mothers were half as likely to use mental health services.¹¹ Despite this apparent disparity of mental health services for depressed mothers, there is a lack of studies specifically focusing on the needs of African American mothers and their children.

EFFECTS OF MATERNAL DEPRESSION ON CHILDREN

Maternal depression is a mental health problem that is devastating to the children as well. Extensive research describes the negative effects of maternal depression on children's socioemotional functioning from infancy to adulthood. These children are at a high risk for developmental delays, neurochemical imbalances, and externalizing and internalizing behavior problems.^{12–14} Children of depressed mothers have increased risks for major depression, anxiety disorders, substance dependence, social impairment, medical problems, and mortality.¹⁵ By the age of 20, the children of depressed parents have a 40% chance of experiencing a major depressive episode, and this rate increases to 60% by the age of 25.¹⁶ Depression beginning in childhood and adolescence continues into adulthood and is linked to substantial morbidity and risk of suicide.³ The negative impact of maternal depression has been demonstrated among African American families.^{17–19}

MENTAL HEALTH SERVICES UTILIZATION BY CHILDREN OF DEPRESSED MOTHERS

Children of depressed mothers are in need of mental health services to prevent the onset of psychiatric disorders and to provide treatment when needed. In a longitudinal study of adolescents of depressed parents in western Oregon, maternal depression increased risk for mental health service use in young adulthood.²⁰ In another longitudinal study of children of depressed parents, 39% of the sample received any psychiatric treatment over the 20-year follow-up despite the poor course of sustained social and medical morbidity.¹⁵ Both of these longitudinal studies into adulthood had few minorities within their samples. In a study by Weissman and colleagues⁹ of the urban primary care sample described previously, 39% of

depressed mothers endorsed that they did not access needed mental health services for their children.

In a related study, Mowbray and colleagues examined mental health service utilization for children of mothers with severe mental illness (57.5% African American, 38.9% with MDD) from poor urban areas.²¹ Findings showed that 24.9% of the children aged 4 to 16 years had received mental health or school services within the past year. This study also showed that the cross-sectional predictors of service use for children included: (1) parent report of internalizing and externalizing problems (using the Child Behavior checklist²²), (2) maternal substance abuse history and high level of case management, (3) non-African American race, and (4) less financial satisfaction.

There is limited research on mental health utilization for depressed mothers and their children despite the significant intergenerational impact of depression. The current investigation contributes to the research by documenting the mental health services utilization with standardized measures for both mothers with depression and their children and examining predictors of utilization using a prospective design. The focus on African American mothers with depression and their children is important because there are few empirical studies on mental health services use among this at-risk, under-served population. Thus, the aims of this study are to: (1) examine the 3-month mental health utilization of African American mothers with depression and their children, and (2) identify demographic and psychological predictors of mental health utilization among African American mothers and their children. It is hypothesized that there will be an underutilization of mental health services for mothers and children. Similar to findings from Mowbray and colleagues,²¹ it is expected that maternal depression severity, baseline treatment utilization, and child internalizing and externalizing behavior problems will positively predict mental health utilization for mothers and children and that low income will negatively predict mental health utilization for mothers.

METHOD

Participants

The participants consisted of 51 mother-child dyads. The mothers ranged in age from 23 to 63 years, with a mean age of 39.3 (SD = 7.6) years. Race/ethnicity was obtained by maternal self-report, and participants were allowed to make more than 1 choice. All mothers identified their race as African American; however, 9.8% (n = 5) also identified with other races. Two percent (n = 1) also identified with Hispanic ethnicity. The majority of the mothers were single (86.3%, n = 44), received public assistance (62.7%, n = 32), and had yearly incomes of \$20 000 or less (68.6%, n = 35). Thirty-seven percent (n = 19) of the mothers worked full-time or part-time, while 25.5% (n = 13) of the sample received disability compensation. The children ranged in age from 7 to 14 years, with a mean age of 11.2 (SD = 2.1) years. Approximately 65% (n = 33) of the children were female. Similarly, mothers identified all of their children as African American; however, 11.8% (n = 6) also identified with other races. Two children (2.9%) were also of Hispanic ethnicity.

