

Institution: Durham University
Unit of Assessment: UoA 24 Anthropology and Development Studies
Title of case study: Infant sleep ecology and night-time care (research from Durham Anthropology's Parent-Infant Sleep Lab)
<p>1. Summary of the impact</p> <p>Durham Anthropology's Parent-Infant Sleep (www.dur.ac.uk/sleep.lab) has generated conceptual and instrumental impact affecting infant-health policy, health-care practitioners and parents at home and overseas. Our research has a) identified tensions and conflicts among official guidance, public health agendas, and cultural expectations surrounding infant sleep, and b) exposed how infant sleep is experienced and 'managed' in families. The outcomes challenged accepted notions about infant sleep ecology and recommendations derived therefrom. Our research prompted and supported a re-evaluation of guidance to parents, contributed to clinical and public health policy, and is used enthusiastically at international, national, local, and individual levels in changing attitudes and practices surrounding night-time infant care. The impact of this research was recognised by ESRC (May 2013) with an award for Outstanding Impact in Society to Professor Helen Ball (http://www.esrc.ac.uk/news-and-events/events/celebrating-impact-prize/prize-winners-2013.aspx).</p>
<p>2. Underpinning research</p> <p>Cultural shifts in infant care throughout the 20th century (such as separation of mothers and infants after birth; uptake of infant formula; promotion of infant sleep independence; and strict Sudden Infant Death (SIDS) prevention guidelines) culminated in expectations and practices around infant sleep that failed to support optimal infant health and development. Research conducted by Durham's Parent-Infant Sleep Lab identified, explored and addressed the dissonance between contemporary infant care and infant biological needs with regard to sleep. We have examined what parents do with their babies at night and why, how parents create infant sleep environments, how these become conceptualised as normal or problematic, how parents interpret and implement SIDS-reduction guidance, how they cope with challenges (such as night-time breastfeeding and sleep disruption, or night-time care of twins), how postnatal ward mother-baby sleep arrangements can be improved, and how unsafe infant sleep practices at home can be addressed.</p> <p>Professor Helen Ball initiated this research in 1995 with (then PGR student) Dr Elaine Hooker (Durham 1995-2001), establishing the Sleep Lab in 2000. Emma Heslop and Steve Leech joined as RAs 2001-2006; PhD students Drs Kristin Klingaman (now Tully), Lane Volpe, Caroline Jones, Anna Cronin-de-Chavez, Meg Newark and PDRA Dr Charlotte Russell joined between 2006-2009, with Dr Alanna Rudzik joining as International Junior Research Fellow in 2012. Three further students (Lyn Robinson, Catherine Taylor and Denise Crane) are completing their PhDs during 2012-2013. All have contributed to the research and impact generated by the Sleep Lab.</p> <p>Our most high impact research to date has involved community-, lab-, and hospital-based studies, using mixed-methods to understand parent-infant sleep and night-time infant care, revealing:</p> <ul style="list-style-type: none"> • differences in antenatal expectations and postnatal experiences of infant sleep, and the emergence of bed-sharing as a common night-time infant-care strategy in the UK (outputs 1-4, plus others). Prior to this research the prevalence and frequency was unknown in UK; • rationales for the infant sleep environments parents use and the characteristics of parents implementing different strategies (outputs 2 & 3); • the nature of sleep behaviour in families, how night-time care is managed or unfolds, the characteristic sleep position of bed-sharing mothers, and how infant safety risks are introduced or avoided (output 5) including sleeping arrangements for twin infants (outputs not included); <p>the effects of infant sleep ecology on breastfeeding outcomes and maternal lactation physiology (output 6 plus others), the sleep environments of post-natal wards and use of side-car cribs (output 6 plus others). This strand of research has been conducted in collaboration with Dr Martin Ward-Platt at the Royal Victoria Infirmary, Newcastle-upon-Tyne.</p>

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Our most recent project, ISIS (the online Infant Sleep Information Source: www.ISISonline.org.uk), has involved creation of a highly regarded source of information for parents, service-providers, and policy-makers containing comprehensive research-based information that fills a vacant information niche and supports decision-making and informed choice. We provide evidence in the ESRC End of Award Report and at http://www.dur.ac.uk/sleep.lab/impact/isis_users/ that this resource is highly used.

3. References to the research

Our research has been underpinned by significant grants occurring during the assessment period, including:

1. 2011-12 ESRC Follow-on Fund: **ISIS Project**, £125,000 (PI: Ball) See: ESRC research catalogue: (<http://www.esrc.ac.uk/my-esrc/grants/RES-189-25-0276/read/reports>)
2. 2007-10 Research for Patient Benefit Programme (NIHR): **NECOT Trial**, £263,104 (PI: Ball) See Trial Registry (<http://www.controlled-trials.com/ISRCTN31466133>).

