

## Positive Parenting Among African American Mothers With a Serious Mental Illness

*Positive parenting is hampered by social-contextual risks—lack of income, education, and support, as well as maternal mental illness—but current models do not examine the effect of each factor in concert with the others. Using structural equation modeling and a community sample (N = 202) of African American mothers diagnosed with depression, bipolar disorder, or schizophrenia, we examined the direct and indirect effects of poverty, maternal education, social support, material and social stress, current mental health, and psychiatric history on positive parenting attitudes, involvement in children's education, and authoritative parenting style. The strongest predictors of parenting attitudes were stress and current mental health. Parenting attitudes were the strongest predictors of parent involvement and style but stress and current mental health were also predictive. Involvement was also predicted by maternal education and social support.*

Mental illness is both a relatively common and remarkably hidden feature of adulthood. According to the Surgeon General's 1999 report on mental health, at any given time, 21% of adult Americans have a mental illness (U.S. Department of

Health and Human Services, 1999). Although many of these individuals have temporary or passing problems, for others with major depression, bipolar disorder, or schizophrenia, mental illness may have a more ongoing effect on everyday life. In the past, institution focused treatment meant that the seriously mentally ill were not likely to be able to take on normative adult roles such as parenting. A dramatic shift to community based service due to implementation of deinstitutionalization policies has changed this. Current estimates are that women with a serious mental illness are at least as likely to have children as women in the general population and many also are able to parent their children.

An emerging literature highlights the negative effects of mental illness, particularly depression, on parenting (for a review, see Oyserman, Mowbray, Allen-Meares, & Firminger, 2000). Depressed mothers are likely to be more negative (Frankel & Harmon, 1996; Radke-Yarrow, Notelman, Belmont, & Welsh, 1993), less encouraging (Scherer, Melloh, Buyck, Anderson, & Foster, 1996), and more punitive in their parenting (Gordon, Burge, Hammen, & Adrian, 1989). Further, although children of mothers with a serious mental illness have been shown to be at increased risk of mental health problems (Amminger et al., 1999) as well as, to a more limited extent, problems in school and academics (Hammen, Gordon, Burge, Adrian, Jaenicke, & Hiroto, 1987; Sameroff, Seifer, & Barocas, 1983), not enough is known about how this occurs.

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Therefore it is important to understand processes that can support parenting among mothers with a serious mental illness and elicit positive parenting—maternal nurturance, authoritative parenting style, and involvement in schooling. For example, though it is known that mental illness is episodic, such that maternal symptoms and functioning are likely to fluctuate, little research has examined the influence of current maternal community functioning as opposed to diagnosis on nurturance, involvement in school, or parenting style (see however, Cummings & Davies, 1994; Hammen, 1997). Equally important, though some research suggests that outcomes for children of mothers with a serious mental illness are in part attributable to the confluence of other risk factors such as poverty, low educational attainment, and lack of social supports (Sameroff et al., 1983), the independent influence of these factors has not been studied. This is a particularly glaring omission because poverty (Belle, 1982), low educational attainment (Puckering, 1989), and social isolation and lack of supports (Seifer et al., 1996; Stott et al., 1984) have all been related to maternal mental illness.

Further, research in this area commonly focuses on White, married, middle-class women, such that the processes linking mental illness to positive parenting among African American, lower income, or single mothers are unexplored. A review of research on effects of maternal mental illness on parenting, published from 1980 to 1999, found that only 21% of articles specified inclusion of either low income or non-White participants; most of these simply described their sample as diverse but did not use income or race in analyses (Oyserman et al., 2000). Because an accumulation of parental risk factors is known to increase risk of negative outcomes for children (Seifer et al., 1996), it is critical that we understand the effect of mental illness on parenting practices among minority and low-income women rather than attempt to generalize from studies with White and middle-class women. Similarly, because minority status increases risk not only of poverty but also of stresses and daily hassles (Clark, Anderson, Clark, & Williams, 1999), the convergence of these social statuses deserves specific attention. However, research to date has not provided a model of the process by which concurrent contextual factors—minority status, poverty, low education, and mental illness—influence parenting practices both directly and indirectly through their influence on family supports and stresses.

This is an important omission because in general, positive parenting practices—positive, nurturant parenting attitudes, supervision of and involvement in school and activities, and authoritative parenting style—all relate to better outcomes for children and adolescents (Bornstein, Tal, & Tamis-LeMonda, 1991; Gray & Steinberg, 1999; Harris & Marmer, 1996). Poverty (Samaan, 2000) plus material and social stress (Furstenberg, Hughes, & Brooks-Gunn, 1992), have all been related to breakdowns in positive parenting both generally and among African American mothers in particular (McLoyd, 1990). Maternal poverty is also related to increased risk of using a negative, punishing parenting style (McLoyd, 1998). Current multiple risk models tend to be additive—simply positing that more risks are worse for children than fewer; although important, these models do not go far enough in determining the relative weight of each factor in concert with the others (Greenberg, Lengua, Coie, Pinderhughes, & The Conduct Problems Prevention Work Group 1999). Because poverty and lack of social support often co-occur with maternal mental illness, only by studying them in concert will it be possible to estimate the total effect of these risk factors on positive parenting. By highlighting mediating factors, such an analysis will provide insights into appropriate preventive strategies as well. In the current research, we attempt to address these gaps by examining antecedents of positive parenting practices among low-income, African American mothers with serious mental illness.

