Home Visiting for At-Risk Preschoolers:

A Successful Model for Latino Families

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In general, early childhood enrichment programs foster the educational development of young children (Bakermans-Kranenburg, van IJzendoorn, & Bradley, 2005; Shonkoff & Phillips, 2000; Zigler & Styfco, 2001). The home environment, parenting, and the perceived value of education are important predictors of school success, and interventions may improve these factors. As parents acquire skills that improve their children's chances for success, they may enhance their parenting self-efficacy (Beach et al., 2008; Pelletier & Brent, 2002). When interventions teach successful parenting skills, they may improve children's academic performance (Baker, Piotrkowski, & Brooks-Gunn, 1998; Miller-Heyl, Macphee, & Fritz, 1998). This study describes the outcomes of an early educational and parenting intervention in the homes of Spanish-speaking families living in a large Southwestern city.

One or both of the parents who participated in this study were born outside of the United States. Immigrants often experience isolation, alienation from the community, and poverty, which could interfere with their well-being (Hernandez, Denton, & Macartney, 2008). Poverty alone increases the risk of depression, with 50% of low-income mothers with young children displaying clinical levels of symptoms (Robinson & Emde, 2004). Depressed mothers also lack confidence and self-efficacy skills, which may interfere with their ability to parent effectively (Coleman & Karraker, 1998). Mothers who are isolated due to language barriers and a lack of

resources may experience additional risks. Theoretically, these risks may affect the marital or partner relationship, which could indirectly affect the child's well-being (Belsky, 1984).

Although much research exists on at-risk families, specific studies focused on family relationships among Latino immigrant parents are scarce. Latino immigrant families are growing in numbers, and this group comprises an increasing proportion of low-income families in the United States. Researchers expect the Latino population to reach 97 million by the year 2050, constituting one-fourth of the U.S. population (Negy, Snyder, & Diaz-Loving, 2004). Marital conflict and parent-child relationships may differ in the Latino household due to stronger ties to the extended family (Vega, 1995). In order to better understand the context of at-risk Latino families, we examine a home visiting intervention for these families from a systems theory perspective (Bronfenbrenner, 1993).

Current research on home visiting suggests that programs placed within a framework of cultural competence are more likely to engage parents' participation in the program, especially within African American and Latino families (Daro, McCurdy, Falconnier, & Stojanovic, 2003; McCurdy, Gannon, & Daro, 2003). Further, a successful collaboration with the community or local school district often results in positive outcomes (Reynolds, 2004). Given that each community is a cultural sub-group with unique stresses and assets, it is recommended that intervention programs carefully consider their relationship with the communities they serve. Immigrants, by nature, form a sub-group within the broader culture. While diversity exists within this sub-group, their language and customs provide a point of common connection. This study focuses on an immigrant community served by native speakers from within the same community; hence, cultural competence is not an issue for home visitors working in this program.

Method

To evaluate program effects and contextual factors within the constraints of the existing infrastructure, we used a quasi-experimental design comparing families on the waiting list with those who had completed at least 6 months of home visits. Families in the experimental group were randomly selected from the list of active families; families in the control group were randomly selected from a list of interested families who had not yet received program services.

Early intervention program

The Home Instruction for Parents of Preschool Youngsters (HIPPY) program began in Israel as a service for immigrant parents (Lombard, 1981). The ultimate goal of the program is to improve the future of at-risk children by improving their potential for educational achievement. HIPPY promotes school readiness by providing services directly to the parent through home visitation. This intervention program supports families in a way that is designed to recognize and respect family needs and values, partnering with parents to support children's learning (Bredekamp, 2003).

Previous studies have indicated long-term effects of the HIPPY program on academic achievement at 3rd grade (Karoly, Kilburn, & Cannon, 2005). This meta-analysis indicated that achievement effects have a positive cost-benefit ratio, indicating that school administrations save $1.80 for every dollar spent on HIPPY. The cost-benefit ratio is probably somewhat higher; the study analyzed in this meta-analysis tested differences between participants who received both the home visiting program and a preschool center-based intervention and a control group that received only the center-based intervention (Baker, Piotrkowski, & Brook-Gunn, 1998). Thus, this test is particularly stringent, as both groups received an intervention.

