



A portrait of family involvement during Head Start: Nature, extent, and predictors

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ABSTRACT

Family involvement, an important resource for early learning among children in poverty, is a primary focus of the Head Start preschool program. The current study examined the extent to which families in Head Start were involved in children's learning at home, in the community, and at school, as well as the child, family, and center factors that predicted this involvement. In total, 2154 children and families, as well as the 165 directors of their Head Start centers, participated in the nationally representative Family and Child Experiences Survey (2003 cohort). Child and family background and involvement data, as well as center outreach information, were collected through self-report surveys and interviews. Descriptive analyses showed that families were regularly involved in children's learning in all three contexts, although no ceiling effects were observed. Inferential analyses revealed that family background and process factors were the most substantial predictors of family involvement at the beginning (i.e., fall) of the Head Start year, and many of these factors continued to predict involvement at the end (i.e., spring) of the year. However, effect sizes were generally small. Center factors, including goals and incentives for involvement, were not linked to family involvement in fall or spring. In sum, findings indicate that most Head Start families were regularly involved with children's learning in diverse ways, but that involvement could be further increased. Distinct patterns of modest family predictors emerged, with center outreach indicated as a factor that could potentially be enhanced.

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Families contribute to children's learning and development through involvement in multiple social contexts (e.g., the home, school, and community). Family involvement may be a particularly important resource in low-income households, where children face elevated risks for later academic and social difficulty in school (Jeynes, 2003, 2005; Lee & Burkam, 2002). Indeed, a primary aim of the Head Start program is enhancing family involvement. However, limited research has discerned how often families are involved in these various social contexts, as well as what features of families' lives and experiences are linked to their involvement. Even less research has explored these questions among low-income families, who may have unique assets (e.g., support from programs such as Head Start) and face special constraints (e.g., limited resources) that result in distinct patterns and predictors of involvement.

The Head Start Family and Child Experiences Survey (FACES) project was undertaken by the Department of Health and Human Services in part to explore involvement among Head Start families. The resulting FACES datasets are among the only nationally

representative samples with information on involvement from both families and educators (Zill et al., 2001). We use one of the most recent FACES datasets (2003 cohort) to explore (1) the nature and frequency of Head Start families' involvement in children's early learning and development in the home, community, and school; and (2) child-, family-, and center-level predictors of family involvement in these contexts at the beginning and end of the Head Start year. Ultimately, we sketch a portrait of how and why these families contribute to young children's learning, as well as how the frequency and predictors of this involvement are consistent with and different from findings in normative, middle-income samples.

1. Types of family involvement

There are multiple ways in which families could be involved in children's learning, including at home, in the community, and in the school.

1.1. Family involvement at home

Families' engagement in academic enrichment activities at home is among the most important early resources for a child's development (Storch & Whitehurst, 2001). For example, shared

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book reading and parent–child conversation can foster vocabulary development (Sénéchal, 2006), discussion of letters and sounds and writing activities can promote alphabet knowledge and phonemic awareness (Hindman, Connor, Jewkes, & Morrison, 2008; Justice & Ezell, 2002), and math-related games can support early number sense (Bjorklund, Hubertz, & Reubens, 2004). Enjoyable home learning activities may also encourage children's positive attitudes about learning (Dearing, McCartney, & Taylor, 2005; Hoover-Dempsey et al., 2001). Additionally, recent meta-analyses indicate that subtle, less instrumental forms of parental involvement, including parenting style and communication about school, create an overall environment of involvement which fosters achievement (Jeynes, 2005, 2007, 2010).

1.2. Family involvement in the community

By engaging with their communities, families can help children learn about the wider world and access resources that may not be readily available within the household (especially in low-income settings) (Epstein, 1995; Sanders, 2009). In turn, these opportunities may foster early academic competence and stimulate child motivation and interest in school (Beasley, 2002; Farver, Xu, Eppe, & Lonigan, 2006). The most widely studied community involvement activities are visiting the library, which offers access to novel materials and expert guidance, and attending museums, which provides a context for rich conversations about new information (Neuman & Celano, 2004; Tenenbaum, Rappolt-Schlichtmann, & Zanger, 2004). Less studied are sporting events, church functions, or other cultural opportunities, all of which may offer children the chance to practice social, literacy, and math skills (Sanders, 2000) and afford warm, caring parent–child interactions beyond the home (Jeynes, 2010; Ratelle, Larose, & Guay, 2005).

1.3. Family involvement at school

Family involvement at school can occur in a number of ways, particularly in Head Start. In addition to volunteering in the classroom (e.g., teaching small groups) or other areas of the center (e.g., staffing the office), families might participate in decision-making bodies such as the parent policy council (Castro, Bryant, Peisner-Feinberg, & Skinner, 2004; Epstein, 1995). Families can also serve as liaisons between the school and other families. Finally, personal communications (e.g., parent–teacher conferences, conversations) allow parents and teachers to share information about children (Rimm-Kaufman & Pianta, 1999, 2005; Rimm-Kaufman & Zhang, 2005). Through these interactions, families learn about the expectations of Head Start and the degree to which their child meets these expectations, both of which can help them support learning (McWayne, Hampton, Fantuzzo, Cohen, & Sekino, 2004; Sweet & Appelbaum, 2004).

1.4. Unanswered questions about family involvement

Although some of these aspects of family involvement have been investigated in previous research (Jeynes, 2003, 2005, 2007, 2010), many questions remain, especially regarding low-income families. Early studies suggested that low-income families were less frequently involved in young children's home learning than middle-income families (Feitelson & Goldstein, 1986; McCormick & Mason, 1986; Raz & Bryant, 1990). However, more recent work has discovered substantial variability among low-socioeconomic status (SES) families (Aram & Levin, 2001; Duursma, Pan, & Raikes, 2008; Huston et al., 2001; Raikes et al., 2006). Little is known about the pattern for community and school involvement. Moreover, many of the key factors often found to predict involvement (e.g., child disability status, family ethnicity and home language) are confounded

with SES, meaning that their predictive power might be attenuated in a uniformly low-income sample. The current study thus examines variability in and predictors of multiple types of involvement among Head Start families, an ethnically and culturally diverse group of low-income families with access to educators potentially focused on enhancing involvement.

2. Predictors of family involvement

Ecological systems theories propose that family involvement in any of these key social contexts (e.g., home, community, or school) could be shaped by factors at various ecological levels (e.g., child, family, and center/school). Below, we briefly review the literature (largely conducted with middle-income families) on these predictors and highlight lingering questions about how they operate among low-income Head Start families to be addressed in this study.

2.1. Child factors

Head Start family involvement may vary with children's background characteristics. Overall, the literature shows involvement to be similar for boys and girls, although slight advantages for either gender have emerged in several samples (Grolnick, Benjet, Kurowski, & Apostoleris, 1997; Manz, Fantuzzo, & Power, 2004; McWayne, Campos, & Owsianik, 2008; Patrikakou & Weissberg, 2000). Less explored (especially in a low-income setting) is the role of a child's disability status. Parents of children with disabilities often place a lower priority on early academic activities at home (Marvin & Mirenda, 1993; Skibbe, Justice, Zucker, & McGinty, 2008), and many must dedicate substantial time at home to teaching self-care and therapeutic routines (Marvin & Wright, 1997). Further, limited physical functioning, as well as few appropriate facilities or equipment, may undermine school and community involvement, especially in under-resourced settings (Batorowicz, McDougall, & Shepherd, 2006; Beckung & Hagberg, 2002). We examine child gender and disability status as predictors of Head Start families' involvement, anticipating more substantial contributions from the latter factor.

