The 1960s War on Poverty launched four decades of early educational intervention programs designed to increase the chances that children from low-income families could succeed in school. Evaluations of such programs have demonstrated that under the right conditions, early educational intervention programs can have a remarkably powerful and long-term impact on the lives of participants (Gomby, Larner, Stevenson, Lewit, & Behrman, 1996; Lazar & Darlington, 1982). For example, children attending the Perry Preschool program in Ypsilanti, Michigan not only performed better in school but ultimately led more productive lives, with decreased high school drop-out rates, fewer early pregnancies, fewer criminal prosecutions, and higher job salaries (Schweinhart, Barnes, Weikert, Barnett, & Epstein, 1994).

Historically, experimental and quasi-experimental research designs have been utilized in evaluations of these intervention programs in order to compare groups of children who received a program to peers who did not. Differences in the life trajectories of these two groups is attributed to the treatment group’s participation in the intervention. Such studies, although useful for demonstrating program effectiveness, pay only scant attention to the mechanisms by which these programs have their impact.
The term “black box” has been usefully applied to the conceptualization of what happens to parents and children when they become participants in an intervention program. Presumably, they enter the “black box” of the treatment and emerge several months or years later in an improved condition. What occurs in the interim remains unknown. Therefore, such designs allow us to know if a program has an effect, but they do not help us understand the mechanisms through which the program components and activities work. Moreover, group comparisons do not address questions regarding dosage (i.e., how much of a program is necessary to have an effect) nor questions regarding the differential impact of various program components.

Equally problematic is the inclusion of all program participants in the “treatment group” which assumes that participation in an intervention program is a monolithic experience, equally intense and meaningful for all families. For example, Olds (1988) recommends the inclusion of all treatment families—regardless of level of involvement—in analyses of the impact of the program for a more realistic assessment of the potential effectiveness. This methodological decision is advisable for a realistic assessment of a program in which many families do not receive the full treatment. However, measuring program participation as a dichotomous variable (treatment versus comparison group) assumes that all treatment families have a similar enough experience to be grouped together. Such a molar measurement scale may mask subtle within-group differences which can only be examined with more finely tuned measurement instruments.

Clearly, these measurement choices could be revisited in order to develop a more refined and useful body of knowledge regarding the impact of early intervention programs. Several related bodies of evaluation and implementation research suggest that parents vary widely in their level of involvement in treatment programs. The relatively high attrition rates from such programs indicates that not all parents who begin an intervention program stay to receive the full program (Gomby, Larson, Lewitt, & Behrman, 1993). For example, of the original 413 pregnant mothers starting the two-year, home-based Maternal Infant Health Outreach Worker Project, only 35% continued until their child’s second birthday (Clinton, 1992). Gomby and colleagues (1993) note that attrition rates from home-visiting programs generally are high, averaging from 35% to 50%. While this may be due in part to the fact that home-visiting programs often target hard-to-reach families (i.e., poor families with young children whose lack of material resources may impede their involvement in programs), these rates of attrition are not limited to home-visiting programs. Miller (1992), for example, reported an average of only 20 to 29 weeks of program involvement in a two-year center-based program for adolescent parents.

Even among families who remain formally enrolled in a program, some demonstrate low levels of enthusiasm, commitment, and effort. As Larner, Halpern, and Harkavy (1992) note in their assessment of the Child Survival/Fair Start programs, “It is one thing to join a program but another to engage in honest discussions, accept support, and take seriously its suggestions” (p. 14). Sustaining family participation was also perceived as a significant challenge for many of the 17 promising family education programs visited by Goodson, Swartz and Millsap (1991), leading to the development of a variety of creative strategies on the part of program staff. They concluded from their assessment of these programs that the challenge of maintaining parent participa-
tion is greatest for programs that set out to establish a long-term relationship with families in order to effect lasting change. Programs that work with families in more limited ways and less frequently do not face the same difficulties since they require less commitment and typically do not recruit hard-to-reach families (Goodson, Swartz & Millsap, 1991).

The Home Instruction Program for Preschool Youngsters (HIPPY), a free, two-year home-based educational program for parents with limited formal education and their preschool-aged children, clearly falls within the category of programs that aim to establish a long-term relationship with hard-to-reach families in order to have a lasting impact on their lives. Parents receive story books and educational activity packets at bimonthly home visits and bimonthly group meetings. During these meetings, paraprofessionals role-play with parents how to use the materials with their children on a daily basis. As a two-year program, it requires significant effort on the part of parents—to be available for home visits, attend group meetings, and make time every day for the parent-child learning sessions. Thus, sustaining family involvement in the HIPPY program is a key challenge. Results of a three year implementation study (Baker & Piotrkowski, 1995) revealed that program staff reported significant concern about the lack of enthusiasm among many HIPPY parents, especially during the second year of the program. In some cases, paraprofessional staff exhibited enormous energy and ingenuity in an effort to maintain and/or regain a family’s commitment to the program. Nonetheless, many families lagged behind the schedule, were not prepared for home visits, did not attend group meetings, and did not appear to be working regularly with their children on the HIPPY story books and activity packets. The HIPPY paraprofessionals in one program studied intensively (Baker, 1995) were well aware of the amount of effort it requires on the part of parents to stay on schedule in the HIPPY program and could readily name the parents who were actively involved in the program and those who were not.

