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To cite this article: Sukran Ucus, Aileen Garcia, Jan Esteraich & Helen Raikes (2019) Predictors and behavioural outcomes of parental involvement among low-income families in elementary schools, United States, *Early Child Development and Care*, 189:9, 1425-1443, DOI: [10.1080/03004430.2017.1385609](https://doi.org/10.1080/03004430.2017.1385609)

To link to this article: <https://doi.org/10.1080/03004430.2017.1385609>



Published online: 30 Oct 2017.



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# Predictors and behavioural outcomes of parental involvement among low-income families in elementary schools, United States

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## ABSTRACT

Parental involvement (PI) in their children's schools has been shown to have a positive influence on the children's behaviours and academic achievement. The purpose of this study was to examine predictors of PI and relations of PI in schools to child externalizing and internalizing behaviours. Data were from the fifth-grade wave of the Early Head Start Research and Evaluation Project, with 1354 fifth grade low-income children and parents. Results revealed that family conflict predicted child internalizing and externalizing and negatively predicted PI in schools. However, PI in schools partially reduced the negative effect of family conflict on both internalizing and externalizing. Parental warmth negatively predicted child externalizing behaviours, and positively predicted PI in school. Additionally, PI in schools further enhanced the positive effect of parental warmth in reducing externalizing behaviours. The study highlights home and parent characteristics that relate to low-income fifth-grade parents' involvement in their child's education and demonstrates the mediating role of PI in reducing behavioural problems of low-income children.

## ARTICLE HISTORY

Received 17 August 2017  
Accepted 25 September 2017



## KEYWORDS

Parental involvement;  
children's behaviours;  
elementary education; low-  
income families

Family-school relations can facilitate valuable communication and socialization practices that promote children's school success (Downer & Myers, 2009; El Nokali, Bachman, & Vortuba-Drzal, 2010; Epstein, 2001; Fantuzzo, McWayne, Perry, & Childs, 2004). Parental involvement (PI) in school, for example, has been related to greater academic achievement regarding both grades and standardized test performance (Hill et al., 2004). Parenting (parent-child relationship, participation in activities), home-school relations (communication, participation), and responsibility for learning outcomes (reading at home, parent-child conversations) all have been shown to improve child outcomes (social competence, cognitive development, communication skills, language development, comprehension skills, positive engagement with peers, adults, and learning) and children's overall school readiness (Harvard Family Research Project, 2006).

Notably, the attachment between the child and his/her parents plays a central role in the child's social development (Papalia, Olds, & Feldman, 2003). A close, secure attachment between the child and his/her parents has an impact on child social behavior and positively influences peer relations and romantic relations. The family environment appears to be especially important in the psychosocial development of a child (Papalia, Olds, & Feldman, 2002, 2003).

Family-school partnerships have also been shown to promote desirable student behaviors (Downer & Myer, 2009; Sheridan et al., 2012) and greater school-based PI (Deslandes & Bertrand, 2005; Estell & Perdue, 2013; Serpell & Mashburn, 2012). Additionally, PI has been associated with

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Data for this study was from The National Early Head Start Research and Evaluation Project (EHSREP, 1996–2010).

declining problem behaviors and improvements in social skills (El Nokali et al., 2010). School-based PI practices such as volunteering at school and engaging in fundraising, are associated with lower levels of student behavior problems. The social cognitive theory posited by Bandura (1977) may facilitate understanding of the link between school-based involvement and behavioral problems. When young children observe their parents modeling respect for school officials, and investing their time in the school, they may internalize the message that school is a natural extension of the family, a place where they are expected to behave appropriately. In another perspective, when parents are involved in school-based activities, they are likely to have positive relationships with teachers. In that case, teachers may be less probable to perceive problematic behaviors among the children of highly-involved parents (cited in McCormick, Cappella, O'Connor & McClowry, 2013).

Some studies about family-school connections in preschool show positive associations with young children's acquisition of social skills (Downer & Myers, 2009; Fantuzzo, McWayne, Perry, & Childs, 2004; Sheridan et al., 2012). When parents are more involved, children's skills in social and behavioral realms may help to make explicit the potential benefits of PI. Moreover, investigation of the possible selection factors that motivate PI would also be useful to inform policies and interventions (El Nokali et al., 2010). PI may develop children's behavior both at home and in the classroom as parents and teachers work together to promote social functioning and address problem behaviors in the context of social functioning (El Nokali et al., 2010; Rimm-Kaufman, Pianta, Cox, & Bradley, 2003). For example, PI was associated with lower conduct problems of children in a Head Start program. Parents with higher levels of school school contact showed more social competence than children of parents with lower levels (Fantuzzo et al., 2004). Children's social-emotional functioning, including social skills and behavior, is related to coherence in parent and teacher views of their relationship, as demonstrated by Kim and her colleagues (2012). When parents and teachers perceive their relationship positively, teachers state that children have the more advanced social competence and fewer behavioral problems in the school environment (Kim et al., 2012).

Given its positive effects on children, PI is strongly encouraged by teachers, parents, childcare providers, researchers, and policy makers (Duch, 2005; Sheldon & Epstein, 2005). Effort to strengthen home, school and community connections is also a part of the solution to narrowing the income achievement gap (Epstein, 2011). For example, programs such as No Child Left Behind (ESEA, 2001), Goals (2000), and other federal initiatives underscore the importance of PI in the United States. These programs encourage involvement by inviting parents to participate in the school's activities and by promoting effective parent-teacher communication (El Nokali et al., 2010). Programs are also concerned with encouraging reciprocal relationships, constructive connections, and harmonious roles among home and school systems to support positive academic trajectories and social-emotional behavioral development of children and youth (Moorman-Kim & Sheridan, 2015).

