Home Visitation Programs for At-risk Young Families
A Systematic Literature Review

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ABSTRACT

Background: This systematic literature review is stimulated by the perceived need of investigator, practice and policy stakeholders for a complete but parsimonious summary of key elements of programs that use home visitation for at-risk young families as the major delivery method.

Objectives: To describe the program components, practices, outcomes, and reliability of the evaluation approaches.

Methods: Computer and hand searches of literature were carried out. Reports of established programs, from the last five years, that describe home visitation services to at-risk families were included. A comprehensive data collection tool was used in the analysis of the findings.

Findings: Improvements over the previous five years were seen in the following areas: use of early intervention model, inclusion of comparison groups and adequate sampling.

Discussion: Challenges remain in development, targeting and reporting of home visitation practice, overall lack of impact, differential effects by program site, retention of participants and appropriate measurement.

Home visitation has become a popular programming approach targeting the developmental needs of infants and preschoolers living in risky situations. Program variation and unevenness of evaluation makes a quick assessment of efficacy impossible. A parsimonious, complete description of current home visitation programs is required. The objectives of this systematic review are to systematically describe: the program components, the practices, the outcomes, and the reliability of the outcomes. Established programs that use home visitation as a primary service delivery method and have evidence of uptake or transfer are included. The populations of interest are childbearing and childrearing families at risk, up to and including the preschool years, excluding families with low birthweight/pre-term infants, or infants and children with special needs. Families at risk are defined as families with a risk condition present in the family or the family’s environment that predisposes children for developmental delay.

METHODS

Computerized searches of CINAHL, ERIC and MEDLINE were carried out. Key search terms included home visitation, healthy families, nurse visitor, paraprofessionals, and child abuse. Reports to funders and journal manuscripts published between 1995 and 2000 were included.1-7,9,10,12-15,17-19,21-33 Descriptions of programs and home visitation practices, not included in the recent publications,8,11,16,20 were sought in past literature. Government documents, program reports, published bibliographies, and reference lists from six previously published literature reviews on aspects of home visitation were hand searched.1-7 Conferences and workshops focusing on home visitation were attended and relevant abstracts and papers reviewed. Key informants were contacted to locate both published and unpublished papers.

These sampling methods yielded 33 published program evaluations and 3 evaluation reports to government and/or funding agencies. Of the 36 program evaluations, 10 articles describe aspects of the Nurse Home Visitation Program. Of those 10, 3 were selected since they include: the most complete description of the program and original evaluation; the most recent
findings, and a comparative description of program implementation using nurses and paraprofessionals. In summary, 14 articles and reports of 9 programs met the inclusion criteria for the systematic review. Program names, number of sites, primary author, dates, and the sources of the reports are described in Table I.

Data collection
Data collection criteria were developed to assess the 9 programs and are described in Tables II and III, based on information from reviews and concept papers identifying the rules of inference used for each criterion. A rating system for each criterion was developed where the most desirable conditions within the criteria were assigned the largest number. The data collection tool is available from the authors upon request.

FINDINGS
Findings are presented according to the objectives: program components (model, objectives, program targets, delivery methods); home visitation practices (visitor type, supervision, dose, consideration of client conditions, tool box of practices); program outcomes (successes and challenges); and reliability of the evaluation (evaluation approach, evaluation design, sample, assessment of program attrition, measurement).

Program components
In addition to enhancing child development, 8 of 9 programs had at least one of the following objectives: building maternal health and life-course competence; enhancing parent and family skill; optimizing parent-child interaction; preventing child neglect and abuse; providing primary health services; and providing social support. The use of a conceptual model should increase the likelihood of cohesive program implementation and valid evaluation planning. About half of the programs articulated a model and used it to link objectives to expected outcomes. The models are simple and do not help to direct programming to mediate expected goals.

Selection of the intervention level, population and environmental target of programs influenced delivery methods, home visitation practice and evaluation. None of the programs were targeted universally. Because most are designed for families at risk, screening was a common program activity. Some programs were available to families with identified risks and usually confirmed occurrence of child neglect or abuse. In these programs, developing relationships with child welfare agencies often became a challenge. Overall the programs were targeted early in childhood toward childbearing and early childrearing families.

Direct child development program approaches focused on the child while indirect program approaches intervened in selected environments of the child. Higher performing children benefit more from direct intervention, while lower performing children benefit more from mediated supportive interventions. Most of the programs in this review were directed to the family environment. Community involvement in the programs was limited to functioning as a referral source and/or object. The selected programs did not plan approaches at the community or societal level.

