

Institution: Aston University		
Unit of Assessment: 3 Allied Health Professions, Dentistry, Nursing and Pharmacy		
Title of case study: 6. The Child Feeding Guide: improving parental feeding practices, child eating behaviour and the knowledge of healthcare practitioners		
Period when the underpinning research was undertaken: 2013 to date		
Details of staff conducting the underpinning research from the submitting unit:		
Name(s):	Role(s) (e.g. job title):	Period(s) employed by submitting HEI:
Professor Claire Farrow	Chair, Reader, Senior Lecturer	2013 to date
Period when the claimed impact occurred: 2013 to date		
Is this case study continued from a case study submitted in 2014? No		
<p>1. Summary of the impact</p> <p>Globally, over 340 million children (including >3 million in the UK) are overweight or obese. To help parents establish healthy diets in children, Aston and Loughborough Universities have created “The Child Feeding Guide” website and app. The guide is the first interactive resource of its kind and is recommended by services throughout the NHS, is embedded into CPD-approved training, has been used to educate 670 health care professionals, is incorporated into US policy and has been downloaded by >100,000 users internationally.</p> <p>Impacts on: Public Policy & Services; Practitioners & Delivery of Professional Services and Understanding, Learning & Participation are claimed.</p>		
<p>2. Underpinning research</p> <p>Background: Poor dietary intake in childhood is a significant public health issue; globally 340 million children are overweight or obese and up to 50% of parents in the UK describe their children as fussy eaters at some point. Poor diet and nutrition are related to several chronic diseases including diabetes, cardiovascular disease and cancer. Fussy eating is also a cause of significant anxiety and stress for many parents. Interventions to improve child diet are not accessible for the majority of families who want help.</p> <p>Underpinning Research: Farrow has worked in child nutrition throughout her research career. Since moving to Aston in 2013, she has developed a body of research exploring behaviours around mealtimes that best promote healthy eating behaviour in children and reduce fussy eating. Farrow’s research (S3.1) was the first in the world to explore the predictors of observed emotional eating in children over time. Farrow has also piloted a series of interventions with parents to explore the most effective ways to reduce fussy eating, which include both quantitative (S3.2) and qualitative (S3.3) studies and subsequently compared their efficacy through home-based interventions led by parents (S3.4). Additionally, she has conducted systematic reviews on the development of childrens’ eating behaviour (e.g. S3.5).</p> <p>Shortly before moving to Aston in 2013, Farrow and colleagues co-created the first draft of the Child Feeding Guide (as a website). Later in 2013, the first iteration of the Child Feeding Guide app was released. Farrow’s research has subsequently informed developments of both the website and the app, including a major website update in 2017, funded by the Higher Education Innovation Fund.</p> <p>Research Insights/Findings: Farrow’s pioneering research into emotional eating demonstrated that parents who use overly controlling feeding practices (such as restricting access to food and using food as a reward for behaviour) are more likely to have children who eat emotionally two</p>		

years later. These findings suggest that controlling feeding practices can *teach* children to eat in response to stress and may predict obesogenic eating behaviours in later life. Farrow's research into fussy eating has also demonstrated that eating with children, eating the same food as them, and not having distractions at mealtimes (e.g. TV, magazines, toys) are associated with less fussy child eating behaviour (**S3.2**). Farrow and colleagues have brought this research together to develop interventions for families to help support them with fussy eating. Trials of these interventions have shown that the most effective way to help reduce fussy eating in children is to use a combination of a) simple rewards for tasting new food, b) parents modelling eating the same food and enjoying it and c) repeatedly offering the food (**S3.3**, **S3.4**). This research has been integrated into the Child Feeding Guide to provide parents, caregivers and health care professionals with evidence-based information about child feeding. Most recently the Child Feeding Guide has been evaluated with 25 mothers who used the resource over a period of 4 weeks and reported reduced anxiety and a reduction in the use of overly controlling feeding practices such as pressure to eat which are known to exacerbate feeding problems (**S3.6**).

