Published in final edited form as:

Ambul Pediatr. 2008 ; 8(6): 368–374. doi:10.1016/j.ambp.2008.08.004.

Discussion of maternal stress during pediatric primary care visits

Jonathan D. Brown, PhD, MHS and

*Mathematica Policy Research, Inc., 600 Maryland Ave., SW, Suite 550, Washington, DC 20024,
Phone: 202-264-3446, Fax 202-863-1763; Email: jbrown@mathematica-mpr.com*

Lawrence S. Wissow, MD, MPH

Professor, Department of Health, Behavior, and Society, Johns Hopkins Bloomberg School of Public Health, 624 N. Broadway, Room 703, Baltimore, MD 21205 Phone: 410-614-1243, Fax: 410-955-7241 Email: lwissow@jhsph.edu

Abstract

Objective—To determine whether the discussion of maternal stress in pediatric primary care is associated with the mother's satisfaction with her child's provider.

Methods—Children ages 5–16 and their mother (N = 747) were recruited from the waiting rooms of 13 geographically diverse pediatric primary care sites from 2002 to 2005. Directly following the visit, the mother reported her satisfaction with the attention that the provider gave to her and her child's problems and also reported whether the provider understood the problems that she wanted to discuss during the visit. The mother also reported whether the visit included the discussion of her "stresses and strains" and the discussion of child mood or behavior.

Results—Thirty-five percent of mothers discussed their stresses and strains with their child's provider. The mother was more likely to be "completely" satisfied with the attention that she and her child received from the provider (odds ratio [OR] 2.43, 95% confidence interval [95% CI], 1.43–4.11) and to agree "strongly" that the provider understood the problems she wanted to discuss (OR 1.95, 95% CI, 1.32–2.93) when the visit included the discussion of maternal stress after controlling for the reason for the visit, number of previous visits, provider specialty (family practice or pediatrics), youth mental health status, whether the visit included the discussion of child mood or behavior, and maternal distress measured with a standard screening tool.

Conclusion—The mother was more satisfied with her child's primary care provider when maternal stress was discussed during the visit. This finding should somewhat alleviate fears that mothers will react negatively to discussion of their stress during pediatric visits.

Keywords

mother; stress; distress; primary care; pediatric; satisfaction; perceptions of care; communication; discussion

Correspondence to: Jonathan D. Brown.

Conflict of interest: The authors have no conflict of interest.

Publisher's Disclaimer: This is a PDF file of an unedited manuscript that has been accepted for publication. As a service to our customers we are providing this early version of the manuscript. The manuscript will undergo copyediting, typesetting, and review of the resulting proof before it is published in its final citable form. Please note that during the production process errors may be discovered which could affect the content, and all legal disclaimers that apply to the journal pertain.

Introduction

Maternal stress interferes with mothers' ability to parent^{1–2} and has a negative impact on the physical and mental health of children.^{3–5} Children of mothers who have high levels of stress also are more likely to require care for acute problems and traumatic injuries.⁶

Pediatric primary care providers (PCPs) may be well-positioned to address maternal stress. Mothers report that they are, hypothetically, willing to discuss their stress during pediatric visits.^{7–8} Though about half of pediatricians surveyed were willing to address mothers' mood,⁹ which may be related to stress, a major barrier is that providers fear negative reactions should they ask mothers routinely about their stress.^{8,10–11} Indeed, mothers report some reluctance to discuss their stress due to fear that disclosing problems could bring about harm to themselves or their children.⁸

Although previous research has asked mothers whether they were willing to discuss their stress with PCPs,^{7–8} the goal of the analyses reported here was to document mothers' satisfaction with PCPs when the discussion of stress actually occurred. We took advantage of existing data that was collected directly following pediatric visits. Mothers were asked whether their own stress had been discussed during the visit and the degree to which they were satisfied with their child's PCP. The data allowed us to examine whether mothers were more satisfied with the PCP when the visit included the discussion of maternal stress. The data also allowed us to examine whether mothers were more likely to discuss their stress in the context of their child's problems or when the mother demonstrated distress on a standard screening tool.

We hypothesized that the discussion of maternal stress would be more common when the mother reported a higher level of distress, as measured with a standard screening tool, and also when her child demonstrated mental health difficulties, since mothers of children with mental health problems report higher levels of stress.^{12–13} We also hypothesized that the mother would be more satisfied with her child's PCP when the visit included the discussion of her stress since previous studies have found that mothers are, hypothetically, willing to discuss their own stress during pediatric visits.^{7–8}

Methods

Participants and Procedures

The data were originally collected to evaluate the outcomes of a training that sought to improve the ability of PCPs to elicit mental health concerns, agree on acceptable forms of treatment, and increase positive expectations that treatment would be helpful.¹⁴ Half of the PCPs were randomized to receive the training, which consisted of three didactic sessions, self-study and practice with simulated patients. PCPs in the control group received a training manual and feedback on standardized patient interviews. Patients were unaware of whether the PCP received the training.