Procedures

This pilot investigation was part of a descriptive study examining the transmission of depression between African American mothers and their children. Mothers were eligible for the study if they (1) were African American, (2) had a primary current or past-year psychiatric diagnosis of a depressive disorder, and (3) were the primary caregiver of a school-aged child who resided at least part-time with them. Mothers could not have (1) history of bipolar disorder or psychotic disorders, (2) current or past-year diagnosis of

substance dependence, or (3) self-report of diagnosis of mental retardation. Children were excluded from participation if there was maternal report of a diagnosis of mental retardation. Mothers participated in a diagnostic interview (Structured Clinical Interview for *Diagnostic and Statistical Manual of Mental Disorders* [Fourth Edition, Text Revision] Axis I Disorders)²³ conducted by the primary author to determine their eligibility for the study. Eligible mothers and 1 of their children completed a battery of assessment questionnaires read aloud by research assistants. Both mother and child were paid \$20 for the assessment interview. Permission to be contacted for a telephone interview about mental health services for themselves and their child 3 months later was obtained during the mother and child assessment. Mothers were contacted by telephone to complete mental health services questionnaires and were paid \$5 for participation. Written consent was collected from the mother and assent was collected from the child. This study was approved by the hospital and the public health department institutional review boards prior to initiation of the study.

Recruitment

Mothers were recruited from outpatient mental health agencies, research studies, ads in local newspapers, homeless shelters, and an elementary school throughout a large metropolitan area in the United States. To facilitate recruitment, childcare was provided and participants received bus tokens or reimbursement for parking costs. Through recruitment efforts, 63 mother-child dyads completed the assessment. The largest recruitment sources for the sample were research studies (34.9%, $n = 22$), newspaper ads (30.2%, $n = 19$), and outpatient mental health agencies (23.8%, $n = 15$). Of the 63 mothers, 81% ($n = 51$) completed the 3-month telephone interview. Those who completed the services data differed from the rest of the sample in that they were more likely to be of lower income, $\chi^2(1) = 4.86, p < .05$. They did not differ in regards to age of parent or child, parent or child depression scores, child anxiety, child behavioral problems, or baseline maternal treatment status.

Measures

Cornell Service Index²⁴ is an 18-item interview that measures quantity, type, and characteristics of services used by adults seeking mental health treatment. It has good interrater reliability and adequate test-retest reliability among community samples of adults newly admitted to outpatient mental health clinics. The index has been used in multisite studies of depression^{25,26} and a study of depressed adults in outpatient settings.²⁷ A 3-month time frame was used for this current study.

Briefest Service Assessment for Children and Adolescents (SACA)²⁸ is a 29-item interview that measures the types of mental health services children receive and the treatments they receive within service settings. The parent version has good to excellent lifetime and satisfactory to good past-year test-retest reliability.²⁹ The SACA demonstrates good to excellent parent-youth correspondence for services that had been used in the preceding year. There was satisfactory concordance ($\kappa = 0.76$) between parent report and medical records of youth inpatient, outpatient, and school service use.²⁸ A 3-month time frame was used for this current study.

Beck Depression Inventory-II (BDI-II)³⁰ is a 21-item self-report measure of the severity of depressive symptoms in areas such as mood, pessimism, sense of failure, and somatic symptoms. There is evidence of the reliability, validity, and utility of the instrument.^{31,32} It has excellent internal consistency ($\alpha = .90$) with African American samples.^{4,33} The BDI-II was used to measure maternal depression severity.

The Children Depression Inventory (CDI)³⁴ is a 27-item self-report scale of depressive symptoms suitable for use by youth ranging in age from 7 to 17 years. It quantifies a range of depressive symptoms, including disturbed mood, hedonic capacity, vegetative functions, self-evaluation, and interpersonal behaviors. The CDI is the most widely used measure of child depression.^{35,36} The CDI has adequate internal consistency (0.82 to 0.87) for African American youth.^{37,38} The CDI total *T* score was used to measure child depression.

The Child Behavioral checklist²² assesses children's competencies and behavioral problems as reported by their parents or guardians. Psychometrics have been established, demonstrating the test's satisfactory reliability and validity. The 20 competence items assess the amount and quality of the child's participation in positive activities (eg, sports, hobbies). The 118 problem items assess behavior across 9 syndromes on a 3-point response scale. It has been used cross-culturally, which includes samples with blacks and/or African Americans.^{39,40} The total problems scale *T* score was used to measure child behavioral problems.

The Multidimensional Anxiety Scale for Children⁴¹ is a 39-item self-report instrument that measures a broad range of anxiety symptoms in youth. The MASC has strong test-retest reliability (0.70 to 0.93), internal consistency (interclass correlations from 0.60 to 0.90), and ample evidence of its validity with both clinic and community samples.^{41–43} African American youth have similar mean total scores as white youth.^{43,44} The total *T* score was used to measure child anxiety.

