Scoping literature review

# Key elements of sustained child health home visiting programs for vulnerable families in Australia: a scoping review


## Abstract

**Objectives** To identify evidence underpinning key elements that contribute to best practice models for sustained child health home visiting for families with vulnerabilities in Australian settings.

**Background** A comprehensive literature review conducted by the Australian Research Alliance for Children and Youth (ARACY) in 2012 identified that evidence to support a best practice child health home visiting model in Australia was lacking or contradictory. Home visiting programs require a rigorous evidence base to support the inclusion of key elements necessary to promote optimal outcomes for families experiencing parenting challenges.

**Study design and methods** This scoping review utilised the nine-step Joanna Briggs Institute scoping review framework. PubMed, CINAHL, Maternity and Infant Care, Google Scholar and government sites were searched for eligible publications between January 2011 and December 2019 that reported on Australian-based home visiting programs provided by child health nurses aimed to support families with vulnerabilities.

**Results** The importance of factors associated with effective programs, identified in the original ARACY reviews, were reinforced, together with key program elements including – a positive nurse relationship, family partnership, information tailored to the family's needs, continuity of carer, and programs targeted to families most likely to benefit. Being embedded in universal services, program flexibility and nurse availability and responsiveness were also identified as key elements by contemporary programs.

**Conclusion** This review identified contemporary evidence supporting key elements for successful home visiting programs and demonstrated the importance of maintaining program content and intervention fidelity in order to achieve intended outcomes.



Keywords child health, home visit, Australia, infant, nurse home visiting

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## Summary of relevance

### *What is already known about the topic*

- An Australian Research Alliance for Children and Youth (ARACY) review of sustained home visiting programs which aimed to identify a best practice national home visiting program within Australia found evidence was lacking or contradictory.[1]
- Sustained home visiting programs are used across Australia to provide support to 'at risk families'; however, not all programs have strong evidence to support their ability to reduce poor infant health outcomes.[1]
- Australian families continue to face challenges with issues of domestic violence, poverty, decreased childhood immunisation rates, rising childhood obesity, and increased development and learning vulnerability.[2–4]

### *What this paper adds*

- Key elements for successful home visiting programs identified by ARACY in 2012 were reinforced.
- Contemporary evidence supporting key elements of successful programs within Australia was identified.
- Evidence to support best practice models and specific gaps in the literature relating to factors that influence contemporary Queensland child health models of care were highlighted.

## Introduction

Any policy or program which connects with children and their families provides an opportunity to improve long-term health outcomes. A scoping review to identify contemporary evidence to support key elements that contribute to successful models of care for child health sustained home visiting programs within Australia will be presented. The rationale underpinning this review of contemporary literature, based on evidence gathered from the Queensland Family CARE (Community-based Assistance Resourcing and Education) research project[5–8] and the work of ARACY[1,9,10] in attempting to establish key factors in child health program success, is provided.

Targeted child health programs are frequently referred to in the literature as 'sustained' home visiting programs to illustrate that these targeted programs are conducted over a period of time. The nomenclature of 'sustained' targeted rather than 'targeted' will be used to illustrate the concept of sustained programs where relevant in this review. For the purpose of this paper, the term 'key element' will be used to illustrate a program factor or component which contributes to making it effective in achieving intended outcomes, essentially, 'what makes it work'.

## Background

The majority of Australian children are healthy, safe and living well.[11] During the last decade, infant and child death rates, maternal smoking and rates of children in youth justice have decreased, while children achieving at or above national standards for literacy and numeracy have improved.[11] However, the 2019 *Australia's children* report highlighted that further work is still needed to optimise outcomes for the individual child and their family, society and potentially future generations.[11]

Scope for improvement has been identified in maternal smoking and alcohol consumption during pregnancy, breastfeeding duration, infant and child immunisation rates, childhood obesity, and hospitalised child injury.[11] While the proportion of children who are reported to be developmentally vulnerable has decreased slightly from 23.6% to 21.7% between 2009–2018, more than one in five Australian children are still vulnerable on one or more developmental domains which have been demonstrated to predict a child's outcome in health, wellbeing and academic success.[4]

Many families continue to face parenting challenges. Over one in five Australian women (23%) are reported to have experienced partner violence; 65% of this happens in the home and children that witness domestic violence are 2–4 times more likely to experience domestic violence as adults.[2] The early identification of domestic violence is therefore a key principle in government strategies to target domestic violence and includes initiatives such as domestic violence screening in antenatal clinics and during postnatal periods.[12]

A considerable proportion of children are living in households with parents who are unemployed, and 17% of children are living in households earning less than half the national average, increasing children's experience of poverty.[3] Poor mental health outcomes are associated with risk factors including domestic violence and socioeconomic disadvantage.[13]

Home visiting programs designed to assist families with identified vulnerabilities are key strategies underpinning the domain of *Confident and capable families* outlined in the people-centred model used for the *Australia's children* report.[11] In 2012, ARACY conducted a literature review of home visiting programs designed to support vulnerable families with the intention to identify and assess the successful components of these home visiting programs in order to inform the development of a national home visiting program for the Australian context.[1] Studies for inclusion were based on methodology (systematic reviews and meta-analyses and randomised controlled trials) and/or specific settings of interest (Australian settings) and included programs based in the United States, New Zealand, United Kingdom and Australia, including the Queensland home visiting trial also known as the Family CARE research project.[1]

