Factors contributing to the sustainability of an early childhood obesity prevention intervention:

The *Infant Program*

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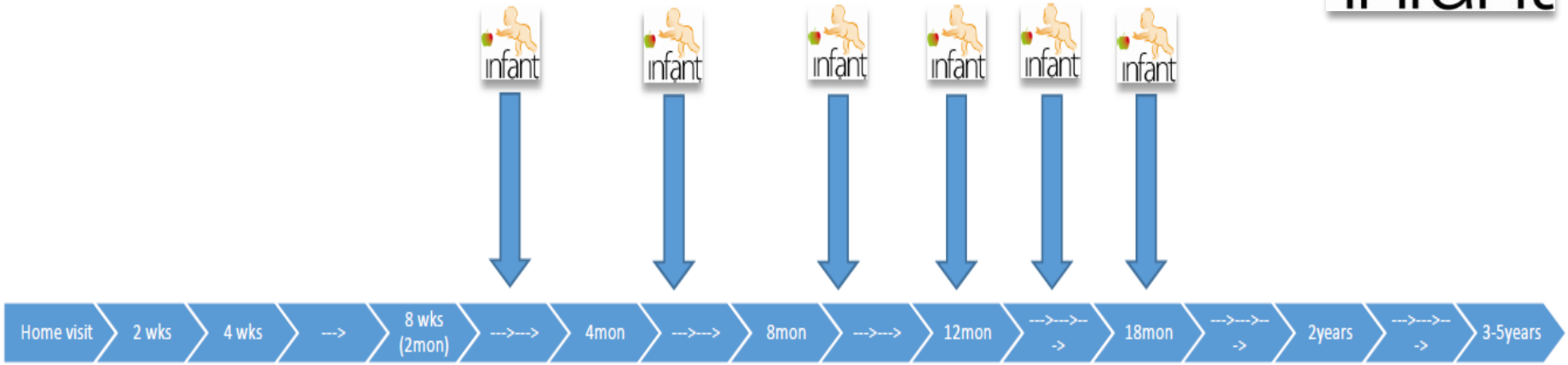
Dr Penny Love

Dr Rachel Laws

A/Professor Kylie Hesketh

Professor Karen Campbell

The *Infant Program*



Victorian Maternal and Child Health Key Ages & Stages Service

epoch Early Prevention Of Obesity In Childhood

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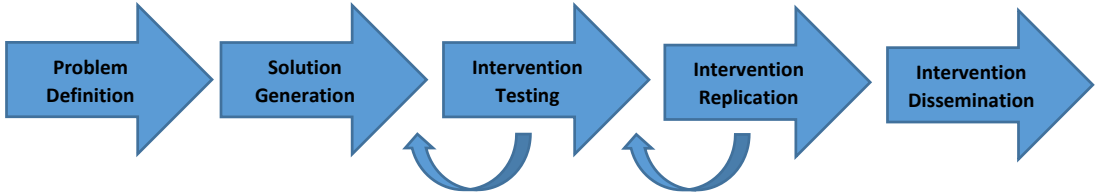
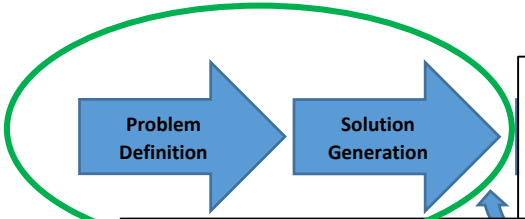
The *Infant Program*

Evolution of the *Infant Program*: from trial to sustainability



Rychetnik L, Bauman A, Laws R, King L, Rissel C, Nutbeam D, et al. Translating research for evidence-based public health: Key concepts and future directions. Journal of Epidemiology and Community Health. 2012;66(12):1187-92

Evolution: formative research



Management of obesity: attitudes and practices of Australian dietitians

K Campbell[1] and D Crawford[1]*

[1]School of Health Sciences, Deakin University, Burwood, Australia

Obesity Management: Australian General Practitioners' Attitudes and Practices

Karen Campbell,* Helen Engel,† Anna Timperio,* Catherine Cooper† and David Crawford*