2.2. Family factors

2.2.1. Background characteristics

Several family background factors often play a role in involvement, regardless of family income. Arguably the best researched family factor is parent education, as more educated families tend to be more involved in children's lives overall (e.g., Grolnick et al., 1997; Roopnarine, 2005). Language minority status might reduce involvement, particularly in the community or school, if families feel alienated from neighbors or educators with ethnic, cultural, and/or language backgrounds different from their own (Epstein & Dauber, 1991; Ortiz, 2004; Ramirez, 2003; Turney & Kao, 2009; Van Velsor & Orozco, 2007; Wong & Hughes, 2006). This is particularly true for immigrant families, who are sometimes found to be less involved than native-born parents (Carreon, Drake, & Barton, 2005; Kao, 2004; Nord & Griffin, 1999).

The role of ethnicity – and particularly the negative relation between minority status and involvement in one or more contexts – that has emerged in the broader literature may not be apparent in low-income settings. Much past work directly or indirectly examining ethnicity and involvement has employed populations of convenience, in which minority participants were more likely to have lower incomes (Baumrind, 1972; Feitelson & Goldstein, 1986). When all participants are relatively low-income (as in Head Start), these negative associations may disappear, and within-group variations may outweigh differences between groups (Jeynes, 2003).

Family structure can also affect parents' time for involvement (Fantuzzo, Tighe, & Childes, 2000; Grolnick et al., 1997). A disproportionately large number of Head Start children reside in single-parent (generally mother-headed) families, in which the burden for involvement falls largely upon one adult who may have less total time for involvement (Bhagwanji & McCollum, 1998). Working more hours also leaves less time for involvement (Weiss et al., 2003).

2.2.2. Process factors

Family process factors may also be linked to involvement in Head Start, as in the larger population. Involvement efforts may be undermined by parents' emotional or mental health challenges, including periods of stress and depression which are relevant across all SES levels but can be more common among low-income families (Evans, 2004; Hill & Talyor, 2004; Inaba et al., 2005). Conversely, positive parenting practices and parent-child relationships have been related to greater involvement, with warm and authoritative parenting predicting more frequent and effective parent engagement in low-income families (Darling & Steinberg, 1993; Simpkins, Weiss, McCartney, Kreider, & Dearing, 2006; Steinberg, Lamborn, Dornbusch, & Darling, 1992) and, ultimately, stronger child outcomes (Jeynes, 2005, 2007). Finally, parents' perceptions of their own self-efficacy can motivate them to forge new connections to schools and communities (Hoover-Dempsey et al., 2001).

2.2.3. Satisfaction with school

Involvement in school (and, perhaps, home and community also) may be fostered by a parent's satisfaction with and connection to the school, including an impression that the school is interested in and respectful of parents' expertise and opinions and invested in their child (Grolnick et al., 1997; Henderson, Mapp, Johnson, & Davies, 2006; Jeynes, 2005, 2007, 2010; Mapp, Johnson, Strickland, & Meza, 2010). As many Head Start parents may not have had positive schooling experiences themselves, and as building strong connections with families is a goal of the Head Start program, this factor may be especially important in this sample.

2.2.4. Obstacles

Low-income parents' involvement in the home, community, and school may be hampered by external barriers, perhaps to a greater degree than middle-income families who might be able to compensate or overcome challenges by using other available resources. For example, home learning could be restricted by limited access to books, toys, games, or writing materials (Feitelson & Goldstein, 1986; McCormick & Mason, 1986; Raz & Bryant, 1990). Similarly, families in low-income and/or violent neighborhoods may be less willing or able to take children out to pursue community-based cultural activities, and might find few available (Leventhal & Brooks-Gunn, 2000). Limited access to transportation and strict work/training schedules might also limit involvement beyond the home (Fantuzzo, McWayne, Perry, & Childes, 2004; Fantuzzo et al., 2000; Hill & Talyor, 2004; Jeynes, 2010; Mapp, 2003; O'Donnell, Kirkner, & Meyer-Adams, 2008).

2.3. Classroom and center factors

Finally, features of outreach undertaken by schools – including the types of family involvement they target and the number and type of invitations and information they extend to families – often predict family involvement at home, in the community, and at school in low- and middle-income settings (Epstein, 1995, 2001; O'Donnell et al., 2008; Patrikakou & Weissberg, 2000; Sheldon, 2005). In Head Start, outreach might focus on any number of goals, including encouraging reading between parents and children

(e.g., by sending materials home or providing workshops), informing parents about opportunities to continue their education, or providing information on health and nutrition (Hindman & Morrison, 2011). Because part of the mission of Head Start is to foster family involvement, educators' outreach might be particularly extensive and effective. However, it is also possible that Head Start outreach efforts could compete with other program goals (e.g., providing mental and medical health care contacts or access to job training), reducing their frequency or efficacy.

3. Goals of the current study

In sum, several sets of factors at the child, family, and center levels of a Head Start student's ecological framework have been shown to predict family involvement in different social contexts, but no studies have yet explored all three of these involvement dimensions and the constellation of relevant predictors in the Head Start context, where involvement may matter most and in unique ways. To build a comprehensive yet nuanced portrait of how families in Head Start are engaged in children's learning and schooling, despite the challenges they may face, we use the nationally representative data from a recent FACES (2003 cohort) study to address two exploratory questions.

First, what is the nature and frequency of family involvement in children's learning at home, in the community, and at school (i.e., the Head Start center)? We examined this at two points during children's first years in Head Start (i.e., fall and spring).

Second, what child, family, and center factors predict Head Start families' home, community, and school involvement at the start and end of the school year? We investigated contributions of child background factors; family background and process variables, satisfaction with the school, and logistical obstacles; and center goals and invitations for family involvement.

4. Method

4.1. FACES 2003 dataset

4.1.1. Overview of prior research with FACES

The FACES datasets, collected every three years beginning in 1997, capture a broad range of variables among children, families, and educators in the Head Start program. (Note that because all FACES participants are connected to Head Start, the datasets do not allow comparisons between children who did and did not experience Head Start.) To date, the FACES research team has produced a number of technical reports with largely descriptive findings regarding children and families (e.g., ACF, 2003; ACYF, 2000; DHHS, 2006; O'Brien et al., 2002; Zill & Resnick, 2006; Zill et al., 2001, 2003) as well as program instruction (Hammer, Farkas, & Maczuga, 2010; Hindman, Skibbe, Miller, & Zimmerman, 2010; Schweinhart, 2006; Shaul, 2003). Although one study (Hindman & Morrison, 2011) examined how family involvement and educator outreach were linked to a variety of child literacy skills, this work did not explore the nature and sources of family involvement itself. Thus, the questions of interest in the current study have yet to be explored in any FACES datasets, including the very recent FACES 2003.

4.1.2. Sampling procedures

As described in the FACES 2003 User's Manual (ICPSR, 2009), the sample was constructed in four stages, with the aim of collecting information about children who first enrolled in Head Start in fall 2003. The population of Head Start programs in the United States was stratified into 30 groups with approximately equal enrollments using key demographic variables (e.g., geographic region, metropolitan status, percent minority, auspice type, and percent of

English language learners). Using probability-proportional-to-size methods, particular programs were selected, two individual centers within each program were recruited, and three classrooms in each center were chosen. Finally, a fixed number of children (typically, $n = 9$) from selected classrooms were recruited. More than 93% of children, families, and educators who consented to participate provided data at least once.

4.2. Participants

Participant information, summarized below, is detailed in Table 1.

4.2.1. Children

The weighted (nationally representative) sample included 2154 children in their first year of Head Start (see Table 1). Overall, 52% of children were female (48% male). In the fall of Head Start, mean child age was 49.07 months. Approximately one-third (34%) of families did not speak English at home. Fully 15% of children had disabilities (e.g., physical challenges, specific language impairments, pervasive cognitive disorders).

