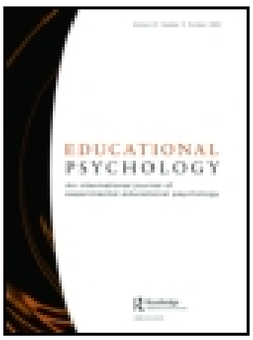

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Home-based Parental Involvement in Young Children's Education: Examining the effects of maternal education across U.S. ethnic groups

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This study investigated the contributions of maternal education and ethnicity to three dimensions of home-based parental involvement in young children's education and development: parental expectations about educational attainment, children's activities at home and outside the home, and family routines. Controlling for family background variables such as family size and structure, household income, and neighbourhood safety, we examined these relations in a nationally representative U.S. sample of 9,864 Asian American, African American, Latino American, and European American five-year-old children. Multiple regression models suggested that maternal education explained small to moderate amounts of variation in parental home-based involvement, and was more strongly associated with these outcome variables than was income. Ethnicity significantly predicted additional variation in only two outcome variables: parental educational expectations and family discussions. Maternal education plays a unique role in explaining U.S. ethnic group variations in parental involvement in young children's education.

Parental involvement is conceptualised as the means by which parents support their children's education and development, and it has been shown to affect positively children's academic achievement and school adjustment (Fehrmann, Keith, & Reimers, 1987; Hill et al., 2004). Parental involvement is a multidimensional construct (Epstein & Sanders, 2002) that includes not only direct involvement in schools, such as volunteering in classrooms and attending parent–teacher conferences, but home-based involvement. Parents support and facilitate their children's education at home through several means: engaging them in learning-stimulating activities, discussing school and family issues, and conveying educational expectations (McWayne,

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Hampton, Fantuzzo, Cohen, & Sekino, 2004). In fact some of these aspects of home-based involvement have been shown to predict achievement more strongly than aspects of school-based involvement (Fantuzzo, McWayne, Perry, & Childs, 2004; Ho & Willms, 1996). However, very little is known about the frequencies and relations of home-based parental involvement factors across ethnic groups in the United States (U.S.), in particular among families with young children. Scholars have therefore called for thorough descriptive studies to identify the aspects of family background that are most likely to lead to higher levels of home-based parental involvement with young children (Bradley, Corwyn, McAdoo, & García Coll, 2001; Hill, 2001; Meece & Kurtz-Costes, 2001).

Family background is a constellation of interrelated factors including family size, family structure, ethnic origin, and socioeconomic status (SES), each of which may uniquely influence home-based parental involvement processes (Carlson & Corcoran, 2001; Ladd, Birch, & Buhs, 1999; Marjoribanks, 1999). Some have suggested that SES may be a stronger source of variation than ethnicity in explaining differences in children's home environments (Entwisle & Alexander, 1996; Gottfried, 1984). SES is a multidimensional construct that includes income, occupation, and education. Research into the effects of each SES dimension on parenting and child competence suggests that the most powerful mechanism may be maternal education (Bornstein, Hahn, Suwalsky, & Haynes, 2003; Hoff, Laursen, & Tardif, 2002). Our study investigated the unique contribution of maternal education to variations in home-based parental involvement with young children, controlling for other family background factors such as income and family size, and for individual differences such as maternal satisfaction and depression. A second aim was to examine ethnic differences and similarities in home-based parental involvement in young children's education after controlling for maternal education.

Conceptual Framework

This study is grounded in an ecological theoretical perspective that views children's development as influenced both by factors within the child, such as sex and age, and by factors in their distal and proximal environments (Bronfenbrenner, 1979; Super & Harkness, 1986; Weisner, 2002). The most direct environmental influences on children's development are their families and parents (LeVine et al., 1994). In their integrative model of children's developmental competencies, García Coll et al. (1996) argue that to understand the specific circumstances of ethnic minority children, social stratification factors such as segregation and discrimination must be considered. For example, ethnic minority families are more likely to live in inhibiting neighbourhoods characterised by poverty, crime, and poor quality schools (Douglas-Hall & Koball, 2005; Duncan, Brooks-Gunn, & Klebanov, 1994; Sampson & Morenoff, 1997).

Furthermore, each ethnic group became a part of the U.S. population under different and specific historical conditions that then shaped their adaptive cultural practices (Harrison, Wilson, Pine, Chan, & Buriel, 1990; Ogbu, 1994). An adaptive

strategy used by many ethnic minority parents is racial and/or cultural socialisation (Murray, Strokes, & Peacock, 1999; Thornton, Chatters, Taylor, & Allen, 1990), which includes family discussions with children about racial discrimination and ethnic history and pride (Hughes, 2003; McAdoo, 2002a). These practices have been found to increase children's self-esteem (Bowman & Howard, 1985), problem-solving skills, and behavioural adjustment (O'Brien Caughy, O'Campo, Randolph, & Nickerson, 2002).

Relations among Family Background Components and Individual Differences

The components of family background, including SES, have rarely been disentangled in studies of child outcomes (Hoff et al., 2002). Consequently, our understanding of how each component affects children's home environments, especially in ethnic minority families, remains limited. For example, there is clear evidence that poverty has deleterious effects on children's development (Duncan et al., 1994). However, among poor families, family size moderates the relation between poverty and negative outcomes: children with fewer siblings show higher academic competence than those with more siblings (Robinson, Weinberg, Redden, Ramey, & Ramey, 1998). Family structure also affects children's competence through the mechanism of maternal depression (Carlson & Corcoran, 2001), which has negative effects on parenting (Mistry, Vandewater, Huston, & McLoyd, 2002). Single mothers report higher rates of depression than married mothers (McLanahan & Adams, 1987), and maternal depression and psychological distress are associated with economic hardship (McLoyd, 1999). As single-parent families usually have lower incomes (McLanahan, 1985), income and family structure are often confounded in studies of income effects on children. Similarly, research has shown that neighbourhood effects on children's competencies are significant, even controlling for potential confounds such as income (Eamon, 2005; Leventhal & Brooks-Gunn, 2000, 2004).

