

Institution: Swansea University		
Unit of Assessment: 2		
Title of case study: Breastfeeding Uncovered: A research based public health campaign that has changed global breastfeeding policy, professional practice and resulted in increased breastfeeding rates		
Period when the underpinning research was undertaken: 2011 – 2018.		
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:
Amy Brown	Professor of Child Public Health	2005 – present
Period when the claimed impact occurred: 2015 – 2020		
Is this case study continued from a case study submitted in 2014? No		
1. Summary of the impact		
<p>'Breastfeeding Uncovered', a campaign to promote understanding of normal infant behaviour and better support for breastfeeding mothers, has led to changes in international breastfeeding policy, enhanced professional practice and supported more women in the UK to breastfeed for longer. The concerns of breastfeeding mothers identified by our research informed the design of accessible information tools (books, articles, talks, animations) to promote evidence-based and empowering messages to parents, professionals and policy makers. As well as driving policy changes, particularly in the UK and Australia, our tools are used by health professionals globally and are credited with mothers feeling more confident and empowered.</p>		
2. Underpinning research		
<p>The World Health Organisation recommends infants are breastfed for up to two years and beyond. However, by six months just 34% of UK infants are breastfed. Although rates are slightly higher in the USA (52%) and Australia (60%) rates still fall far short of recommendations. Understanding why rates are so low is critical to improving population health outcomes and reducing health service cost burdens. Although a small percentage of women have physiological contraindications that prevent them from breastfeeding, other countries have much higher breastfeeding rates. This suggests that differences in experiences of breastfeeding play a role.</p> <p>Previous research has established that high-quality practical professional support is critical to breastfeeding success. However despite this support being available, breastfeeding rates are still low. This led to our research question – what other aspects of support are important?</p> <p>To answer this we conducted a programme of research exploring maternal perceptions and concerns around feeding their babies. In a series of interconnected research studies we identified a central issue that poor maternal understanding about normal breastfed baby behaviour led to practices that made breastfeeding difficult or resulted in formula use:</p> <ol style="list-style-type: none"> 1. In a qualitative interview study with new mothers and health professionals we identified that mothers perceived breastfed babies as waking and feeding too frequently particularly at night. This was often interpreted as a sign a baby needed to be taught to feed less frequently by being put in a feeding and sleeping routine [R1]. 2. In a qualitative survey we explored perceptions of breastfeeding education and promotion with 1,130 breastfeeding mothers. The results highlighted that women wanted more realistic information and support around infant feeding patterns and normal baby behaviour [R2]. We then explored the impact of these beliefs around normal baby behaviour upon breastfeeding outcomes: 3. In a survey with 508 new mothers we found that when mothers tried to use a routine to feed their baby this often led to breastfeeding complications and cessation [R3]. <p>In the next step we explored whether maternal beliefs about infant feeding sleep and routines were evidenced in infant behaviour:</p>		

4. In a survey with 712 mothers we found no association between whether a baby was breast or formula fed and how often infants woke at night [R4].
5. In a survey with 354 mothers who had tried to use a feeding and sleeping routine we found that often these routines did not work and instead increased maternal anxiety [R5].
6. We also identified that trying to use such routines often led to breastfeeding cessation [R6].
7. Finally, we brought together these findings in an invited narrative review paper highlighting the need to ensure that rather than simply telling women to breastfeed we needed to ensure they received support that extended outside of practical skills. Enhanced antenatal education including normal breastfed baby behaviour was part of this [R7].

We then used these findings to create our research driven 'Breastfeeding Uncovered' public health campaign designed to increase breastfeeding rates by promoting understanding of normal baby behaviour and the importance of avoiding feeding routines.

3. References to the research

This research has made important contributions to the discipline internationally and contributes important knowledge to the field likely to have a lasting influence. Whilst all papers have been peer reviewed.

[R1] Brown, A., Raynor, P., & Lee, M. (2011). Healthcare professionals' and mothers' perceptions of factors that influence decisions to breastfeed or formula feed infants: a comparative study. *Journal of advanced nursing*, 67(9), 1993-2003.