Australian parents' views on their 5–6-year-old children's food choices

KAREN J. CAMPBELL, DAVID A. CRAWFORD and KYLIE D. HESKETH

Centre for Physical Activity and Nutrition Research, School of Exercise and Nutrition Sciences, Deakin University, Burwood, Australia

Interventions for preventing obesity in children (Review)

Campbell K, Waters E, O'Meara S, Kelly S, Summerbell C

THE COCHRANE COLLABORATION®

Strategies which aim to positively impact on weight, physical activity, diet and sedentary behaviours in children from zero to five years. A systematic review of the literature

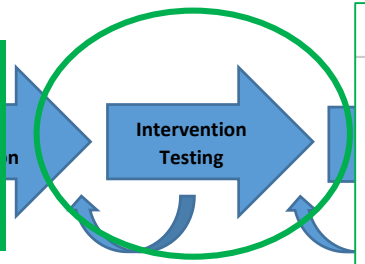
K. J. Campbell and K. D. Hesketh

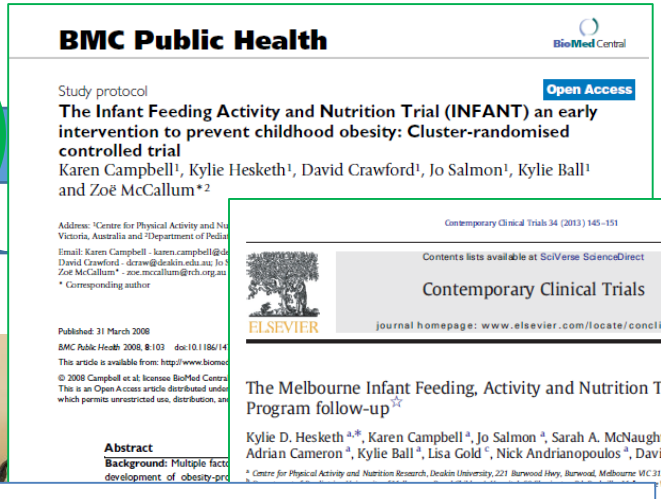
Interventions to Prevent Obesity in 0–5 Year Olds: An Updated Systematic Review of the Literature

Kylie D. Hesketh[1] and Karen J. Campbell[1]

Evolution: intervention testing

Cluster RCT (2008)
Follow-up (2011)





BMC Public Health

BioMed Central

Study protocol

Open Access

The Infant Feeding Activity and Nutrition Trial (INFANT) an early intervention to prevent childhood obesity: Cluster-randomised controlled trial

Karen Campbell[1], Kylie Hesketh[1], David Crawford[1], Jo Salmon[1], Kylie Ball[1] and Zoë McCallum*[2]

Contemporary Clinical Trials 34 (2013) 145–151

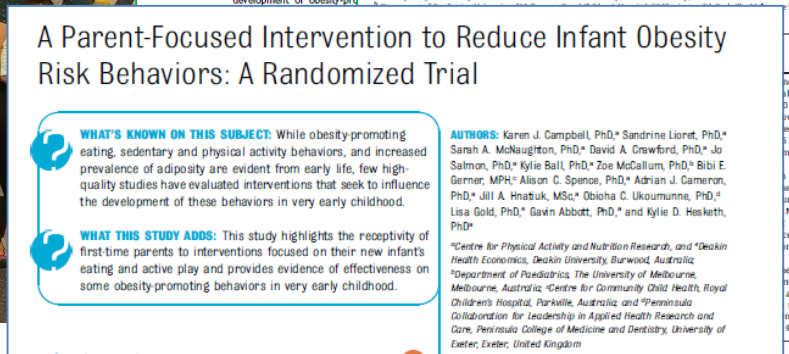
Contents lists available at SciVerse ScienceDirect