Our conceptual model focuses on the direct and indirect effects of both poverty and serious mental illness—diagnosis, symptoms, current functioning, and number of years since onset—on positive parenting. We examine the extent to which poverty, low education, and mental illness influence parenting directly or through their influence on the intervening processes of social support and stress. We define stress in terms of both negative life events and chronic hassles (Aneshensel, 1992) and hypothesize that poverty, low education, and maternal mental illness may affect parenting partly by increasing family stress and depleting family support systems. That is, high stress and low support may mediate the relationship between maternal mental illness and problematic parenting practices, just as the relationship between poverty and parenting was importantly mediated by stress in McLoyd's (1990) study of African American low-income female headed families. Although previous research on parenting

has failed to verify a stress buffering role for social support (Quittner, Glueckauf, & Jackson, 1990; Simons, Lorenz, Wu, & Conger, 1993), we also explore the possibility that social support may moderate the effects of poverty and problems in current mental health on positive parenting for mothers with serious mental illness.

## METHOD

### *Sample Recruitment*

Participants were African American mothers ( $n = 202$ ) who participated in an ongoing NIMH funded study of women with both childcare responsibilities for at least one of their children and a serious mental illness diagnoses—schizophrenia, schizoaffective disorder, unipolar or bipolar depression (with or without psychotic features) of at least one year's duration (Mowbray & Oyserman, NIMH R01 54321).

Mothers in the study were all recruited with the collaboration of the local Community Mental Health Board following Board and University IRB approval. Twelve Community Mental Health Centers in the Detroit-Wayne County area participated. Mothers were provided information about the study and its voluntary nature either by their case managers, or if this was not possible, directly by a member of the research staff. Of 227 initial contacts, 218 agreed to be contacted by the research staff, and 202 were found eligible to participate. When contacted, participants were either receiving ongoing outpatient services or just entering service (81%) or were in short-term inpatient hospitalization (19%). In the latter case, interviews took place 30 days or more postdischarge so that mother's situation had restabilized. In this way we ensured inclusion of mothers that were diverse in their level of community functioning.

### *Sample Description*

At the time of interview, on average, mothers were 37 years of age ( $SD = 6.5$ , range = 21–60) and had 2.9 children ( $SD = 1.57$ ,  $Mdn = 3$ ); 35.6% had not completed high school, most lived below the poverty line (72%), and were unemployed in the month prior to the interview (83.2%). Median mental illness onset was at 27 years of age; median number of lifetime hospitalizations for mental illness was 3.00, with 68 (33.7%) reporting a mental illness hospitalization in the year prior to the interview. At interview,

Diagnostic Interview Schedule (DIS) diagnoses were major depression (34%), bipolar disorder with psychotic features (15%), schizophrenia (15%), major depression with psychotic features (14%), bipolar disorder (12%) and schizoaffective disorder (10%). Most mothers lived with their children (93.1%) and no other adults (25.8% of mother were never married and 28.8% were separated, widowed, or divorced) or with a spouse or partner (24.3%), or with their parents or other relatives (15.0%). The remaining mothers lived alone, although they had parenting responsibilities for their children at least 1 day per week.

### *Study Procedure*

Two structured, at-home interviews were conducted, 2 weeks apart, (median length = 105 and 46 minutes, respectively), with the second interview being the DIS. Participants were reimbursed \$15 for their time after each interview. To insure quality, interviewers audio taped interviews and the tapes were checked by the interview coordinator. Interviewers were women, aged 23 to 45, with extensive training in the interview schedule. Seven mothers refused the second interview, and 15 provided insufficient information for determination of diagnosis resulting in complete information for 180 women. The mothers who did not complete the diagnostic interview were compared with those who did on all study variables and were found to be higher in current community functioning and to have fewer symptoms, fewer hassles related to functioning, and fewer negative social interactions but more lifetime hospitalizations. Because, as detailed in the results section, diagnosis did not relate to the outcomes of interest and removing these mothers from the sample would have resulted in reducing the representativeness of the sample, we chose to analyze the data with the full set of participants.

## MEASURES

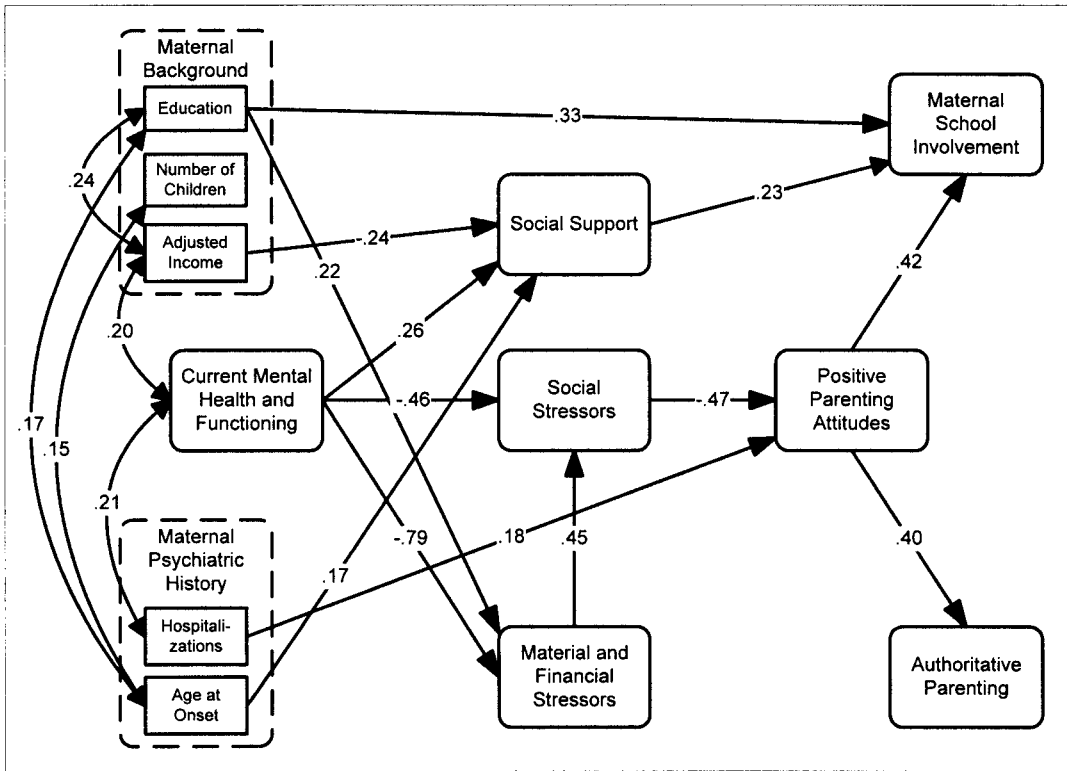
Measures are presented in the order they appear in the model, Figure 1, using the same construct headings.

