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Lee M. Pachter, Peggy Auinger, Ray Palmer and Michael Weitzman

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ARTICLE

Do Parenting and the Home Environment, Maternal Depression, Neighborhood, and Chronic Poverty Affect Child Behavioral Problems Differently in Different Racial-Ethnic Groups?

Lee M. Pachter, DO[a], Peggy Auinger, MS[b], Ray Palmer, PhD[c], Michael Weitzman, MD[b]

[a]Department of Pediatrics, University of Connecticut School of Medicine and Saint Francis Hospital and Medical Center, Hartford, Connecticut; [b]American Academy of Pediatrics Center for Child Health Research and University of Rochester School of Medicine, Rochester, New York; [c]Department of Family Medicine, University of Texas San Antonio, San Antonio, Texas

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ABSTRACT

OBJECTIVE. To determine whether the processes through which parenting practices, maternal depression, neighborhood, and chronic poverty affect child behavioral problems are similar or different in minority and nonminority children in the United States.

METHODS. Data from 884 white, 538 black, and 404 Latino families with children who were 6 to 9 years of age in the National Longitudinal Survey of Youth were analyzed. The outcome, child behavioral problems, was measured using the Behavior Problems Index externalizing and internalizing subscales. The effects of chronic poverty, neighborhood, maternal depression, and parenting on the outcome were analyzed using multigroup structural equation modeling.

RESULTS. Chronic poverty affected child behavioral problems indirectly through the other variables, and parenting practices had direct effects in each racial/ethnic group. The effects of maternal depression were partially mediated through parenting in the white and Latino samples but were direct and unmediated through parenting practices in the black sample. Neighborhood effects were present in the white and black samples but were not significant for the Latino sample.

CONCLUSIONS. Chronic poverty, neighborhood, maternal depression, and parenting practices have effects on child behavioral problems in white, black, and Latino children, but the processes and mechanisms through which they exert their effects differ among the groups. The differences may be related to social stratification mechanisms as well as sociocultural differences in family and childrearing practices.

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Key Words
child behavior and development, behavioral problems, minority groups, parenting, maternal depression, neighborhood effects, poverty, racial/ethnic groups, disparities

Abbreviations
NLSY—National Longitudinal Survey of Youth
HOME-SF—Home Observation of the Environment-Short Form
SEM—structural equation modeling
CFI—Comparative Fit Index
RMSEA—Root Mean Square Error of Approximation
CFA— confirmatory factor analysis

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Address correspondence to Lee M. Pachter, DO, Department of Pediatrics, Saint Francis Hospital and Medical Center, 114 Woodland St, Hartford, CT 06105. E-mail: Lpachter@stfranciscare.org

BEHAVIORAL PROBLEMS IN school-aged children are very common. Reports indicate that as many as 15% to 25% of school-aged youth have psychosocial or behavioral problems.[1–4]

Child behavioral and developmental outcomes are influenced by numerous individual-, family-, and community-level factors. Individual-level factors include child health, temperament, biology, genetics, and age. Family-level variables that may affect child development include family structure and roles; parenting beliefs, practices, and goals; parental physical and mental health status; and household socioeconomic conditions. Macro-level community effects include neighborhood characteristics, peer influences, schools, health care, and economic opportunities. Each of these variables has been shown to have either direct or indirect effects on child developmental issues such as behavioral problems, academic and school performance, and emotional health.[5–18]

The study of child development in minority populations requires special consideration. Because of differences in culture, class, opportunity, and context, it cannot be assumed that the processes that lead to certain developmental outcomes in majority children have the same effects in minority children. In a paper that proposed an integrative model for studying child developmental competencies in minority children, García Coll et al[19] noted that when studying such competencies and outcomes in minorities, there are factors that are unique to minority populations (eg, racism, discrimination, segregation) as well as factors that are also pertinent to child development in majority children but may have differing effects in minority children as a result of differences in contexts. Examples of some of the factors that may have differing effects include family structure and residence patterns, parenting practices, parental mental health status, and neighborhood effects. It becomes important not to extrapolate effects that are noted in studies of middle-class majority populations into other contexts without additional study and analysis. For example, the effects of neighborhood and community may differ among different groups on the basis of the safety of the neighborhood for children and families, the length of residency in a particular neighborhood (possibly as a result of recent migration/immigration, or of whether the family owns or rents their dwelling), cultural views on when and how children should interact with individuals outside the family, household stability and family structure, child care issues, parental fear or comfort with law enforcement, birth order, etc. Likewise, parenting practices and the home environment are influenced by culturally normative practices and values, socioeconomic conditions, and family and household structure (which may be affected by factors such as immigration, serial migration, household economic stability, etc in addition to cultural style).