Data Analytic Plan

The aims of the study were to describe maternal and child mental health services utilization and to identify predictors of service utilization. Data management and analyses were conducted with SPSS 12 (SPSS Inc, Chicago, Illinois). Preliminary analyses were based on descriptive statistics entailing percentages of maternal and child service utilization, mean number of maternal session attendance (Tables 1 and 2), and means and standard deviations of maternal depression severity, child depressive symptoms, child anxiety symptoms, and maternal report of child behavioral problems. Bivariate associations among study continuous variables were performed.

Logistic regressions were conducted to assess the extent to which baseline treatment status, demographic, and behavioral rating scales predicted mental health utilization 3 months later. Separate logistic regressions were conducted for mother and child service utilization (Tables 3 and 4). The dependent variables were recoded into categorical variables: utilization of mental health services (no = 0, yes = 1) for mother and child. Demographic variables were entered first for both maternal and child logistic regressions. The independent variables for mothers' utilization were as follows: maternal age, income level, baseline maternal treatment status, maternal depression severity, and maternal report of child behavioral problems. The independent variables for children's utilization are as follows: child age, child gender, child depression symptoms, child anxiety symptoms, maternal report of child behavioral symptoms, and baseline maternal treatment status. The independent variables were recoded into categorical variables: baseline maternal treatment status (no = 0, yes = 1), income level (\$0–\$20 000 = 1, ≥\$20 001 = 2), and child gender (female = 0, male = 1).

RESULTS

Mental Health Service Utilization

Tables 1 and 2 display the 3-month frequency of mental health utilization for mothers and their children, respectively. Overall, 65.3% (*n* = 32) of the mothers and 36.7% (*n* = 18) of

the children had utilized any mental health services. The number of total sessions mothers attended ranged from 0 to 121, with a mean of 14.8 (SD = 24.4).

Mothers were recruited from several sources. For the frequently sampled sources, 86.6% (n = 13) of mothers from research studies, 85.7% of (n = 12) mothers from outpatient mental health agencies, and 25% (n = 4) of mothers from newspapers utilized mental health services. The following are the most common mental health services utilized by mothers based on their recruitment source. The most common services used by mothers from research studies were group therapy (n = 10, 66.7%), case management (n = 7, 46.7%) and individual therapy (n = 7, 46.7%). Mothers recruited from outpatient mental health agencies more frequently utilized individual therapy (n = 11, 78.6%), medication visit (n = 8, 57.1%) and case management (n = 5, 35.7%). For mothers recruited from newspaper ads, the most utilized mental health services were individual therapy, intake evaluation, and outpatient medical visit (n = 2, 12.5%).

Logistic Regressions Predicting Mental Health Services Utilization

Tables 3 and 4 display logistic regressions for predictors of maternal and child mental health utilization respectively. For the mothers, baseline mental health treatment status was the best predictor of 3-month mental health utilization. Follow-up χ^2 analysis demonstrated that mothers who were in treatment at baseline were more likely to be in treatment 3 months later, $\chi^2 (1) = 10.31, p < .01$. However, for some mothers, there was a change in treatment status from baseline to 3-month follow-up. Three mothers (12.5%) were no longer in treatment at 3 months, while 12 (44%) began or resumed mental health services during the 3 months following baseline. Of the 12 mothers who began or resumed therapy, the most common services utilized were group therapy (n = 8), case management (n = 5), individual therapy (n = 4), and an intake evaluation (n = 4). When the variables were entered separately into the regression analyses, income significantly predicted mental health utilization, while maternal depression severity marginally predicted mental health utilization. However, these variables no longer predicted utilization when treatment status was included in the regression. Exploratory analyses showed that these mothers who were in treatment at baseline were more likely to be in a lower income group, $\chi^2 (1) = 4.36, p < .05$, and more depressed, $t = -1.84, p < .10$.

For children, maternal report of child behavior problems significantly predicted 3-month mental health utilization. *T* tests were conducted to further examine this finding. Results showed that children who utilized mental health services had higher levels of behavioral problems on the Child Behavioral checklist than children who did not utilize mental health services ($t = -2.07, p < .05$).