### *Maternal Background Characteristics*

*Maternal education* was reported in years ( $M = 12.1$ ;  $SD = 2.04$ ;  $Mdn = 12.0$ ).

*Adjusted household income.* Total monthly income ( $M = \$1,017.69$ ;  $SD = \$539.9$ ,  $Mdn =$

FIGURE 1. SOCIAL-CONTEXTUAL EFFECTS ON POSITIVE PARENTING



Note: All paths are significant at  $p < .05$ .

\$900.00, range = \$115.00–\$3,500.00) was transformed to a percent of the poverty line (U.S. Census Bureau, 1996) adjusting for household size ( $M = 90.7\%$ ,  $SD = 48.5\%$ ,  $Mdn = 80.0\%$ ). Because of positive skew, adjusted household income was log transformed before use in analysis.

*Number of children* included biological, adopted, and stepchildren ( $M = 2.87$ ,  $SD = 1.57$ ,  $Mdn = 3.0$ ).

#### Maternal Psychiatric History

*Age of onset of psychiatric disorder* was assessed as age at first psychiatric hospitalization, or if none, age at first psychiatric visit or worst symptoms ( $M = 26.99$ ,  $SD = 8.62$ ,  $Mdn = 27.0$ ).

*Hospitalizations per year mentally ill* was expressed as the lifetime number of psychiatric hospitalizations divided by the number of years between onset and interview ( $M = .52$ ,  $SD = .69$ ,  $Mdn = .33$ ), to adjust for variable mental illness onset and maternal age. Log transformation reduced positive skew.

#### Current Mental Health and Functioning

*Community functioning* was an 18-item self-report scale with responses (1 = no activity, 5 = frequent independent activity) tailored to address domains relevant to women with a serious mental illness, including doing daily chores, handling finances and crises, social activity and conflict, and relationship with case manager or therapist ( $M = 3.38$ ,  $SD = .52$ ,  $\alpha = .78$ ; Bybee, Mowbray, Oyserman, & Lewandowski, 2000).

*Psychiatric symptomatology*, including depressive and psychotic symptoms, was assessed with the Colorado Symptom Index (Shern et al., 1994), a 14-item, 5-point symptom frequency scale ranging from 1 = never to 5 = at least every day ( $M = 2.73$ ,  $SD = .85$ ,  $\alpha = .90$ ).

*Hassles related to ability to function in the community* were assessed with a 5-item, 4-point Likert scale (1 = not at all a hassle, to 4 = a great deal of a hassle) adapted from the Hassles and Uplifts Scale (Lazarus & Folkman, 1984). Items included cooking, health, energy level, shopping, and medications ( $M = 2.16$ ,  $SD = .82$ ,  $\alpha = .82$ ).

*Psychiatric life events* in the past year were assessed with a 4-item checklist modified from the Brief Life Events Questionnaire (BLE; Brugha & Cragg, 1990). Items included psychiatric crisis, serious injury or illness, change in psychiatric medications, and change in mental health provider ( $M = 1.52$ ,  $SD = 1.21$ , range = 0–4).

### *Supports and Stressors*

*Social support.* Social support was assessed with three variables derived from the Arizona Social Support Interview Schedule (ASSIS; Barrera, 1980). To reduce positive skew, we applied square root transformations to each.

*Enacted support for private, personal matters* was the number of people with whom the participant talked about personal private matters in the past month ( $M = 2.41$ ,  $SD = 1.83$ , range = 0–10).

*Enacted support for parenting* was the number of people who gave parenting feedback and advice in the past month ( $M = 1.85$ ,  $SD = 1.93$ , range = 0–15).

*Enacted support without conflict* was the number of people who, in the past month, had given support and had not angered or upset the respondent ( $M = 4.85$ ,  $SD = 3.45$ , range = 0–24).

*Social stress. Social and relational life event stresses* in the past year were assessed with a 6-item checklist from the BLE (Brugha & Cragg, 1990). Events included death of parent, child, or spouse; death of a close friend or relative; physical or sexual assault; separation or termination of a romantic relationship; a serious problem with a close friend, neighbor, or relative; and periods of separation from children, family members, or relatives ( $M = 1.80$ ,  $SD = 1.20$ , range = 0–5).

*Negative social interaction stress* was the number of people with whom the participant had unpleasant disagreements or who made the respondent angry or upset in the past month (ASSIS; Barrera, 1980 [ $M = 1.60$ ,  $SD = 1.66$ , range = 0–10]). To reduce positive skew, we used the square root of this variable.