Factors associated with successful programs included a professional skilled workforce, antenatal visits, a greater number of visits over a longer period, and an achieved recruitment of the target population, i.e. program involvement by families for whom the program was designed and who were most likely to achieve the expected outcomes of the intervention. The authors concluded that recommendations for a national model of care were not able to be made, as available evidence to support key components was either lacking or contradictory[1], and suggested that each sustained home visiting program needs to be evaluated on the program's ability to achieve its outcomes against its intentions.[1]

A complementary review by ARACY explored methods of engaging with families, especially those experiencing social vulnerabilities, to determine which were the most effective.[10] Key findings of this review highlighted that *how* services are provided are as important as *what* is provided. Elements that were identified as necessary for effective programs were described as being relationship-based, involving partnerships between professionals and parents, targetting goals that parents see as important, providing parents with choices regarding strategies, building parental competencies, being non-stigmatising, demonstrating cultural awareness and sensitivity, and maintaining continuity of care.[10]

In Australia, each state and territory continues to provide maternal and child home visiting programs using eligibility criteria which demonstrate considerable variation, even in programs originating from the same foundation[5–8,14], and may or may not have built-in evaluation processes in place. An example of such a program is the Family CARE program which was developed from the findings of the Family CARE research project conducted over two decades ago in Queensland.[5–8]

Initial evaluations of this home visiting program designed for families with specific vulnerabilities reported short-term improvements in parenting competence, experience and capacity, significant reduction in maternal postnatal depression and parental smoking, improved mother–infant attachment, increased immunisation status, and improved satisfaction in child health service providers.[5–6,8] However, at 12 and 18 months no statistically significant outcomes between the intervention and comparison families were identified.[8,14]

The Family CARE program, implemented into child health services in some Queensland regions following the original study[5–8], was designed as a structured home visiting program to enhance family engagement over a 12-month period to maximise protective factors during pregnancy and the first year of an infant's life. The program was later trialled as an augmented program, Family Care and Parents Under Pressure – Babies, which demonstrated positive results in reducing postnatal depression scores and establishing greater contact between families and community health services.[15] The original Family CARE program has since been adapted within maternal and child health services in Queensland, with variations in target group, eligibility criteria and program duration, yet with little or no evaluation in place over the past 2 decades to ensure program intentions achieved intended outcomes for families with vulnerabilities.

The ARACY review of targeted home visiting programs in 2012 highlighted the widening disparity between families that function well and those with vulnerabilities, and concluded that the components of home visiting programs were inconsistent, unsubstantiated or lacked rigour[1]. McDonald and colleagues recommended that home visiting programs be evaluated on their ability to achieve outcomes based on program intentions.[1]

This scoping review will evaluate evidence emerging during the last decade to identify key elements necessary for successful home visiting programs in order to supplement the comprehensive ARACY reviews conducted in 2012.[1,10] The aim of this scoping review was therefore to identify contemporary evidence to support best practice home visiting models that support families with vulnerabilities in Australia.

## Methods

The Joanna Briggs Institute guidelines on conducting systematic scoping reviews were used in this review.[16] Scoping reviews allow the rapid assessment of available primary research on a focused topic, to explore the extent and breadth of evidence, and to identify research gaps in the literature.[17,18] This methodology is helpful in exploring research questions that are complex or have not been extensively reviewed.[19]

### *Research question*

The primary aim of this scoping review was to identify key elements that contribute to best practice home visiting models that support families with social vulnerabilities in Australia. Informed by the Population-Concept-Context framework[19], this review was guided by the primary question – What are the key elements of sustained home visiting programs for vulnerable families in Australia?

### *Information sources and search strategy*

A preliminary search of two databases (PubMed and CINAHL) using the key words 'home visit', 'child health' and 'Australia' was conducted (7 September 2019) with an analysis of the text words used in the title and abstract of relevant papers, and listed key words used to inform appropriate MeSH terms and other key terms. A search strategy combining both MeSH and free-text terms was developed to retrieve articles from electronic databases – PubMed, Maternity and Infant Care and CINAHL/EBSCO. These databases were selected to comprehensively address relevant public health literature. Table 1 displays the terms used in the search strategy. The

*Table 1. Key words and MeSH terms*

| Main concepts | Child health | Home visit | Australia |
|---|---|---|---|
| MeSH terms | Child health (2016)<br>Child health services (1968)<br>Maternal-child health centres (1979)<br>Pediatric, paediatric, infant AND health | House call/s (1968)<br>Home visit | Australia<br>New South Wales<br>Queensland<br>Australian Capital Territory<br>Northern Territory<br>Tasmania<br>South Australia<br>Western Australia |
| Alternative terms | Maternal health<br>Child development<br>Parenting<br>Postnatal care<br>Child and family health<br>Family health<br>Maternal child nursing<br>Infant care | Nurse home visiting | |

search strategy was designed in PubMed and translated to other databases. The selected studies' reference lists were hand searched using the key words to identify further articles.

Searches were limited to the English language and the period January 2011 to December 2019 to capture evidence published since the 2012 ARACY review[10]. A web search using Google Scholar, Google and the Queensland Health intranet (to provide illustrative examples) was also used to identify relevant grey literature; the first 100 results from each search were manually reviewed.