3. References to the research

- S3.1** Farrow, C., Haycraft, E. & Blissett, J. (2015). Teaching our children when to eat: how parental feeding practices inform the development of emotional eating. A longitudinal experimental design. *American Journal of Clinical Nutrition*, 101, 908-913. <https://doi.org/10.3945/ajcn.114.103713>.
- S3.2** Powell, F., Farrow, C., Meyer, C., & Haycraft, E. (2017). The importance of mealtime structure for reducing child food fussiness, *Maternal & Child Nutrition*, 13, e12296. <https://doi.org/10.1111/mcn.12296>.
- S3.3** Holley, C., Haycraft, E., & Farrow, C. (2016). Investigating offering of vegetables by caregivers of preschool age children: A qualitative study. *Child Health, Care and Development*, 43, 240-249. <https://doi.org/10.1111/cch.12400>.
- S3.4** Holley, C., Haycraft, E., & Farrow, C. (2015). 'Why don't you try it again?' A comparison of parent led, home based interventions aimed at increasing children's consumption of a disliked vegetable, *Appetite*, 87, 215-22. <https://doi.org/10.1016/j.appet.2014.12.216>.
- S3.5** Holley, C., Farrow, C., & Haycraft, E. (2017). A systematic review of methods for increasing vegetable consumption in early childhood, *Current Nutrition Reports*, 6, 157-170. <https://doi.org/10.1007/s13668-017-0202-1>.
- S3.6** Haycraft, E., Witcomb, & Farrow, C. (2020). The Child Feeding Guide: A digital health intervention for reducing controlling child feeding practices and maternal anxiety over time. *Nutrition Bulletin*, <https://doi.org/10.1111/nbu.12445>.

The quality of the research described above is evidenced by **S3.1-S3.6**, published in international, peer-reviewed journals and the following competitively-awarded research grants: **British Psychological Society £10,970**, Fruit and Vegetable Maths Masters: disseminating psychological evidence in a fun mobile application to improve children's eating through the home, preschool or school (2016-2017); **HEIF £10,600**, 5-a-day fillers: Development and preliminary validation of a mobile app to increase children's exposure to, and liking of, vegetables (2016-2018); **£27,480** Enhanced optimisation of the Child Feeding Guide website and app (2017); **UKRI-GCRF, ES/T004959/1 £863,225**, A school closer to home: the role of mealtimes in fostering language development and aligning home and school learning in rural Kenya and Zambia (2019-2021); **Italian Ministry for Education and Research €483,177**, Understanding how complementary feeding method longitudinally affects developmental outcomes in young children (2019-2022); **MRC PHIND MR/V032208/1 £140,566** Co-developing an app-based intervention to increase children's consumption of vegetables (2020-2022).

4. Details of the impact

The Child Feeding Guide (**S5.1**), developed and disseminated by Farrow and colleagues from the body of work detailed in section 3, is the first research-based app and website of its kind for parents and healthcare professionals which provides evidence-based, simple advice about how to manage and respond to poor nutrition and fussy eating in children. The following impacts are claimed:

1. Impact on public policy & services: recommendation of the Child Feeding Guide by the NHS: The Child Feeding Guide is currently the only feeding resource recommended to parents by the NHS as part of their “Information Service for Parents” emails which are sent out to parents/caregivers when infants reach 27 months old (**S5.2**). The Child Feeding Guide is also recommended by multiple NHS trusts including CAMHS Hampshire NHS, City and Hackney NHS, Mid Cheshire NHS, South West Yorkshire Partnership NHS, Sandwell & West Birmingham NHS and North East Devon NHS (**S5.2**) as a resource for both parents and health care professionals and most recently, is now being recommended by GP groups (e.g. clmp.org, **S5.2**)

2. Impact on public policy & services: recommendation of the Child Feeding Guide by national and international charities and organisations: The Child Feeding Guide has been endorsed and shared by parenting charities including the National Childbirth Trust, Parenting Science Gang and the Indian Educational Foundation Pallikutan (**S5.3**). The resource has also been recommended by Rightstart online, toddlerabout.co.uk; the Brighton and Hove Food Partnership and by the British Heart Foundation to inform their “Chompy’s Ten Tasty Mealtime Tips” (**S5.3**). The Child Feeding Guide is also recommended in multiple, international books concerning child feeding and has been translated by the Early Childhood Eating and Sleeping Disorders Outpatient Clinic at Heim Pal National Institute of Pediatrics, Budapest, Hungary (**S5.3**).

3. Impact on public policy & services: international policy development: Research underpinning the Child Feeding Guide (**S3.1**) has been cited in the US Policy Guide: Parenting Matters: Supporting parents of children ages 0-8 (**S5.4**) which was commissioned by the Division of Social and Behavioral Sciences of the US National Academy of Sciences. The National Academies in the US are national authorities in their areas and form the basis for much of US Government policy on health.