*Interpersonal daily hassles* were assessed with an 8-item, 4-point Likert scale (1 = *not at all a hassle*, 4 = *a great deal of a hassle*) adapted from the Hassles and Uplifts Scale (Lazarus and Folkman, 1984). Items included hassles with friends, romantic partner, neighbors, job or school, therapist, parents, kids and other relatives ( $M = 1.75$ ,  $SD = .49$ ,  $\alpha = .62$ ).

*Material and financial stress. Material resource related hassles* were assessed with an 8-item, 4-point Likert scale (1 = *not at all a hassle*, 4 = *a great deal of a hassle*) adapted from Lazarus and Folkman (1984). Items included medical care, landlord, social services, child-care, children's father, transportation, and things breaking down ( $M = 1.92$ ,  $SD = .58$ ,  $\alpha = .64$ ).

*Financial life event stresses* in the past year were assessed with a 5-item checklist from the BLE (Brugha & Cragg, 1990). Items included loss or reduction of entitlement benefits, loss or theft of items of value, major money crisis or housing loss/forced move ( $M = 1.35$ ,  $SD = 1.21$ , range = 0–5).

*Financial worries* were measured through the Adequacy of Financial Support Measure (Mowbray et al., 1999), an 8-item checklist addressing ability to pay for food, clothing, rent and utilities, medical needs, debts, transportation, and needs of friends and family ( $M = .45$ ,  $SD = .31$ ,  $\alpha = .79$ ).

*Financial satisfaction* was a 3-item, 5-point Likert scale addressing general financial satisfaction, difficulty paying bills, and having money at the end of the month ( $M = 2.86$ ,  $SD = .82$ ,  $\alpha = .69$ ).

### *Positive Parenting Attitudes*

*Parenting satisfaction* was measured with the Parenting Sense of Competence Scale (Gibaud-Wallston & Wandersman, 1978), an 8-item, 5-point Likert scale (1 = *very dissatisfied*, 5 = *very satisfied*;  $M = 4.03$ ,  $SD = .76$ ,  $\alpha = .83$ ).

*Parenting stress* was assessed with the Parenting Stress Index (Abidin, 1990), a 14-item, 5-point Likert scale (1 = *not at all*, 5 = *very much*;  $M = 2.49$ ,  $SD = .77$ ,  $\alpha = .87$ ) addressing child adaptability; acceptability; demands and mood; parental attachment; and parental social isolation.

*Parental nurturance* was assessed through the parental nurturance subscale of the Block Child Rearing Practices Scale (Rickel & Biasatti, 1982), a 13-item, 4-point response scale (1 = *not at all*, 4 = *very much*;  $M = 3.67$ ,  $SD = .34$ ,  $\alpha = .83$ ), including listening to and sharing feelings and experiences with one's children. To reduce negative skew, we used a cube transformation.

### *Maternal School Involvement*

*School involvement* was assessed with a 6-item checklist including belonging to or attending PTA meetings, volunteering at school, belonging to other parent organizations, attending school events, planning activities with other parents, and



enrolling child in other activities outside school. Because response scales differed, items were standardized before calculating the average scale score ( $M = 0.00$ ,  $SD = .58$ ,  $\alpha = .65$ ).

*Schoolwork supervision* was assessed with a 5-item scale (including how often mother helps with homework, talks with child about school, and checks that homework has been done), using a 4-point response scale, 1 = *never* to 4 = *often*; as well as checklist items measuring whether mother attends parent-teacher conferences and communicates with teachers outside conferences. Items were standardized and then averaged together ( $M = 0.00$ ,  $SD = .68$ ,  $\alpha = .72$ ).

*Contact with adults*, other than family members, involved in the child's life was assessed with 3 items covering frequency of contact, who usually initiates this contact, and how often the respondent feels upset or worried when talking to these other adults. The individual items were standardized then averaged because response scales differed ( $M = 0.00$ ,  $SD = .68$ ,  $\alpha = .56$ ).

#### *Authoritative Parenting*

*Negotiation, directives and explanation* in mother's responses to four scenarios adapted from the Sensitivity to Children Scale (Stollack, Scholom, Kallam, & Saturansky, 1973) were used to operationalize authoritative parenting following Baumrind's (1978) description. Each scenario described a problematic child behavior (e.g., not wanting to go to bed, having a temper tantrum at the supermarket), and mothers described what they would do or say in response. Two project staff coded responses to each scenario with the final score being summed across the four scenarios. The variables coded were negotiation, including maternal management of the child's environment ( $M = 1.13$ ,  $SD = .92$ , range = 0–4,  $\kappa = .82$ ); positive directives ( $M = .73$ ,  $SD = .81$ , range = 0–4,  $\kappa = .74$ ); and explanations, including validation of feelings ( $M = 2.17$ ,  $SD = 1.16$ , range = 0–4,  $\kappa = .75$ ).

## RESULTS

### *Analysis Plan*

Structural equation modeling was used to assess the fit of the conceptual model using multiple indicators of each of the constructs of interest. Analysis used Amos version 4.0 (Arbuckle & Wothke, 1999), with maximum likelihood methods em-

ployed to estimate the parameters of the model. After applying the previously noted transformation to reduce skew, variables were adequate in distribution and variation so few modifications were needed prior to analysis. Diagnosis was not included in the final analysis because preliminary analyses showed it was not influential in the model and including diagnosis reduced the sample size from 202 to 180, as described previously. Thus, though our sample includes mothers with serious mental illnesses, our analysis focuses on their current symptoms, functioning, and chronicity in terms of hospitalizations per year mentally ill. Columns 2–4 of Table 1 summarize descriptive information for all the measures in the final model; the raw correlations are available from the authors.