Sites were chosen to represent the range of specialties (family practice and pediatrics), payers (private and public), locations (rural and urban), and practice structures (solo, group, clinics) that provide pediatric primary care in the United States and relate to variation in the prevalence of children's mental health problems.^{15–16} Sites in the Baltimore, MD, Washington, DC and upstate New York were recruited. The lead PCP at each site was approached for participation. If that PCP agreed, he or she encouraged other PCPs to participate.

Recruitment of the parent and their child occurred from December 2002 to August 2005. Interviewers approached all parents in the waiting area with the goal of recruiting 10 parent-child dyads per PCP. The parent and child were eligible if the child was 5 – 16 years old and

the child's reported pain was 4 or less on an analog scale of 1–10 (1 = no pain). Children in pain were excluded on the grounds that it would be inappropriate to burden them with research tasks. One child per parent was randomly selected if more than one was eligible. Both fathers and mothers were eligible. The analyses reported here only include mothers.

The mother provided written consent and children age 11 to 16 provided written assent. Within five minutes after the visit, the mother completed all of the questionnaires described below. Spanish language instrumentation was used when appropriate. The mother was compensated \$15. The Johns Hopkins University Bloomberg School of Public Health Committee on Human Research and the ethics review committees of each clinic approved the procedures.

The dependent variables for these analyses were the mother's response to two questions derived from a previous investigation of patients' attitudes toward primary care.¹⁷ The first was: "Overall, how satisfied were you with the attention your doctor/nurse practitioner gave to you and the problems you may be having with your child?" Response options ranged from 1 (not at all) to 5 (completely). The second was: "Overall, do you feel that during today's visit your child's doctor/nurse practitioner understood the problems you wanted to discuss at the visit?" Response options ranged from 1 (strongly disagree) to 5 (strongly agree). Items were not constructed to form a scale. These questions were used for this analysis because they were the only questions that the mother answered about her satisfaction with the attention that she received from her child's PCP. The mother answered several other questions about whether she was satisfied with the care that her child received. Responses to these two outcomes were dichotomized for ease of interpretation to identify mothers who were "completely" satisfied with the attention received from the PCP versus those who were less than "completely" satisfied, and those who "strongly" agreed that the PCP understood the problems she wanted to discuss versus those who less than "strongly" agreed.

The independent and control variables were selected based on a review of the factors that influence patient satisfaction¹⁸ and based on Perloff and colleagues' conceptual model of doctor-patient communication.¹⁹

Discussion of maternal stress was the independent variable of interest. The mother responded "Yes" or "No" to the question: "During today's visit did your doctor/nurse practitioner discuss any stresses or strains you are feeling yourself?"

Several control variables, described below, were also included in these analyses.

The mother answered two questions that required a "Yes" or "No" response: "During today's visit did your doctor/nurse practitioner discuss your child's mood?" and "During today's visit did your doctor/nurse practitioner discuss your child's behavior?" Responses to these questions were included to examine whether the mother was more likely to discuss stress if she also discussed the child's mood or behavior, since mothers of children with mental health problems experience higher levels of stress.^{12–13} We also examined these items in relation to the outcomes because mothers may be more satisfied with visits that include the discussion of child mood or behavior, since they often wish to discuss such topics with the PCP.²⁰

The mother also reported her native language, her race and ethnicity, the reason for the visit, number of previous visits, and the age and insurance status of the child. Age was included to examine whether mothers of older or younger children were more likely to discuss their stress. Native language was included because patients less proficient in English may experience greater barriers to communication and may experience less satisfaction with care.²¹ Likewise, race and ethnicity were included because minority patients report poorer communication with medical professionals, which may lead to lower patient satisfaction.¹⁹ Insurance status was included because parents of uninsured children have reported lower satisfaction with care.²²

No data was collected about family income to avoid intrusiveness. The reason for the visit was included to examine whether discussion of stress was more common during visits that were for the child's mental health or for chronic child health problems, since mothers of these children may experience greater levels of stress.^{12–13} The number of previous visits was included to examine whether mothers may have been more likely to discuss their stress or may have been more satisfied when they had an existing relationship with the PCP.

