

Written submission to the Joint Committee on Children and Youth Affairs on the topic of Tackling Childhood Obesity

Introduction

The Choosing Healthy Eating for Infant Health (CHERISH) team would like to thank the Joint Committee on Children and Youth Affairs for the opportunity to provide input into their consultation on tackling childhood obesity.

The prevalence of **childhood obesity** in Ireland is unacceptably high, with approximately 1 in 5 primary school children overweight or obese. Obesity in childhood can lead to increased risk of diabetes, hypertension, coronary heart disease and stroke in later life. The **first two years of life** represent a critical window for the development and prevention of childhood overweight and obesity. How, what, and when parents feed their child influences children's feeding behaviours, preferences and weight outcomes. Feeding behaviours therefore represent important modifiable targets for childhood obesity prevention.

Healthcare professionals (e.g. General Practitioners, Public Health Nurses) are in a unique position to guide and influence parent feeding behaviours to prevent childhood obesity. This is because during the first two years, such healthcare professionals have frequent contact with parents of young children. In Ireland, children currently have up to 24 contact points, such as routine vaccination visits, with healthcare professionals in the first two years of life. Thus healthcare professionals are uniquely placed to deliver infant feeding and obesity prevention strategies during routine visits.

The aim of the CHERISH Project is therefore to inform, develop, implement, and evaluate an **evidence-based infant feeding intervention** to be delivered in primary care in Ireland. To date, the CHERISH study has completed a number of studies to address this aim. Findings from each of these studies are presented herein; links to all relevant publications are presented in Appendix 3.

The existing burden and future impact of current rates of childhood overweight and obesity

- We estimated the causal effect of child overweight and obesity status on **direct** (e.g. healthcare utilisation) and **indirect** (e.g. societal) **costs** and found:
 - A **significant effect of weight status on healthcare utilisation for children** at age thirteen.
 - **Lifetime indirect costs** of childhood/adolescent overweight/obesity (productivity losses, premature mortality and lifetime income losses) are **greater than direct costs** resulting from healthcare obesity related expenditure.
 - Obesity should not be understood solely as a health issue but rather one that may have far-reaching implications for a child's education and economic future.
- We examined whether adiposity of the child, his/her mother, or both were associated with **teachers' perceptions of the child's academic ability** at age nine. We found:
 - **Teachers are more likely to rate children of obese mothers as below average in reading and mathematics** compared to those whose mother was leaner (adjusting for their measured ability).
 - Given the role of the teacher in educating and motivating students this could have implications for further educational attainment. Poorer academic achievement can indirectly lead to lower wages and fewer employment opportunities.
- We examined maternal recognition of overweight/obesity during early childhood in Ireland and found:
 - Mothers of overweight or obese three and five year olds show **poor awareness of their child's weight** status.
 - A range of **child, mother and household characteristics** contributed to maternal weight misperception when children are three years old and five years old. A failure of mothers to identify their child's overweight/obesity was more likely to occur if the child was a girl, had a higher birth weight, if the mother was obese or working.
 - This study suggests that health professionals and public health campaigns need to play a greater role in helping mothers' correctly identify their child's weight status.

Understanding infant feeding practices and how they can inform childhood obesity prevention

Complementary feeding is a process where foods and liquids other than breastmilk or formula milk are introduced. The timing and types of foods introduced during complementary feeding have been associated with childhood overweight and obesity. To examine parents' experiences and perceptions of complementary infant feeding, we synthesised studies that asked parents about their feeding experiences in the first two years. This can inform how we can improve complementary feeding and related supports in Ireland to tackle childhood obesity. The following key points were identified:

Guidelines & Advice

- Friends and family are highly trusted and influential
- Value of healthcare professional advice depends on perceived appropriateness and 'fit'
- Parents aware of official guidelines but perceived usefulness varies
- Having multiple conflicting sources is confusing

Stage of Weaning

- Parents experiences change over time
- Beginning complementary feeding involves concern about how, what and when to feed. Some parents experience excitement about beginning feeding.
- During established feeding parents experience stress, and evaluate food as good or bad.
- Parents also enjoy interacting with their child through feeding

Knowing & Trying

- Maternal instinct guides much feeding behaviour
- Parents with prior experience do not feel they need information of advice
- Parents engage in 'trial and error' behaviour when feeding to see what works for them and their baby

Daily Life

- Cost of healthy feeding is a barrier for most parents, regardless of socioeconomic status
- Time constraints influence what is fed, especially for working parents
- Ready made foods are considered time saving but are not fully trusted by parents

Development and feasibility of an intervention to improve early infant feeding practices and prevent childhood obesity, to be delivered in primary care in Ireland

Key findings from reviews of healthcare professional delivered infant feeding interventions to prevent childhood obesity demonstrate:

- These interventions can:
 - **Reduce the pressure parents put on their child to eat.** This is important because greater parental pressure has been associated with enhanced risk of overweight and obesity.
 - **Reduce child consumption of non-core drinks** (e.g. any drinks besides milk or water). Consumption of these drinks also have links to childhood overweight and obesity.
- Interventions most commonly include instructions for parents on how to feed their infant.
- Overall theory use was poor in intervention development. Appropriate theory can help identify how, and to what extent, interventions can lead to changes in infant feeding behaviour and child weight.
- A **responsive feeding** approach, demonstrating how to respond to the infant's hunger and satiety cues, demonstrated better child weight and feeding outcomes.
- Little attention was given to **how intervention providers were trained**, and also to how closely their delivery of the intervention aligned with how the intervention was intended to be delivered. This limits assessing the effectiveness of the intervention.