## *Eligibility criteria*

Peer reviewed publications and reports identified in the grey literature, together with both qualitative and quantitative study designs and including primary and secondary sources (e.g. literature reviews), were deemed eligible for inclusion in this scoping review if a home visiting model of care to support families with vulnerabilities conducted by child health nurses in Australia was described. Papers were excluded if the program did not include home visiting and/or were provided by health professionals other than child health nurses. Home visiting programs specific to Aboriginal and Torres Strait Islander and/or culturally, linguistically diverse (CALD) families, and families with children experiencing health needs – including disabilities and medically complex chronic conditions – were excluded from this scoping review due to additional considerations required in terms of service provision elements to ensure cultural safety and co-design in partnership with these priority groups.[20–21]

## *Study selection process*

Identified articles were collated in Endnote X9 for review and duplicates were removed. Titles and abstracts were screened by two reviewers (NL, JY) and checked by a third (MG) against the agreed inclusion and exclusion criteria, with inconsistencies in decisions resolved by consensus. Articles were then sourced as full text articles for review and again assessed by each reviewer against the eligibility criteria. Figure 1 illustrates the study selection process using the PRISMA guide.[22]

## *Charting the data*

While there is accumulating evidence on home visiting programs and key elements recommended for successful programs, there is a paucity of evidence to support the ability of these programs to maintain significant sustainable change.[23] Program logic has been shown to be a mechanism to enhance program success by utilising a framework to assess programs against their theoretical components, target population needs and program components to achieve success.[23]

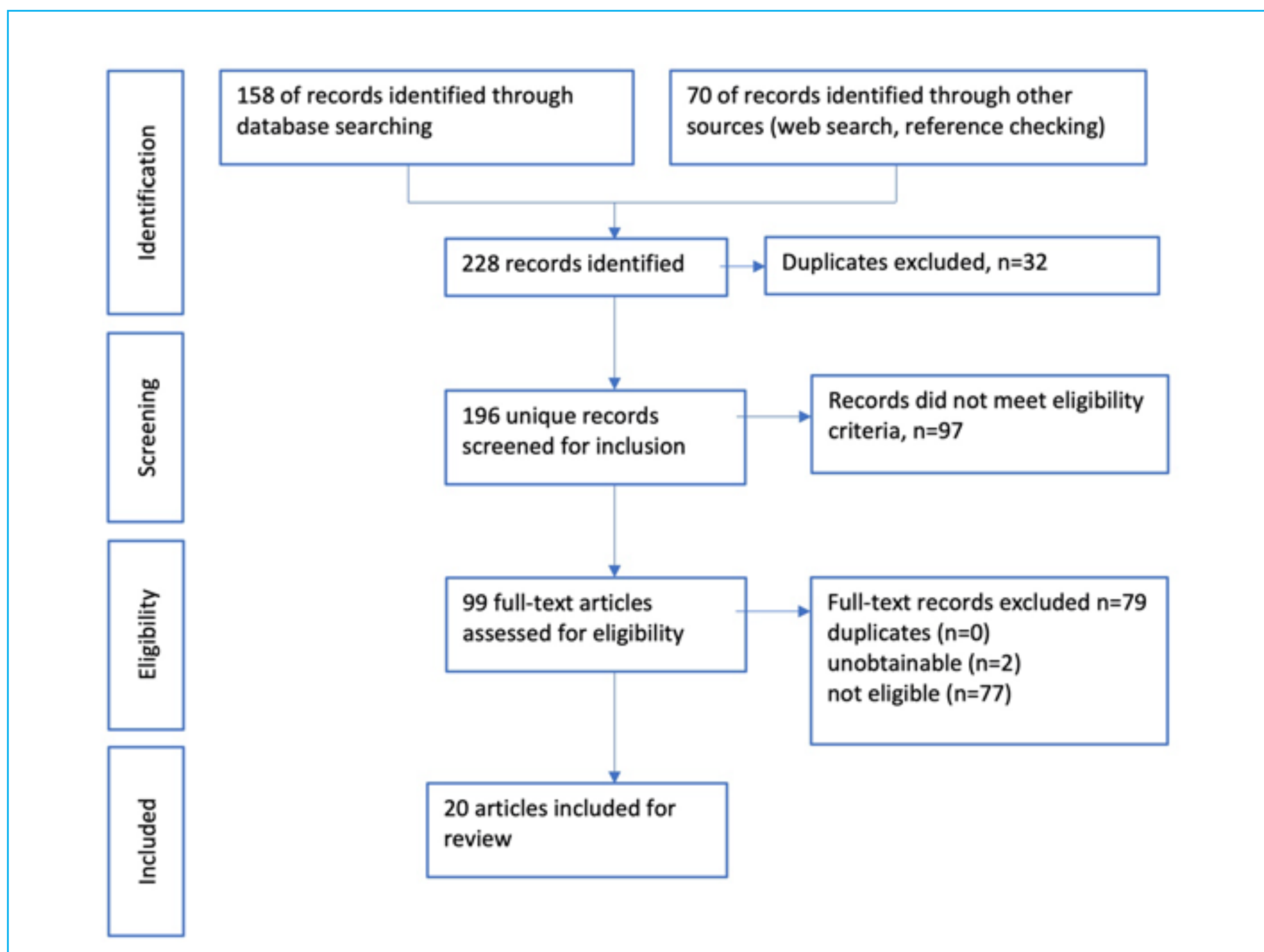


*Figure 1. Flowchart of study selection process (PRISMA)[22]*

*Table 2. Data extraction tool*

| | |
|---|---|
| **General information** | Program name<br>No. articles related to the program<br>Location of program |
| **Program elements** | Program aims<br>Target group<br>Eligibility criteria<br>Theoretical/conceptual framework<br>Number of visits<br>Duration of program<br>Outcomes |
| **Key elements** | Identified from the study |

The study team developed a data extraction tool which reflected components of the program logic model described by Segal and colleagues[23] which includes program objective, population, theory of change, program components and success.

