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A multidimensional, multilevel examination of mother and father involvement among culturally diverse Head Start families

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Abstract

In this study we examined the relationships between family demographics and level of satisfaction with school contact as possible determinants of multiple dimensions of family involvement in early childhood education. Participants included 171 urban, Head Start parents (108 mothers and 63 fathers). Results revealed that for mothers, having less than a high school education was negatively associated with levels of home-school conferencing. For fathers, primary language spoken in the home was associated with both levels of home-school conferencing and school-based involvement, with Polish- and Spanish-speaking fathers participating less compared with their English-speaking counterparts. In addition, fathers of boys reported higher levels of home-school conferencing. Involvement at school was significantly associated with level of satisfaction with school contact for both mothers and fathers. Multilevel analyses revealed parent gender and satisfaction as the most salient predictors of involvement at the level of the family. Implications for future research, as well as family involvement practice and policy, are discussed.

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Keywords: Family involvement; Preschool; Low-income; Fathers; Cultural diversity; Immigrant

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Family involvement in children's educational experiences has been recognized as a vital component of early childhood education for decades, and national education policymakers continue to adopt it as a top priority (U.S. Department of Education, 2002; Zigler & Muenchow, 1992). The importance of family involvement during early childhood has been supported by numerous studies which demonstrate relationships between involvement behaviors and children's social and academic outcomes (Barnard, 2004; Dearing, McCartney, Weiss, Kreider, & Simpkins, 2004; Marcon, 1999; Miedel & Reynolds, 1999; Rimm-Kaufman, Pianta, Cox, & Bradley, 2003). Furthermore, family involvement has been identified as a key protective factor for low-income, ethnic minority children and youth (Jeynes, 2003). Thus, understanding and promoting positive connections between families and schools may be one way of narrowing the achievement gap between White and ethnic minority students (Wong & Hughes, 2006).

Current thinking has evolved from viewing family involvement as a uni-dimensional, uni-directional construct to recognizing that involvement is both multidimensional and bi-directional (Christenson, 2004; Fantuzzo, Tighe, & Childs, 2000). Family involvement has often been conceptualized as what parents contribute at school (e.g., volunteering in the classroom, attending parent meetings, organizing fund-raisers). More recent conceptualizations acknowledge that family involvement encompasses more than school-based activities. It also includes what parents do at home and in the community to encourage children's learning, as well as activities that reflect transactional experiences between home and school and between school and community (Epstein, 1995). This understanding recognizes that multiple contexts and the dynamic, bi-directional interactions between contexts are critical influences on children's educational success (Bronfenbrenner & Morris, 1998). Indeed, family involvement behaviors occurring both at home and in early childhood settings have been found to positively and independently relate to children's academic and social outcomes (Fantuzzo, McWayne, Perry, & Childs, 2004; Parker, Boak, Griffin, Ripple, & Peay, 1999).

In addition to studies focusing on the relationship between family involvement and child outcomes, the early childhood literature has examined demographic determinants and correlates of involvement, such as parent education, marital status, employment, and primary language. For example, studies show that parents with higher levels of education are, on average, more involved with school activities, although not necessarily with home-based activities (Fantuzzo et al., 2000; Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Grolnick & Slowiaczek, 1994; Roopnarine, 2005). Results regarding marital status are mixed with some finding that married parents tend to be more involved than unmarried parents (e.g., Fantuzzo et al., 2000; Grolnick et al., 1997), while others find no relationship exists (Smock & McCormick, 1995). Interestingly, parents' employment status does not appear to be related to levels of involvement, at least with respect to low-income ethnic minority samples (Fantuzzo et al., 2000, 2004). Although few studies have addressed the influence of primary language, Wong and Hughes (2006) found that Spanish-speaking parents reported lower levels of communication with the school compared to English-speaking parents.

Researchers have emphasized the importance of promoting parent involvement in underrepresented groups, such as among fathers and within immigrant families (Delgado-Gaitan, 1991; García Coll et al., 2002; Marsiglio, Amato, Day, & Lamb, 2000; Wong & Hughes, 2006). Although research consistently shows that mothers are more involved than fathers with young children at home and with school-related activities (Laflamme,

Pomerleau, & Malcuit, 2002; Lamb, Pleck, Charnov, & Levine, 1985; McBride & Rane, 1997; Roopnarine & Ahmeduzzaman, 1993; Toth & Xu, 1999), the vast majority of this research has been based on mother report (Coley & Morris, 2002). Despite this report bias, studies of fathers' involvement with infants highlight the important and unique contributions they make to the development of young children in the areas of academic achievement, behavior and social-emotional skills (Amato & Rivera, 1999; Cabrera, Tamis-LeMonda, Bradley, Hofferth & Lamb, 2000; Culp, Schadle, Robinson, & Culp, 2000; Lamb 1997; Roggman, Boyce, Cook, Christensen, & Jones, 2004). The importance of father involvement in child development has gained increasing attention over the past two decades due, in part, to the changing role of fathers within our society and the growing number of mothers in the workforce (Doherty, Kouneski, & Erickson, 1998; Marsiglio et al., 2000). Unfortunately, low participation of fathers in research, overly simplistic measurement of father involvement (e.g., father absent versus father present), and the preponderance of studies driven by mothers' report of father behaviors have inhibited our understanding of the specific ways that fathers' involvement influences children's development. In addition, most fatherhood research has been conducted with majority culture, middle-income men (Cabrera et al., 2000); therefore, our understanding of father involvement is based on White middle-class norms (Marsiglio et al., 2000).

Understanding parent involvement within immigrant families is even more limited. Few studies have included immigrants, despite the fact that the number of children of immigrants is increasing in schools across the nation, and significant enclaves of immigrant families reside in states such as California and port-of-entry cities such as New York. A decade ago, one-tenth of the U.S. population was comprised of immigrants (Portés & Rumbaut, 2001), and figures show that one in five youth in the U.S. are either foreign-born or children of immigrants (Suárez-Orozco & Suárez-Orozco, 2001). More recently, the *Federal Interagency Forum on Child and Family Statistics* (2006) indicated that children increasingly will have: (a) diverse racial and ethnic backgrounds, (b) diverse households with respect to the nationality of parents and family structure, and (c) exposure to poverty.

Despite these trends, a lack of cross-cultural awareness, understanding, and communication pervades educational practice and policy decisions that present structural and institutional barriers to immigrant parents' involvement (Chapa, 2001; Fuller, Eggers-Pierola, Holloway, Liang, & Rambaud, 1996; Gandara, 2001; Goldenberg, 1987; Orfield, 2001; Suárez-Orozco & Paez, 2002). For example, bilingual education in some states has been all but eradicated despite research and practice which shows the effectiveness of bilingual programs (Gandara, 2001). Traditional parent involvement activities, such as reading to children or helping with homework, may be difficult for recent immigrants who do not speak English, thus accounting for their lower involvement (López, 2001; Sosa, 1997). For these parents, incongruence often extends beyond the linguistic differences between school and home. For example, in many Mexican societies, it is common for parents to defer to teachers who are viewed as educational experts. Questioning a teacher may be seen as disrespectful and an infringement on the teacher's expertise (Suárez-Orozco & Suárez-Orozco, 2001; Valenzuela, 1999). When Mexican families immigrate to the U.S., they may not be comfortable with some types of school involvement, such as serving on a parent policy council or participating in a parent-teacher organization. Many low-income immigrant parents who fear deportation or other government interventions are reluctant to be involved in the school if they do not trust

educators or administrators. Moreover, long work hours of many immigrant families often preclude parent participation in school activities scheduled during school hours (Aspiazu, Bauer, & Spillett, 1998; Sosa, 1997). These families are likely to be considered “uninvolved” by traditional standards when quite the opposite may be true.

Given these potential discontinuities, which can manifest as early as when a child enters preschool (Slaughter-Defoe, 1995; U.S. Department of Health and Human Services [DHHS], 2001), a relevant construct for understanding immigrant families’ involvement in school with young children may be their satisfaction with school contact and support. Qualitative research shows that cultural incongruence between home and school often leads to parent dissatisfaction, which is reflected in lower levels of involvement among immigrant families (Valenzuela, 1999; Villanueva, 1996). There is little quantitative research, however, to guide inquiry in this area. It is not difficult to conceive that, given the myriad challenges associated with immigrant status in our society, parent satisfaction with school contact could be important for promoting quality mesosystem interactions (Bronfenbrenner & Morris, 1998; Shriver & Kramer, 1993) and complementary learning systems between home and school (Harvard Family Research Project, 2005), as well as higher levels of parent involvement among immigrant families, particularly with young children entering preschool, a period during which many families encounter the formal U.S. education system for the first time.