4.2.2. Families

Sociodemographic data were collected through interviews with children's primary caregivers, more than 85% of whom were biological mothers. Families were ethnically diverse (35% white, 31% Black, 29% Hispanic/Latino, 1% Asian, 3% American Indian, 1% biracial or multiracial), and 12% of parents had recently immigrated to the United States. Mothers' education levels varied (31% had no high school degree, 40% had a high school degree or GED, and 28% pursued or earned an Associate's degree or higher). The average Head Start household comprised 4.64 people. About half (48%) of children lived in mother-headed households, and 47% of children lived with two parents. At children's entry to Head Start, 36% of mothers worked full-time. Fully 70% of families fell at or below the poverty line, and 84% received some government aid (e.g., food stamps, WIC).

4.2.3. Centers and educators

Head Start teachers averaged 12.56 years of experience in teaching. Although 6% of teachers had no education beyond high school, most (58%) had attended some college or earned Associate's degrees, and many (23%) held Bachelor's degrees or had some graduate coursework (13%). On average, one staff member served 6.67 children.

4.3. Measures

4.3.1. Data collection procedures

For all measures in the FACES dataset, the FACES team worked with expert consultants to develop an assessment battery based on measures commonly used in other large-scale data collection efforts. While most have been extensively used in the field, some have undergone extensive validity examinations (e.g., child outcomes), whereas others have been less thoroughly studied (including several key parent questionnaires). Because there were no standardized, validated measures of involvement or parenting practices available to the FACES team, we present confirmatory factor analyses with FACES data for those measures (using guidelines from Kline, 2003, to evaluate model fit), using Mplus 5.21. We also provide Cronbach alpha (or KR20) statistics to show the consistency of responses on each scale or subscale (using guidelines for adequate alphas from Nunnally & Bernstein, 1994).

Data about family involvement at home and in the community were collected from individual parent interviews in fall and spring. In-school involvement data were collected in spring interviews

Table 1
Descriptive statistics, children, families, and centers.

Continuous variables	<i>M</i>	<i>SD</i>	Range
Child factors			
Age in months	49.07	6.65	35–63
Family factors			
Household size	4.64	1.71	2–16
Center factors			
Teachers' experience	12.56	8.19	1–40
Staff: child ratio	6.67	2.10	2–15
Categorical variables			Percentage
Child factors			
Gender			
Female			52
Male			48
Family speaks English at home			
Yes			66
No			34
Child is dual language learner			
Yes			20
No			80
Child disability status			
Yes			15
No			85
Family factors			
Household structure			
Two-parent			47
Mother-headed			48
Father-headed			2
Other structure			4
Family (maternal) ethnicity			
White			35
Black			31
Hispanic/Latino			29
Asian			1
Native American			3
Bi- or multi-racial			1
Mother is recent immigrant			
Yes			12
No			88
Maternal education			
8th grade			8
Some high school			23
High school degree/GED			40
Associate's coursework or degree			23
Bachelor's degree			3
Graduate coursework or degree			1
Maternal employment			
Full time			36
Part time			18
Looking for work			9
Not in labor force			37
Family in poverty			
Yes			70
No			30
Family receiving government aid			
Yes			84
No			16
Center factors			
Teacher education			
Some high school			0
High school/GED/Vo tech			6
Some college/associate's degree			58
Bachelor's degree			23
Graduate coursework or degree			13

only. The majority of interviews were conducted with biological mothers who reported primary responsibility for their child's care; however, questions regarding home and community involvement were worded to include information about how often any family members had engaged children in these activities. School involvement questions asked the respondent about how often "you" have engaged in these various activities and, thus, might reflect only the involvement of the primary caregiver.

Table 2
Descriptive statistics, family and center potential predictors of involvement.

Continuous variables	<i>M</i>	<i>SD</i>	Range
Family-level predictors			
Parent depression	6.68	6.49	.00–36.00
Parent self-efficacy	3.17	.47	1.29–4.00
Warmth	4.40	.50	2.33–5.00
Autonomy support	4.25	.70	1.00–5.00
Consistent management and discipline	4.05	.65	1.25–5.00
High control	2.14	.82	1.00–5.00
Satisfaction: Head Start goal achievement	3.73	.38	1.00–4.00
Satisfaction: Head Start personal experiences	3.79	.36	1.00–4.00
Total number of obstacles	1.35	1.12	.00–8.00
Center-level predictors			
Invitations	10.78	2.69	3.00–17.00
ECERS score	35.23	.93	32.00–37.00
Categorical variables	Percentage		
Family-level predictors			
Logistical obstacles to involvement			
Work schedule	49		
Child care	25		
School/training schedule	16		
Transportation	12		
Health problems	9		
Not enough opportunities	5		
Don't know others	5		
Feel uncomfortable at Head Start	4		
Need more support from spouse/partner	4		
Had bad experiences with Head Start	3		
Language or cultural barriers	2		
Concern for safety	1		
Teacher seems uncomfortable with parents	1		
Center-level predictors			
Center goals for involvement			
Teacher parents about child development	63		
Help families become self-sufficient	50		
Encourage parents to read more	47		
Identify and support families' personal goals	35		
Inform parents about support services	29		
Inform parents about their own child	28		
Encourage participation in policy groups	19		
Help families build social support networks	18		
Teach parents about health and nutrition	8		
Help parents build literacy skills	7		

Regarding potential predictors of involvement, data on characteristics of children (e.g., gender, disability) and families (e.g., demographics, process variables) were collected through individual parent interviews in the fall of Head Start. Families' satisfaction with Head Start and obstacles to involvement were collected in spring only (allowing families to recall the preceding school year). Data on center outreach goals and invitations were collected from personal interviews with center directors in the fall of the school year.

4.3.2. Family involvement

Families reported on several facets of involvement (see Table 2).

4.3.2.1. Home involvement. Home involvement was measured using a scale developed and widely implemented by the National Household Education Survey (NHES) and the Head Start Quality Research Centers (Breit-Smith, Cabell, & Justice, 2010; Herrold, O'Donnell, & Mulligan, 2008). Parents rated 12 items (e.g., reading books with children; telling stories; playing games; teaching about letters, words, numbers; singing songs; and involving children in everyday tasks such as errands and chores) from 0 (rarely) to 2 (3 or more times per week). Possible scores ranged from 0 to 24, yielding information about the amount of parent involvement in

these home-based activities each week. Confirmatory factor analyses suggested acceptable model fit in fall and spring (Comparative Fit Index (CFI) and Tucker–Lewis Index (TLI) > .90 and Root mean square error of approximation (RMSEA) < .05, as specified by Kline, 2003), and an additional model revealed metric invariance across time ($p > .05$). Cronbach alphas (.69 in fall and .70 in spring) indicated reliability at the low end of the acceptable range.

4.3.2.2. Community involvement. Parents also reported their engagement using a scale employed in the NHES study and Head Start Quality Research Center projects (Herrold et al., 2008). Parents rated their use of 11 community-based enrichment activities outside the home, such as visiting a library, the mall or a museum; attending community events; and attending movies, plays and/or concerts, noting whether or not the family had engaged in these activities with children during the past month (where yes = 1 and no = 0). All together, this measure yielded a total frequency of families' engagement in community-based activities on a monthly basis, ranging from 0 to 11. Confirmatory latent factor analyses suggested questionable model fit; while some indices were acceptable at both time points (CFI and TLI > .95 and RMSEA < .05), WRMR values were high (1.8 in fall and 1.3 in spring) and KR20 reliabilities were low (.57 in fall and .60 in spring) indicating relatively poor fit in fall by even more liberal guidelines (e.g., George & Mallery, 2003). An additional model revealed metric invariance across time ($p > .05$).