[R2] Brown, A., & Arnott, B. (2014). Breastfeeding duration and early parenting behaviour: the importance of an infant-led, responsive style. *PloS one*, 9(2), e83893.

[R3] Brown, A., & Harries, V. (2015). Infant sleep and night feeding patterns during later infancy: Association with breastfeeding frequency, daytime complementary food intake, and infant weight. *Breastfeeding Medicine*, 10(5), 246-252.

[R4] Harries, V., & Brown, A. (2019). The association between use of infant parenting books that promote strict routines, and maternal depression, self-efficacy, and parenting confidence. *Early Child Development and Care*, 189(8), 1339-1350.

[R5] Harries, V., & Brown, A. (2019). The association between baby care books that promote strict care routines and infant feeding, night-time care, and maternal–infant interactions. *Maternal & Child Nutrition*, 15(4), e12858.

[R6] Brown, A. (2016). What do women really want? Lessons for breastfeeding promotion and education. *Breastfeeding Medicine*, 11(3), 102-110.

[R7] Brown, A. (2017). Breastfeeding as a public health responsibility: A review of the evidence. *Journal of Human Nutrition and Dietetics*, 30(6), 759-770.

Research funding

1. Brown, A. (GBP60,000) Maternal control of milk feeding: the role of attitudes, intentions and experiences. ESRC Doctoral Studentship. 2005 – 2009.
2. Brown, A. (GBP77,102) Maternal control of milk feeding: the role of attitudes, intentions and experiences. ESRC Postdoctoral Fellowship. 2011 – 2012.
3. Brown, A. (GBP2,500) Understanding antenatal education and breastfeeding. Children and Young People's Research Network. 2011 – 2012.
4. Brown, A. (GBP6,800) Understanding public attitudes to breastfeeding. Swansea University Research Grant Enabler. 2016.

4. Details of the impact

Our research [R1, R2] highlighted the need for greater understanding of normal breastfed baby behaviour and the damage that feeding routines could do to breastfeeding. To tackle this we used our research findings [R3, R4, R5, R6] to create an educational public health campaign 'Breastfeeding Uncovered' aimed at parents, professionals and policy makers to promote normal baby behaviour and highlight the importance of responding to those needs rather than trying to use feeding and sleep routines. Our campaign included the following:

- Publishing the research as a popular science book for the public (Breastfeeding Uncovered, 2016). An edited chapter was published in a textbook for health professionals and policy makers (Breastfeeding and Breast Milk-From Biochemistry to Impact, 2018).
- Publishing a breastfeeding guide for parents (The Positive Breastfeeding Book 2018).
- Presenting a series of 200+ invited research talks between 2015 - 2020 for parents, professionals and policy makers in the UK, Australasia, USA, Canada and Europe.
- Publication of 75+ articles between 2015 – 20 in globally-recognised professional magazines (e.g., Practising Midwife) and the popular press (e.g., Conversation UK, Huff Post).
- Creating 6 publicly available animations of the research findings reassuring parents of normal breastfed baby behaviour and how to better support breastfeeding.
- A global media campaign to promote the research, including an episode of Channel 4's Dispatches entitled 'Breastfeeding Uncovered'.

Our campaign was successful having had significant impact upon policy, professional practice and supported mothers to breastfeed for longer. It is recognised by the ESRC as having 'outstanding impact' in changing breastfeeding policies worldwide [C1] and by the Made at Uni 'Lifesavers' campaign as a way 'universities are saving lives and keeping us healthy' [C2].