Studies of minority child health and development need to be conducted with an appreciation of how differences in contexts affect developmental outcomes. Because Western society is based in social stratification resulting in unequal distribution of material, social, and psychological capital, successful development may require different strategies in different environments. In fact, successful child health and development can be defined as the successful adaptation to a specific environment or context.[20] What may be considered normative in one setting may not necessarily provide an advantage in other settings.

Because of these differences in the settings between majority and minority children, it not only becomes important to study the differing effects of personal-, family-, and community-level factors on child developmental outcomes but also requires looking into the processes through which these variables have an effect on developmental outcomes and whether the relations among variables differ in different groups. For example, we all know that poverty is bad for children, but poverty affects children indirectly, through other mediating variables such as neighborhoods, the availability of quality education and health care, job opportunities, family cohesion and structure, parenting practices and goals, nutrition, etc. In different settings, poverty may result in poor outcomes through different intermediates. Because of this, it is crucial to assess the processes through which poverty exerts its effects and the relative importance of these intermediate variables specifically in different sociocultural contexts. This may result in a more targeted approach to intervention. To understand the factors that contribute to child behavioral problems in diverse racial/ethnic groups, we analyzed data from a national data set to determine the processes through which parenting practices, maternal depression, neighborhood effects, and chronic poverty affect child behavioral problems in 3 racial/ethnic groups.

METHODS

Study Sample

Data were analyzed from the National Longitudinal Survey of Youth (NLSY). The NLSY was begun in 1979, when a national, multistaged, stratified, random sample of 12 686 men and women between the ages of 14 and 21 were interviewed. This sample included an oversampling of Hispanic, black, and economically disadvantaged nonblack/non-Hispanic youth. These youth were interviewed annually until 1994, then biannually thereafter. Retention rates remained at ~90% during the first 15 years of the survey.[21] In 1986, the Children of the NLSY data set was launched. This sample consists of children who were born to the female NLSY79 respondents. Child assessments include data that were gathered from mothers as well as direct observations and interviewer ratings.

The present study used data that were gathered in the 1994 data wave, because 1994 was the last year in which questions regarding depression were administered to the full sample (afterward, it was administered only to women who were 40 years of age and older). We restricted our sample to families with children between the ages of 6 and 9 years.

Measures

The outcome variable was child behavioral problems. The independent variables under investigation were parenting, chronic poverty, maternal depression, and neighborhood/social capital. A description of each of these variables follows.

Child Behavior Problems

The Behavior Problems Index was used to assess frequency, range, and type of childhood behavior problems. This instrument was developed by Peterson and Zill[22] and consists of 28 questions derived from commonly used questionnaires such as the Achenbach Child Behavior Checklist[23] and others. It has been used extensively in studies of behavior problems in children.[24–28] Two subscales, Internalizing (eg, depression, anxiety, frustration) and Externalizing (eg, aggression, hyperactivity, oppositional behavior) behaviors, were used as the outcome variables for this study. Standardized percentile scores for the Internalizing and Externalizing subscales were used in these analyses.

Parenting

The Home Observation of the Environment-Short Form (HOME-SF) is used in the NLSY as the measure of parenting and the quality of the child's home environment. The HOME-SF is a modification of the HOME inventory created by Caldwell and Bradley.[29] The instrument includes items obtained by maternal report and interviewer observation and measures the quality of the emotional support and cognitive stimulation that the home environment provides the child. The HOME has been used widely as a measure of parenting and the home environment. It has been used in different racial/ethnic groups and shown to have few differences in psychometric properties in different groups.[8,30–33] This study uses items from Part C, which pertain to children between the ages of 6 and 9 years. Standardized percentile scores were used in these analyses.