The mother reported her distress using the 28-item General Health Questionnaire (GHQ), which has been widely used in primary care as a screening tool for emotional distress.^{23–24} The GHQ measures underlying symptoms of mental disorder but is not intended to provide a diagnosis.²⁵ GHQ scores are, however, highly correlated with the Diagnostic Interview Schedule, the Composite International Diagnostic Instrument (CIDI), and physician assessments of mental disorder.^{26–27} This analysis included the GHQ in order to examine whether a measure of distress was associated with the discussion of stress and whether distress was associated with satisfaction with the PCP, since previous research suggests that distressed mothers may be less satisfied with care.²⁸ The standard algorithm which sums all symptoms and divides the sum by the number of completed items was used to score the GHQ. GHQ scores of 4 or higher correspond to a clinically significant level of distress, which was used as the criteria of distress.²⁵

The mother reported her child's mental health difficulties using the 33-item Strengths and Difficulties Questionnaire (SDQ), which has been used as a screening tool for mental health problems among youth age 3–16 years in clinic and community settings.²⁹ The SDQ was included to examine whether discussion of stress was more likely to occur in the context of child mental health problems since mothers are receptive to discussing their child's emotions and behaviors in primary care,³⁰ which may provide an opportunity to discuss the mother's stress. The standard algorithm was used to sum symptoms. A score of 16 or higher, which corresponds to the 9% of youth in the US with "high difficulties," was used as the criteria for identifying youth with a mental health problem.³¹ The PCP was unaware of the SDQ and GHQ scores.

Statistical Analysis

The distribution of the two outcomes was examined. Chi-square was used to examine the bivariate relationship between the discussion of stress and each outcome and between the discussion of stress and child and mother characteristics. Variables that did not achieve a statistically significant level of $P < .20$ in bivariate analyses were excluded from multivariable analyses. Multivariable random effects logistic regression was used to model the odds ratio (OR) and 95% confidence interval (95% CI) of each of the dichotomized outcomes as a function of the discussion of stress and other covariates. Random effects regression accounts for the non-independence of observations due to clustering.³² The random effects regression used the PCP identifier as the grouping variable to account for clustering by PCP and account for any unmeasured influence of PCP characteristics on the outcome. The number of sites was too small for valid estimates of clustering within site. Variables were entered into the model in the following order: discussion of stress, discussion of child mood, discussion of child behavior, GHQ, SDQ, number of previous visits, reason for visit, and PCP specialty (family practice versus pediatrics). Regressions were also conducted among stratified samples of well-child, acute care, medical follow-up, and mental health visits. Stata 9 was used for the analyses.³³

Results

Practices and Providers

Thirteen of the 16 sites that were approached participated. Three sites were unable to participate due to staff turnover. Rural sites ($n = 7$) included a solo pediatric practice, a hospital-based pediatric practice, four free-standing multi-specialty offices, and a small-town practice staffed by two family nurse practitioners, all located in small towns of upstate New York. Urban sites ($n = 6$) located in Baltimore, MD, and Washington, DC, included three community clinics (two multi-specialty, one pediatric), a group private pediatric practice, a hospital-based family practice, and a multi-service center that served mainly Latino families. No site had formal collaborative arrangements with psychiatrists or psychologists, and all served children ages infant to 18 years who were covered by a mix of insurance types.

Eighty-three percent ($n=54$) of the 65 PCPs who were recruited participated. Of those who participated, 81.4% ($n = 44$) were medical doctors, 16.6% ($n = 9$) were nurse practitioners, and 1.8% ($n = 1$) was a physician assistant. Nurse practitioners and the physician assistant were included in the original study to examine whether the uptake of skills taught during the training varied according to the PCP's previous training. Forty-one percent were male ($n = 22$), 64.8% ($n= 35$) identified their specialty as pediatrics, and 35.2% ($n=19$) as family practice.

Mothers and Children

Of 871 child-parent dyads recruited, 4.9% refused or were ineligible. Of the remaining 828 visits, 54 were with fathers and 27 did not have complete data; these were excluded resulting in a final sample of 747 mothers and their child (Table 1). There were no statistically significant differences ($P < .20$) in the variables listed in Table 1 between the final sample and any excluded group (visits with fathers, visits with incomplete data, or those who refused or were ineligible). The sample of children who were "Other race" and non-Latino ($n = 11$) was too small for valid inferences and was therefore combined with the sample of Latino children. Each PCP had an average of 13.5 patient observations.