DISCUSSION

This pilot study provides preliminary evidence about mental health utilization of African American mothers with depressive disorders and their children. We found that 65% of the depressed African American mothers had utilized mental health services. These findings are similar to those of Weissman and colleagues,⁹ who found that 49% of depressed mothers had received treatment within the past month and that 75% of depressed mothers had received mental health treatment in their lifetime within an urban general medicine practice. Our study's rate of maternal mental health utilization is higher than the utilization rates found for postpartum mothers.^{8,10,11} Perinatal women may have more physical limitations in getting mental health care in addition to the increased demands of pregnancy and newborn care, which limit the ability of the parent to seek care for herself. Further documentation of mental health utilization of subgroups of mothers with depression would clarify the variability in findings.

A major finding of this study is that mothers who were in treatment were more likely to have utilized mental health treatment within 3 months after the baseline assessment. It is reasonable to assume that mothers who were in treatment initially continued with their mental health services only 3 months later. In a study of an urban population, African Americans who utilized mental health services at baseline were more likely to use these services 12 to 15 years later.⁴⁵ The finding of continued mental health utilization for depressed African American mothers is encouraging in light of the research indicating that African Americans have low mental health utilization and are more likely to drop out of mental health treatment.^{7,46,47} In a cross-sectional study with African American, Latina, and European American women, the 3 strongest predictors of lifetime mental health utilization are self-reported drug problem, greater belief that psychiatric disorder is caused by an imbalance within oneself or one's environment, and less belief that psychiatric disorder is caused by religious or supernatural forces.⁴⁸ Current substance dependence disorder was an exclusion criterion for the study; therefore, substance disorders cannot account for continued utilization of mental health services. Despite the various barriers to mental health services that the sample may encounter (eg, mental health stigma, racial discrimination in the health care system, lack of social support, competing demands of parenting/caregiving),^{47,49,50} the current study suggests that African American mothers with depression who initiate treatment in the face of these barriers can stay in treatment at least short term to address their mental health needs. Only 3 mothers were no longer in treatment at the follow-up interview.

We found that approximately 38% of the children received mental health services within the 3 months after the assessment interview. This rate was slightly higher than 24%, the rate of children with past-year mental health utilization rates noted in a study of children of mothers with severe mental illness.²¹ Our mental health utilization rate is similar to the 1-year utilization rate of 34.5% found by Mandell, Boothroyd, and Stiles⁵¹ in Medicaid records. Mental health utilization rates in this sample reflect the high risk status of the children, especially when there is evidence showing that African American children were less likely than white children to have utilized mental health treatment.^{21,51,52}

Our results suggest that maternal reports of child behavior problems predicted child mental health utilization. Similarly, Mowbray et al²¹ demonstrated that maternal reports of child behavior problems as measured by the Child Behavioral checklist predicted child mental health utilization. In a recent review, parent perception of child problems was a predictor of child mental health utilization.⁵³ A large body of evidence describes the behavioral profiles of the children of depressed mothers, with evidence suggesting that manifestations of behavioral symptoms vary by developmental stage, with disruptive behavior disorders and anxiety disorders being more common among school-aged children, depression being more common among adolescents and substance abuse being more common among young adults.^{15,54–56} Recent data from the Sequenced Treatment Alternatives to Relieve Depression study, assessing current and lifetime prevalence of psychiatric disorders among children of depressed mothers, suggests that as many as 45% of those children meet criteria for a psychiatric diagnosis.⁵⁷

In another study, Wu and colleagues⁵² examined patterns of mental health services among depressed children and adolescents and looked for factors associated with service utilization. Among those who received treatment for depression, depressed youth whose mothers were receiving professional help were more likely to utilize mental health services than mothers who were not receiving professional mental health services; however, African American youth were less likely to receive professional help than other ethnic groups in this study.

Income had an effect on the results of the current study. Women with a yearly income of \$20 000 or less were more likely to have services data collected and more likely to be in

treatment at the baseline assessment. There have been limited studies on the effects of income on mental health service use, and results have been inconsistent.²¹ Women in the lower income level may have had a higher rate of treatment in this study due to the availability of health care services to those with income low enough to be on public insurance. Minorities are less likely to be insured, resulting in poor access to care in general,⁵⁸ but those making higher incomes may be at a further disadvantage due to the high costs of insurance in the United States.²¹ Young minority women in particular are often uninsured, despite their high risk of depression.^{59,58} Thus, women with lower income may have higher rates of treatment due to increased economic stress impacting their psychiatric functioning, leading to greater need to use mental health services. Future research is warranted to understand the complex interactions of income, race, and mental health utilization.