Contemporary Clinical Trials

journal homepage: www.elsevier.com/locate/conclintrial

The Melbourne Infant Feeding, Activity and Nutrition Trial (InFANT) Program follow-up☆

Kylie D. Hesketh[a,*], Karen Campbell[a], Jo Salmon[a], Sarah A. McNaughton[a], Zoe McCallum[b], Adrian Cameron[a], Kylie Ball[a], Lisa Gold[c], Nick Andrianopoulos[a], David Crawford[a]



A Parent-Focused Intervention to Reduce Infant Obesity Risk Behaviors: A Randomized Trial

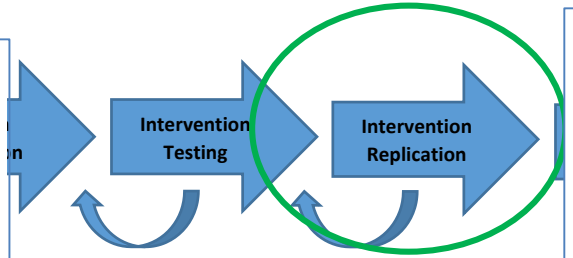
WHAT'S KNOWN ON THIS SUBJECT: While obesity-promoting eating, sedentary and physical activity behaviors, and increased prevalence of adiposity are evident from early life, few high-quality studies have evaluated interventions that seek to influence the development of these behaviors in very early childhood.

WHAT THIS STUDY ADDS: This study highlights the receptivity of first-time parents to interventions focused on their new infant's eating and active play and provides evidence of effectiveness on some obesity-promoting behaviors in very early childhood.

AUTHORS: Karen J. Campbell, PhD,[a] Sandrine Lioret, PhD,[a] Sarah A. McNaughton, PhD,[a] David A. Crawford, PhD,[a] Jo Salmon, PhD,[a] Kylie Ball, PhD,[a] Zoe McCallum, PhD,[b] Bibi E. Gerner, MPH,[c] Alison C. Spence, PhD,[a] Adrian J. Cameron, PhD,[a] Jill A. Hnatiuk, MSc,[a] Obioha C. Ukoumunne, PhD,[d] Lisa Gold, PhD,[e] Gavin Abbott, PhD,[a] and Kylie D. Hesketh, PhD[a]

[a]Centre for Physical Activity and Nutrition Research, and [e]Deakin Health Economics, Deakin University, Burwood, Australia; [b]Department of Paediatrics, The University of Melbourne, Melbourne, Australia; [c]Centre for Community Child Health, Royal Children's Hospital, Parkville, Australia; and [d]Peninsula Collaboration for Leadership in Applied Health Research and Care, Peninsula College of Medicine and Dentistry, University of Exeter, Exeter, United Kingdom

Evolution: small scale implementation



Laws et al. BMC Nursing (2015) 14:26
DOI 10.1186/s12912-015-0077-7

BMC Nursing

RESEARCH ARTICLE Open Access

Obesity prevention in early life: an opportunity to better support the role of Maternal and Child Health Nurses in Australia

R. Laws[1,5*], K. J. Campbell[1,5], P. van der Pligt[1], K. Ball[1,5], J. Lynch[2,5], G. Russell[3,5], R. Taylor[4,5] and E. Denney-Wilson[3,5]

Abstract

Backgrou
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prevention

Methods:
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Results: A
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Keywords

Campbell et al. BMC Public Health (2016) 16:166
DOI 10.1186/s12889-016-2836-0

BMC Public

STUDY PROTOCOL Ope

The extended Infant Feeding, Activity and Nutrition Trial (InFANT Extend) Program: a cluster-randomized controlled trial of an early intervention to prevent childhood obesity

Karen J. Campbell[1*], Kylie D. Hesketh[1], Sarah A. McNaughton[1], Kylie Ball[1], Zoë McCallum[2], John Lynch[3] and David A. Crawford[1]

Abstract

Background: Understanding how we can prevent childhood obesity in scalable and sustainable ways is
Early RCT interventions focused on the first two years of life have shown promise however, differences in
Mass Index between intervention and control groups diminish once the interventions cease. Innovative a
effective strategies seeking to continue to support parents to engender appropriate energy balance beha
young children need to be explored.