1. Advancing global breastfeeding policy

The campaign has directly influenced changes to global infant feeding policies. The campaign has achieved this through providing underpinning research for updated policies and through providing expert guidance to panels, committees and invited round table discussions:

UK highlights include:

- The research [R1] is included in the updated NICE guidelines for Postnatal Care for 'Breastfeeding facilitators and barriers' [C3].
- The research [R1] underpins the updated UNICEF UK 'Baby Friendly Initiative Review of the Standards' that lay out standards for care for breastfeeding mothers [C4].
- Professor Brown presented her research [R2, R4] in 2016 and 2018 to the All-Party Parliamentary Group for Infant Feeding and Inequalities, leading to the citation in Hansard. In a debate on infant feeding the chair of the APPG stated '*I recommend people read Dr Amy Brown's book 'Breastfeeding Uncovered' which highlights a lot of the issues*' [C5 3.11pm].
- In 2018 Professor Brown was an Expert Advisor to the Becoming Breastfeeding Friendly Initiative; a global initiative to strengthen breastfeeding support. The Scottish arm of this research has been published underpinned by papers R2 and R7 [C6].
- Professor Brown supported the 2016 UK World Breastfeeding Trends Initiative team who examined successful indicators of breastfeeding support. R2 underpins their report [C7].

International highlights include:

- Professor Brown was invited to present her research to the Australian Department of Health, resulting in the research playing a substantial role in their updated national breastfeeding strategy [CE8]. The strategy refers directly to Professor Brown [pg 30] and cites [R2, R7] alongside the 'Breastfeeding Uncovered' book and textbook chapter summary.
- The research [R2] underpins the Australian Clinical Practice Guideline 'Breastfeeding Antenatal Education and Counselling' [C9].
- The research [R3] underpins the International Baby-friendly Hospital Initiative for Neonatal Wards Guiding Principles and Ten Steps to Promote and Support Breastfeeding [C10].

2. Supporting health professional learning and practice

The research is recognised by leading infant feeding organisations as supporting breastfeeding education and practice. The director of the infant nutrition charity 'First Steps Nutrition Trust' stated '*The academic work that Professor Brown has done exposing the myths associated with infant feeding, challenging common attitudes and providing a framework for support for women across the UK and globally has transformed the narrative. Her work has been an important part of the changing conversation on infant feeding and has filled an important gap in the evidence, which has led to dialogue which directly impacts on the lives of families*' [C12].

Our research talks are accredited to provide Continuing Education Recognition Points, and have been accessed by 10,000+ professionals globally including presentation in New Zealand, Australia, Canada, Europe and the USA [C11a]. Our research articles in The Conversation UK and Huff Post have 2,000,000.00 readers from every continent [C11b]. The 'Breastfeeding Uncovered' book is a core text for NCT breastfeeding counsellor trainees with the Programme Director for the UNICEF UK Baby Friendly Initiative stating that *'It fits in so well with our messaging, we will be happy to promote the book in any way we can on publication'* [C12].

Our research animations have over 20,000,000.00 views across our campaign's social media pages. They are used in public health promotion and training by 200+ health boards and councils in the UK. Globally, the animations are used by breastfeeding organisations in the USA, Australasia, South Africa and Europe and as part of a World Health Organisation training package in developing regions, including Sierra Leone. They have been translated (subtitled) into numerous languages. In a survey of 214 global professionals who used the animations, 97% agreed that they helped them better support breastfeeding mothers, with 94% agreeing that they helped mothers breastfeed for longer. Testimonials include: *'I love these animations and we use them widely. They make sharing the science with new parents easy, and they get complicated but important messages across in clear, fun ways'* (National Childbirth Trust president 2018) and *'The animations are a very effective way in which to get bite sized messages out, they are entertaining and informative'* (Australian Breastfeeding Association Counsellor 2019) [C11d].

3. Empowering mothers to breastfeed

In a survey of 1000+ mothers who viewed our animations, 94% perceived the animations to be informative, supportive and non-judgemental, and 90% credited the animations with enabling them to breastfeed for longer. Feedback from mothers includes *'They helped me feel like I was doing the right thing despite other people telling me something was wrong'*, *'They gave me the confidence to carry on feeding'*, *'I don't think I'd be breastfeeding without them'* [C11d].

Over 30,000.00 copies of our books have been sold, including Dutch and Russian translations. Over 500 public reviews support the impact of the books on breastfeeding confidence and duration e.g., *'This book honestly has saved me from giving up breastfeeding my three-week-old ...this book saved our breastfeeding journey'* (The Positive Breastfeeding Book). Mother and Baby Magazine endorsed the book *'With its combination of straight talking, science-based information and reassuring advice from fellow mums and experts, the invaluable Positive Breastfeeding Book empowers new mothers'* whilst the Association for Improvement in Maternity Services noted *'This book is all about educating and empowering readers'* [C11c].

