



## Is co-sleeping wrong?

Prof. Helen Ball, Parent-Infant Sleep Lab,  
Anthropology, Durham University, UK

[www.dur.ac.uk/sleep.lab](http://www.dur.ac.uk/sleep.lab) and [www.isisonline.org.uk](http://www.isisonline.org.uk)

### 1. The view from here

- Where and with whom babies sleep does not have a right or wrong answer
- It involves biology, history, cultural values, context, and motivations
- It can be done more safely or less safely
- Why do public health specialists recommend babies sleep there but not here, this way, but not that?
- Why have there been spectacular successes with some recommendations, and spectacular resistance to others?

### 2. Session objectives

- Background to the present situation
  - SIDS & SUDI
  - History of search for risk factors
  - Back to sleep
- Understanding the sleep sharing debate
  - Conflicting agendas
  - Practices, behaviors and beliefs
- New perspectives and interventions
  - New research on bed-sharing, breastfeeding & SIDS
  - New approaches

### 3. What are SIDS and SUDI?

- 1965 ICD-8 under code 795 a category was created for infant deaths designated Sudden Infant Death Syndrome
- A category of exclusion for the death of an infant where a post-mortem examination (and now a death scene investigation) fails to determine a specific cause
- SIDS a sudden *unexplainable* infant death, is grouped with other sudden *explainable* infant mortality under the heading Sudden Unexpected Death in Infancy (SUDI).
- Differentiation of SIDS and explained SUDI is difficult due to ambiguity in the pathological separation of SIDS and soft suffocation.

#### 4. The quest for 'risk factors'

- No underlying 'cause' to tackle
- SIDS prevention strategies were based upon characteristics of infants who died – how do you know what to target?
- Need comparisons with babies who don't die: case-control design
- Dozens of case-control studies conducted
- Compare characteristics of SIDS babies with control babies matched for key criteria
- Identify 'factors' that are associated with an increased risk of being in the SIDS group

#### 5. What case-control studies do....

- Examine retrospective exposures to potential causes of rare events
- Begin with cases (deaths), select controls, work backwards to ascertain differences
- Probability of selection bias = high for controls
- Probability of recall bias = high for cases and controls
- Low probability of loss to follow-up
- Medium risk of confounding
- Rated as low quality on scale of medical evidence
- Requires categorical data – easy for disease – not so easy for behavioural factors
- Produce odds ratios: provide info on relative, but not absolute risk
- Normally used for generating hypotheses, not formulating policy.

#### 6. NZ cot death study

- Late eighties, VERY high SIDS rate in New Zealand
- National SIDS case control study: Mitchell and Scragg
- 79% SIDS accounted for by 3 risk factors
  - Prone sleeping
  - Maternal smoking
  - Not breastfeeding
- Triggered launch of NZ Cot Death Prevention Programme in 1991: supine, smoke free, breastfeed
- 'Don't bed-share' added in 1992

#### 7. Worldwide campaigns

- Case-control studies conducted in many countries
- All confirmed the association of SIDS and prone sleep
- Back to Sleep campaigns launched

#### 8. Implementation strategy

- Repeated saturation of 'back to sleep' message
- Prevalence of prone sleep plummeted
- Some cultural/ethnic variation, but not substantial

#### 9. Ethnicity

- In US Native Americans have greatest risk;
- Aboriginal peoples have greatest risk in Australia.
- In NZ Maori risk increased; Pacific Island risk decreased
- In UK immigrants from India, Pakistan, Bangladesh, Caribbean have decreased risk

- compared to White British
  - Holland: Moroccan immigrants decreased risk, Turkish immigrants greatly increased risk
  - No clear pattern associated with minority groupings and health inequalities
10. Further key risks identified
- Smoking (maternal, in pregnancy)
  - Head covering
  - Overwrapping
  - Infant illness
  - Soft bedding
  - Soft surfaces
  - Overheating
  - Bed-sharing
11. Considering bed-sharing
- Konner and Super (1987) and McKenna (1986) hypothesised SIDS was a phenomenon of solitary infant sleep in Western cultures
  - McKenna combined evidence from infant physiology, human evolution, ethnographic reports, polysomnographic studies to examine the effects of bed-sharing
12. Epidemiology and bed-sharing
- Prompted epidemiologists to more closely examine infant sleep location in SIDS case-control studies
  - Produced array of conflicting evidence,
    - variations in how sleep environments were categorized,
    - how parents were asked about their infant's sleep environment,
    - interaction between sleep location and other variables
  - No case-control studies have found bed-sharing reduces SIDS-risk
  - Room-sharing, but not bed-sharing is protective
  - Key interaction between bed-sharing and smoking (Scragg et al 1993)
  - No increased risk of SIDS for infants of parents who did not smoke (Blair et al 1999)
13. Conflicting health agendas
- Infant sleep location is caught between two public health agendas.
  - Safeguarding (the prevention of infant death/injury and safety awareness);
    - viewed by its detractors as neglectful parenting exposing infants to risk of accidental death or SIDS
  - Well-being (the promotion of breastfeeding, bonding and infant mental development)
    - bed-sharing is a parenting behavior valued by its proponents for reinforcing attachment, supporting infant development and facilitating breastfeeding,
14. Weighing costs and benefits
- Case-control studies present a complex picture
  - Bed-sharing associated with positive and negative infant outcomes
  - These depend on context of sleep environment and characteristics of parents and babies,
  - Safeguarding and Wellbeing agendas intersect, recommendations can seem contradictory,

