

Overview

- What is the place for home-based ECD interventions?
- What is the evidence that home-based ECD interventions work?
 - The Australian national evaluation of the Home Interaction Program for Parents and Youngsters (HIPPY).

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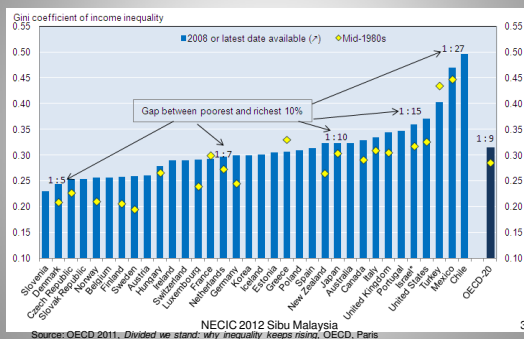
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The extent of income inequality across OECD countries



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Policy Objective A

Give every child the best start in life

Priority objectives

- 1 Reduce inequalities in the early development of physical and emotional health, and cognitive, linguistic, and social skills.
- 2 Ensure high quality maternity services, parenting programmes, childcare and early years education to meet need across the social gradient.
- 3 Build the resilience and well-being of young children across the social gradient.

A.1 Introduction

Giving every child the best start in life is crucial to reducing health inequalities across the life course. The foundations for virtually every aspect of human development – physical, intellectual and emotional – are laid in early childhood. What happens during these early years, starting in the womb, has lifelong effects on many aspects of health and well-being – from obesity, heart disease and mental health, to educational achievement and economic status (see summary of data in Chapter 2). To have an impact on health inequalities we need to address the social gradient in children's access to positive early experiences. Later interventions, although important, are considerably less effective if they have not had good

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A.2 Recommendations

A.2.1 Increased investment in early years

Recommendation: Increase the proportion of overall expenditure allocated to the early years and ensure expenditure on early years development is focused progressively across the social gradient.

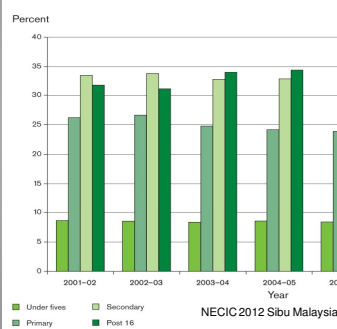
early in the life cycle is likely to be more effective in enhancing children's long-term outcomes than later investment and that the 'social profitability' of investment is likely to differ significantly across the child's life course. The timing of investment is critical according to the outcomes one is seeking to influence. For example, Cunha and Heckman²⁹⁸ show that cognitive ability (IQ) stabilises between 8 and 10 years of age, while behaviour remains modifiable into late childhood. A model of adult skill formation

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Proportion of education expenditure to early years

Figure 4.1 Education expenditure by age group, 2001–8

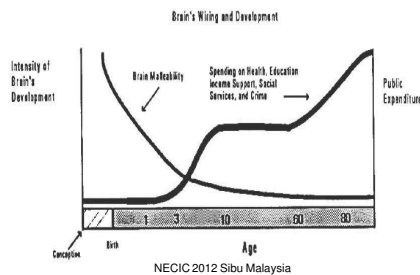


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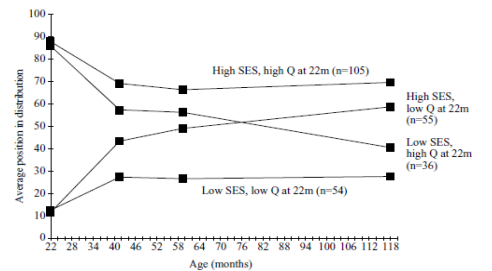
Increase proportion of education expenditure to early years...