Chronic Poverty

Chronic poverty was used as a variable in this study because, for many families, poverty status changes. The majority of poverty episodes are short lasting, and the majority of those who are poor do not remain so for long periods as a result of changes in household composition and employment status.[11] Studies have shown that the greatest effects of poverty on child development occur in settings of chronic or long-term poverty.[15] We therefore created a variable that identifies families who have lived in poverty for long durations during the child's lifetime. The NLSY has an annual question that assesses the income level of the family and whether the level falls below the poverty level. We used poverty level rather than income because poverty level adjusts for family size. We created a chronic poverty variable to assess whether the family was below the poverty level for at least 50% of the child's life.

Maternal Depression

Maternal depression was assessed using the Center for Epidemiologic Study of Depression scale.[34] The version used in the NLSY is a 7-item instrument that assesses the frequency and the occurrence of depressive symptoms. We performed a multigroup confirmatory factor analysis (CFA) of these 7 questions to determine whether they measured the same latent construct (ie, depression) among the different racial/ethnic groups (this is called invariance). Multigroup CFA allows one to determine which cluster of items has similar conceptual meaning (or invariance) among the different groups. We found invariance among the 3 racial/ethnic groups for 4 of the 7 items ("trouble keeping mind on tasks," "depressed," "takes extra effort to get things done," and "restless sleep"). (This does not mean that the groups answered the items the same; it means that the items measure the underlying latent construct, depression, similarly among the groups.) These items were used as a scale in our analyses.

Neighborhood/Social Capital

Mothers were asked a series of 9 questions about their home neighborhood with regard to infrastructure, services, safety, social interaction, and child/family issues. Multigroup CFA was performed, and invariance was found for 4 items: "people don't respect rules/laws," "adults don't supervise their children," "lots of people can't find jobs," and "neighborhood is a good place to raise children." These items were used as a scale in our analyses.

Ethnic Group

Ethnicity of the child was determined by maternal report. The NLSY did allow for disaggregating of "Hispanic/Latino" into subgroups (Mexican American, Puerto Rican, South American, etc), but total numbers for subgroups were too small for separate analyses. The NLSY did not distinguish between US-born African-Americans and families of West Indian/Caribbean descent. Therefore, the 3 racial/ethnic groups that were used in these analyses are white, black, and Latino.

Statistical Analyses

A conceptual model was created to study the influences of parenting, chronic poverty, maternal depression, and

neighborhood on child problem behaviors. This model is presented in Fig 1.

This model hypothesizes both direct and indirect (mediated) effects of chronic poverty, neighborhood, maternal depression, and parenting on child behaviors. To asses the processes through which these variables influence child behavioral problems in the different ethnic groups, structural equation models were estimated. Structural equation modeling (SEM) is a technique by which relationships between dependent and independent variables can be analyzed. SEM differs from regression techniques in that SEM allows one to examine not only direct effects but also the simultaneous analysis of indirect effects through intervening variables.[35] Variables that are indicated by boxes are directly measured and variables that are indicated by ovals are indirectly measured (or latent) variables. Because the measures that were used for maternal depression and neighborhood were created for this study through confirmatory factor analyses, they are indicated as latent variables. To determine the differences in the relationships among the variables among the various ethnic groups sampled, we conducted separate SEM analyses for the white, black, and Latino samples. Standardized path coefficients were calculated, as were the model fit indices: the Comparative Fit Index (CFI) and the Root Mean Square Error of Approximation (RMSEA). Fit indices help to determine whether the data fit the proposed model, and the CFI and RMSEA are based on χ^2 distributions and degrees of freedom.[36] A good fit is defined as a CFI of .9 or better and an RMSEA of $<.08$.[37,38] Analyses were done using the AMOS 5 statistical software package.[39]

RESULTS

Data were analyzed for 884 white, 538 black, and 404 Latino families. Table 1 displays the demographic profile for these families. Single parenthood existed in all groups, with the greatest occurrence in the black sample, and extended family households were more common in both black and Latino families.

TABLE 1 **Characteristics of Sample by Ethnicity**

	White ($n = 884$)	Black ($n = 538$)	Latino ($n = 404$)
Maternal age (SD)	33.3 (2.20)	32.5 (2.17)	32.9 (2.27)
Child's age (SD)	8.0 (1.18)	8.0 (1.14)	8.0 (1.15)
Chronic poverty, %	11	37	29
Single parent, %	27	63	37
Grandmother/father in home, %	4	10	9
Aunt/uncle in home, %	1	6	3

Structural equation models that depict the relationships between parenting, chronic poverty, neighborhood, and maternal depression on internalizing and externalizing childhood problem behaviors in white, black, and Latino children are displayed in Fig 2. Paths with standardized regression weights significant at $P \leq .05$ are highlighted by solid lines.