The purpose of the present study was to address some of the limitations in previous research on family involvement by including both mothers and fathers from diverse cultural groups (i.e., first, second, and third-generation Latino and Polish immigrant families¹) and using a multidimensional measure of family involvement. Given the paucity of family involvement research with low-income families, a primary aim was to examine relations between demographic factors and level of satisfaction as possible determinants of family involvement behaviors for culturally diverse mothers and fathers participating in Head Start, the largest federally-funded preschool program for low-income children and families.

A number of hypotheses were tested in this study. First, consistent with research indicating that fathers spend less time with their infants and young children than do mothers, we expected higher levels of involvement among mothers than fathers. Second, we hypothesized several relationships between parent involvement and demographic variables. Specifically, we hypothesized that: (a) parents’ level of education would be related to involvement, with higher levels of education associated with higher levels of involvement at school; (b) child sex would be a significant predictor of, at least, fathers’ involvement, inasmuch as research indicates that fathers tend to be more involved with boys and mothers show no differential involvement based on child sex (e.g., Fantuzzo et al., 2000; Harris & Morgan, 1991); (c) there would be differences in school involvement behavior as a function of the primary language spoken at home; and (d) parents’ employment would not be related to involvement activities, consistent with other studies examining involvement among low-income,

¹ The research presented in this review on parent involvement with immigrant populations reflects studies conducted with Latino groups. The present study includes an immigrant population from Poland. However, to date there is no literature which focuses on the Polish Diaspora in the U.S. and their views or practices of parent involvement in early childhood education.

early childhood samples. (No specific hypothesis was forwarded regarding marital status, as the literature seems to be inconsistent with respect to this predictor.) Third, we hypothesized that satisfaction with school contact would be positively associated with level of school involvement across both mothers and fathers of preschool children. Although the research has not adequately addressed the relationship between parent satisfaction and parent involvement, previous qualitative studies suggest a relationship may exist. Finally, we expected that factors unique to each parent contribute to within-family variation, whereas factors unique to a family contribute to between-family variation, and, therefore, believe it is important to include the perspectives of both mothers and fathers to obtain a more holistic view of family involvement. Thus, effects observed for mothers and fathers separately (in OLS regressions) might differ when examined in the context of multilevel modeling (MLM), a technique which controls for shared family influences (Teachman, Carver, & Day, 1995).

Method

Sample

Participants in this study were 171 parent respondents of 115 preschool children enrolled in an urban, multicultural Head Start program. Sixty percent of the respondents were mothers ($N=108$), 40% were fathers² ($N=63$), and 64% of the sample consisted of mother/father pairs reporting on the same child ($N=110$). The reported mean age for mothers and fathers was 32 years (range=21–65) and 34 years (range=20–50), respectively³. Fifty-eight percent of parent respondents were Latino, 37% were White (Polish), and 5% identified as “Other.” Additionally, 25% of respondents were primary English speakers, 28% were primary Polish speakers, 28% were primary Spanish speakers, and 19% reported being bilingual. Of the primary English language speakers, 83% were Latino, 10% were Polish, and 7% were African-American. Of the 19% of the sample who reported being bilingual in the home, 12% were Spanish/English bilingual and 7% were Polish/English bilingual. A higher proportion of fathers (79%) than mothers (59%) reported being married. According to program records, two-thirds of parents who participated in this study were immigrants who were educated in their country of origin (67%), 10% represented second-generation individuals in the U.S., and 21% were third-generation. Seventy-two percent of mothers and 63% of fathers had at least a high school diploma or equivalent. Employment demographics showed that all fathers in this sample were employed, with 92% reporting full-time and 8% reporting part-time employment. Thirty-three percent of mothers were employed full-time, 19% were employed part-time, and 49% were unemployed. Data from the 110 paired parents (55 dyads) were used in the multilevel analyses. Demographics of this subsample generally matched those of the full sample. See [Table 1](#) for a report of the mother and father total sample and paired sample demographics.

² “Father” was defined in this study as those individuals who self-identified as the child’s “father” on the demographic form, as opposed to other choices (i.e., uncle, step-father, grandfather, foster parent, or other).

³ Three children in this sample had grandparents as legal guardians.

Table 1
Demographic characteristics of mothers ($n=108$) and fathers ($n=63$)

	Full Sample ($N=171$)		Dyads ($N=110$)	
	Mothers ($N=108$)	Fathers ($N=63$)	Mothers ($N=55$)	Fathers ($N=55$)
<i>Demographic variable % (N)</i>				
Marital status				
Single	41% (45)	21% (14)	20% (11)	20% (11)
Married	59% (63)	79% (49)	80% (44)	80% (44)
Educational attainment				
Less than high school	28% (30)	38% (24)	22% (12)	38% (20)
High school or GED	28% (30)	32% (20)	31% (17)	32% (18)
Greater high school	44% (46)	30% (19)	46% (25)	30% (17)
Employment				
Full or part-time	52% (52)	100% (63)	39% (20)	100% (52)
Unemployed	48% (49)	0% (0)	61% (31)	0% (0)
Race/ethnicity				
Latino	65% (69)	50% (31)	49% (26)	43% (24)
White (Polish)	31% (33)	48% (30)	51% (27)	55% (30)
African-American	2% (2)	2% (1)	0% (0)	2% (1)
Other	2% (2)	0% (0)	0% (0)	0% (0)
Primary language spoken in home				
English	26% (28)	22% (14)	20% (11)	20% (11)
Spanish	27% (29)	30% (19)	22% (12)	26% (14)
Polish	23% (25)	35% (22)	38% (21)	40% (22)
Bilingual	23% (25)	13% (8)	20% (11)	14% (8)
English/Spanish	16% (18)	5% (3)	9% (5)	5% (3)
English/Polish	8% (8)	8% (5)	11% (6)	9% (5)

Note. For ease of presentation, percentages were rounded to the nearest whole number and reflect the percentage based on valid (non-missing) data. Where parenthetical numbers do not sum to the total sample or subsample, missing data were encountered (e.g., not everyone completed employment status on the demographic questionnaire).

The urban Head Start program from which participants were recruited is located in New York City and serves 176 three- and four-year-old children in 10 classrooms. At the time of this study, 63% of the children enrolled in the program were Latino, 30% were White, non-Hispanic, and 7% represented other ethnic groups, primarily African-American. Thirty-seven percent of the children spoke English as their primary language, 33% spoke Spanish as their primary language, and 30% spoke Polish as their primary language.⁴ Four-year-olds constituted over half of all children in the program (56%). In addition, families served by this program met federal guidelines for enrollment in Head Start, with at least 90% demonstrating income eligibility. Compared with national Head Start demographic data, the present sample had a higher proportion of married, formally educated, and immigrant parents. Coupled with the higher proportion of married parents, a smaller percentage of mothers in this sample worked outside of the home, reflecting a more traditional family structure than we find among Head Start families nationwide.

⁴ The vast majority of English-speaking children were Latino, and all White, non-Hispanic children spoke Polish.

Teaching staff consisted of 10 head teachers, 10 assistant teachers, and 5 teacher aides. The total teaching staff had an average of 9.8 years of teaching experience. Seventy percent of head teachers had a Master's Degree, and 80% of all teaching staff had greater than a high school diploma. Fifty-two percent of teachers were White (of which half were Polish), 36% were Latino, and 12% identified as "Other." The majority of teaching staff (76%) reported being bilingual. Of these individuals, 47% indicated Spanish as their native language, 37% indicated Polish, and 16% indicated "Other."

Measures

The following measures were employed to gather self-report data from parent participants, with three dimensions of family involvement serving as the eventual dependent variables, and demographic and satisfaction variables serving as predictor variables.

