ENCYCLOPEDIA
on Early Childhood
Development

Impacts of Home Visiting Programs on Young Children's School Readiness

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January 2022, 2e éd. rév.

Introduction

Home visiting programs are designed and implemented to support families in providing an environment that promotes the healthy growth and development of their children. Programs target their services to families and caregivers in order to improve child development, enhance school readiness, and promote positive parent-child interactions. Although programs differ in their approach, populations served and intended outcomes, high-quality home visiting programs can provide child development and family support services that reduce risk and increase protective factors.

Home visiting programs addressing school readiness are most effective when delivered at the community level, through a comprehensive early childhood system that includes the supports and services that ensure a continuum of care for all family members across the early years. School readiness includes the readiness of the individual child, the school's readiness to support children, and the ability of the family and community to support early child development, health,

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and well being. In addition to home visiting services, appropriate referrals to community services, including to preschool programs, offer a low-cost universal approach that increases the chances of early school success. This comprehensive approach to home visiting as a part of a broad early childhood system has been identified as an effective strategy to help close the gap in school readiness and child well-being associated with poverty and early childhood adversity.[1,2]

Subject

Home visitation is a type of service-delivery model that can be used to provide many different kinds of interventions to target participants.[3,4] Home visiting programs can vary widely in their goals, clients, providers, activities, schedules and administrative structure. They share some common elements, however. Home visiting programs provide structured services:

1. in a home[a];
2. from a trained service provider;
3. in order to alter the knowledge, beliefs and/or behaviour of children and caregivers or others in the caregiving environment, and to provide parenting support.[5]

Home visits are often structured to provide consistency across participants, providers, and visits and to link program practices with intended outcomes. A visit protocol, a formal curriculum, an individualized service plan, and/or a specific theoretical framework can be the basis for activities that take place during home visits. Services are delivered in the living space of the participating family and within their ongoing daily routines and activities. The providers may be credentialed or certified professionals, paraprofessionals, or volunteers, but typically they have received some form of training in the methods and topical content of the program so that they are able to act as a source of expertise and support for caregivers.[6] Finally, home visiting programs are attempting to achieve some change on the part of participating families—in their understanding (beliefs about child-rearing, knowledge of child development), and/or actions (their manner of interacting with their child or structuring the environment, ability to provide healthy meals, engage in prenatal health care)—or on the part of the child (change in rate of development, health status, etc.). Home visiting also may be used as a way to provide case management, make referrals to existing community services including early intervention for those with delays and disabilities, or bring information to parents or caregivers to support their ability to provide a positive and healthy home environment for their children.[3,4,7]

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Problems

Data about the efficacy of home visiting programs have been accumulating over the past several decades. The federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program launched in the U.S. in 2012 and its accompanying national Mother and Infant Home Visiting Program Evaluation (MIHOPE) (which included 4 models - Early Head Start's Home-based option, Healthy Families America, Nurse-Family Partnership, and Parents as Teachers), and the Home Visiting Evidence of Effectiveness (HoMVEE) reviews has contributed much new data about program features, implementation, and impacts.[8-12] More of the research has used randomized controlled trial (RCT) or quasi-experimental designs, with multiple data sources and outcome measures, and longitudinal follow-up. These studies, along with older reviews, and recent meta-analyses have generally found that home visiting programs produce a limited range of significant effects and that the effects produced are often small.[4,13,14] Nevertheless, a review of seven evidence-based home visiting models showed all seven to have at least one study with positive impacts on child development and school readiness outcomes.[13] Detailed analyses, however, sometimes reveal important program effects. For example, certain subsets of participants may experience long-term positive outcomes on specific variables.[15,16] These results and others suggest that in assessing the efficacy of home visiting programs, it is important to include measures of multiple child and family outcomes at various points in time and to collect enough information about participants to allow for an analysis of the program effects on various types of subgroups. Averaging effects across multiple studies is currently seen as an inadequate approach to understanding what works for whom.[17]

Other difficulties when conducting or evaluating research in this area include ensuring the equivalency of the control and experimental groups in randomized controlled trials (RCTs),[18] controlling for participant attrition (which may affect the validity of findings by reducing group equivalence) and missed visits (which may affect validity by reducing program intensity),[19] documenting that the program was fully and accurately implemented, and determining whether the program's theory of change logically connects program activities with intended outcomes.