Children's home environments and their parents' involvement in their education also vary according to individual differences such as the child's sex and age and the mother's psychological health and educational level. A national study of young children in the U.S. found that parents of girls engage in more discussions with them about school, and monitor their activities less, than parents of boys (Ho & Willms, 1996). Maternal education predicts a variety of positive parenting practices and child outcomes within and across cultures (Anderson, Funk, Elliott, & Smith, 2003; Bornstein et al., 2003; LeVine, 2003), even controlling for maternal intelligence (Luster & Dubow, 1992). Although increased schooling is associated with higher income and occupation status, some research suggests that education makes a unique, positive contribution to parenting above and beyond those advantages (DeGarmo, Forgatch, & Martinez, 1999; Turner & Johnson, 2003). Several reasons are proposed for this link. First, maternal education is more stable than either occupational status or income, which can easily fluctuate over time (Duncan &

Magnuson, 2003). Second, more educated women benefit from increased knowledge as well as from more highly developed cognitive skills such as problem-solving and language skills, which they apply in their parenting practices (Englund, Luckner, Whaley, & Egeland, 2004; Hoff, 2003; Pan, Rowe, Singer, & Snow, 2005). Third, education may raise personal self-efficacy—the belief that one has control over the circumstances of one's life (Dauber & Epstein, 1993; Galper, Wigfield, & Seefeldt, 1997; Lareau, 1989). Personal self-efficacy is associated with self-efficacy in parenting, which is further related to providing learning-stimulating activities and holding high aspirations and expectations for children's educational attainment (Clark, 1993; Machida, Taylor, & Kim, 2002), and to children's own self-efficacy beliefs (Ardelt & Eccles, 2001).

Home-based Parental Involvement across U.S. Ethnic Groups

We investigated three aspects of home-based parental involvement that can be expected to impact upon children's educational achievement and behavioural adjustment in school: parental beliefs, children's activities, and family routines.

Parents' beliefs and expectations about their children's competence have been shown to predict children's school performance (Entwisle & Alexander, 1990; Halle, Kurtz-Costes, & Mahoney, 1997; Hess, Holloway, Dickson, & Price, 1984; Johnson & Martin, 1985; Luster & McAdoo, 1996). Although parental expectations have been found to vary across ethnic groups (Hill, 2001), the few studies investigating these differences have provided inconclusive evidence. Okagaki and Frensch (1998) found that the Asian Americans in their study held higher expectations of children's educational attainment than did either the European or the Latino Americans. Interestingly, however, when parents were asked to indicate their minimum acceptable expectations—the least amount of education they would allow their children to obtain—Latino Americans reported "some college" while European Americans reported only "high school graduation". A study by Stevenson, Chen, and Uttal (1990) found that 71% of European Americans expected their children to attend college, whereas only 43% of Latino Americans had this expectation. Because the parents with the lowest expectations were also the least educated in these studies, the unique influences of ethnicity and education were not identified. Controlling for maternal education, cultural beliefs in the value of educational achievement may be shown to influence parental expectations. Parents from minority ethnic groups who have suffered discrimination may view higher education as a means to overcome barriers and achieve social mobility (Garcia Coll et al., 2002).

Learning-stimulating activities have been shown to enhance children's development and learning (Bradley, Corwyn, Burchinal, McAdoo, & García Coll, 2001; Crane, 1996; Gottfried, Fleming, & Gottfried, 1998; Wood, 2002), yet research on the frequencies of young children's activities has been largely limited to literacy activities such as book reading (Baker, Scher, & Mackler, 1997; Weinberger, 1996). European American parents have been found to read more often to their children than African American and Latino American parents, and, across all ethnic groups,

income and maternal education are positively related to frequency of parent–child reading (Bradley, Corwyn, Burchinal, et al., 2001; DeGarmo et al., 1999). LeVine and others have argued that, across cultures, increased schooling leads women to engage in more "pedagogical" parent–child interactions, which include more verbal behaviours and promote early communicative competence (LeVine, LeVine, & Schnell, 2001; Richman, Miller, & Levine, 1992). Other parent–child verbal interactions such as telling stories, reciting rhymes, and singing songs also promote early literacy skills (Maclean, Bryant, & Bradley, 1987), and may be more significant than reading (Snow, 1993), yet have not been extensively studied. Our study extends this line of research by including a wide range of verbal activities.

Very little is known about young children's engagement in non-literacy activities such as doing chores, playing games, and doing art (Huston, Wright, Marquis, & Green, 1999). One of the few studies that addressed this gap found that playing games and watching television were much more frequent than reading (Timmer, Eccles, & O'Brien, 1985). Outside activities such as museum and library visits may also contribute to development and learning, yet virtually no research exists on the frequencies of these activities in young children's lives. A national study of three- to five-year-old children in the U.S. found that the frequencies of these activities varied more with income than with ethnicity (Bradley, Corwyn, Burchinal, et al., 2001).

Family routines such as mealtimes and family discussions constitute another means through which parents support their children's education and promote their developmental competencies (Fiese et al., 2002; Serpell, Sonnenschein, & Baker, 2002). Little is known, however, about how family routines vary across ethnic groups (Fiese, Hooker, Kotary, & Schwagler, 1993). Because many African American and Latino American parents practice cultural and racial socialisation (Hughes, 2003; Thornton et al., 1990), family rituals and discussions may be used by these parents as mechanisms for racial socialisation. Furthermore, ethnic minority families value family loyalty and closeness (Chao, 2000; Harwood, Leyendecker, Carlson, Asencio, & Miller, 2002). It is therefore likely that family routines are an important part of children's daily lives in U.S. ethnic minority families.