There are limitations to the current study. First, the time period for mental health utilization is shorter than is typically reported in research literature. The current study assesses for mental health utilization in the past 3 months, while research literature more frequently report on utilization within either the past year or lifetime. It is unclear how the 3-month time span corresponds to past-year utilization. Second, data were not gathered about the child's baseline treatment status, thus it is not known if children who received treatment within the 3-month period had been receiving treatment prior to the study. Third, the sample included a larger proportion of women who had lower income, although there was a range of income levels. Fourth, recruitment included mental health treatment facilities, thus recruitment strategies may have biased the sample of women who were in treatment. Finally, because the sample included only African American mothers, the results may not be generalizable to depressed mothers of other races and ethnicities or to depressed fathers.

These are important clinical implications of the study's findings. This pilot study provides preliminary data to support the use of mental health treatments for depressed mothers and their children. With utilization of mental health services, benefits to both mothers and children can be demonstrated. For example, Weissman and colleagues⁵⁷ found that 3 months of medication treatment for mothers with depression resulted in reductions in children's diagnoses and symptoms supporting the benefits of maternal treatment for child psychiatric outcomes. Other studies examining the effectiveness of brief psychotherapeutic interventions for maternal depression—specifically, interpersonal therapy for depressed mothers whose children are receiving treatment—effectively reduced levels of maternal symptoms and improved child functioning.⁶⁰ These studies suggest potential benefits of brief interventions for depressed mothers. Utilization of brief interventions might increase access and acceptability to needed mental health services. Improving mental health utilization for depressed mothers and their children who are exhibiting behavioral difficulties may lead to psychiatric benefits in both generations.

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References

1. Goldman LS, Nielsen NH, Champion HC. Awareness, diagnosis, and treatment of depression. *J Gen Intern Med* 1999;14:569–580. [PubMed: 10491249]
2. Patel V, Farooq S, Thara R. What is the best approach to treating schizophrenia in developing countries? *PLoS Med* 2007;4:963–966.

3. Weissman MM, Jensen P. What research suggests for depressed women with children. *J Clin Psychiatry* 2002;63:641–647. [PubMed: 12143923]
4. Gary FA, Yarandi HN. Depression among southern rural African American women: a factor analysis of the Beck Depression Inventory-II. *Nurs Res* 2004;53:251–259. [PubMed: 15266164]
5. Williams DR, Gonzalez HR, Neighbors H, et al. Prevalence and distribution of Major Depressive Disorder in African Americans, Caribbean Blacks, and Non-Hispanic Whites. *Arch Gen Psychiatry* 2007;64:305–315. [PubMed: 17339519]
6. Garland AF, Lau AS, Yeh M, et al. Racial and ethnic differences in utilization of mental health services among high-risk youths. *Am J Psychiatry* 2005;162:1336–1343. [PubMed: 15994717]
7. Neighbors HW, Caldwell C, Williams DR, et al. Race, ethnicity, and the use of services for mental disorders. *Arch Gen Psychiatry* 2007;64:485–494. [PubMed: 17404125]
8. Horowitz JA, Cousins A. Postpartum depression treatment rates for at-risk women. *Nurs Res* 2006;55:S23–S27. [PubMed: 16601631]
9. Weissman MM, Feder A, Pilowsky DJ, et al. Depressed mothers coming to primary care: maternal reports of problems with their children. *J Affect Disord* 2004;78:93–100. [PubMed: 14706719]
10. Huang ZJ, Wong FY, Ronzio CR, et al. Depressive symptomatology and mental health help-seeking patterns of US- and foreign-born mothers. *Matern Child Health J* 2007;11:257–267. [PubMed: 17171544]
11. Song D, Sands RG, Wong YI. Utilization of mental health services by low-income pregnant and postpartum women on medical assistance. *Women Health* 2004;39:1–24. [PubMed: 15002880]
12. Downey G, Coyne JC. Children of depressed parents: an integrative review. *Psychol Bull* 1990;108:50–76. [PubMed: 2200073]
13. Field T. Maternal depression effects on infants and early interventions. *Prev Med* 1998;27:200–203. [PubMed: 9578995]
14. Goodman, SH.; Tully, E. Depression in women who are mothers: an integrative model of risk for the development of psychopathology in their sons and daughters. In: Keyes, CLM.; Goodman, SH., editors. *Women and Depression: a handbook for the Social, Behavioral, and Biomedical Sciences*. New York, NY: Cambridge University Press; 2006. p. 241-280.
15. Weissman MM, Wickramaratne P, Nomura Y, et al. Offspring of depressed parents: 20 years later. *Am J Psychiatry* 2006;163:1001–1008. [PubMed: 16741200]
16. Beardslee WR, Keller MB, Lavori PW, et al. The impact of parental affective disorders in a non-referred sample. *J Am Acad Child Adolesc Psychiatry* 1993;32:723–730. [PubMed: 8340291]
17. Goodman SH, Brumley HE. Schizophrenic and depressed mothers: relational deficits in parenting. *Dev Psychol* 1990;26:31–39.
18. Knitzer, J.; Theberge, S.; Johnson, K. Reducing maternal depression and its impact on young children: toward a responsive early childhood policy framework. New York, NY: The National Center for Children in Poverty; 2008.
19. Krishnakumar A, Black MM. Longitudinal predictors of competence among African American children: the role of distal and proximal risk factors. *J Appl Dev Psychol* 2002;23:237–266.
20. Lewinsohn PM, Olino TM, Klein DN. Psychosocial impairment in offspring of depressed parents. *Psychol Med* 2005;35:1493–1503. [PubMed: 16164773]
21. Mowbray CT, Lewandowski L, Bybee D, et al. Children of mothers diagnosed with serious mental illness: patterns and predictors of service use. *Ment Health Serv Res* 2004;6:167–183. [PubMed: 15473103]
22. Achenbach, TM. Manual for the Child Behavior Checklist/4–18 and 1991 Profile. Burlington, VT: University of Vermont, Department of Psychiatry; 1991.
23. First, MB.; Spitzer, RL.; Gibbon, M., et al. Structured Clinical Interview for DSM-IV-TR Axis I Disorders, Research Version, Patient Edition (SCID-I/P). New York, NY: Biometrics Research, New York State Psychiatric Institute; 2001.
24. Sirey JA, Meyers BS, Teresi JA, et al. The cornell service index as a measure of health service use. *Psychiatr Serv* 2005;56:1564–1569. [PubMed: 16339619]

