Applying the theoretical domains framework to identify barriers to the implementation of childcare nutrition guidelines: systematic review

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Background

- Early childhood (0-5yrs) is a critical period in the establishment of healthy dietary behaviours

- Children are not meeting dietary guidelines

- Childcare identified as key environment

- Nutrition guidelines developed to ensure healthy foods are provided to children
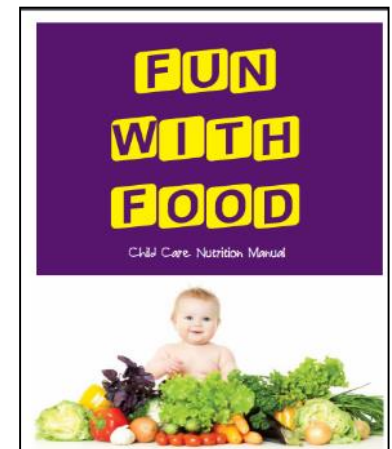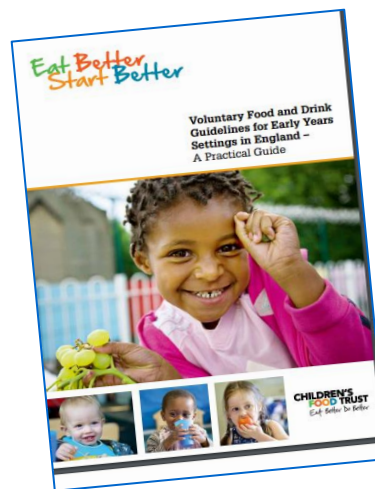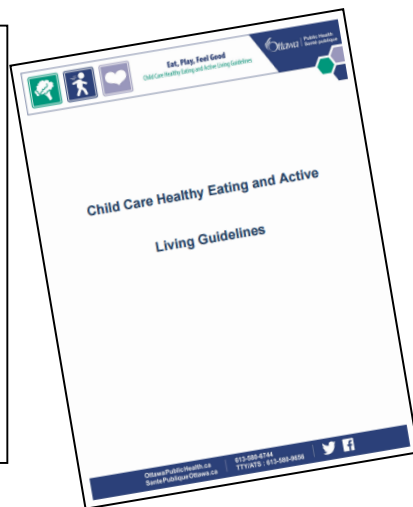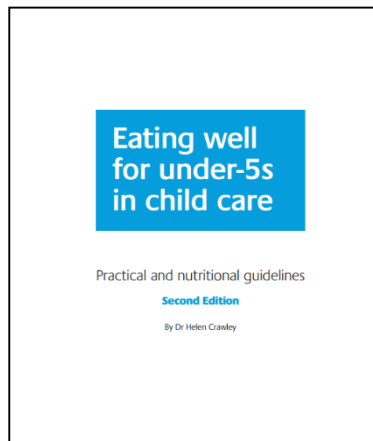
Context

- Evidence suggests poor implementation

- Services often failing to provide foods that are consistent with recommendations

  – Prevalence 5% Australia; 0% New South Wales

- Significant given:

  – 20 yr existence

  – High recognition amongst staff

  – Supportive licensing and accreditation standards

Aim:

- To identify factors (barriers and facilitators) that may influence the implementation of dietary guidelines regarding food provision in centre based childcare services

- To apply Theoretical Domains Framework (TDF) in synthesis of factors

  – To provide a comprehensive understanding to better inform future intervention strategies

Theoretical Domains Framework (TDF)

- Allows use of behavioural theory to investigate and address implementation problems

- Constructs from 33 behaviour change theories grouped in 14 domains covering key factors that may be barriers or enablers to implementation

- Provides a systematic approach:

  - Understanding of the determinants of current and desired implementation behaviours.

  - Identifying areas to change

  - Selection of strategies

TDF Domains and Scope

Domain	Example
Knowledge	Awareness of guidelines, procedural knowledge
Skills	Sufficient ability acquired through training and practice
Memory, attention and decision processes	Does the service forget, are there reminders in place?
Behavioural regulation	What is done at a personal level to ensure staff do this?
Social influences	Who influences the decision to do this?
Environmental context and resources	Are there sufficient resources, what is missing?
Social/professional role and identity	Is this seen as typical thing to do in their role?
Beliefs about capabilities	Confident in capacity, what makes it easier or difficult?
Beliefs about consequences	What are benefits or negative aspects of doing this?
Optimism	Is the staff member optimistic that this will make a difference in the grand scheme?
Intentions	How motivated are staff to do this?
Motivation and goals	Priority of doing this compared to competing demands
Reinforcement	Is there any external reward for doing this ?
Emotion	Is this stressful to do ?

Methods

Data sources:

- Medline, Medline in Process, PsycINFO, ERIC, Embase and CINAHL

- Reference lists of included studies, hand searches of Implementation Science, contacted authors and experts re ongoing studies

Inclusion criteria:

- **Studies:** Non-experimental, or any design, conducted in childcare which qualitatively and/or quantitatively examined barriers or facilitators

- **Participants:** Managers, cooks, or other staff, involved in the operation of centre based childcare services.