Our study addressed the following questions and hypotheses. Our first hypothesis was tentative because research into ethnic group differences in parents' expectations for their young children's long-term educational attainment is limited. We hypothesised that U.S. ethnic minority groups would report higher educational attainment expectations than European Americans due to adaptive cultural beliefs in education as a means of overcoming discrimination barriers. Second, we hypothesised that maternal education level would be positively associated with the frequency of all types of activity. Third, we hypothesised that, controlling for maternal education and other family background factors, no significant ethnic group differences in verbal activities would emerge. Given limited knowledge of family mealtimes and discussions, we did not formulate a hypothesis on this question but speculated that family structure and parental satisfaction might be related to these routines. Single heads of households may find it challenging to keep regular mealtimes, and parents who feel more satisfied may spend more time engaging in family routines. Finally,

we expected that U.S. ethnic minority families would engage more frequently than European American families in discussions about ethnic and racial heritage and religion due to the importance they place on ethnic and racial socialisation.

Method

Participants

The sample originated from the Early Childhood Longitudinal Study Kindergarten Class of 1998–1999 (ECLS-K; National Center for Education Statistics, 2002) and is representative of the U.S. population with respect to region, race/ethnicity, and maternal education level. The ECLS-K was launched by the National Center for Educational Statistics (NCES) of the U.S. Department of Education to measure children's early school experiences from kindergarten to third grade, and is intended to follow these children until their final year in secondary school. Participants were recruited from public and private schools and from both full-day and part-day kindergarten programs. The ECLS-K collects information on children's cognitive, social, emotional, and physical development from children and their parents, teachers, and schools. Data are collected in a variety of formats, including one-on-one assessments, computer-assisted telephone interviews (CATI), and self-administered paper and pencil questionnaires. We utilised the ECLS-K for our investigation because it is one of the few U.S. datasets that measures the home environments of young children. Furthermore, because it oversampled Asians, the ECLS-K is currently the only U.S. longitudinal dataset with sufficient numbers of families from the four major U.S. ethnic groups to provide data on a wide range of children's home environments.

The base year ECLS-K sample includes 12,213 first-time kindergarteners whose parents completed questionnaires in the Fall and the Spring of the kindergarten year. In the U.S., kindergarten is the first year of the formal, public education system and is thought to serve as a transition year to the more formal pedagogies of first grade and beyond (Pianta, Rimm-Kauffman, & Cox, 1999). Although kindergarten policies are established locally and vary across U.S. schools and districts, in general children learn and practice basic cognitive and social skills through play, songs, stories, art, and object manipulation (Dombkowski, 2001). The proportion of children attending full-day programs has steadily increased in recent decades (Dombkowski, 2001). Eligibility requirements vary across the U.S., but in the majority of the 50 states, children may be enrolled in kindergarten at the age of five (Vecchiotti, 2003). In 2003, 92% of American five-year-old children were enrolled in either full- or part-day kindergarten (U.S. Census Bureau, 2005).

Because our study focused on ethnicity and maternal education, we controlled by design for changes in family structure such as parents' divorce, and for race/ethnicity by selecting only monoracial/cultural families whose structures had remained stable across the study period. Table 1 presents descriptive information for the final sample of 9,864 children, subdivided by ethnic group. The mean age

was 68.11 months (*SD* = .09) at the Fall semester data collection, and about half of the children were girls (49.7%); this proportion was constant across ethnic groups.

Measures

We chose indicators that have been found to predict child outcomes such as achievement and behavioural adjustment, yet for which little is known about the relative effects of education and ethnicity. The primary measure used was the ECLS-K parent questionnaire, which was completed via telephone interview with the parent available when called by interviewers (NCES, 2001).

Family background and individual difference variables. Maternal education level was measured using nine possible categories of educational attainment: (1) eighth grade or below, (2) ninth to 12th grade, (3) high school diploma or equivalent, (4) vocational or technological program, (5) some college but no degree, (6) bachelor's degree, (7) graduate or professional school but no degree, (8) master's degree, and (9) doctorate or professional degree. Income was measured as annual income. Family size was measured using the number of siblings per family variable. Family structure was measured as either single or dual parent household. Neighbourhood safety was measured in the ECLS-K by six items such as "safe to play outside" and "violent crime in the area", each associated with a three-point response scale: big problem, somewhat of a problem, and not a problem. The Cronbach α estimate for this scale was .75.

Maternal depression was measured with 12 items such as "felt sad" and "felt lonely" with four-point response scales: never, some of the time, a moderate amount, and most of the time. The Cronbach α estimate for this scale was high at .86. Parental satisfaction was measured on a four-point scale ranging from "completely true" to "not at all true" in response to nine statements such as, "I feel trapped as a parent" and "Being a parent is harder than I expected." Higher scores reflect higher satisfaction. The Cronbach α estimate for this scale was .68.

Parental expectations. Parental expectations for their child's educational attainment was measured by a single item with six possible values: less than high school, high school diploma, some college, bachelor's degree, master's degree, and lastly PhD, MD, or other advanced degree.

Parent–child and child activities. The ECLS-K includes 11 items measuring frequencies of children's activities on a four-point scale (never, once or twice per week, three to six times per week, and daily). A factor analysis suggested the existence of two distinct dimensions that together explained 47.9% of the variance: (1) verbal activities (Cronbach α = .64), which includes reading to the child, telling stories, reading

outside of school, looking at picture books, and singing songs; and (2) non-verbal activities (Cronbach α = .64), which includes doing chores, playing games, doing art, building things, doing sports, and learning about nature. Six outside-home activities were also measured (e.g., visiting the library, attending sports events). Because the response categories were dichotomous, reflecting whether the child had participated in that activity in the last 30 days, we created an index ranging from 0 to 6 to represent the total number of outside home activities reported.