White Families

Parenting/home environment, neighborhood, and maternal depression have significant direct effects on externalizing child behavior problems, and parenting/home environment and maternal depression have direct effects on internalizing behavior problems (Fig 2A). The effect of maternal depression on both internalizing and externalizing problems is partially mediated through parenting (ie, both significant direct and indirect effects are shown). Neighborhood effects on internalizing problems are fully mediated through parenting; neighborhood effects on externalizing problems are partially mediated through parenting. The effect of chronic poverty on both internalizing and externalizing problems is fully mediated through neighborhood, maternal depression, and parenting. The full model predicts 15% and 12% of the variance of externalizing and internalizing behaviors, respectively.

Black Families

Parenting/home environment, neighborhood, and maternal depression have significant direct effects on inter-

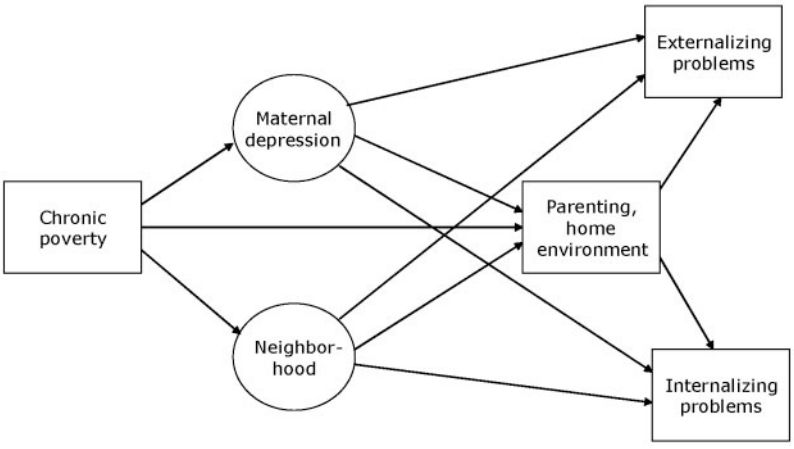

FIGURE 1
Model of the hypothesized relationships between the predictor variables of chronic poverty, neighborhood effects, parenting and the home environment, and maternal depression and the outcome variables of internalizing and externalizing child behavior problems. Ovals indicate latent variables (variables created for this study by combining questions/items; see text); boxes indicate directly measured variables or scores from instruments.