Variation in parental involvement in HIPPY may be particularly problematic for at least two reasons. First, by design, parents are the sole providers of the HIPPY program for participating children. Children do not receive any aspect of the program without their parent’s involvement. Thus, the impact of the program for children is mediated by the involvement and efforts of the parent. Second, parents are expected to work with their children on the HIPPY materials for fifteen minutes every day, requiring a significant amount of effort and skill on the part of the parent to organize their day to include time for the HIPPY lesson. Parents and paraprofessionals interviewed revealed many potential obstacles to daily participation in the HIPPY program, such as variability in daily schedules (i.e., changing work or child care arrangements); lack of energy to make the effort; inability to manage children who are non-compliant; and competing time demands such as child care, employment, and household responsibilities (Baker, 1995). Therefore, it is of particular relevance for the HIPPY program to understand the factors that account for variation in parental level of involvement in HIPPY. Staff could utilize such information to develop more realistic expectations of how parents can be involved in HIPPY and help parents anticipate potential barriers in order to address them proactively.

Despite the obvious programmatic and practical utility of such information, surprisingly little empirical research exists examining the predictors of parent involvement in
intervention programs. In an analysis of the predictors of parent involvement in Head Start—a center-based intervention program—Parker, Piotrkowski, Kessler-Sklar, and Baker (1996) examined the relationship between almost 40 variables and subsequent objective assessments of parental involvement in the Head Start Center (measured as volunteering in the classroom, in the office, and on trips; attending workshops and policy meetings; and receiving social services). Results revealed that variables associated with less involvement at the Head Start center were those that created logistical barriers for the parents. For example, pregnancy during the Head Start year, involvement in self-sufficiency promoting activities outside the home, and having children with birth and health difficulties were all associated with lower levels of involvement.

These results are consistent with anecdotal findings pertaining to barriers to parent involvement in public schools. Logistical barriers such as time, money, and work schedules appear to play an important role in impeding parent involvement (e.g., Baker, 1996; Moles, 1993). Again, little empirical work exists to confirm these qualitative reports. Eccles and Harold (1996) acknowledge the potential for family background characteristics to function as logistical barriers to parent involvement although their preliminary analyses did not include them. Dauber and Epstein (1989) did include family background measures in the regression equation predicting four types of parent involvement (at school, at home on homework, at home on reading skills, and total parent involvement). Parental education was the most strongly associated family background measure: Better educated parents reported greater involvement in all four types of involvement. Family size also positively predicted involvement levels at home, but was not a significant predictor of parent involvement at school.

Taken together, the results of these studies identify potential barriers to parent involvement. However, empirical support is required before generalizing these findings to the HIPPY program because contextual differences between center and home-based programs may influence the pattern of relationships between predictors and involvement.

The present study was undertaken to shed light on possible predictors of parent involvement in the HIPPY program. The study was designed to build on and extend preliminary efforts in two ways. First, analyses are conducted separately within two program sites (City A and City B) and within two cohorts (Cohort I and Cohort II) in order to identify context-specific patterns of relationships. Second, a self-report assessment of parent involvement was used.

The decision was made to conduct analyses separately by program site because differences in the program sites may affect patterns of relationship between predictors and involvement. For example, the HIPPY program in City A was located in a semi-rural area populated primarily by African-American families. These families lived in the same community for several generations and have deep roots there. The City B HIPPY program, on the other hand, is situated in an inner-city urban multi-ethnic community with an influx of recent immigrants. In addition to varying along ethnic and urban/rural dimensions, the context of the HIPPY programs themselves varied. In City B, parents were geographically dispersed, many living far from the site of the group meetings, requiring considerable effort for group meeting attendance (i.e., taking as many as three different public buses at night in relatively unsafe neighborhoods). Moreover, due to travel requirements of the paraprofessionals who lived and worked far
from their assigned parents, missed home visits were more difficult to reschedule. In
the more rural town of City A, parents drove their cars or walked to the group meeting
locations and most families lived within close proximity to the program site. Therefore,
while the core components of the HIPPY program (story books, activity packets,
bweekly cycles of home visits and group meetings) were shared by the two cities, there
were many factors—both family level as well as programmatic—that might cause the
patterns of relationship between involvement and predictors to vary by site.

Analyses were also conducted separately by cohort. The rationale for this decision
was empirically based. Earlier analyses examining the impact of the program on
participants revealed a consistent cohort effect. HIPPY children and parents in Cohort
I in both cities outperformed their control/comparison peers. In Cohort II, however,
there were no statistically significant differences between the HIPPY and comparison/
control families in either city (Baker & Piotrkowski, 1996). The cohorts appear to be
non-comparable in important—and as yet undetected—ways that might affect which
variables predict involvement.