25. Bruce ML, Ten Have TR, Reynolds CF III, et al. Reducing suicidal ideation and depressive symptoms in depressed older primary care patients: a randomized controlled trial. *JAMA* 2004;291:1081–1091. [PubMed: 14996777]
26. Unutzer J, Katon W, Callahan CM, et al. Depression treatment in a sample of 1,801 depressed older adults in primary care. *J Am Geriatr Soc* 2003;51:505–514. [PubMed: 12657070]
27. Weinberger MI, Sirey JA, Bruce ML, et al. Predictors of major depression six months after admission for outpatient treatment. *Psychiatr Serv* 2008;59:1211–1215. [PubMed: 18832510]
28. Stiffman AR, Horwitz SM, Hoagwood K, et al. The Service Assessment for Children and Adolescents (SACA): adult and child reports. *J Am Acad Child Adolesc Psychiatry* 2000;39:1032–1039. [PubMed: 10939232]
29. Horwitz SM, Hoagwood K, Stiffman AR, et al. Reliability of the Services Assessment for Children and Adolescents. *Psychiatr Serv* 2001;52:1088–1094. [PubMed: 11474056]
30. Beck, AT.; Steer, RA.; Brown, GK. Manual for Beck Depression Inventory-II. San Antonio, TX: Psychological Corporation; 1996.
31. Dozois DJA, Dobson KS, Ahnberg JL. A psychometric evaluation of the Beck Depression Inventory-II. *Psychol Assess* 1998;10:83–89.
32. Steer RA, Ball R, Ranieri WF, et al. Dimensions of the Beck Depression Inventory-II in clinically depressed outpatients. *J Clin Psychol* 1999;55:117–128. [PubMed: 10100838]
33. Grothe KB, Dutton GR, Jones GN, et al. Validation of the Beck Depression Inventory-II in a low-income African American sample of medical out-patients. *Psychol Assess* 2005;17:110–114. [PubMed: 15769232]
34. Kovacs, M. Children's Depression Inventory manual. North Tonawanda, NY: Multi-Health Systems; 1992.
35. Kazdin AE. Childhood depression. *J Child Psychol Psychiatry* 1990;31:121–160. [PubMed: 2179245]
36. Myers K, Winters NC. Ten-year review of rating scales. II: scales for internalizing disorders. *J Am Acad Child Adolesc Psychiatry* 2002;41:634–659. [PubMed: 12049439]
37. Cardemil EV, Reivich KJ, Beever CG, et al. The prevention of depressive symptoms in low-income, minority children: two-year follow-up. *Behav Res Ther* 2007;45:313–327. [PubMed: 16643843]
38. DuRant RH, Cadenhead C, Pendergrast RA, et al. Factors associated with the use of violence among urban black adolescents. *Am J Public Health* 1994;84:612–617. [PubMed: 8154565]
39. Crijnen AAM, Achenbach TM, Verhulst FC. Comparisons of problems reported by parents of children in 12 cultures: Total problems, externalizing, and internalizing. *J Am Acad Child Adolesc Psychiatry* 1997;36:1269–1277. [PubMed: 9291729]
40. Crijnen AAM, Achenbach TM, Verhulst FC. Problems reported by parents of children in multiple cultures: the Child Behavior Checklist syndrome constructs. *Am J Psychiatry* 1999;156:569–574. [PubMed: 10200736]
41. March JS, Parker JDA, Sullivan K, et al. The Multidimensional Anxiety Scale for Children (MASC): Factor structure, reliability, and validity. *J Am Acad Child Adolesc Psychiatry* 1997;36:554–565. [PubMed: 9100431]
42. Grills-Tauchel AE, Ollendick TH, Fisak B. Reexamination of the MASC factor structure and discriminant ability in a mixed clinical outpatient sample. *Depress Anxiety* 2008;25:942–950. [PubMed: 18008335]
43. March JS, Sullivan K, Parker J. Test-retest reliability of the Multidimensional Anxiety Scale for Children. *J Anxiety Disord* 1999;13:349–358. [PubMed: 10504106]
44. Kingery JN, Ginsburg GS, Burstein M. Factor structure and psychometric properties of the Multidimensional Anxiety Scale for Children in an African American adolescent sample. *Child Psychiatry Hum Dev* 2009;40:287–300. [PubMed: 19165593]
45. Cooper-Patrick L, Gallo JJ, Powe NR, et al. Mental health service utilization by African Americans and Whites: the Baltimore epidemiologic catchment area follow-up. *Med Care* 1999;37:1034–1045. [PubMed: 10524370]