The following six Durham Sleep Lab outputs are research publications of at least 2* quality, published in peer-reviewed international social science and relevant clinical journals. They all apply an anthropological perspective to a clinical issue, and have been published in social science and clinical journals. All have been cited frequently in policy documents and practice recommendations:

1. **Ball, HL.** Hooker, E., Kelly, P.J (1999). Where will the baby sleep? Attitudes and practices of new and experienced parents regarding co sleeping with their newborn infants. *American Anthropologist* **10**(1):143-151. Cited in 84 journal articles at 10.5.13, no download stats. *American Anthropologist* is ranked 17/81 anthropology journals. Journal IF 1.488. DOI: **10.1525/aa.1999.101.1.143**
2. **Ball, HL** 2002. Reasons to bed-share: why parents sleep with their infants. *Journal of Reproductive and Infant Psychology* **20**(4): 207-222. Cited in 66 journal articles and downloaded 600+ times at 10.5.13. Journal IF 0.85. This journal is widely read by UK midwives and infant health specialists. DOI: **10.1080/0264683021000033147**
3. **Ball, HL** 2003. Breastfeeding, bed-sharing and infant sleep. *Birth* **30**(3): 181-188. This article is cited in 116 journal articles at 10.5.13, no download data. *Birth* is ranked 2/99 of Science Nursing journals and 2/97 of Social Science Nursing journals. Journal IF 2.18 DOI: **10.1046/j.1523-536X.2003.00243.x**
4. Blair, PS. & **HL Ball** (2004). The prevalence and characteristics associated with parent–infant bed-sharing in England. *Archives of Disease in Childhood* **89**: 1106-1110. This article is cited in 76 journal articles and downloaded over 3200 times at 10.5.13. *Archives of Disease in Childhood* is the leading UK paediatrics journal with an IF of 2.88. DOI: **10.1136/adc.2003.038067**
5. **Ball, HL.** (2006). Parent-Infant Bed-sharing Behavior: effects of feeding type, and presence of father. *Human Nature: an interdisciplinary biosocial perspective* **17**(3): 301-316. This article is cited in 37 journal articles, and downloaded 438 times from DRO at 10.5.13. *Human Nature* is ranked 9/75 anthropology journals. Journal impact factor 2.48. DOI: **10.1007/s12110-006-1011-1**
6. **Ball, HL.** Ward-Platt, MP. et al. (2006). Randomised trial of mother-infant sleep proximity on the post-natal ward: implications for breastfeeding initiation and infant safety. *Archives of Disease in Childhood* **91**:1005-1010. This article is cited in 42 journal articles and downloaded over 1465 times at 10.5.13. *ADC*, the leading UK paediatrics journal has an IF of 2.88. DOI: **10.1136/adc.2006.099416**

The quality of these outputs is further demonstrated by an anonymous reviewer's comment on Ball et al (2006) "This paper is extremely important and should be published as soon as possible. The debate concerning SIDS is beginning to impinge on breastfeeding norms. This well executed study adds an important piece to this discussion, and offers options for postpartum care. There is nothing in the literature that I am aware of that addresses this issue in the postpartum wards. The clinical and research messages are clear. In my opinion, this article should be in the most widely read of Pediatric journals, so it would be well placed with you. Thank you for the opportunity to comment on this excellent and timely article."

4. Details of the impact

Durham Sleep Lab research findings have made a clear impact upon a) infant sleep safety recommendations and campaigns, b) hospital and community infant care practice, policies and guidance for staff and c) parental ability to make informed-choices about infant sleep arrangements. We have increased our research-users' understanding of controversial issues such as parent-infant bed-sharing and generated research evidence that informs policy and supports practice in a variety of arenas. The value of the work of the Durham Sleep Lab was captured in a recent midwifery review which began: "Helen Ball has been an absolute gift to this area" (Essentially MIDIRS, 2012, 3(4):13).

Our impact is far-reaching, supporting infant care policy and practice at local, regional and national levels in a variety of countries (see www.dur.ac.uk/sleep.lab/impact). Our research has informed UK policy development via the Department of Health and Scottish Health Executive, National Institute for Clinical Excellence, NHS Choices, NGOs such as UNICEF (see below), parent-support charities (e.g. La Leche League, NCT), and professional bodies such as Royal College of Midwifery in the UK and overseas. We use speaking and policy-input invitations as pathways to impact, educating policy-makers and practitioners about infant sleep ecology, thereby changing perceptions, policy and practice (e.g. **Source 1**).

We have worked with UNICEF UK Baby-Friendly Initiative since 1998. UNICEF's parent information leaflet *Caring for Your Baby at Night* (**Source 2**), endorsed by the Royal College of Midwives, Community Practitioners and Health Visitors Association, and Foundation for Study of Infant Death, is given to all parents upon discharge from maternity care in the UK and draws heavily on our research about why and how parents bed-share. The 'Guide for Health Professionals' providing the evidence-base for *Caring for your Baby at Night* cites 8 of our research publications and directs parents to Durham Sleep Lab's Infant Sleep Info Source website (www.isisonline.org.uk). UNICEF uses and recommends Durham Sleep Lab research in their guidance for both professionals and parents on their website (www.unicef.org.uk/BabyFriendly/News-and-Research/Research/Bed-sharing-and-infant-sleep) (**Source 3**).