We chose to assess level of parent involvement from parent self-report rather than
paraprofessional report forms. Although self-report data may be susceptible to distor-
tion and bias, we believe that parents know best the level of effort they put into the
program. Because interviews were conducted by researchers not associated with the
program and because participants were assured confidentiality, we feel confident that
these parent reports are an accurate reflection of their level of involvement. The vari-
ability in responses and lack of a ceiling effect also indicate that social desirability did
not play a major role in parental responses.

This study was designed to address several specific questions about parent involve-
ment in the HIPPY program. First, we aimed to identify predictors of involvement in
order to better understand the factors that facilitate and impede parent involvement in
HIPPY. Second, by analyzing predictors separately by site and cohort we aim to iden-
tify context-specific patterns of relationships. Third, two different parent involvement
variables were included in this analysis, one of which focused on parent involvement
in the home-based aspects of the program and the other assessed parent involvement
in the out-of-home aspects of the program. By including two different variables we will
be able to assess program-specific predictors of involvement in HIPPY. Taken
together, these results will shed light on the factors that can influence level of parent
participation in the HIPPY program.

METHODS

The HIPPY Program Intervention

Developed in Israel by the NCJW Research Institute for Innovation in Education at
Currently, HIPPY programs are serving over 15,000 families annually in 28 states and
the District of Columbia. All United States HIPPY programs are affiliated with HIPPY
USA, an independent technical assistance and training center.
HIPPY is a two-year program for families with limited formal education and their preschool-aged children. During the second year of the program, children are typically attending kindergarten. In each year of the program, there are 30 weeks of activities, scheduled to coincide roughly with the school year. The core elements of the program are bimonthly home visits by paraprofessionals and bimonthly group meetings with parents and paraprofessionals led by a HIPPY program coordinator. During the home visits and group meetings, parents learn through role playing how to use the HIPPY story books and educational activities, which they are to work on with their children for 15 minutes every day. These HIPPY activities are designed to help children develop age-appropriate language skills, sensory and perceptual discrimination skills, motor skills, and problem-solving abilities. In addition, at the group meetings, HIPPY parents engage in enrichment activities determined by local needs and interests. Attendance in group meetings is typically low in these two HIPPY programs; on average less than half the families attend. Additional or “doubled-up” home visits are made in an effort to keep all of the families on the same schedule.

Study Design and Sample

Four samples from a larger quasi-experimental, two-site and two-cohort evaluation of the HIPPY program were utilized in this study. Cohort I began HIPPY in the fall/winter of 1990, and Cohort II began HIPPY in the fall of 1991. City A is a semi-rural community in Arkansas with primarily African-American families. Families were recruited into the program from word of mouth and flyers in the neighborhood. City B is the fourth largest city in New York State, with a multi-ethnic urban population. In City B, all families enrolled in the administrative agency’s prekindergarten program were invited to participate in a lottery for the HIPPY program. Table 1 presents a description of the samples by site and cohort.

<table>
<thead>
<tr>
<th>Variables</th>
<th>City A</th>
<th>City B</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Cohort I (n=41)</td>
<td>Cohort II (n=36)</td>
</tr>
<tr>
<td>Parent's Ethnicity(^a)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Minority</td>
<td>95%</td>
<td>97%</td>
</tr>
<tr>
<td>White</td>
<td>5%</td>
<td>3%</td>
</tr>
<tr>
<td>Parent's Education(^b)</td>
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<td></td>
</tr>
<tr>
<td>Less than High School</td>
<td>32%</td>
<td>31%</td>
</tr>
<tr>
<td>High School</td>
<td>63%</td>
<td>50%</td>
</tr>
<tr>
<td>More than High School</td>
<td>5%</td>
<td>19%</td>
</tr>
<tr>
<td>Family Structure(^c)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single-Parent</td>
<td>64%</td>
<td>79%</td>
</tr>
<tr>
<td>Two-Parent</td>
<td>37%</td>
<td>22%</td>
</tr>
<tr>
<td>Primary Source of Income</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Public Assistance</td>
<td>42%</td>
<td>42%</td>
</tr>
<tr>
<td>Other</td>
<td>59%</td>
<td>58%</td>
</tr>
</tbody>
</table>

Notes:  
\(^a\)There were significantly more minority families in City A than in City B (chi-square(n=144)=13.82, \(p < .001\)).  
\(^b\)Parents in City B had significantly more education than parents in City A (chi-square(n=144)=13.82, \(p < .001\)).  
\(^c\)There were significantly more single-parent families in City A than in City B (chi-square(n=144)=13.82, \(p < .001\)).
As can be seen in Table 1 there were significant site differences in three of the four variables. City A families were more likely than City B families to be minority, live in a single-parent family, and have less education. There were no differences between City A and City B in percentage of families reporting public assistance as their primary source of income. Analyses within each city to examine possible cohort effects did not reveal any significant differences.

Baseline data were collected from all four groups at the beginning of the HIPPY program year. At the end of the two-year program, families were visited in their home for an intensive posttesting session, including an interview with parents about their involvement in different aspects of the HIPPY program. In City A both parent and child measures were individually administered in their own homes. In City B, parents were interviewed at home but the children were assessed at school. For a full description of the study see Baker and Piotrkowski (1996).