Family involvement

Mothers' and fathers' involvement in children's education was measured using the *Family Involvement Questionnaire* (FIQ; Fantuzzo et al., 2000). This instrument is a multidimensional rating scale that asks primary careproviders of young children to indicate the nature and extent of their involvement in their children's early educational experiences. The FIQ was developed in partnership with parents and early childhood teachers (grades preK through first grade) in a large urban school district in the Northeast, and is comprised of 42 Likert-type items. Analyses of the FIQ conducted by Fantuzzo et al. (2000) revealed three parent involvement dimensions: School-Based Involvement (SBI), Home-Based Involvement (HBI), and Home-School Conferencing (HSC) (Cronbach's $\alpha = .86, .89, .90$, respectively, for the current sample). The SBI dimension is comprised of 10 items and defined by activities and behaviors that parents engage in at school to benefit their children (e.g., volunteering in the classroom, going on class trips, meeting other parents to plan events). HBI consists of 13 items and includes behaviors reflecting active promotion of a learning environment at home for children (e.g., creating space for learning activities at home, providing learning opportunities for the child in the community, keeping regular routines for the child, sharing stories about one's own educational experiences). HSC is comprised of 11 items and describes communication behaviors between parents and school personnel about a child's educational experiences and progress (e.g., talking with the child's teacher about learning difficulties and accomplishments, discussing with the child's teacher ways to promote learning at home; exchanging written notes or phone calls with the teacher). Items are rated on a four-point scale (i.e., 1=Rarely, 2=Sometimes, 3=Often, 4=Always), with higher scores indicating higher levels of involvement for each dimension. Validity studies have documented a relationship between the SBI dimension and number of parent volunteer hours in school-based activities (Fantuzzo et al., 2000), as well as between each dimension of involvement and child outcomes in Head Start, including peer play behaviors, vocabulary skills, learning behaviors, and conduct problems (e.g., Fantuzzo et al., 2004; Fantuzzo, Tighe, McWayne, Davis, & Childs, 2002). A more recent study has replicated the factor structure of the FIQ with Latino families of preschool children, extending its construct validity (Roberts & Ginsburg-Block, 2005). For purposes of this study, scores for each dimension were derived by summing ratings across the items of the

scale and then dividing by the number of items within the scale, with a possible mean range from 1–4.

Parent satisfaction with school contact

This construct was assessed using the *Parent Satisfaction with Educational Experiences Scale* (PSEE; Fantuzzo, Perry, & Childs, 2006), a 12-item, self-report measure of parents' satisfaction with contact with their child's early childhood programs. Items ask parents to rate their satisfaction with various points of contact: volunteering in the classroom, planning classroom activities, notes sent home, conferences with the teacher regarding children's educational progress, telephone conversations, parent workshops offered at the program, and contact with school administrators. Items are rated on a four-point scale (1=Very Dissatisfied, 2=Dissatisfied, 3=Satisfied, and 4=Very Satisfied). Higher scores indicate higher levels of satisfaction. The PSEE was developed with a sample of primary careproviders of 648 children enrolled in the early childhood programs hosted by an urban northeastern school district (e.g., Head Start, Comprehensive Early Learning Center, kindergarten, and first grade). For purposes of this study, a total score (Cronbach's $\alpha=.96$) was calculated across all 12 items, and then a mean item rating was derived by dividing the total score by the number of items completed (possible mean range=1–4).

Parent demographics

A demographic questionnaire was used to gather information about family factors, such as mother's and father's age, level of education, employment status, marital and residence status, number of children and adults in the household, primary language spoken in the home, and mother's and father's racial and/or ethnic group identification. Age and sex of the child about whom they were responding were also requested.

Procedures

Data collection was part of an ongoing research partnership between New York University and the Head Start program. Participants were recruited following the approval of the study by Head Start parents and educational staff and by the University's Committee for Activities Involving Human Subjects. Flyers announcing the study were posted at the Head Start program in English, Spanish and Polish. All measures were translated into Polish and Spanish by professional translators and then back-translated into English by bilingual Head Start staff. When discrepancies occurred between the professional and Head Start translations, the colloquial versions of items were retained. Consistent with the Head Start program's procedure for communicating with families, one packet for each parent that included all research measures was sent home in children's backpacks. Included in each packet was a letter explaining that parents could return the questionnaires directly to Head Start or mail them to the researchers in addressed envelopes that were provided. A reminder letter was sent home after three weeks to maximize participation. At least one parent of 115 of the 176 children's parents (65%) agreed to participate. A children's book was given to each participating family in their primary language.

Statistical analyses

To address the paucity of research that has included both mothers' and fathers' reports of their own involvement (Coley & Morris, 2002), both separate ordinary least squares (OLS) regression models and multilevel regression models were run along the FIQ dimensions (home-based, school-based, and home-school conferencing). Simultaneous regressions were run for the larger samples of both mothers and fathers, separately, to ascertain findings for the respective groups created by parent sex. This set of analyses was deemed important because the preponderance of literature on family involvement is really a reflection of maternal involvement, as few studies incorporate fathers. However, in addition to these OLS regressions, given that the context for mothers and fathers who raise the same child is not independent, multilevel analyses (via SAS 9.1 PROC MIXED) were employed to determine the function of demographic predictors and level of satisfaction as determinants of family involvement for the 55 mother–father pairs in the sample. The key statistical advantage of multilevel modeling is that it controls for the correlation in the pair of outcome scores associated with each dyad (i.e., one for the mother and one for the father) and estimates the between-dyad variance via the inclusion of random dyad effects. The ability to control for this non-independence is a clear advantage of multilevel modeling when examining dyadic data (Lyons & Sayer, 2005).

Results

To test our hypotheses, two separate linear regression analyses were conducted. First, OLS regressions, one for each FIQ dimension, were run separately for mothers and fathers. Second, MLM analyses were conducted to account for shared family context among the 55 mother–father dyads in the sample. In the MLM models, level-1 outcomes (family involvement dimensions) were examined as a function of both level-1 (individual-level) and level-2 (family-level) predictors. More specifically, the level-1 models expressed involvement, measured separately for each parent, as a function of individual parent characteristics (i.e., parent sex, educational attainment). An individual's outcome (FIQ dimension score) was expressed as the linear combination of an intercept for the individual's family (dyad) (β_{0j}), predictors measured on the individuals within a family (e.g., parent sex) and their corresponding fixed effects (i.e., the average β over all clusters, or γ_{10}), and random error (r_{ij}) associated with the observed outcome for the i th individual in the j th dyad. For the level-1 analysis, predictors were group mean centered. By centering in this way, we were able to obtain an accurate estimate of the level-1 slope variance (i.e., a “pure” or unbiased estimate of the pooled within-dyad regression coefficient), such that parameter estimates could then be directly interpreted as the predictor's association with the dependent variables controlling for other level-1 variables (Raudenbush & Bryk, 2002; Enders & Tofghi, 2007). This model was a random intercept model and, thus, did not examine whether the level-1 predictors had varying influences across dyads. The equation for the level-1 model follows:

$$\text{FIQ}_{ij} = \beta_{0j} + \beta_1 \text{PARENT SEX}_j + \beta_2 \text{GRT HIGH SCHOOL} \\ + \beta_3 \text{LESS HIGH SCHOOL}_j + r_{ij}, \text{ where } r_{ij} \sim N(0, \sigma^2)$$

Level-2 predictors included child sex, maternal employment, marital status, family satisfaction with school contact (the average of mother and father report), and primary language, because these variables were determined to be shared within the family. For the level-2 analysis, all predictors (including those entered previously at level 1) were grand mean centered, so that the level-2 regression coefficients could be interpreted as the slope estimates between the level-2 predictors and the dependent variables, controlling for the level-1 effects. The family-specific intercepts were expressed as the linear combination of an overall mean (γ_{00}), family-specific predictors (e.g., marital status), and a random effect, μ_{0j} , associated with each family, according to the equation below:

$$\begin{aligned} \beta_{0j} = & \gamma_{00} + \gamma_{01}\text{CHILD SEX}_j + \gamma_{02}\text{EMPLOYMENT}_j + \gamma_{03}\text{MARRIED}_j \\ & + \gamma_{04}\text{SATISFACTION}_j + \gamma_{05}\text{SPANISH}_j + \gamma_{06}\text{POLISH}_j + \gamma_{07}\text{BILINGUAL}_j \\ & + \mu_{0j}, \text{ where } \mu_{0j} \sim N(0, \tau_{00}) \end{aligned}$$

Results obtained demonstrated that with respect to mothers and fathers separately, the OLS regression models were significant for two dimensions: (a) SBI, $F(10, 93)=3.64$, $p=.0005$ and $F(9, 52)=3.47$, $p=.003$, respectively, and (b) HSC, $F(10, 93)=2.71$, $p=.0062$ and $F(9, 52)=7.24$, $p<.0001$, respectively. Of particular note, the OLS regression models for fathers accounted for more variance than did the models for mothers [$R^2=42\%$ (SBI) and $R^2=60\%$ (HSC) for fathers, compared with 31% (SBI) and 25% (HSC) for mothers]. See Tables 3 and 4 for these separate OLS regression results. No significant relationships were found for HBI for either mothers or fathers according to OLS regressions. All three models in MLM analyses revealed significant effects. These results are explicated in more detail below, according to each hypothesis.