### *Assessment of Model Fit*

Several indices were used to assess the empirical fit of the model. Following the strategy presented by both Hoyle and Panter (1995) and Hu and Bentler (1995), one index from each of three recommended types was applied. As an index of absolute fit, the traditional ML  $\chi^2$  Goodness-of-Fit Test was used to assess the overall ability of the model to reproduce the observed data matrix. Two types of incremental fit indices were also used—the Comparative Fit Index (CFI; Bentler, 1990), and the Incremental Fit Index (IFI; Bollen, 1989). Both compare the fit of the hypothesized model to the fit of a baseline or independence model in which all paths are fixed to zero and both have an adequate fit threshold of .90; they differ in their reference to the central or noncentral  $\chi^2$  distribution. An alternative index of fit, the Root Mean Square Error of Approximation (RMSEA; Browne & Cudeck, 1993), was also applied. RMSEA estimates a function for model-data discrepancy in the population, corrected for model complexity; small values of RMSEA (those not significantly exceeding .05) indicate close fit of the model to the data. In addition to indices of overall model fit, the likelihood ratio (LR)  $\chi^2$  was used to compare the fit of alternative models involving nested sets of parameters. Fitted residuals were also used to identify sources of misfit.

### *Modeling Strategy*

A two-step modeling strategy was used, estimating measurement coefficients linking indicators to latent constructs in the first step and adding directional links among constructs in the second step.

TABLE 1. FINAL MEASUREMENT MODEL (AND DESCRIPTIVE STATISTICS): FACTOR LOADINGS OF OBSERVED INDICATORS ON LATENT CONSTRUCTS

Latent Construct Observed Indicators	Standardized Loadings	<i>M</i>	<i>SD</i>	Range
Maternal background characteristics				
Maternal education in years	— <sup>a</sup>	12.06	2.04	6–17
Adjusted household income <sup>b</sup>	—	90.70	48.50	11–333
Number of children	—	2.87	1.57	1–9
Maternal psychiatric history				
Age of onset of psychiatric disorder	—	26.99	8.62	3–50
Hospitalizations per year mentally ill	—	0.52	0.69	0–5.5
Current mental health and functioning				
Community functioning <sup>bc</sup>	0.81	3.38	0.52	1.84–4.68
Psychiatric symptomatology	–0.79	2.73	0.85	1.07–4.79
Hassles related to ability to function in community	–0.70	2.16	0.82	1–4
Psychiatric life events	–0.39	1.52	1.21	0–4
Supports and stressors				
Social support (enacted)				
Private, personal matters <sup>b</sup>	0.56	2.41	1.83	0–10
Parenting <sup>c</sup>	0.44	1.85	1.93	0–15
Without conflict <sup>bc</sup>	0.97	4.85	3.45	0–24
Social stressors				
Social and relational life event stresses	0.40	1.80	1.20	0–5
Negative social interaction stresses <sup>c</sup>	0.60	1.60	1.66	0–10
Interpersonal daily hassles <sup>b</sup>	0.61	1.75	0.49	1–3.33
Material and financial stressors				
Material resource-related hassles <sup>b</sup>	0.67	1.92	0.58	1–3.38
Financial life event stresses	0.47	1.35	1.21	0–5
Financial worries	0.59	0.45	0.31	0–1
Financial satisfaction	–0.63	2.86	0.82	1.33–4.33
Positive parenting attitudes				
Parenting satisfaction	0.72	4.03	0.76	1.5–5
Parenting stress	–0.65	2.49	0.77	1.05–4.58
Parental nurturance <sup>bc</sup>	0.66	3.67	0.34	2.38–4
Maternal school involvement				
School involvement <sup>bc</sup>	0.59	0.00	0.58	–1.06–1.19
Schoolwork supervision <sup>c</sup>	0.73	0.00	0.68	–2.75–0.54
Contact with adults	–0.69	0.00	0.68	–0.93–2.08
Authoritative parenting				
Negotiation	0.34	1.13	0.92	0–4
Positive directives	–0.51	0.73	0.81	0–4
Explanations <sup>b</sup>	0.65	2.17	1.16	0–4

Note: *N* = 202. For ease of reading, variables are in the same order as in the measures section.

<sup>a</sup>Maternal background characteristics and psychiatric history were modeled as observed exogenous variables and, therefore, had no factor loadings. <sup>b</sup>These measurement loadings have been set to one to scale the latent variables. <sup>c</sup>To address distribution problems, we transformed these variables as described in the text.

The conceptual model hypothesized maternal background characteristics and maternal mental health as exogenous variables affecting positive parenting, authoritative parenting style, and maternal school involvement, both directly and indirectly, mediated by contextual supports and stressors. Positive parenting attitudes were further

conceptualized as partial mediators of effects on both authoritative parenting and school involvement. Initial analysis focused on refining the measurement specification of the latent constructs. These are discussed in order of their representation in the model (see Figure 1).

*Maternal background characteristics* (income,

education, and number of children) showed little interrelationship to one another and were included as separate observed exogenous variables.

*Maternal mental health* (community functioning, symptomatology, hassles related to functioning in the community, psychiatric life events, age at onset, and lifetime hospitalizations per year mentally ill) was originally conceptualized as a single construct. Although measures of *current* mental health status formed a strong latent construct, variables describing mothers' psychiatric *history*—age at onset, lifetime hospitalizations per year mentally ill—showed little association with the construct and were therefore modeled as observed exogenous variables.