Discussion of Stress

Thirty-five percent ($n=267$) of mothers discussed their stress, 57.1% ($n= 427$) discussed child behavior, and 55.2% ($n = 413$) discussed child mood. Nearly 85% of visits where stress was discussed also included the discussion of child mood or behavior; 38% of discussion about maternal stress occurred during visits with a child who scored within the high difficulties range of the SDQ (Table 1). Nearly 68% of visits that included the discussion of stress were for well-child care. Other variables listed in Table 1 were not statistically associated with the discussion of stress ($P < .20$).

Satisfaction with Provider

Mothers reported a high degree of satisfaction with the attention received from the PCP (mean [M] = 4.64, standard deviation [SD] = 0.75) and high agreement that the PCP understood the problems she wanted to discuss (M = 3.89, SD = 1.17). Responses to both questions ranged from 1–5 but were skewed toward higher scores. When responses were dichotomized, 57.7% ($n=431$) of mothers were "completely" satisfied and 76.2% ($n=569$) "strongly" agreed that the PCP understood her problems (Table 1).

Table 2 presents the statistically significant bivariate relationships between visit characteristics and each outcome. Chi-square tests that were not statistically significant are not shown. During visits that included the discussion of stress, 77.9% of mothers were completely satisfied with the attention received from the PCP and 61.0% strongly agreed that the PCP understood the problems she wanted to discuss. During visits that included the discussion of child mood or

child behavior, a larger proportion of mothers were satisfied with the attention received from the PCP and felt understood. Sixty-nine percent of mothers who demonstrated distress on the GHQ were completely satisfied with the attention received from the PCP and 73.1% of mothers of children who demonstrated a mental health problem on the SDQ also reported this outcome. Among visits to family practitioners, a higher proportion of mothers were completely satisfied with the attention received from the PCP and a higher proportion strongly agreed that the PCP understood what she wanted to discuss during the visit. No other variables listed in Table 1 were statistically associated with either outcome ($P < .20$).

Controlling for covariates, when the visit included the discussion of stress, the mother had 2.43 times higher odds of reporting being completely satisfied with the attention received from the PCP and 1.95 times higher odds of strongly agreeing that the PCP understood the problems she wanted to discuss (Table 3). The discussion of child mood and behavior were not independently associated with either outcome in regression analyses. The odds of both outcomes were higher when the child had more than 20 previous visits with the PCP and when the visit was with a family practitioner. The odds that the mother reported being completely satisfied with the attention received from the PCP were also higher when the visit was for a child mental health problem.

The odds of each outcome were higher during visits that included the discussion of stress when the regression analyses were repeated among separate stratified samples of well-child visits, mental health visits, and follow-up medical visits (results not shown). In these stratified regressions, the magnitude and statistical significance of the discussion of stress was similar to the results presented in Table 3. The discussion of stress maintained only a marginally statistically significant relationship with satisfaction (OR 2.21, 95% CI, 0.65–7.50, $P = .18$) and feeling understood (OR 1.85, 95% CI, 0.91–3.80, $P = .06$) when the regressions were repeated among acute care visits. In all of the stratified regressions, the odds of each outcome were higher during visits with family practitioners, similar to the results presented in Table 3. The number of previous visits did not maintain a statistically significant relationship with either outcome in the stratified regressions, which may have been due to insufficient statistical power. No statistically non-significant variables in the original regressions with the complete sample became statistically significant in the stratified regressions.

Discussion

Mothers reported higher satisfaction with their child's PCP when their own stress was discussed during pediatric visits. PCP's of course need to approach the discussion of stress tactfully and respectfully, but some of their fears that the discussion of stress will be poorly received may be unwarranted. It is notable that a large proportion of visits that included the discussion of maternal stress were well-child visits. This may suggest that maternal stress received less attention during acute care or other types of visits. Most but not all visits where maternal stress was discussed included discussion of child mood or behavior. However, the discussion of child mood and behavior were not independently associated with the mother's satisfaction. This suggests that mothers may perceive discussion of their own stress as a legitimate topic for pediatric visits regardless of a link to a specific child problem.

Satisfaction was also higher when the visit was with a family practitioners, who are more likely to have had training in adult health whereas pediatricians report inadequate training to address mothers' emotions.¹⁰ The family practitioners in this study may have also been the PCP for the mother, but that information was not collected.

It is important to note that satisfaction is only one indicator that a pediatric visit was potentially helpful. Nonetheless, higher satisfaction may lead to higher continuity of care,³⁴ which is

positively associated with the receipt of age-appropriate preventive services and vaccinations as well as a decreased likelihood of emergency room visits among children.^{35–36} Further research is needed to understand the relationship between mothers' perception of the PCP and health outcomes of children and mothers.