- Interventions addressing one agenda may have a detrimental impact on the other.
15. Practices, behaviours & beliefs
- Intervention campaigns to reduce prone infant sleep were very effective
  - In contrast parents ignore and reject recommendations to avoid bed-sharing
  - Relational aspects of infant sleep are imbued with cultural and personal values.
16. Parental & cultural beliefs
- Deeply-rooted beliefs attached to infant sleep location
  - The 'nature of infancy' and the 'purpose of parenting' are understood differently in across cultures and communities
  - One reason why efforts to 'ban bed-sharing' are contentious.
17. A practice, is a practice?
- SIDS-risk reduction fails to differentiate between
    - a) infant-care practices,
    - b) parenting and parental behaviors,
    - c) cultural beliefs regarding infant sleep.
  - Practices, behaviors and beliefs involve three 'levels of parental engagement' with SIDS-risks that require different approaches for effective intervention.
18. What is an infant care practice?
- Simple actions performed by carers, little engagement or cultural value.
  - Easily modifiable, e.g. prone sleep –was recent, not culturally embedded.
  - Little parental resistance.
  - Norway: preference for prone sleep fell from 64% to 8% in a few months following a supine-sleep campaign
  - Otago, New Zealand: prone sleep of one month old babies fell from 42% in 1986 to 2% in 1989
19. Parental behaviours?
- Activities parents choose to perform with direct or indirect effects on infants.
  - Direct parental behaviour: breastfeeding, prenatal maternal smoking.
  - Indirect: parental postnatal smoking.
  - Bed-sharing is a behavior many parents actively choose.
  - Changing parental behaviors involves both a change in attitude, and commitment to behavior change for the parent.
  - It cannot simply be achieved by the provision of information.
20. Cultural beliefs
- Embedded shared notions of the nature of infancy, role of the parent, and the wider cultural milieu in which infants are 'raised', or 'nurtured'.
  - Meanings attached to infant sleep location reflect cultural paradigms such as fostering dependence or independence, nurturing one's infant or training them for adulthood.
  - Attempts to change such beliefs challenge the cultural identity of the target parents, and their community -- often dismissed as culturally irrelevant.
21. 'Modifiable' risk factors

- Used in SIDS literature for aspects of infant-care assumed to be malleable.
- A heterogeneous collection of infant-care practices, parental behaviors, and cultural beliefs.
- It is ineffective to employ the same approaches to these different entities.

22. Modifying infant sleep position via 'Back to Sleep' campaigns involved a simple and easily implemented change in practice.

In tackling intractable parental behaviors such as smoking, SIDS messages have been modified to accommodate smokers' inability or unwillingness to quit.

- Don't sleep with your baby?
- Bed-sharing is not a simple infant-care practice
- It is not easily modifiable by information campaigns.
- Intervention programs that emphasize a 'Don't Sleep With Your Baby' approach seem naïve and inappropriate.
- Fail to acknowledge the cultural and personal importance attached to bed-sharing
- More nuanced approaches?

23. Around the world = different approaches

- Individualized or culturally tailored guidance
- Specific interventions where infants may be at risk.
- These help parents maximize their infants' safety within the parameters of their own willingness or ability to alter behaviors or beliefs.

24. What's going on around the world?

- Beyond Western post-industrial settings babies sleep in contact with a care-giver night and day as cultural norm.
- In Euro-American countries bed-sharing is common among certain sub-groups
  - breastfeeding mothers
  - immigrant populations from non-Euro-American countries
  - culturally distinct minority groups.

25. These groups, and the validity of their cultural and behavioral differences are not often recognised in public health infant sleep recommendations.