- **Measures:** Any factors reported to influence implementation (records, interviews, questionnaires/ surveys)

Methods

Selection of studies

- Duplicate screening all abstracts and titles

Data extraction:

- Two review authors independently extracted information on:
  - Study design, sampling method and size, recruitment method, inclusion/exclusion criteria, year of publication, childcare service type, country and participant/service demographics and socioeconomic characteristics.
  - Data collection method, the factors (barriers and facilitators) identified, and the validity of measures used.

TDF Data synthesis

- Identified factors were assigned to domains according to definitions pre-specified in a coding manual

Prisma flow diagram

5610 records identified through electronic database search

1450 additional records identified from hand-search of key journals/ checking reference lists of included studies /grey literature, contact with authors/implementation scientists

5139 records screened after duplicates removed

5019 records excluded

120 full text articles assessed for eligibility

108 full text articles excluded, with reasons

Outcomes*: n=89
Participants**: n=9
Not available in English: n=1

Unable to locate full text: n= 9

12 included studies

(6 Quantitative studies; 6 qualitative studies)

Results: Characteristics of included studies

- ***Countries:*** Canada (n=5), US (n=4), Australia (n=1), Ireland (n=1) and New Zealand (n=1)

- ***Participants:*** Service cooks, educators, service directors or service managers (range 8 to 2841)

- ***Measures:***
  - Quantitative: telephone (n= 2), pen and paper (n= 2), online tool (n=1), one did not describe

  - Qualitative: face-to-face semi structured interviews (n=4), focus groups (n=2)

- ***Design:*** Cross-sectional (n=11) and one multi-case exploratory design

Results: Barriers

TDF domains	Quantitative N=6	Qualitative N=6
1. Knowledge	←··· (n=3)	←··· (n=3)
2. Skills	←··· (n=4)	←··· (n=1)
3. Social influences	←··· (n=4)	←··· (n=5)
4. Beliefs about capabilities		←··· (n=2)
5. Beliefs about consequences		←··· (n=2)
6. Environmental context and resources	←··· (n=5)	←··· (n=4)
7. Professional role and identity	←··· (n=1)	←··· (n=1)
8. Intentions	←··· (n=1)	
Total domains barriers identified for	6	7

Results: Barriers

TDF domains	Quantitative N=6	Qualitative N=6	Examples
1. Knowledge	← (n=3)	← (n=3)	Limited general nutrition knowledge and poor knowledge of the menu dietary guidelines
2. Skills	← (n=4)	← (n=1)	
3. Social influences	← (n=4)	← (n=5)	Staff perceptions of what foods children liked or disliked
4. Beliefs about capabilities		← (n=2)	
5. Beliefs about consequences		← (n=2)	
6. Environmental context and resources	← (n=5)	← (n=4)	Insufficient menu planning tools and resources; insufficient time
7. Professional role and identity	← (n=1)	← (n=1)	
8. Intentions	← (n=1)		

Results: Facilitators

TDF domains	Quantitative N=6	Qualitative N=6
1. Knowledge		←¨(n= 2)
2. Skills	←¨(n=1)	←¨(n=3)
3. Social influences	←¨(n=2)	←¨(n= 3)
4. Beliefs about capabilities		←¨(n= 2)
5. Beliefs about consequences		←·· ←¨(n=1)
6. Environmental context and resources	←¨(n= 5)	←¨(n=5)
7. Professional role and identity		←¨(n=2)
8. Intentions		←¨(n=1)
9. Goals		←¨(n=3)
10. Reinforcement		←¨(n=1)
Total domains barriers identified for	3	10

Results: Facilitators

TDF domains	Quantitative N=6	Qualitative N=6	Examples
Knowledge		(n= 2)	
Skills	← (n=1)	← (n=3)	Highly trained and staff skilled in menu planning
Social influences	← (n=2)	← (n= 3)	Staff communication and collaboration; well established social networks to share information and gain support
Beliefs about capabilities		← (n= 2)	
Beliefs about consequences		← (n=1)	
Environmental context and resources	← (n= 5)	← (n=5)	The availability of sample menus; enforcement of nutrition policies and role modelling of healthy eating behaviours by staff
Professional role and identity		← (n=2)	
Intentions		← (n=1)	
Goals		← (n=3)	
Reinforcement		← (n=1)	

Summary

- The inclusion of both quantitative and qualitative studies allowed us to identify a broader range of factors

- Factors within 'Environmental context and resources' and 'social influences' were most common influences on implementation

- Strategies would benefit from addressing
  - Barriers: skills, resources (e.g recipes sample menus), staff perceptions that children will not like foods

  - Facilitators: Internal relationships and supportive environment (e.g policy and role modelling)

Summary cont.

- None of the included studies reported barriers or facilitators relating to 'optimism', 'memory', 'attention and decision processes' and 'behavioural regulation'.

- Suggests that the state of the literature is focused on early implementation stages– that of adopting a new practice.

- Limitations: limited to those published in English, majority of studies conducted in US, Canada.

  – Barriers reported in other jurisdictions with alternative models of childcare operations may differ

- Acknowledge the need to verify findings amongst childcare services within our region

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