



An Assessment of a Home-visiting Intervention and Rural, Low-income Children's School Readiness

Final Report to Garrett County Partnership
for Children and Families Inc. Local
Management Board

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Dissertation--

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A research brief based on the investigation is available on line at:
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Christine grew up in a rural area and was an elementary school teacher. She has conducted research focused on health outcomes for young children in formal and informal early child care programs and with rural issues as related to child care availability, and food security. She has also examined school readiness and early school performance as a practitioner with specific issues related to standardized testing, services to low-income children, and educational policy issues pertaining to language proficiency and immigration status. She is an Assistant Professor in the Early Childhood Program at Northern Virginia Community College in Manassas, Virginia.

Executive Summary

The purpose of this study, conducted as dissertation research in the Department of Family Studies at the University of Maryland, College Park, was to assess the effects of Healthy Families Garrett County on school readiness in a population of low-income, rural children in Garrett County, MD. Children (n=164), who entered the Healthy Families Garrett County program in 1999 or 2000 shortly after birth and completed the school readiness assessment upon kindergarten entry in 2004 or 2005, were selected along with their families.

Incorporating the objectives established by the National Education Goals Panel for promoting school readiness, the model community approach puts into place a system of prevention and intervention that impacts significantly on families in Garrett County. Early results suggest those participating in HFGC had higher school readiness scores than those not participating. Long term program participation negates factors associated with low-income and imparts a positive return on the investments.

The study used path analyses to examine the relationships among frequency, intensity, and duration of the home visiting intervention, and home safety, parental knowledge of infant development, and school readiness. All variables, (1) home visiting frequency, (2) home visiting intensity, (3) home visiting duration, (4) parental knowledge of infant development, and (5) home safety were considered to be paths leading directly to the enhanced outcome of school readiness in this low-income, rural sample.

RESULTS:

- (1) Duration of home visiting had a positive, direct effect on home safety.
- (2) Duration of home visiting had a positive, direct effect on parental knowledge of infant development.
- (3) Home safety had a positive, direct effect on school readiness in the composite and all tested subscales (personal and social, language and literacy, mathematical thinking, physical health and development).
- (4) Duration had an indirect effect on school readiness through home safety.

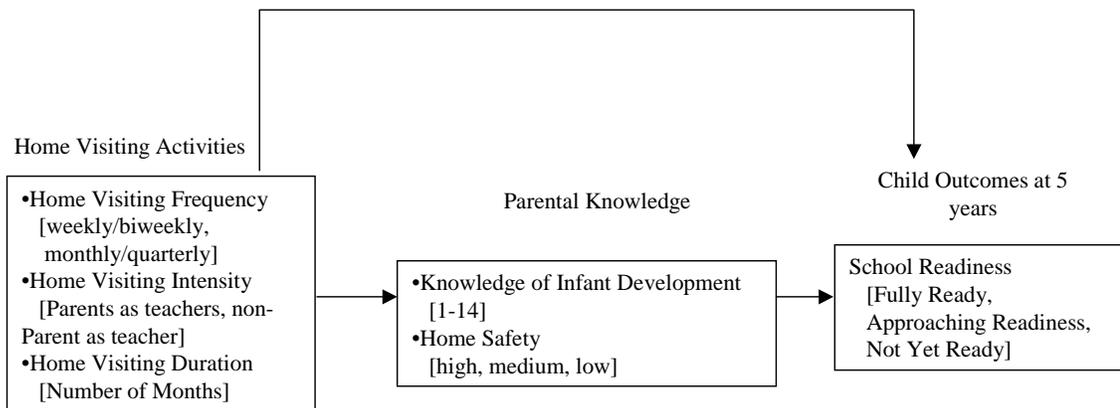
RECOMMENDATIONS:

- (1) Maintain program duration to kindergarten entry.
- (2) Implement new parental knowledge or home environment measures.
- (3) Continue emphasis on home safety and collaboration with local agencies for impacting school readiness.
- (4) Conduct statistical comparisons of means testing with the school readiness scores of HFGC children as compared to non-HFGC children.
- (5) Administer the home environment measures at regular intervals to all families receiving home visiting services.

Section	
2	Conceptual Model

The purpose of this study was to examine the effectiveness of one program's interventions on parental knowledge of child development and home safety on rural children's school readiness. See Figure 1 for a depiction of the conceptual model for this study.

Figure 1 Conceptual Model



RESEARCH QUESTIONS

The overall goals for this research study were to examine the relationship between different levels of home visiting services to parents and the resultant school readiness of their children, and to examine parental child development knowledge and home safety that mediate the relationship between program participation and school readiness in a sample of low-income, rural children. In addition, the direct relationship between home safety and parental child development and school readiness were examined through the following research questions:

- 1) Does home visiting frequency predict children's school readiness?
- 2) Does home visiting intensity predict children's school readiness?
- 3) Does the duration of home visiting service predict children's school readiness?
- 4) Does home visiting predict parental knowledge of child development?
- 5) Does home visiting predict home safety?
- 6) Does parental knowledge of child development predict children's school readiness?
- 7) Does home safety predict children's school readiness?
- 8) Does home visiting have an effect on school readiness by increasing home safety scores?
- 9) Does home visiting have an effect on school readiness by increasing parental knowledge of infant development scores?

ANALYSES

Descriptive analyses were conducted to describe the demographic characteristics of the sample including family income, type of child care arrangements, and parental level of education. Additionally, descriptive analyses described the frequency, duration, and intensity of home visiting services, parental knowledge of infant development, home safety and children's school readiness characteristics of the sample.