FIGURE 4.2 BRAIN DEVELOPMENT - OPPORTUNITY AND INVESTMENT



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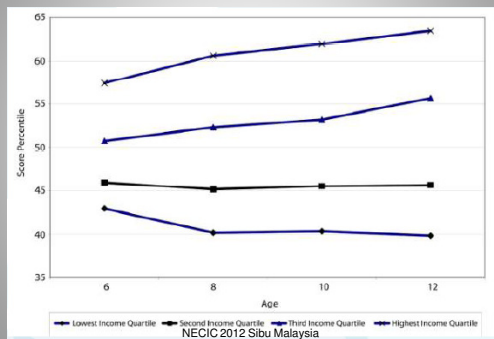
Gaps appear early and then remain fairly constant



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School does not close the gap...

Evolution by Age of Average Percentile ranks on the PIAT Math Score by Family Income

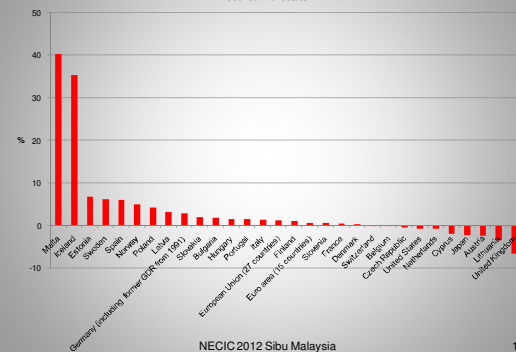


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Source: Heckman 2008, Schools, skills and synapses

Average annual growth of pre-primary expenditure as proportion of total education expenditure (2001 - 2008).

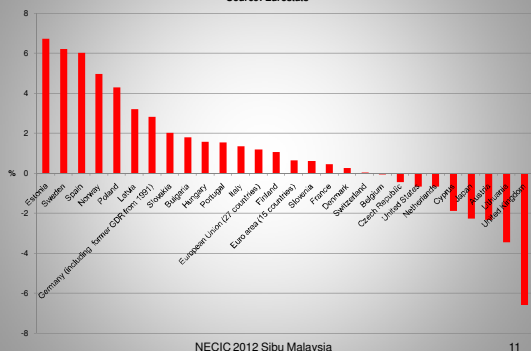
Source: Eurostat



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Average annual growth of pre-primary expenditure as proportion of total education expenditure (2001 - 2008)

Source: Eurostat



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Pre-school education and care: A 'Win - Win' Policy (Green A & Mostafa T, 2011)

- No social - equity trade off.
- But...

"Raising aggregate levels of expenditure on pre-school early education and care **does not** reduce the social gaps."

"Participation in PSEC increases educational performance by similar amounts of **all** social groups."

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*"To reduce the steepness of the social gradient in health, actions must be universal, but with a scale and intensity that is proportionate to the level of disadvantage. We call this **proportionate universalism**."*

(Marmot Review, 2010 p15)

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- To close the gap and address inequalities less advantaged families must get **more or better quality** primary school education and care. (Green A & Mostafa T, 2011)

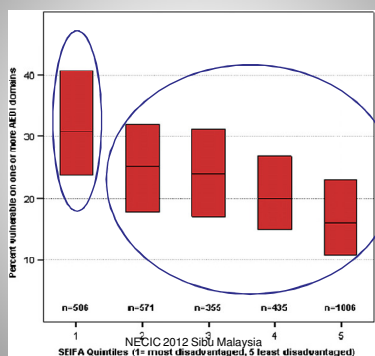
- Traditional responses = targeted place-based interventions

- Stigmatising
- Miss most of those who need more

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Proportion of vulnerable children in disadvantaged geographic areas (Goldfield, S 2012)



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The place for home-visiting programs?

Universal centre-based child care
+ targeted home-visiting to reach those who need more (not place-based).

We call this *proportionate universalism*

But...Do *home-based* ECD interventions for children work?