*Contextual supports and stressors*, which was originally conceptualized as a single latent construct, showed low communality and was separated into three separate constructs—*social support*, *social stress*, and *financial stress*. Social stress was conceptualized as a potential mediator of the effects of both financial stress and social support.

The final measurement model incorporated correlated residuals between observed indicators whose component items derived from a common measure because such indicators would be expected to share measurement variance. The affected indicators were those from Brugha and Cragg's (1990) life events measure (psychiatric, social-relational, and financial life events); those from Lazarus and Folkman's (1984) daily hassles measure (functioning, social, and material resource hassles); and finally those from Barrera's (1980) social support measure (private-personal, parenting and unconflicted support, and negative social interactions).

Once the complete measurement model was established, the structural paths specified by the conceptual model were estimated and the full structural model was assessed for fit to the data. We facilitated interpretation of model parameters by using the following procedure: paths not found to significantly differ from zero (at  $p < .05$ , as determined by bias-corrected bootstrap estimates of parameter standard errors) were fixed at zero, and the model was re-estimated. Likelihood ratio  $\chi^2$  was calculated to compare the fit of the trimmed model to the full model. Bootstrap methods (Arbuckle & Wothke, 1999; Bollen & Stine, 1990) were used to derive bias-corrected confidence intervals for all model parameters, including direct, indirect, and total effects, as well as estimates of variance in each endogenous construct that was explained by the model.

### Measurement Model

With all covariances among measurement residuals set to zero, fit was marginally acceptable, with  $\chi^2 (289, N = 202) = 488.50, p < .001, CFI = .85, IFI = .86, RMSEA = .06 (p\text{-close} = .06)$ . Freeing selected residuals to covary, as described above, improved fit relative to the model without correlated errors (LR  $\chi^2 [9, N = 202] = 81.20, p < .001$ ). The final measurement model was an adequate fit to the data:  $\chi^2 (280, N = 202) = 407.29, p < .001, CFI = .91, IFI = .91, RMSEA = .05 (p\text{-close} = .65)$ . Estimated correlations between residuals of the three indicators derived from the life events measure ranged from .14 to .26; correlations between residuals of the indicators from the hassles measure ranged from .17 to .37; and correlations between residuals of indicators from the social support measure ranged from .10 to .28. This model was also a reasonable reflection of the underlying concepts with a majority of the indicator loadings greater than .60 and an average absolute value of the loadings at .62. We note briefly that although two loadings were less than .4, as demonstrated by Little, Lindenberger, and Nesselroade (1999), this is not problematic because such loadings typically provide valid triangulation and yield unbiased estimates of relationships between latent constructs. The first column in Table 1 shows the results of the final measurement model, including the indicators of each latent construct and the corresponding standardized factor loadings.

### Structural Model

Building on the final measurement model, a full structural model was estimated reflecting all directional paths indicated in the conceptual model, as well as nondirectional correlations among the exogenous (predictor) variables. Fit of this full model was adequate, although the significance of chi-square revealed imperfections in the model's ability to reproduce the data matrix,  $\chi^2 (282, N = 202) = 411.23, p < .001$ . However, other indices showed both substantial improvement in fit compared to a null model ( $CFI = .90, IFI = .91$ ) and close overall model fit, corrected for model complexity ( $RMSEA = .05, p\text{-close} = .64$ ). Several of the hypothesized paths from the conceptual model were found not to differ significantly from zero in the observed data (at  $p < .05$ ). When these nonsignificant paths were fixed at zero, the fit of the model was not significantly affected, as dem-



TABLE 2. FINAL STRUCTURAL MODEL: STANDARDIZED TOTAL EFFECTS

	Endogenous (predicted) variables					
	Social support	Social stress	Financial stress	Positive parenting attitudes	Maternal school involvement	Authoritative parenting
Exogenous (predictor) variables						
Maternal education	0.00	0.10*	0.22*	-0.05*	0.30*	-0.02*
Adjusted household income	-0.24*	0.00	0.00	0.00	-0.06*	0.00
Number of children	0.00	0.00	0.00	0.00	0.00	0.00
Age at onset of psychiatric disorder	0.17*	0.00	0.00	0.00	0.04	0.00
Hospitalizations per year mentally ill	0.00	0.00	0.00	0.18*	0.08*	0.07*
Current mental health and functioning	0.26*	-0.81*	-0.79*	0.38*	0.22*	0.15*
Intervening variables						
Social support	-	0.00	0.00	0.00	0.23*	0.00
Social stress	0.00	-	0.00	-0.47*	-0.20*	-0.19*
Material and financial stress	0.00	0.45*	-	-0.21*	-0.09*	-0.08*
Positive parenting attitudes	0.00	0.00	0.00	-	0.42*	0.40*
Variance explained by model (R <sup>2</sup> )	0.13*	0.73*	0.68*	0.28*	0.34*	0.16*

\* $p < .05$ , using bias-corrected bootstrap standard error estimates.

onstrated by the lack of a significant likelihood ratio test: LR  $\chi^2(45, N = 202) = 49.54, p < .30$ . Fit of the final structural model portrayed in Figure 1, with nonsignificant paths trimmed, was very similar to the fit of the full untrimmed model,  $\chi^2(327, N = 202) = 460.77, p < .001$ , CFI = .90, IFI = .91, and RMSEA = .05,  $p$ -close = .81. Thus, the final structural model of directional relationships among latent constructs served as an adequate representation of the interrelationships between observed variables.