26. Prevalence

- Bed-sharing surveys in Western countries: ~50% of infants ever bed-share by six months.
- Recent studies on bed-sharing prevalence in non-Western settings:
  - of 682 clinic-attending mothers in Klang district, Malaysia, 74% reported bed-sharing (Tan et al. 2009).
  - In Brazil, a large cohort study of 4231 infants found 48% of mothers and 3-month old infants bed-shared habitually (Santos et al. 2009).
  - Anuntaseree et al. (2008) found 68% of 3722 3-month old infants in Thailand shared a bed with their parents.
- Bed-sharing is mainstream infant-care around the world
- Factors that modify SIDS-risk with bed-sharing vary.

27. We reported a strong association between bed-sharing and breastfeeding over a decade ago. (Ball et al 1999; Ball 2002, 2003). Confirmed by numerous researchers.

- Women who breastfeed are more likely to bed-share and bed-sharing is associated with greater breastfeeding duration in many studies.

#### 28. Bed-sharing and weaning?

- Santos (2009) investigated bed-sharing at 3 months and breastfeeding at 12 months.
- Almost all children born in Pelotas, Brazil in 2004 (99.2%) were enrolled in a cohort study.
- At birth, 3 months, and 12 months, mothers were interviewed to gather information on socio-demographic, reproductive, BF, and bed-sharing characteristics.
- Bed-sharing was defined as habitual sharing of a bed between mother and child for the entire night or part of the night.
- Of 4231 live births, 2889 were breastfed at age 3 months. The prevalence of BF at age 12 months was 59.2% in the children who bed-shared at 3 months and 44% in those who did not.
- Among children who were exclusively breastfed at 3 months, 75.1% of those who also bed-shared were still breastfed at age 12 months, versus 52.3% of those who did not bed-share.
- Concluded that bed-sharing at 3 months protected against weaning up to age 12 months

#### 29. NECOT Trial

- Bed-sharing at home was not related to sleep location at hospital; Those mothers who choose to bed-share at home in the 1<sup>st</sup> 14 weeks are twice as likely to breastfeed to 6 months than those who do not bed-share

#### 30. Bed-sharing supports breastfeeding

- Mothers who breastfeed tend to bed-share
- Mothers who are inclined to breastfeed longer may also be more inclined to bed-share.
- A breastfeeding sub-culture whose understanding of infant sleep location differs from the majority population (Elias et al. 1986).
- It is not currently possible to clarify the direction of the bed-sharing-breastfeeding relationship; however mothers who breastfeed are more inclined to keep their babies in close proximity generally than those who never breastfeed (Pires 2011), supporting the sub-culture explanation.

#### 31. Longitudinal bed-sharing patterns

- Blair et al (2010) aimed to explore the different groups that share beds and the potential association with breastfeeding.
- Analysed bed sharing and breastfeeding in 7447 families at 5 points from birth to 4 years
- 4 groups were identified with latent class analysis.
  - Infrequent sharers (66%),
  - Early bed sharers (infancy) 13%;
  - Late bed sharers (1+) 15%
  - Constant bed sharers (6%).

#### 32. Types of bed-sharers identified

- Higher maternal education and social class were:

- Positively associated with early bed-sharing,
  - Negatively associated with late bed-sharing,
  - Not associated with constant bed-sharing.
  - Breastfeeding was significantly higher among the groups that shared beds constantly or early.
  - The socioeconomic and educational characteristics of families that are most likely to share beds in the first few months after an infant's birth place them at a very low risk of SIDS
  - **...any benefit from preventing bed-sharing in this group is likely to be very small**
33. Are there risks? How big?
- Gessner and Porter (2006) estimated the maximum potential risk of SIDS among non-smoking mothers was <1 in 10 000
  - Breastfed babies have a 50% lower risk of SIDS at all ages during infancy (Vennemann et al 2011)
  - Breastfed babies experience rare suffocation accidents.
  - **"The answer should not be to condemn bed-sharing, but to ensure that where it is undertaken, then the infant is safe." (Beal and Byard 2000)**
34. Bed-sharing—what is hazardous?
- Blabey & Gessner (2009) examined 13 years of Alaskan infant death data to assess contributions of known risk factors.
  - 13% of deaths occurred while bed-sharing. 99% of these had at least one additional risk factor present including maternal tobacco use (75%) and sleeping with an impaired person (43%).
  - Frequent bedsharing was reported for 38% of Alaskan infants. Most women bedsharing reported no risk factors.
  - "Taken together these results suggest that infant bed-sharing in the absence of other risk factors is not inherently dangerous"
35. Bed-sharing and smoking
- Bed-sharing is a feature of infant-care culture for New Zealand's Maori and Pacific Islander communities, but only among the Maori is bed-sharing linked with an increased SIDS-risk from smoking (Tuohy et al. 1988) as Pacific Islanders bed-share but rarely smoke (Mitchell et al. 1997).
  - Among aboriginal Australians Perth 68% of mothers bed-shared with their infants and 65% smoked during pregnancy (Eades et al. 1999).
  - In contrast in the UK, South Asian infants are more likely to bed-share, but mothers rarely smoke (Ball et al. 2011), as is the case for Thai infants in Australia (Rice and Naksook 1998).
  - In each situation, therefore, bed-sharing carries different risks due to associations with other variables.
36. Bed-sharing—what's hazardous?
- South-West Infant Sleep Study (UK) – Blair et al (2009)
  - 4 year population based case-control study involving 80 SIDS infants and two control groups weighted for age and time of reference sleep: 87 randomly selected controls and 82 controls at high risk of SIDS.