Research Context

Because home visiting programs differ in their goals and content, research into their efficacy must be tailored to program-specific goals, practices, and participants. (See also chapter by Korfmacher and coll.) In general, home visiting programs can be grouped into those seeking

medical/physical health outcomes and those seeking parent-child interaction and child development outcomes. The target population may be identified at the level of the caregiver (e.g., teen mothers, low-income families) or the child (e.g., children with disabilities). Some programs may have broad and varied goals, such as improving prenatal and perinatal health, nutrition, safety, and parenting. Other programs may have narrower goals, such as reducing the incidence of child abuse and neglect. Program outcomes may focus on adults or on children; providers frequently cite multiple goals (e.g., improved child development, parent social-emotional support, parent education).[10]

In this chapter, we focus on the effectiveness of home visiting programs in promoting developmental, cognitive, and school readiness outcomes in children. The majority of home visiting services and research have focused on the period prenatally through 2 to 3 years and thus have not measured long-term impacts on school readiness and school achievement, but some of the more recent studies have done follow up into elementary school. However, most of the available studies have examined the impact on these outcomes indirectly through changes in parenting practices and precursors to successful school success (i.e., positive behaviour outcomes including self-regulation and attention).

Key Research Questions

Key research questions include the following:

1. What are the short-term and long-term benefits experienced by participating families and their children relative to nonparticipating families, particularly for children's school readiness skills and parenting to support child development?
2. What factors influence participation and nonparticipation in the program?
3. Do outcomes differ for different subgroups?

Research Results

Recent advances in program design, evaluation and funding have supported the implementation of home visiting as a practical intervention to improve the health, safety and education of children and families, mitigating the impact of poverty and adverse early childhood experiences.[3] Although program approaches and quality may vary, there are common positive effects found on parenting knowledge, beliefs, and/or behaviour and child cognitive, language, and social-

emotional development. In order to achieve the intended outcomes, programs need to have clearly defined interventions and outcome measures, with a process to monitor quality.[20] Recent research has begun to focus on how measures to assess quality can be used to monitor programs and program improvement efforts.[21,22]

A review of seven home visiting program models across 16 studies conducted over a decade ago that included rigorous evaluation components and measured child development and school readiness outcomes concluded positive impacts on young children's development and behaviour. Six models showed favourable effects on primary outcome measures (e.g., standardized measures of child development outcomes and reduction in behaviour problems).[23] Only studies with outcomes using direct observation, direct assessment, or administrative records were included. More recent reviews also show relatively small effects on developmental outcomes, but authors noted that "modest effect sizes in studies concerning developmental delay can result in important population-level effects given the high proportion of children in low-income families (nearly 20%) meeting criteria for early intervention services".[3] A rigorous review conducted more recently in 2018 identified 21 home visiting models that met criteria of being an evidence-based model.[11] That review concluded that 12 of the models had evidence for favorable impacts on child development and school readiness outcomes. Recent and continuing research has been focusing on families with infants and toddlers living in poverty who are at higher risk for adverse early childhood experiences (ACES) that can lead to lifelong negative effects on physical and emotional health, and educational success.[3,24] For example, the Adverse Childhood Experiences study indicates that traumatic experiences in early childhood can have lifelong impacts on physical and mental health. Data from this study indicate that children with 2 or more adverse experiences are more likely to repeat a grade. Home visiting programs can mitigate the effects of toxic stress, enhancing parenting skills and creating more positive early childhood experiences.[24,25] This research points to the importance of targeted home visiting programs to families who are experiencing stress and a recent meta-analysis of home visiting with such families indeed shows decreases in both social-emotional problems and stressful experiences.[26]

Problems identified in earlier reviews completed in the 1990s still plague this field, however, including that many models have limited rigorous research studies. In many of the studies described in previous and more recent reviews and meta-analyses, programs struggled to enroll, engage, and retain families. When program benefits are demonstrated, they usually accrued only to a subset of families originally enrolled in the programs, they rarely occurred for all of a

program's goals, and the benefits were often quite modest in magnitude.[27] The generally small effects on outcomes averaged across studies have led researchers to call for precision home visiting research to look at what works for whom.[17,28] (Also see chapter by Korfmacher and coll.).