This study focuses on a HIPPY program which serves mostly Latino Spanish-speaking families with children between the ages of 3 and 6 years. The program recruits families through

word of mouth or through a sign-up for mothers who attend an elementary school pre-kindergarten meeting in the spring. In the metropolitan area, approximately 3% of the families eligible for the program are served due to limited funding (Martinez-Cantu & Nievar, 2008). Thus, active recruitment is not a priority; there are always more interested families than available funds will support. Families who request services earlier in the year are most likely to enroll in the program; other families are assigned to a waiting list. Once in the program, mothers receive educational packets with activities for their children; trained paraprofessional aides who are members of the same community act as instructors. HIPPY also facilitates monthly group meetings to give support and information to parents.

The program in this study is administered through the public schools. In our experience, Spanish-speaking families are receptive to contact from the school district, which may explain our low rate of refusal for participation in the study (n = 2). In this particular district, the majority of the families eligible for the program are Spanish-speaking Latinos. All of the families randomly selected for participation spoke only Spanish or were bilingual; however, there were 3 African American families in the program who were not selected for this study.

Participants

Participants (n = 98) included mothers and children from families eligible for HIPPY. All participants were of Latino origin and spoke Spanish; however, 3% were fluent in English and Spanish. The average age of the mothers was 30 years of age; 87.3% were married with 4.3% of these designated as common-law marriages. The average household contained 2.3 adults and 2.4 children. Household income was assessed with a categorical measure. Average income (37% of families) was between $15,000 and $25,000; 29% had an income of less than $15,000. Mother's

average education level was high school education; 36% had not graduated from high school. Among the spouses or partners, 41% had not graduated from high school.

Procedure

After families were randomly selected for possible participation, trained bi-lingual research assistants contacted families by telephone. Only two families actually refused participation; however, we were unable to reach several families on the waiting list for various reasons, such as disconnected telephones. Two trained research assistants (at least one Spanish-speaking) presented initial consent and demographic forms to interested families in their homes before proceeding with data collection. Participants were compensated with $20 for their time and effort.

Measures

Measures included the Parenting Stress Index, Parental Involvement and Efficacy, Center for Epidemiological Survey-Depression, Marital Conflict Scale, Marital Satisfaction, Home Observation for Measurement of the Environment, Child Behavior Checklist, and the Peabody Picture Vocabulary Test. Spanish versions of the Parental Stress Index, Parental Involvement and Efficacy, and the Center for Epidemiological Survey-Depression were validated in previous studies (Diener, Nievar, & Wright, 2003; Nievar, Brophy-Herb, Fitzgerald, & Diener, 2007). The Marital Conflict Scale, the HOME, and the Marital Satisfaction question were translated and back-translated to confirm validity. The final measures were developed through consensus with translators and bilingual native speakers on the research team. Although the HOME survey was translated into Spanish for convenience, bilingual research assistants delivered the HOME in a semi-structured conversational style. All other measures had standardized Spanish language versions obtained from the publishers.

Parenting Stress Index. Two subscales of the Parenting Stress Index, Attachment and Isolation, were used in this study. This widely used measure subscales have been previously validated in other studies (Abidin, 2000). The Isolation subscale measures social support as perceived by the mother (α = .71). The Attachment subscale measures attachment-related stress. A large national study found unacceptable reliabilities with the Attachment subscale and reduced the scale to three items (NICHD Early Child Care Research Network, 1994); similarly, we reduced the scale to three items to increase Cronbach's alpha to a more acceptable level of .61.

Parental Involvement and Efficacy. This measure addresses parents' perceived control over the areas of children's health, social skills, and cognitive development (Diener, Nievar, & Wright, 2003). It also assesses parents' perceptions of their potential effectiveness as parents. These items were scored on a 5-point Likert scale ranging from strongly disagree to strongly agree. A higher score on the measure indicates a stronger belief in parental efficacy and involvement (α = .75). A sample item is: "I can do a lot to help my child be excited about learning."