- 54% SIDS infants were sleep-sharing vs. 20% of control groups.
- Significant multivariable interaction between co-sleeping death and recent parental use of alcohol or drugs (31% v 3% random controls).
- Also much greater proportion of SIDS infants who had slept with adult on a sofa (17% v 1%).
- Many of the SIDS infants co-slept in a hazardous environment. The major influences on risk, use of alcohol or drugs before co-sleeping and co-sleeping on a sofa.

#### 37. Knowledge of risks

- Kendall-Tackett et al (2010) surveyed 4,789 US mothers of 0–12 months infants
- Almost 60% of respondents bed-shared and this occurred throughout the first year.
- 25% of mothers had fallen asleep with their infants in dangerous sleep locations, such as chairs, sofas or recliners.
- Bed-sharing families cited both ideological and pragmatic reasons for sleeping with their babies.
- Authors conclude that mothers appear well-aware of prohibitions against bed-sharing, but consistent with the results of previous studies, the majority continue to bed-share.

#### 38. Where to go from here?

- As understanding progresses questions emerge requiring further research.
- Is there a difference in risk for bed-sharing dyads who breastfeed and those who don't?
- Although no studies have calculated odds ratios for SIDS-risk among breastfed infants who bed-share, breastfeeding generally reduces the risk of SIDS (Vennemann et al. 2009; Hauck et al. 2011).
- Blanket recommendations to avoid bed-sharing are inappropriate even within homogenous populations, as bed-sharing does not occur for the same motivations, nor carry the same risk for all families.
- Blanket recommendations also have unanticipated consequences such as reduced breastfeeding, or adoption of more risky behaviors such as sleep-sharing on sofas.
- Kendall-Tackett et al. (2010) reported that 44% of mothers who fed their babies at night on chairs, recliners or sofas fell asleep while doing so, and these were more likely to be high-income, highly educated, otherwise 'low risk' mothers.

#### 39. New approaches to safe bed-sharing

- The Maori Wahakura

#### 40. Wahakura Project

- Targets a Maori 'problem' using Maori traditions
- Raises awareness of the link between prenatal smoking and SIDS
- Provides opportunities for discussions around safe sleep and infant care
- Wahakura produced from free and renewable resources
- Contain no chemicals or artificial ingredients
- Encourage families to bed-share in the Maori tradition
- Evaluation to look at night-time behaviour, breastfeeding outcomes, mother-infant bonding in 280 families

#### 41. Bradford Infant Care Study

- Bradford Infant Care Study (BradICS) conducted at 2-4 months age Target cohort of



- 5000 infants from Born in Bradford Project
  - Telephone questionnaire to families of infants reaching 8 weeks of age from September 2008 to January 2010.
  - Conducted by BiB researchers using appropriate languages
  - Aimed to obtain data from 2500 families
42. BradICS objectives
- To describe and explore the current variability in infant care in the dominant ethnic groups in Bradford.
  - Examine exposure to SIDS risks in the South Asian and White British families.
  - Use the above data to identify areas for targeted SIDS prevention.
  - UK babies of S Asian origin have a SIDS rate 4x lower than White UK babies
43. Telephone questionnaires
- Questionnaire domains all related to UK SIDS reduction guidelines
    - Sleep position
    - Sleep surface
    - Sleep location
    - Pacifier use
    - Overheating
    - Cot/crib safety
    - Breastfeeding
    - Bed-sharing
    - Sofa-sharing
    - Smoking
    - Alcohol consumption
44. Results
- Sleep-sharing by ethnicity
  - Sleep-sharing by breastfeeding status
  - Breastfeeding, ethnicity & bed sharing
  - Ever bed-share vs. ever sofa-share
45. Targeted information & intervention
- One-size fits all approach is inappropriate
  - Breast-feeders have a need for targeted information on safe bed-sharing
  - Groups with cultural beliefs favourable to bed-sharing need information and culturally relevant interventions if bed-sharing cannot be made safe
  - Sofa-sharing is a recent practice and should be modifiable
46. Modifying bedsharing behaviour
- Risky bed-sharing
  - Safer bed-sharing
  - Safest bed-sharing
  - Side-cars: for 'almost' bed-sharing
  - ISIS: the Infant Sleep Information Source project