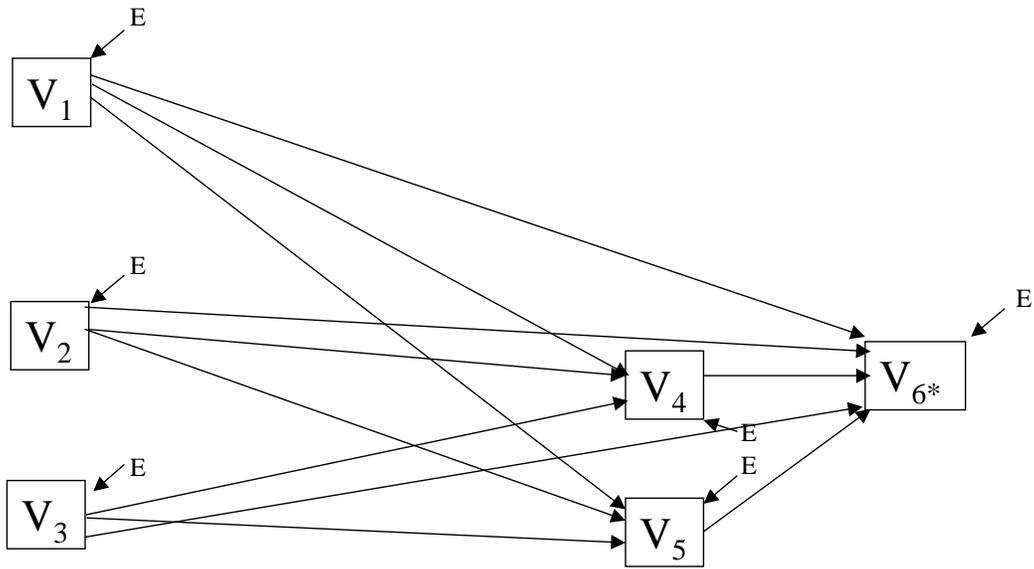
Path analysis is a linear, causal statistical modeling technique. It is used to measure the direct and indirect effects of variables hypothesized as causal. It was hypothesized that home visiting program interventions have both direct and indirect effects on school readiness, and direct effects on home safety and knowledge of infant development. See Figure 2 for a depiction of the path analysis model.

The model proposed relationships between the variables of home visiting frequency (V1), home visiting intensity (V2), home visiting duration (V3), knowledge of infant development between 12 and 30 months of age (V4), home safety (V5), and the school readiness composite score (V6). Income and type of child care the year before kindergarten were included as control variables.

The model also was used to examine the effect of home visiting frequency, intensity, and duration, and parental knowledge and home safety on individual WSS subscales: social competence (V7), literacy (V8), mathematics (V9), and health (V10). Income and type of child care the year before kindergarten again were included as control variables.

The path analysis was repeated for each subscale in place of the composite score in order to examine individual areas of readiness including: social competence (V7), literacy (V8), mathematics (V9), and physical health and development (V10).

Figure 2 Statistical Model



V₁=Home Visiting Frequency
 V₂=Home Visiting Intensity
 V₃=Home Visiting Duration
 V₄=Knowledge of Infant Development

V₅=Home Safety
 V₆=School Readiness Composite*
 V₇=Social competence subscale
 V₈=Literacy subscale
 V₉=Mathematics subscale
 V₁₀=Health subscale

Descriptive Results

Descriptive statistics, including frequencies, means, and standard deviations were used to summarize the demographic information of families, using SPSS statistical package version 14.0. These variables included frequency, intensity, and duration of home visiting, knowledge of infant development, home safety, and school readiness composite and subscale scores and are reported in Table 1. In addition, income was examined by using free and reduced meals rate.

Table 1: Descriptive Statistics for Path Model Variables for Total Sample

VARIABLE	MEAN	SD	RANGE	SCALE RANGE
FREQUENCY ^a	2.73	.93	1-5	1-5
INTENSITY ^b	.66	.48	0-1	0-1
DURATION ^c	4.62	1.52	1-6	1-6
KNOWLEDGE OF INFANT DEVELOPMENT	10.9	2.27	5-14	1-14
HOME SAFETY ^d	2.72	.48	2-3	1-3
READINESS COMPOSITE	75.12	15.19	30-90	30-90
PERSONAL/SOCIAL	10	2.17	4-12	4-12
LANGUAGE/LITERACY	14.75	3.46	6-18	6-18
MATHEMATICAL THINKING	9.85	2.40	4-12	4-12
PHYSICAL HEALTH AND DEVELOPMENT	10.75	1.84	4-12	4-12

Note: SD=Standard Deviation.

^aOnce/twice per year, Quarterly/five times per year, Monthly, Twice-monthly, Weekly

^bParticipation/non-participation in Parents as Teachers.

^cDuration in years.

^dHigh and Medium/Low

COHORT I

The first cohort, entered the HFGC program in 1998/1999 and entered kindergarten in September, 2004. These children were all Caucasian, and the group included 90 children with 50 boys and 40 girls with a mean age of 5.33 years. Income was not reported, but 58% of the children (n=52) received free or reduced meals in kindergarten. Sixty-eight percent of the children (n=61) participated in Head Start or pre-kindergarten with a nearly even split the year preceding kindergarten. Ten children were in family child care or a child care center (11%), 18 children were at home (20%), and 1 child had missing data for this variable.