Even with all these efforts, however, research has shown that parents do not consistently become involved in their children's schools (Eccles & Harold, 1993; Grolnick, Friendly, & Bellas, 2009). Thus, scholars have investigated the different factors which facilitate or hinder PI. The present study aims to contribute to the existing literature by examining parenting and home characteristics as they affect PI. Also, our study follows the recommendation of Edwards and Kutaka (2015) to investigate child outcomes other than academic achievement related to PI by analysing how PI is related to children's behavioural outcomes.

Acknowledging that parenting behaviours, as well as child development, are simultaneously embedded in multiple, related contexts, this study draws from Bronfenbrenner's (1979) ecological systems theory. The ecological systems theory emphasizes that the parent-child dyad is not situated in a vacuum and that it is subjected to external influences (e.g. socioeconomic condition, social support). Thus, it is a comprehensive framework for examining potential predictors and outcomes of PI (Epstein, 2007). With this, the present study simultaneously examined three potential family and home-related variables which influence PI, namely, parental warmth, family conflict, and external home environment condition. We also tested how PI is related to children's internalizing and externalizing behaviours.

## Relations among parental involvement, parenting, home characteristics, and child behaviour outcomes

PI is characterized as a multidimensional construct (Grolnick & Slowiaczek, 1994) that includes practices at home and in school. School-based involvement is that which takes place at the school, such as attending parent–teacher conferences or school events, volunteering in the classroom, or becoming involved in the teacher–parent association. Home-based involvement is that which typically takes place in the home or community such as talking with children or taking children to the library (Fantuzzo et al., 2004). PI also includes parents' values, beliefs, and attitudes regarding education and the goals for their children (Catsambis, 2001; Englund, Luckner, Whaley, & Egeland, 2004). Parental values and attitudes have been shown to contribute to academic achievement through children's motivation indirectly and to the ability to persist when challenged academically (El Nokali et al., 2010).

Although the benefits of PI are well-documented in the literature, research typically has concentrated on the preschool/kindergarten and high school years; there is a dearth of research on PI during late elementary and middle childhood years (McCormick, Cappella, O'Connor, & Mcclowry, 2013). Yet, PI may play a particularly important role at this time, especially in regard to behaviour problems such as internalizing and externalizing behaviours, of interest in the current study. Behaviour patterns, sustained or averted at this time, set an important stage for subsequent school and civic success.

Furthermore, a thorough search of the literature revealed that parenting and family-related factors have not been extensively studied in relation to PI. Studies focusing on relevant family factors can help extend our knowledge of the barriers to and factors promoting PI. To further promote PI, research should also investigate whether PI is predictive of child outcomes beyond academics, as we did in this study.

### **Parental warmth**

Parental warmth is defined as the extent to which parents adapt to children's needs and abilities, based on prompt, contingent, and appropriate parental behaviours in response to a child's actions (Bornstein & Tamis-LeMonda, 1989). For example, parenting behaviours such as display of positive affect, physical closeness, and using sensitive voice tones are frequently associated with improved cognitive outcomes and later language development (Bornstein & Tamis-LeMonda, 1989; Burt, 2008). Parental warmth is also predictive of children's behaviour development. For example, perceived parental warmth is positively associated with children's psychological health (Rohner & Veneziano, 2001). On the other hand, children who do not perceive parental warmth have higher tendencies to develop problems such as low self-esteem, emotional instability, and inability to manage negative emotions (Rohner & Khaleque, 2010). Warmth and involvement from both parents are related to fewer problem behaviours over the course of adolescence (Waller et al., 2015). It may also act as a buffer to other home environment contexts that have been linked to less optimal child outcomes (Etkin, Koss, Cummings, & Davies, 2014).

Studies directly linking parental warmth and PI were not found, but the broader literature on positive and responsive parenting suggests that parental warmth is indicative of parental sensitivity and responsiveness to their children's needs (Steinberg, 2001). Thus, it is reasonable to hypothesize that there is an association between parental warmth and PI, such that parents who display high levels of warmth would be more involved with their children's education.

### **Family conflict**

A child experiences family conflict in his/her home environment when family members are negative, hostile, argumentative, and in some cases, violent with one another. In particular, higher levels of family conflict are related to decreased PI in schools (Andreas & Watson, 2009; Li, 2012; Tanaka, Raishevich, & Scarpa, 2010) and predict less positive and less supportive parenting behaviours

(Rafferty & Griffin, 2010). The stress brought about by family conflicts may limit the parent's energy to involve themselves in their children's schooling, and this is particularly true for families in poverty. According to Gordon and Cui (2014), families residing in high-poverty neighbourhoods are less able to sustain collective cohesion which results in distressed environments and in turn, negatively affects parents' efforts to assist their children academically. Family conflict has also been linked to child adjustment problems (Formoso, Gonzales, & Aiken, 2000) and increased aggression in middle childhood (Andreas & Watson, 2009; Li, 2012; Tanaka et al., 2010). Vandewater and Lansford (2016) found that high levels of family conflicts affect children's well-being, and this includes internalizing and externalizing behaviours, in some cases attributed theoretically to family triangulation whereby children are drawn into their parents' conflicts.

### **External home environment**

In the current study, we focused on the condition of low-income families' external home environment (e.g. housing and safety on the block, presence of garbage, etc.) and how it affects involvement. Although physical disorder in the environment has been associated with parents' psychological distress (Jocson & McLoyd, 2015), we did not find any study that directly linked external home environment with PI. However, it is evident from the family stress model (Conger, Conger, & Martin, 2010) that a distressed environment affects parents' well-being and leads to less optimal parenting practices, which affect children's developmental trajectories. Thus, we would expect that poor conditions of external home environment would be negatively related to PI in schools and positively to child behaviour problems, but these relations have not been explored in the literature and for older elementary-aged children.