The added value of case management or referral brokering to home visitation programming was often not clear. However, follow-up programming for preschoolers was thought to be effective. Most of the programs in this review use home visitation plus case management. No transition planning or follow-up programming is evident.

Home visitation practices
Well-described home visitation practices facilitate replication and effective transfer to new settings. In order to contribute to the debate concerning the preparation required by home visitors, an accurate description of visitor preparation, training and supervision is required. More than two thirds of the programs employ trained paraprofessionals as home visitors. Supervision was required to prevent drift from program protocols, preserve objectivity, provide support to home visitors and enhance professional growth. Supervision workload and approaches were not described in most of the programs and when described, the contribution to the program outcomes was not analyzed or commented on.

It is likely that only an intensive intervention of sufficient duration will overcome the biases of home visitation prac-
tices against positive results. The majority of programs plan for home visits over more than two years. Intensity in programs can be evaluated through examination of the number of visits planned and the number executed over the duration of the program. Less than half report both of these data, and the number of visits delivered always fell short of the expected number. The best result was in the Nurse Home Visitation Program where 50% of planned visits were completed. In the comparison of nurses to paraprofessionals, nurses completed 51% and paraprofessionals completed 40% of the planned visits.

Home visitation programming must address factors that contribute to the nature of the at-risk conditions in families, cultural beliefs and practices, and barriers that prevent access to home visitation services. These factors might be taken into consideration through: staffing, targeting, and ordering or focusing visitation practices. Limited numbers of programs describe actual efforts in these areas. Clear and accessible descriptions of home visitation practices facilitate replication and increase the likelihood of successfully linking outcomes to program elements. Only two programs have clearly...
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The relationship between the practices in the program and the objectives were articulated in about half of the programs. Quality control of practices contributes to consistency of outcome but few programs describe these controls. Systematic paper audit and frequent observation of home visits by supervisory personnel were the methods of choice.8,25-27,33

Program outcomes

Program successes were classified by outcome objective. Seven programs reported on maternal health and life-course competence. The findings range from regression in aspects of maternal health through no findings, to some changes in physical (i.e., decreased injury due to partner violence; increased time between pregnancy; improved prenatal care) and/or psychological variables (i.e., reduced parental stress). Six programs reported in the area of enhancing parental skill and/or parent-infant interaction. Findings range from no change to small improvements (i.e., parent knowledge and attitudes) to significant differences (i.e., decreased hazards in the home, increased use of nonviolent discipline). All of the programs reported findings in the area of healthy child development. Findings range from no difference, through mixed findings (i.e., cognitive, physical or social development, birth outcomes). Five programs targeted the prevention of abuse and neglect.25,26,28,30,33 One showed a reduction in verified cases of abuse in one program site only. Five programs had objectives to improve primary health services. Findings were mixed, ranging from no difference through to some success linking families to physician’s care.28,30 Mixed success was reported in areas such as improving immunization. Finally, only one of four programs targeting social support reported a change from low to normal support.33

The major challenges to program effectiveness included: lack of overall impact, differential effects by program site and/or difficulties tailoring the program to the community, retention of family participants, maintenance of intensity of the program, turnover of home visitors, cultural bias in measures, and drift of program focus from building adaptation to focusing on risks.

Reliability of the evaluation

Investigator, policy, and practice experts in healthy child development require different information.22 Policy-makers want practical answers, practitioners require explication of practices used, and investigators are interested in what is known and not known. Evaluation of outcomes is required for functional assessment of utility by policy-makers. Documentation of program implementation is required for successful transfer of program elements to new sites. In most of the evaluations, both types of evaluation were implemented although exhaustive descriptions of actual practices were scarce.