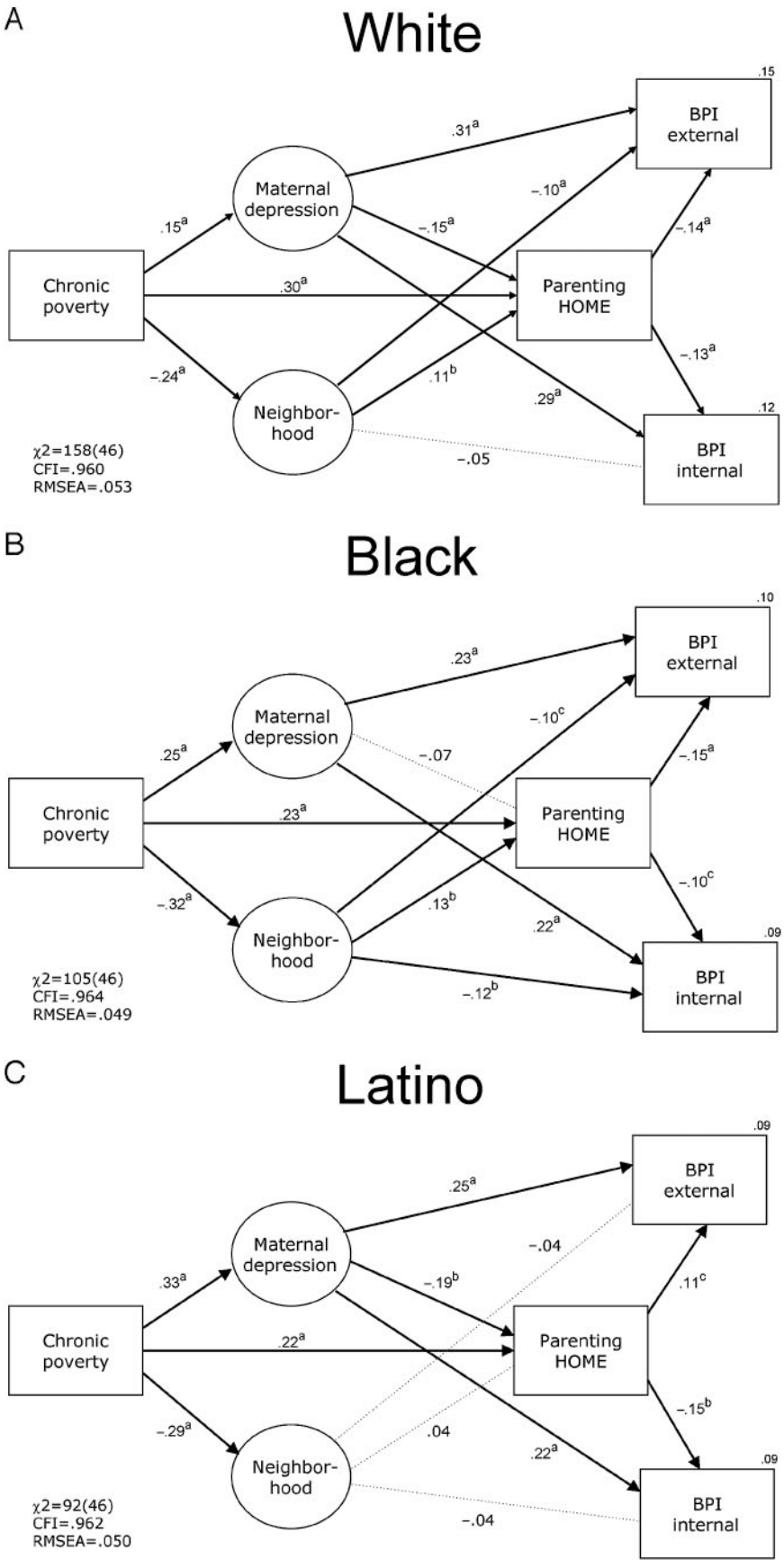

FIGURE 2
SEM for white, black, and Latino groups. Only pathways that were significant at $P < .05$ are highlighted by solid lines. Standardized regression coefficients are displayed ([a]$P < .001$; [b]$P < .01$; [c]$P < .05$).

nalizing and externalizing child behavior problems (Fig 2B). The effect of maternal depression on internalizing and externalizing problems is direct and not significantly mediated through parenting. The effect of neighborhood on internalizing and externalizing problems is partially mediated through parenting. The effect of chronic poverty on internalizing and externalizing child behavior problems is fully mediated through neighborhood, maternal depression, and parenting. The full model predicts 10% and 9% of the variance of externalizing and internalizing behaviors, respectively.

Latino Families

Parenting/home environment and maternal depression have significant direct effects on internalizing and externalizing child behavior problems (Fig 2C). The effect of maternal depression on internalizing and externalizing behaviors is partially mediated through parenting, and the effects of chronic poverty are fully mediated through parenting and maternal depression. Neighborhood had no significant direct or indirect effects on child behavioral problems. The full model predicts 9% of the variance of externalizing and internalizing behaviors.

DISCUSSION

Results of this study show that variables such as parenting, maternal depression, chronic poverty, and neighborhood have effects on child behavior problems, and the processes and mechanisms through which they exert their effects differ in different ethnic groups. These differences are summarized below.

Chronic Poverty

It is not surprising to find that chronic poverty exerts its effects through other, more proximal variables such as neighborhood, maternal depression, and parenting practices/home environment. Through its nature, poverty exerts its effects by limiting material and other resources; the lack of these resources affects children through altering the quality of the home environment, the physical and social conditions of the neighborhood in which the child and the family live, the mental health of the child's caregivers, parental interactions with children, health, nutrition, etc.[12] We used a measure of chronic poverty: the family's living below the poverty level for at least 50% of the child's lifetime. Data from longitudinal studies show that many families move in and out of poverty on the basis of life events such as unemployment, divorce, and changes in family arrangements, and for many families, periods of poverty are short.[40] In these families, the effects of "poverty spells" on child development likely will depend on both the degree of deprivation during such spells and the timing of the spells with regard to stage of child development. For other families, poverty is not a transient condition but a constant state. Not only are families who are in chronic poverty below the poverty level for longer periods of time, but also their level of poverty is more severe.[9] Effects of chronic poverty have greater detrimental effects on child health and development. Data show that chronic poverty is not equally distributed among ethnic groups. Minority families have much higher rates of chronic or persistent poverty.[11] The results of this study are consistent with others showing the relationship between poverty and child behavioral outcomes.[10,15,41,42] Through the use of multigroup SEM, we were able to analyze the relative influences of the mediators through which chronic poverty affects child behavior in white, black, and Latino families.