4.3.2.3. School involvement. In spring only, parents reported the frequency with which they engaged in 12 school involvement practices, such as volunteering and observing in classrooms, attending social events or parent–teacher conferences, and participating in policy or fundraising groups. These practices were rated on a 5-point scale (from 0 = not yet to 4 = at least once per week), with possible scores reflecting involvement over the course of the school year ranging from 0 to 48. Confirmatory latent factor analyses suggested that the one-factor model fit the data (CFI and TLI > .90 and RMSEA < .05). Cronbach alpha was acceptable at .81.

4.3.3. Family predictors of involvement

Potential predictors were measured (see Table 2).

4.3.3.1. Process factors. Primary caregivers reported on their depression symptoms in the past week, utilizing the Center for Epidemiologic Studies–Depression scale (CES-D; Radloff, 1991). In this short version, each of the 12 items was rated on a 4-point scale (1 = rarely or never; 4 = most or all of the time), with possible scores ranging from 12 to 48. This measure has repeatedly demonstrated strong reliability and construct validity (Garrison, Schluchter, Schoenbach, & Kaplan, 1989; Radloff, 1991), including in the current study, where confirmatory factor analyses showed that the one-factor model was an adequate fit to the data (CFI and TLI > .90), although the RMSEA (.06) value slightly exceeded recommendations (i.e., .05). Cronbach alpha was .87. Participants (mostly mothers) reported relatively low levels of depression ($M = 6.68$, $SD = 6.49$).

Primary caregivers' perceptions of their own self-efficacy were examined using the self-reported Pearlin Mastery Scale (Pearlin & Schooler, 1978). Each of 7 items (e.g., "I feel that what happens to me depends on me," and "I can do things that I put my mind to") was rated on a 4-point scale (1 = strongly disagree, 4 = strongly agree), with possible scores ranging from 4 to 28. Prior work (Jackson, 2000; Pearlin & Schooler, 1978) has established the reliability and validity of the measure, and in the current study, there was some evidence that the one-factor model fit the data (CFI and TLI > .90) although the RMSEA was high (.10). Cronbach alpha was .75. These

families reported relatively high levels of self-efficacy ($M = 3.17$, $SD = .47$).

Dimensions of parenting practices included warmth (three items, e.g., “I have warm, intimate moments with my child”); autonomy support (two items, e.g., “I encourage my child to be independent”); consistent management and discipline (four items, e.g., “I have no difficulty sticking with rules”); and over-control (three items, e.g., “I don’t allow my child to get angry with me”). Parents rated each item from 1 (not at all like me) to 5 (exactly like me). Confirmatory factor analyses showed this four-factor model fit the data well (CFI and TLI > .90, RMSEA < .05), although Cronbach alphas were low (from .45 to .50 for all). Overall, families reported high warmth ($M = 4.40$, $SD = .50$), autonomy support ($M = 4.25$, $SD = .70$), and management/discipline ($M = 4.05$, $SD = .65$), while over-control was low ($M = 2.14$, $SD = .82$).

4.3.3.2. Satisfaction with Head Start. During the spring interview, parents reported their level of satisfaction with the Head Start program on 21 items drawn from the Quality Research Center projects. Items tapped into various perspectives on how Head Start helped children and families, each rated from 1 (very dissatisfied) to 4 (very satisfied). One subscale (eight items) focused on parents’ satisfaction with program achievements, including how well programs had met their core goals (e.g., “Head Start helped my child grow and develop” or “Head Start prepared my child for kindergarten”). The other subscale (13 items) focused on parents’ satisfaction with their own and their child’s experiences in Head Start (e.g., “My child felt safe and secure” or “The teacher was supportive of me as a parent”). Confirmatory latent factor analyses supported the hypothesis that subscales were related but distinct, with a two-factor model distinguishing between program achievements and personal experiences fitting the data well (CFI and TLI > .90, RMSEA < .05). We thus created two satisfaction variables: program achievement and personal experiences (Cronbach alphas were acceptable at .86 and .83, respectively), taking the mean of all items attendant to each factor. Given the possible ranges for both subscales (range = 1–4), satisfaction with achievement and personal experiences were high ($M = 3.73$, $SD = .38$ and $M = 3.79$, $SD = .36$, respectively).

4.3.3.3. Logistical obstacles. Parents reported whether or not they had experienced any of 13 obstacles to involvement, such as schedule conflicts, need for childcare, or transportation needs. Most frequent were interference from work schedules (49%), childcare needs (25%), school/training commitments (16%), or transportation needs (12%). Fewer than 10% of families noted health problems, social isolation, cultural or language differences, or safety concerns. Because no latent factor was expected to underlie all of these various indicators (i.e., there is no theoretical reason that families facing one obstacle would face all the others as well), this series of variables was treated as an index rather than a scale. We summed across items to create a total number of obstacles faced, finding that the average family faced 1.35 obstacles ($SD = 1.12$).

4.3.4. Center predictors of involvement

Descriptive data are included in Table 2.

4.3.4.1. Goals. Center directors noted their top three goals for family outreach and involvement, choosing from 10 possibilities (e.g., teaching parents about child development, encouraging parents to read more, helping parents develop a social support network). For each selected goal, centers rated the degree to which they gauged their programs to be successful in achieving this goal, from 1 (not very) to 3 (very). Because (a) centers were asked to choose only three goals of 10, and (b) higher scores represented

success, which is likely distinct from why centers chose these goals in the first place, no scale was created with these 10 items. Instead, each was considered as an individual item, consistent with previous examinations of FACES center outreach variables (Hindman & Morrison, 2011). Centers differed in the goals they prioritized, with the most popular being teaching families about child development (selected by 63% of centers), helping families to become more economically stable (50% of centers), and urging families to read more (47% of centers). Less prominent were helping families form support networks, learn about health and literacy, and choose and pursue their own personalized goals.

4.3.4.2. Invitations. Directors reported on whether their center ever invited families to be involved in any of 17 different school-based capacities (e.g., classroom aides, home visitors, mentors for other families, support personnel). This index yielded a score from 0 to 17, once again with no latent factor expected to underlie center’s choices from this exhaustive list of opportunities. On average, centers offered 10.78 different invitations each year ($SD = 2.69$, range from 3 to 17).

4.4. Data preparation

4.4.1. Missing data

Amounts of missing data were generally quite small. No more than 6% of families were missing information about background factors or family involvement at home or school. Approximately 15% of teachers and classrooms were missing data (e.g., teacher education). Among center variables, 19% of center directors did not participate in the interview, meaning that their centers were missing all outreach variables. Preliminary *t*-test and chi-square analyses indicated that data were missing at random, meaning that the probability of missing data depended at least partly on factors accounted for by variables in the dataset. In particular, zero-order correlations revealed that child and family data were more likely ($p < .05$) to be missing among families in which mothers were white, recent immigrants, and reported lower levels of depression. Classroom data were more likely to be missing in centers serving higher proportions of minority students. Center data were more likely to be missing in centers serving higher populations of Spanish speakers and recent immigrant families.

Because simply excluding participants with missing data can create biases in a sample, best-practice imputation procedures were employed (Widaman, 2006). Specifically, five datasets were imputed using multiple imputation procedures in SPSS 17.0. All available variables were included in the imputations of all others, to ensure that estimates of missing data were as accurate as possible. Findings reflect pooled estimates combining across these datasets.

4.4.2. Weights

Data were weighted with the normalized child weight (CHNRWTO). This weight adjusts the sample to be representative of the larger population of children who began Head Start during the 2003–2004 academic year (and their parents and teachers). Specifically, this weight takes into account children who left Head Start before the end of the year, as well as demographic factors of the sample including region (i.e., northeast, midwest, south, and west), urban vs. rural location, minority enrollment (i.e., more or less than 50%), program auspices (i.e., school-based or other funders), and percentage of children in the program who were not native speakers of English. Using this weight allows us to draw conclusions about the nation’s Head Start population, rather than about this particular sample of children and families only.