**Measures**

**Predictors of Involvement**

Several different types of predictors were selected for inclusion in this study. All of these variables were assessed at baseline, at the very beginning of the two-year HIPPY program.

First, four family risk factors were selected as we believed they might create stress and interfere with a family’s ability to participate in the program (single parenthood, receiving public assistance, not completing high school, and ethnic minority status).

Eight additional family background characteristics were also assessed: the number of adults in the home, the number of children in the home, the number of infants in the home, adult’s age, child’s age, child’s gender, past use of public assistance, and whether or not the adult speaks English in the home.

Five variables assessing the material and literacy environment were included as possible facilitators of involvement in the program (parental expectations for the HIPPY child’s school performance and level of education to be achieved, parent-reported frequency of child’s play with a variety of learning toys; the self-reported frequency with which the parent helps the child learn various skills; self-reported types of reading materials at home).

Because depression is so common among women, especially low-income minority mothers (e.g., Weissman, Prusoff, Gammon, Merikangas, Leckman, & Kidd, 1984), we felt it was important to determine the extent to which, if at all, depressive symptomatology affected level of involvement in HIPPY. Perhaps depressed parents would have less energy to participate in HIPPY. On the other hand, perhaps parents who are depressed are more likely to attend group meetings for the company and support of the staff and parents. And finally, all children begin the program with an existing level of basic skills which may be related to parental effort in the program. Perhaps children who have less skills “pull” for greater involvement in the parents who rally behind their kids. On the other hand, perhaps children who can quickly master the materials make the program more enjoyable for the parents who then put more effort into it.

These nineteen predictor variables were drawn from three baseline parent and child measures. Children’s cognitive skills were assessed by the Cooperative Preschool
Inventory (CPI) (Educational Testing Service, 1974). The CPI is a 64-item individually administered assessment of preschoolers’ cognitive achievements which has been used extensively with low-income populations in preschool intervention evaluations. Depressive symptoms in the adults were measured using the Center for Epidemiological Studies Depression Scale (CES-D) (Radloff, 1977). This 20-item scale has been widely used in community-based studies. The National Evaluation Information System (NEIS) (Abt, 1988), a comprehensive family questionnaire, was used to gather information about family characteristics, the home educational environment, and parental expectations for the child’s school success.

From these measures, the following 19 variables were utilized:

- Demographics: number of adults in the home; number of children under the age of one; total number of children; family structure; major source of income (public assistance/other); age of adult; race/ethnicity (Minority/non-minority); education of HIPPY adult; previous receipt of welfare, parental fluency in English, age of child; and gender of child (twelve variables);
- Parental expectations: expectations for the child’s school performance and level of education to be achieved (two variables);
- Educational environment at home: parent-reported frequency of child’s play with a variety of learning toys; the self-reported frequency with which the parent helps the child learn various skills; and self-reported types of reading materials at home (three variables);
- Child’s school readiness: total score on the CPI (one variable); and
- Parental well-being: total score on the CES-D (one variable).

Given that these variables were measured prior to parent’s actual involvement, they are conceptualized as predictors in the sense that they temporally predate involvement. Due to the large number of predictor variables and the small sample sizes, regression analyses are not conducted. Rather, analyses are conducted which identify significant correlates of involvement. In all cases directional hypotheses regarding the direction of the relationship between the 19 predictor variables and level of parent involvement are not made. As this study is exploratory in nature we did not want to prematurely eliminate unexpected relationships through one-tailed directional tests of association. In some instances such as with maternal depression (as noted above), plausible hypotheses could be made for explaining either direction of a potential relationship.

Measure of Parent Involvement in HIPPY

Two years after baseline data collection at the end of the two-year HIPPY program HIPPY families were interviewed about their level of involvement. Parents rated five aspects of their involvement: in home visits, role-playing the curriculum, working on the materials with their child, attending group meetings, and interacting with other HIPPY parents. Parents rated their involvement in each of these aspects of the program on a five-point scale from 1 (no involvement) to 5 (regular and enthusiastic involvement). These variables factored into two subscales, the first comprised of three items pertaining to parent involvement in the home aspects of the program (home visits, role-
Predictors of Parent Involvement

playing, and working on the materials) and the second comprised of two items pertaining to parent involvement in out-of-home aspects of the program (group meetings and interacting with other HIPPY parents). The internal consistency of each factor was adequate (alphas = .77 and .70 for in-home and out-of-home involvement respectively). These two variables were correlated .29, indicating considerable independence among them and supporting the premise that levels of participation in different aspects of the program may be unrelated.

RESULTS

Variations in Involvement

First we investigated variation in levels of participation in the in- and out-of-home components of HIPPY. As shown in Table 2, the mean level of participation in the in-home component of HIPPY was high in all four groups, with means ranging from 3.7 to 4.3 on a scale of 1 to 5. However, there were differences between the groups. Two-way ANOVAs revealed a significant site by cohort interaction (F(1,143)=6.29, p<.05). Scheffe's post hoc tests revealed that in Cohort II parents in City A reported significantly more involvement than parents in City B; but in Cohort I there was no difference between the cities in level of involvement. Table 2 also contains the means and standard deviations for the out-of-home component of HIPPY. Average involvement in the out-of-home component was relatively low, with means ranging from 2.2 to 2.9 on a scale from 1 to 5. The four groups did not differ in their reports of out-of-home involvement in HIPPY.