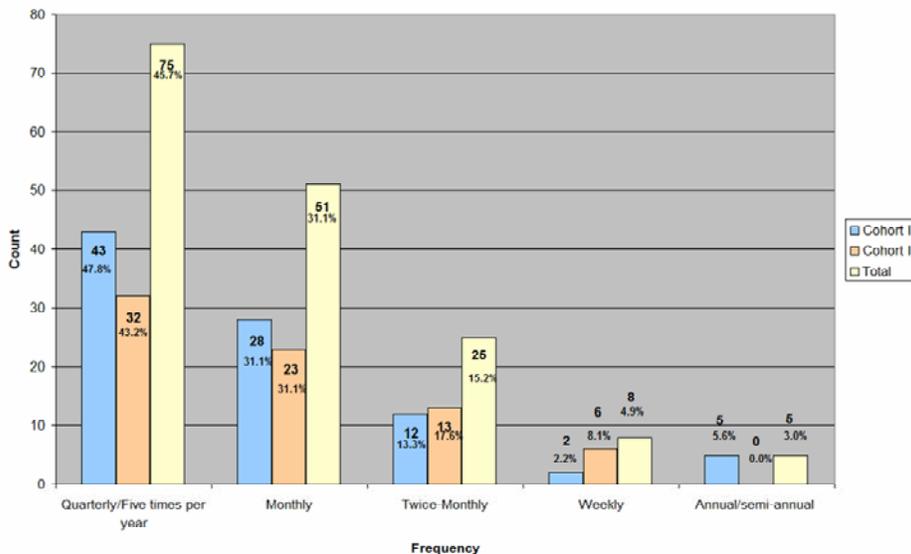
COHORT II

The second cohort, entered the HFGC program in 1999/2000 and entered kindergarten in September 2005. These 74 children also were all Caucasian. Forty-two children were boys and 32 were girls with a mean age of 5.42 years. Forty percent of the children (n=37) received free or reduced meals in kindergarten. Sixty-four percent (n=47) participated in Head Start, Early Head Start or pre-kindergarten. Six children (8%) participated in child care programs. A large group of children were reported to be at home the year before kindergarten (28.4%; N=21).

HOME VISITING FREQUENCY

In the first cohort, more than three-quarters of the children (n=71; 78.9%) received services monthly or quarterly/five times per year. As depicted in Figure 3, only 14 subjects (14.5%) received more frequent home visits. In cohort 2, nearly three-quarters received monthly or quarterly/five times per year visits (n=55; 74.3%), and 19 (25.7%) received home visits weekly or twice-monthly. There was a statistically significant difference between cohorts ($t=-2.18, p=.03$), due to the fact that cohort II parents received a slightly higher frequency of services.

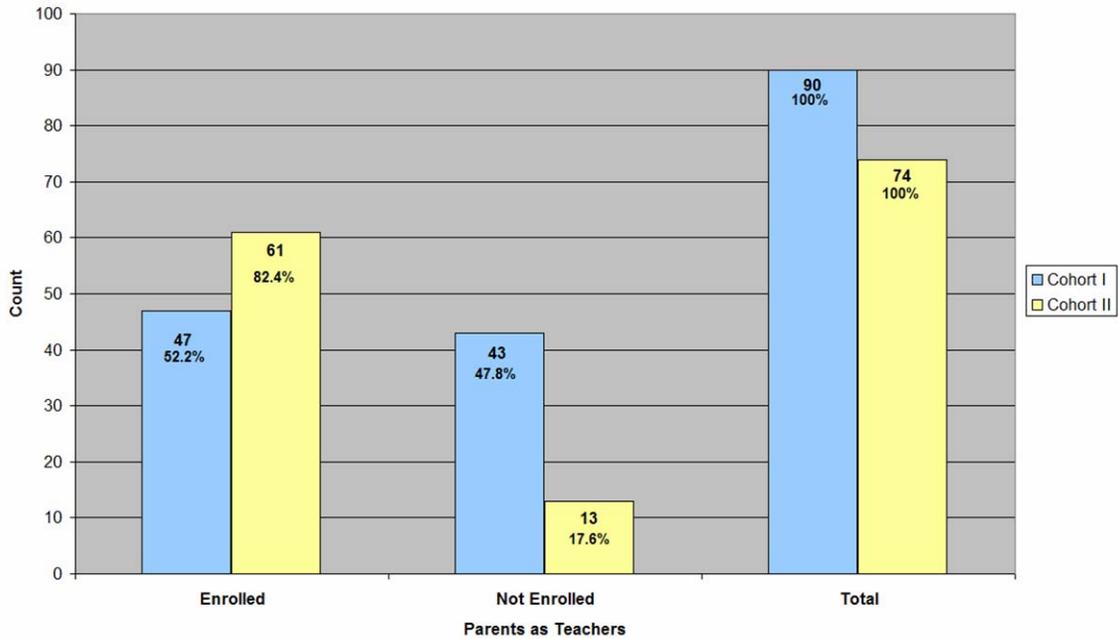
Figure 3: Home Visiting Frequency by Cohort



HOME VISITING INTENSITY

More than half of the parents (108/164) were enrolled in the Parents as Teachers program (PAT). As shown in Figure 4, parents who enrolled in HFGC during cohort II signed up for PAT in greater numbers than cohort I and this difference was significant as shown in Table 7 ($t=-4.37, p=.00$).