As can be seen in Figure 1, several of the exogenous variables were significantly correlated (at  $p < .05$ ). All correlations were interpretable. Specifically, adjusted income and education were positively correlated ( $r = .24$ ), indicating that mothers with higher levels of education were doing better financially. Mothers whose onset of mental illness occurred at a later age tended to have higher levels of education ( $r = .17$ ) and more children ( $r = .15$ ). Higher levels of daily functioning were seen for mothers with higher incomes ( $r = .20$ ) and for mothers who had more hospitalizations per year mentally ill ( $r = .21$ ).

Table 2 summarizes the total effect (direct plus indirect) of each exogenous and intervening variable on each endogenous latent construct in the model. Additionally, the overall proportion of variance explained by the modeled relationships is summarized for each endogenous construct. Direct effects are explicitly displayed in the model diagram in Figure 1; indirect effects are summarized below. All effects are standardized.

Throughout, the statistical significance of each parameter is indicated, as determined by bias-corrected bootstrap 95% confidence interval estimates calculated on the standardized coefficients.

*Social support.* Direct relationships with demographic and mental health variables explained 13% of the variance in the latent construct of social support. Women with later onset of mental illness ( $\beta = .17$ ) and those with better current functioning ( $\beta = .26$ ) had higher levels of social support. In addition, women with lower incomes reported higher levels of support ( $\beta = -.24$ ). This surprising finding must be interpreted in light of the women's generally low incomes, averaging below the poverty line. It is possible that among these relatively poor women, those living in more extreme poverty were compelled to seek out others and in this way were able to obtain more support.

*Material and financial stress.* Sixty-eight percent of the variance in material stress was explained by exogenous variables, the strongest predictor being mother's current mental health and functioning ( $\beta = -.79$ ). Mothers with better current mental health and functioning were less stressed. However, mothers with higher education were more stressed ( $\beta = .22$ ); perhaps these mothers had higher expectations or had experienced decline in standard of living over time and so were more stressed. This speculation is bolstered by the lack of significant association between adjusted household income and material stress once the

nondirectional associations of income with education and current mental health were controlled in the model.

*Social stress.* Seventy-three percent of the variance in social stress was accounted for by modeled relationships, the strongest predictor again being mother's current mental health and functioning ( $\beta = -.81$ ). Mothers with better current mental health and functioning were less stressed. Approximately half the total effect of maternal current mental health and functioning on social stress was direct ( $\beta = -.46$ ), with the remainder an indirect effect ( $\beta = -.35$ ) expressed through material stress. Maternal education also showed a significant indirect effect on social stress ( $\beta = .10$ ), expressed through material stress.

*Positive parenting attitudes.* Exogenous and intervening variables explained 28% of the variance in positive parenting attitudes. The strongest predictor of positive parenting was social stress ( $\beta = -.47$ ); mothers who were less stressed reported more positive parenting attitudes. With regard to mental health variables, mothers with higher rates of hospitalization per year of mental illness were also higher in positive parenting attitudes ( $\beta = .18$ ), perhaps because hospitalizations stabilized women or because the contrast between hospitalizations and being in the community increased the value of being a mother for these women. In addition, maternal current mental health and functioning also related indirectly to positive parenting attitudes ( $\beta = .38$ ), through maternal social stress and material stress. Other indirect relationships were also expressed through the association of social stress and positive parenting. Mothers with less material stress were less socially stressed, resulting in more positive parenting attitudes ( $\beta = -.21$ ). Maternal education showed a small ( $\beta = -.05$ ) but significant negative effect on parenting attitudes, expressed through material and social stress; lower levels of education were associated with slightly more positive parenting attitudes. It is important to note that it was social stress and not social support that was significantly related to positive parenting attitudes. Social support showed no significant effect on parenting attitudes, nor did family income, number of children, or age at onset of mental illness.

*Maternal involvement in child's education.* The model accounted for 34% of the variance in maternal involvement in the child's education. The

largest direct predictor of involvement was positive parenting attitudes ( $\beta = .42$ ); mothers with more positive parenting attitudes were more involved in their child's education. Support and stress were also important. Mothers with more social support were more involved in their child's education ( $\beta = .23$ ), and mothers who were more stressed were less involved—social stress had a negative indirect effect on involvement ( $\beta = -.20$ ), as did material and financial stress ( $\beta = -.09$ ), expressed through social stress. Both types of stress indirectly affected maternal involvement in child's education through their negative impact on parenting attitudes—mothers who were more stressed expressed more negative parenting attitudes, which in turn were associated with lower levels of involvement in the child's education. Maternal education had a substantial total effect on maternal involvement with children's education ( $\beta = .30$ ), composed primarily of a direct positive association ( $\beta = .32$ ) indicating that mothers with higher educational attainment were likely to be more involved in their children's education.

Current mental health and functioning had a positive total effect on maternal involvement in children's education ( $\beta = .22$ ), indicating that better current functioning was associated with greater involvement. The effect was entirely indirect and was expressed through the positive impact of current mental health on social support and through the negative association of current mental health with financial and social stress and the association of support and stress with positive parenting attitudes, as described previously. Mothers who were currently functioning better and experiencing fewer symptoms were able to obtain more social support and were less stressed; this in turn was related to more positive parenting attitudes and more involvement in children's education. Among these women with serious mental illnesses, the influence of mental health problems was indirect, not direct.

Two other exogenous variables also showed small but significant indirect effects on involvement. Income had a small but significant negative association with involvement in child's education ( $\beta = -.06$ ), expressed through social support. Number of hospitalizations was positively predictive of involvement ( $\beta = .08$ ), expressed through the negative association with positive parenting attitudes. Age at onset of mental illness was not significantly related to education involvement, although the component paths of the indirect effect were both individually significant.