In order to test for differences in level of involvement between the in-home and out-of-home components of the program, four paired t-tests were conducted. Results revealed that in all four groups parents reported significantly less involvement in the out-of-home than in the in-home component of the program. This finding confirms our hypothesis that involvement in HIPPY is not a uniform experience for parents and is also consistent with staff reports of the difficulty in engaging parents in the group meeting component of the HIPPY program (Baker & Piotrkowski, 1995).

Table 2. Level of Involvement Variables By Site and Cohort

<table>
<thead>
<tr>
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<th>City A</th>
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<th>City B</th>
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<tr>
<td></td>
<td>CI</td>
<td>CIl</td>
<td>CI</td>
<td>CIl</td>
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<tr>
<td>In-Home Involvement</td>
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<td></td>
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<td></td>
</tr>
<tr>
<td></td>
<td>3.9</td>
<td>4.3</td>
<td>4.1</td>
<td>3.7</td>
</tr>
<tr>
<td></td>
<td>(.86)</td>
<td>(.65)</td>
<td>(.82)</td>
<td>(1.1)</td>
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<tr>
<td>Out-of-Home Involvement</td>
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<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2.9</td>
<td>2.8</td>
<td>2.8</td>
<td>2.2</td>
</tr>
<tr>
<td></td>
<td>(.96)</td>
<td>(1.4)</td>
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<td>t</td>
<td>5.59</td>
<td>5.94</td>
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</tr>
<tr>
<td>P</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
<td>.001</td>
</tr>
</tbody>
</table>

Note: *Post hoc Scheffe contrasts revealed that in Cohort II, City A parents reported significantly more in-home involvement than City B parents. There were no differences in Cohort I.
Predictors of In-Home Involvement

Our next question concerned the extent to which the 19 predictor variables were associated with level of involvement in the in-home aspect of the program. In order to address this question we calculated zero-order correlations between each of the 19 variables and the in-home involvement variable for each of the four groups. A total of 76 correlations were conducted, 15 (20%) of which were significant at $p<.05$. The significant correlations ranged between .28 and .48. (See table 3.)

Ten of the nineteen variables predicted greater parent involvement in the in-home component of the HIPPY program in at least one of the four groups. More adults in the home (City B Cohort I), being in a two-parent family (City B Cohort I), not receiving welfare (City B Cohorts I and II), having higher education (City A Cohort II, City B Cohort I), having a male HIPPY child (City B Cohorts I and II), having higher expectations for the child’s educational performance (City A Cohort I) and attainment (City B Cohorts I and II), less materials in the home (City B Cohort II), having more learning toys in the home (City A Cohort II, City B Cohort I), and having children with higher CPI scores (City B Cohort I).

As can be seen in the table, there was considerable variation across the four groups in patterns of predictors, confirming our expectations that program site and cohort represent distinct samples. Nonetheless, a general pattern of correlations emerged across the groups which suggest that families with fewer stressors and greater resources report higher levels of involvement in the in-home component of the HIPPY program. Although the specific predictors varied by group, the overall picture was relatively consistent.
The data indicate that family risk factors were associated with level of involvement. Because risk factors tend to be cumulative in their effect (Rutter, 1990) our next step was to look more closely at the relationship between number of risk factors and level of involvement in HIPPY. To do so, we created a variable representing the number of risk factors for each family to see if the amount of risk was associated with involvement regardless of the specific risk experienced by each family. Being a single-parent, receiving welfare as the primary source of income, not completing high school, and being minority were all coded as risk factors. Thus, each family received a score from 0 to 4 indicating the number of risk factors present in that family. This variable was then correlated with in-home involvement for each of the four groups. Consistent with our hypothesis, in two of the four groups—City A Cohort II and City B Cohort I—more risk factors were significantly associated with less in-home involvement. Again, these relationships varied by site and cohort.

Nine variables were not associated with in-home parent involvement: number of children in the home, number of infants in the home, age of mother, ethnicity of mother, previously receiving welfare, adult fluency in English, age of child, number of skills parent tried to teach child in past month, and maternal depression.