Data extraction information in this review included general information, program elements, including program aims, target group, eligibility criteria and outcomes. Key elements attributed to the success of the program in achieving positive outcomes for families with vulnerabilities identified within each study selected for review were highlighted. Data were extracted by one team member and verified by two additional reviewers (Table 2).

### Collating, summarising and reporting the results

As the articles were reviewed and the information summarised, the information was entered into three tables to facilitate comparisons and analysis. Table 3 charts the number of articles that relate to the named program identified in the search, Australian state/territory location of service, and program characteristics including target population, eligibility criteria, service duration, frequency of visits, and the theoretical or conceptual framework underpinning the service model. Table 4 illustrates each program's aims against its outcomes as recommended by the ARACY review[1] and consistent with the program logic model.[23] Table 5 provides a comparison of components or key elements associated with success within Australian-based home visiting programs identified in the ARACY review against the studies identified more recently (in the last decade) selected in this scoping review. In line with scoping review methodology, an assessment of the quality of the included studies was not performed.[19]

## Results

A total of 228 records were retrieved. After title and abstract screening, 99 records were kept for full-text retrieval. Full-text was unobtainable for two articles. Further duplicates and studies not meeting eligibility criteria were removed. A total of 20 studies met eligibility criteria and were included at full-text review (Figure 1). These studies addressed eight home visiting models of care which aimed to support families with vulnerabilities conducted by child health nurses in Australia.

As the primary aim of this scoping review was to identify key elements that contribute to best practice home visiting models that support families with social vulnerabilities in Australia, results will be presented and discussed with a focus on the home visiting models selected for review (n=8). Individual studies or reports that relate to these models (n=20) are detailed in Tables 3 and 4.

Program logic components will be used to inform the evaluation of these programs by reviewing program setting, objectives, target population and eligibility, theory of change (theoretical/conceptual framework), key components and measures used to determine program success.

### Characteristics of selected studies

*Location:* The majority of eligible programs for review were located (seven of eight programs, 88%) on the eastern seaboard of Australia (NSW, n=5; Queensland, n=1; Victoria/Tasmania, n=1) with one home visiting program evaluated in South Australia associated with five reports.[37–41] The programs included: the South Australia Nurse/Family Home Visiting program[37–41] (n=5 articles); the Maternal Early Childhood Sustained Home-visiting (MECSH)[32–34] program (n=3 articles); the Healthy Beginnings program[29–31] (n=3 articles); the right@home program, a relatively recent program based on the MECSH program[35,36] (n=2 articles); the Early Intervention Home Visiting program[24,25] (n=2 articles); the Family Care and Parents Under Pressure – Babies program trial[26,27] (n=2 articles); the Sustained Health Home Visiting (SHHV)[42] program (n=2 articles); and the Foundations for Young Parents program[28] (n=1 article). Programs were based within community child health services, varied in duration (range 1–3 years), and commenced either in the antenatal or postnatal period.

*Service characteristics:* Most programs (seven of eight) had clearly defined program aims or objectives which appeared appropriate for the target population (Table 4).[24–27,29–43] Considerable variation in target populations was evident between programs, with some programs targeting young mothers (NSW Foundations for Young Parents program)[28], first-time mothers (Healthy Beginnings program)[29–31] or families with mental health issues (NSW Early Intervention Home Visiting program)[24,25], while others focussed on establishing support for families experiencing socioeconomic disadvantage and adversity (the NSW MECSH program, the VIC/TAS right@home program)[24,25] or more generalised adversity and parenting challenges without a clearly defined target group (SA Nurse/Family Home Visiting program) (Table 3).[37–40] Eligibility criteria mostly reflected target population, where stated, and ranged from few and specific criteria – e.g. the Edinburgh Postnatal Depression Score (EPDS) ≥12 for the Early Intervention Home Visiting program which focussed on mothers with moderate to severe postnatal depression[24,25] – to multiple criteria, inclusive of a broader population to address a range of families within a service who may be experiencing socioeconomic and situational adversity – e.g. the MECSH program recruited young pregnant women who were likely to be unsupported by family and/or their partner and experience challenges that may include substance misuse, mental health issues, childhood abuse, domestic violence and life stresses.[32–34]