Hypothesis 1. Mothers will demonstrate higher levels of involvement in their preschool children's education compared with fathers.

To address this hypothesis, MLM analyses were employed. The parameter estimates, standard errors, and corresponding t and p -values presented in Table 5 represent the overall fixed effects for both mothers and fathers. According to these analyses, on average, fathers reported lower levels of involvement than did mothers across all three dimensions of family involvement (HBI, $b=-0.33$, $p=.001$; SBI, $b=-0.40$, $p<.0001$; HSC, $b=-0.70$, $p<.0001$). See Table 2 for mean scores on each FIQ dimension across mothers and fathers.

Hypothesis 2. Demographic predictors will demonstrate expected relationships with family involvement, consistent with extant research.

a) Parents' level of education will be related to involvement, with higher levels of education associated with higher levels of involvement at school

Educational attainment was comprised of three levels: less than a high school diploma, high school diploma or GED, or greater than a high school diploma. As shown in Table 3, according to OLS regression results educational attainment was related to HSC for mothers. Mothers with less than a high school education reported lower involvement in home-school conferencing activities ($b=-.32$, $p=.04$). This was not true for the SBI dimension, nor for fathers on either school involvement dimension (see also Table 4). According to MLM

Table 2
Means and standard deviations of FIQ dimensions and PSEE scores for mother–father pairs

Variable	Mothers (<i>N</i> =55)	Fathers (<i>N</i> =55)
	<i>M</i> (SD)	<i>M</i> (SD)
FIQ dimensions ^a		
Home-based involvement	3.23 (0.45)	2.90 (0.64)
Home-school conferencing	2.31 (0.57)	1.63 (0.67)
School-based involvement	1.85 (0.52)	1.51 (0.58)
PSEE ^b	3.26 (0.33)	3.13 (0.34)

Note. FIQ=Family Involvement Questionnaire, and PSEE=Parent Satisfaction with Educational Experiences scale.

^a Involvement across the three dimensions was measured on a 4 point Likert scale: 1=Rarely, 2=Sometimes, 3=Often, and 4=Always.

^b Satisfaction was measured on a 4 point Likert scale: 1=Very Dissatisfied, 2=Dissatisfied, 3=Satisfied, and 4=Very Satisfied.

analyses, after taking into account shared family context, there was no significant effect for education on any of the FIQ dimensions controlling for the other variables in the multilevel model (see Table 5).

b) Child sex will significantly predict fathers' involvement (with fathers showing more involvement with boys), but not mothers' involvement

Regarding the effects of child sex, according to the OLS regression analysis, fathers of boys indeed had higher ratings on the HSC dimension ($b = .35, p = .02$), partially supporting our hypothesis that fathers are more involved with their sons (see Table 4). There were no

Table 3
Variation in mothers' involvement explained by demographic and satisfaction variables (*N*=108)

Variable	Home-based involvement		School-based involvement		Home-school conferencing	
	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)
Child sex (males)	.13 (.10)	1.21 (.23)	.01 (.11)	0.12 (.90)	.12 (.12)	1.02 (.31)
Less high school ^a	-.11 (.13)	-0.83 (.41)	-.07 (.14)	-0.51 (.61)	-.32 (.15)	-2.09 (.04)
Greater high school	.01 (.13)	0.10 (.92)	-.07 (.14)	-0.48 (.63)	-.22 (.15)	-1.44 (.16)
Full time employment ^b	-.03 (.13)	-0.25 (.80)	-.08 (.14)	-0.57 (.57)	-.07 (.16)	-0.43 (.67)
Part-time employment	-.08 (.15)	-0.53 (.60)	-.05 (.15)	-0.29 (.77)	-.11 (.17)	-0.64 (.52)
Marital status (married)	-.07 (.11)	-0.69 (.49)	-.06 (.11)	-0.58 (.57)	.05 (.12)	0.43 (.67)
Spanish (primary) ^c	-.32 (.14)	-2.26 (.03)	.08 (.15)	0.52 (.60)	-.18 (.16)	-1.09 (.28)
Polish (primary)	-.18 (.15)	-1.20 (.23)	.12 (.16)	0.72 (.48)	-.05 (.18)	-0.29 (.77)
Bilingual	-.05 (.14)	-0.37 (.71)	.22 (.15)	1.45 (.15)	-.02 (.16)	-0.12 (.91)
Satisfaction with contact	.10 (.14)	0.74 (.46)	.74 (.14)	5.15 (.00)	.62 (.16)	3.90 (.00)
Model <i>R</i> ² (<i>p</i> > <i>F</i>)	.15 (.19)		.31 (.00)		.25 (.01)	

Note. Information is presented in the following order: values are unstandardized regression coefficients (standard error terms), *T* values (exact *p*-values).

^a Reference group for educational attainment had a high school diploma or GED.

^b Reference group for employment was unemployed.

^c Reference group for primary language was comprised of primary English speakers.

Table 4

Variation in fathers' involvement explained by demographic and satisfaction variables ($N=63$)

Variable	Home-based involvement		School-based involvement		Home-school conferencing	
	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)
Child sex (males)	.19 (.17)	1.11 (.27)	.13 (.14)	0.94 (.35)	.35 (.14)	2.48 (.02)
Less high school ^a	-.05 (.23)	-0.20 (.84)	.12 (.18)	-0.67 (.51)	-.12 (.19)	-0.65 (.52)
Greater high school	-.28 (.20)	-1.35 (.19)	.02 (.16)	0.15 (.89)	-.22 (.17)	-1.30 (.20)
Full time employment ^b	-.44 (.40)	-1.10 (.28)	.38 (.33)	1.17 (.25)	-.05 (.34)	-0.14 (.89)
Marital status (married)	.41 (.22)	1.88 (.07)	.31 (.18)	1.75 (.09) [†]	.22 (.18)	1.21 (.23)
Spanish (primary) ^c	.04 (.27)	0.15 (.88)	-.44 (.22)	-1.98 (.05)	-.41 (.23)	-1.81 (.08) [†]
Polish (primary)	-.25 (.25)	-0.98 (.33)	-.53 (.21)	-2.58 (.01)	-.87 (.21)	-4.09 (.00)
Bilingual	-.09 (.30)	-0.29 (.78)	.04 (.24)	0.15 (.88)	-.30 (.25)	-1.18 (.24)
Satisfaction with contact	.65 (.29)	2.22 (.03)	.52 (.24)	2.17 (.04)	.76 (.25)	3.11 (.00)
Model R^2 ($p > F$)	.25 (.06) [†]		.42 (.00)		.60 (.00)	

Note. Information is presented in the following order: values are unstandardized regression coefficients (standard error terms), *T* values (exact *p*-values). [†]Values reflect $p > .05$, but $< .10$.

^a Reference group for educational attainment had a high school diploma or GED.

^b Reference group for employment was part-time employment.

^c Reference group for primary language was comprised of primary English speakers.

differential relationships found based on child sex for mothers (see Table 3), consistent with our prediction. In addition, the dyadic analyses revealed that, with respect to home-school conferencing, the family-level child sex variable remained influential when controlling for the other effects. Families with boys reported higher involvement in home-school conferencing activities than did families with girls ($b=0.27$, $p=.04$). Because of our small sample, we did not have sufficient power to test cross-level interaction effects in the MLM analyses (e.g., child sex \times parent sex).

c) Primary language will significantly predict levels of school involvement behavior; with non-English speakers demonstrating less of these types of involvement

Primary language included four levels: English, Polish, Spanish, and Bilingual. In OLS regressions, for fathers, unlike for mothers, differences emerged based on primary language. Compared with English-speaking fathers, Polish-speaking and Spanish-speaking fathers evidenced lower ratings on the SBI dimension ($b=-.53$, $p=.01$ and $b=-.44$, $p=.05$, respectively), and Polish-speaking fathers reported lower levels of involvement on the HSC dimension ($b=-.87$, $p<.0001$). Multilevel analyses also supported the overall influence of primary language after taking into account shared family context. Families in which Polish was the primary language spoken at home reported lower involvement in home-school conferencing than did English-speaking families ($b=-0.53$, $p=.006$).

d) Parents' employment will not be related to level of involvement activities

The variable for employment contained two levels: full or part-time and not employed. As hypothesized, this demographic marker did not account for variation in level of involvement for mothers or fathers, or when taking into account shared family context.