Laws et al. BMC Public Health (2016) 16:748
DOI 10.1186/s12889-016-3361-x

BMC Pub

RESEARCH ARTICLE

Translating an early childhood obesity prevention program for local community implementation: a case study of the Melbourne InFANT Program

R. Laws[1,2,3*], K. D. Hesketh[1,3], K. Ball[1,2], C. Cooper[1], K. Vrljic[4] and K. J. Campbell[1,2,3]

Abstract

Background: While there is a growing interest in the field of research translation, there are few pu
examples of public health interventions that have been effectively scaled up and implemented in t
This paper provides a case study of the community-wide implementation of the Melbourne Infant,
and Nutrition Trial (InFANT), an obesity prevention program for parents with infants aged 3–18 mo
explored key factors influencing the translation of the Program into routine practice and the respec
policy makers, researchers and implementers.

Methods: Case studies were conducted of five of the eight prevention areas in Victoria, Australia who
the Program. Cases were selected on the basis of having implemented the Program for 6 months or
collected from January to June 2015 and included 18 individual interviews, one focus group and obse
meetings. A total of 28 individuals, including research staff ($n = 4$), policy makers ($n = 2$) and implemer
contributed to the data collected. Thematic analysis was conducted using cross case comparisons and
were verified through member checking.

nutrients

MDPI

Article

Factors Influencing Parental Engagement in an Early Childhood Obesity Prevention Program Implemented at Scale: The *Infant Program*

Penelope Love [1,2,*], Rachel Laws [1,2], Eloise Litterbach [3] and Karen J. Campbell [1,2]

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2 Centre of Research Excellence, Early Prevention of Obesity in Childhood (EPOCH), Deakin University, Geelong 3222, Australia
3 School of Exercise and Nutrition Sciences, Deakin University, Geelong 3222, Australia; e.litterbach@deakin.edu.au
* Correspondence: penny.love@deakin.edu.au; Tel.: +61-03-5227-8484

Received: 29 March 2018; Accepted: 16 April 2018; Published: 19 April 2018

check for updates

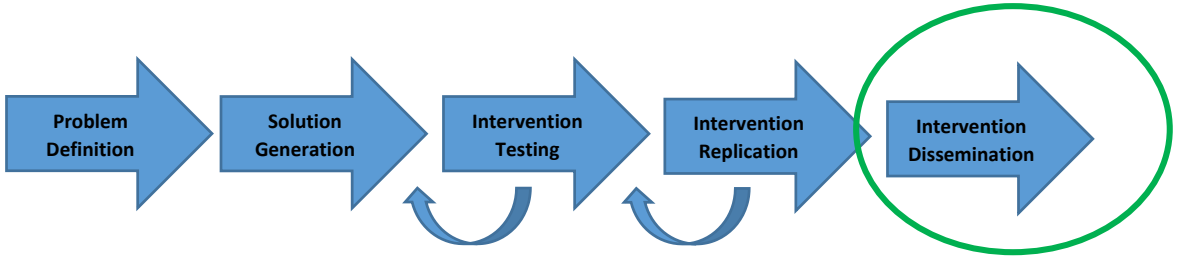
Abstract: The 'early years' is a crucial period for the prevention of childhood obesity. Health services are well placed to deliver preventive programs to families, however, they usually rely on voluntary attendance, which is challenging given low parental engagement. This study explored factors influencing engagement in the *Infant Program*: a group-based obesity prevention program facilitated by maternal and child health nurses within first-time parent groups. Six 1.5 h sessions were delivered at three-month intervals when the infants were 3–18 months. A multi-site qualitative exploratory approach was used, and program service providers and parents were interviewed. Numerous interrelated factors were identified, linked to two themes: the transition to parenthood, and program processes. Personal factors enabling engagement included parents' heightened need for knowledge, affirmation and social connections. Adjusting to the baby's routine and increased parental self-efficacy were associated with diminished engagement. Organisational factors that challenged embedding program delivery into routine practice included aspects of program promotion, referral and scheduling and workforce resources. Program factors encompassed program content, format, resources and facilitators, with the program being described as meeting parental expectations, although some messages were perceived as difficult to implement. The study findings provide insight into potential strategies to address modifiable barriers to parental engagement in early-year interventions.