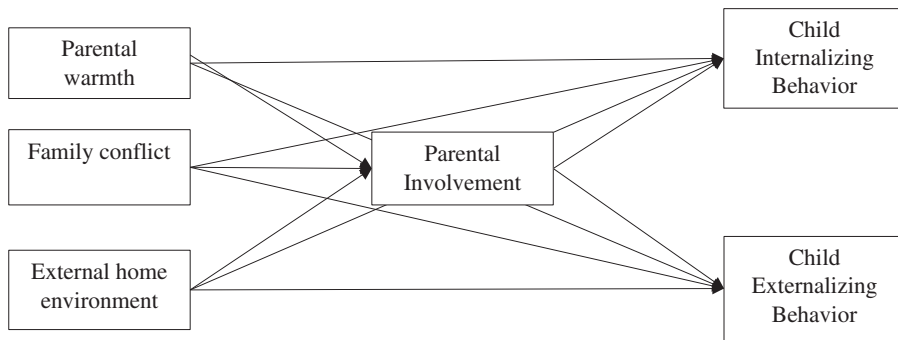
### **Parental involvement and child externalizing and internalizing behaviours**

Behavioural adjustment in young children is categorized into externalizing and internalizing behaviours. Externalizing behaviours include problems with attention, self-regulation, and noncompliance, antisocial, aggressive, and other under controlled behaviours. Internalizing behaviours include depression, withdrawal, and anxiety, as well as feelings of inferiority, self-consciousness, shyness, hypersensitivity, and somatic complaints (Bornstein, Hahn, & Haynes, 2010; Campbell, Pierce, March, Ewing, & Szumowski, 1994; Caspi, Henry, McGee, Moffitt, & Silva, 1995).

PI has been found to improve children's behaviours both at home and in school (El Nokali et al., 2010). Research has also shown that parental monitoring and involvement, not only in education, are predictive of decelerated internalizing and externalizing behaviours (DeGarmo, Patterson, & Forgatch, 2004). In explaining this relationship, Hango (2007) emphasized that PI can convey to children their interest and investment in the child's development, thereby supporting positive development.

### **The present study**

Although there is evidence that PI in schools can help to improve child behavioural outcomes, especially from preschool to adolescence, there is virtually no research on how child and family characteristics are associated with family-school relationships regarding children's behaviour problems. Research is needed to inform prevention and intervention strategies that support families at risk for engaging in family-school relationships which are supportive of their children (Power, 2015). Educational difficulties for children at-risk based on any risk indicator are responsive to variations in the quality of the home and school environments (Kwok, Im, Hughes, Wehrly, & West, 2016). Thus it is reasonable to offer PI in the school for children at risk which could make a difference in behavioural outcomes. The current study uses advanced statistical techniques to investigate the influence of family factors on PI directly, and indirectly through PI, on child internalizing and



**Figure 1.** Hypothesized relations among the variables.

externalizing among late elementary-school-age children from low-income households. The following specific research questions were addressed (see also [Figure 1](#) for hypothesized pathways):

- How do external home environment and family characteristics (parental warmth and family conflict) relate to PI in schools? Given the current research, we hypothesize that parental warmth will have a positive relation and family conflict a negative relation to PI in schools. We regard our exploration of the relation between external home environment and PI as exploratory.
- How do home environment and family characteristics relate to internalizing and externalizing behaviours? Consistent with the literature we hypothesize a positive relation between parental warmth and a negative relation between family conflict and internalizing and externalizing, while the study of the relation of environment to these outcomes is exploratory.
- Does PI in schools reduce child externalizing and internalizing? We expect a significant direct relation between PI in schools and reductions in child externalizing and internalizing, consistent with literature linking PI and social-emotional development.
- Do the effects of home environment and family characteristics on externalizing and internalizing behaviours change if parents are more involved in schools? We hypothesize that the interaction between family conflict and PI will demonstrate that PI has positive (reducing) effects on externalizing and internalizing, and that the interaction between warmth and PI will demonstrate further benefits from PI over parental warmth alone while interaction effects involving external environment are explorative.

## Method

### *National Early Head Start Research and Evaluation Project*

The National Early Head Start Research and Evaluation Project (EHSREP, 1996–2010) was a randomized, longitudinal evaluation of the Early Head Start (EHS) programme with the main objective of investigating the impacts of EHS on a wide range of family and child outcomes. EHS, started in 1995, currently continues to offer comprehensive, two-generation programmes that focus on enhancing children's development while strengthening families.

Between 1996 and 1998, a total of 3001 pregnant mothers and families (with infants under 12 months of age) who were managing poverty were recruited for the study (Administration for Children and Families 2002a). Data collection occurred in three phases: Birth to Three phase (1996–2001; 3 waves), Pre-Kindergarten Follow-up phase (2001–2005), and 5th Grade Follow-up phase (2005–2010). All data used for the present study were collected during the 5th Grade Follow-up phase which assessed children and families in the spring of the children's fifth grade year or sixth year of formal schooling, when the children were approximately 11 years of age.

**Table 1.** Demographics ( $N = 1354$ ).

Variable	<i>M</i> ( <i>SD</i> ) or %
Child's age <i>M</i> ( <i>SD</i> )	11 years (.33)
Child's gender	
Male	50.6%
Female	49.4%
Child's race/ethnicity	
Black	34.0%
Hispanic	21.5%
White	40.4%
Other	4.2%
Mother's education	
8th grade or less, some high school	22.6%
High school diploma/GED	26.5%
Some college, tech training	31.3%
Bachelor's degree or higher	19.6%
Mother's employment	
Full time	32.0%
Part time	18.3%
Not employed	49.7%
Yearly household income	\$24,000–29,000

### **Participants and procedures**

Data for this study were drawn from the 1632 parent–child dyads participating during the Elementary School Follow-up phase (2005–2010) of which families who completed the parent interview were selected ( $N = 1354$ ). Although this study needed data only from the parent interview and assessor observations, other measures were also obtained during this phase (e.g. direct child assessments, videotaping of maternal–child interactions, and teacher questionnaires) (United States Department of Health and Human Services & Administration for Children and Families, 2011).