Family routines. We created the variable "family meals" to measure family mealtime routine based on the mean of four ECLS-K variables, days eating together (breakfast and dinner) per week and days per week eating at a regular time (breakfast and dinner), each ranging from 0 to 7. The variable "family discussions" was created as the mean of two variables: frequency of family discussions about religion, and frequency of family discussions about ethnic heritage. The value of this variable ranged from 1 (never) to 5 (several times a week).

Procedures

The data from the parent questionnaire were collected using computer-assisted telephone interviewing, with some personal interviewing of parents not available by telephone (NCES, 2001). Interviews were primarily conducted in English, and bilingual interviewers conducted some interviews in Spanish, Lakota, Hmong, and Chinese. The response rate was 85.3% for Fall and 83.9% for Spring, and the participation rate among the schools initially contacted was 75% of public schools and 93% of private schools (NCES, 2001). Prior to creating derived variables, we imputed values for missing data using the EM algorithm and SAS PROC MI Version 8. Missing data rates were low, at .01–1.98%. Imputation allows for the estimation of probable values from conditional distributions and provides more robust estimates of population parameters than listwise and pairwise deletion (Graham & Hofer, 2000).

The ECLS-K used a multistage stratified sampling design (NCES, 2001). At the first stage of sample selection, the U.S. was divided into geographic areas consisting of counties or groups of counties. A random selection of these groups of counties was then made within specific strata, and at the second sampling stage several schools were identified within each selected group. At the final sampling stage, about 20 students were selected from each school but Asian American students were sampled at a rate three times higher than non-Asian American students. Due to this oversampling and to the existence of some non-response, NCES created sampling weights for use in analyses to represent the population better. Analysts should address this complex sampling design, specifically the clustering and oversampling, by using the sampling weights and special statistical procedures to obtain accurate standard errors for parameters (Lee, Forthofer, & Lorimor, 1989). Ignoring these sampling issues may lead to negatively biased standard errors, which increase the Type I error rate. We used the SURVEYREG procedure in SAS Version 9.1 software to estimate parameters and their standard errors using Taylor series linearisation.

The study hypotheses were tested with a series of six four-step hierarchical regression analyses, one for each dependent variable: parental expectations, verbal activities, nonverbal activities, outside home activities index, family meals, and family discussions. For all analyses, covariates of child's sex, family structure, family size, family income, neighbourhood safety, parental satisfaction, and maternal depression were first entered into the model. Then maternal education was entered to assess its unique contribution to the outcome, controlling for family background and individual difference variables. In the third step, dummy variables for three of the four ethnic groups were entered. In each model, the ethnic group with the lowest overall unconditional mean on that outcome variable served as the baseline reference group and was not included explicitly in the analysis. Finally, we tested for possible interactions between ethnic group and maternal education in their associations with the dependent variable.

Results

Significant differences were found across ethnic groups in the means of all control variables except child's sex. European Americans reported higher means on most of the SES indicators than did parents from the three other groups (see Table 1). They reported the highest maternal education levels, the highest incomes, and the safest neighbourhoods, although their income and maternal education means did not significantly differ from those of Asian American parents. European American families reported fewer siblings on average than African American and Latino American families, and they also reported the highest levels of parental satisfaction. The majority of children in the full sample resided in two-parent households with the exception of African Americans, of whom the majority (68%) lived in single-parent households.

With regard to the parental involvement variables, on average all parents expected their children to obtain a bachelor's degree, but Asian Americans reported significantly higher expectations (M = 4.65, SD = 1.01, or between a bachelor's degree and a master's degree), than all three other groups. Latinos also reported higher expectations (M = 4.46, SD = 1.24) than both African Americans (M = 4.17, SD = 1.23) and European Americans, who reported the lowest overall mean (M = 4.01, SD = .97). Regarding activities, European Americans engaged most frequently in both verbal and nonverbal activities (M = 3.13, SD = .52 and M = 2.70, SD = .49 respectively, or about three to six times a week). Latino Americans engaged in the fewest outside-home activities (M = 1.79, SD = 1.38), although children of the other groups went on outings only slightly more often. African American children engaged least frequently in regular family meals (M = 4.81, SD = 1.37), and Asian and European Americans engaged most frequently in regular family meals. Finally, European Americans engaged least often in family discussions (M = 3.15, SD = .87, or several times a year), and the three other groups engaged in these discussions slightly more often.

These results provide evidence that several aspects of home-based parental involvement differ according to ethnic background. The next step in our inquiry was to investigate whether these differences might be explained by other family

Table 1. Descriptive statistics by ethnic group (n = 9,864)