Center for Epidemiological Survey-Depression. This 20-item measure has been widely used as a survey instrument and screening tool (Radloff, 1977). Although there is a clinical cut-off score, this measure is not a clinical diagnostic tool. It only measures the participant's self-report of depressive symptoms. Additionally, research on the CES-D scale found no significant differences among groups with different ethnic backgrounds (Roberts, 1980). The Cronbach's alpha for the present study was .84.

Marital Conflict Scale and Marital Satisfaction. The marital conflict scale is a measure used in the National Longitudinal Survey of Youth (NLSY). Assessments of marital conflict or disagreement survey 10 areas of family life. For example, one item states, "How often do you

and your husband have arguments about chores and responsibilities around the house?" Level of disagreement is measured on a 4-point scale (α = .74).

Home Observation for Measurement of the Environment. This widely-used measure of the home environment has been shown to predict children's later achievement in school (Caldwell & Bradley, 1984). It assesses positive areas of children's environment on a dichotomous scale which lowers the alpha level. In addition, this measure is a cumulative measure of risk and is therefore not internally consistent. In repeated studies, however, it has shown criterion validity as an overall measure of children's environment (Friedman & Wachs, 1999).

Child Behavior Checklist. Mothers completed the Spanish language version of the Child Behavior Checklist (Achenbach, 2000), a report of young children's behavioral adjustment. Scores are standardized for age and gender. The Child Behavior Checklist is a widely-used measure with 100 items each describing a potential behavioral problem (e.g., "My child cries often"). Mothers were asked if each item was *not true* (0), *sometimes true* (1), or *often true* (2). Reliability for this sample was high (α = .95).

Peabody Picture Vocabulary Test. The Test de Vocabulario en Imágenes Peabody (Dunn, Padilla, Lugo, & Dunn, 1986)—Spanish version of the Peabody Picture Vocabulary Test—was used to assess the child's receptive vocabulary. This test is widely used as an indicator of verbal ability and scholastic aptitude. Standard scores are based on a mean of 100 and a standard deviation of 15.

Results

Preliminary analyses included intercorrelations among study variables, means, and standard deviations, as shown in Table 1. Demographic characteristics of participant and control

groups were compared through the use of *t* tests to verify similarities within the sample. There were no significant differences between groups in the number of adults in the home, education level of the mother, education level of the father, or income. The mothers in the participant group were, on average, 2.3 years older, and they were likely to have more children than the control group.

Multiple independent *t* tests assessed differences between the participants in the HIPPY program and the control group on measures of maternal depression, parental efficacy, stress, marital conflict and satisfaction, HOME, children's behavior, and children's receptive vocabulary, as shown in Table 2. There was a statistically significant difference between program participants and control group on measures of the home environment, marital satisfaction, parental efficacy, and the Attachment subscale of the PSI. There were no statistically significant program effects on children's behavior, children's vocabulary, marital conflict, marital stress, maternal depression, and the Social Support subscale of the PSI.

Two regressions indicated group differences between participants and controls. The first regression shows a positive effect of the intervention on the home environment when income and maternal depression are controlled. Group status is also a positive significant factor in a regression on children's vocabulary as measured by the Peabody Picture Vocabulary Test, as shown in Table 3.

Discussion

The results of preliminary *t* tests on demographic measures revealed that participants in the intervention were significantly older and had more children than members of the control group. This may be explained by the likelihood of the mothers who participate in the program with their first or second child to return to the program with an additional child. Mothers who

have been in the program before are given priority to reenroll when their younger children are 3 years old. Only 3% of eligible families participate in the metropolitan area participate each year (Martinez-Cantu & Nievar, 2008). Thus, program participation is highly selective, and those who are given priority may have more children. Given that larger families generally experience more stress in low-income homes (Evans, 2004), we would expect the program families to have fewer resources and suboptimal outcomes. The significant negative difference between program families and controls in the quality of the physical environment confirms this expectation. Thus, the pre-existing increased risk within the participant group makes our test of the program on families and children even more stringent; it also suggests that the program is serving families who are most at risk.