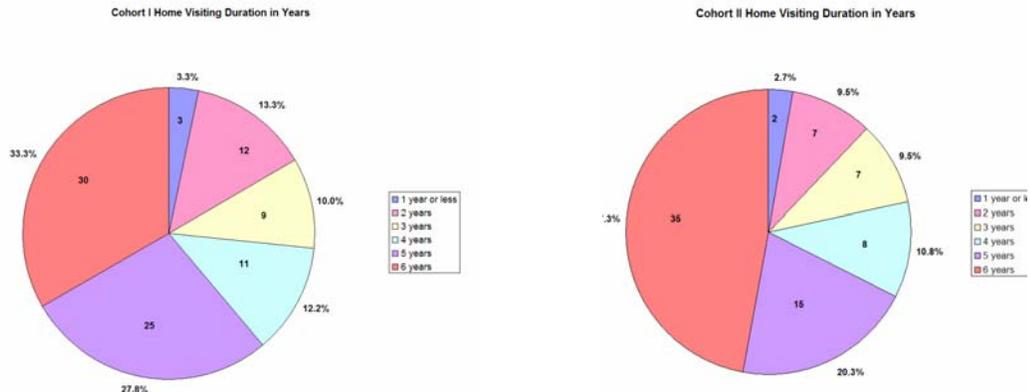
Figure 4: Home Visiting Intensity (Parents as Teachers) by Cohort



HOME VISITING DURATION

Parents' length of time enrolled in the program varied. Many participants stayed enrolled until kindergarten entry at age five (six years of duration), in effect maxing out the program as shown in Figure 5. The mean number of years of home visiting duration was 4.48 years for cohort I and 4.78 years for cohort II. There was no statistically significant difference between the two cohorts for home visiting duration ($t=-1.29, p=.20$).

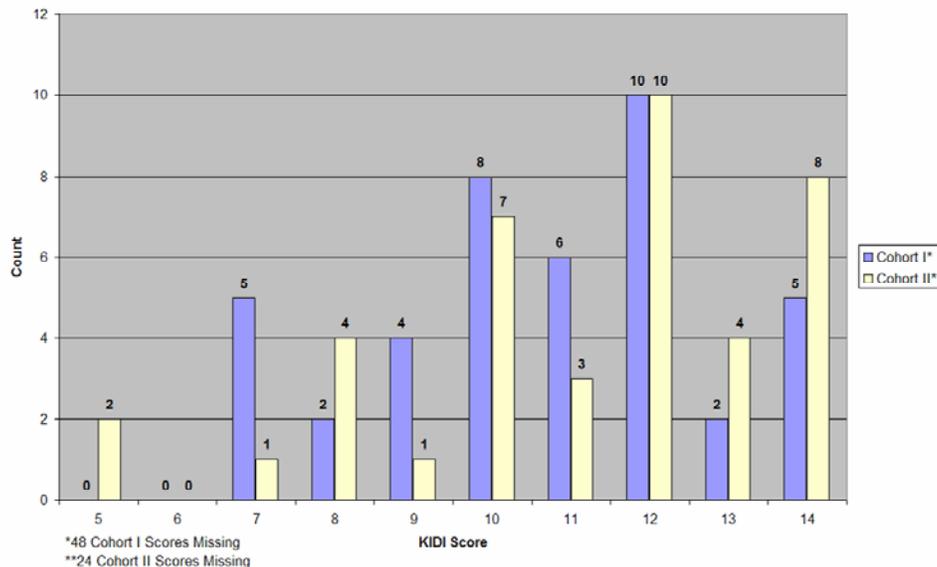
Figure 5. Home Visiting Duration in Years by Cohort



KNOWLEDGE OF INFANT DEVELOPMENT

Figure 6 illustrates the range of respondents' scores for the Knowledge of Infant Development Index (KIDI). None of the participants in the first cohort achieved a score lower than 7/14. According to the criteria for HFGC, an 8/14 is passing, and under these criteria only 8/164 subjects from the two cohorts failed to meet this passing criteria. Half of the HFGC participants in this sample ($n=82/164$) did not complete the KIDI scale and were unable to be assessed in this area. There was no statistically significant difference between the two cohorts on this variable ($t=-.87, p=.39$).

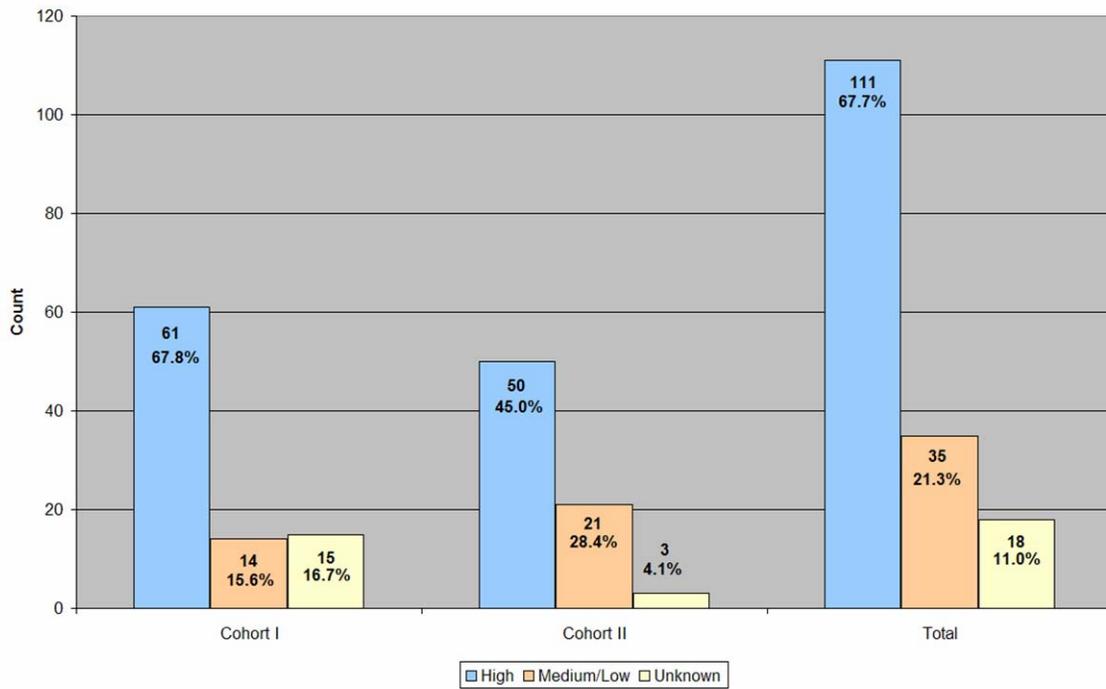
Figure 6. Frequency Scores on the Knowledge of Infant Development Index