Research into the implementation of home visiting programs has documented a common set of difficulties across programs in delivering services as intended. (See also Paulsell chapter) First, target families may not accept initial enrollment into the program. Two studies that collected data on this aspect of implementation found that one-tenth to one-quarter of families declined invitations to participate in the home visiting program.[29,30] In another study, 20 percent of families that agreed to participate did not begin the program by receiving an initial visit.[19] Second, families may not receive the full number of planned visits. Evaluation of the Nurse Family Partnership model found that families received only half of the scheduled number of visits.[31] Evaluations of the Hawaii Healthy Start and the Parents as Teachers programs found that 42 percent and 38 percent to 56 percent of scheduled visits respectively were actually conducted.[29,32] Even when visits are conducted, the planned curriculum and visit activities may not be presented according to the program model, and families may not follow through with the activities outside of the home visit.[33,34] Recent research has begun to examine how technical assistance and training supports delivered to home visiting program supervisors and home visitors can improve model fidelity.[35] (See Paulsell chapter.) In a review of home visiting research in the 1990s, Gomby, Culross, and Berman[27] found that between 20 percent and 67 percent of enrolled families left home visitation programs before the scheduled termination date. More recent studies continue to show a persistent problem with families leaving the program and not engaging in visits as intended by program developers. For example, in the MIHOPE evaluation, about 28% of families left MIHOPE home visiting programs within six months, while about 55% were still receiving about two visits per month after a year.[9] With only about half of families remaining after one year, many families were only receiving half of the intended number of visits.[8] Studies of Early Head Start also show that families with the greatest number of risk factors are the most likely to drop out which was also observed in the recent MIHOPE study.[36]

The assumed link between parent behaviour change and improved outcomes for children has received mixed research support. In other words, even when home visitation programs succeed in their goal of changing parent behaviour, these changes do not always appear to produce significantly better child outcomes in the short term, but in some cases appear to have an impact in the long term.[37,38] Examples include a study of the Home Instruction Program for Preschool

Youngsters (HIPPY) model with low-income Latino families showing changes in parenting practices and better third-grade math achievement and positive impacts on both math and reading achievement in fifth grade.[39,40] Earlier evaluations of HIPPY found mixed results regarding program effectiveness. In some cohorts, program participants outperformed nonparticipants on measures of school adaptation and achievement through second grade, but these results were not replicated with other cohorts at other sites.

Both older and more recent reviews of home visiting programs described above included only studies using rigorous designs and measurement and a number of models show significant impacts on child development and school readiness outcomes. The Early Head Start model used a RCT design to study the impact of a mixed-model service delivery (i.e., center-based and home-visiting) on developmental outcomes at 2- and 3-year follow-up. Overall, there were small, but significant gains on cognitive development at 3 years, but not 2 years. More recent Early Head Start evaluations find positive impacts at ages 2 and 3 on cognition, language, attention, behaviour problems, and health and on maternal parenting, mental health, and employment outcomes, with better attention and approaches toward learning and fewer behavior problems at age 5 than the control group, but no differences on early school achievement.[41] Nonexperimental follow-up showed, however, that those children who went on to attend preschool after EHS did have better early school achievement. Studies of the Nurse Family Partnership model followed children to 6 years and found significant program effects on language and cognitive functioning as well as fewer behaviour problems in a RCT study.[42] In addition, evaluations of Healthy Families America have shown small, but favourable effects on young children's development.[43,44]

Home visiting programs focusing on supporting parents' abilities to promote children's development explicitly appear to impact children's development positively. One meta-analysis found that programs that taught parent responsiveness and parenting practices found better cognitive outcomes for children.[4] A meta-analysis of RCTs found that the most pronounced effect for parent-child interactions and maternal sensitivity can be improved in a shorter period of time, where effects of interventions on child development may take longer to emerge.[45] Several studies find longer-term impacts on parenting and associated positive effects for child outcomes. In a RCT of a New York Healthy Families America program, the program reduced first grade retention rates and doubled the number of first graders demonstrating early academic skills for those participating in the program.[2] And at least one recent longitudinal study of Parents as Teachers found positive school achievement and reduced disciplinary problems in early

elementary school along with increased scores on parent measures of interactions, knowledge of child development, and family support.[46]

Other studies were unable to document program impacts on parenting and home environment factors that are predictive of children's early learning and development through control group designs. An evaluation of Hawaii's Healthy Start program found no differences between experimental and control groups in maternal life course (attainment of educational and life goals), substance abuse, partner violence, depressive symptoms, the home as a learning environment, parent-child interaction, parental stress, and child developmental and health measures.[43] However, program participation was associated with a reduction in the number of child abuse cases.