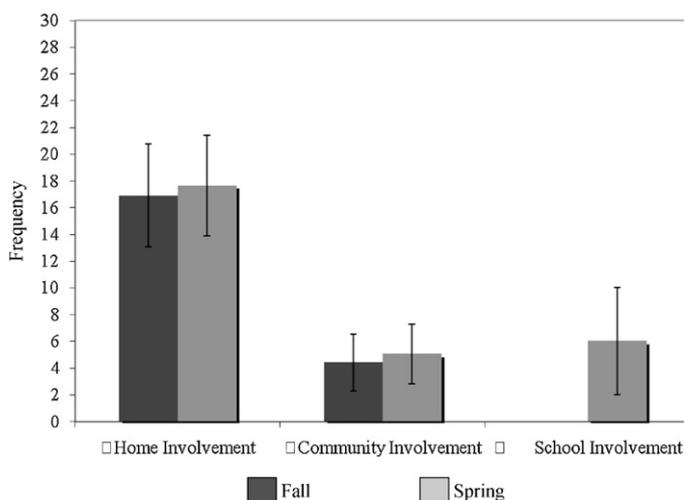


Fig. 1. Frequency of types of involvement.

5. Results

5.1. Question 1: Nature and extent of family involvement

5.1.1. Analytic strategy

Descriptive statistics examined the nature and extent of family home, community, and school involvement. Measures of central tendency (i.e., means) and dispersion (i.e., standard deviations and ranges) were calculated for each variable.

5.1.2. Home involvement

Regarding home activities (see Fig. 1), the average score in fall was 16.92 on a scale from 0 to 24, with variation across families ($SD=3.85$, range from 2 to 24). In spring, the mean was slightly higher, at 17.67, with variation again apparent ($SD=3.77$, range from 1 to 24). Thus, families engaged in approximately 17 home learning activities per week, whether through one-time use of 17 different activities, or through multiple interactions around a smaller set of activities. t -tests showed that, on average, Head Start families demonstrated significant increases in home involvement from fall to spring ($t(2,153)=9.04$, $p<.001$, $d=.20$).

Among these, no one item dominated the scale in fall or spring. In fall, the mean scores for all 11 items fell between .86 (worked on arts and crafts) and 1.76 (played with toys and games). Similarly, in spring, scores ranged from .99 (worked on arts and crafts) to 1.76 (played with toys and games, talked about Head Start). Looking within these scales, there were significant increases ($p<.05$) from fall to spring in the frequency of reading books with children, teaching about numbers and letters, counting, working on arts and crafts, playing games and sports, involving children in errands and chores, and talking about television programs and videos. All effects were small. There were no items for which average involvement decreased.

5.1.3. Community involvement

In the fall of the Head Start year (see Fig. 1), families engaged in 4.42 community-based activities per month ($SD=2.10$, range from 0 to 11) and 5.06 in the spring ($SD=2.22$, range from 0 to 11). Thus, most families engaged in at least five different community activities each month (perhaps employing some more than once, although because data were coded as yes vs. no, they do not illuminate this issue). t -tests showed significant increases from fall to spring ($t(2,153)=15.66$, $p<.001$, $d=.29$).

As with home involvement activities, no one community-based activity dominated the monthly involvement scale. In fall,

families' most common activities were visiting a park or playground (79%) or a mall (75%) with their child, whereas only 23% went to a zoo/aquarium and just 12% went to a museum/art gallery or a play/concert with their preschooler. In spring, the least popular activities remained the same: visiting museums (19%) or concerts (21%), as well as visiting a zoo/aquarium (27%). Similarly, visiting the mall and parks remained the most prominent (78% and 89%, respectively). Looking at each practice, there were significant increases ($p<.01$ for all) from fall to spring in the proportion of families engaging in all of these community-based activities, representing small to moderate effect sizes.

5.1.4. School-based involvement

The average score on the school-based involvement scale (see Fig. 1), which potentially ranged from 0 to 55, was 6.02 ($SD=4.01$, range from 0 to 30). Put another way, the average Head Start family was involved in the school on at least six occasions during the year. Variability was notable, with all responses observed for each item.

No single practice dominated the scale (e.g., policy council, observing in children's classrooms). Few involvement practices were employed, on average, more than once per year. Least frequent were distributing newsletters and flyers, with a mean of .18 ($SD=.59$), as well as calling or visiting another Head Start parent on behalf of Head Start ($M=.26$, $SD=.66$) and attending policy council meetings ($M=.32$, $SD=.78$), both of which rarely happened for most families. Most frequent was attending parent-teacher conferences ($M=1.33$, $SD=.90$), which occurred between once/twice and several times per year. In addition, observing in one's own child's classroom ($M=1.27$, $SD=1.18$) and volunteering in the classroom ($M=1.10$, $SD=1.19$) took place slightly more often than once/twice per year.

5.1.5. Correlations among types of involvement

Zero-order Pearson correlations between fall and spring home and community involvement ranged from .25 to .40 ($p<.001$ for all). Correlations between spring school involvement and both fall and spring home and community involvement ranged from .10 to .30 ($p<.001$). Thus, these significant but modest correlations suggest that these types of involvement were relatively independent among these families.

5.2. Question 2: Predictors of family involvement

5.2.1. Analytic strategy

Multi-level regression models were constructed to examine which child, family, and center factors predicted home, community, and school involvement at the beginning of the Head Start year in this nationally representative sample. In addition, we simultaneously examined how these factors predicted change in involvement over the Head Start year. In total, three models were created (one each for home involvement, community involvement, and school involvement). Because data were nested (i.e., involvement measures were nested within children and families, which were nested within classrooms, which were in turn nested within centers), we employed multilevel models using the HLM 6.06 software.

5.2.1.1. Model construction: home and community involvement.

Because few classrooms from each center were selected, preliminary models showed that none of the involvement variables differed significantly and meaningfully between classrooms; thus, only three levels of nesting (repeated involvement measures within children/families within centers) were considered. Classroom variables were aggregated to the center level. In each of these models, the intercept (i.e., average involvement in fall) was allowed to vary across families and centers; in contrast, change over the Head Start

year, measured over just two time points, was fixed. All predictors were centered at the grand mean (i.e., the sample mean) and fixed (i.e., their contributions to the outcome were not considered to vary across centers).

5.2.1.2. Model construction: school involvement. For school involvement, which was measured only in spring, a two-level model (children/families in centers) was constructed. All variables in this model were grand-centered, and spring involvement was allowed to vary across centers.

5.2.1.3. Estimation techniques. Ultimately, models are interpreted in the same way as those using ordinary least square methods, with a change in the predictor linked to a change in the outcome, over and above the effects of the other variables in the model. All variables described in Section 4 were included in preliminary models, although those that were not significantly ($p < .05$) related to the outcome were trimmed from the models one at a time, so as to maximize parsimony and interpretability in final models. Results before and after trimming were similar, although in some cases variables with small contributions ($d < .05$) became significant only after trimming, likely because multicollinearity initially attenuated their relatively weak associations with the outcome. In all three models, the FIML estimator was used, and the normalized weight was placed at the child/family level. In multilevel regression, residuals are assumed to be independent from each other and from predictors, with a normal distribution and constant variance. At level 2, it is assumed that residuals are independent and normal with constant variance, as well as independent of level-2 predictors (with the same scenario applying to level 3). Residuals at each level were checked using a combination of scatterplots, boxplots, and Q-Q plots, which revealed no significant deviations from key assumptions. Further, to explore multicollinearity, we examined the zero-order correlations of predictors at each level, as well as the tau matrix of the HLM output file to ensure that covariances between random effects within a model were acceptable (i.e., $r < .60$).