Variable	Mean (*SD*)				
	Asian American (n = 526)	African American (n = 1243)	Latino American (n = 1375)	European American (n = 6720)	F
Family background control variables					
Maternal education	4.69_a (2.12)	3.89_b (1.46)	3.02_b (1.66)	4.79_a (1.68)	153.46*
Income (in $10,000s)	5.74_a (4.69)	2.99_b (3.18)	3.02_b (3.00)	6.53_a (5.07)	194.49*
Neighbourhood safety	2.84_b (.25)	2.76_a (.34)	2.73_a (.38)	2.92_c (.17)	85.28*
Number of siblings	1.71_{ab} (1.85)	1.57_b (1.34)	1.63_b (1.23)	1.41_a (1.00)	8.71*
Parental satisfaction	3.34_{ab} (.67)	3.56_a (.50)	3.47_b (.56)	3.72 (.33)	28.32*
Maternal depression	1.39 (.42)	1.60 (.54)	1.43_a (.47)	1.42_a (.41)	18.17*
Home environment dependent variables					
Parental expectations	4.65 (1.01)	4.17 (1.23)	4.46 (1.24)	4.01 (.97)	34.28*
Verbal activities	3.01_a (.62)	3.05_a (.57)	2.91 (.61)	3.13 (.52)	35.32*
Nonverbal activities	2.57 (.54)	2.65 (.55)	2.46 (.58)	2.70 (.49)	36.83*
Outside-home activities	2.21_a (1.38)	2.10_a (1.42)	1.79 (1.38)	2.20_a (1.32)	8.35*
Family meals	5.23_a (1.39)	4.81 (1.37)	5.10 (1.37)	5.44_a (1.23)	38.44*
Family discussions	3.56_a (2.12)	3.56_a (2.14)	3.67_a (2.02)	3.15 (1.74)	73.28*

Note. Means in the same row that do not share subscripts differ at $p < .05$. *Maternal education*: 1 = 8th grade or below, 2 = 9th–12th grade, 3 = high school diploma or equivalent, 4 = vocational or technical program, 5 = some college, 6 = bachelor's degree, 7 = graduate or professional school, no degree, 8 = master's degree, 9 = doctorate or professional degree. *Neighbourhood safety*: 1 = big problem, 2 = somewhat of a problem, 3 = no problem. *Parental satisfaction*: 1 = completely true, 2 = mostly true, 3 = somewhat true, 4 = not at all true. *Maternal depression*: 1 = never, 2 = some of the time, 3 = a moderate amount of the time, 4 = most of the time. *Verbal and nonverbal activities*: 1 = not at all, 2 = once or twice a week, 3 = three to six times a week, 4 = every day. *Outside-home activities*: total number engaged in during past 30 days ranging from 0 to 6. *Family meals*: from 7 = breakfast and dinner together every day to 1 = breakfast and dinner never eaten together. *Family discussions*: 1 = never, 2 = almost never, 3 = several times a year, 4 = several times a month, 5 = several times a week or more. *Parental expectations*: 1 = less than high school, 2 = high school diploma, 3 = two or more years college, 4 = bachelor's degree, 5 = master's degree, 6 = PhD, MD, or other advanced degree.
*$p < .001$

background characteristics such as maternal education and income. We present the results of the six sets of regression analyses by category of parental involvement: parental expectations, parent–child activities, and family routines. In the following presentation, tables are provided only for regression results with at least moderate effect sizes. The remaining regression models, and the correlation matrices for the full sample and by ethnic group, are available from the first author.

Parental Expectations

Families with higher incomes, fewer siblings, and less maternal depression, and whose target child is a girl, reported higher expectations for that child's educational attainment ($R^2 = .03$, $F[7,425] = 25.07$, $p < .001$; see Table 2). When maternal education was added to the model, R^2 increased to .05, suggesting that, controlling for family background variables, more educated mothers hold higher expectations of their child's achievement than less educated mothers. Ethnicity explained a significant and large amount of the variation at the third step ($R^2 = .11$, $F[11,425] = 51.13$, $p < .001$). Controlling for income, family size, child's sex, maternal depression, and maternal education, Latino Americans and Asian Americans reported higher expectations than European Americans and African Americans. We noted in our sample, however, that the correlations between maternal education and parental expectations were lower among Latino Americans and Asian Americans ($r = .10$ and $r = .11$ respectively) than among European Americans and African Americans ($r = .31$ for both groups).

We therefore tested ethnicity × maternal education interactions in a fourth step, and found significant interactions indicating that the relation between maternal education and educational expectation differed between those with African American or European American ethnicity and Latino Americans. Controlling for family background variables, the relationship between maternal education and parental expectations was stronger among African Americans and European Americans than Latino Americans. Figure 1 illustrates the different magnitudes in each group, displaying the predicted values of educational expectation across the maternal education levels for dual-parent homes with boys as the target child and with sample mean values inserted for the significant control variables. There was no significant maternal education interaction for Asian American parents, suggesting that the relation between maternal education and parental expectations is of the same magnitude for Asian American parents as it is for Latino American parents. Caution must be taken to avoid overemphasising the importance of these interactions, as their addition to the model did not result in a significant increase in the overall model R^2.

Children's Activities

Verbal activities. Parents with higher incomes, fewer children, and higher parental satisfaction reported engaging in more verbal activities, and girls engage more frequently in verbal activities than boys ($R^2 = .06$, $F[7,425] = 68.69$, $p < .001$; see Table 3). Maternal education contributed a significant amount at the second step

Table 2. Hierarchical regression analysis predicting parental expectations

	Step 1			Step 2			Step 3		
Variable	*B*	*SEB*	*t*	*B*	*SEB*	*t*	*B*	*SEB*	*t*
Family background									
Child's sex	.13	.03	−3.75***	.13	.03	3.78***	.13	.03	4.00***
Family size	−.05	.01	−3.69***	−.04	.01	−2.60**	−.05	.01	−3.56***
Family structure	.02	.04	.55	.02	.04	.44	.08	.04	1.70
Income	.03	.00	10.37***	.01	.00	5.47***	.02	.00	8.56***
Parental satisfaction	−.03	.04	−.80	−.04	.04	−.86	.03	.04	.78
Maternal depression	−.19	.04	−4.48***	−.17	.04	−4.03***	−.12	.05	−2.36*
Neighbourhood safety	−.13	.07	−1.85	−.19	.07	−2.57*	.02	.07	0.30
Maternal education				.10	.01	9.22***	.13	.01	14.07***
Ethnicity									
Asian American							.66	.08	−8.03***
African American							.43	.06	−7.00*
Latino American							.76	.07	11.66***
R^2	.03			.05			.11		
F for change in R^2				8.11**			9.61***		

Note. European American was used as the referent group for this analysis.
*$p < .05$; **$p < .01$; ***$p < .001$

($R^2 = .09$, $F[8,425] = 72.91$, $p < .001$). Controlling for income, family size, parental satisfaction, and child's sex, children whose mothers have more schooling engage more frequently in verbal activities. Ethnicity did not significantly increase the percentage of variation explained at the third step.

