Home Visiting Programs for Deaf or Hard of Hearing Children: A Systematic Review

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Abstract

Purpose: To explore the quality and strength of evidence available for home visiting programs seeking to improve outcomes in the Child Development and School Readiness domain using an evidenced-based approach.

Background: The Home Visiting Evidence of Effectiveness (HomVEE, DHHS) program has identified 12 home visiting models that focus on improving Child Development and School Readiness. We sought to evaluate the strength and quality of evidence supporting these home visiting intervention programs specific to children who are deaf or hard of hearing and their families.

Method: We employed the following five steps in this study:
1. Developed a question specific to children who are deaf or hard of hearing and their parents using the PICO framework
2. Conducted a systematic literature search to identify relevant studies
3. Examined titles and abstracts to eliminate irrelevant studies
4. Abstracted data for evidence tables of remaining studies meeting inclusion criteria
5. Critically appraised studies by grading quality and strength of evidence

Results: Evidence-based home visiting programs that offer the best fit for children who are deaf or hard of hearing and their families (due to the target population served, target outcome domain, education required for home visitors, and curriculum) include:
- Early Head Start Home Visiting (EHS-HV)
- Parents as Teachers (PAT)
- Play and Learning Strategies (PALS)

None of the peer-reviewed research studies identified for these three intervention programs reported outcomes for children who are deaf or hard of hearing. We identified two home visiting models specific to children who are deaf or hard of hearing and their families (i.e., Colorado Home Intervention Program and Project ASPIRE) as ‘promising practices’.

Conclusion and Implications: Rigorous empirical evidence is limited at best, and represents an opportunity for the development of a named home intervention model with new or existing curricula coupled with a systematic approach to collection of outcome data for the purpose of generating evidence to support and inform best practices in home visiting for children who are deaf or hard of hearing.

Systematic Review Process

**STEP ONE**

The PICO acronym stands for:
- **P** = patient, problem, or population
- **I** = intervention
- **C** = comparison, control or comparator
- **O** = outcomes

**STEP TWO**

Search terms from the PICO framework were used systematically in identified databases to identify evidence published in peer-reviewed journals.

The following databases were used in this study with search strings developed by the research librarian.
1. Academic Search Elite
2. CINAHL Plus with Full Text
3. ERIC
4. Cochrane Central Register of Controlled Trials
5. Cochrane Database of Systematic Reviews
6. Cochrane Methodology Register
7. PsycINFO
8. Psychology and Behavioral Sciences Collection
9. PubMed
10. SociINDEX with Full Text
11. Web of Science

**STEP THREE**

Duplicates were removed from the aggregated list of citations, the titles and abstracts of the identified articles were checked against pre-determined criteria for eligibility and relevance.

**EXCLUSION CRITERIA**

Studies were excluded from this study for the following reasons:
- Primary service delivery strategy not used (Home Visiting)
- Eligible study design not used (randomized controlled trial, quasi-experimental design, and implementation study)
- Eligible target population not used (families with children from 0 – 5 served in a developed-world context)
- Data in eligible outcome domain not available (Child Development and School Readiness)
- Did not examine a named home visiting model
- Study not published in English

**INCLUSION CRITERIA**

Home Visiting Models must meet at least one of the following criteria:
- At least one high- or moderate-quality impact study of the model finds favorable, statistically significant impacts in the outcome domain
- At least two high- or moderate-quality impact studies of the model using non-overlapping analytic study samples with one or more favorable, statistically significant impacts in the same domain

**STEP FOUR**

The quality of the identified research studies were rated for quality and strength of evidence using the following criteria:
- High – Consistent results from well-designed studies in representative populations that assess the effect of the service on outcomes
- Mod – Evidence is sufficient to determine the effects of the service, but confidence is limited. The conclusion might change as more information becomes available
- Low – Evidence is insufficient to assess the effects of outcomes

**STEP FIVE**

Data was synthesized, key components extracted, and results summarized in evidence tables.

**Results**

The Preferred Reporting of Items for Systematic Reviews and Meta Analyses (PRISMA) flowchart published by Moher, Liberati, Tetzlaff and Altman (2009) was used to present search results.

**Summary**

Fifteen research studies were identified as meeting the DHHS criteria for evidence of effectiveness. Two of the five ‘named’ home intervention models were identified specific to children who are deaf or hard of hearing and their families met the criteria.

Results for the Colorado Home Intervention Program (CHIP) revealed eight (Ni=8) research studies published consistently over the past 20 years using research methodology rated as moderate evidence. Outcome measures used in these studies included the Minnesota Child Development Inventory (MCDI) and the MacArthur Communication Development Inventory: Expressive Vocabulary (MCDI – EV) and Receptive Vocabulary (MCDI – RV) subscales.

Results for Project ASPIRE revealed two (Ni=2) research studies published in the past five years using research methodology rated as high (Ni=1) and moderate (Ni=1) evidence. The outcome measures for these studies were those provided by the Language Environment Analysis (LENA) system.

**Conclusions**

Two of the five home visiting models we reviewed met the DHHS criteria for outcomes in the domain of Child Development and School Readiness (i.e., communication development). Ten studies contributed supporting evidence for these two home visiting models specific to children who are deaf or hard of hearing and their families (i.e., Colorado Home Intervention Program and Project ASPIRE).

Only one of these models has multiple published studies demonstrating long-term sustainability with statewide implementation; adherence to EHDI principles as outlined by the JCIH; and comprehensive service delivery from identification through early childhood education via a seamless system of service delivery.

Rigorous empirical evidence is limited at best, and represents an opportunity for the development or application of a ‘named’ home intervention model with new or existing curricula (i.e., Play and Learn Strategies) coupled with a systematic approach to collection of outcome data for the purpose of generating evidence to support and inform best practices in home visiting for children who are deaf or hard of hearing.

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