HOME SAFETY

The Home Safety Scale (HSS) scores at one year were high for both groups as seen in Figure 7. In the first cohort, no parents failed the assessment, and in the second cohort, only two subjects got a low score. Fifteen cases in the first cohort, and three in the second were unable to be assessed on home safety, as they exited the program before the one-year HSS scale was administered. For the purposes of the multivariate analyses, the two low scores were combined with the medium scores and only two groups were used for comparison, high and medium/low. As displayed in Table 7, home safety did not yield any statistically significant differences between the two cohorts ($t=1.067, p=.29$).

Figure 7. Home Safety Scale Scores at 12 Months by Cohort



Program Effects

Empirical evidence was found for each hypothesis suggesting direct effects from home safety to the composite and all subscale scores. Small to moderate effects were found in the paths leading from home safety to the school readiness measure composite, and all subscale scores. Home visiting duration did have an indirect effect on school readiness through home safety in three areas: the composite score, the personal and social subscale, and the physical health and development subscale. The small indirect effects in these areas suggest that as duration in the HFGC program increased, home safety increased, and subsequently school readiness. These results are reported in Table 2.

Table 2: Direct and Indirect Effects on School Readiness

	Direct Effects from Home Safety to School Readiness	Indirect Effects of Home Visiting Duration on School Readiness through Home Safety
School Readiness Composite	.23*	.11*
Personal and Social Subscale	.26*	.12*
Language and Literacy Subscale	.19*	.08
Mathematical Thinking Subscale	.17*	.08
Physical and Health and Development Subscale	.26*	.12*

*p < .05.

SUMMARY OF RESULTS

The summary of results, presented in Table 3 outline the significant findings for each of the research questions. The major findings were in the areas of home visiting duration and its effect on parental knowledge of infant development and home safety. Additional findings included the effect of home safety on school readiness.

Table 3: Summary of Results

Research Question	Findings
1 - Does home visiting frequency predict school readiness?	No significant findings.
2 - Does participation intensity (PAT) predict school readiness?	No significant findings.
3 - Does duration of home visiting services predict school readiness?	No significant findings
4 - Does home visiting (frequency, intensity, duration) predict parental knowledge of infant development	Duration of home visiting has a positive, direct effect on parental knowledge of infant development.
5 - Does home visiting (frequency, intensity, duration) predict home safety?	Duration of home visiting has a positive, direct effect on home safety.
6 - Does the level of parental knowledge predict school readiness?	No significant findings.
7 - Does home safety predict school readiness?	Home safety predicts school readiness in the composite and all tested subscales (personal and social, language and literacy, mathematical thinking, physical health and development).
8 - Does home visiting (frequency, intensity, duration) have an effect on school readiness by increasing home safety scores?	Duration has an indirect effect on school readiness through home safety.
9 - Does home visiting (frequency, intensity, duration) have an effect on school readiness by increasing parental knowledge of infant development scores?	No significant findings.

HOME SAFETY EFFECTS

The paths leading from home safety scale scores to school readiness scores were significant for the composite and all subscale scores. Within the context of the *Healthy Families Garrett County* program, the scale is not only a diagnostic tool, but also a call for action. Many families significantly improved their home safety scale score from their

baseline at intake to the 12-month home safety score used for the multivariate analyses ($t=73.01$, $p=.00$).

The intervention that HFGC provides for home safety is multi-faceted. HFGC provides a home safety kit that includes some of the items on the scale such as outlet protectors. When parents do not have safety gates, safety guards on windows, car seats, or well water that has been tested, HFGC staff immediately make referrals and use their extensive web of resources to help families attain the necessities in order to facilitate a secure haven for the child and family. In many cases, they actually purchase items, such as fire alarms for the families. It is this proactive intervention that best explains the improvement between baseline home safety scores and scores at 12 months.

While individual question items could not be analyzed for the purpose of this research, program staff report that many families smoke tobacco upon program entry and continue to do so over time. Given that this item is worth 2/22 points, it is likely that this question in conjunction with any other missed question would prevent a family from attaining a high score. Smoking behavior is addressed by program staff, but is articulated by HFGC staff as a difficult area for intervention. The other comprehensive approaches by HFGC staff for home safety appear to make an important difference for children's school readiness.

PARENTAL KNOWLEDGE EFFECTS

Results from the present study indicate that there is no empirical support for the directional link from parental knowledge to kindergarten readiness. These findings are surprising when considering that previous research does indicate that parenting relationships make a difference in cognitive skills in rural children (Fish, Jacquet, & Frye, 2003), suggesting that global school readiness would be affected.