46. Nadeem E, Lange JM, Edge D, et al. Does stigma keep poor young immigrant and US-born Black and Latina women from seeking mental health care? *Psychiatr Serv* 2007;58:1547–1554. [PubMed: 18048555]
47. Schraufnagel TJ, Wagner AW, Miranda J, et al. Treating minority patients with depression and anxiety: What does the evidence tell us? *Gen Hosp Psychiatry* 2006;28:27–36. [PubMed: 16377362]
48. Alvidrez J. Ethnic variations in mental health attitudes and service use among low-income African American, Latina, and European American young women. *Community Ment Health J* 1999;35:515–530. [PubMed: 10863988]
49. Dennis CL, Chung-Lee L. Postpartum depression help-seeking barriers and maternal treatment preferences: a qualitative systematic review. *Birth* 2006;33:323–331. [PubMed: 17150072]
50. Ojeda VD, McGuire TG. Gender and racial/ethnic differences in use of outpatient mental health and substance use services by depressed adults. *Psychiatr Q* 2006;77:211–222. [PubMed: 16927167]
51. Mandell DS, Boothroyd RA, Stiles PG. Children's use of mental health services in different Medicaid insurance plans. *J Behav Health Serv Res* 2003;30:228–237. [PubMed: 12710375]
52. Wu P, Hoven CW, Cohen P, et al. Factors associated with use of mental health services for depression by children and adolescents. *Psychiatr Serv* 2001;52:189–195. [PubMed: 11157117]
53. Sayal K. Annotation: Pathways to care for children with mental health problems. *J Child Psychol Psychiatr* 2006;47:649–659.
54. Brennan PA, Hammen C, Andersen MJ, et al. Chronicity, severity, and timing of maternal depressive symptoms: relationships with child outcomes at age 5. *Dev Psychology* 2000;36:759–766.
55. Hammen C, Burge D, Stansbury K. Relationship of mother and child variables to child outcomes in a high-risk sample: a casual modeling analysis. *Dev Psychology* 1990;26:24–30.
56. Weissman MM, Wickramaratne P, Nomura Y, et al. Families at high and low risk for depression: a 3-generational study. *Arch Gen Psychiatry* 2005;62:29–36. [PubMed: 15630070]
57. Weissman MM, Pilowsky DJ, Wickramaratne PJ, et al. Remissions in maternal depression and child psychopathology: a STAR*D child report. *JAMA* 2006;295:1389–1398. [PubMed: 16551710]
58. U.S. Department of Health and Human Services. Mental health: Culture, race, and ethnicity—a supplement to mental health: a report of the Surgeon General. Rockville, MD: Substance Abuse and Mental Health Services Administration, Center for Mental Health Services; 2001.
59. Miranda J, Azocar F, Komaromy M, et al. Unmet mental health needs of women in public-sector gynecologic clinics. *Am J Obstet Gynecol* 1998;178:212–217. [PubMed: 9500476]
60. Swartz HA, Frank E, Zuckoff A, et al. Brief interpersonal psychotherapy for depressed mothers whose children are receiving psychiatric treatment. *Am J Psychiatry* 2008;165:1155–1162. [PubMed: 18558645]