Table 5
Multilevel modeling of determinants of family involvement ($N=55$ mother–father dyads or 110 parents)

	Home-based		School-based		Conferencing	
	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)	<i>b</i> (SE)	<i>T</i> (<i>p</i>)
<i>Fixed effects</i>						
Level 1 predictors ^a						
Parent sex (fathers)	-.33 (.10)	-3.46 (.00)	-.40 (.07)	-5.43 (.00)	-.70 (.10)	-7.30 (.00)
Education ^b						
<High school	-.14 (.18)	-0.79 (.43)	-.04 (.14)	-0.28 (.78)	-.24 (.15)	-1.67 (.10)
>High school	-.05 (.17)	-0.33 (.75)	-.19 (.13)	-1.47 (.15)	-.02 (.13)	-0.14 (.89)
Level 2 predictors						
Child sex (boys)	.26 (.14)	1.81 (.08) [†]	.04 (.12)	0.34 (.74)	.27 (.13)	2.11 (.04)
Employment status ^c	-.11 (.17)	-0.62 (.54)	-.21 (.15)	-1.46 (.15)	-.14 (.15)	-0.94 (.35)
Marital status (married)	.42 (.19)	2.18 (.04)	.33 (.16)	2.07 (.05) [†]	.34 (.17)	2.04 (.05) [†]
Satisfaction w/school contact	.22 (.24)	0.93 (.36)	.79 (.20)	3.87 (.00)	.71 (.21)	3.36 (.00)
Primary language ^d						
Spanish	-.26 (.24)	-1.09 (.28)	-.17 (.20)	-0.86 (.40)	-.35 (.21)	-1.70 (.10)
Polish	-.40 (.20)	-1.95 (.06) [†]	-.10 (.17)	-0.56 (.58)	-.53 (.18)	-2.94 (.01)
Bilingual	-.12 (.23)	-0.51 (.61)	.17 (.20)	0.89 (.38)	-.17 (.20)	-0.84 (.41)

Note. Information is presented in the following order: values are unstandardized regression coefficients (standard error terms), *T* values (exact *p*-values). [†]Values reflect $p > .05$, but $< .10$.

^a Slope estimates resulting from the Level-1 analysis may be considered “pure” estimates of the level-1 (average within-family) effects, because they are based on predictors that were group mean centered. Slope estimates resulting from the Level-2 analysis are based on predictors that were grand mean centered and, therefore, level-2 coefficients may be interpreted as the effect of a particular predictor on the dependent variable, controlling for all other predictors in the model.

^b The reference category for education variables is high school diploma or equivalent.

^c Refers to mothers’ part-time or full-time employment, since all fathers were employed. The reference category is maternal unemployment.

^d Refers to the primary language spoken in the home. If one parent reported being bilingual, this variable was coded as bilingual. The reference category for primary language is English, and therefore, fixed effects coefficients are interpreted as the difference between the averages for English speakers versus other language speakers.

The variable for marital status included two levels: married and unmarried. We did not forward any specific hypotheses concerning this variable, because the literature tends to be inconsistent regarding its effects on involvement. According to OLS analyses, marital status was not a significant predictor. However, according to MLM analyses, when taking into account shared family context, marital status is associated with levels of home-based involvement, such that parents who are married report higher levels of involvement in home activities with their preschool children than their unmarried counterparts ($b=0.42$, $p=.036$).

Hypothesis 3. Parents’ level of satisfaction with school contact will be positively associated with level of involvement across both mothers and fathers.

In line with our hypothesis, satisfaction with school contact was associated with two dimensions of family involvement. According to the separate OLS regressions, mothers who reported higher levels of satisfaction with contact were more involved in school-based

activities ($b = .74, p < .0001$) and home-school conferencing ($b = .62, p < .0001$). Likewise, fathers who reported higher levels of satisfaction with contact were more involved in school-based activities ($b = .52, p = .04$) and home-school conferencing ($b = .76, p < .001$), controlling for demographic characteristics. See Table 2 for mean scores on the satisfaction variable across mothers and fathers.

After taking into account shared family context, consistent with what OLS regressions demonstrated, satisfaction with school contact was related to the two school dimensions of involvement, after controlling for the effects of the level-1 and level-2 demographic variables in the model (specifically, SBI, $b = 0.79, p < .0001$ and HSC, $b = 0.71, p < .0001$). Therefore, corroborating OLS analyses, higher family-level satisfaction with school contact was also associated with higher levels of involvement in these dimensions, but not the home-based involvement dimension.

Hypothesis 4. Some effects observed for mothers and fathers separately will disappear in the context of multilevel modeling (MLM), a technique which controls for shared family influences.

As presented above, findings from the MLM analyses revealed parent sex, child sex, primary language, marital status, and satisfaction with school contact to be significant predictors of various dimensions of family involvement. Three findings differed between the larger separate samples of mothers and fathers and the dyadic subsample. First, the coefficients for Spanish-speaking and Polish-speaking families were much smaller and not statistically significant on the SBI dimension, suggesting that, at least for this sample, family-level effects may compensate for language differences observed with fathers. Second, the effect of maternal education was not significant according to MLM regressions. Third, marital status, which was not significant according to OLS regression analyses, became significant when examined at the family-level.

For further information concerning the multilevel model, refer to Table 6, which reports the variance components. Across types of family involvement, when the level-1 predictors were added to the model, compared with the unconditional model, the residual variance at level 1 was reduced. In addition, when level-2 predictors were included, significant fixed effects were found for the family-level predictors; thus, the family-level predictors helped to explain the random between-family variance. This can be seen via the percentage of variance explained (R^2). The intra-class correlation coefficient [(between-family variance) ÷ (between-family variance + residual variance)] demonstrates the similarity in self-reported involvement among individuals within families after controlling for the influences of other predictors. This coefficient was moderate to large for the home- and school-based involvement dimensions, indicating a substantial amount of similarity among individuals within families with respect to these home and school activities, and was small to moderate for home-school conferencing, indicating relatively less similarity within families on this dimension.

Discussion

The current study was designed to examine predictors of family involvement among culturally diverse Head Start parents and to address several limitations of previous family

Table 6
Estimated variance components

Dependent variable	Estimate		% Variance	
	Intercept ^a	Residual ^b	Explained ^c	ICC ^d
Home-based involvement				
Random effects only	.082	.253****		.24
Level 1 fixed effects included	.106*	.211****	.17	.33
Level 2 fixed effects included	.082	.253****	.24	.27
School-based involvement				
Random effects only	.090*	.237****		.28
Level 1 fixed effects included	.198***	.128****	.46	.61
Level 2 fixed effects included	.078*	.115****	.61	.41
Home-school conferencing				
Random effects only	-.024	.524****		.05
Level 1 fixed effects included	.143*	.229****	.56	.38
Level 2 fixed effects included	.033	.222****	.77	.13

Note. * $p < .05$; ** $p < .01$; *** $p < .001$; **** $p < .0001$.

^a Intercept refers to the variance of the random dyad effects.

^b Residual refers to the variance of Level 1 residuals.

^c % Variance explained refers to the percentage of variance in the Level 1 residuals explained by the Level 1 fixed effects and the percentage of between-dyad variance explained by the Level 2 fixed effects, respectively.

^d ICC = intra-class correlation coefficient.

involvement research. First, we employed a multidimensional measure of family involvement to assess parents' self-reported levels of involvement on three distinct dimensions measured by the FIQ: School-Based Involvement, Home-Based Involvement, and Home-School Conferencing (Fantuzzo et al., 2000). Second, unlike the vast majority of prior research on family involvement which reflects *maternal* involvement solely or, if it includes fathers, tends to employ mother report of father involvement, this study examined involvement behaviors as reported directly by both mothers and fathers. Third, we examined the relationship between level of involvement and parents' satisfaction with school contact, which has received a relatively limited research focus, particularly among ethnic minority and immigrant families (Lee, 2005). Finally, two types of multiple regression analyses were conducted to examine possible determinants of family involvement: (a) multiple regression with 108 mothers and 63 fathers separately, and (b) multilevel modeling to account for shared family context among 55 mother–father dyads.