These findings may have implications for child-health quality improvement initiatives.³⁷ Surveys such as the Consumer Assessment of Health Plans Survey (CAHPS), used to measure such initiatives, ask whether parents are satisfied with their child's health care but, to the best of our knowledge, do not assess parent satisfaction with the attention that their own health or stress receives during pediatric visits. This may be a missed opportunity to assess another aspect of care that potentially influences the health of children and parents.

Limitations

The generalizability of the results may be limited because PCPs were participants in a randomized trial, which was unrelated to our outcomes but did have a positive impact on the distress of mothers and the mental health functioning of minority children.¹⁴ The independent variable and outcomes analyzed here may have been too crude to detect an association with the training.

All of the data is maternal self-report. Objective measures of visit content or PCP-reported data may yield different results. We do not have data to understand how mothers may have interpreted the single question used to report the discussion of stress. We do not know the source of mothers' "stresses and strains." It is possible that stress from different sources (e.g. child behavior problems versus financial stress) may have a different relationship with mothers' perceptions of the PCP. Mothers may, for example, be reluctant to discuss financial stress but find it acceptable to discuss stress related to the child. No data was available on whether the PCP or mother initiated the discussion of stress.

This research did not use instrumentation that measured broad constructs of patient satisfaction. Rather, single-item outcomes were used to measure specific aspects of care that were believed to be associated with doctor-patient communication and with the attention the mother received, based on a review of the literature and conceptual models.^{18–19} Future research should examine how the items used to measure satisfaction in this study are associated with other measures of satisfaction and health outcomes. The sample of PCPs lacked diversity to examine racial concordance with mothers.

Conclusion

The discussion of maternal stress during pediatric visits was positively associated with the mother's satisfaction with her child's PCP. These findings should somewhat alleviate fears that mothers will respond negatively to discussion of their stress during pediatric visits.

Acknowledgements

Sources of support: Primary data collection and analysis were supported by NIMH grant R01MH062469 (Lawrence S. Wissow). Data analysis was also supported by NIMH grant F31MH75531 (Jonathan D. Brown).

We wish to thank the families, physicians, nurses, and medical staff who participated in this research. Our research team included: Carmen Ivette Diaz, Mark Celio, O'Neil Costley, Dr. Anne Gadomski, Dr. Xianghua Luo (statistician), Lucia Martinez, Nancy Tallman, Alexandra Suchman, Dr. Mei-Chen Wang (statistician), Nancy Weissflog, and Ciara Zachary. Primary data collection was supported by NIMH grant R01MH062469 (Dr. Wissow). Data analysis was also supported by NIMH grant F31MH75531 (Dr. Brown).