#### 47. Conclusions

- Bed-sharing is important to many groups and cultures
- Breastfeeding mothers are one such group
- It is not an easily modifiable 'risk factor'
- It is not an infant care practice that can be altered via 'programs of instruction'
- It is hazardous in association with other activities and places e.g. smoking, alcohol, drugs, sofas
- Risks can be modified via creative attention to these hazards, and provision of targeted information

#### Bibliography

- Abbott, S. (1992). Holding on and pushing away: comparative perspectives on an Eastern Kentucky child rearing practice. *Ethos* 20, 33-65.
- Abel, S., Park, J., et al. (2001). Infant care practices in New Zealand: a cross-cultural qualitative study. *Social Science and Medicine* 53, 1135-1148.
- Alm, B., Lagercrantz, H., & Wennergren, G. (2006). Stop SIDS--sleeping solitary supine, sucking soother, stopping smoking substitutes. *Acta paediatrica* 95(3), 260-2.
- Anuntaseree, W., Mo-suwan, L., Vasiknanonte, P., et al. (2008). Factors associated with bed-sharing and sleep position in Thai neonates. *Child: Care, Health and Development*, 34(4), 482-490.
- Balarajan, R., Soni Raleigh, V., & Botting, B. (1989). Sudden infant death syndrome and postneonatal mortality in immigrants in England and Wales. *British Medical Journal*, 298(6675), 716-20.
- Ball, H.L. (2002). Reasons to bed-share: why parents sleep with their infants. *Journal of Reproductive and Infant Psychology* 20(4), 207-222.
- Ball, H.L. (2003). Breastfeeding, bed-sharing and infant sleep. *Birth* 30(3), 181-188.
- Ball, H.L. (2006). Parent-infant bed-sharing behavior. *Human Nature*, 17(3), 301-318.
- Ball, H.L. & Hooker, E. (1999). Where will the baby sleep? Attitudes and practices of new and experienced parents regarding cosleeping with their newborn infants. *American Anthropologist*, 101(1), 143-151.
- Ball, H.L., Moya, E., Fairley, L., Westman, J., Oddie, S., Wright, J. (2011) Infant care practices related to sudden infant death syndrome in South Asian and White British families in the UK *Paediatric and Perinatal Epidemiology* 26(1):3-12.
- Ball, H.L., Moya, E., Fairley, L., Westman, J., Oddie, S., Wright, J. (2012). Bed and sofa-sharing practices in a UK bi-ethnic population. *Pediatrics* 129:e673-e681
- Ball, H.L., & Russell, C.K. (in press, 2012). Night-time nurturing: an evolutionary perspective on breastfeeding and sleep. In *Evolution, Early Experience and Human Development: From Research to Practice and Policy*. Narvaez, D., Panksepp, J., Schore, A., & Gleason, T. (Eds.) New York: Oxford University Press.
- Blabey, M.H., & Gessner, B.D. (2009). Infant bed-sharing practices and associated risk factors among births and infant deaths in Alaska. *Public Health Reports*, 124(4), 527-534.
- Blair, P.S., Sidebotham, P., Berry, P.J., et al. (2006). Major epidemiological changes in Sudden Infant Death Syndrome: a 20-year population-based study in the UK. *Lancet*, 367(9507), 314-9.
- Blair, P.S., Sidebotham, P., Evason-Coombe, C., et al. (2009). Hazardous cosleeping environments and risk factors amenable to change: case-control study of SIDS in South-West England. *BMJ*, 339. doi:10.1136/bmj.b3666