Tests between groups indicated positive effects of the intervention on contextual factors, such as marital satisfaction, and the intellectual and social environment of the child. HIPPY participants exhibited higher ratings of marital satisfaction, lower parental stress in regards to attachment issues, and higher ratings of parental efficacy than control group participants. In regards to the intellectual and social environment of the child, HIPPY participants evidenced more learning materials, increased language stimulation, increased academic stimulation, more role modeling, and a greater variety of learning experiences than control group participants. Effects of intervention participation on the total home environment were significant, even when income and maternal depression were included as control variables. This outcome is consistent with the goals of the HIPPY curriculum, which is designed to empower parents as their children’s first teacher. The program also teaches skills for parent involvement with their child’s school, and results show that HIPPY participants are more involved with their children's learning experiences when compared to the control group.

No differences appeared between groups on simple tests of differences on children's vocabulary; however, the program group showed significantly higher scores than the control group when we controlled for risk factors not addressed by the intervention, such as child behavior problems and maternal depression. The finding of intervention effects on vocabulary was particularly interesting as the measure of the home environment (HOME) was not correlated with measure of vocabulary, although the intervention appeared to positively affect both measures.

One explanation for the lack of association between the HOME and the measure of children's vocabulary is that the HOME is both economically and culturally biased. For example, one of the items in the HOME asks about the father eating meals with the children. In some cultures, the father does not eat dinner with the children (Bradley, 1999). Other observed items in the HOME include parental conversation and providing opportunities for the child to show a talent or a toy to the visitor. In other cultures besides the Euro-American culture, parents may not frequently engage in play or even conversation with their children (Morelli, Rogoff, & Angelillo, 2003). Nonetheless, improvements in the items on the HOME environment correspond to improvements in school readiness and academic achievement in the United States. The fact that this program has had a positive effect on family and child outcomes, one of which is the HOME, tends to support its validity.

The criterion validity of the HOME for Spanish-speaking Latino immigrants is an interesting question, particularly when we examine individual subscales, such as language stimulation. It is possible that the mechanisms of language acquisition for immigrant Latino families may differ from Euro-American families given cultural differences in appropriate parent-child communication. In a previous study drawing on NLSY data, the HOME was

associated with improved vocabulary scores for each ethnic and poverty status groups studied except poor Hispanic Americans (Bradley, Corwyn, Burchinal, McAdoo, & García Coll, 2001). Other studies that have used this measure with Latino families also suggest that indicators on the HOME may not be equally applicable to all ethnic or income groups (Diener, Nievar, & Wright, 2003; Bradley, Corwyn, McAdoo, & García Coll, 2001).

It is important to remember, particularly when designing interventions, that most parenting practices are not universal across cultures. In the past, practices that are more common among minority cultures than among Euro-Americans have been assumed to be deficits or risks (Holliday & Holmes, 2003). Acculturation, or specifically in this case, successful integration into the American school system, need not result in the loss of ethnic identity or ethnic styles of parenting. The success of this program may, in fact, be partially due to program delivery by members of the same cultural group, who would not view culture-specific practices as deficits.

In addition to examining program effects on school readiness, this study also examined mental health issues. Those who participated in the program did not differ significantly from the control group on the measure of depression. These results are not surprising considering the intervention program does not address this need. In the population at large, 6.7% of adults experience major depressive symptoms (NIMH, 2008); however, 20% of both HIPPY participants and control participants scored in the clinical range (> 16) of the Center for Epidemiological Studies Depression Scale (CES-D). While other studies have shown a higher percentage of depression among low-income mothers of diverse groups (Robinson & Emde, 2004), the prevalence of depression is still a cause for concern. The HIPPY program does not focus on social-emotional needs; however, an intervention focus in this area should be considered, given that access to mental health services may be limited in this group.