*Table 3. Charting the number of articles, location and program characteristics*

| Home visiting program | No. of articles | Location | Target group | Program eligibility criteria | Theoretical/ conceptual framework | No of visits | Program duration |
|---|---|---|---|---|---|---|---|
| Early Intervention Home Visiting | 2 | New South Wales | Mothers with moderate to severe postnatal depression | • EPDS≥12 | • Attachment theory<br>• Strengths-based approach<br>• Family partnership<br>• Seeing is believing technique | 10 | From infant 4–6 months for a 10-month period |
| Family Care and Parents Under Pressure – Babies | 2 | Queensland | Families that meet the eligibility criteria of mental illness, violence, young parents and CALD | • History of mental illness<br>• Intimate partner violence<br>• Alcohol or other drug use disorder<br>• History of psychotic illness<br>• English as second language; did not require a translator | • Not stated | Not stated | 12 months |
| Foundations for Young Parents | 1 | New South Wales | Young parents Indigenous and complex needs parents excluded | • Parent aged <25 years | • Circle of security<br>• Incredible years | Not stated | Antenatal to infant turns 2 years |
| Healthy Beginnings | 3 | New South Wales | First-time mothers and infants located in a socially and economically disadvantaged area | • Mothers ≥16 years<br>• First-time mother<br>• Between 24- and 34-weeks' gestation<br>• English speaking<br>• Lived in local area | • Not stated | 8 | Antenatal to infant turns 2 years |
| Maternal Early Childhood Sustained Home-visiting (MECSH) | 3 | New South Wales | Pregnant mothers with adequate English. Identified risks (from eligibility criteria) | • Level of education<br>• <19 years<br>• Unsupported parent<br>• Antenatal care >20 weeks<br>• Major stressor in last 12 months<br>• Substance misuse<br>• Mental health issue<br>• EPDS≥10<br>• Psychosocial distress/risk<br>• Childhood abuse<br>• Domestic violence | • Strengths-based approach<br>• Anticipatory guidance<br>• Attachment focus<br>• Child and family focused<br>• Flexible and responsive<br>• Promoting self-efficacy and maternal aspirations<br>• Working in partnership<br>• Enabling relationship between nurse and family | 25 | To infant is 2 years of age |
| right@home | 2 | Victoria/ Tasmania | Families experiencing adversity that have limited access to services | ≥2 of the following risk factors:<br>• Young pregnancy ≤23 years<br>• Poor mental or physical health<br>• Lack of support<br>• Anxiety<br>• < Year 12 education<br>• Poor income/ employment | • Strengths-based approach<br>• Family partnership model<br>• Attachment focus<br>• Proactive primary healthcare<br>• Anticipatory health education | 25 | Antenatal to infant turns 2 years |

*Table 3. Charting the number of articles, location and program characteristics (cont).*

| Home visiting program | No. of articles | Location | Target group | Program eligibility criteria | Theoretical/ conceptual framework | No of visits | Program duration |
|---|---|---|---|---|---|---|---|
| South Australia Nurse/ Family Home Visiting | 5 | South Australia | Nil stated | • Mothers ≥20 years<br>• Infant Aboriginal or Torres Strait Islander descent<br>• Maternal social isolation<br>• Maternal poor attribution towards infant<br>• Current or past treatment for mental health issues<br>• Drug or alcohol related issues<br>• Domestic violence currently impacting on parenting<br>• Previous intervention from child safety services<br>• Infant congenital abnormalities<br>• Clinician concern | • Family partnership model<br>• Child and family focused<br>• Working in partnership<br>• Trust and relationship building<br>• Attachment focus<br>• Parent-child Interaction model<br>• Strengths-based approach<br>• Modelling<br>• Reframing<br>• Social connectedness/ social capital<br>• Cultural inclusion<br>• Collaboration with community agencies | 34 | Postnatal to infant turns 2 years |
| Sustained Health Home Visiting (SHHV) | 2 | New South Wales | Vulnerable pregnant mothers and/ or had an infant aged 36 months or less | Level 2 risk factors:<br>• <19 years unsupported parent or other vulnerability<br>• Single, unsupported parent<br>• Late antenatal care (>25 weeks)<br>• Multiple/premature/ complicated birth<br>• Child or parent with disability/chronic illness<br>• Adjustment of parenting issues<br>• Needing support with parenting<br>• Anxiety, depression<br>• History of mental health problem or disorder<br>• Grief and loss associated with the death of a child or other significant family member<br>• Relationship issues with partner or significant other<br>• Financial stress<br>• Unstable/unsuitable housing<br>• Partner unemployed<br>• Refugee status, recent migrant, poor English skills | • Family partnership model<br>• Attachment theory<br>• Strengths-based intervention<br>• Child development theory<br>———<br>Level 3 risk factors:<br>• Current substance misuse<br>• Current mental health symptoms or disorder<br>• Parent or partner with developmental disability<br>• Current or history of domestic violence<br>• Current or history of child protection issues<br>• History of abusive childhood<br>• Current or history of mental health intervention | 60 | Antenatal to infant 3 years of age |

Of the models, six (75%) described specific theoretical or conceptual frameworks that underpinned the practice model used by child health nurses in their support of families with vulnerabilities to achieve desired behaviours and outcomes.[24,25,28,32–43] Attachment theory, family partnership and using a strengths-based approach were common theories and/or concepts within five of the six programs[24,25,32-43] which acknowledged a framework; however, several of these drew on multiple theoretical concepts within models of care that guided health professional practice (Table 3).[32–41]

Variation was seen within the timing of initial program engagement, program duration and frequency of program visits across selected programs. Five of the eight programs were designed to commence in the antenatal period; four of these continued until the infant turned 2 years of age[28–41], while the NSW Sustained Health Home Visiting program continued until the child turned 3 years.[42,43] Program duration ranged from 10 months for a targeted support program of monthly visits (n=10) for mothers with moderate to severe postnatal depression[24,25], to 3 years for the Sustained Health Home Visiting program for families with identified vulnerabilities associated with poor health and infant outcomes[42,43] and with a total of 60 visits during the 36-month period. Two programs, the Family Care and Parents Under Pressure – Babies trial[26,27] and the Healthy Beginning program[29–31] with a duration of 12 months and 24 months respectively, did not refer to a number of planned visits within the program.