- Blair, P.S., Heron, J., & Fleming, P.J. (2010). Relationship between bed sharing and breastfeeding: Longitudinal, population-based analysis. *Pediatrics*, 126(5), e1119-e1126.
- Blair, P.S. and H.L. Ball (2004). The prevalence and characteristics associated with parent-infant bed-sharing in England. *Archives of Disease in Childhood* 89, 1106-1110.
- Blair, P.S., Ward-Platt, M. P., Smith, I.J., et al. (2006). Sudden infant death syndrome and sleeping position in pre-term and low birth-weight infants: an opportunity for targeted intervention. *Archives of Disease in Childhood*, 91(2), 101-6.
- Blair P.S., Fleming P.J., Smith I.J., et al. (1999) Babies sleeping with parents: case-control study of factors influencing the risk of the Sudden Infant Death Syndrome. CESDI SUDI research group. *British Medical Journal*. 319(7223), 1457-61.
- Bolling, K., Grant, C., Hamlyn, B., et al. (2007). *Infant feeding survey 2005*. London: The Information Centre for Health and Social Care
- Byard, R., Beal, S., et al. (1994). Potentially dangerous sleeping environments and accidental asphyxia in infancy and early childhood. *Archives of Disease in Childhood* 71, 497-500.
- Byard, R., Beal, S. et al. (2001). Specific dangers associated with infants sleeping on sofas. *Journal of Paediatrics & Child Health* 37, 476-478.
- Colson, E.R., McCabe, L.K., Fox, K., et al., (2005). Barriers to following the back-to-sleep recommendations: insights from focus groups with inner-city caregivers. *Ambulatory Pediatrics*, 5(6), 349-54.
- Crawford, C. (1994). Parenting practices in the Basque country: implications of infant and childhood sleeping location for personality development. *Ethos* 22(1), 42-82.
- Davies, D.P. & Gantley, M. (1994). Ethnicity and the etiology of sudden infant death syndrome. *Archives of Disease in Childhood* 70, 349-353.
- de Jonge, G.A., Burgmeijer, R.J., Engelberts, A.C., et al. (1993). Sleeping position for infants and cot death in The Netherlands 1985-91. *Archives of Disease in Childhood*, 69(6), 660-663.
- Eades, S.J. & Read A.W., & Bibbulung Gnarnep Team (1999). Infant care practices in a metropolitan aboriginal population. *Journal of Paediatrics and Child Health* 35 (6), 541-544.
- Elias, M.F., Nicholson, N.A., Konner, M., (1986) Two subcultures of maternal care in the United States. In D.M. Taub & F.A. King (Eds.) *Current perspectives in primate social dynamics*. 37-50
- Farooqi, S., Perry, I.J., & Beevers, D.G. (1993). Ethnic differences in infant-rearing practices and their possible relationship to the incidence of sudden infant death syndrome (SIDS). *Paediatric and Perinatal Epidemiology*, 7(3), 245-52.
- Fleming, P., & Blair, P.S. (2007). Sudden Infant Death Syndrome and parental smoking. *Early Human Development*, 83(11), 721-5.
- Fleming, P.J., P.S. Blair, et al. (1996). Environment of infants during sleep and risk of the sudden infant death syndrome: results of 1993-5 case-control study for confidential inquiry into stillbirths and deaths in infancy. *British Medical Journal* 313 (7051), 191-194.
- Fleming, P.J., Blair, P.S., Ward-Platt, M., et al. (2003). Sudden infant death syndrome and social deprivation: assessing epidemiological factors after post-matching for deprivation. *Paediatric and Perinatal Epidemiology*, 17(3), 272-80.
- Gantley, M., Davies, D.P., & Murcott, A. (1993). Sudden infant death syndrome: links with infant care practices. *British Medical Journal*, 306(6869), 16-20.
- Gessner, B.D., & Porter, T.J. (2006) Bed Sharing With Unimpaired Parents Is Not an Important Risk for Sudden Infant Death Syndrome. *Pediatrics*, 117, 990.