Non-verbal activities. Parents with higher incomes and higher parental satisfaction living in safer neighbourhoods reported engaging in more nonverbal activities, and boys engage more frequently in these activities than girls ($R^2 = .03$, $F[7,425] = 18.73$, $p < .001$). The second step revealed a main effect of maternal education, with children of more educated mothers more likely to engage in nonverbal activities than children of less-educated mothers, and the .01 increment in R^2 was significant. Income and neighbourhood safety no longer explained a significant amount of variation in non-verbal activities when maternal education was included in the model in the second step. Ethnicity did not significantly increase the amount of variation in non-verbal activities explained.

Outside-home activities. A moderate amount of the variability in outside-home activities was explained by the control family background variables in the first step ($R^2 = .06$, $F[7,425] = 39.53$, $p < .001$). Children from families with higher incomes and whose mothers report higher parental satisfaction take part in more outside-home activities, and children with more siblings appear to participate in fewer

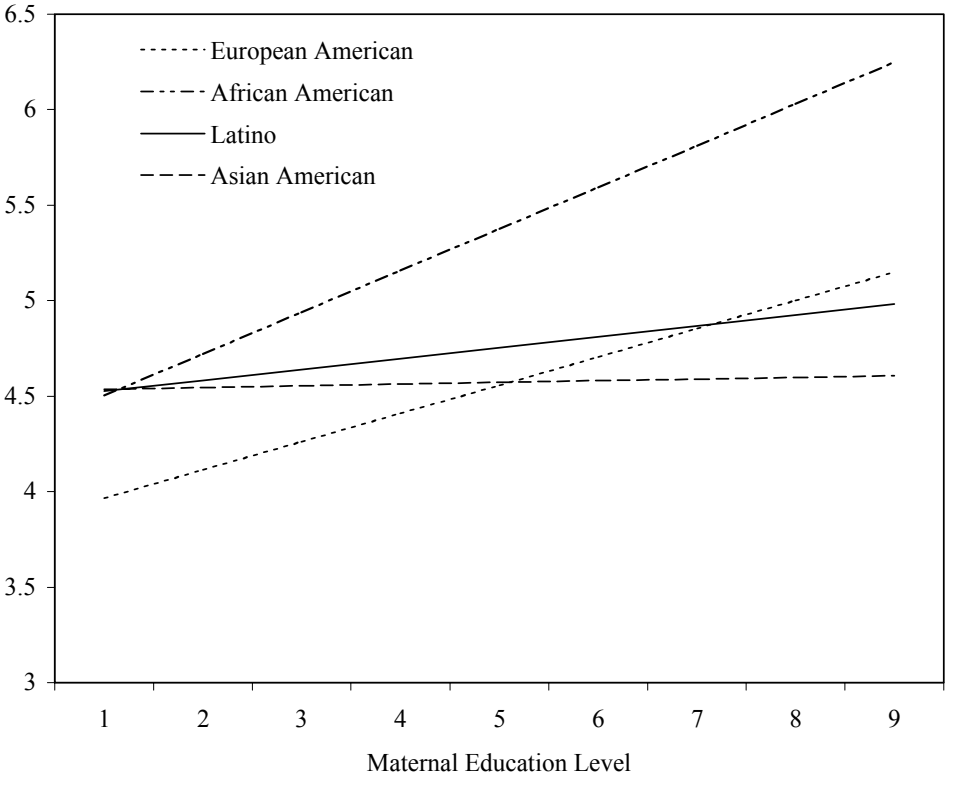

Figure 1. Predicted parental expectations for children's educational attainment by maternal education

Note. All significant control variables set at sample mean. Child's sex = male. Family structure = 2 parents. *Maternal education*: 1 = 8th grade or below, 2 = 9th–12th grade, 3 = high school diploma or equivalent, 4 = vocational or technical program, 5 = some college, 6 = bachelor's degree, 7 = graduate or professional school, no degree, 8 = baster's degree, 9 = doctorate or professional degree. *Parental expectations*: 1 = less than high school, 2 = high school diploma, 3 = two or more years college, 4 = bachelor's degree, 5 = master's degree, 6 = PhD, MD, or other advanced degree.

outside-home activities. When maternal education was added at the second step, a significant additional amount of variance in outside-home activities was explained ($\Delta R = .04$, $p < .001$): children whose mothers are more educated reportedly engage more frequently in these activities. Interestingly, with maternal education in the model, family size no longer significantly predicted outside-home activities. Ethnicity explained no additional variation.