In the text below, we note the variables that predicted involvement. Further, because the optimal techniques for calculating effect sizes in multilevel models are much debated (McCartney & Rosenthal, 2000; Roberts & Monaco, 2006; Rosnow & Rosenthal, 2003), we include two approaches to provide a more comprehensive picture. First, for each predictor, d was computed by multiplying the coefficient for each predictor by its SD and then dividing by the SD of the outcome, creating a standardized value which facilitates comparison across individual predictors within a particular set of variables (e.g., child background factors, family process factors) but does not account for the multilevel nature of the data (e.g., Ponitz, Rimm-Kaufman, Brock, & Nathanson, 2009). Second, for each block of predictors (e.g., child background, family processes), we calculated the change in the total outcome variance at that level of the model attributable to that block, which does account for the multilevel nature of the data (see Raudenbush & Bryk, 2002). Complete results appear in Tables 3–5, and d values for predictors with at least small effect sizes ($d \geq .10$; see NSSE, 2011) are noted in the text.

5.2.2. Predictors of home involvement

Results, summarized below, are presented in Table 3.

5.2.2.1. Fall. A number of factors predicted fall home involvement.

5.2.2.1.1. Child factors. Only female gender predicted family involvement ($b = .45, p = .001$).

5.2.2.1.2. Family factors. Mothers of Hispanic/Latino backgrounds reported less home involvement than other groups ($b = -.64, p = .014$), whereas Asian mothers reported more

Table 3
Predictors of home involvement during Head Start.

Fixed effect	<i>b</i>	<i>p</i>	<i>d</i>	%
Fall home involvement	16.84	<.001		
Child factors				1
Child is female	.45	.001	.06	
Background factors				13
Hispanic mother	-.64	.014	.05	
Asian mother	1.52	.007	.04	
Immigrant mother	-1.31	<.001	.14	
Father-only household	-1.12	.026	.04	
Process variables				12
Parenting: consistent management	.32	.017	.06	
Parenting: warmth	.39	.022	.05	
Parenting: autonomy support	.49	<.001	.09	
Parenting: over-control	-.44	<.001	.09	
Parental self-efficacy	.11	<.001	.01	
Other types of involvement				8
Fall community involvement	.45	<.001	.23	
Spring home involvement	.81	<.001		
Family background factors				1
Hispanic mother	.65	.010	.08	
Process variables				1
Parenting: consistent management	-.41	.010	.07	
Parenting: Over-control	.27	.026	.06	
Parental self-efficacy	-.08	.017	.01	
Other types of involvement				6
Community involvement	.29	<.001	.16	
School involvement	.05	.010	.05	
	Variance			<i>p</i>
Random effects				
<i>U</i> ₀₀ (between center)	.62			<.001
<i>R</i> ₀ (between center)	3.99			<.001
<i>E</i> (within child)	7.35			

Note: The final model explained 46% of the between-center variance in fall involvement, 39% of the between-family variance in fall involvement, and 2% of the fall involvement variance within families.

Table 4
Predictors of community involvement during Head Start.

Fixed effects	<i>b</i>	<i>p</i>	<i>d</i>	%
Fall community involvement	4.40	<.001		
Family background factors				42
Maternal education	.19	<.001	.13	
Black mother	.92	<.001	.20	
Hispanic mother	.66	<.001	.15	
Family process factors				1
Parenting: warmth	.21	.013	.05	
Other types of involvement				7
Fall home involvement	.15	<.001	.27	
Spring community involvement	.68	<.001		
Child factors				<1
Child is female	.21	.030	.04	
Family background factors				<1
Immigrant mother	.31	.013	.06	
Other involvement factors				7
Home involvement	.10	<.001	.17	
School involvement	.04	<.001	.07	
	Variance			<i>p</i>
Random effects				
<i>U</i> ₀₀ (between center)	.21			<.001
<i>R</i> ₀ (between center)	1.54			<.001
<i>E</i> (within child)	1.87			

Note: The final model explained 62% of the variance between centers in fall involvement, 32% of the variance between families in fall involvement, and 2% of the variance within families.

involvement ($b = 1.52, p = .007$). Immigrant mothers reported less involvement ($b = -1.31, p < .001, d = .14$). Finally, father-only households reported less involvement ($b = -1.12, p = .026$). Among family process variables, greater involvement was linked to higher

Table 5
Predictors of school involvement during Head Start.

Fixed effect	<i>b</i>	<i>p</i>	<i>d</i>	%
Spring school involvement	6.15	<.001		
Child factors				<1
Child is female	-.43	.034	.05	
Family background factors				7
Immigrant mother	-.71	.031	.07	
Maternal education	.19	.008	.07	
Mother-only household	-.52	.026	.03	
Hispanic mother	.64	.031	.07	
Asian mother	1.62	.025	.04	
Obstacles	-.49	<.001	.14	1
Satisfaction with Head Start: achievement	.76	.001	.07	2
Other involvement factors				3
Home involvement	.14	<.001	.13	
Community involvement	.30	<.001	.16	
	Variance			<i>p</i>
Random effect				
U_0 (between center)	1.66			<.001
E (within center)	12.46			

Note: The final model explained 21% of the variance between centers in spring school involvement and 75% of the variance within centers.

levels of consistent management ($b = .32, p = .017$), warmth ($b = .39, p = .022$), and autonomy support ($b = .49, p < .001$), as well as lower levels of over-control ($b = -.44, p < .001$). Finally, parent self-efficacy was positively associated with home involvement ($b = .11, p < .001$). We also examined the contributions of other kinds of family involvement, finding greater fall home involvement among families who reported more fall community involvement ($b = .45, p < .001, d = .23$).

5.2.2.2. Spring home involvement. Multiple factors predicted spring involvement, accounting for fall levels of involvement (or, in other words, involvement change from fall to spring).

5.2.2.2.1. Child factors. No child factors were related to spring home involvement.

5.2.2.2.2. Family factors. Families with Hispanic/Latina mothers had stronger spring involvement ($b = .65, p = .010$). Parents who reported more consistent management practices showed weaker spring involvement ($b = -.41, p = .010$), while those reporting more controlling practices had stronger spring involvement ($b = .27, p = .026$). In addition, parents noting lower self-efficacy in fall reported greater involvement in spring ($b = -.08, p = .017$). Community involvement (in spring) was again predictive of home involvement ($b = .29, p < .001, d = .16$).

5.2.2.2.3. Center factors. No center-level variables were linked to spring involvement.

5.2.3. Predictors of community involvement

Results, summarized below, are in Table 4.

5.2.3.1. Fall community involvement. A number of factors predicted community involvement.

5.2.3.1.1. Child factors. No child factors were related to fall community involvement.

5.2.3.1.2. Family factors. Involvement was greater among families with more educated mothers ($b = .19, p < .001, d = .13$). In addition, higher involvement was reported among Black families ($b = .92, p < .001, d = .20$) and Hispanic families ($b = .66, p < .001, d = .15$), relative to all other ethnic groups. Of process factors, warmth predicted community involvement ($b = .21, p = .013$). Finally, families who were more involved at home at the beginning

of Head Start were also more involved in the community ($b = .15, p < .001, d = .27$).

5.2.3.2. Spring community involvement. Several factors contributed to spring involvement.

5.2.3.2.1. Child factors. Spring involvement was greater for girls ($b = .21, p = .030$).

5.2.3.2.2. Family factors. Immigrant families reported greater spring community involvement ($b = .31, p = .013$). Spring community involvement was also higher in families reporting more spring involvement at home ($b = .10, p < .001, d = .17$) and school ($b = .04, p < .001$).