Social and emotional competencies as an evaluation of school readiness are in theory, impacted by parental knowledge and subsequent behaviors. Improved parenting of infants and toddlers is connected to improvement in cognitive and language abilities and behavior skills in three year olds (Administration for Children, Youth, and Families, 2006). This finding implies that parental knowledge, and subsequent improvement in parenting behaviors would have an impact on school readiness. Parenting styles, which may have been reflected through parental knowledge have been found to influence children's emotional styles (Eisenberg & Fabes, 1992; Wakschlag & Hans, 1999). Raver suggests that many emotional problems in children are deeply impacted by parenting processes, and intervention programs that enhance parenting skills may indirectly improve children's emotional and behavioral outcomes (2006).

In the study reported here, the results may have been affected because the Knowledge of Infant Development Index (KIDI) had been reduced from a 58-item measure, and it may not have been an accurate indicator of parental knowledge. Additionally, the 50% rate of missing data and subsequent linear interpolation to replace such data may have resulted in this measure being inadequate for the analyses.

EFFECTS OF FREQUENCY OF HOME VISITING SERVICES

Frequency of home visiting service for any of the school readiness measures was not supported by empirical evidence, nor was parental knowledge of infant development, or home safety. This finding might best be explained by taking into account the frequency of visitation, which is based upon the level of family stress that a family exhibits at intake.

Stress is assessed through the use of a family stress measure filled out by either one or both parents, and frequency of services is subsequently determined. Family stress has been linked to poorer cooperation with children, and ability to follow directions and concentrate (Murray-Harvey, & Slee, 1998). All of these are important for school readiness in kindergarten and are salient examples of the impact of family stress on school readiness of children. The Healthy Families Garrett County program attempts to buffer these stressful factors by offering each family the level of service that they need as an individual family unit. It is possible then, that each family is receiving what they need, and thus frequency becomes negated as a predictive variable. In effect, the frequency of services may be a factor that moderates family stress level and furthers parental knowledge and school readiness.

Unfortunately, the family stress measures are only administered at intake, so it was not possible to observe stress decrease over time, although program evaluation reports and anecdotal data suggested that parents feel supported by the frequency of the program recommended to them. Over the last five years, in all but a handful of cases, parents accepted the level of service for which they qualify. In the absence of a control group of families who refused service or chose not to enroll, it is difficult to obtain a true measure of the impact of frequency. Instead, these findings compellingly suggest that HFGC has done a thorough job of matching the right amount of intervention to families.

EFFECTS OF INTENSITY OF HOME VISITING SERVICES

Participation in Parents as Teachers (PAT) was not found to be a significant predictor for school readiness in this sample. Parents as Teachers list school readiness as a primary goal (Parents as Teachers National Center, 2006) for program impact. However in this sample, there was no empirical basis for demonstrating that the program increased school readiness.

The finding that participation in PAT did not increase school readiness was surprising considering that previous research by Pfannenstiel, Seitz, and Zigler (2002) found that participation in PAT was significant for improving school readiness scores as compared to children in families who did not participate. With regard to subscale content areas, PAT children have been found to perform better on academic screening measures including literacy and math (Pfannenstiel & Seltzer, 1989) in school readiness measures, and in these same areas on measures in subsequent grades through third grade (Pfannenstiel, Lambson, & Yarnell, 1996). Literacy, in particular, has been found to be connected to previous participation in PAT (Coleman, Rowland, & Hutchins, 1997). PAT participating parents have also been reported to engage in a variety of activities supporting literacy such as visiting the library regularly, and having more books and reading and writing opportunities

in the home (Pfannenstiel, Lambson, & Yarnell, 1996), as well as parenting behaviors that promote literacy skills, such as reading aloud to children in the home, telling nursery rhymes and singing with children in the home.

Social and emotional development is normally improved for PAT participants. Children whose parents participate demonstrate significantly more aspects of positive social development than comparison children, and the importance of social/emotional development has been widely researched as both an aspect of school readiness (Hamre & Pianta, 2001; Eisenberg & Fabes, 1992; Rubin, Coplan, Fox & Calkins, 1995), and a predictor for school readiness (Ladd, Kochendorfer, & Coleman, 1997, O'Neil, Walsh, Parke, Wang & Strand, 1997, Raver, 2002).

Given an extensive body of research suggesting that PAT is effective for school readiness raises the possibility that in the current study, something is not consistent. An explanation for not finding significant results in the context for this research project is that so many more participants were enrolled in PAT than non-enrolled, differences could not be observed. Another compelling explanation is that there was no control group for this variable.

Also, HFGC staff report that home visiting for PAT and non-PAT parents are conducted by the same home-visiting workers and that non-PAT parents do receive information in many of the content areas covered by PAT. In essence, non-PAT parents receive a smaller dosage of PAT, but cannot truly be considered to be non-participants in the program or a control group. In fact, the higher school readiness scores of HFGC participants, as compared with Maryland and Garrett County overall might actually suggest that the HFGC intervention, which includes PAT in varying degrees of formality, makes a difference over time.

DIRECT PATHS TO HOME SAFETY

Home safety was not predicted by frequency of services and intensity of services. As mentioned previously, these shortcomings may be due to the fact that frequency might not be revealing if families are all receiving the recommended dosage, and the majority of parents choose the more intensive curriculum. Duration, however, was a significant path leading to home safety.