Keywords: childhood obesity; parental engagement; maternal and child health; research translation; implementation; infant feeding; active play

1. Introduction

The 'early years', more recently defined as the first 1000 days (conception to 24 months), is widely acknowledged as a crucial period in laying the foundation for life-long learning and development [1,2], and more specifically, for the prevention of childhood obesity [3]. Globally, an estimated 41 million children aged under five are overweight or obese [4]. In Australia, 20% of children aged 2–4 years are overweight or obese [5], with predictions that this could reach 33% by 2025 [6]. One in three children living in lower socioeconomic areas (33%) are overweight or obese compared with those living in higher socioeconomic areas (19%), while levels are comparable across urban (26%) or regional (27%)

Evolution: sustainability



AIM:

To explore the enablers and barriers to the sustained implementation of the *Infant Program* within Victorian, Australia

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Methods

- Convergent parallel mixed methods study
- Online survey of trained facilitators since scale-up (RR: 52.4%)
  - ongoing implementation (5 LGAs)
  - discontinued implementation (5 LGAs)
  - no implementation (4 LGAs)
- Follow-up telephone interviews of sub-sample
  - ongoing implementation (4 LGAs)
  - discontinued implementation (4 LGAs)
  - no implementation (3 LGAs)

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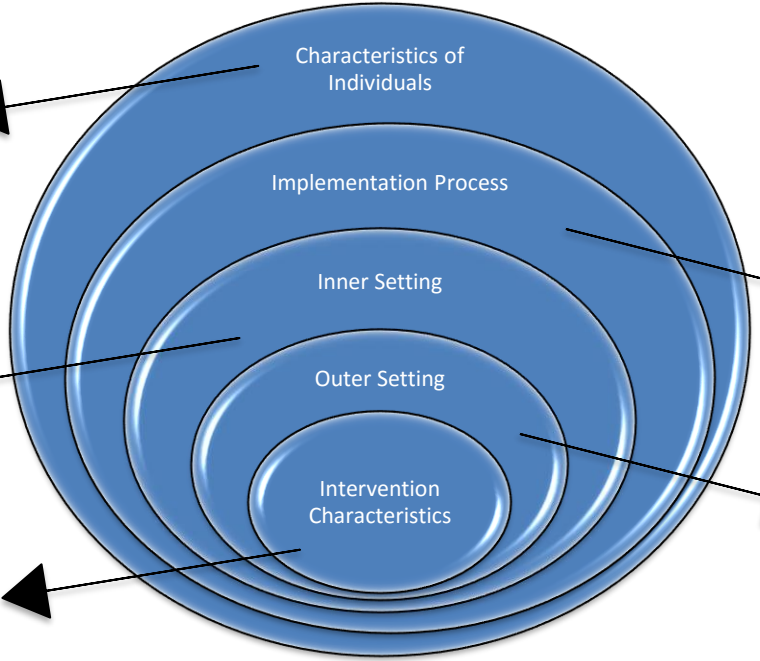
Thematic analysis

CHARACTERISTICS OF FACILITATORS
Knowledge & beliefs about intervention; self-efficacy; implementation skills; identification with organisation; personal attributes

INNER SETTING
Organisational structure; networks & communications; culture; implementation climate; readiness for implementation

INTERVENTION CHARACTERISTICS
Implementation decisions; evidence; relative advantage; adaptability; complexity; design quality; cost



IMPLEMENTATION PROCESS
Coordination; engagement; execution to plan; reflection & evaluation