Predictors of Out-of-Home Involvement

Our next question concerned the extent to which the 19 predictor variables were associated with level of involvement in the out-of-home aspect of the program. In

<table>
<thead>
<tr>
<th>Predictors of In-Home Involvement in HIPPY</th>
<th>CI</th>
<th>CI I</th>
<th>CI</th>
<th>CI I</th>
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<tbody>
<tr>
<td>Family Structure</td>
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<td>.36*</td>
<td>.34</td>
</tr>
<tr>
<td>Source of Income</td>
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<td></td>
<td>.28</td>
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<td></td>
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<tr>
<td>Number of Adults</td>
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<td>.58**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Children</td>
<td></td>
<td></td>
<td>.27*</td>
<td></td>
</tr>
<tr>
<td>Number of Infants</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Adult’s Age</td>
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<tr>
<td>Child’s Age</td>
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<tr>
<td>Child’s Gender</td>
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<tr>
<td>Past receipt of Welfare</td>
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<td>.51**</td>
<td>.43*</td>
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<td>English as Native Language</td>
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<td>.29*</td>
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<td></td>
<td></td>
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<tr>
<td>Educational Aspirations</td>
<td></td>
<td>.35*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Number of Toys in Home</td>
<td></td>
<td>.40**</td>
<td></td>
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<tr>
<td>Number of Skills Taught</td>
<td></td>
<td></td>
<td></td>
<td>.34*</td>
</tr>
<tr>
<td>Number of Materials in Home</td>
<td></td>
<td>.38*</td>
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<tr>
<td>CPI</td>
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<tr>
<td>Depression</td>
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<tr>
<td>Risk</td>
<td>.23+</td>
<td>.29*</td>
<td>.38**</td>
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Note:  + p<.10 * p<.05 ** p<.01
order to address this question we calculated zero-order correlations between each of the 19 variables and the out-of-home involvement variable for each of the four groups. A total of 76 correlations were conducted, 11 (15%) of which were significant at p<.05. The significant correlations ranged between .27 and .58 (See Table 4).

Nine of the predictor variables were associated with greater involvement in the out-of-home component of the HIPPY program in at least one of the four groups. Having fewer adults in the home (City A Cohort II), having more children (City B Cohort II), being a single parent (City A Cohort I), receiving welfare (City A Cohort II, City B Cohort I), previously receiving welfare (City A Cohort II, City B Cohort I), less fluency in English (City B Cohort II), having a female HIPPY child (City A Cohort II), trying to teach the HIPPY child more skills in the past month (City B Cohort II), and having less different types of literacy materials in the home (City A Cohort II) were all associated with more involvement in the group meetings and with the other parents in the HIPPY program.

As with predictors of in-home involvement, there was considerable variation across the four groups in patterns of prediction of out-of-home involvement. Nonetheless, a general pattern of correlations emerged. In contrast with the pattern of predictors of in-home involvement, fewer resources and stresses were associated with greater out-of-home involvement. For example, having less adults and more children in the home was associated with greater out-of-home involvement as was being a single-parent and receiving public assistance. Along the same lines, analyses examining the relationship between number of risk factor and level of out-of-home involvement revealed that more risk factors was associated with greater out-of-home involvement in two groups (City A Cohorts I and II). 4

Ten variables were not associated with out-of-home involvement. Number of children in the home, mother’s age, ethnicity, and level of education, child’s age, number of educational toys in the home, parental expectations for child’s attainment and performance, child’s CPI scores, and maternal depression. Five of the 19 predictor variables did not predict either type of involvement: number of children in the home, mother’s age and ethnicity, child’s age, and maternal depression.

**Differences in Predictors of the Two Types of Involvement**

Next we turned to the question of similarities and differences in the variables which predicted the two types of involvement. We began by asking if the same variables predicted both types of involvement. Of the fourteen variables that predicted at least one of the two types of involvement in the HIPPY program, only five predicted both. Therefore, there was considerable involvement-specific patterns of associations. Interestingly, in three of the cases of overlap (the same variable predicted both types of involvement) the relationship was in the opposite direction. More adults in the home was associated with more in-home involvement and less out-of-home involvement. Similarly, being a single parent was associated with less involvement in-home and more involvement out-of-home. Gender was associated with both; but again the relationship was in different directions. Male children were associated with more in-home involvement and less out-of-home involvement. In contrast, receiving welfare and having less materials in the home were associated in the same direction with both
involvement variables: receiving welfare was associated with less involvement in both aspects of the HIPPY program and less materials in the home was associated with greater involvement. Therefore, to a great extent, predictors of involvement varied by whether involvement took place in the home or outside the home.

Further evidence for involvement-specific patterns comes from a within-group comparison of the significant predictors. That is, we looked within each of the four groups (City A Cohort I, City A Cohort II, City B Cohort I, and City B Cohort II) to determine if the same variable predicted both types of involvement. Of the 26 significant correlations, only one variable was significantly correlated with both types of involvement within the same group. The likelihood of such a binomial distribution occurring by chance is significant at .001, indicating that predictors appear to function differently depending upon the type of involvement.

**DISCUSSION**

There was considerable variation in level of involvement in the HIPPY program, in both the in-home and out-of-home components. We consider quite significant the finding that parents across all four groups reported significantly greater involvement in-home than out-of-home. These data provide empirical support for the longstanding belief that some families are best reached through home visiting—because some parents are too shy to attend group meeting, because some families cannot logistically manage group meeting attendance (work schedules, child care schedules, etc.), or because program staff and parents can create a more meaningful relationship when it occurs one-on-one within a home setting (Halpern & Lamer, 1987). Despite the many advantages of home-visiting, many early educational interventions are entirely center-based. Such programs may be missing an important avenue for engaging parents in their children’s education—through at-home learning activities.