Review of experiences of participating in infant feeding obesity prevention interventions

We have reviewed parent and healthcare professional (HCP) experiences of participating in infant feeding interventions. Two main themes were identified:

Intervention experience/implementation		Intervention Outcome
What factors influenced how the intervention was experienced/implemented?		
Healthcare provider	Parent	
Consistency of message across HCPs/providers	Practical skills and information	Interventions facilitated changes in knowledge, understanding, emotions/feelings and behaviours for parents
Importance of relationships between healthcare professionals/providers	Supportive environment and relationships	
Time/capacity/resources e.g. staffing	Sustainability and continuity of intervention delivery	

The key findings from this review are:

- **Supportive relationships and environments** are integral to the successful infant feeding interventions to prevent childhood obesity for both healthcare professionals and parents
- **Capacity issues** can negatively affect intervention delivery for healthcare professionals.
- A focus on **practical elements** is essential for parents to ensure success.

Examining feasibility of an infant feeding intervention in primary care in Ireland

We have conducted focus groups with parents, to determine content, format, delivery and acceptability of an infant feeding intervention at vaccination visits; Interviews were also conducted with healthcare professionals to examine opinions on addressing infant feeding in primary care, and barriers and enablers to delivering an infant feeding intervention at vaccination visits.

Both parents and healthcare professionals identified the following key points:

- **Clear consistent information** provision is essential
- Resources should be **evidence-based and trustworthy**
- Need to **raise awareness** of the importance of infant feeding for obesity prevention
- **Practical skills-based guidance and instruction** is needed
- Having a **good trusting relationship** between the parent and healthcare professional is important
- **Time, capacity, availability and accessibility** of healthcare professionals to deliver intervention is problematic

Recommendations for prevention of childhood obesity via infant-feeding interventions delivered in primary care

A number of key recommendations for **primary care based infant feeding childhood obesity prevention in Ireland** have arisen from the findings of the CHERIsH study to date. These recommendations were recently presented at the international CHERIsH steering committee meeting to a panel of national and international experts from the fields of Health Psychology, Public Health, Health Economics, Maternal and Infant Health, Implementation Science, as well as representatives from the Health Service Executive, Safefood and the Health Research Board.

As a result **the CHERIsH team present the following recommendations:**

1. Infant feeding advice must be delivered in a **clear and consistent** manner across healthcare professionals and additional (paper-based and online) resources messages.
2. Obesity prevention strategies must focus on informing and training parents in **accurate and developmentally appropriate responses to child feeding cues**.
3. Early child feeding supports must include and acknowledge the importance of **family and friends** in infant feeding. This can be done by developing family or community based strategies, or by providing information to parents about the role of family and friends in their infant feeding experience.
4. Infant feeding must be considered as a **process with changes over time** for children and parents. Provision of support to parents by healthcare professionals for both positive and negative experiences, which can change over time, is important to promote healthy infant feeding and prevent childhood obesity.
5. Provision of adequate **resources, training and capacity** for healthcare professionals to deliver infant feeding interventions is crucial.
6. There is a need for **greater consensus/clarity regarding the role of healthcare professionals** in relation to infant feeding in primary care.
7. Healthcare professionals and public health campaigns may need to play a greater role in terms of **helping mothers' correctly identify their child's weight** status.
8. Consideration and integration of **theory** at all stages of the development, implementation and evaluation of obesity prevention initiatives is essential to develop effective approaches.

Choosing Healthy Eating for Infant Health (CHERISH Study)

The CHERISH research team are currently working with key stakeholder groups, including parents and healthcare professionals, to finalise our infant feeding intervention based on our research findings and recommendations.

We thank the Committee for the opportunity to respond to the consultation on tackling childhood obesity. We would be delighted to provide any further information as needed and we look forward to your response regarding the recommendations we have put forward.