Other models show mixed impacts. A 1990's RCT evaluation of the Parents as Teachers (PAT) program also failed to find differences between groups on measures of parenting knowledge and behaviour or child health and development.[32] Small positive differences were found for teen mothers and Latina mothers on some of these measures. However, another RCT study with the Parents as Teachers Born to Learn curriculum did find significant effects on cognitive development and mastery motivation at age 2 for the low socioeconomic families only.[47] Furthermore, a more recent RCT in Switzerland found that children receiving the PAT program had improved adaptive behavior and enhanced language skills at age 3 with the most high-risk children also having reductions in problem behaviours.[48] A randomized controlled trial of Family Check-Up demonstrated favourable impacts on at risk toddlers' behaviour and positive parenting practices.[49]

Randomized controlled trials (RCTs) have also shown that programs are more likely to have positive effects when targeted to the neediest subgroups in a population. For example, in the Nurse Family Partnership model children born to mothers with low psychological resources had better academic achievement in math and reading in first through sixth grade compared to their control peers (i.e., mothers without the intervention with similar characteristics).[50,51] (See also updated information in the Donelan-McCall & Olds chapter).

The largest RCT of a comprehensive early intervention program for low-birth-weight, premature infants (birth to age three), the Infant Health and Development Program, included a home visiting component along with an educational centre-based program.[52] At age three, intervention group children had significantly better cognitive and behavioural outcomes and improved parent-

child interactions. The positive outcomes were most pronounced in the poorest socioeconomic group of children and families and in those who participated in the intervention most fully. In follow-up studies, improvements in cognitive and behavioural development were also found at age 8 and 18 years for those in the heavier weight group.[53] The Chicago Child-Parent Center Program also combined a structured preschool program with a home visitation component. This program found long-term differences between program participants and matched controls. Participating children had higher rates of high-school completion, lower rates of grade retention and special education placement, and a lower rate of juvenile arrests and impacts lasting into adulthood.[54-56] Another example showing more intensive programming has larger impacts is the Healthy Steps evaluation showing significantly better child language outcomes when the program was initiated prenatally through 24 months.[57] Early Head Start studies cited earlier also show that combining home visiting with later preschool attendance will yield better school readiness impacts than home visiting alone. Finally, there is a need to look at how home visiting could be beneficial for improving school outcomes when combined with a preschool program as in a recent study with families in Head Start programs that found reduced need for educational and mental health services in third grade.[58] These studies suggest that a more intensive intervention involving the child directly may be required for larger effects on school readiness to be seen with home visiting as one part of a more comprehensive approach.

Conclusions

Research on home visitation programs has not been able to show that these programs alone have a strong and consistent effect on participating children and families, but modest effects have been repeatedly reported for children’s early development and behaviour and parenting behaviours and discipline practices. Programs that are designed and implemented with greater rigour seem to provide better results. Home visitation programs also appear to offer greater benefits to certain subgroups of families, such as low-income, single, teen mothers.

These conclusions support recent attention to use of research designs that look at more differentiation of the program models and components to match the needs of the families aimed at improving child development and other outcomes. Precision home visiting uses research to identify what aspects of home visiting work for which families in what circumstance, resulting in programs that target interventions to the needs of particular families.[17]

Future research needs to examine the role of evidence-based home visiting within a more comprehensive system of services across the first five years of life. It can be an initial cost - effective strategy to build trusting relationships and support early positive parenting that will improve children's development over the long run because families will have increased likelihood of enrolling their children in preschool programs and use other needed child and family supports.

Furthermore, efficacy research needs to include longitudinal designs and simultaneously include cost-benefit studies to demonstrate the long-term cost savings that will build public support for both early home visiting programs and a more comprehensive early childhood system.

The recent Covid-19 pandemic brought to light the disparities and inequities of our early childhood service systems (as well as our later education systems). This state of affairs also has reinforced the benefit of more authentic participatory approaches in research and evaluation to identify what works and for whom. Research and evaluation that includes various stakeholders, from those who are affected by an issue to those that fund the programs, promises to provide insights and perspectives that can strengthen the impact of home visiting programs.

Implications

Programs that are successful with families at increased risk for poor child development outcomes tend to be programs that offer a comprehensive focus—targeting families' multiple needs—and therefore may be more expensive to develop, implement, and maintain. In their current state of development, home visitation programs alone do not appear to represent the low-cost solution to child health and developmental problems that policymakers and the public have hoped for for decades. However, as the field continues to research more precision approaches that match program components to child and family needs, add the needed assistance and professional development supports to ensure model fidelity, and incorporate home visiting programs within a comprehensive early childhood system across the first five years of life, more consistent and positive results for participating target families are to be expected.

For high risk families with multiple challenges and levels of adversity, home visiting programs can serve to encourage families to take advantage of preschool programs available to them and their children and increase their participation in other family support programs during the preschool through 3rd grade years[59] to further support school readiness outcomes.

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Note:

[a] Services are brought to the family and settings may include the family's home, or another mutually agreed upon location such as community center, park, or public library. More recently, due to the pandemic, programs have relied on virtual methods or conducting a home visit remotely via digital devices.