Safe Sleep, Bed-sharing, and Breastfeeding policy documents from a wide range of NHS Trusts and Local Councils use similar evidence from our research (http://www.dur.ac.uk/sleep.lab/impact/nhs_policies/). NHS policy examples include NHS Northumbria, NHS Central Lancashire, NHS Bedfordshire, NHS Salisbury, NHS Highlands (**Sources 4-6**).

The characteristic mother-baby sleep position we documented in 2006 was first used in the UNICEF/FSID leaflet *Sharing a Bed with your Baby* (given to all UK parents at hospital discharge from 2008-2011), and is now incorporated into safe-sleep guidelines around the world. This guidance leaflet is still recommended by many NHS trusts and international organisations, and is translated into at least 18 languages

(<http://www.unicef.org.uk/BabyFriendly/Resources/Resources-in-other-languages/>). The same research is used in the Australian Breastfeeding Association guidance for parents, La Leche League guidance on safe sleeping in UK and US (LLLGB; LLLI), and the New Zealand College of Midwives' position statement, among many others (**Sources 7-9**).

Our postnatal-ward video studies of night-time infant care have supported side-car crib use in postnatal units in UK, European and worldwide hospitals (e.g., UK, Australia, New Zealand, USA, Belgium and France).

Our (ESRC-funded) **ISIS project** (www.isisonline.org.uk) is a key pathway to impact, filling a vacant information niche in providing authoritative and accessible research-based infant sleep information for parents, service providers, and policy makers. Launched in March 2012, ISIS received 74,651 visits from 50,124 unique visitors in 12 months (58% UK-based, 42% from 137 other countries – data provided by Google Analytics). Dozens of NHS trusts, local councils, parenting and support groups, infant and maternal health websites provide links to ISIS; we can document referrals to ISIS from around the world and have observed many instances of mother-to-mother sharing of ISIS info via social networking e.g., "Have you heard of ISIS? [www.isisonline.org.uk]. I have found it so helpful to me to understand my baby and sleep" (Mumsnet 2012).

Ball has spoken, by invitation, at over 180 health professional conferences, workshops, and

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workforce education events, (<http://www.dur.ac.uk/sleep.lab/insidethesleeplab/presentations/>) sharing our research with thousands of service providers in UK and overseas. This is a direct pathway to impact: the recipients of this information have enthusiastically embraced it, and used it to change practice and policy within their spheres of work, for example:

“Thank you for your sleep presentation for GOLD 2012. We are in the process of reviewing our recommendations around SIDS and co-sleeping, and we will be using much of the information from your presentation to argue for a more nuanced recommendation than the one we currently make.” [Washington State Dept of Health, email, 12.7.12, copy available on request].

Achieving impact has not been without challenge. Maintaining positive dialogue, sharing research results and publications, and supporting partnership working have been important in advancing change. This is exemplified in Lancashire where we have worked with the safeguarding board, NHS infant feeding coordinators, public health department and County Council to develop and refine their new Safer Infant Sleep guidance for Health Professionals and materials for families (**Source 10**). Directly sharing the results of our research has been important in shaping this guidance and alleviating tension between policy makers, health professionals and parents.

A much more extensive list of our impact, with links to evidence of the use of both the research and ISIS, can be found at www.dur.ac.uk/sleep.lab/impact.

5. Sources to corroborate the impact

Ten sources of evidence that illustrate the nature of the impact of Durham Sleep Lab research on infant care policy, guidance and practice are selected below for corroboration.

1. UK SIDS prevention recommendations: Department of Health and Foundation for Study of Infant Death: [Reduce the Risk guidelines \(2009\)](#)
2. [Caring for your Baby at Night \(2012\)](#): The Health Professionals Guide from UNICEF with Royal College of Midwives, Foundation for the Study of Infant Death, Community Practitioners and Health Visitors Association and UNITE, the Health Workers' Union.
3. UNICEF UK Baby-Friendly Initiative website: [Research – Bed-sharing and Infant Sleep](#); [Infant Sleep Info Source Launch](#); [Sample bed-sharing policy](#); [Research outputs](#); [Safe bed-sharing guidance](#) and [translations](#).
4. Northumbria Healthcare NHS Foundation Trust: [Guidance to support safe sleeping practices for babies \(2013\)](#)
5. NHS Central Lancashire: [Infant Feeding Policy \(2010\)](#) (Appendix 4: Guidance on bed-sharing/co-sleeping in relation to infant feeding)
6. Salisbury NHS Foundation Trust: [Mothers and Infants Bedsharing](#) (Policy Document 2008-2013)
7. New Zealand College of Midwives (NZCOM): [Safe sleeping for baby \(2010\)](#)
8. Australian Breastfeeding Association (ABA): [Position statement on Safe Infant Sleeping \(2012\)](#)
9. La Leche League GB [Safe sleep and the breastfed baby \(2010\)](#)
10. Lancashire County Council and Lancashire Children's and Young People's Trust: [Pan-Lancashire Safer Sleeping Guidance for the Integrated Workforce \(2012\)](#) and [Safer sleep for baby \(2013\)](#) (Guidance for parents)