- Gilbert, R., Salanti, G., Harden, M., See, S. (2005) Infant sleeping position and the sudden infant death syndrome: systematic review of observational studies and historical review of recommendations from 1940 to 2002. *International Journal of Epidemiology*, 34, 874-887.
- Golding, J., Fleming, P., & Parkes, J. (1992). Cot deaths and sleep position campaigns. *Lancet*, 339(8795), 748-9.
- Hackett, M. (2007). *Unsettled sleep: The construction and consequences of a public health media campaign*. City University of New York. Retrieved 3.10.11 from <http://proquest.umi.com/pqdlink?did=1408928511&Fmt=7&clientId=79356&RQT=309&VName=PQD>
- Hauck, F. R., Herman, S. M., Donovan, M., et al. (2003). Sleep environment and the risk of sudden infant death syndrome in an urban population: the Chicago Infant Mortality Study. *Pediatrics*, 111(Supplement 1), 1207.
- Hauck, F.R., & Smolkin, M.S. (2009) Maternal substance use during pregnancy and increased risk of sudden infant death syndrome among African Americans. In: Abstracts of the 2008 International SIDS Conference. *Forensic Science, Medicine and Pathology*, 5(2), 134.
- Hauck, F.R., Thompson, J.M.D., Tanabe, K.O., et al. (2011). Breastfeeding and Reduced Risk of Sudden Infant Death Syndrome: A Meta-analysis. *Pediatrics*, 128(1), 103-110.
- Horsley, T., Clifford, T., Barrowman, N., et al. (2007). Benefits and harms associated with the practice of bed sharing: a systematic review. *Archives of Pediatric & Adolescent Medicine*, 161(3), 237-45.
- Huang, C., & Cheng, S. (2006). [Reducing the risk of sudden infant death syndrome through safe sleep practices]. *Hu li za zhi (The Journal of Nursing)*, 53(4), 11-6.
- Irgens, L.M., Markestad, T., et al. (1995). Sleeping position and sudden infant death syndrome in Norway 1967-1991. *Archives of Disease in Childhood* 72 (6), 478-482.
- Kendall-Tackett, K., Cong, Z., & Hale, T.W. (2010). Mother-Infant Sleep Locations and Nighttime Feeding Behavior. *Clinical Lactation*, 1(1), 27-30.
- Konner, M.J. and C.M. Super (1987). Sudden Infant Death Syndrome: an anthropological hypothesis. *The role of culture in developmental disorder*. C. M. Super. San Diego, Academic Press: 95-108.
- Lahr, M.B., Rosenberg, K.D., & Lapidus, J. A. (2007). Maternal-infant bedsharing: risk factors for bedsharing in a population-based survey of new mothers and implications for SIDS risk reduction. *Maternal and Child Health Journal*, 11(3), 277-86.
- Lope, R.J.R., Kong, W.K., Lee, V.W.M., et al. (2010). Sleep position and infant care practices in an urban community in Kuala Lumpur. *Medical Journal of Malaysia*, 65(1), 45-8.
- Markestad, T., Skadberg, B., et al. (1995). Sleeping position and sudden infant death syndrome (SIDS): effect of an intervention programme to avoid prone sleeping. *Acta Paediatrica* 84(4), 375-378.
- McCoy, R.C., Hunt, C.E., Lesko, S.M., et al. (2004). Frequency of bed sharing and its relationship to breastfeeding. *Journal of Developmental and Behavioral Pediatrics*: 25(3), 141-9.
- McKenna, J.J. (1986). An anthropological perspective on the sudden infant death syndrome (SIDS): the role of parental breathing cues and speech breathing adaptations. *Medical Anthropology*, 10(1), 9-92.
- McKenna, J. (1990a). Evolution and Sudden Infant Death Syndrome: Part I Infant Responsivity to Parental Contact. *Human Nature* 1(2), 145-177.
- McKenna, J. (1990b). Evolution and the Sudden Infant Death Syndrome (SIDS): Part II Why Human Infants? *Human Nature* 1(2), 179-206.