Table 1**Mental Health Utilization for Mothers**

Service	N = 51	%	Mean sessions
Psychiatric			
Individual therapy (one-on-one interaction)	23	45.1	4.06
Medication visit (dosages monitored/prescribed by health care provider)	16	31.4	0.96
Group therapy (peers offer guidance and report)	15	29.4	2.41
Case management (helps individuals to make decisions about their health care)	13	25.5	2.06
Family therapy (support for nurturing change and development within the family)	9	17.6	1.35
Intake evaluation (interview focused on symptoms and behaviors)	9	17.6	0.14
Day treatment (intense services for behavioral, emotional, and/or learning problems)	2	3.9	1.41
Crisis team visit (support offered by group of individuals)	1	2.1	0.04
Substance			
Intake evaluation (educational, psychological, and medical)	2	4.0	0.02
Counseling (provided by a trained professional)	2	3.9	1.49
Day treatment (outgoing patient care)	1	2.0	0.31
Methadone visit (received support for drug)	0	0	0
Self-help	0	0	0
Other services			
Outpatient medical visit (walk-in services)	8	16.0	0.43
Any	32	65.3	14.84

Table 2**Mental Health Utilization for Children**

Service	N = 50	%
Outpatient mental health clinic (visit without overnight stay)	8	16
Professional mental health services (psychiatrist, psychologist, social worker, or family counselor)	5	10.2
Home visit	4	8
Day treatment (facility where care is provided)	3	6
Special help in regular classroom (support provided)	3	6
Other counseling or therapy in school	3	6
Hospitalization (admitted into a hospital for treatment)	1	2
Primary care doctor (pediatrician or family care doctor for problems with behavior)	1	2
Religious leader (priest, minister, or rabbi for problems with behaviors or feelings)	1	2
Self-help group (ie, Alcoholics Anonymous or peer counseling)	1	2
Crisis hotline (number you can call to get advice)	0	0
Detention center/prison or jail	0	0
Drug or alcohol clinic (provides treatment for substance abuse and addiction)	0	0
Emergency room (for problems with behaviors or feelings)	0	0
Emergency shelter (provides privacy and protection from danger)	0	0
Foster home (placed in household by a social service agency)	0	0
Group home (live with others and participate in daily tasks)	0	0
Probation or juvenile corrections (corrections officer or a court counselor)	0	0
Residential treatment care (live-in stay for services)	0	0
Special classroom (additional support provided to selected students)	0	0
Special school (additional support provided to all students)	0	0
Substance treatment unit (provides support in overcoming addictions)	0	0
Any services	18	36.7

Table 3

Logistic Regression for Maternal Mental Health Utilization

Baseline Predictors	OR	95% CI
Maternal age	1.00	0.91–1.09
Income	3.31	0.67–16.35
Maternal treatment status	0.09 ^a	0.02–0.49
Maternal depression	1.05	0.98–1.14
Child behavior problems	0.97	0.90–1.04

Abbreviations: CI, confidence interval; OR, odds ratio.

^a
 $p < .01$.

Table 4

Logistic Regression for Child Mental Health Utilization

Baseline Predictors	OR	95% CI
Child age	1.25	0.84–1.87
Child gender	0.59	0.14–2.43
Child depression	0.97	0.90–1.04
Child anxiety	1.04	0.97–1.13
Child behavior problems	1.07 ^a	1.00–1.14
Maternal treatment status	0.62	0.14–2.84

Abbreviations: CI, confidence interval; OR, odds ratio.

^a
 $p < .05$.