### Study outcomes

Program evaluations included qualitative[24,25,34,38,41], quantitative[26,27,29,36,43] and mixed method approaches.[28,35,37,42] Seven of the quantitative studies used a randomised controlled trial design.[24,30–33,39,40] Data collection tools to evaluate if programs were meeting intended aims were varied but appropriate to the research design and included semi-structured interviews, focus groups, case file review, audit checklists and economic evaluations.

Articles relating to each of the eight programs were reviewed to identify statements about contributing factors or key elements that were associated with successful program outcomes. These findings were compared to those key elements recommended by ARACY[1,10] for inclusion in home visiting programs to promote program achievement of intended outcomes for families with vulnerabilities (Table 5).

Of the key elements supported by ARACY[1,10] as an important component of successful and effective home visiting programs, *a positive nurse relationship* and *family partnership* were the two most commonly identified elements, reported by seven[24–28,32–43] and five[24–27,35–43] of the eight programs, respectively. *Information tailored to the family's needs*, consistent with ARACY[1,10] recommendations, was also present in 50% (n=4) of the programs.[26,27,29–31,37–43] *Continuity of carer*[32–34,42,43] and *Programs targeted to families most likely to benefit*[37–43], elements recommended by ARACY[1,10], were each regarded as important elements by two (25%) of the eight services, with the Sustained Health Home Visiting program[37–41] identifying both of these specific elements.

Being *embedded in universal services*[26,27,32–36], *program flexibility*[26,27,35–41] and *nurse availability and responsiveness*[24,25,28,32–34] were each elements identified in at least three of the eight programs as important elements, although these elements had not been previously been highlighted by the ARACY reviews (Table 5).[1,10]

Program outcomes that were reported in evaluations of the selected programs generally reflected program aims, and were mostly consistent with the theoretical or conceptual frameworks that underpinned the child health model incorporated into the program. For example, the Early Intervention Home Visiting program[26,27] – specifically designed to support mothers with moderate to severe depression (eligibility criteria EPDS≥12) – aimed to increase parental sensitivity, confidence, sense of wellbeing and social connectedness. This model was underpinned by attachment theory, using family partnership and strengths-based approaches, together with a 'seeing is believing' technique.[24,25] The program was reported to achieve its aims of improving maternal confidence and emotional responsiveness to their infants and identified that working within a partnership model had benefits for maternal engagement and affirmation of maternal capabilities in addition to increasing nurse capacity.[24,25]

Programs with a greater number of key components were associated with some particular outcomes. The Family Care and Parents Under Pressure trial, right@home and the MECSH program found a greater intensity of maternal capacity for parenting[27,32,35] which was maintained in the Family CARE program even during deteriorating maternal depression.[27] The MECSH and right@home programs reported greater family engagement and retention with the service.[32,35]

## Discussion

This scoping review aimed to identify contemporary evidence to support best practice home visiting models that support families with vulnerabilities in Australia, and was guided by the question – What are the key elements of sustained home visiting programs for vulnerable families in Australia?

Elements, including *a positive nurse relationship*, *professional community nurse, antenatal visits, duration over 2 years, program fidelity, program flexibility*, *family partnership* and *information tailored to the family's needs,* were the most common elements present and valued within contemporary programs that were also consistent with ARACY[1,10] recommendations. *Continuity of carer*[32–34, 42,43] and *programs targeted to families most likely to benefit*[37–43] were also elements supported by ARACY but which feature less frequently in contemporary programs.

Other factors identified within the programs less frequently but which were recommended by the ARACY review were to target goals that parents see as important, build parental competencies and provide parents with choices regarding strategies.[1,10]

Elements of contemporary programs which featured relatively frequently, although not specifically identified in the ARACY recommendations, were *being embedded in universal services*[26,27,32–36], *EPDS screening in the antenatal period*[24,25,32–36,42,43] and *nurse availability and responsiveness*.[24,25,28,32–34]