All of our hypotheses were confirmed, although some only partially. First, mothers reported significantly higher levels of involvement than did fathers across the three dimensions. This result extends the findings of previous studies, in which mothers demonstrate higher involvement with their infants than do fathers, to parents of preschool children for a variety of home- and school-based activities (Laflamme et al., 2002; McBride & Rane, 1997; Pleck & Masciadrelli, 2004; Roopnarine, 2005; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). The observed gender difference might be related to: (a) unspecified expectations for fathers' involvement in this Head Start program or inadequate efforts to get fathers involved in center- and home-based activities; (b) fathers' inability to "show up" at school because of work responsibilities; or, (c) incongruent expectations for father involvement between the fathers' country of origin and the U.S. (Delgado-Gaitan, 1991;

Lee, 2005). López (2001), for example, indicates that traditional involvement behaviors are often expected of parents who may be unaware of mainstream norms; this might be particularly true for immigrant fathers.

Separate regression models revealed that other demographic factors were differentially associated with mother and father involvement. Educational attainment accounted for differences in mothers' involvement, according to the OLS regressions. Mothers in our sample who had less than a high school education reported significantly lower levels of conferencing with school personnel. Fantuzzo et al. (2000) reported similar findings on the Home-School Conferencing dimension for a low-income, predominantly African-American female sample. Our findings are consistent with the ethnographic work of Lareau and Shumar (1996), who found that parental involvement behaviors may be hampered by social class position, often determined by educational level. Differences in social class between parents with lower levels of education and more formally educated school officials can result in an inequity in the distribution of power embedded in the dynamics of home-school interactions. Even within a Head Start context (where family involvement is explicitly supported), mothers with less than a high school education participated in lower levels of home-school conferencing. This finding is particularly interesting in that many teachers and teacher assistants shared the same language and ethnic background as parents in their classrooms; it may speak to the issue of unequal power structures between institutions and the community despite similarities on an individual-level. However, it is not clear why this relationship between education and involvement did not emerge in the dyadic (MLM) analyses or why it was not present for fathers.

Two variables were associated with level of involvement among fathers, but not mothers. Specifically, fathers of boys reported being significantly more involved in home-school conferencing than did fathers of girls. Although there is no clear evidence in the literature to indicate that child gender is a determinant of involvement, our finding is consistent with early childhood literature documenting that boys in preschools typically receive more attention from their teachers than do girls, usually as a result of "misbehavior" (Dobbs, Arnold, & Doctoroff, 2004). It is plausible that fathers are more involved when children misbehave, and, therefore, are more communicative with school personnel when it comes to their sons. However, future research is needed to test this hypothesis.

Primary language was also associated with father involvement, but not mother involvement, in the separate regression analyses. Fathers who were primarily Polish or Spanish speakers reported being less involved with school-based activities, and Polish-speaking fathers reported less home-school conferencing than did English-speaking fathers. These findings are consistent with other research which suggests that the inability to communicate with staff members is a barrier to parental involvement in schools for newly arrived immigrants and for parents who speak languages other than English (Chavkin & González, 1995; Lee, 2005; Ortíz, 2004). Others have documented that language minority parents often feel less welcomed at their children's school (Martinez, DeGarmo, & Eddy, 2004; Quezada, Diaz, & Sanchez, 2003). A recent nation-wide study revealed that primary Spanish-speaking parents receive fewer communications from their child's school (in the form of memos, notes or emails) than their English-speaking counterparts (National Center for Education Statistics, 2006). Low involvement among language minority fathers is also

consistent with research documenting that, despite spending more time in many aspects of their children's lives, fathers still do not spend time in the school environment (Pleck & Masciadrelli, 2004).

It is interesting to note that the influence of primary language also manifested itself in the family-level MLM analyses with the Polish-speaking families. This finding could be sample-specific, but it does suggest a possible cultural difference between the recently immigrated Polish families and more established Latino families in the community. The majority of English-speaking families (81%) who served as the reference group were Latino, suggesting that primary language served as a proxy for recency of immigration in this study. It remains unclear from our data and from previous studies, however, why language presented a barrier for fathers, but not for mothers. With larger samples, future research could test this relationship via cross-level moderation analyses (e.g., parent sex \times child sex; primary language \times parent sex) to see if the OLS results would replicate once shared family context is taken into account.

Although marital status did not present as significantly related to levels of involvement in the separate OLS regressions, it did emerge in the family-level analyses as a significant predictor of home-based involvement and as a trend with respect to the school involvement dimensions. This finding is somewhat surprising, albeit consistent with the general equivocal interpretation of this variable's effect in the larger body of literature. It could be that this finding is specific to the smaller subsample of 55 dyads, or it could be that when taking into account shared family context, being married matters. We could not tease out this finding in the present study, but it certainly warrants future attention.

Satisfaction with contact at the Head Start program was associated with involvement in school-based activities and home-school conferencing for both individuals and families in this study. Until now, the association between satisfaction and parent involvement has not been examined directly in the early childhood literature. In the school choice literature, conducted mainly with middle schools, involvement in school activities has been found to relate positively to satisfaction (Goldring & Shapira, 1993). McNamara, Telzrow, and DeLamatre (1999) examined parent reactions to an elementary school intervention program and found that satisfaction with the program was related positively to parents' involvement in program implementation. Additionally, Griffith (1996) found that elementary school parents were more satisfied when they perceived a cooperative and receptive school system, characterized by effective communication between parents and school personnel. On average, parents in the current study reported high levels of satisfaction with their school contact. Nonetheless, variability in satisfaction was related to variability in their reported involvement and should be considered a potentially important determinant of family involvement, even in preschool. This finding, however, should be interpreted with some caution. There is arguably some overlap between the items of the satisfaction measure and the FIQ, particularly for the School-Based and Home-School Conferencing dimensions. One's satisfaction with volunteer opportunities, for example, could reflect level of involvement in this type of school-based activity. It is possible that embedded in a rating of satisfaction is also a rating of involvement. Future research could confirm or disconfirm the relationships found in this study by employing different measures of satisfaction.

Limitations and future research

Although this study advances our understanding of the determinants of family involvement in culturally diverse, low-income children's educational experiences, several limitations highlight the need for further research. The present study was a cross-sectional study of family involvement in one urban Head Start program in the northeast; the generalizability to other early childhood intervention programs serving linguistically and ethnically diverse immigrant families may be limited. Furthermore, because of the study's cross-sectional design, it is not possible to determine the direction of the relationship between satisfaction and involvement. It could be that parents who are more satisfied with contact at their child's center are more involved in school-based activities, or, alternatively, that parents who are more involved in school-based activities are more satisfied with their contact. The specific direction and possible mediators of this relationship (e.g., parental aspirations for their children, beliefs about schooling, teacher expectations) will need to be investigated in future research.

The nature of family demographics also limits generalizability. It is plausible that findings from the separate regressions generalize only to families in which both mothers and fathers are willing to participate in research. There were nine cases in which mothers reported being married, but father data were not returned; we do not have information on the number of cases where mothers reported being unmarried but the child's father was residing in the same home. It would be interesting for future research to take into account these complicated issues of marital status, residence and non-residence in investigating the shared effects of family involvement on children's outcomes. In addition, the high proportion of married families in our sample (59% of mothers and 79% of fathers) reflects a family structure that is atypical compared with national Head Start data (i.e., where 43% of the predominantly female primary care providers reported being married; U.S. DHHS, 2001). Moreover, multilevel dyadic findings from this study are likely to apply to two-parent families who maintain a relatively traditional family structure, with the father as the primary breadwinner and the mother not employed outside the home. This traditional family structure is certainly no longer the norm for families in this country, but it may characterize Latino and Polish immigrant communities served by this Head Start program. It also appears, with respect to the dyadic data, that Latino families may have been underrepresented (45% of the families were Latino versus 63% enrollment of Latino children in the program), and Polish families may have been overrepresented (53% were Polish families versus 30% enrollment of White, non-Hispanic children in the program). Upon closer examination, participant Polish families demonstrated higher rates of being married compared with Latino families (87% versus 54%), perhaps explaining their disproportionate representation within the dyadic data.