References

1. Repetti RL, Wood J. Effects of daily stress at work on mothers' interactions with preschoolers. *J Family Psychology* 1997;11(1):90–108.
2. Anthony LG, Anthony BJ, Glanville DN, Naiman DQ, Waaners C, Shaffer S. The relationship between parenting stress, parenting behaviour and preschoolers' social competence and behaviour problems in the classroom. *Infant and Child Development* 2005;14(2):133–54.
3. Barry TD, Dunlap ST, Cotten SJ, Lochman JE, Wells KC. The influence of maternal stress and distress on disruptive behavior problems in boys. *J Am Acad Child Adolescent Psychiatry* 2005 Mar;44(3):265–73.
4. Essex MJ, Klein MH, Cho E, Kalin NH. Maternal stress beginning in infancy may sensitize children to later stress exposure: Effects on cortisol and behavior. *Biol Psychiatry* 2002 Oct 15;52(8):776–84. [PubMed: 12372649]
5. Wright RJ, Cohen S, Carey V, Weiss ST, Gold DR. Parental stress as a predictor of wheezing in infancy: A prospective birth-cohort study. *Am J Respir Crit Care Med* 2002 Feb 1;165(3):358–65. [PubMed: 11818321]
6. Abidin RR. Parenting stress and the utilization of pediatric services. *Children's Health Care* 1982;11(2):70–3.
7. Kahn RS, Wise PH, Finkelstein JA, Bernstein HH, Lowe JA, Homer CJ. The scope of unmet maternal health needs in pediatric settings. *Pediatrics* 1999 Mar;103(3):576–81. [PubMed: 10049959]
8. Heneghan AM, Mercer M, DeLeone NL. Will mothers discuss parenting stress and depressive symptoms with their child's pediatrician? *Pediatrics* 2004 Mar;113(3 Pt 1):460–7. [PubMed: 14993535]
9. Olson AL, Kemper KJ, Kelleher KJ, Hammond CS, Zuckerman BS, Dietrich AJ. Primary care pediatricians' roles and perceived responsibilities in the identification and management of maternal depression. *Pediatrics* 2002 Dec;110(6):1169–76. [PubMed: 12456915]
10. Horwitz SM, Kelleher KJ, Stein RE, Storfer-Isser A, Youngstrom EA, Park ER, et al. Barriers to the identification and management of psychosocial issues in children and maternal depression. *Pediatrics* 2007 Jan;119(1):e208–18. [PubMed: 17200245]
11. Wiley CC, Burke GS, Gill PA, Law NE. Pediatricians' views of postpartum depression: A self-administered survey. *Arch Women's Mental Health* 2004 Oct;7(4):231–6.
12. Anastopoulos AD, Guevremont DC, Shelton TL, DuPaul GJ. Parenting stress among families of children with attention deficit hyperactivity disorder. *J Abnormal Child Psychology* 1992 Oct;20(5):503–20.
13. Mash EJ, Johnston C. Determinants of parenting stress: Illustrations from families of hyperactive children and families of physically abused children. *J Clinical Child Psychology* 1990;19(4):313–29.
14. Wissow LS, Gadomski A, Roter D, Larson S, Brown J, Zachary C, et al. Improving child and parent mental health in primary care: A cluster-randomized trial of communication skills training. *Pediatrics* 2008 Feb;121(2):266–75. [PubMed: 18245417]
15. Freed GL, Nahra TA, Wheeler JR. Which physicians are providing health care to America's children? Trends and changes during the past 20 years. *Arch Pediatric Adolescent Med* 2004 Jan;158(1):22–6.
16. Simpson GA, Bloom B, Cohen RA, Blumberg S, Bourdon KH. U.S. children with emotional and behavioral difficulties: Data from the 2001, 2002, and 2003 National Health Interview surveys. *Adv Data* 2005 Jun 23;(360):1–13. [PubMed: 16004071]
17. Hulka BS, Zyzanski SJ, Cassel JC, Thompson SJ. Scale for the measurement of attitudes toward physicians and primary medical care. *Med Care* 1970 Sep-Oct;8(5):429–36. [PubMed: 4920640]
18. Sitzia J, Wood N. Patient satisfaction: A review of issues and concepts. *Soc Sci Med* 1997 Dec;45(12):1829–43. [PubMed: 9447632]
19. Perloff RM, Bonder B, Ray GB, Ray EB, Siminoff LA. Doctor-patient communication, cultural competence, and minority health. *Am Behav Scientist* 2006;49:835–52.