The effect size of .51 is the largest in the model and clearly shows that parents who participate in the program longer are more likely to demonstrate higher home safety practices. This finding may be because duration reflects a higher level of commitment to the program and subsequently to follow recommendations given by program staff. It may also reflect heightened opportunity that program staff had to intervene on behalf of the family for the well-being of the child. Particularly in families where chronic stress is a factor, continued exposure to a program may be particularly important in helping a family to cope and then to flourish.

Recommendations

DURATION

Program providers may be tempted to provide short bursts of intensity with the hope of reaching maximum audience for minimal expenditure. However, in this sample, all families, including those who received lower levels of service benefited from long-term program participation. Program providers must examine the possibility that long-term engagement creates opportunity to help families at different points in a child's growth and development and thus reduce the greater program costs. Certainly as related to school readiness, a child's continued exposure to academic-related concepts as they approach school entry would be effective.

In rural populations where there are unique risks such as isolation or historically low levels of educational attainment, it appears that longer-term intervention will provide a lasting buffer. This idea is consistent with current research suggesting that to make a difference for the long-term well-being of a child, long-term program participation is required, as short term programs may not "inoculate" a child from the ongoing stresses faced in low-income environments (Zigler & Styfco, 2001).

- **It is recommended, on the basis of this research, that home visiting services be provided from birth until school entry.**

COLLABORATION

Collaboration is an important part of the home visiting process. *Healthy Families Garrett County* is currently funded from a variety of sources but was initiated with reinvested monies from the state of Maryland from savings incurred when Local Management Boards through the *Systems Reform Initiative* generated opportunities for children to stay in their local communities rather than be parceled out to out-of-home placements. In these cases, home visiting is only one part of a larger intervention where other services are expected to increase school readiness by providing access to health care and access to early education. For example, home visitors often administer home safety checklists, and help families to enroll for various community services such as insurance enrollment. HFGC practices the recommendation by Perroncel (2000) to increase collaboration between agencies providing early home visiting services as a means of potentially promoting school readiness by increasing service accessibility and opportunities for families.

Johnson and Knitzer, from the National Center for Children in Poverty specifically recommend promoting multiple prevention strategies targeted to all children, especially low-income children (2005). Among the many strategies endorsed, specific prevention

measures included: (1) maternal depression screening, (2) developmental risk screenings, (3) training providers who work with low income families in promoting parenting skills in understanding their babies, and (4) access to Medicaid/SCHIP (Johnson & Knitzer, 2005). HFGC is a perfect example of a program that provides these types of services. Home visiting programs should also be aware of the importance of being proactive, as in the case of HFGC, where providing services includes using extensive networks of referrals to acquire and literally deliver what families need. Although education is empowering, it is the proactive approach, which literally puts tools in the hands of families that was found, in this study to be the key predictor for families enrolled in the HFGC program.

- **Therefore, it is recommended that collaborative efforts be continued through a multi-tiered approach that accounts for home safety, family support, and infant development to promote optimal outcomes for school readiness.**

EVALUATION

Research-based evaluation tools are of crucial importance when considering long-term intervention and the potential impact on school readiness. Programs must implement protocols considered to be in wide usage in the early childhood field. Primary recommendations for the HFGC program center around program evaluation, as opposed to actual service delivery. *The primary evaluation recommendation is to use a widely recognized home environment measure that effectively examines parental knowledge.*

Although the KIDI does look at parental knowledge, it is not in standard usage in the field of early childhood and family studies and it is self-administered. Additionally, for this sample, the KIDI had been reduced from a 58-item scale to a 14-item scale, with no mechanism for identifying reliability and validity as the responses were not recorded by question. This is a substantial limitation in assessing the effectiveness of the program on enhancing parental knowledge, and tempers the importance of the significant path from duration to knowledge of infant development in this research. It would be advisable to use a scale where the home visiting worker can assess the family environment, using more recognizable instrumentation.

The Infant/Toddler HOME scale (Caldwell & Bradley, 1984) is designed for use during infancy (birth to age three). It is comprised of 45 items arranged in six subscales including (1) parental responsiveness, (2) acceptance of the child, (3) organization of the environment, (4) learning materials, (5) parental involvement, and (6) variety in experience. The scale requires 45-90 minute home visit by a worker trained in completion of the HOME scale to complete the assessment. The HOME has high test-retest reliability (.62 to .77 for total score) and high validity with HOME scores at 24 months correlating .72 with the 36-month Binet IQ scores (Bradley, 1982).

Alternatively, the Nursing Child Assessment Satellite Training Teaching Task Scales (Barnard, 1994) could be used to examine parent-child interaction in the home. The Nursing Child Assessment Satellite Training Teaching Task Scales (NCAST) is used by trained home workers to assess caregiver-child interaction during a semi-structured teaching setting in the home or child care setting. The assessment is used for children birth to 36 months and is currently in use in Early Head Start, where children are assessed at 24 months.

During the assessment, the parent or caregiver is asked to select a task that a child cannot do. Subsequently, parents are instructed to explain the task to the child and provide the child any necessary assistance in doing the task. Sumner and Speitz (1994) report that the NCAST is highly correlated with the HOME assessment with a range of .46 to .61. The internal consistency measures vary from .52 to .80 (Sumner and Speitz, 1994), with lower reliability for the Early Head Start variation (Bridges, et al., 2004). This scale has been used with rural populations (Horodynski & Gibbons, 2004), and may be an effective alternative to the HOME scale.