Family Routines

Family meals. Children in two-parent, higher income households, living in safer neighbourhoods, with more siblings, and whose parents report higher satisfaction

Table 3. Hierarchical regression analysis predicting verbal activities

	Step 1			Step 2			Step 3		
Variable	*B*	*SEB*	*t*	*B*	*SEB*	*t*	*B*	*SEB*	*t*
Family background									
Child's sex	.19	.01	14.25***	.20	.01	14.56***	.20	.01	14.56***
Family size	−.02	.01	−3.43***	−.01	.01	−2.03*	−.01	.01	−1.82
Family structure	.01	.02	.61	.01	.02	.51	.01	.02	.75
Income	.01	.00	9.30***	.00	.00	2.38*	.00	.00	1.72
Parental satisfaction	.14	.02	6.19***	.14	.02	6.11***	.13	.02	5.59***
Maternal depression	.00	.03	.02	.01	.03	.40	.00	.03	.11
Neighbourhood safety	.04	.04	1.16	.01	.04	.20	−.02	.04	−.55
Maternal education				.06	.00	12.93***	.05	.00	11.30***
Ethnicity and interactions									
Asian American							−.01	.04	−.16
European American							.12	.03	4.17***
African American							.10	.03	3.30**
R^2		.06			.09			.10	
F for change in R^2					11.18**			.95	

Note. Latino American was used as the referent group for this analysis.
*$p < .05$; **$p < .01$; ***$p < .001$

and lower depression were the most likely to engage in regular family meals (R^2 = .04, F[7,425] = 37.34, $p < .001$). Adding maternal education to the model significantly increased the amount of variation explained, although the increase was small ($\Delta R = .01$, $p < .001$). Income was no longer a significant predictor of family meals, suggesting that maternal education plays a greater role than income in predicting mealtime regularity. An increase in R^2 due to the addition of the ethnicity variables in the third step was not significant.

Family discussions. Neighbourhood safety, family size, and child's sex explained a small but significant proportion of the variation in family discussions (R^2 = .02, F[7,425] = 9.87, $p < .001$). Although there was a main effect of maternal education at the second step, the increase in R^2 was not significant (see Table 4). The addition of ethnicity variables at the third step, however, did significantly increase the amount of variation in family discussions explained (R^2 = .09, F[11,425] = 36.13, $p < .001$). Asian Americans, African Americans, and Latinos were more likely to engage in family discussions than European Americans, controlling for child's sex, parental satisfaction, family size and structure, and maternal education. Dual-parent families with kindergarten girls, and those with more siblings, were more likely to engage in family discussions than were single-parent families with kindergarten boys and families with fewer siblings.

Discussion

First, we investigated relations between maternal education and parental expectations for children's long-term educational attainment. We found that maternal education was related to higher long-term expectations, and that, controlling for maternal education, parents from U.S. ethnic minority groups reported higher expectations than European American parents for their children's educational attainment. Asian Americans and Latino Americans reported the highest expectations on average, even controlling for income and maternal education, and European Americans reported the lowest expectations for their child's educational attainment.

This result has several possible explanations. Although previous studies have found that Latino Americans have lower expectations, on average, than European Americans, these studies have mostly been conducted with parents of older, adolescent children. The children in this study are instead very young and parents' expectations may be higher during these early years in their child's life. As their children progress through the school system, it is possible that parents' expectations may decrease even if their aspirations or hopes remain high. Goldenberg, Gallimore, Reese, and Garnier (2001) found that Latino American parents tend to have very high aspirations unaffected by perceptions of discrimination, but that their expectations begin high and then fluctuate during the course of their child's educational trajectory.

Another explanation for the finding that Latino Americans and Asian Americans report higher expectations than European Americans and African Americans may be

Table 4. Hierarchical regression analysis predicting family discussions

	Step 1			Step 2			Step 3		
Variable	*B*	*SEB*	*t*	*B*	*SEB*	*t*	*B*	*SEB*	*t*
Family background									
Child's sex	.12	.06	4.28***	.13	.06	4.39***	.12	.06	4.25***
Family size	.06	.02	4.45***	.07	.02	5.07***	.05	.02	4.30***
Family structure	.06	.08	1.52	.06	.08	1.47	.17	.08	4.32***
Income	.00	.01	1.64	−.00	.01	−1.52	.00	.01	1.56
Parental satisfaction	.06	.07	1.59	.06	.07	1.52	.12	.08	3.05**
Maternal depression	−.01	.07	−.25	.00	.07	.09	.04	.08	.90
Neighbourhood safety	−.03	.13	−4.53***	−.33	.13	−5.11***	−.12	.13	−1.80
Maternal education				.06	.02	6.42***	.09	.02	10.93***
Ethnicity									
Asian American							.49	.16	6.17***
African American							.57	.11	10.72***
Latino American							.69	.09	15.30***
R^2		.02			.02			.09	
F for change in R^2					3.36			11.20***	

Note. European American was used as the referent group for this analysis.
*$p < .05$; **$p < .01$; ***$p < .001$.

differences in acculturation level. Latino Americans and Asian Americans who immigrated more recently, who became residents of the U.S. voluntarily, and who were welcomed and assisted may be more aware of, and optimistic about, the value of education as a means of social mobility (Portes & McLeod, 1996; Portes & Zhou, 1993; Waldinger & Feliciano, 2004). Although African Americans, especially those with more education, also hold high expectations for their children's education, they may be more aware of the obstacles of racism, having suffered as descendants of slaves for more than 200 years (McAdoo, 2002b). Measuring perceived discrimination and generation level would enable future studies to investigate this possibility further.

Next, we examined relations between maternal education and children's activities, and hypothesised that maternal education would be positively associated with the frequency of all types of activities, even controlling for income. This hypothesis was confirmed. Children whose mothers had higher levels of education engaged more frequently in verbal, non-verbal, and outside-home activities, controlling for other family background variables. Although income also explained some of the variation in verbal and outside-home activities, the proportion of variance explained by income in these two models appeared smaller than the proportion explained by maternal education. Parents who reported feeling more satisfied and comfortable in their role as parents also reported that their children engaged in more of all types of activities. It is possible that parental satisfaction and other individual-level variables such as parental self-efficacy mediate the relationship between maternal education and children's activities. Future studies are needed to investigate further the potential mediators between maternal education and young children's engagement in learning-stimulating activities.