The parent interview was completed in the family's home, typically with the mother, and included questions regarding the mothers' employment status and education, the child's social skills and problem behaviours, the family home environment, and about the level of family involvement in the child's school. Observations occurred during the home visit.

To ensure reliability in data collection, assessors attended a five-day training session that included all aspects of the home visit including rules and techniques for interviewing, as well as the scoring in the home observation scales. To achieve certification, all trainees administered selected portions of each component of the home visit and home observations to a certifier acting as the mother, who then scored the trainee. All trainees were required to pass the certification before they could collect data.

Families were nearly evenly divided in regard to whether they were randomly assigned to receive EHS services in 1996 (51.5%) or to the comparison group (48.5%). All of the participating children were from families with incomes below the federal poverty income level (Administration for Children and Families, 2002b). Children in the sample (49.7% male) were on average 11 years old ( $SD = .33$ ). At the time of the data collection, 49.1% of the mothers had obtained at least a high school diploma or GED, and 31.3% some college, and 28.6% of the mothers were employed full-time, 16.3% employed part-time. For this sample, 39.6% of the respondents were White, 33.3% Black, 21.1% Hispanic, and 4.1% of another race or ethnicity. For additional information on participating families, see Table 1.

### **Measures**

#### **Demographics**

Demographic data were collected for each child and family. These data included primary caregiver age, education, income, employment, and race.

### **Parental warmth**

Parental warmth was observed by the assessor and measured using the 9-item Parental Warmth subscale of the Home Observation for the Measurement of the Environment based on the Early Adolescent HOME Inventory (Bradley et al., 2000). The HOME is a widely used measure, designed to assess the quality and quantity of support, stimulation, and structure provided to children ages 11–13 in the home environment. The Parental Warmth subscale measures responsive and supportive parenting behaviours and is based entirely on interviewer observations of the parent and child during the interview in the parent's home. Observations include whether the mother vocalized to the child and responded back, kissed or caressed the child during the visit, whether her voice conveyed positive feeling towards the child, and whether she praised the child. Coded as yes or no, scores can range from 0 if none of the positive behaviours were observed, to 9 if all of the behaviours were observed. If more than 25% of the items were missing, the variable was dropped for that respondent. If less than 25% of the items were missing, the missing values were imputed as the mean of the non-missing values. The Cronbach's alpha for this study was reported as  $a = .81$ .

### **Family conflict**

The Family Environment Scale measures the social environments of families (Moos & Moos, 1994). The research project used a shortened version of the conflict subscale. This 5-item subscale measures the extent to which anger and aggression is expressed in the family and if conflict is a recurring pattern in the family's interactions. Using a 4-point scale, where (4) Strongly agree (3) Mildly agree (2) Mildly disagree, and (1) Strongly disagree, parents responded to statements such as 'We fight a lot' and 'We often criticize each other' and 'Sometimes we get so angry we throw things.' Higher scores indicate higher frequency of family conflict. The reported Cronbach's alpha for this measure was .78. The conflict subscale is highly related to other widely used self-report assessments of similar constructs such as the Conflict Tactics Scale and the hostility subscale of the California Q-Sort (Moos, 1990; Moos & Moos, 1994; Moss & Moss, 2002).

### **External home environment**

The external home environment was measured by assessor observation using the 8-item External Physical Environment subscale of the Home Observation for the Measurement of the Environment (Caldwell & Bradley, 1984). This subscale measures the observed safety and adequacy of the exterior home environment and is based entirely on interviewer observations. Observations include the condition of the housing on the block, whether garbage, litter, broken glass on the street, whether people are seen on the street arguing, fighting, or behaving in a hostile way and the degree of comfort the assessor felt when parking, walking, and waiting at the front door. The assessor scored each question on a Likert-style scale: for instance, the selections of 'very good, moderate, fair, poor' were used to score the condition of the housing on the block, and 'none or almost none, yes but not a lot, yet quite a bit, yes just about everywhere' were used to score whether garbage, etc. was on the street. Higher scores indicated a poorer quality of the external home environment. If more than 25% of the items were missing, the variable was dropped for that respondent. If less than 25% of the items were missing, the missing values were imputed as the mean of the non-missing values. The Cronbach's alpha for this study was  $a = .75$ .

### **Parental involvement**

This assessment was adapted for this evaluation from the PI questions used in the NICHD Study of Early Child Care (NICHD Early Child Care Research Network, 1994, 2002). The score for this variable is the sum of nine questions asking the parent about the family's involvement with the child's school. Questions include asking the parent if he/she is comfortable visiting the school, talking to the teacher about the child and the child's progress, and how many times the parent has stopped by the school to talk to the teacher during the school year. A higher score indicates higher PI.



If more than 25% of the items were missing, the variable was dropped for that respondent. If less than 25% of the items were missing, the missing values were imputed as the mean of the non-missing values. The reported Cronbach's alpha for this measure was  $a = .87$ .