5.2.3.2.3. Center factors. No center-level factors were uniquely related to community involvement.

5.2.4. Predictors of school involvement

Predictors appear in Table 5 and are summarized below.

5.2.4.1. Spring school involvement. Several variables were linked to spring school involvement.

5.2.4.1.1. Child factors. Only gender was related to school involvement, with families of girls reporting less involvement ($b = -.43, p = .034$).

5.2.4.1.2. Family factors. Among family background factors, more educated mothers reported greater involvement in Head Start ($b = .19, p = .008$). Further, Hispanic/Latino families reported higher levels of school-based involvement than other ethnic groups ($b = .64, p = .031$), as did Asian families ($b = 1.62, p = .025$). School involvement was lower, however, among families in which mothers were immigrants ($b = -.71, p = .031$). School-based involvement was also lower in single-parent households, particularly those headed by mothers ($b = -.52, p = .026$). In-school involvement was linked to greater satisfaction with Head Start's achievement of its program goals ($b = .76, p = .001$).

Logistical obstacles were inversely related to the frequency of school-based involvement among Head Start families ($b = -.49, p < .001, d = .14$). To identify whether particular obstacles were especially critical, we decomposed the index to find that a need for child care ($b = -.59, p = .003$), interfering work schedules ($b = -1.29, p < .001$), and lack of transportation ($b = -.77, p = .003$) drove this association.

Finally, higher self-reports of both spring home involvement ($b = .14, p < .001, d = .13$) and community involvement ($b = .30, p < .001, d = .16$) predicted school involvement.

5.2.4.1.3. Center factors. No center factors uniquely explained variance in school involvement.

5.3. Summary of results

In brief, families were involved in their children's learning and schooling in a variety of ways before and during Head Start, with significant but small to moderate increases in all types of involvement over the course of the year. However, for many families, involvement could be further increased. Overall, family factors, including ethnicity and culture, were the strongest predictors of involvement, although patterns of relations varied across types of involvement. Interestingly, variables prominent in research with middle-income populations operated differently in this Head Start sample. As one example, there was no evidence that minority families were less involved than white families; moreover, meaningful variations across ethnic groups and between types of involvement emerged (see Fig. 2). However, even family factor contributions were generally modest and substantially greater in fall (before the Head Start experience began). Other expected predictors did not emerge; among child factors, only gender was (inconsistently)

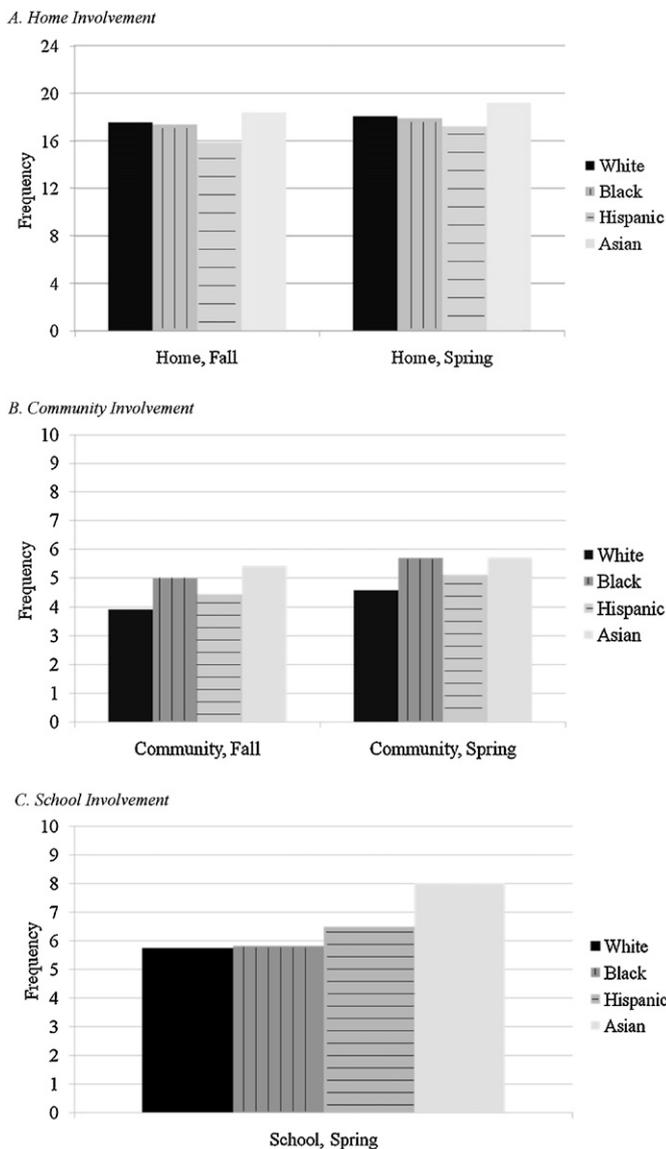


Fig. 2. (A) Home involvement. (B) Community involvement.

linked to involvement, and center outreach did not predict involvement.

6. Discussion

This study constructed a profile of the nature and predictors of low-income Head Start families' involvement in children's learning and schooling in the home, community, and school contexts. As a whole, this study adds to our understanding of the multiple efforts that Head Start families make to support their children's school success, as well as how very particular facets of their experiences during Head Start – especially characteristics of families themselves – predicted involvement over children's first year in the program.

6.1. Regular and diverse family involvement

The finding that Head Start families are involved in children's learning on a regular basis and in a variety of ways, both before and throughout Head Start, with increased involvement over the course of the year, reinforces recent work that contradicts deficit-model assertions (e.g., Duursma et al., 2008; O'Donnell, 2008; Raikes et al., 2006). It is important to note evidence that this involvement

matters for children's outcomes. For example, book readings in the home support vocabulary development (Sénéchal, 2006), as well as alphabet knowledge and phonemic awareness (Justice & Ezell, 2002). Community connections foster children's knowledge of the world and motivation to learn more (Bradley, Corwyn, McAdoo, & Coll, 2001), while also helping families network with others to build social connections and capital that can ameliorate depression and isolation and improve their understanding of the school system (Sheldon, 2005).

The advantages of school-based involvement are also many (see Epstein, 2001). The relatively higher frequency of involvement activities targeting parents' own children – for example, conferences and classroom volunteering or observations – suggests that parents may place particular value on those school-based activities that they find most immediately relevant to their own lives (O'Donnell et al., 2008). In contrast, parent policy council meetings, which often focus upon center issues that may seem indirectly related to children's well-being, were attended by fewer parents. This finding implies that centers might be able to increase family involvement in some school-based activities if they clearly indicated how this involvement ultimately benefits children and families.

As a whole, these results raise the question of whether Head Start families' levels of involvement in children's learning and schooling are, in absolute terms, high or low. On one hand, comparison to the broader research literature would suggest that Head Start families' involvement is similar to involvement among families in the NHES national survey (Herrold et al., 2008) or other samples in the research literature (Sanders, 2009). Yet, on the other hand, in this and other samples, there was room for more involvement. For example, few families in the NHES or FACES study communicated with schools multiple times per week, or volunteered more than a few times per year. Gains in the frequency of involvement over the course of the year were modest, and greater increases could be fostered. Given some work (e.g., Watkins, 1997) indicating that families who are involved early on remain so throughout children's school careers, an infusion of effort to help Head Start families engage in children's learning in the home, school, and community could lead to exponential benefits over time.

6.2. Multiple predictors of involvement

The pattern of predictors varied across the three dimensions of family involvement, implying that researchers, policy makers, and practitioners should consider which dimension(s) of this construct are of greatest interest in particular situations (Fantuzzo et al., 2000; McWayne et al., 2008). Perhaps most interesting, though, is the deviation of results from findings in prior research on relatively higher income families.