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Campbell Systematic Reviews
2012:1
First published: 3 January, 2012
Last updated: 6 April, 2011
Search executed: 7 October, 2010

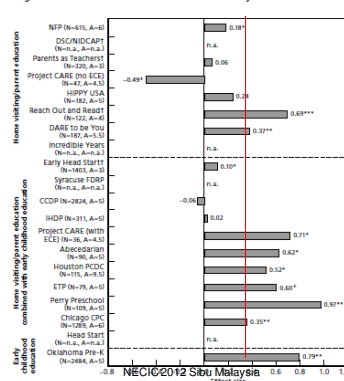
Home-based Child Development Interventions for Preschool Children from Socially Disadvantaged Families

Sarah Miller, Lisa K. Maguire, Geraldine Macdonald

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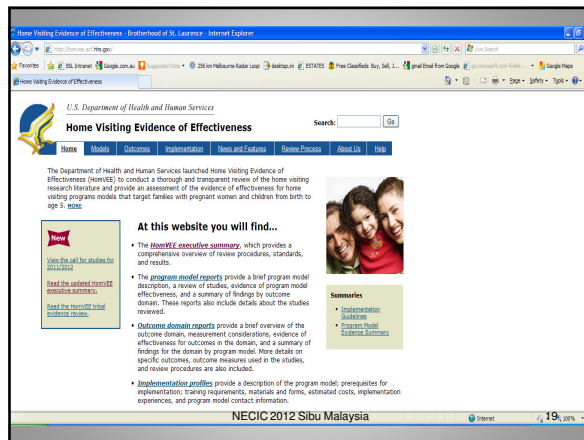
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Figure 3.1
Cognitive Outcome Effect Sizes Near or in Elementary School



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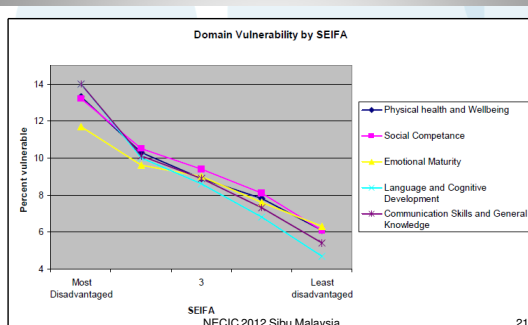
Home-based early childhood development interventions for pre-school children from socially disadvantaged families: Do they work?

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Not all children start school equal

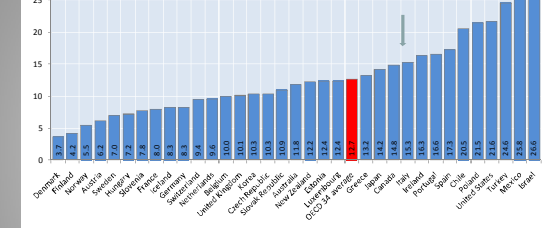
(Australian Early Development Index)



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Percentage of children aged 0-17 living in households with less than 50 per cent of the median equivalised household income, mid to late 2000s (Source: OECD 2011)



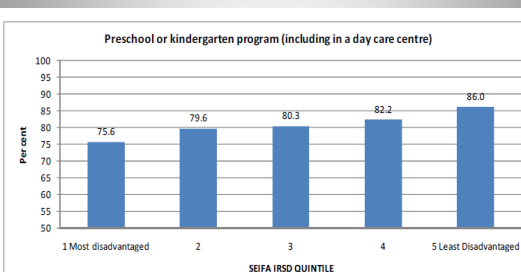
•500,000 children (12%) growing up in poverty in Australia.

•Poverty and social exclusion linked to child school readiness risk factors and developmental delay and poorer outcomes later in life.

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Children in families that are disadvantaged are less likely to attend centre-based preschool education and care

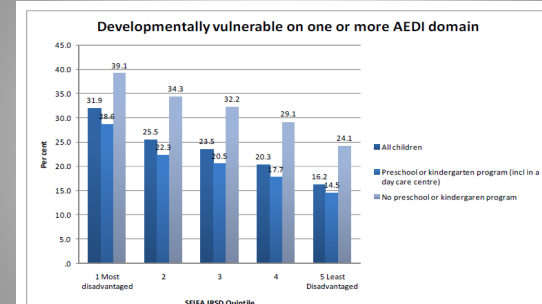


Goldfield, S. 2012. Early childhood development and equity: Where to from here? Luncheon seminar presentation Brotherhood of St. Laurence, Melbourne, Australia.