### *Child's internalizing and externalizing behaviours*

Parents completed the Child Behaviour Checklist for 6–18-year-old children to measure internalizing and externalizing behaviour (Achenbach & Rescorla, 2000, 2001). The CBCL-6/18 is a standardized, parent-reported measure of child emotional and behavioural problems. Subscales used for this study include the 32-item Internalizing Behaviour Problems (comprised of the Anxious/Depressed, Withdrawn/Depressed, and Somatic Complaints subscales) and the 35-item Externalizing Behaviour Problems (comprised of the Rule-Breaking and Aggressive Behaviour subscales). Parents were asked to consider their child's behaviour in the last six months and answer each item on a scale ranging from 1 (very or often true) to 3 (not true). Example items include 'Destroys things belonging to his/her family or others' and 'Set fires' (externalizing), 'Is nervous, high-strung or tense' and 'Feels too guilty' (internalizing). For each subscale, the sum of all items was calculated into raw scores, as long as no more than eight items were missing from a subscale, per respondent. Missing items were imputed to the mean of all other items from the subscale for a particular respondent. The raw scores were converted to *T* scores. Higher scores indicate greater behaviour problems. The Cronbach's alpha for internal consistency was reported to be  $a = .85$  for the Internalizing Behaviour subscale, and  $a = .91$  for the Externalizing Behaviour subscale.

## Results

### *Descriptive and bivariate analyses*

Tables 1–3 present the descriptive and correlational statistics of the variables we examined. Consistent with theoretical assumptions, family conflict was negatively correlated to PI, with more conflict associated with less PI. Family conflict was negatively correlated to child internalizing and externalizing behaviours, suggesting that greater family conflict is related to more internalizing and externalizing behaviours. The external home environment is also negatively correlated to PI, meaning better external home environment (lower scores) is associated with higher levels of PI. In addition, mother's educational attainment and household income positively correlated to PI, and gender was negatively related to externalizing behaviours, such that boys had higher levels of externalizing. On the other hand, internal home environment and programme participation did not significantly relate to PI.

### *Model test*

To test the hypothesized model, we conducted path analysis in MPlus version 7.11 using the maximum likelihood estimator (Muthen & Muthen, 2012). Chi-square test was used to evaluate overall model fit. As the chi-square test is sensitive to large sample size (Bentler & Bonnet, 1980), three more fit indices were used in this study: the comparative fit index (CFI), root mean square error of approximation (RMSEA), and standardized root mean square residual (SRMR). The chi-

**Table 2.** Descriptive statistics of the variables in the study.

Variable	<i>n</i>	<i>M</i>	<i>SD</i>	Min	Max
Family conflict	1354	1.440	0.449	1	3.63
Parental warmth	1348	6.531	2.204	0	9
External environment	1337	10.336	1.718	1.14	17
Parental involvement	1329	36.561	6.593	12	45
Child internalizing behaviour	1354	49.638	10.635	33	85
Child externalizing behaviour	1354	53.078	11.128	33	85

**Table 3.** Correlations among variables in the study.

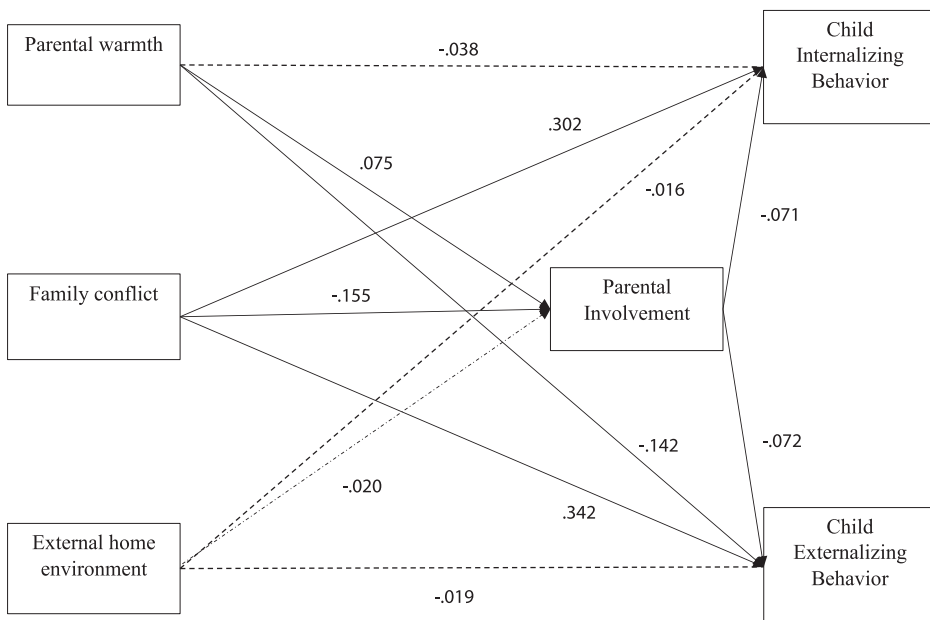
Variable	1	2	3	4	5	6	7	8	9	10
1. Family conflict	–									
2. Parental warmth	–.120*	–								
3. External environment	.018	–.050	–							
4. Parental involvement	–.175*	.079*	–.042	–						
5. Internalizing behavior	.319*	–.078*	–.005	–.126*	–					
6. Externalizing behavior	.371*	–.188*	–.002	–.142*	.602*	–				
7. Mother's education	–.033	.068*	–.100*	.124*	–.006	–.010	–			
8. Household income	–.119*	.123*	–.128	.073*	–.136*	–.148*	.346*	–		
9. Program participation	–.034	.012	–.005	.022	–.010	–.015	.014	.025	–	
10. Child gender	–.024	.036	–.045	.029	–.025	–.130*	.027	.041	.000	–

Note: Child gender was dummy coded (0 = male; 1 = female).

\* $p < .001$ .

square statistic was significant ( $\chi^2 = 85.253$ ,  $df = 12$ ,  $p < .001$ ), indicating that the hypothesized model did not fit the data. On the other hand, following the criteria recommended by Brown (2006), the other indices showed acceptable fit, CFI = .930, RMSEA = .067, and SRMR = .020.