Fourteen of the nineteen variables were associated with at least one of the two parent involvement variables. Although specific relationships varied across the four samples, type of involvement comparisons revealed a consistent pattern of effects. In-home involvement was predicted by greater familial strengths such as more adults in the home, being in a two-parent family, and not receiving welfare while out-of-home involvement was associated with fewer familial resources. Greater number of risk factors also revealed a different pattern in which more risk factors was associated with less in-home but more out-of-home involvement.

These data reveal that the factors that increase in-home parent involvement decrease out-of-home involvement, suggesting clear involvement-specific profiles of high participators. Thus, parents who are highly involved in the home may be less involved outside the home as these variables appear to “pull” parents in different directions. This finding is also supported by the relatively low intercorrelation among the two involvement variables. Therefore, it can be concluded that involvement in HIPPY is not a monolithic experience for parents. Not only do parents vary in their level of involvement, but they vary in their involvement in different aspects of the program.

Our data also suggest that rather than risk factors functioning as barriers to involvement in all situations, they may in some contexts lead to greater involvement. More
risk factors led to greater out-of-home involvement in City A. There may be at least
two mechanisms for such a pattern of associations. One possible explanation is that
parents may perceive the out-of-home aspects of the program as an opportunity to gain
assistance with these problem areas. For example, parents who are on welfare may
attend group meetings to gain employment information or social contacts. Thus,
having the problem functions as an impetus for greater involvement. Such an interpre-
tation is consistent with the goals of other early intervention programs—such as Head
Start—to provide social support to participating parents (e.g, Parker, Piotrkowski, &
Peay, 1987). A second mechanism at work may be that variables typically associated
with negative developmental outcomes for a family may nonetheless facilitate parental
attendance at HIPPY group meetings. For example, it may be easier for single parents
to attend meetings because they are not simultaneously experiencing the need or desire
to stay home with their spouse.

In contrast to the involvement-specific correlations of the family background predic-
tors, measures of the home educational environment were uniformly associated with
higher levels of both in-home and out-of-home involvement. This finding is particu-
larly salient in light of the important role educational expectations play in the school
success of children (e.g, Seginer, 1993). Despite consensus in the field regarding the
importance of parental expectations, little is known about the specific mechanisms by
which attitudes of the parents transform into meaningful behavior on the part of their
children. These data begin to shed light on one such mechanism, notably effort.
Parents who want and expect more for their children report higher levels of involve-
ment in the HIPPY program. Thus, parental expectations appear to energize parental
behaviors in a meaningful direction. Our data suggest that parents believe that their
involvement in the HIPPY program will help them fulfill their expectations for their
child’s success in school. Such a belief would be consistent with parents’ and program
staffs’ conceptualization of HIPPY as a school readiness program (Baker, 1995).
HIPPY appears then to offer parents a direct and concrete way to act on their high
expectations so that they can become a reality for their children.

It is also noteworthy that parental ethnicity was not significantly related to either
type of involvement in any of the four groups. Although minority status is considered
a risk factor for negative outcomes for families (e.g, Sameroff, Seifer, Baldwin, &
Baldwin, 1993), our data indicate that all parents are equally able and interested in
being involved in their children’s education. Although research has shown consistent
ethnic/cultural differences in parental beliefs about the importance of specific types of
involvement (e.g., Chen & Stevenson, 1995), our data indicate that minority parents
are no less willing and able to put the effort into a program once they have enrolled in
it. This data confirms that under the right conditions, parents from all backgrounds are
willing to make an effort to help their children succeed in school.

The lack of relationship between ethnicity and involvement may also be due to the
fact that HIPPY is staffed by local community residents drawn from the same pool of
families as the HIPPY participants. The program is designed such that paraprofession-
als and parents tend to be from the same ethnic background. Consonance among parent
and staff ethnic backgrounds may account for the fact that parental ethnicity was not
related to level of involvement. If so, this finding would provide empirical support for
one theoretical rationale underpinning employment of lay paraprofessionals in HIPPY.
Predictors of Parent Involvement

and similar home-visiting programs for low-income and minority families (Halpern, 1992; Lombard, 1981).

The pattern of findings revealed in these analyses have programmatic implications. First, that different factors facilitate in-home and out-of-home involvement suggests that low levels of parent involvement in one or the other component of the program is not a reflection of parental apathy or lack of interest in their children’s education. Despite the best of intentions, parents vary in their level of involvement in part because the very factors in their lives that facilitate one type of involvement impede the other type.

Second, program staff might benefit from discussing with families the extent to which the various predictors of involvement are present in their lives. Such information could be used to help parents and staff anticipate which factors may facilitate and/or interfere with involvement. Working with families to identify the variables at play in their life may also help them recognize areas where they need assistance. Families who appear to have all four family risk variables at the onset of the program could be targeted for more intensive support in the in-home aspects of the program. Knowledge that these variables might impede in-home involvement may help staff anticipate and head off early drop out and/or low levels of participation. At the same time, staff need to be aware that these variables increase the likelihood of involvement in the out-of-home component of the program. Therefore, it may be useful to discuss with parents what they want to get out of the group meetings to determine how the meetings could be designed to best serve their needs.