Maternal Depression

The effects of maternal depression on child behavior problems were direct in all groups as well as mediated through parenting in the white and Latino groups (Fig 3). In the black sample, direct effects were significant, but the pathway showing the effects of maternal depression on child behavior through parenting was not significant (ie, the effects of maternal depression on child behavior problems was not significantly mediated through parenting practices). The causes for this are unclear, but some hypotheses may be considered. For example, it is known that extended family household

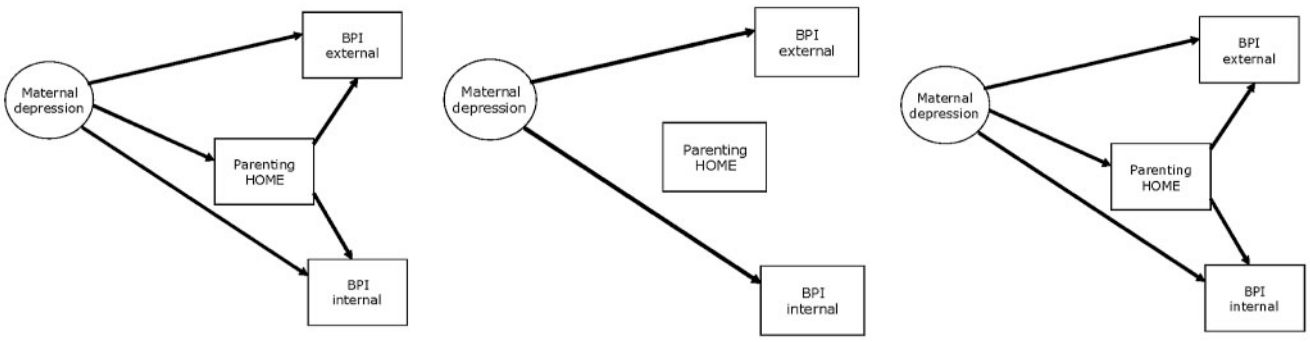

FIGURE 3
Comparison of effects of maternal depression on behavior problems in white, black, and Latino children.

arrangements and sharing of childrearing responsibilities with extended family, including grandmothers, cousins, aunts, and uncles, is common in many black families.[43,44] This family structure is the result of both cultural style (the traditional extended family) and social stratification mechanisms. Perhaps this culturally normative family structure acts as a buffer and makes it easier for other family members to provide childrearing and child care when a mother has serious mental illness problems, thus mitigating or decreasing the significance of the pathway between maternal depression and child behavioral problems through parenting and the home environment. This is not to say that maternal depression does not significantly affect black children; it is just that the process through which it exerts its effects may be different as a result of this type of normative family structure in some families. The direct path between maternal depression and child behavioral problems in this model can be conceptualized as all of the possible ways that maternal depression could affect child behavioral outcomes other than through parenting. Such mechanisms may include genetic, prenatal environment, biological and neuroregulatory pathways, and other undefined psychosocial risk factors.[45]

Neighborhood

Neighborhood effects on child behavioral problems differed by ethnic group (Fig 4). In the black and white groups, neighborhood had significant direct and indirect effects on behavioral problems, but in the Latino sample, no significant effects were noted.