Most of the study's hypotheses were supported, as shown in Figure 2 (see Table 4 for a summary of direct, indirect, and total effects). Family conflict negatively predicted PI ( $\beta = -0.155$ ,  $p < .001$ ) and positively predicted both child internalizing and externalizing behaviour ( $\beta = .302$ ,  $p < .001$  and  $\beta = .340$ ,  $p < .001$ , respectively). Parental warmth positively predicted PI ( $\beta = 0.074$ ,  $p < .005$ ) and negatively predicted externalizing behaviour ( $\beta = -0.139$ ,  $p < .001$ ). PI also negatively predicted child internalizing and externalizing behaviour ( $\beta = -0.071$ ,  $p < .005$  and  $\beta = -0.069$ ,  $p < .005$ , respectively). The path from external home environment to PI was not significant ( $\beta = -0.019$ ,  $p = .476$ ). In addition, child gender significantly predicted externalizing behaviour ( $\beta = -0.115$ ,  $p < .001$ ) such that boys showed higher levels of externalizing behaviours compared to girls. On the other hand, gender did not predict internalizing behaviour or PI. Overall, the model explains 6% of the variance in PI ( $R^2 = .066$ ), 11% of the variance in child internalizing behaviour ( $R^2 = .109$ ), and 18% of the variance in child externalizing behaviour ( $R^2 = .177$ ). Although  $R^2$  values are modest, note that significant



**Figure 2.** Final path model of predictors and outcomes of parental involvement, with standardized coefficients. Paths with solid lines are significant at  $p < .05$ .

**Table 4.** Decomposition of effects for the variables predicting parental involvement and child outcomes.

Predictor	Dependent variable	Direct effect	Indirect effect	Total effect
Family conflict	Parental involvement	-.155*	-	-.155*
	Internalizing behaviour	.302*	.011*	.313*
	Externalizing behaviour	.342*	.011*	.353*
Parental warmth	Parental involvement	.075*	-	.075*
	Internalizing behaviour	-.038	-.005*	-.043
	Externalizing behaviour	-.142*	-.005*	-.147*
External environment	Parental involvement	-.020	-	-.020
	Internalizing behaviour	-.016	.001	.014
	Externalizing behaviour	-.019	.001	-.017
Parental involvement	Internalizing behaviour	-.071*	-	-.071*
	Externalizing behaviour	-.072*	-	-.072*

Note: Tests of significance of total and indirect effects were conducted using Mplus v.7 (Muthen & Muthen, 2012), which uses a procedure similar to the Sobel test.

\*  $p < .05$ .

associations among the variables emerged even after controlling for the effects of child gender, race, mother's education, household income, and programme participation.

### Test of indirect effects

To test the possible indirect effects between the parenting and family characteristics (including both family conflict and parental warmth) and child outcomes via PI, we conducted bootstrapping analyses as suggested by Preacher and Hayes (2004). For this study, the bootstrap estimates were based on 5000 samples, meaning the original data were resampled 5000 times to estimate indirect effects. This procedure revealed that aside from the direct effect of family conflict on the two child outcomes, family conflict was also indirectly related to child internalizing behaviour ( $\beta = .011$ , 95% bias-corrected bootstrap confidence interval of .061–.496) and externalizing behaviour ( $\beta = .011$ , 95% bias-corrected bootstrap confidence interval of .052–.510) via PI. Additionally, parental warmth is indirectly related to child internalizing behaviour ( $\beta = -.005$ , 95% bias-corrected bootstrap confidence interval of  $-.056$  to  $-.004$ ) and child externalizing behaviour ( $\beta = -.005$ , 95% bias-corrected bootstrap confidence interval of  $-.057$  to  $-.003$ ) through PI. Gender, on the other hand, did not have significant indirect effects on internalizing and externalizing behaviours via PI.

## Discussion

In this study using path analyses, we examined the effects of parental warmth, family conflict, and external home environment on PI in their children's schools. Including PI as a possible mediator, we also examined the direct and indirect effects of these predictor variables on child internalizing and externalizing behaviours. We found that family conflict negatively predicted PI in schools and had both direct and indirect effects (through PI) on externalizing and internalizing behaviours. Parental warmth predicted PI in schools and had both direct and indirect effects (through PI) on child behaviour externalizing. No significant effects were found for the external home environment. Furthermore, a parent's involvement in their child's school predicted the child's behaviour. We address each of the research questions in turn.

### ***How do the context of the external home environment and family characteristics (parental warmth and family conflict) relate to parental involvement in schools?***

Previous research has shown that parents who enjoy a warm relationship with their child are also more likely to get involved in the children's schools (Steinberg, Lamborn, Dornbusch, & Darling, 1992; Edwards, Sheridan, & Knoche, 2008). Supportive of this literature, we found parental warmth predicted parents' school involvement. Also consistent with previous studies of the effects of family conflict (Andreas &

Watson, 2009; Tanaka et al., 2010; Li, 2012), findings from this study showed parents who reported higher levels of family conflict tend to be less involved. It is logical that a conflicted relationship among family members may strain the parent's ability and motivation to be more involved in the child's schooling. We did not find predicted significant relations between external home environment and PI.

### ***How do external home environment and family characteristics (parenting warmth and family conflict) influence children's internalizing and externalizing behaviours?***

The study found that parental warmth and family conflict were directly associated with child behaviours as reported by parents. Greater warmth was associated with less externalizing behaviours while greater family conflict led to both more internalizing and externalizing behaviours. There was no significant relationship between external home environment and children's internalizing or externalizing behaviours.