We further hypothesised that, controlling for maternal education, we would find no ethnic group differences in the frequencies of verbal activities, and our study provided evidence to support this hypothesis. Theory and research have shown that mothers with more years of schooling engage in more verbal interactions with their children within and across cultures (see LeVine et al., 2001). Although, controlling for maternal education, Latino Americans and Asian Americans were found to engage less frequently than European Americans and African Americans in verbal and nonverbal activities with their children, the increment in R^2 with the addition of ethnicity variables was too small to be significant in both regression models. Furthermore, when interactions between maternal education and ethnicity were tested, the amount of variation explained did not increase. We therefore conclude that maternal education plays a more important role than ethnicity in differentiating the frequencies of young children's home-based activities.

We hypothesised that family structure and parental satisfaction might be related to family meals, as single parents who are heads of their households may find it more difficult to have meals at regular times due to their work schedules. We also expected that parents who are more comfortable and satisfied with their role as parents may be more likely to spend time engaging in family routines such as meals and family discussions. Both these hypotheses were supported by our analysis results. Furthermore, larger families living in safer neighbourhoods, and families whose five-year-old

child is a girl, reported engaging in more of both types of family routine. Although maternal education contributed to explaining variation in both family routine variables, income did not make a significant contribution after controlling for the other family background variables. These results offer a portrait of the types of American family that can be expected to spend more time together engaging in routines such as mealtimes and discussions about shared cultural and religious beliefs. To the extent that such routines do in fact promote children's development in various domains, these findings provide further evidence that the role of maternal education as a parenting mechanism should not be overlooked.

We also hypothesised that U.S. ethnic minority families would engage more frequently than European American families in discussions about ethnic heritage and religion, due to the cultural values they hold regarding the importance of family closeness and the importance of adaptive cultural practices such as cultural socialisation. We found that this was the case, and that, even controlling for maternal education, ethnic group differences explained a significant amount of variation in family discussions. Latino Americans and African Americans reported the highest frequency of engagement in these discussions, and Asian Americans also reported a higher mean frequency than European Americans.

Although this study makes a substantive contribution, several limitations must be noted. First, the ECLS-K is limited to self-report parental data and does not include observations of parent–child interactions or activities, which would serve as a check on the possible inaccuracy or social desirability biases associated with self-reported behaviours. Including such observations in future national studies would increase their reliability and enable researchers to examine mechanisms through which parents' engagement in activities affects children's behaviours. Observations of parent–child interactions would also enable researchers to investigate relations between parental education level and parental behaviours at a more micro level.

Second, in differentiating groups according to broad ethnic group affiliation, the ECLS-K combined individuals who are in fact different from one another in several respects. The group labelled "Latino American" is very diverse with regard to country of origin, circumstances of arrival/residence in the U.S., and acculturation level (Delgado-Gaitan, 1993; Harwood et al., 2002). Among Asian Americans, similar issues must be addressed (Chao & Tseng, 2002), and we believe that within-group differences among European Americans and African Americans also warrant differentiating these groups in future studies.

Finally, although we did find that maternal education makes a significant contribution to explaining variation in several key home environment variables, we caution that the effects of maternal education ranged from small to moderate, suggesting that other factors need to be included in future models to explain variation more thoroughly.

Implications

For all the models predicting parental involvement outcome variables in which both maternal education and income were significant, the effect of maternal education

appeared stronger than that of income. This study extends our knowledge of the relationship between maternal education and parenting beliefs and practices by contributing new evidence for the significance of these relations. One implication of our findings is that maternal education is a key mechanism through which mothers positively influence their children's home environments, and in turn their developmental competencies. Policies and programs aimed at providing women with greater access to higher education and at keeping girls in school at least until they obtain a high school diploma may therefore have positive, lasting effects on parenting beliefs and practices. Future research examining the types and effects of fathers' involvement in children's education are also warranted, as fathers are frequently actively involved in various aspects of children's education.

Another important implication of this study is that no single factor can solely predict variation in the frequencies of various parental involvement indicators. Each family background variable and SES component that we examined made specific and unique contributions to specific aspects of home-based parental involvement. In some instances, such as family routines, neighbourhood quality still accounted for some of the variance in home-based parental involvement when income and maternal education were controlled for, whereas in others, neighbourhood quality appeared no longer to matter as much. Family structure, or whether children were reared in single- or dual-parent households, made a significant difference in how often children were involved in family routines. However, family structure did not appear to relate to any of the other parental involvement indicators, controlling for other family background characteristics. Furthermore, even though maternal depression is known to impact negatively upon mother–child interactions, when controlling for other family background characteristics, maternal depression was not associated with children's engagement in verbal and nonverbal activities. Maternal satisfaction, a construct negatively related to maternal depression ($r = -.29$, $p < .001$), may account for a portion of the variation in these outcomes, thereby suppressing the effects of maternal depression.

Multi-ethnic studies in the U.S. have been criticised for using European Americans as a standard against which other groups are compared, leading to an interpretation of cultural difference as cultural deficiency (García Coll & Pachter, 2002; McLoyd, 1999). These analyses, using extant data, represent a first step in the effort to disentangle cultural differences from parental education and income differences. Future studies, examining the processes through which early learning environments and parental involvement dimensions shape children's later educational and social experiences, are warranted. The same behaviours may serve different functions in different cultures, and the same parenting function may be achieved by different behaviours in different cultures (Bornstein, 1995). Research into the meanings attributed by parents to family routines and activities, and longitudinal studies tracing the direction of effects on children's development, may elucidate variations in processes among these groups even if frequencies of behaviours do not vary. Alternative pathways to educational achievement and school adjustment, such as family routines and rituals, may then be uncovered, pointing

to potential strengths that may serve as protective factors, especially for at-risk children.

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