EVIDENCE BRIEF

Interventions for parents and families:
the evidence for improving physical health and wellbeing outcomes for children

BACKGROUND

Parents and the family and home environment play a central role in the early learning and development of infants and children (1, 2). A range of interventions exist to support parents and families, particularly in situations where the family is vulnerable and/or where the infant or child may be at risk of delays in learning or development. The first five years of life present a critical window of opportunity for learning and development (3) and they lay the foundation for preparedness for learning and readiness for school (4).

The purpose of this *Evidence Brief* is to describe the extent to which interventions for parents and families can improve child physical health and wellbeing outcomes. This brief draws on evidence from systematic reviews, which provide the most comprehensive assessment of the evidence.

Key Messages

- This review of reviews found limited evidence to suggest that home visiting programs improve fine and gross motor skills in infants and young children: results from systematic reviews found no improvements in these outcomes. Three individual studies reported some improvements; however, the quality of this evidence is limited.
- There is early evidence from a single review that interventions for parents of premature infants can improve psychomotor development in the short-term (at 12 months of age), however the improvements diminished by the age of 24 months.
- All of the evidence identified in this *Evidence Brief* relates to gross and fine motor skills. No systematic reviews were found that report the impact of parenting and family support interventions on children's physical readiness for the school day and physical independence.

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DEFINITION OF PHYSICAL HEALTH AND WELLBEING OUTCOMES

This review of reviews focused on outcomes defined in the Australian Early Development Census (AEDC, see www.aedc.gov.au), which collects data about key areas of early childhood development (known as 'domains'). The **Physical Health and Wellbeing** domain includes physical readiness for school day (dressed inappropriately, arriving late, hungry or tired), physical independence (independence regarding own needs, hand preference and co-ordination), and gross and fine motor skills.

MAIN FINDINGS

This review of reviews identified **seven** (5-11) high-quality systematic reviews that report on the impact of parenting and family support interventions and home visiting on child physical health and wellbeing. Six reviews examined **home visiting interventions** delivered to a range of vulnerable families and one review examined a range of **interventions for parents of premature infants**.

All but one of the reviews reported here included only reasonably rigorous studies with control or comparison groups; some randomised, some quasi randomised, and some non-randomised. One review also included mixed methods and qualitative studies.

Outcomes investigated in this literature

All studies in the identified systematic reviews reported fine and gross motor skills. No studies reported on physical readiness for school day or physical independence. For definitions of the main outcome terms used in this literature, see the **box**.

Child ages covered in this literature

The objective of this *Evidence Brief* was to identify interventions relevant to children up to five years of age. Due to mixed reporting of age groups in studies and in systematic reviews, it has not always been possible to restrict to reviews solely covering children aged up to five years.

Fine motor skills
A child's ability to coordinate movements (usually) of their fingers and hands with their eyes. For example, grasping small objects with thumb and forefinger, holding a crayon with two fingers and thumb.

Gross motor skills
A child's ability to coordinate the large muscles of the body to walk, sit upright, lift, kick, run, etc. For example, navigating stairs, catching a large ball with both hands, climbing on play equipment.

Gross and fine motor skills

Home visiting programs

Six reviews reported the impact of **home visiting programs** on fine and gross motor skills as an outcome. The interventions[1] were delivered to a range of **vulnerable families** including mothers with drug and alcohol problems; socially disadvantaged and low socioeconomic status (SES) families; high-risk families (low birth weight infants in poor communities); and parents of **developmentally vulnerable children** (premature infants).

A broad review of **home visiting programs** (5) included four randomised controlled trials (RCT) delivered to **families at risk of adverse outcomes**. No specific interventions were named but they encompassed parent psychosocial support, parent training and education and service referral. This review found no improvement in child motor development as a result of the home visiting programs.

Home visiting programs delivered during **pregnancy and after birth** for women with **drug and alcohol problems** (9) also did not improve physical outcomes in children up to three years of age. Home visits were conducted by community health nurses, paraprofessional advocates and lay visitors. The authors

[1] All named interventions that were found to have some benefit for children are described at the end of this evidence brief.

note that due to methodological shortcomings in the included studies, the review was not able to draw reliable conclusions.

A review of **home-based (home visiting) child development interventions** for **pre-school children from socially disadvantaged families** (6) identified two studies reporting physical outcomes. Of the two studies reporting relevant outcomes, one study showed significant improvements in psychomotor development in the intervention group compared to control group at the end of the intervention and at one and two year follow-up tests. The other study, examining home visits by a public health nurse to infants aged 30 weeks and involving teaching and counselling, showed no significant differences between groups at 7.5 months after the intervention. The authors note that the quality of the evidence was unclear and thus the capacity to draw reliable conclusions about the effectiveness of the programs is limited.

In a review specifically examining one-to-one home visiting interventions delivered by **peers/ paraprofessionals** (11), a single study for high risk families (children **less than 25 months** of age with low weight for age and families living in poor communities with high crime rates) reported no physical improvements at the end of the intervention. However, the intervention group scored significantly higher on motor development than control group one year after the intervention ended. The **Hawaii Early Learning program** curriculum was used for the parent-child interaction and child development components of the intervention.

A very broad review assessed the benefit of parenting interventions for reducing social inequalities in children's health and development, with children aged **birth to eight years** by the World Health Organization in Europe (7). This review found a single study reporting physical outcomes, which showed a benefit for fine motor skills in the treatment group. The review did not indicate if this was a significant benefit or not and so the reliability of these findings is questionable. Furthermore, a second study from this review (7), examining an intervention to improve health and wellbeing to promote and support parent–infant relationships, found no effect on motor development in the intervention group.