6.2.1. Family variables explain the greatest relative variance

Before entering Head Start, family involvement was linked to variables attendant to families themselves, particularly background factors such as ethnicity and, in one case, immigrant status. Interestingly, while many of these family variables were related to involvement in spring, the overall variance explained by these factors was smaller. This diminished contribution over the Head Start year may suggest that many Head Start centers create a level playing field for families to become involved, whatever their backgrounds. While it is plausible that specific center activities might affect family involvement in this way, it is also (alternatively or additionally) possible that families' experience with other families while in Head Start shapes their involvement and allows those who were not initially involved in one or more dimensions to become more engaged.

It is interesting that, in this sample, family background factors (e.g., ethnicity, home language, household structure) did not play a consistent role across dimensions of involvement, and contributions that did emerge were small. These findings resonate with work by Hill and colleagues (Hill, 2001; Hill & Craft, 2003), suggesting that long-standing assumptions about ethnic differences in parenting and parent involvement between white and minority families may be more attributable to socioeconomic status than to ethnicity. In addition, holding SES relatively constant in this sample may have allowed differences among minority groups to emerge, in several cases showing higher involvement among some minority groups, relative to other minority and white families. The same rationale might explain why maternal education is not a substantial predictor of involvement in Head Start families, despite its variability in this sample. Finally, the fact that some traditional risk factors matter less, and not always negatively, in this sample could indicate that Head Start, which is focused upon understanding and supporting families' needs, levels the playing field for vulnerable families.

Both families' satisfaction with Head Start and a select few logistical obstacles, such as scheduling conflicts and transportation or child care needs, were modestly linked only to school involvement. This unique relation likely appeared because this type of involvement alone must take place at a certain location within a particular time frame, where the presence of other children (beyond the enrolled preschooler) is generally not accepted (Hill & Talyor, 2004; Mapp, 2003). Certainly, families might benefit if centers made information from school-based experiences available in more family-friendly ways. For example, workshops, assemblies, public governance meetings, or performances could be videotaped and made available via DVD or web-based streaming to families. Similarly, community partners (e.g., clinics, community colleges) who visit Head Start to present information or provide services could be encouraged to open their doors to families beyond school hours to provide opportunities for parents with inflexible schedules. However, only a few obstacles predicted involvement, and their contributions were small, indicating that Head Start may have attenuated the impact of these obstacles by providing a welcoming and accessible environment.

6.2.2. Connections between types of involvement

Across models, higher levels of any aspect of involvement were consistently but moderately linked to higher levels of the others. This novel finding suggests that Head Start programs could use one kind of involvement to boost another, fostering connections among these different social contexts. For example, families who come to volunteer in the classroom could receive packets of activities helping them to extend the instructional tools they have witnessed or practiced at school into the home. Alternatively, centers could distribute fun, appropriate learning activities for home involvement that include information about relevant community resources and invitations for school involvement to further these learning goals. In other words, each dimension could be strategically exploited as an avenue to promote the others.

6.2.3. Center outreach did not predict involvement

The null associations between center outreach practices and family involvement are also noteworthy. These data, consistent with some other research in Head Start (Hindman & Morrison, 2011), would seem to suggest that Head Start's efforts simply do not make a contribution to involvement above and beyond the factors (e.g., parenting) already included. This finding is important because there may be ways for Head Start centers to adapt their outreach to achieve greater effects on families and children. For example, the current study implies that, given the role of family background factors in involvement both before and during Head Start, programs might tailor outreach efforts around these factors.

For example, perhaps building invitations for home involvement around suggestions for warm and consistent parenting, or suggesting specific activities that take relatively little time to accommodate parents working outside of the home, might better support home involvement. Similarly, tailoring invitations for school involvement to avoid potential obstacles shown to be especially important (e.g., providing childcare, transportation, or alternative involvement times) might ultimately support the efficacy of these efforts.

6.2.4. Remaining unexplained variance

Overall, many of the factors identified in past research as important contributors to family involvement in normative populations demonstrate weak or null associations with Head Start families' involvement. While these results provide new insights, they leave unexplained variance in involvement outcomes and raise questions about what factors do foster or impede involvement in this setting. To this end, it might be valuable to know about classroom (in addition to center) outreach, such as communication with families, workshops or other gatherings. Other aspects of families' experiences, such as views of their own roles in children's education and expectations for children's achievement, might also play a role (Hoover-Dempsey & Sandler, 1995; Jeynes, 2007).

7. Limitations and future research

Several limitations of the current study inform both interpretation of these findings and directions for future research. First, study interviews asked largely about "family" practices and primarily relied on responses from mothers. Thus, unique features of others' (including fathers') involvement may be obscured. In light of recent research on the role of fathers (Cabrera, Shannon, Mitchell, & West, 2009; Downer, Campos, McWayne, & Gartner, 2008; Fagan & Iglesias, 1999; McWayne et al., 2008; Palm & Fagan, 2008) and other relatives such as grandparents (Barnett, Scaramella, Neppl, Ontai, & Conger, 2010; Unger, Jones, Park, & Tressell, 2001) in children's learning and development, this issue warrants more attention, especially because this study shows lower home involvement in single-father households.

Second, it is important to note that, although the FACES study includes teacher, parent, and child measures that are widely used in the field, several tools (including those focused on involvement) have not yet been rigorously validated to ensure that they demonstrate concurrent and predictive validity with other, equally established tools. Low reliability statistics for several scales may distort (and, in this study, perhaps attenuate) relations between these constructs and family involvement; these measures require further item-level research in both normative and low-income samples. For example, it may be the case that, in low-income communities, a family's choice to be involved in one activity (e.g., visiting a museum) does not predispose that family to select other community activities (e.g., attending a sporting event), perhaps because multiple activities are not available, or because the resources (e.g., time, money) needed to take advantage of these activities are lacking. In contrast, in a middle-income community, where both families and neighborhoods generally have more resources, families who engage in one community activity might also be willing or able to engage in others, resulting in a higher reliability for this scale. As another example, families' views of their own parenting practices and self-efficacy, or even simply how families interpret the items on scales tapping these constructs, may differ in low-income communities, necessitating some adjustments to these measures for use with these participants (Coolahan, McWayne, Fantuzzo, & Grim, 2002). Future research could undertake diagnostic examinations of the reliability and validity of popular but not-yet-fully-understood measures using the FACES data, as well as other large-scale datasets in which these measures appear (e.g.,

NHES, Early childhood longitudinal study, birth cohort (ECLS-B) and Early childhood longitudinal study, kindergarten cohort (ECLS-K), likely complemented by smaller-scale quantitative and qualitative validation studies.

Finally, these results are correlational and, as a result, cannot be interpreted causally; follow-up work with experimental methods or natural experiments could build on these findings.

8. Conclusions

This investigation of family involvement in Head Start, using a large-scale, nationally representative, and recently collected dataset focused on children, families, and educators, revealed that families were involved at home, in the community, and in Head Start centers on a regular basis and through a diverse range of activities; however, opportunities for more involvement were noted as well. Engagement in other types of involvement, in addition to family background and process variables, emerged as the most prominent predictors of families' engagement along each dimension, suggesting possibilities for intervention through involvement in different social contexts (home, community, and school) and potential strategies for tailoring involvement invitations and opportunities to appeal to families from different backgrounds. The roles of other child (e.g., disability, gender), family (e.g., background, satisfaction with Head Start, and logistical obstacles), and center (e.g., goals, outreach) variables were minimal and nuanced, in interesting contrast to some prior research on middle-income samples. These results may be used by Head Start and other early childhood education communities to move beyond confounds attendant to SES and to understand the frequency and predictors of involvement among diverse families in low-income households.

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