Since the initiation of the campaign in 2016, publicly available data from Public Health England, Wales and Scotland has shown a rise in breastfeeding continuation rates at 6 – 8 weeks: England from 43.8% to 48.2%, Wales from 30.8% to 34.6% and Scotland from 50 – 55%. This increase represents an approximate additional 36,000 babies breastfed at 6–8 weeks compared to 5 – 7 years ago [C12]. Although the mechanisms underlying these changes are complex, the research is recognised by experts as contributing to these changes [C13]. For example:

'The research by Swansea University makes a significant contribution to our understanding of what works to increase breastfeeding rates, by enabling both parents and those who support them, to better understand how breastfeeding works and the importance of responsiveness. The work has, in concert with other developments, supported more parents to breastfeed and to breastfeed for longer. We know this as parents who breastfeed for as long as they wished frequently report that skilled help and the freedom to feed responsively were significant drivers in their success and this is a key part of the University of Swansea's contribution to our collective understanding' (Maternity Advisor Public Health England 2019).

'At the Hearts Milk Bank, the non-profit service funded by the Human Milk Foundation, we frequently see mothers who have been saved by your work. Either they were better prepared going into motherhood, and they and/or their partners and wider family are more able to advocate for better lactation support, or they have found your work after giving birth and can make more informed decisions as a consequence. In terms of the wider work, I do in the policy sphere as Director of the HMF, I am in no doubt that making the case for equitable access to lactation support and screened donor milk where needed is significantly easier as a result of your work. I fully

believe your research and methods of engaging with parents, professionals and policy makers have played an important role in increases in breastfeeding rates that are being evidenced and local and national levels, alongside greater governmental investments in Scotland and elsewhere internationally'. (Co-founder and Director Human Milk Foundation).

5. Sources to corroborate the impact

[C1] ESRC recognition of [‘outstanding impact’](#) in changing breastfeeding policies worldwide.

[C2] Recognition [Made at Uni ‘Lifesavers’ campaign](#) 100 ways universities are saving lives and making us healthier.

[C3] Evidence of research underpinning Updated [NICE guidelines](#) for Postnatal care for ‘Breastfeeding facilitators and barriers’.

[C4] Evidence of research underpinning UNICEF UK [‘Baby Friendly Initiative Review of the standards’](#)

[C5] Hansard record of [parliamentary infant feeding debate](#) – mention at 3.11pm.

[C6] Evidence of research underpinning Becoming Breastfeeding Friendly [Scottish report](#) alongside expert contribution to [Wales report](#)

[C7] Evidence of research underpinning UK [World Breastfeeding Trends Initiative](#) report.

[C8] Evidence of research underpinning Australian Department of Health [National Breastfeeding Strategy](#)

[C9] Evidence of research underpinning Australian Government National Health & Medical Research Council [Clinical Practice Guideline](#) ‘Breastfeeding Antenatal Education & Counselling’.

[C10] Evidence of research underpinning International Baby-friendly Hospital Initiative for Neonatal Wards [Guiding Principles](#) and Ten Steps to promote and support breastfeeding.

[C11] Evidence of engagement tools including [presentations \(a\)](#), [articles \(b\)](#), [books \(c\)](#), [media \(d\)](#) and [animations \(e\)](#).

[C12] Publicly available data sources to evidence the changes in breastfeeding rates for [England](#), [Wales](#), and [Scotland](#) between 2013 – 2020.

[C13] A collection of available testimonial letters and communications from international infant feeding charities, policy makers and health professionals as to the impact of the work upon policy, practice and parents. Includes testimony from The Human Milk Foundation, First Steps Nutrition Trust, UNICEF UK Baby Friendly Initiative, Public Health England, All Party Parliamentary Group for Infant Feeding and Inequalities, Australian Breastfeeding Association, Australian Department of Health, New Zealand Ministry of Health, and Academics in Australia and Canada.