Recent studies suggest that first-generation, low-income Hispanic children are more likely to have problems in school than any other socioeconomic or generational group in the United States (Reardon & Galindo, 2006; Miller & Garcia, 2008). Yet Latino families tend to be invested in providing a high quality education for their children in the early years (Valencia, Pérez & Echeveste and Tomás Rivera Policy Institute, 2006). Home visiting, in this case, helps to fill the gap between the investment of immigrant parents in their children's education and their ability to prepare their children to navigate the American school system.

We assume that one reason for the program's success is the use of home visitors from the same community as the participants, particularly native speakers of their language. Home visitors who adjust the program to fit families' needs enhance their participation and involvement in services, thus making the program itself more effective (Korfmacher et al., in press). In this case, cultural and linguistic competencies are essential components in adapting the program for Latino families, ensuring a connection between families and their home visitors.

It is possible that a positive connection between families and home visitors affected other areas of their lives. Although the program did not address couple relationships, we found that program participants reported more marital satisfaction than families not participating in the program. From anecdotal reports, home visitors may have encouraged mothers to take an active, empowered role in their relationships with their husbands. Alternatively, it is possible that as mothers felt more empowered as parents, they became more satisfied with their partner or spouse. This certainly warrants additional research, to replicate the finding of couple effects and to investigate the family processes involved.

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Table 1

Correlations Between Study Variables (n = 96)

Variable	1	2	3	4	5	6	7	8	9
1. HOME Total	-								
2. PPVT (vocabulary)	.00	-							
3. Education	.18	.11	-						
4. CBCL (behavior)	-.24*	-.23*	.01	-					
5. Marital Satisfaction	.18	.11	.17	-.03	-				
6. Parental Efficacy	.28*	.09	.23*	-.14	.13	-			
7. CES-D (depression)	-.21*	-.19	-.11	.40*	-.01	-.23*	-		
8. PSI Isolation	-.17	-.06	-.16	.24*	-1.8	-.26*	.20	-	
9. PSI Attachment	.27*	.16	.30*	-.28*	.16	.32*	-.40*	-.38	-
M	39.98	95.99	2.24	33.26	4.21	70.97	9.62	2.13	2.7
SD	5.75	17.06	1.21	20.85	.94	14.5	7.58	.64	.53

Table 2

Mean Comparisons of HIPPY and Control Participants

Variable	*t*	*df*	*p*	*d*
Learning Materials	4.298*	94	.001	.877
Language Stimulation	2.656*	94	.009	.542
Physical Environment	-2.156*	94	.034	.440
Responsibility	-.704	94	.483	.144
Academic Stimulation	4.121*	94	.001	.841
Modeling	2.919*	94	.004	.596
Variety	5.609*	94	.001	1.145
Acceptance	.267	94	.790	.055
HOME Total	3.746*	94	.001	.765
PPVT Percentile Rank	-1.577	83	.119	.392
CBCL	-1.169	82	.246	.256
Marital Satisfaction	2.048*	89	.043	.427
Marital Conflict	-1.714†	89	.090	.359
Parental Efficacy	3.317*	92	.001	.684
Marital Stress	-.971	76	.335	.226
PSI (Attachment)	-2.341*	90	.012	.541
PSI (Social Support)	-1.518	75	.133	.314
Maternal Depression	.079	93	.937	.016
PPVT	-.929	91	.355	.195

* $p < .05$, †$p < .10$

Table 3

Summary of Regression Analysis for Variables Predicting the Home Environment and Children's Vocabulary

Variable	*B*	*SE B*	*B*
Home Environment (*n* =88)			
Household Income	.10	.33	.03
Maternal Depression	-3.62	1.43	-.24*
Participant Group	-5.21	1.05	-.46*
Children's Vocabulary (*n* =64)			
Household Income	.36	1.65	.03
Maternal Depression	-2.38	5.13	-.06
Child Behavior Checklist	-15.83	9.75	-.21
Participant Group	9.93	3.72	.32*

*$p < .05$.