A review of **paraprofessional home visitations** on child outcomes (8) reported significant improvements for the intervention group in regards to developmental quotient (locomotor, hand-eye coordination and performance) compared to control group children, in one study assessing the effects of psychosocial stimulation. In a second study of home visitation for substance abusing mothers, the group receiving the intervention had higher psychomotor scores at six months of age and 18 months of age than the control group. The home visits were intended to enhance the mother's communication with her child. In a third study of a 12 month home visitation program for Bangladeshi children there were no improvements for motor development.

There is insufficient evidence that home visiting interventions improve gross and fine motor skills in children. Among the six reviews, three individual studies reported improvements in physical outcomes however due to the size of the studies and methodological limitations inherent in their design, no strong conclusions can be drawn.

Premature infants

A single review (10) examined a variety of interventions aiming to enhance parents' skills and involve parents in the care of their **premature infants**. Physical performance scores were much higher at 12 months for the intervention compared to the control group, but at 24 months this difference had disappeared. The authors note that on the whole the methodological quality of the studies is low.

IMPLICATIONS FOR POLICY AND PRACTICE

- Interventions addressing child physical health and wellbeing outcomes are important for improving child learning and development. Children need to be well rested, have adequate nutrition, be physically independent and have good gross and fine motor skills in order to learn.
- There is **limited evidence** at the systematic review level for interventions that improve physical outcomes in children.
- There is **no evidence** at the systematic review level for interventions that address a child's physical readiness for the school day or physical independence.

LIMITATIONS OF AND GAPS IN THIS LITERATURE

- There is limited literature reporting physical outcomes in children. Evaluations only report gross and fine motor skills and this is predominantly for infants and young children under three years of age.
- It is unclear whether any programs identified in this review aimed specifically at improving children's physical development, or whether it was measured as a secondary outcome following a primary change, such as reducing maternal depression or improving mother-child interactions.
- Most of the systematic reviews, and therefore interventions, reported here targeted a broader range of child outcomes than just physical health and wellbeing. When making decisions about interventions, it is important to consider the full scope of outcomes targeted by interventions and to choose something that is applicable to the needs of the families involved in services.

CONCLUSION

A limited number of systematic reviews reported physical outcomes. Of those that did, the majority were home visiting programs that included an evaluation of fine and gross motor skills in infants and toddlers. There is no strong evidence that these programs improve physical fine and gross motor skills in children. There is early evidence from a single review that specific interventions for parents of premature infants can improve fine and gross motor skills when tested at 12 months; however, the benefits diminish by 24 months of age. No systematic reviews were identified that reported for the AEDC categories of physical readiness for the school day or physical independence. It is worth noting there may be other interventions not identified that focus on improving physical health that fall outside the scope of this brief.

METHODOLOGY: REVIEW OF SYSTEMATIC REVIEWS

This *Evidence Brief* is based on literature identified using a systematic methodology to review systematic reviews. Systematic reviews protect against some of the incompleteness and biases that can be encountered with traditional literature reviews, thereby providing readers with greater confidence in any conclusions that are drawn. The databases searched in September 2015 were: PsycINFO, Embase Classic+Embase, Ovid MEDLINE(R), Ovid MEDLINE(R) In-Process & Other Non-Indexed Citations, Social Work Abstracts, Education Resources Information Centre (ERIC), Applied Social Sciences Index and Abstracts (ASSIA), Social Services Abstracts, Sociological Abstracts, Cumulative Index to Nursing and Allied Health Literature (CINAHL), Criminal Justice Abstracts, the Cochrane Collaboration Library, the Campbell Collaboration Library. No publication year limits were imposed. We searched for English language systematic reviews and meta-analysis of parenting, family support and home visiting interventions. Books, chapters, conference papers and theses were excluded, as were reviews that only included studies with children aged over six years. Interventions such as surgery, vaccinations, medications, international aid and international development were excluded. Reviews needed to report findings for at least one physical

health and wellbeing outcome. Systematic reviews were assessed for degree of rigour against these criteria: 1) the review addressed a clearly designed research question; 2) there was an a priori search strategy and clearly defined inclusion and exclusion criteria; 3) a minimum of three academic databases were searched; 4) grey (unpublished) literature was specifically searched for; and 5) more than one rater/coder was used.

Of the 2958 search results, seven relevant reviews reporting physical health and wellbeing outcomes were identified.

TERMINOLOGY

Interventions for parents and families

Interventions included in this review were: parenting programs/interventions, family support interventions, and home visiting/visitation interventions. Definitions of these interventions vary considerably and they are sometimes grouped together or used interchangeably. In general, we included interventions in which parent and family skills, behaviours, knowledge or cognition were targeted with the aim of improving key child outcomes.

Parents

The term *parents* refers to any person undertaking a parenting role, including biological parents, foster parents, and step-parents.

Outcomes

An outcome is defined here as a measurable change in, or benefit to, an infant or child. It may include an increase in a desired behaviour or skill or a decrease in an undesired behaviour or skill.

INTERVENTION DESCRIPTION

Hawaii Early Learning Program (HELP)

The HELP (Hawaii Early Learning Profile) 0-3 and 3-6 programs are flexible curriculum-based assessment tools that identify needs, monitor growth and development, and establish a plan to address assessment results. Play-based activities and intervention strategies are used to encourage, support, and facilitate a wide variety of developmental skills and address specific needs.

www.militaryfamilies.psu.edu/programs/help-hawaii-early-learning-profile

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FUNDING

This material was produced for The Benevolent Society with funding from the John Barnes Foundation.

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SUGGESTED CITATION

Devine, B., Sartore, G-M., Macvean, M. & Pourliakas, A. (2016). *Interventions for parents and families: the evidence for improving child physical health and wellbeing outcomes for children.* Prepared for The Benevolent Society. Victoria: Parenting Research Centre.

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CSS196-ICPHWO_0316

Published March 2016.

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