The data reported here are noteworthy because they represent one of the first attempts to identify predictors of level of involvement in a home-based early educational intervention program. The findings suggest the types of variables that both facilitate and impede family involvement in the HIPPY program. However, because of the small within-group samples and the site by cohort specific pattern of associations, these data should be considered preliminary rather than conclusive and await replication with a larger sample. Replication would be particularly useful for clarifying the site and cohort specificity of the findings. For example, of the four groups, City A Cohort II and City B Cohort I appeared more similar in their pattern of relationships suggesting that neither cohort nor program site alone can fully explain these findings. Further, determining the ways in which parental subjective assessments of level of involvement is related to positive outcomes for parents and children would also be an important next step in understanding the mechanisms by which participation in these programs positively influences the lives of the participants.

**Programmatic Recommendations**

Based on the pattern of results revealed in this study, the following suggestions might be useful for program staff of the HIPPY program in particular and staff of similar programs, more generally to consider.

1. **Program staff could work with parents to identify barriers of different types of involvement that may be relevant in their lives in order to proactively address areas of need within the family.**
Ten of the 19 variables included in this study were associated with one or both type of parent involvement in the HIPPY program. Our data shed light on the types of variables that might function as barriers to in-home and out-of-home involvement in HIPPY. HIPPY staff could utilize this information as the starting point of a discussion with parents about which of the variables are present in their lives and the extent to which the parents perceive them to be a barrier or potential barrier to their in-home and/or out-of-home involvement in HIPPY. For example, staff could discuss with parents how many children are in the home, whether the parent has adequate child-care for them, and whether the parent has sufficient time away from her child-care responsibilities to work on HIPPY for 15 minutes every day.

2. **Program staff could identify barriers to participation common among many or all of the program families in order to make programmatic adjustments as necessary (i.e, offer transportation to group meetings).**

Based on the first recommendation, such discussions with program families about barriers may reveal that some are experienced by many participating families. This information could then be used by program staff to offer assistance to families in order to decrease the likelihood that such factors will impede parent involvement. For example, perhaps groups of single mothers could watch each other’s children during home visits or English as a Second Language classes could be offered during or after group meetings for small groups of interested parents.

3. **Program staff could discuss with parents ways in which they would like the group meetings to address their needs in order to plan group meetings that can build on this information.**

In our samples, group meetings appeared to appeal to parents who had the most risk factors in their lives. One plausible explanation for this intriguing finding is that parents with the greatest needs seek out group meetings as a means to an end. They appear to be participating for reasons above and beyond a desire to participate in the HIPPY program (otherwise their in-home involvement would be high as well). Therefore, our data suggest that it might be fruitful for staff to maximize this opportunity to connect with these parents through discussions regarding their expectations for the group meetings. For example, perhaps parents are hoping that the meetings will help them find a job, learn English, make friends, etc. Discussions with parents can provide staff with the necessary information to tailor the content of the group meetings to meet the needs of the families.

4. **Program coordinators could—as much as possible—assign paraprofessionals to families to ensure that paraprofessionals and parents are from the same ethnic and cultural backgrounds.**
Our data suggest that consonance between staff and parent ethnicity might be a factor for enhancing parent involvement. In some program sites this occurs as a matter of course because all staff and parents are from the same ethnic background. In other HIPPY program sites there is more variability in staff and parent backgrounds. When assigning families to paraprofessionals, program coordinators might want to keep this issue in mind.

5. **Program staff could acknowledge parents’ desires for their children’s educational success and identify with parents additional ways parents could help their children succeed in school.**

Parental expectations and aspirations for their children’s educational success was a factor influencing greater involvement in the HIPPY program. This data is consistent with the premise of the HIPPY program that parents want the best for their children and want their children to succeed in school. Participation in the HIPPY program is one way that parents can act on this desire. HIPPY program staff can acknowledge these parental aspirations and offer assistance to parents seeking to identify additional ways to facilitate their children’s educational development. This is particularly important because HIPPY parents may not have access to traditional ways of enhancing their children’s educational development such as tutoring, expensive educational materials, computers etc.)

**NOTES**

1. In earlier research on parental involvement in the HIPPY program, Baker and Piotrkowski (1996) aimed to identify predictors of the number of HIPPY activity packets received by parents using paraprofessional reports of parental involvement. However, two methodological choices may have limited the validity of these analyses, which did not prove fruitful. HIPPY families from three different HIPPY programs were analyzed as one group, perhaps diluting site-specific patterns of relationships between predictors and involvement. In addition, level of parent involvement was calculated from paraprofessional report forms designed to monitor staff work schedules, creating a potential bias in the accuracy of the data.

2. The relationship between this variable and involvement was not consistent. Receiving welfare was associated with greater out of home involvement in one group and less out-of-home involvement in another group.

3. See note 2.

4. The City B Cohort I group revealed a different pattern in which more risk factors were associated with less involvement.

5. In City A Cohort II receiving welfare was associated with greater out-of-home involvement.

**REFERENCES**