20. Garrison WT, Bailey EN, Garb J, Ecker B, Spencer P, Sigelman D. Interactions between parents and pediatric primary care physicians about children's mental health. *Hosp Community Psychiatry* 1992 May;43(5):489–93. [PubMed: 1375183]
21. Johnson RL, Saha S, Arbelaez JJ, Beach MC, Cooper LA. Racial and ethnic differences in patient perceptions of bias and cultural competence in health care. *J Gen Intern Med* 2004 Feb;19(2):101–10. [PubMed: 15009789]
22. Ngu EM, Flores G. Satisfaction with care and ease of using health care services among parents of children with special health care needs: The roles of race/ethnicity, insurance, language, and adequacy of family-centered care. *Pediatrics* 2006 Apr;117(4):1184–96. [PubMed: 16585314]
23. Tiemens BG, Ormel J, Simon GE. Occurrence, recognition, and outcome of psychological disorders in primary care. *Am J Psychiatry* 1996 May;153(5):636–44. [PubMed: 8615408]
24. Berwick DM, Budman S, Damico-White J, Feldstein M, Klerman GL. Assessment of psychological morbidity in primary care: Explorations with the General Health Questionnaire. *J Chronic Dis* 1987;40(Suppl 1):71S–84S. [PubMed: 3597700]
25. Goldberg DP, Hillier VF. A scaled version of the general health questionnaire. *Psychol Med* 1979 Feb;9(1):139–45. [PubMed: 424481]
26. Goldberg DP, Gater R, Sartorius N, Ustun TB, Piccinelli M, Gureje O, et al. The validity of two versions of the GHQ in the WHO study of mental illness in general health care. *Psychol Med* 1997 Jan;27(1):191–7. [PubMed: 9122299]
27. Von Korff M, Shapiro S, Burke JD, Teitlebaum M, Skinner EA, German P, et al. Anxiety and depression in a primary care clinic: Comparison of diagnostic interview schedule, general health questionnaire, and practitioner assessments. *Arch Gen Psychiatry* 1987 Feb;44(2):152–6. [PubMed: 3813810]
28. Wyshak G, Barsky A. Satisfaction with and effectiveness of medical care in relation to anxiety and depression. patient and physician ratings compared. *Gen Hosp Psychiatry* 1995 Mar;17(2):108–14. [PubMed: 7789781]
29. Goodman R. The extended version of the Strengths and Difficulties Questionnaire as a guide to child psychiatric caseness and consequent burden. *J Child Psychol Psychiatry* 1999 Jul;40(5):791–9. [PubMed: 10433412]
30. Brown JD, Wissow LS, Zachary C, Cook BL. Receiving advice about child mental health from a primary care provider: African American and Hispanic parent attitudes. *Med Care* 2007 Nov;45(11):1076–82. [PubMed: 18049348]
31. Bourdon KH, Goodman R, Rae DS, Simpson G, Koretz DS. The Strengths and Difficulties Questionnaire: U.S. normative data and psychometric properties. *J Am Acad Child Adolescent Psychiatry* 2005 Jun;44(6):557–64.
32. Diez-Roux AV. Multilevel analysis in public health research. *Ann Rev Public Health* 2000;21:171–92. [PubMed: 10884951]
33. StataCorp. Stata Statistical Software: Release 9. College Station, TX: StataCorp LP; 2005.
34. Marquis MS, Davies AR, Ware JE Jr. Patient satisfaction and change in medical care provider: A longitudinal study. *Med Care* 1983 Aug;21(8):821–9. [PubMed: 6888031]
35. Christakis DA, Mell L, Wright JA, Davis R, Connell FA. The association between greater continuity of care and timely measles-mumps-rubella vaccination. *Am J Public Health* 2000 Jun;90(6):962–5. [PubMed: 10846516]
36. Christakis DA, Mell L, Koepsell TD, Zimmerman FJ, Connell FA. Association of lower continuity of care with greater risk of emergency department use and hospitalization in children. *Pediatrics* 2001 Mar;107(3):524–9. [PubMed: 11230593]
37. Shaller D. Implementing and using quality measures for children's health care: Perspectives on the state of the practice. *Pediatrics* 2004 Jan;113(1 Pt 2):217–27. [PubMed: 14702504]

Table 1

Patient and Visit Characteristics

	All Visits (N = 747)	Visit did not include discussion of maternal stress (n = 480)	Visit included discussion of maternal stress (n = 267)
Visit included discussion of child mood *	413 (55.2%)	187 (37.7%)	226 (84.6%)
Visit included discussion of child behavior *	427 (57.1%)	201 (41.8%)	226 (84.6%)
Mother's native language English	641 (85.8%)	431 (89.8%)	210 (78.6%)
Male child	375 (50.2%)	235 (48.9%)	140 (52.4%)
Mother race/ethnicity			
Non-Latino African American	249 (33.3%)	168 (35.0%)	81 (30.3%)
Non-Latino Caucasian	397 (53.1%)	250 (52.1%)	147 (55.0%)
Latino or Other Race	101 (13.5%)	63 (13.1%)	38 (14.2%)
Child age (M=9.85, SD=3.48)			
5-10	424 (56.7%)	271 (56.4%)	153 (57.3%)
11-16	323 (43.2%)	199 (41.5%)	124 (46.4%)
Child privately insured	367 (49.1%)	241 (50.2%)	126 (47.2%)
Number of previous visits to provider			
None	69 (9.2%)	39 (8.1%)	30 (11.2%)
1 - 5	260 (34.8%)	159 (33.1%)	101 (37.8%)
6 - 10	109 (14.5%)	72 (15.0%)	37 (13.8%)
11 - 20	153 (20.4%)	93 (19.3%)	60 (22.4%)
More than 20	156 (20.8%)	101 (21.0%)	55 (20.5%)
Mother GHQ Score >= 4	157 (21.0%)	92 (19.2%)	65 (24.3%)
Child SDQ Total Difficulties Score >= 16 *	208 (27.8%)	105 (21.8%)	103 (38.5%)
Reason for visit **			
Mental health	45 (6.0%)	21 (4.3%)	24 (8.9%)
Acute medical	228 (30.5%)	179 (37.3%)	49 (18.3%)
Follow-up medical	77 (10.3%)	50 (10.4%)	27 (10.1%)
Well-child	397 (53.1%)	216 (45.0%)	181 (67.8%)
Visit with provider received intervention training	456 (61.0%)	289 (60.2%)	163 (61.0%)
Visit with family practitioner	140 (18.7%)	88 (18.3%)	52 (19.5%)
Male provider	281 (37.6%)	181 (37.7%)	100 (37.4%)