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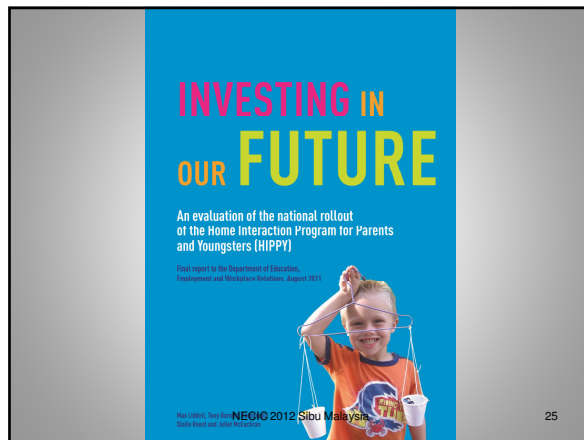
Children who do not attend preschool education and care start school behind their peers



Goldfield, S. 2012. Early childhood development and equity: Where to from here? Luncheon seminar presentation Brotherhood of St. Laurence, Melbourne, Australia.

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Outline of HIPPY

- 2 year program starting in the year before the child's first year of formal school
- Home tutors – paraprofessionals who are trained and supported by a qualified local program coordinator
- Home tutors work with parent – who in turn work with child 15 min per day, 5 days per week
- Manualised / Structured Curriculum
- Home visiting + Centre based (group meetings)

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HIPPY Internationally

- HIPPY commenced in 1969 in Israel
- Since then it has spread to the USA, Canada, New Zealand, Austria, Australia, Germany, Italy South Africa, Argentina, Denmark and Switzerland, with programs in Turkey and Netherlands using similar principles.
- HIPPY was first introduced in Australia in Melbourne in 1998. Currently there are 50 Australian sites either established or in the process. Expansion since 2009 results from Australian Government priorities on education and early childhood

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HIPPY Research

- Several international studies provide evidence of results ranging from 'promising' to 'positive' or 'excellent'
- Only two randomised controlled trials (USA)
- Several small studies in Australia since 2002 with broadly similar findings
- BSL conducted a larger study 2008-2009 for Victorian Department of Education on seven sites. Results confirm other research but lack of comparison groups noted as a limitation

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Evaluation domains

- ❑ **Appropriateness**
the identified need for the program, alignment with Australian Government priorities and alternative responses/programs.
- ❑ **Effectiveness**
the degree to which the intended benefits or outcomes have been achieved.
- ❑ **Efficiency**
the cost-effectiveness of the program.
- ❑ **HIPPY with Indigenous Australians**
the appropriateness and acceptability of the program among Indigenous Australians.
- ❑ **Governance**
whether the governance arrangements have been appropriate and sufficient.

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Features of effective early childhood parenting programs

Programs vary in the following ways:	What research has found to be most effective:
Location	<input type="checkbox"/> The program operates at both the home and childcare settings. <input type="checkbox"/> New parenting skills must be actively rehearsed and parents must practise these skills at home.
Target	<input type="checkbox"/> Include quality education and direct teaching of child plus support for parents and teachers.
Timing & Extensivity	<input type="checkbox"/> Begin in the preschool period and extend into the early school years.
Intensity	<input type="checkbox"/> Are intensive in nature (i.e. a weekly program over a two year period.)
Curriculum	<input type="checkbox"/> Include a curriculum that children can meaningfully connect with. <input type="checkbox"/> Parenting programmes must teach principles and not just prescribed techniques. <input type="checkbox"/> Programmes need to include both sanctions for negative behaviour as well as strategies to build positive relationships through play and praise.
Comprise multiple components	<input type="checkbox"/> Programmes need to include quality early childhood education and a simultaneous family support strategy. <input type="checkbox"/> If difficulties exist in the relationships between adults in the family, they cannot be ignored.