*Table 4. Programs aims and outcomes*

| Program | Aims | Outcomes |
|---|---|---|
| Early Intervention Home Visiting | • Improving child and family outcomes by increasing parental sensitivity, confidence, sense of wellbeing and social connectedness | • Working in partnership affirmed mothers as capable and insightful parents<br>• Maternal engagement in viewing infants in new ways enabled sensitive parental response<br>• Increased nurse capacity of working in partnership rather than expert model[24]<br>• Most valued program elements were the home visitor qualities of understanding and professional knowledge; reassurance and consistency<br>• The outcome for the mothers was improved confidence and emotional responsiveness to their infants[25] |
| Family Care and Parents Under Pressure – Babies | Enhance adjustment to parenting role by:<br>• Establishing a relationship of trust between the professional home visitors and the family<br>• Promoting maternal–infant attachment<br>• Improving parental adoption of health promoting behaviours<br>• Promoting positive parenting practices<br>• Reducing parental stress and improving maternal mood<br>• Reducing child abuse potential<br>• Promoting the use of community and neighbourhood support systems to assist families | • Greater intensity of maternal involvement was related to improved maternal responsivity to the infant and suitability of the home environment<br>• The improvements were maintained even during deteriorating symptoms of maternal depression<br>• Despite strong involvement in the program some maternal depressive symptoms increased[27]<br>• Mothers experiencing domestic violence were more likely to leave the home visiting program early and received fewer home visits<br>• Mothers with impaired psychological functioning received more than the prescribed visits and remained on the program longer[26] |
| Foundations for Young Parents | | • Themes identified were related to the creation of relationships between the parent and other young mothers; parent and the clinician<br>• Importance placed on the relationship characteristics, the individual clinician's characteristics and the content of their interactions and benefits of the relationship. Elements of trust, clinical expertise and experience, program flexibility to meet the mother's needs and empathy. Created social interaction[28] |
| Healthy Beginnings | • Prevention of excessive weight gain in infancy | • Cost effective program[29]<br>• Reduction in BMI<br>• Improved infant feeding practices<br>• Reduction in TV viewing during mealtime<br>• Improved maternal vegetable consumption and physical activity[30]<br>• No effects of the early intervention on dietary behaviours, quality of life, physical activity and TV viewing time were detected at age 5 years[31] |
| Maternal Early Childhood Sustained Home-visiting (MECSH) | • Supporting mothers through pregnancy to help the transition to parenthood<br>• Improving the health and wellbeing of mothers by helping them to care for themselves<br>• Improving child health and development by helping parents to interact with their children by supporting and modelling positive parent–infant interaction and development of education programs<br>• Supporting development of parenting aspiration for children and parents<br>• Improving networks for parents to create relationships within the family and with other families and services | • Higher rate of unassisted vaginal births<br>• Self-reported improved health<br>• Increased parenting capacity<br>• Greater engagement with the service[32]<br>• Enhanced maternal emotional and verbal response<br>• Longer breastfeeding duration<br>• Improved experience of motherhood<br>• Improved child mental development of mothers that were psychosocially distressed antenatal[33]<br>• A positive relationship with the nurse, nurse's availability and responsiveness resulted in positive impacts such as emotional wellbeing, confidence, help-seeking behaviour and parenting current and subsequent children<br>• Small number of women reported feelings of stress and disconnection from services following program completion[34] |

*Table 4. Programs aims and outcomes (cont)*

| Program | Aims | Outcomes |
|---|---|---|
| right@home | • Improving children's learning and development by school entry<br>• Positive transition to parenting<br>• Mother, child and family health, development and wellbeing<br>• Maternal–infant bonding and attachment<br>• Positive parenting skills<br>• Mothers to be future orientated and aspirational for themselves, their child and family<br>• Enhanced maternal and family coping, problem solving skills and the ability to mobilise resources<br>• Supportive relationships in their family and community | • Safer family homes<br>• More regular child bedtime<br>• Greater social interaction for the child with adults<br>• Warmer parenting practices<br>• Greater facilitation of childhood learning[35]<br>• High level of retainment (87%) of families to the conclusion of the program<br>• Delivered with higher adherence to program dose, schedule and content<br>• Family relationship to the nurse highly rated[36] |
| South Australia Nurse/Family Home Visiting | • Enhancing the mental and physical health of children and their families<br>• Enhancing the cognitive, social and emotional wellbeing of children and their families<br>• Assisting families to provide a safe and supportive environment or their children<br>• Better linking families to available resources and networks within the community<br>• Offering an evidence-based, acceptable and culturally appropriate home visiting program | • Nil significant outcomes at 5 years[37]<br>• Nil significant outcomes at 2 years[40]<br>• Improved maternal perception of relationship with the infant<br>• Increased maternal satisfaction with parenting<br>• Increased identified childhood sleeping problems[39]<br>• The role of trusting relationship between nurse–client and shared decision-making was central to program engagement and led to parental perception of increased control in their role as a parent<br>• From the mother's perspective they engaged in a relationship not a program[41]<br>• Child health nurses considered their greatest influence was improving mothers' confidence with parenting and knowledge of child development<br>• Nurse–mother relationship most relevant factor to in retaining maternal engagement<br>• Flexibility in timing of visits and capacity for program to meet specific needs are influential factors in maternal engagement[38] |
| Sustained Health Home Visiting (SHHV) | • Actively engaging families in need of additional support<br>• Building on parents' knowledge and experience<br>• Forming and promoting a trusting family–nurse relationship<br>• Supporting the development of parental self-efficacy, the early attachment between infant and career and an understanding of the developmental needs of the infant to foster the social and emotional development of children<br>• Improving the health, safety and wellbeing of children and families through family support and encouraging community-based involvement | • Clients were accepted to the program with extremely high vulnerability<br>• Greater number of clients were accepted in the postnatal period<br>• More clients were experiencing anxiety and/or depression, financial stress, isolation and history domestic violence<br>• Level of disengagement by inability to contact (13%) or refusing services (12%)<br>• Greatest intervention was to provide emotional support and promoting main carers health and wellbeing<br>• Ongoing challenges with providing a service to the high risk (level 3) families due to a lack of team management approach (supporting families in partnership with other services)[42]<br>• Most common intervention was emotional support, information about health and wellbeing and infant development<br>• Greater access to support services<br>• Increased self-efficacy and social networks[43] |