* $P < .20, \chi^2_3$ ** $P < .20, \chi^2_7$

Table 2
Bivariate Relationship of Visit Characteristics with Satisfaction

	All Visits (N = 747)	Mother completely satisfied with attention received from PCP (n = 569)	Mother not completely satisfied with attention received from PCP (n=178)	Mother strongly agreed that PCP understood problems she wanted to discuss (n = 431)	Mother did not strongly agree that PCP understood problems she wanted to discuss (n = 316)
Visit included discussion of maternal stress [*]	267	208 (77.9%)	59 (33.1%)	163 (61.0%)	104 (39.9%)
Visit included discussion of child mood [*]	413	339 (82.1%)	74 (17.9%)	255 (61.7%)	158 (38.3%)
Visit included discussion of child behavior [*]	427	349 (81.7%)	78 (18.2%)	264 (61.8%)	163 (38.2%)
Mother GHQ Score > =4 [*]	157	109 (69.4%)	48 (30.6%)	NS	NS
Child SDQ Total Difficulties Score >= 16 [*]	208	152 (73.1%)	56 (26.9%)	NS	NS
Number of previous visits with provider ^{**}					
None	69	47 (68.1%)	22 (31.8%)	36 (52.2%)	33 (47.8%)
1 – 5	260	148 (56.9%)	112 (43.1%)	112 (43.1%)	148 (56.9%)
6 – 10	109	81 (74.3%)	28 (25.7%)	53 (48.6%)	56 (51.4%)
11 – 20	153	144 (94.2%)	9 (5.8%)	110 (71.9%)	43 (28.1%)
More than 20 [†]	156	149 (95.5%)	7 (4.5%)	120 (76.9%)	36 (23.1%)
Reason for visit [†]					
Mental health	45	37 (82.2%)	8 (17.7%)	NS	NS
Acute medical	228	166 (72.8%)	62 (27.2%)	NS	NS
Follow-up medical	77	67 (87.0%)	10 (13.0%)	NS	NS
Well-child	397	299 (75.3%)	98 (24.7%)	NS	NS
Visit with family practitioner [*]	140	102 (72.9%)	38 (27.1%)	73 (52.1%)	67 (47.9%)

^{*} $P < .20, \chi^2_3$

^{**} $P < .20, \chi^2_9$

[†] $P < .20, \chi^2_3$

NS = chi-square not statistically significant at $P < .20$

Table 3
Multivariable Logistic Regressions of Satisfaction

Variable	Mother completely satisfied with attention received from PCP Odds Ratio (95% CI)	Mother strongly agreed that PCP understood problems she wanted to discuss Odds Ratio (95% CI)
Visit included discussion of maternal stress [†]	2.43* (1.43–4.11)	1.95* (1.32–2.93)
Visit included discussion of child mood [†]	1.45 (0.79–2.47)	1.05 (0.65–1.70)
Visit included discussion of child behavior [†]	1.22 (0.67–2.15)	1.11 (0.68–1.82)
Mother GHQ Score >=4	0.56 (0.35 – 1.89)	0.89 (0.59 – 1.34)
Child SDQ Total Difficulties Score >=16	0.59 (0.38–.947)	0.82 (0.55–1.21)
Number of previous visits [‡]		
None	0.85 (0.43–1.66)	0.89 (0.47–1.59)
6–10	1.04 (0.59–1.87)	0.73 (0.44–1.20)
11–20	1.72 (0.96–3.05)	1.18 (0.75–1.87)
More than 20	1.72* (1.02–3.05)	1.69* (1.06–2.71)
Reason for visit [§]		
Acute medical	1.11 (0.71–1.77)	1.26 (0.84–1.89)
Mental health	4.01** (1.62–9.93)	1.64 (0.92–2.93)
Follow-up medical	1.55 (0.64–3.78)	1.64 (0.78–3.34)
Visit with family practitioner	1.66** (1.15–2.77)	1.48** (1.02–2.41)
Model fit	p < .0001	p < .0001

* $P < .001$

** $P < .05$

[†] Reference is no discussion of the topic.

[‡] Reference is 1–5 visits.

[§] Reference is well-child visit