The study's significant findings are consistent with studies showing good parent-child relationships, which are characterized by supportive and warm parental behaviours and low-conflict/high cohesion in the family, promote young children's emotional and behavioural resilience to different types of environmental risk such as poverty (Flouri, Midouhas, Joshi, & Tzavidis, 2015; Waller et al., 2015). Warm and highly involved parents enhanced social functioning and reduced behaviour problems (El Nokali et al., 2010; Etkin et al., 2014). Parental warmth might seem to empower the associations between parenting practices and favourable health behaviours (Ray, Kalland, Lehto, & Roos, 2013). Additionally, our findings are consistent with research showing coercive parent-child interactions (i.e. interactions characterized by reciprocal and escalating negative exchanges among family members), harsh parenting styles, and marital conflict can increase rates of aggressive behaviour and externalizing behaviour problems in young children (Andreas & Watson, 2009; Dishion & Patterson, 2006; Li, 2012; Price, Chiapa, & Walsh, 2013).

Our study is consistent with studies showing skilled parenting and high cohesion successfully moderated the risk of poverty in minority children, positioning them well below children from other impoverished families in externalizing problem behaviour (Gorman-Smith, Tolan, Henry, & Flor-sheim, 2000; Johnson, 2003; Kerig, 1995). The current study lends support to the themes in the literature in regard to moderating effects of family cohesion and warmth and reduced conflict for children experiencing risks related to poverty.

However, in previous research, neighbourhood factors such as community-level poverty and danger, exposure to violence, victimization in the neighbourhood, and exposure to deviant peers have been found to be associated with early antisocial behaviours (Ingoldsby & Shaw, 2002; Jeon, Buettner, & Hur, 2014; Price et al., 2013). Nevertheless, we did not find a significant relation between these external dimensions of the home environment and children's internalizing and externalizing problem behaviours. It is possible that parenting factors as we found in the current study were more salient in predicting child outcomes than neighbourhood effects, further consistent with our findings that parental factors are buffering effects of poverty, including the more external effects of negative neighbourhood factors.

### ***Does PI in schools reduce child externalizing and internalizing?***

Certainly, we expected that when parents became involved in schools, children's behavioural outcomes of all types would be improved. Indeed, we did see the direct association between PI in schools and behavioural outcomes in this study, consistent with previous studies (Chen, 2009; Fantuzzo et al., 2004; Kellaghan, Sloane, Alvarez, & Bloom, 1993; Malone, 2015). The current study further contributes by substantiating the importance of PI in schools of late elementary school-aged children in realms of social-emotional functioning, at an age when children may become particularly vulnerable to destructive behaviour patterns that can lead to school disengagement/drop out or encounters with the criminal justice system (in the case of externalizing) (El Nokali et al.,

2010; Liu, 2004; Moffitt, 1993). Moreover, while we found higher levels of externalizing for boys than for girls, the positive effects of PI equally applied for boys and girls.

### ***Do the effects of external home environment and family characteristics on externalizing and internalizing change if parents are more involved in schools?***

This was a research question of great interest. The indirect effects suggest that PI is an important channel that buffers the relation between parenting and family characteristics and the development of children's internalizing and externalizing behaviours. PI has a reductive effect on the impact of family conflict on child internalizing and externalizing behaviour. Put another way, if parents have high levels of conflict but are involved in school, the associations between conflict and externalizing and internalizing are reduced. Moreover, parental warmth is related to lower externalizing behaviour via PI which has an additive effect on the impact of parental warmth on child externalizing behaviour. Parents who show warmth also exert greater involvement in their children's education, which is then related to children's lower externalizing behaviour.

### ***Mechanisms***

What might be the mechanisms for the mediation effects detected in our study? In regard to PI mediating family conflict's effect on behaviour problems, it is probable that involvement in school signals to the child that behaviours in school matter, as parent and school work together to help the child keep behaviours on track. It is also possible that children experiencing internalizing problems feel encouragement by witnessing their parents' interest through school involvement. As to a mechanism for additive effects of PI to the effects of warmth on reducing behaviour problems for children living in poverty, warmth and PI are both assets for development, operating in an additive way to positive development (Scales, 1998). Most directly, parents and teachers may both be more effective when they coordinate efforts through PI in communication with children who have behaviour problems. Through involvement with schools, parents may be improving knowledge and parent-child interactions and becoming more effective in down-regulating children's external and internal behaviours. Thus, children who experience family conflict may be buffered from its adverse effects by the parents' constructive tactics and positive emotionality towards the child, and maintain warm affect even in the face of family conflict (Li, 2012).

### ***Timing***

By the time children are in elementary school, behavioural patterns have emerged and begin to reveal potential developmental trajectories. The elementary school years offer unique opportunities for examining developmental pathways and the factors that influence these pathways. Early onset of externalizing behaviour problems has been linked to more maladaptive behaviours later (Dishion & Patterson, 2006). Thus, it is important to address behavioural problems before children enter middle schools or junior high schools. Furthermore, our study extends the knowledge base by showing that involving low-income parents in school can have reductive effects on behavioural problems for both boys and girls in fifth grade, which is a critical time before children enter adolescence.

### ***Implications for practice***

The current study has implications for parents, teachers, administrators, teacher preparatory programmes, and policy-makers on one important aspect of the United States' elementary education system regarding children and their families with risk factors. The main implication of our study for schools serving low-income children is that PI should be encouraged, consistent with Greenwood and Hickman's (1991) research that the most effective educational programme are those where the home and school work together on behalf of the child. Interestingly, the size of the school-based

parent network predicts involvement at school, whereas the size of a parent's social network of other adults predicts involvement at home. Thus, one important strategy for involving parents in schools could be to build a feeling of community among parents. Another approach would be to help parents understand their importance in their child's academic and social success, consistent with studies demonstrating parents' beliefs about their role in the education of their children account for the most variation in PI (cited in Sheldon, 2002).