Finally, there are clear limitations to interpretation of the FIQ self-report data. These family involvement constructs could be measured via behavioral indicators, and findings based on more direct measures might plausibly reveal different outcomes. In addition to including more direct measures of family involvement, future research should strive to include additional variables which may moderate level of involvement, such as having a child previously enrolled in Head Start or specific immigration histories. It will be important to relate family involvement constructs to child outcomes for culturally diverse groups and to compare results with those of previous studies (cf. Fantuzzo et al.'s work with predominantly African-American parents).

Implications for practice and policy

One of the more salient findings of this study was the association between satisfaction and parental involvement in school-based activities. Acknowledging the connection between these variables has implications for early childhood practice. For example, increasing parents' satisfaction with school contact may have a positive influence on their level of involvement. With respect to increasing satisfaction, Adams and Christenson (2000) suggest that high quality relationships characterized by mutual respect and cooperative problem-solving are linked to satisfaction more so than frequency of contact.

In the present study, demographic status variables, such as educational level, employment, and primary language, did not account for parents' level of involvement in home-based activities. Given that home-based involvement is a strong predictor of educational success for ethnic minority children (Fantuzzo et al., 2000; Lee & Bowen, 2006), practitioners should seek to understand and encourage already existing family practices. Often, communication regarding home-based involvement is one way; that is, schools make suggestions to parents regarding appropriate home involvement practices. Practitioners may be unaware of the many ways parents already support their children at home. Reciprocal dialogue between parents and educational staff can help teachers determine how they may adapt culture-specific methods to the classroom environment, leading to higher congruence between the home and school.

The present research also has implications with respect to school-based family involvement programming. The ability to compare determining factors across individuals within a family can shed light on distinct family roles so as to inform the development of specific school-based intervention components. Findings from regression analyses highlighted potential areas of discrepancy and overlap between mothers' and fathers' school-based involvement. For example, primary language appears to be a key predictor of involvement for immigrant fathers but not mothers (which potentially translates into an overall family-level effect), whereas satisfaction appears to be influential for both mothers and fathers. Head Start programs are appropriate contexts in which to implement and study interventions aimed at all family members associated with child caregiving and to investigate whether an intervention has any effect on decreasing the discrepancy of involvement behaviors or the influence of various determinants among members (Lyons & Sayer, 2005).

Recent immigrants arrive with high hopes regarding the potential benefits the U.S. educational system affords their children. Challenges may be experienced both by parents, who must learn to navigate a new culture and educational system, and by educators, who must understand how mainstream ideas may clash with the new cultures parents bring. Dialogue between the home and school should, thus, focus on establishing shared expectations for meaningful family involvement to maximize educational outcomes for *all* children and assure opportunities for growth and success in our society.

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References

- Adams, K. S., & Christenson, S. L. (2000). Trust and the family-school relationship examination of parent-teacher differences in elementary and secondary grades. *Journal of School Psychology, 38*, 477–497.
- Amato, P. R., & Rivera, F. (1999). Parental involvement and children's behavior problems. *Journal of Marriage and the Family, 61*, 375–384.
- Aspiazu, G. G., Bauer, S. C., & Spillett, M. D. (1998). Improving the academic performance of Hispanic youth: A community education model. *Bilingual Research Journal, 22*, 2–4.
- Barnard, W. M. (2004). Parent involvement in elementary school and educational attainment. *Children and Youth Services Review, 26*, 39–62.
- Bronfenbrenner, U., & Morris, P. A. (1998). *The ecology of developmental processes*. Hoboken, NJ: Wiley.
- Cabrera, N. J., Tamis-LeMonda, C. S., Bradley, R., Hofferth, S., & Lamb, M. E. (2000). Fatherhood in the twenty-first century. *Child Development, 71*, 127–136.
- Chapa, J. (2001). Affirmative action, X percent plans, and Latino access to higher education in the twenty-first century. In M. M. Suarez-Orozco & M. M. Paez (Eds.), *Latinos: remaking America* (pp. 375–388). Berkeley, CA: University of California Press.
- Chavkin, N. F., & González, D. L. (1995). *Forging partnerships between Mexican American parents and the schools*. ERIC digest (No. EDORC958). U.S.; West Virginia: ERIC/CRESS.
- Christenson, S. L. (2004). The family-school partnership: An opportunity to promote the learning competence of all students. *School Psychology Review, 33*, 83–104.
- Coley, R. L., & Morris, J. E. (2002). Comparing father and mother reports of father involvement among low-income minority families. *Journal of Marriage and the Family, 64*, 982–997.
- Culp, R. E., Schadle, S., Robinson, L., & Culp, A. M. (2000). Relationships among parent involvement and young children's perceived self-competence and behavioral problems. *Journal of Child and Family Studies, 9*, 27–38.
- Dearing, E., McCartney, K., Weiss, H. B., Kreider, H., & Simpkins, S. (2004). The promotive effects of family educational involvement for low-income children's literacy. *Journal of School Psychology, 42*, 445–460.
- Delgado-Gaitán, C. (1991). Involving parents in the schools: A process of empowerment. *American Journal of Education, 100*, 20–46.
- Dobbs, J., Arnold, D. H., & Doctoroff, G. L. (2004). Attention in the preschool classroom: The relationships among child gender, child misbehavior, and types of teacher attention. *Early Child Development and Care, 174*, 281–295.
- Doherty, W. J., Kouneski, E. F., & Erickson, M. F. (1998). Responsible fathering: An overview and conceptual framework. *Journal of Marriage and the Family, 60*, 277–292.
- Enders, C. K., & Tofighi, D. (2007). Centering predictor variables in cross-sectional multilevel models: A new look at an old issue. *Psychological Methods, 12*, 121–138.
- Epstein, J. L. (1995). School/family/community partnerships: Caring for the children we share. *Phi Delta Kappan, 76*, 701–712.
- Fantuzzo, J., McWayne, C., Perry, M. A., & Childs, S. (2004). Multiple dimensions of family involvement and their relations to behavioral and learning competencies for urban, low-income children. *School Psychology Review, 33*, 467–480.
- Fantuzzo, J., Perry, M., & Childs, S. (2006). Parent Satisfaction with Educational Experiences Scale: A multivariate examination of parent satisfaction with early childhood education programs. *Early Childhood Research Quarterly, 21*, 142–152.
- Fantuzzo, J., Tighe, E., & Childs, S. (2000). Family Involvement Questionnaire: A multivariate assessment of family participation in early childhood education. *Journal of Educational Psychology, 92*, 367–376.