Neighborhood effects in this study were defined by a series of questions that address perceptions of the neighborhood with regard to employment, respecting rules, and childrearing. Most of the literature on neighborhood effects concerns neighborhood socioeconomic status/income/poverty.[14] In contrast, the neighborhood variable that was used in this study roughly estimates dimensions of social capital[46] and collective efficacy.[17,47] Social capital "refers to features of social organization such as networks, norms, and social trust that facilitate coordination and cooperation for mutual benefit."[48] Collective efficacy refers to a sense of mutual trust and solidarity among neighbors combined with the willingness of neighbors to intervene for the common good.[47] Social capital and collective efficacy have been shown to be predictors of neighborhood violence,[47] behavioral/emotional problems,[16] positive adolescent outcomes,[49] and firearm carrying among youth.[50] Theory suggests that social capital/collective efficacy could be linked to parenting behavior as well as child outcomes (through peer groups, for example), but more data are needed to confirm these associations.[17] This study uses a measure of social capital/collective efficacy and finds significant relationships between it and parenting and child behavioral outcomes. It also finds differences in these relationships among ethnic groups.

As noted above, we found no significant path between neighborhood and parenting or child outcomes in the Latino sample. Although we believe that neighborhood does in fact affect child behavior, we can hypothesize why this effect may be diminished in the Latino sample. Neighborhood effects are known to increase as the age of the child increases. Our sample of children were between 6 and 9 years of age, which can be seen as a transitional period in which children begin to venture out of the home more and more and during which the effects of the neighborhood may begin to become evident. Latino families tend to be characterized by a strong sense of *familismo*, which refers to "feelings of loyalty, reciprocity, and solidarity toward members of the family."[51] Part of this family style includes a high degree of parental involvement in children's lives, what has been referred to as "normal enmeshment," characterized by family interdependence as well as protection from external influences such as the neighborhood.[52] It could be argued that part of this parenting style might translate into limited independent contact with the neighborhood in Latino children at this age, resulting in less direct influence of neighborhood on child behavior. Future research could determine whether the effects of neigh-

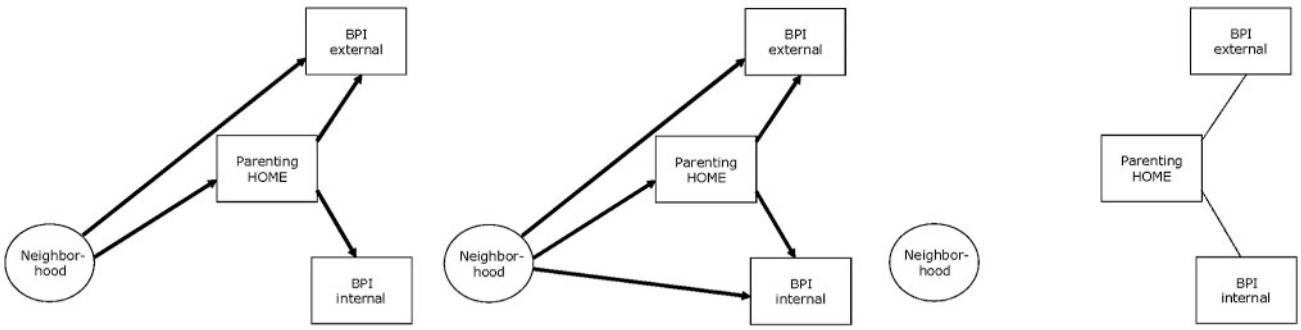

FIGURE 4
Comparison of effects of neighborhood on behavior problems in white, black, and Latino children.

borhood influences on child behavior emerge later in Latino children as compared with others.

These results need to be interpreted cautiously. The structural equation models presented account for 9% to 15% of the variance in child behavioral problems. It was not our goal to find a comprehensive model that would predict the majority of the influences on child behavioral problems as a result of the many different variables and factors that may contribute. Our goal was to choose social and nonbiological individual-level variables that have been shown to have an effect on child behavior and development and determine their relative influences in different ethnic groups. There are also limitations of the data set. The mothers in this sample were National Longitudinal Survey study youth who were between the ages of 14 and 22 in 1979. At the time of the data wave that was analyzed in this study, they were between the ages of 29 and 37 and may not be representative of mothers of different age ranges. Another limitation to the data set is that because of sample size issues, it was not possible to disaggregate the racial/ethnic samples into more meaningful subgroups on the basis of country or area of origin or by migration and/or acculturation status. Therefore, differences between families of Mexican American, Puerto Rican, and other Central/South American heritages or between African American and West Indian/Caribbean heritages could not be analyzed. Also, the Center for Epidemiologic Study Depression instrument that was used in the NLSY measures only depressive symptoms and should not be interpreted as a clinical measure of depression. A similar caveat relates to the Child Behavior Problem Index. Finally, many of the data that are included in the NLSY are obtained from a single data source: the mother. There may be concerns regarding common reporter bias. For example, this might account for the strong relationships found between maternal depression and child behavior problems; it could be hypothesized that depressed mothers may interpret their child's behavior in a more negative way.