In addition, HFGC should administer the HOME annually, and with the addition of each new child in the family. The HOME assessment may or may not take place during the same visit that home safety is assessed. Although many parents did not have KIDI scores due to low frequency, there was still contact with a home visiting worker. Implementation of a more effective home measure on an ongoing basis strengthens the argument that HFGC makes a difference for increasing parental involvement and knowledge.

- **On the basis of this research, it is recommended that a new home environment or parental knowledge measurement be implemented.**

For every family where home visiting takes place, assessment of the parent-child relationship and the quality of home life should be monitored initially and in an ongoing fashion at regular intervals. In addition, the family stress scale used at intake should be readministered at least once, possibly at one year after service delivery. In this way, the effect of HFGC for reducing family stress could be examined. Given that mothers' health and well-being is instrumental to the well-being of their children, the Center for Epidemiological Studies Depression Scale (CESD) should be administered to all mothers within three to six months after the birth of the child, or another depression scale should be implemented to screen for post-partum depression.

- **Therefore, it is recommended that assessment measures be administered at regular intervals, to all families participating in home visiting services.**

In terms of evaluating school readiness, HFGC should make every attempt to determine if the percentage differences for school readiness are significant when comparing HFGC children to non-HFGC children. Although approval was not given to examine the effect of a non-HFGC control-group for this project, HFGC has contracted this information in the past. Looking at the differences between the treatment group and the children who are not in HFGC may result in compelling findings.

- **It is recommended, on the basis of this research, that HFGC conduct statistical testing to identify group differences between non-HFGC and HFGC participants in Garrett County.**

FUTURE RESEARCH

Positive outcomes resulting from participation in HFGC were observed by examining the school readiness scores of children served by the program in comparison to the aggregate results for Garrett County and the State of Maryland (See Tables 4 and 5). In addition, non-HFGC participant scores in Garrett County were analyzed by Case Consulting in 2005, for the Fall 2004 results and provided to HFGC, subsequent to this research project.

In all areas, with the exception of social and personal competence, the HFGC sample has a higher percentage of children fully ready for kindergarten than the state. The composite score is slightly lower than the rate for non-HFGC children in Garrett County, or Garrett county altogether, reflecting the slightly lower scores in the same ways for the social and personal competencies subscale as well as the fact that the composite is computed via a range of scores which is not evidenced by the composite. Notably, HFGC children scored above the non-HFGC children for the majority of subscale scores, including the subscales not included in the multivariate analyses of this project. HFGC children did have substantially higher scores in the area of physical health and development.

Results from the Fall 2004 and 2005 Work Sampling Scores demonstrate that HFGC participating children have higher scores than both Garrett County overall and the state of Maryland, with the exception of mathematical thinking. These observations are consistent with the results of the path analyses where mathematical thinking showed the smallest effect size; but physical health and development, which reveals substantially higher percentages of children fully ready in HFGC, as compared to state or county was the strongest path. Although language and literacy did not yield powerful effects from the participation in the home visiting program, the percentage of HFGC participants who are fully ready are considerably greater than for the county or state for both 2004 and 2005, as well as non-participants for both years, suggesting that HFGC participation positively impacts children's school readiness.¹

Results from the Fall 2005 Work Sampling Scores demonstrate that HFGC participating children have higher scores than both Garrett County overall and the state of Maryland, with the exception of mathematical thinking.

¹ Note: Maryland and Garrett County results provided by Maryland Department of Education, 2005 and 2006. Aggregated WSS results for HFGC and Non-HFGC children were provided by Case Consulting, LLC to the Garrett County Local Management Board in August, 2005 and March 2006. Statistical analyses of group differences between HFGC and non-HFGC participants could not be conducted because the University of Maryland did not have access to the individual cases for non-HFGC families.

Table 4: Percentage of HFGC, Garrett Cnty and MD Children “fully ready” Fall 2004

	Composite Score	Social and Personal	Language and Literacy	Mathematical Thinking	Physical Health and Development
HFGC Sample	62%	63%	60%	61%	80%
Non-HFGC in Garrett County	63%	64%	55%	57%	72%
Garrett County overall	63%	64%	57%	58%	75%
Maryland	58%	63%	48%	54%	72%

Table 5: Percentage of HFGC, Garrett Cnty and MD Children “fully ready” Fall 2005

SUMMARY

HFGC uses a model community approach, cooperating with local agencies to ensure that all families have ample opportunity to enroll in the program. Indeed, many of Garrett County’s families do enroll in HFGC as a result of this community cooperation. Finally, Garrett County’s families are accessed early in the child’s life. Program participation requires enrollment within the first twelve weeks post-partum. In this sample, 56% of cohort 1 families were enrolled prenatally, and 87% of cohort 2 families were enrolled prenatally, with the rest subsequently enrolled before the twelve-week cutoff point. HFGC is an ideal example of a program that uses all the National Center for Children in Poverty’s recommendations, with the added component of length of time.

HFGC incorporates the objectives established by the National Education Goals Panel for promoting school readiness. The multi-faceted program addresses the good health of children by implementing an extensive home safety checklist and by cooperating with other community agencies. Although rural children are historically underinsured (Bailey, 2004; Dunbar & Mueller, 1998; National Conference of State Legislatures, 2000); in this sample, 83.5% (n=137) were enrolled in the Maryland Child Health Insurance Program. HFGC children have the advantage of home enrichment that takes place through the home visiting program, and they have access to high quality early education as evidenced by the high participation rates in the county preschool program and Head Start. It is the comprehensive and collaborative approach of the HFGC program over a long period of time that made a positive difference for school readiness in this sample.

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