Weiss and her colleagues (2014) found that parental motivation, financial and other resources, time constraints, and school policies were the strongest factors that either hindered or encouraged PI. Parental time constraints (for both parents or the single parent working full-time) and school's administrative support, resources, teacher training, and school climate, which all could be reflected in the school's policy on PI, were found to be primary factors that predicted successful uptake and implementation of PI programmes. The challenge is that schools must find a way for programmes to be implemented and sustained, especially in schools that may have fewer resources (Stormshak et al., 2016). Beyond lack of resources, school staff training and experience, school leadership, school climate, critical events, attitudes towards parents, programme integration may be important dynamics to untangle to understand causes of children's behaviour problems, in addition to parental motivations and lack of PI (Stormshak et al., 2016).

In Bradley and his colleagues' (2000) research, home environment which addresses the quantity and quality of stimulation, support, and structure available to children ages 10–15 in their home, were significantly related to scores on measures of family context and child development in the sociocultural context. In that sense, problematic home environment and challenges of parenting tend to have a reverse effect relative to child well-being and welfare, child–parent relationships, teacher–parent relationships, and parent's involvement in their children's development. Thus, with the current study's findings, it may be possible for the school to offer meetings or seminars that provide parents tools to enhance their interaction with their children and other members in their family.

Teacher professional development plays a major role in preparing teachers for PI that produces positive outcomes for parents and students. Empowering parents with low-socioeconomic status may require empowering teachers' knowledge, skills, and expertise to involve them. Sheldon's (2002) research suggests teachers be trained with skills to help parents build social networks with other school parents. Many parents would benefit from directions and ideas from the teacher which may be useful for the child's progress in school (Epstein, 2007).

### ***Strengths and limitations***

One strength of the current study was the availability of secondary data from the EHSREP data set. Comprehensive, multiple measures were used for the research study, offering researchers the ability to analyse data from a multitude of tested constructs. Observed assessments were also used in addition to the parental report. Another strength is that this study examined infrequently-researched family contextual variables (family conflict, external physical environment) as factors predicting PI.

Although these findings are useful in contributing to the existing literature on the effects of PI on children's internalizing and externalizing behaviour, and the predictors of PI, there are limitations to this study. The sample selected for this study was drawn from a specific population (EHRSEP participants). Therefore, this sample may not represent all families living in poverty across the United States and, thus, may not be generalizable to all low-income populations. It certainly is not generalizable to all income levels. Also, parents self-reported on several measures used in this study (i.e. family conflict, PI in the child's school, and the child's internalizing and externalizing behaviours). Because of the potential biases that can influence the results in self-report measures, the readers should be aware of their use. Fortunately, observations for measures of maternal warmth and external home environment were available for this study. Parents may be biased raters, particularly in the current study

considering they are part of a larger study aimed at, among other things, improving PI in education. Thus, it would be important also to note the lack of teacher ratings to minimize parent biases in reporting.

Another limitation may be that the majority of parent respondents were mothers (93%), and generalizing these findings to other caregivers should be attempted with caution. In addition, the current research model explains only a modest percentage of the variance in PI, child internalizing behaviour, and child externalizing behaviour, home environment, so it is important to examine other variables that may impact the model. Finally, the findings of this study only refer to statistical prediction and not causal relationships. Although potential covariates were included in the analyses, other factors which we were not able to control, such as earlier levels of child internalizing and externalizing behaviours, may have influenced PI and subsequent scores on behaviours.

### **Future research**

Although progress has been made through the current study in delineating the predictors and effects of PI in preadolescent children's school experiences, more research is needed. Factors underlying what enhances and diminishes PI typically have been focused on school structure factors and family demographics, and less on parent and family-level variables. To maximize the practical significance of research on parents' involvement in children's education, future research should pursue a better understanding of parents' involvement in the context of specific bridges created by schools to link parents to school. Schools can create multiple bridges for parents to be involved in children's education (Pomerantz & Monti, 2015).

Several areas pose potential fruitful investigations, such as how parental beliefs around school involvement and the distribution of information educating parents about involvement influence their participation. Also, understanding the family stress model including factors for maternal depression, parental stress, various configurations of the family structure, and other potential familial risk factors will contribute to a more nuanced knowledge of the conditions and processes that underpin the school-family connections. A person-centred profile analysis of these family factors could offer schools and programmes valuable information in determining which families may need additional support and encouragement of participation. Moreover, further analysis of how PI moderates and mediates the impact of familial factors on children's academic as well as non-academic outcomes, such as social-emotional adjustment is warranted.

Continuity in family engagement is particularly important during transitions, such as from preschool to kindergarten or from elementary to middle school. These discontinuities may present particular challenges between home and school for children living in a non-Western culture or a minority indigenous or immigrant groups in a Western country (Kellaghan et al., 1993, Weiss et al., 2014). Research on PI during transitions would make a significant contribution, particularly for these populations.

### **Summary**

Parenting factors and family involvement in schools consistently predict student outcomes such as higher academic achievement, more regular school attendance, and greater student engagement (Powell, Son, File, & Froiland, 2012; Sheldon, 2015), as well as reduced behaviour problems (the current study). The contributions of the present study are to (1) add support to a well-established literature from the current study's late-elementary and low-income sample that home and parent factors are related to both PI in schools and child behaviour problems, (2) augment a preschool- and adolescence-dominated literature with the current study's late-elementary and low-income sample finding that PI matters for reducing child behaviour problems, thereby suggesting redoubled efforts to involve often-vulnerable parents during a critical time in development, and (3) demonstrating, through indirect effects, that PI makes an additional difference for children who are already vulnerable due to family conflict. Results have implications for efforts to emphasize PI in schools. Schools can implement a variety of practices that will engage families

in their children's schooling using programmes that implement home–school partnership activities and with multiple approaches (such as communicating, volunteering, learning at home, decision-making, collaborating with the community) in a research-based framework (Sheldon, 2015).

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Funding

This article was financed by a grant from the Scientific and Technological Research Council of Turkey (The TUBITAK) to the first author as part of the visiting scholar program.

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