*Authoritative parenting.* Sixteen percent of the variance in authoritative parenting was explained by the modeled relationships. The only direct predictor of authoritative parenting was positive parenting attitudes ( $\beta = .40$ ), indicating that positive attitudes were associated with more authoritative parenting. Social and material stress each had negative indirect effects on authoritative parenting ( $\beta = -.19$  and  $\beta = -.08$ , respectively); the effects of stress were expressed through their negative impact on positive parenting attitudes. Current mental health and functioning had a positive indirect effect on authoritative parenting ( $\beta = .15$ ), such that better functioning was associated with more authoritative parenting. Maternal education showed a small but significant indirect negative effect ( $\beta = -.02$ ), indicating that lower levels of education were predictive of more authoritative parenting. The effects of both current functioning and maternal education were expressed through the impact of stress on positive parenting attitudes. Previous hospitalizations had a positive indirect effect ( $\beta = .07$ ), expressed through parenting attitudes; women with more hospitalizations were more likely to use authoritative parenting strategies.

#### *Social Support Does not Buffer the Effects of Poverty and Mental Illness on Parenting*

To examine the possible buffering role of social support, we conducted exploratory analyses using both multivariate graphics and moderated regression (Aiken & West, 1991). For each of the 9 indicators of positive parenting, all possible 2-way interactions between each of the 3 indicators of social support and the 4 indicators of current mental health and functioning, plus adjusted income were examined. Only 3 of the 135 tested interactions approached significance, indicating that in this sample, social support did not moderate the effects of poverty or mental illness on parenting.

#### DISCUSSION

In this study, we examined the concurrent influences of maternal socioeconomic status and mental illness on parenting. We focused in particular on African American mothers who were generally living in poverty and asked to what extent social support and social and financial stresses would mediate the relationship between maternal socioeconomic status, mental illness, and parenting. Previous research has highlighted that low-income African American mothers' positive parenting behaviors

are strengthened by social supports and dampened by social and financial stress (McLoyd, 1998). Research with mothers with a serious mental illness has not as yet examined the extent that these same factors mediate the impact of mental illness on positive parenting (Oyserman et al., 2000).

We found no differential effects of maternal diagnosis—depression, schizophrenia, or bipolar disorder. However, we did find effects of current mental health and functioning, of age at onset of mental illness, and of having obtained treatment through psychiatric hospitalizations. Mothers who were currently experiencing fewer symptoms and functioning better were more able to obtain social support and were less at risk of social and material stress. Support in turn facilitated mothers' involvement in their children's education. Better maternal psychiatric functioning was also related to reporting less stress, both social and financial. Through these influences, maternal functioning and age at onset of mental illness had indirect effects on positive parenting attitudes, maternal involvement in child's education, and authoritative parenting. Finally, the variables related to psychiatric functioning had important relationships with one another and with social support. Mothers with more hospitalizations also reported higher levels of current functioning, which in turn related to more social support and less stress, both social and material. Although hospitalizations clearly are stressful and place demands on others in one's social network, hospitalizations may improve community functioning because of stronger connections with service providers and closer monitoring of medications. In addition, age at onset of mental illness was positively related to social support, such that women who were older when they first became mentally ill reported higher levels of social support. Given that the average age of onset was 27, perhaps women with later onset had more time prior to experiencing psychiatric difficulties to develop the skills needed to establish networks that could be counted on.

Though most mothers did not work and were poor, we found that poorer mothers reported higher levels of social support. Although adjusted income did not have any direct effects on parenting outcomes, it did exert an indirect effect on maternal involvement in child's education through social support. In addition, adjusted income was also associated with current functioning, in that mothers who were better off financially reported higher levels of mental health and functioning—better community functioning, fewer psychiatric symp-

toms, fewer psychiatric life events, and fewer daily hassles related to psychiatric functioning. With regard to maternal education, we found large direct effects on maternal involvement in children's education.

As has been suggested in research among mothers in the general population (Downey & Coyne, 1990), social support, social stress, and financial stress all significantly affected parenting outcomes, either directly or indirectly. Social support had a direct positive influence on maternal involvement in child's education. Mothers with higher levels of social support were more involved with their children's schooling. Consistent with other research on parenting (Quittner, Glueckauf, & Jackson, 1990; Simons, Lorenz, Wu, & Conger, 1995), we found no evidence that social support buffered the effects of poverty or mental illness on parenting. Social stress had a direct negative influence on positive parenting attitudes and, through this, an indirect negative effect on authoritative parenting style and on maternal involvement in children's education. The effects of financial stress were also indirect through the positive relationship between financial and social stress—financially stressed mothers also reported higher social stress, which in turn had a dampening effect on parenting outcomes, as described previously.

Even though limited (by its cross-sectional nature and reliance on self-reports) our findings are both unique and important. They provide a sense of the extent to which parenting among mothers with a serious mental illness is influenced by factors similar to those that influence other mothers, as well as the additional effect of variables specific to mental illness. Thus, we found that maternal mental illness and socioeconomic status influence parenting primarily through the positive direct effects of maternal education on child's educational experience and the negative effects of social stress on positive parenting attitudes. The model presents alternative paths of influence on parenting outcomes, with poverty as a potential starting point for many difficulties that mothers face, particularly greater financial and social stress associated with lower levels of functioning. Our data suggest that mothers with a serious mental illness can be helped to provide better parenting for their children and in this way reduce intergenerational risk by focusing on the mediators of risk. Preventive interventions can promote mother's efforts to parent by providing access to adequate financial resources, structuring opportunities for

social support, and offering appropriate mental health services that are sensitive to parenting needs. Moreover, mother's educational needs should not be ignored because education has a positive relationship with effective parenting.

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