Victorian Research Centre, (2009). Do You Believe in Magic? The Home Interaction Program: Second Party Report. Vol. No. 1. And, Sutton, C, Utting D, and Farrington, D (2004). Support from the Start: UK Department of Education and Skills. Research Report 524

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The effectiveness of HIPPY

'Does it work?'

HIPPY aims to:

support parents in their role as their child's first teacher and foster a love of learning in children so that they start school 'ready-to-learn'.

Research themes:

- What was the impact of HIPPY on the child's school readiness?
- What was the impact for the parents?
- What was the impact for home tutors?

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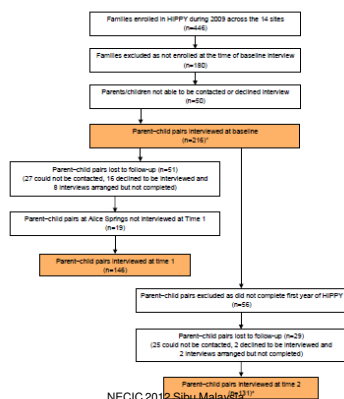
Research design and analysis

- Quasi-experimental research design
before and after measurement plus comparison to matched control group to establish counterfactual.
- Included analysis of program fidelity
to determine the extent to which the program had been delivered and taken up by participants as expected, and any effect of fidelity on outcomes.

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Figure 3.1 Participant flow diagram: parents and children

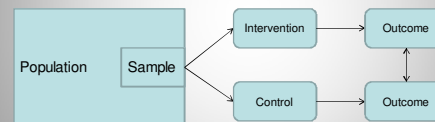


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Randomized trial

- The ideal for evaluating effectiveness is a randomized controlled trial (RCT).



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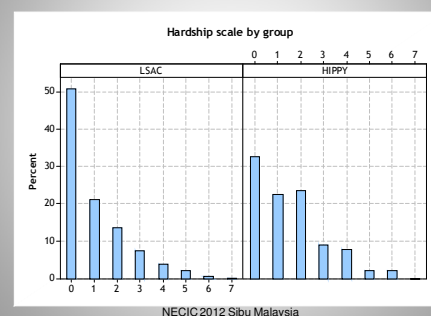
Randomized trial

- The ideal for evaluating effectiveness is a randomized controlled trial (RCT).
- A RCT was **logically, ethically and practically** possible, but not **politically** possible.
- Don't have that. Next best thing – Propensity Score Matching with LSAC to get counterfactual
- Conscious selection of HIPPY children guarantees substantial differences between HIPPY and LSAC children.

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Propensity score matching



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Propensity score matching

- Propensity score idea:
 - Estimate the chance of being a HIPPY child/parent (relative to LSAC), in these data.
 - Propensity score = $\Pr(\text{HIPPY})$.
 - When analysing outcomes, always include the propensity score in any analysis.
- Adjusts for the HIPPY / LSAC differences.
- Not randomization, but the next best thing:
- Children/parents compared have the same chance of being a HIPPY child/parent.

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Associations with HIPPY, before and after adjustment for propensity score

Variable	Before	After
Hardship scale	$P = 0.001$	$P = 0.56$
SEIFA disadvantage	$P < 0.0001$	$P = 0.27$
Who am I?	$P < 0.0001$	$P = 0.43$
ATSI	$P < 0.0001$	$P = 0.29$

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Analysis

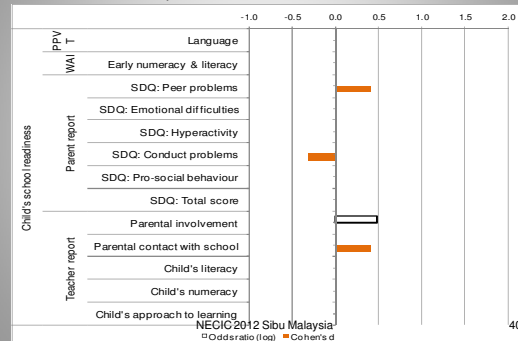
- Analysis of outcomes was done using the applicable statistical method:
 - Scale/continuous outcome – General Linear Model;
 - Ordinal outcome – Ordinal Logistic Regression ;
 - Binary outcome – Logistic Regression.
- In each case, the model evaluates the HIPPY effect **after adjustment for the propensity score**.