- Fantuzzo, J. W., Tighe, E., McWayne, C. M., Davis, G., & Childs, S. (2002). Parent involvement in early childhood education and children's peer play competencies: An examination of multivariate relationships. *NHSA Dialog: A Research-To-Practice Journal for the Early Intervention Field*, 6, 3–21.
- Federal Interagency Forum on Child and Family Statistics (2006). America's children in brief: Key national indicators of well-being, 2006. *Federal Interagency Forum on Child and Family Statistics* Washington, DC: U.S. Government Printing Office.
- Fuller, B., Eggers-Pierola, C., Holloway, S. D., Liang, X., & Rambaud, M. F. (1996). Rich culture, poor markets: Why do Latino parents forgo preschooling? *Teachers College Record*, 97, 400–418.
- Gandara, P. (2001). Learning English in California: Guideposts for the nation. In M. M. Suarez-Orozco, & M. Paez (Eds.), *Latinos: Remaking America* (pp. 339–358). Berkeley, CA: University of California Press.
- Garcia Coll, C., Akiba, D., Palacios, N., Bailey, B., Silver, R., DiMartino, L., et al. (2002). Parental involvement in children's education: Lessons from three immigrant groups. *Parenting: Science and Practice*, 2, 303–324.
- Goldenberg, C. (1987). Low-income Hispanic parents' contributions to their first-grade children's word-recognition skills. *Anthropology & Education Quarterly*, 18, 149–179.
- Goldring, E. B., & Shapira, R. (1993). Choice, empowerment, and involvement: What satisfies parents? *Educational Evaluation and Policy Analysis*, 15, 396–409.
- Griffith, J. (1996). Relation of parental involvement, empowerment, and school traits to student academic performance. *Journal of Educational Research*, 90, 33–41.
- Grolnick, W. S., & Slowiaczek, M. L. (1994). Parents' involvement in children's schooling: A multidimensional conceptualization and motivational model. *Child Development*, 65, 237–252.
- Grolnick, W. S., Benjet, C., Kurowski, C. O., & Apostoleris, N. H. (1997). Predictors of parent involvement in children's schooling. *Journal of Educational Psychology*, 89, 538–548.
- Harris, K. M., & Morgan, S. P. (1991). Fathers, sons, and daughters: Differential paternal involvement in parenting. *Journal of Marriage & the Family*, 53, 531–544.
- Harvard Family Research Project (2005). Beyond the classroom: Complementary learning to improve achievement outcomes. *The Evaluation Exchange*, 11(1), 2–6.
- Jeynes, W. (2003). A meta-analysis: The effects of parental involvement on minority children's academic achievement. *Education and Urban Society*, 35, 202–218.
- Laflamme, D., Pomerleau, A., & Malcuit, G. (2002). A comparison of fathers' and mothers' involvement in childcare and stimulation behaviors during free-play with their infants at 9 and 15 months. *Sex Roles*, 47, 507–518.
- Lamb, M. E. (1997). The development of father–infant relationships. In M. E. Lamb (Ed.), *The role of the father in child development* (pp. 104–120), 3rd ed. Hoboken, NJ: John Wiley & Sons.
- Lamb, M. E., Pleck, J. H., Charnov, E., & Levine, J. A. (1985). Paternal behavior in humans. *American Psychologist*, 25, 883–894.
- Lareau, A., & Shumar, W. (1996). The problem of individualism in family-school policies. *Sociology of Education, Extra Issue, Special Issue*, 24–39.
- Lee, S. (2005). Selective parent participation: Structural and cultural factors that influence school participation among Korean parents. *Equity & Excellence in Education*, 38, 299–308.
- Lee, J., & Bowen, N. K. (2006). Parent involvement, cultural capital, and the achievement gap among elementary school children. *American Educational Research Journal*, 43, 193–218.
- Lopéz, G. R. (2001). The value of hard work: Lessons on parent involvement from an (im)migrant household. *Harvard Educational Review*, 71, 416–437.
- Lyons, K. S., & Sayer, A. G. (2005). Using multilevel modeling in caregiving research. *Aging & Mental Health*, 9, 189–195.
- Marcon, R. A. (1999). Positive relationships between parent school involvement and public school inner-city preschoolers' development and academic performance. *School Psychology Review*, 28, 395–412.
- Marsiglio, W., Amato, P., Day, R. D., & Lamb, M. E. (2000). Scholarship on fatherhood in the 1990s and beyond. *Journal of Marriage and the Family*, 62, 1173–1191.
- Martinez, C. R., Jr., DeGarmo, D. S., & Eddy, J. M. (2004). Promoting academic success among Latino youths. *Hispanic Journal of Behavioral Sciences*, 26, 128–151.
- McBride, B. A., & Rane, T. R. (1997). Father/male involvement in early childhood programs: Issues and challenges. *Early Childhood Education Journal*, 25, 11–15.

- McNamara, K., Telzrow, C., & DeLamatre, J. (1999). Parent reactions to implementation of intervention-based assessment. *Journal of Educational & Psychological Consultation, 10*, 343–362.
- Miedel, W. T., & Reynolds, A. J. (1999). Parent involvement in early intervention for disadvantaged children: Does it matter? *Journal of School Psychology, 37*, 379–402.
- National Center for Educational Statistics (2006). *School and parent interaction by household language and poverty status: 2002–2003*. Washington, DC: U.S. Department of Education.
- Orfield, G. (2001). Commentary. In M. M. Suarez-Orozco & M. M. Paez (Eds.), *Latinos: Remaking America* (pp. 389–397). Berkeley, CA: University of California Press.
- Ortíz, R. W. (2004). Hispanic/Latino fathers and children's literacy development: Examining involvement practices from a sociocultural context. *Journal of Latinos and Education, 3*, 165–180.
- Parker, F. L., Boak, A. Y., Griffin, K. W., Ripple, C., & Peay, L. (1999). Parent–child relationship, home learning environment, and school readiness. *School Psychology Review, 28*, 413–425.
- Pleck, J. H., & Masciadrelli, B. P. (2004). Paternal involvement by U.S. residential fathers: Levels, sources, and consequences. In M. E. Lamb (Ed.), *The role of the father in child development* (pp. 222–271), 4th ed. New York: Wiley.
- Portés, A., & Rumbaut, R. (2001). *Legacies: The story of the immigrant second generation*. Berkeley, CA: University of California Press.
- Quezada, R. L., Diaz, D. M., & Sanchez, M. (2003). Involving Latino parents. *Leadership, 33*, 32–34.
- Raudenbush, S. W., & Bryk, A. S. (2002). *Hierarchical linear models: Applications and data analysis methods*, (2nd ed.) Thousand Oaks, CA: Sage.
- Rimm-Kaufman, S. E., Pianta, R., Cox, M. J., & Bradley, R. H. (2003). Teacher-rated family involvement and children's social and academic outcomes in kindergarten. *Early Education and Development, 14*, 179–198.
- Roberts, M., & Ginsburg-Block, M. (2005). Examining early childhood family-school collaboration practices among diverse Southwestern families. *Symposium paper presented at the Annual Meeting of the National Association of School Psychologists, Atlanta, GA*.
- Roggman, L. A., Boyce, L. K., Cook, G. A., Christensen, K., & Jones, D. (2004). Playing with Daddy: Social toy play, Early Head Start, and developmental outcomes. *Fathering, 2*, 83–108.
- Roopnarine, J. L. (2005). Mothers' and fathers' behaviors toward their 3- to 4-month-old infants in lower, middle, and upper socioeconomic African-American families. *Developmental Psychology, 41*, 723–732.
- Roopnarine, J. L., & Ahmeduzzaman, M. (1993). Puerto Rican fathers' involvement with their preschool-age children. *Hispanic Journal of Behavioral Sciences, 15*, 96–107.
- Shriver, M., & Kramer, J. J. (1993). Parent involvement in an early childhood special education program: A descriptive analysis of parent demographics and level of involvement. *Psychology In the Schools, 30*, 255–263.
- Slaughter-Defoe, D. T. (1995). Revisiting the concept of socialization: Caregiving and teaching in the 90s: A personal perspective. *American Psychologist, 50*, 276–286.
- Smock, S. M., & McCormick, S. M. (1995). Assessing parents' involvement in their children's schooling. *Journal of Urban Affairs, 17*, 395–411.
- Sosa, A. S. (1997). Involving Hispanic parents in educational activities through collaborative relationships. *Bilingual Research Journal, 21*, 285–293.
- Suárez-Orozco, C., & Suárez-Orozco, M. M. (2001). *Children of immigration*. Cambridge, MA: Harvard University Press.
- Suárez-Orozco, M. M., & Suárez-Orozco Paez, M. M. (Eds.). (2002). *Latinos: Remaking America* Berkeley, CA: University of California Press.
- Teachman, J. D., Carver, K., & Day, R. (1995). A model for the analysis of paired data. *Journal of Marriage and the Family, 57*, 1011–1024.
- Toth, J. F., & Xu, X. (1999). Ethnic and cultural diversity in fathers' involvement: A racial/ethnic comparison of African American, Hispanic, and White fathers. *Youth & Society, 31*, 76–99.
- U.S. Department of Education (2002). No Child Left Behind. Retrieved May 16, 2006, from <http://www.ed.gov/nclb/landing.jhtml?src=pb>
- U.S. Department of Health and Human Services (2001). *Head Start FACES: Longitudinal findings on program performance*. Washington, DC: Author.
- Valenzuela, A. (1999). *Subtractive schooling*. Albany, NY: State University of New York Press.
- Villanueva, I. (1996). Change in the educational life of Chicano families across three generations. *Education and Urban Society, 29*, 13–34.

- Wong, S. W., & Hughes, J. N. (2006). Ethnicity and language contributions to dimensions of parent involvement. *School Psychology Review*, 35, 645–662.
- Yeung, W. J., Sandberg, J. F., Davis-Kean, P. E., & Hofferth, S. L. (2001). Children's time with fathers in intact families. *Journal of Marriage and the Family*, 63, 136–154.
- Zigler, E. F., & Muenchow, S. (1992). *Head Start: The inside story of America's most successful educational experiment*. New York: Basic Books Inc.