4. Impact on practitioners and delivery of professional services: Farrow and colleagues have trained approximately 670 healthcare professionals to understand and apply the research underpinning the Child Feeding Guide. Training has taken place at dedicated events at Aston University, Loughborough University and in London, commissioned by practitioner groups including Startwell (Birmingham Public Health) and Riverside Cares which is a leading childcare agency specialising in training and education (**S5.5**). Surveys of trainees have revealed that 91% agreed it contains useful information, 87% agreed it is a beneficial resource and 95% said they would recommend the Child Feeding Guide (**S5.6**). This Child Feeding Guide training has also been endorsed for CPD by the Association for Nutrition who commented: *“Many nutritionists’ work involves children, and how to persuade them to eat a healthy diet is important. However, this is an area not generally covered in detail in university nutrition courses, meaning that newly qualified nutritionists often have to learn about this vital area ‘on the job’. The in depth and practical nature of the course will mean that inexperienced nutritionists will be able to acquire a sound and evidence-based grounding in best practice.”* (**S5.7**).

5. Impact on understanding, learning and participation: parental behaviour and understanding of child eating behavior: Likely influenced by the recommendations detailed in impacts 1 and 2, well over 100,000 users from 4 continents have viewed >350,000 pages of the Child Feeding Guide. Predominant engagement is from the UK, USA and Australia, but top-10 usage also encompasses India, the Philippines, France, Pakistan and Singapore (**S5.8**). The underpinning research (**S3.1-S3.6**) has been shared internationally by the press and private organisations throughout Europe, US and India (**S5.9**). Feedback from parents using the Child Feeding Guide has been overwhelmingly positive. For example: *“This is a no nonsense super helpful app for everyone who’s ever had a fussy eater at mealtimes. Thanks for the support and the ideas!”* (review from parent user on Apple App Store; **S5.10**). Questionnaire feedback indicates

that more than 80% of parents said that the Child Feeding Guide had helped them to understand their child's eating behaviour better and feedback from parents also highlights that the Child Feeding Guide has led to positive changes in behaviour around mealtimes: *"I think a really important thing is that I'm more relaxed about it now. Before, I was so worried about whether I was doing the right thing I was getting stressed out and probably making things worse. It's changed my attitude."* (S5.10).

5. Sources to corroborate the impact

- S5.1** The Child Feeding Guide: <https://www.childfeedingguide.co.uk/>
- S5.2** Copy of NHS "Information Service for Parents" email sent to parents of 27-month-old children and online NHS Child Feeding Guide recommendations: <https://hampshirecamhs.nhs.uk/issue/eating-difficulties-professionals/>; <http://cityandhackneycamhs.org.uk/resourcescat/the-child-feeding-guide/>; <https://www.southwestyorkshire.nhs.uk/barnsley-childrens-speech-language-therapy-service/help-and-advice-for-you-at-home/about-us/>; <https://www.healthforkids.co.uk/sandwell/selective-eating-information-for-parents/>; https://northeast.devonformularyguidance.nhs.uk/referral-guidance/eastern-locality/paediatrics/feeding_eating_difficulties; <https://clmp.org.uk/information-zone/child-health/help-with-feeding/>
- S5.3** Compilation of Child Feeding Guide recommendations from UK & India charities, organisations and parenting books, including: Perspective: NCT's journal on preparing parents for birth and early parenthood. Issue 37, Dec 2017; Parenting Science Gang leaflet "Understanding and Managing Picky Eating"; websites <https://www.pallikkutam.com/edu-news/child-feeding-guide-helps-mums->; <https://www.rightstartonline.co.uk/news/a-breakthrough-for-fussy-eaters>; <https://www.toddleabout.co.uk/parenting/fussy-eating-and-parents-stress-remedied-by-online-guide/>; <https://bhfood.org.uk/child-feeding-guide-help-for-those-fussy-eaters/>; <https://www.bhf.org.uk/informationsupport/publications/children-and-young-people/chompys-ten-tasty-mealtime-tips> (p16); copy of Hungarian translation of the Child Feeding Guide.
- S5.4** US Policy Document: Parenting Matters <https://www.nap.edu/catalog/21868/parenting-matters-supporting-parents-of-children-ages-0-8>. See pages 60 & 89.
- S5.5** Details of Child Feeding Guide training events.
- S5.6** Published abstract summarising feedback data from health care professionals and parents. https://www.frontiersin.org/10.3389/conf.FPUBH.2016.01.00012/event_abstract
- S5.7** Letter from the Association for Nutrition endorsing Child Feeding Guide training for CPD.
- S5.8** Google Analytics statistics for the Child Feeding Guide.
- S5.9** Altimetric data concerning non-academic use of child-feeding research listed in section 3.
- S5.10** Media focus on the Child Feeding Guide: Podcast of BBC R4 Woman's Hour interview with Claire Farrow (mins 23:03 > 30:22) and compilation of social media feedback on the Guide.