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Findings:

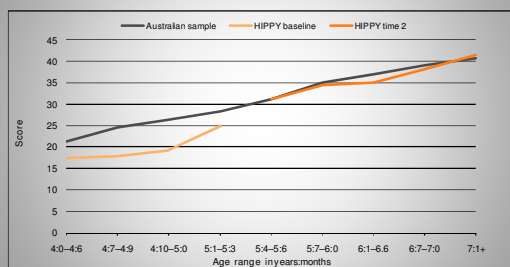
What was the impact of HIPPY on the child's school readiness?



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HIPPY children's cognitive development compared with the Australian norm

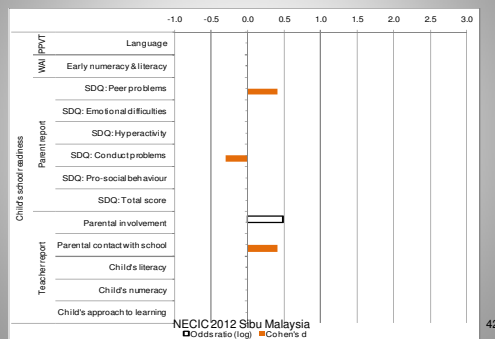


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Findings:

What was the impact of HIPPY on the child's school readiness?



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Parent and teacher qualitative statements about the perceived benefits of HIPPY

Parent report ...

"The teachers are surprised with him because he hasn't been to preschool and he does well at school. He's taken the prizes at school, a principal's award in the very first term."

Teacher reports...

"The child is going extremely well with school; she is an absolute delight to have in the classroom."

"The child is a very well adjusted five-year-old who enjoys all we do and participates fully."

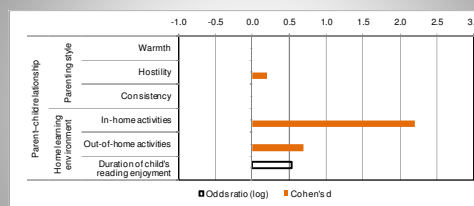
"The child is coping well, seems very happy and has lovely friendships. Behaviour is excellent. He is working at an appropriate level, very shy with adults but able to ask for help if required."

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Findings:

What was the impact of HIPPY on the parents?

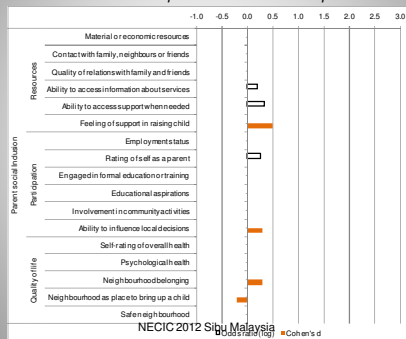


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Findings:

What was the impact of HIPPY on the parents?



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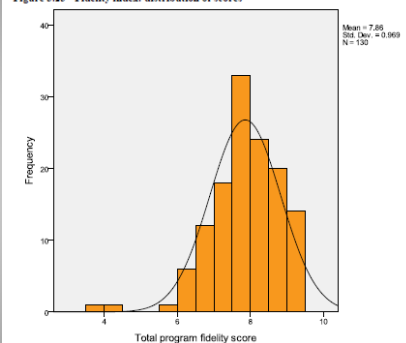
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Table 3.10 Fidelity framework and measures for HIPPY		
Fidelity aspects	Definitions	Measures
Delivery	Adherence	<ol style="list-style-type: none"> Number of home visits offered Number of group meetings offered Number of HIPPY weekly activity packs parent reported they did with child Number of days per week parent reported they usually did HIPPY with the child How often the parent reported they did role-play, learning through play, HIPPY principles, generalisation, behaviour management, other issues not directly linked to HIPPY
	Quality of delivery	<ol style="list-style-type: none"> How prepared the team was as reported by the parent Parent satisfaction with home tutor How much parent enjoyed doing HIPPY How useful parent thought HIPPY was for the child How much child enjoyed doing HIPPY
Uptake	Exposure	<ol style="list-style-type: none"> Number of home visits completed Number of group meetings attended Number of days per week parent reported they usually did HIPPY with the child How much time parent usually spent doing HIPPY with child in each session Average length of home visits
	Participant responsiveness	<ol style="list-style-type: none"> Parent report of usefulness of HIPPY How much HIPPY helped the parent with, for example, their confidence as their child's first teacher, parenting skills, understanding of child's development, meeting and finding support from other parents How often parent reported valuing what they had learnt from HIPPY in everyday life