Dr Karen Matvienko-Sikar and Professor Patricia M. Kearney on behalf of the CHERISH study team



Appendix 1

CHERISH Project details

Funding: Health Research Board (HRB) Interdisciplinary Capacity Enhancement (ICE) Awards 2015

Project Team:

University College Cork: Prof Patricia Kearney (*Principal investigator*), Dr Janas Harrington, Dr Sheena McHugh, Dr Karen Matvienko-Sikar, Jenny Cooney

National University of Ireland Galway: Prof Molly Byrne, Dr Caroline Heary, Dr Edel Doherty, Dr Michelle Queally, Dr Elaine Toomey, Marita Hennessy

Trinity College Dublin: Prof Catherine Hayes

Mallow Primary Healthcare Centre: Dr Tony Heffernan

Project Aim: To develop, implement, and evaluate an evidence-based infant feeding intervention to be delivered in primary care

Work Package 1: Identifying the literature and evidence base- completed

Work Package 2: Develop a pilot intervention to influence infant feeding practices - ongoing

Work Package 3: Implement and evaluate the pilot intervention – not yet commenced

Appendix 2
Summary of the studies completed to date

Study	Status	Findings
1. Review of effects of healthcare professional (HCP) delivered infant feeding interventions	Complete	Some evidence that interventions can reduce parental pressure on children to eat and child consumption of non-core drinks ; Responsive feeding interventions had better outcomes; Many studies had methodological issues in intervention development and evaluation
2. Synthesis/review of parents' experiences of infant feeding	Complete	Four themes identified: Guidelines & Advice ; Stage of Weaning ; Knowing & Trying ; Daily Life
3. Synthesis/review of parents and HCPs experiences of infant feeding interventions	Ongoing Preliminary findings only	Factors influencing intervention implementation/ experience include sustainability, consistency of message, importance of trusting/supportive relationships and environments, time/capacity/resources (HCPs) and practical aspects (parents)
4. Predictors of obesity in preschool children – maternal recognition of overweight/obesity	Complete	Many mothers fail to accurately identify their child as overweight (OW) and/or obese (OB); Being obese made mothers more likely to misperceive child's weight, but higher education made mothers less likely
5. Identification of direct and indirect costs of childhood obesity in Ireland	Complete	Lifetime indirect costs of childhood/adolescent OW/OB are greater than direct costs (healthcare OB related expenditure); significant effect of weight status on healthcare utilisation for children aged 13
6. Is the adiposity of the child, its mother's, or both were associated with the teacher's perceptions of the child's academic ability	Complete	Teachers are more likely to rate children of obese mothers below average in reading and maths compared to those whose mother was leaner (adjusting for their measured ability)
7. Focus groups with parents of young children (0-2) <i>6 focus groups (n=30 parents)</i>	Complete	Parents want clear consistent messages , and practical guidance & support delivered at the right time . Parents have different preferences for information receipt. Trustworthiness and relationship with healthcare professionals is important.
8. Interviews with HCPs <i>21 interviews</i>	Complete	Consistency of message; trustworthy resources; practical skills . Mixed opinions re feasibility (3 No, 9 Yes, 9 Yes, but...). Barriers = time/capacity, resources, roles and parent/child stress ; Enablers = topic importance, provision of training/resources, positive relationships, child not sick at time

Appendix 3

Links to CHERISH publications

Doherty, E., Queally, M., Cullinan, J., & Gillespie, P. (2017). The impact of childhood overweight and obesity on healthcare utilisation. *Economics & Human Biology*, 27, 84-92. doi: 10.1016/j.ehb.2017.05.002 [[Available here](#)]

Matvienko-Sikar, K., Byrne, M., Kelly, C., Toomey, E., Hennessy, M., & Devane, D. et al. (2017). Development of an infant feeding core outcome set for childhood obesity interventions: study protocol. *Trials*, 18(1). doi: 10.1186/s13063-017-2180-4. [[Available here](#)]

Matvienko-Sikar, K., Kelly, C., Sinnott, C., McSharry, J., Houghton, C., & Heary, C. et al. (2017). Parental experiences and perceptions of infant complementary feeding: a qualitative evidence synthesis. *Obesity Reviews*, 19(4), 501-517. doi: 10.1111/obr.12653 [[Available here](#)]

Matvienko-Sikar, K., Toomey, E., Delaney, L., Harrington, J., Byrne, M., & Kearney, P. (2018). Effects of healthcare professional delivered early feeding interventions on feeding practices and dietary intake: A systematic review. *Appetite*, 123, 56-71. doi: 10.1016/j.appet.2017.12.001 [[Available here](#)]

Queally, M., Doherty, E., Finucane, F., & O'Neill, C. (2017). Low expectations: Do teachers underestimate the ability of overweight children or the children of overweight mothers?. *Economics & Human Biology*, 27, 26-32. doi: 10.1016/j.ehb.2017.04.006. [[Available here](#)]

Toomey, E., Matvienko-Sikar, K., Heary, C., Delaney, L., Queally, M., Hayes, C., Kearney, P.M., Byrne, M. (2018). Intervention Fidelity Within Trials of Infant Feeding Behavioral Interventions to Prevent Childhood Obesity: A Systematic Review. *Annals of Behavioural Medicine*, epublication ahead of print. Doi: 10.1093/abm/kay021/4994386 [[Available here](#)]