Random assignment to program or control group provided the most accurate estimate of home visitation effects.23 Control or comparison group designs with some form of randomization, usually random and concealed, were used in most of the evaluations. Because non-significant find-

### TABLE III

Reliability of the Evaluation Criteria by Rating Scale and Outcome

<table>
<thead>
<tr>
<th>Evaluation Approach</th>
<th>Outcome</th>
<th>Rating Scale</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Formative evaluation only</td>
<td>0</td>
<td>Measurement</td>
<td></td>
</tr>
<tr>
<td>2. Summative evaluation only</td>
<td>3</td>
<td>Quality of Measure*</td>
<td>1</td>
</tr>
<tr>
<td>3. Combination of summative and formative evaluation implemented</td>
<td>6</td>
<td>1. Untested</td>
<td>1. Proxy measure of objective</td>
</tr>
<tr>
<td>Design*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Quasi experimental</td>
<td>4</td>
<td>2. Normed or tested on dissimilar sample</td>
<td>2</td>
</tr>
<tr>
<td>2. Nonrandom, or inadequate masking of assignment</td>
<td>1</td>
<td>3. Normed or tested on similar sample</td>
<td>7</td>
</tr>
<tr>
<td>3. Quasi random (stratification or mid-study adjustment)</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Random and concealed to prevent manipulation</td>
<td>4</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Sample Size                  |         | Blinded Data Collection |         |
|------------------------------|---------|1. Investigator collected| 1       |
| 1. Less than half of the participants | 2       | 2. Interventionist collected | 1       |
| 2. More than half of the participants | 2       | 3. Disinterested but not blinded collector | 2       |
| 3. All participants          | 5       | 4. Blinded collector    | 5       |

| Assessment of Attrition      |         |             |         |
|------------------------------|---------|1. Group differences not reported | 7       |
| 2. Group differences and reasons for attrition reported | 2       | 2. More than half of the participants | 2       |
| 3. Group differences reported and analyzed or no group differences detected | 0       |             |         |

* some programs qualify for more than one rating criteria, hence outcome entries do not add to nine

### TABLE IV

Number of Programs Using Proxy and Direct Measures by Program Objective

<table>
<thead>
<tr>
<th>Program Objective (Number of programs that target the objective)</th>
<th>Number of Programs Using Proxy Measures</th>
<th>Number of Programs Using Direct Measures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maternal health and life course competence (5)</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Parental skill and/or *Parent-infant interaction (6)</td>
<td>6</td>
<td>3</td>
</tr>
<tr>
<td>Healthy child development (9)</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>Prevention of abuse and neglect (5)</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Primary health services (5)</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>Social support (4)</td>
<td>0</td>
<td>4</td>
</tr>
</tbody>
</table>

* Parent-infant interaction was not measured in every program that targeted it as an outcome
ings cannot be attributed solely to ineffective interventions when the sample is small or the targeted outcome is rare, as in reduction of child abuse, evaluations should include all participants in the evaluation. Most of the evaluations included over half or all of the program participants. Attrition from home visitation programs can be as high as 67%. Even when intention-to-treat approaches are employed, attrition can reach 48%. Follow-up of 80% of enrolled participants in both program groups and comparison groups is desirable if program outcomes are to be seen as reliable. Most of the evaluations do not report differences between participants retained and those lost to attrition on any variables. When group differences were reported, analysis of probable sources was neglected. Measures that are reliable and relate to the program objectives are more likely to give policy-relevant information. Table IV shows the blending of proxy and direct measures by program objectives. Parental measures by program objectives. Parental measures by program objectives. Goal level) and ensured through adequate supervision and monitoring. Measures selected for program evaluations have improved dramatically from the previous five years of publications. The continued use of attitudinal and perceptual measures as proxies for behavioural outcomes and the general dearth of positive findings from their application are disappointing. Two measurement issues therefore arise. First, measures designed for stable estimates of child development in healthy infants (the target in 8 of 9 programs) are not likely to produce findings of significant developmental delay in the early months of life. Only after locomotion and speech has developed will significant problem child behaviours in cognitive and social competence become apparent. Second, the need to delineate and use sensitive measures of short- and medium-term mediators of healthy child development is apparent.

**REFERENCES**

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Received: May 2, 2001
Accepted: October 17, 2001

Quand la maladie d’Alzheimer a frappé Rita Hayworth, on ne pouvait pas faire grand-chose pour l’ aider.

Aujourd’hui, il y a de l’espoir.

Si vous ou un de vos proches oubliez toutes sortes de choses de plus en plus souvent, c’est peut-être à cause de la maladie d’Alzheimer. Le diagnostic de la maladie d’Alzheimer est plus facile et il existe des traitements et de l’aide pour vivre avec la maladie. Voyez un médecin le plus tôt possible et communiquez avec votre Société Alzheimer locale ou visitez notre site web: www.alzheimer.ca

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Société Alzheimer
L’aide d’aujourd’hui. L’espoir de demain.