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Figure 3.23 Fidelity index: distribution of scores



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If a parent did 'more' as compared to 'less' of HIPPY, does this produce better results?

Outcomes that were correlated with program fidelity	Total group	Low Fidelity	High Fidelity
SDQ: Child problems with peers			
SDQ: Child conduct problems			
SDQ: Child pro-social behaviour			
Parent felt more supported			
View about neighbourhood as safe place for children			
Parent self efficacy			
Confidence as child's first teacher (no LSAC comparison)			
Parent involved in child's learning & development (teacher report)			
Parent contact with school			
Hostile/angry parenting style			
In-home activities			
Out-of-home activities			
Reading with child			
Access to information when needed			
Ability to influence local decisions			
Neighbourhood belonging			

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Evaluation criteria	Comment
Appropriateness	The evaluation found that HIPPY has a rare combination of evidence-based features that are known to be effective in early childhood parenting programs. The program meets a significant need in Australia, and aligns with and supports four important Australian Government early childhood development priorities and policy agendas.
Effectiveness	The evaluation provides a strong evidence base as to the effectiveness of HIPPY, which sets it apart from most other early childhood parenting programs in Australia. Significant positive impacts were found across a number of important developmental domains and spheres of influence, including the child, the parent, the home learning environment and parents' social connectedness and inclusion. Moved from being a strong <i>theory-based</i> intervention to being a stronger <i>evidence-based</i> intervention.
Efficiency	HIPPY's cost-effectiveness compares very favourably to that of other programs. It was not possible to make Australian comparisons due to the lack of data about Australian programs. The program has achieved good efficiencies and a benefit-cost analysis shows a return on investment to society of as much as \$2.53 for every dollar spent. This is a conservative estimate, as the paucity of data available in Australia limited what could be included in the modelling. Research about other similar programs indicates it is realistic to estimate a return to society of as much as \$4 for every \$1 spent (Duncan et al. 2007).
HIPPY with Indigenous Australians	HIPPY with Indigenous Australians is promising , with strong reports of positive impacts. Successful strategies to meet the significant challenge of engaging Indigenous families are discussed.
Governance	HIPPY is well managed and governance arrangements are strong and satisfactory. However, based on stakeholder feedback there are opportunities for improvement in the areas of reporting requirements and balance between the needs of all partners within an innovative model of governance involving government and the community sector.

Indigenous HIPPY participants reports of perceived benefits...

- **increased confidence** to teach their child
- **increased confidence** to talk to their child's teacher
- **pride** for both the parent and the child in the child's learning and achievement
- **improved parenting skills:** patience and responding to difficult behaviour
- **better relationship** between parents and child and improved quality time spent with the child
- **social connectedness** from meeting other parents
- the child becoming familiar and confident with schoolwork
- more **insight about school's** requirements and expectations
- **better awareness** of their child's skills, abilities and academic needs.

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Conclusion

Do home-based ECD interventions for children work?

"The most successful early intervention programs have been aimed at socially disadvantaged families and have used combined strategies that target both child and parent." (Watson & Tully, 2008)

What is the place for home-based ECD interventions?

To reduce inequalities action must be universal but at a scale and intensity that is relative to need ; those who need more get more.

Governments should invest in universal centre-based child care + targeted home-visiting to reach those who need more (not place-based).

We call this **proportionate universalism**

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