*Table 5. Key elements identified within the home visiting programs*

| Program characteristics | ARACY review[1,10] | Early Intervention Home Visiting[24,25] | Family Care and Parents Under Pressure – Babies[26,27] | Foundations for Young Parents[28] | Healthy Beginnings[29–31] | Maternal Early Childhood Sustained Home-visiting (MECSH)[32–34] | right@ home[35,36] | South Australia Nurse/ Family Home Visiting[37–41] | Sustained Health Home Visiting (SHHV)[42,43] |
|---|---|---|---|---|---|---|---|---|---|
| Antenatal visits | ✓ | | | ✓ | ✓ | ✓ | ✓ | | ✓ |
| Content focus on identified risk factors | | | | | ✓ | | | | |
| Continuity of carer | ✓ | | | | | ✓ | | | ✓ |
| Duration over 2 years | ✓ | | | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |
| Embedded in universal services | | | ✓ | | | ✓ | ✓ | | |
| EPDS screening | | ✓ | | | | ✓ | ✓ | | ✓ |
| Family partnership | ✓ | ✓ | ✓ | | | | ✓ | ✓ | ✓ |
| Fidelity monitoring | | | ✓ | | ✓ | | ✓ | ✓ | |
| First- and second-time mothers | | | | | | ✓ | | | |
| Program flexibility | | | ✓ | | | | ✓ | ✓ | |
| Social interaction components | | | | ✓ | | | | | |
| Specialised training for nurse visitors | ✓ | | ✓ | | | | | | |
| Supervision | ✓ | | ✓ | | | | | | |
| Targeted families most likely to benefit | ✓ | | | | | | | ✓ | ✓ |
| Home visitor characteristics | | | | | | | | | ✓ |
| Information tailored to family's needs | ✓ | | ✓ | | ✓ | | | ✓ | ✓ |
| Nurse availability and responsiveness | | ✓ | | ✓ | | ✓ | | | |
| Positive nurse relationship | ✓ | ✓ | ✓ | ✓ | | ✓ | ✓ | ✓ | ✓ |
| Professional community nurse | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ | ✓ |

Despite poor mental health being a common contributing factor in a family experiencing parenting challenges, specific recommendations relating to screening using the EPDS tool was lacking in the ARACY reviews[1,10]; this may have been due to the contradictory evidence on whether intervention for maternal depression with home visiting programs are successful in the moderate- to long-term.[1,6,10,14]

Key elements specific to the evaluated program were most likely attributed to the target group and aims of the program. However, some, such as *focused program content on identified risk factors* and ensuring *program fidelity,* would add a robustness to the program and ensures that program aims are well contextualised within the program intervention. The MECSH program found no differences in outcomes between multiparous as well as primigravida mothers and the recommendation that programs be offered to *first and second-time mothers* is contrary to the well evaluated US Nurse Family Partnership program.[33,44] The MECSH program did recommend further research with larger sample numbers to validate this finding.[33]

The findings of this scoping review have several implications for practice and health professional education and identified future research opportunities. Home visiting programs should utilise the evidence-based principles and key elements outlined in the ARACY recommendations to optimise program outcomes. In practice, these home visiting programs should have regular audit quality cycles in place as indicators of program content and process fidelity and to compare outcomes against the program's specific aims and intentions.

Several key elements identified as important in the ARACY reviews and in this scoping review relate to the support and preparation of health professionals caring for families with vulnerabilities. Orientation and education provided to staff relating to a home visiting program's conceptual framework and ensuring their understanding of the rationale behind selected eligibility criteria to ensure the families who will most likely benefit from the program are recruited, are likely to be as important as program content and duration. The child health nurse's awareness of their integral and highly influential role in promoting a positive relationship, being available and responsive, and tailoring information to meet the family's needs are key in program success.

This scoping review has highlighted the paucity of evidence underpinning a consistent approach to home visiting models of care for families with vulnerabilities and facing parenting challenges. Despite the numerous programs available to families in Australia, further investigation is needed with larger sample sizes and robust designs that will enable the measurement of the impact of specific components and interventions in order to determine program outcomes achieve program intentions.

### *Strengths and limitations*

This review highlighted that elements contributing to successful home visiting programs identified in the 2012 ARACY reviews[1,10] continue to be important, with evidence of further key elements emerging from this review. A scoping review methodology was also useful in facilitating rapid assessment of available primary research on this focussed topic, particularly as this area has not been extensively reviewed.[19] However, it is important to note that narrative summaries are not as informative for clinical decision-making processes as they do not allow for the calculation of pooled effect estimates should this data be available.[45]

In addition, searches were limited to studies published in English, and focussed on identifying home visiting programs within Australia, potentially leading to language bias and exclusion of relevant articles published in other languages and from other nations which may reveal program components or key program elements relevant to Australian settings. Specific programs targeting Aboriginal and Torres Strait Islander and/or CALD families, and families with children experiencing health needs including disabilities and medically complex chronic conditions, were beyond the scope of the primary aim of this review. Further research is required to establish the additional considerations and program components required for optimal service provision for these families.

## Conclusion

This scoping review identified the key elements of contemporary sustained home visiting programs for vulnerable families in Australia. The review confirmed the importance of key program elements identified in the original ARACY reviews[1,10], including *positive nurse relationship*, *family partnership, information tailored to the family's needs*, *continuity of carer* and *programs targeted to families most likely to benefit.* However, this review also provided evidence of elements emerging as valued and important in contemporary sustained home visiting programs which included *being embedded in universal services, program flexibility* and *nurse availability and responsiveness.* Considerable variation across programs was evident in terms of program aims, target populations, eligibility criteria, program content and duration, making comparison of program outcomes or proposals for best practice models problematic. The paucity of evidence supporting contemporary sustained home visiting programs to achieve behavioural change and improve health outcomes for families with vulnerabilities will be addressed through appropriately designing and implementing quality to ensure program intentions achieve intended outcomes for families with vulnerabilities.

## Conflict of interest

The authors declare no conflicts of interest.


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