We used multigroup CFA to help ensure that the instruments that were used in this study displayed conceptual equivalence among groups. Conceptual equivalence means that the instruments measure the same concepts or latent variables (eg, depression, neighborhood) in the various groups. Multigroup CFA resulted in the use of 4 of the 9 items of the Center for Epidemiological Study of Depression instrument and 4 of 11 neighborhood items in these analyses. CFA results in the elimination of questions that may have some salience in certain groups. The balance between cross-group equivalence and within-group comprehensiveness is a challenge in cross-cultural research. We also believe that the results of the CFA with regard to the neighborhood variable provided a scale that not only has structural equivalence but also has face validity and provides a functional assessment of components of social capital/collective efficacy. For example, the item "the neighborhood is a good place to raise children" relates to the community norms and social trust defined by social capital, the item "people don't respect rules/laws" taps into coordination and cooperation for mutual benefit, and "adults don't supervise their children" relates to collective efficacy and willingness to intervene for the common good.

The HOME-SF is an instrument that has been used widely to measure the quality of the home environment and as an overall measure of parenting. The instrument is broad in scope and can be scored as a total score; as 2 subscale scores (cognitive stimulation and emotional support); or as smaller subfactors, such as learning stimulation, parental responsiveness, corporeal punishment, teaching, and physical environment. Others have used specific single items from the HOME-SF. We decided to use the total HOME score in our analyses for a number of reasons. First, the total score has been the most commonly used method of analyzing the HOME-SF in studies that have used the NLSY database,[33] and the instrument has been shown to have good psychometric properties. More important, our study uses a general model of the effects of social and family factors on child behavior, using parenting and the home environment as a mediator. Specific subdimensions of the home environment could be hypothesized to mediate specific social/family factors (emotional responsivity for maternal depression, cognitive stimulation for poverty, etc), but because we used multiple social and family factors in our model, we believed that using the total score would best fit this "macro" model. In future studies to elucidate the relationships among a specific social variable, home environment, and child behavior outcomes, one may want to consider using a more limited conceptualization of home environment (through the use of a specific subscales of the HOME-SF).

CONCLUSIONS

This study demonstrates that the processes through which family and community factors affect child behavior have both similarities and differences in different racial/ethnic groups. The similarities include the pervasive and toxic effects of poverty and the universal importance of parenting. The differences include the processes through which maternal depression and neighborhood affect child behavior. These findings may be explained by normative cultural values and processes that result from social stratification mechanisms. They can be seen as possible "sociocultural buffers" against poor childhood outcomes and emphasize the need for a context-specific approach to studying child behavior and development. Future research needs to go past the mere documentation of racial-ethnic disparities that are already widely recognized. What is needed are studies that

aim to elucidate the underlying causes and mechanisms for such disparities.

These data emphasize the need for clinicians to have an awareness and a sensitivity to the social context of patients' lives. In assessment for behavioral and emotional problems, particularly when planning for interventions, the results of this study suggest that information regarding maternal mental health, family residency patterns, extended-family connections, and child interactions with the neighborhood needs to be assessed. The culturally and contextually informed clinician should be aware of the potential benefits of extended family members and other social connections with regard to childrearing, especially under the circumstances of a parent with mental health issues. In addition to advocating for mental health services, one could assess the social support system that is available within the family and the community and attempt to integrate these systems within the care plan. It also is important to recognize that different families have different styles regarding the child's interaction with the neighborhood during middle childhood, and these are influenced by cultural values, parenting styles, and safety issues. Results of this study also further emphasize the importance of the home environment and parenting for positive emotional and behavioral health of children and provide more evidence for the need for a family-centered approach to anticipatory guidance, patient care, and parental education regarding child development, as proposed, for example, in the Bright Futures guidelines. The results of this study also can be seen as providing additional evidence for considering a multidisciplinary team approach to clinical care because one individual may not have the expertise or time to address all of these issues. With regard to advocacy and social policy, an appreciation and understanding of these different mechanisms will help to guard against a "one size fits all" approach to intervention and allow for more informed and efficient use of energy and resources in a more targeted and effective manner.

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