OUTER SETTING
Participant needs; cosmopolitanism; peer pressure; external policy & incentives

Damschroder, L.J., et al., Fostering implementation of health services research findings into practice: A consolidated framework for advancing implementation science. Implementation Science 2009, 4(1):50

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Results

CHARACTERISTIC		TOTAL (n=33)	Ongoing (n=15)	Discontinued (n=11)	Never (n=5)	Don't know (n=2)
Gender	Female	33	15	1	5	2
Age	20-29 years	3	3			
	30-39 years	6	3	1		2
	40-49 years	12	5	6	1	
	50-59 years	10	4	3	3	
	60+ years	2		1	1	
Position	MCHN	15	8	5	2	
	Dietitian	9	6		2	1
	HP Officer	3	1	1		1
	Early Intervention/ Childhood Professional	3		2	1	
	Children/Families Professional	3		3		
Capacity	full time	12	5	3	2	2
	part-time	21	10	8	3	
In role	<5years	7	5	2	0	
	5-10years	11	6	3	0	2
	11-15years	4	2	1	1	
	>15years	11	2	5	4	
LGA since training	same	31	15	11	5	
	different	2				2

Results

ENABLERS		BARRIERS	
ONGOING (n=15)	**INITIAL (n=11)**	**DISCONTINUED (n=11)**	**NEVER (n=5)**
Management su[illegible]port	Availability of funding	Availability of funding	[illegible]Availability of funding
Availability of [illegible]ding	Availability of staff to deliver	Ability to maintain attendance of parents	[illegible]ailability of staff to deliver [illegible]Availability of staff to co-ordinate
Evidence to su[illegible]e decision Confidence [illegible]to deliver Availability [illegible]co-ordinate [illegible]s routine	Evidence to support the decision Management support Availability of staff to co-ordinate	Availability of staff to deliv Availability of staff to c[illegible] ordinate Mana[illegible]	Ability to incorporate as routine practice [illegible]bility to maintain attendance of parents
	Alignment to organisational priorities Ability to incorporate as routine practice Confidence of staff to deliver Ability to recruit parents Ability to maintain attendance of parents		[illegible]support the [illegible]on [illegible]t support [illegible]uit parents
Ability to maintain attendance of parents		Confidence of staff to deliver	
Availability of staff to deliver		Evidence to support the decision	

HIGH likelihood of continuing implementation

LOW likelihood of (re) starting implementation

CONCLUSIONS

ENABLERS OF SUSTAINABILITY

- Management support
- Sufficient funding and staff
- Incorporation into routine practice
- Alignment to organisational priorities
- Recruitment & retention of adequate participant numbers
- Confidence of staff to deliver & coordinate the program

CFIR Constructs

Inner setting - Leadership engagement

Inner setting - Available resources

Inner setting - Compatibility

Inner setting - Relative priority

Outer setting - Patient needs

Individual Characteristics - Attributes

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resourcing

leadership

partnerships

policy & procedures

resourcing

training & capacity building

leadership

program effectiveness

stakeholder participation

monitoring progress

intergation into existing programs/policies

Lessons learnt

- Streamlined administration and evaluation processes
  > Online registration and evaluation system
- Accessible facilitator training
  > Online training course
- Capacity building on implementation processes
  > Case studies and facilitator networking
- Participant online options to complement sessions
  > Program app and website
- High level organisational support
  > Partnership engagement
  > System wide approach to roll out

“I’ve been able to incorporate *Infant* into my role whereas I think other dieticians or maternal and child health nurses don't have that flexibility”

“I think if you get really, really good training, that puts you in a good place to then deliver”

“*Infant* provided a structure and some resources for providing a program to mothers addressing many of the issues that we wanted to address”

“The reason we can run so many *Infant* programs and offer so much support is because we have the funding to do it”

“In the early stages the scheduling was quite difficult.. at age specific times, and juggling the dieticians’ diaries….but we’ve come up with a reasonably good scheduling system now”