- McKenna, J.J. & Mosko, S.S. (1990). Evolution and Sudden Infant Death Syndrome (SIDS): Part III: Infant arousal and parent-infant co-sleeping. *Human Nature* 1(3), 291-330.
- McKenna, J.J., Ball, H.L., & Gettler, L.T. (2007). Mother-infant cosleeping, breastfeeding and sudden infant death syndrome: what biological anthropology has discovered about normal infant sleep and pediatric sleep medicine. *American Journal of Physical Anthropology, Suppl 45(S45)*, 133-161.
- McManus, V., Abel, S., McCreanor, T., Tipene-Leach, D. Narratives of deprivation: Women's life stories around Maori sudden infant death syndrome *Social Science & Medicine* 71; 643-649, 2010
- Mehanni, M., Kiberd, B., McDonnell, M., et al. (1999). Reduce the risk of cot death guidelines. The effect of a revised intervention programme. National Sudden Infant Death Register, Dublin. *Irish Medical Journal*, 92(2), 266-9.
- Mitchell, E.A. (2007). Sudden infant death syndrome: should bed sharing be discouraged? *Archives of Pediatrics and Adolescent Medicine*, 161(3), 305.
- Mitchell, E. a. (2009). SIDS: past, present and future. *Acta paediatrica*, 98(11), 1712-9.
- Mitchell, E.A., and Scragg, R. (1993). Are infants sharing a bed with another person at increased risk of sudden infant death syndrome? *Sleep*, 16(4), 387-9.
- Mitchell E.A., & Thompson J.M.D. (1995) Co-sleeping increases the risk of SIDS, but sleeping in the parents' bedroom lowers it. In: Rognum T.O., editor. *Sudden infant death syndrome: new trends in the nineties*. Oslo: Scandinavian University Press. p. 266-9.
- Mitchell, E.A., Ford, R.P.K., et al. (1992). Further evidence supporting a causal relationship between prone sleeping and SIDS. *Journal of Paediatric & Child Health* 28(5), 9-12.
- Mitchell, E.A., Tuohy, P.G., et al. (1997). Risk factors for Sudden Infant Death Syndrome following the Prevention Campaign in New Zealand: a prospective study. *Pediatrics* 100(5), 835-840.
- Mitchell, E.A., Stewart, A.W., Crampton, P., et al. (2000). Deprivation and sudden infant death syndrome. *Social Science & Medicine* 51(1), 147-50.
- Moon, R.Y., Oden, R.P., Joyner, B.L., & Ajao, T.I. (2010). Qualitative analysis of beliefs and perceptions about sudden infant death syndrome in African-American mothers: implications for safe sleep recommendations. *Journal of Pediatrics*, 157(1), 92-97.
- Moon, R.Y., Calabrese, T., et al. (2008). Reducing the Risk of Sudden Infant Death Syndrome in Child Care and Changing Provider Practices: lessons learned from a demonstration project. *Pediatrics* 122(4), 788-798.
- Morelli, G., Oppenheim, D., et al. (1992). Cultural Variation in Infants Sleeping Arrangements: Questions of Independence. *Developmental Psychology* 28(4), 604-613.
- National Institute of Child Health and Human Development (NICHD) (2001). *Babies Sleep Safest on their Backs: A resource kit for reducing SIDS in African American communities*. Washington, DC, U.S. Government Printing Office.
- National Institute of Child Health and Human Development (NICHD) (2010). Healthy Native Babies Project [www.nichd.nih.gov/publications/pubs\\_details.cfm?from=&pubs\\_id=5733](http://www.nichd.nih.gov/publications/pubs_details.cfm?from=&pubs_id=5733). Accessed 1.2.12
- O'Hara, M., Harruff, R., et al. (2000). Sleep location and suffocation: how good is the evidence? [letter]. *Pediatrics* 105(4), 915-917.
- Office for National Statistics. Trends in cot death. *Health Statistics Quarterly* 2000; 5,17-25.
- Pelayo, R., Owens, J., et al. (2006). Bed sharing with unimpaired parents is not an important risk for Sudden Infant Death Syndrome. [letter] *Pediatrics* 117, 993-994.

- Rasinski, K.A., Kuby, A. et al. (2003). Effect of a Sudden Infant Death Syndrome risk reduction education program on risk factor compliance and information sources in primarily black urban communities. *Pediatrics* 111(4), e347-e354.
- Ruys, J.H., de Jonge, G.A., Brand, R., et al. (2007). Bed-sharing in the first four months of life: a risk factor for sudden infant death. *Acta Paediatrica*, 96(10), 1399-403.
- Santos, I.S., Mota, D.M., Matijasevich, A., et al. (2009). Bed-sharing at 3 months and breast-feeding at 1 year in southern Brazil. *Journal of Pediatrics*, 155(4), 505-509.
- Schluter, P.J., Paterson, J., et al. (2007). Infant Care Practices Associated with Sudden Infant Death Syndrome: findings from the Pacific Islands Families Study. *Journal of Paediatrics and Child Health* 43, 388-393.
- Scragg, R., & Mitchell, E. (1998). Side sleeping position and bed sharing in the Sudden Infant Death Syndrome. *Annals of Medicine* 30(4), 345-9.
- Scragg, R., Stewart, A.W., et al. (1995). Public health policy on bed-sharing and smoking in the sudden infant death syndrome. *New Zealand Medical Journal* 108, 218-222.
- Tan, K.L., Ghani, S.N., & Moy, F.M. (2009). The prevalence and characteristics associated with mother-infant bed-sharing in Klang District, Malaysia. *Medical Journal of Malaysia*, 64(4), 311-315.
- Taylor, E.M., & Emery, J.L. (1988). Trends in unexpected infant deaths in Sheffield. *Lancet*, 2(8620), 1121-1123.
- Tipene-Leach, D. (2007a) Versing the traditional in a contemporary idiom: weaving the solution to cot death. Presentation accessed 10.3.2011 from [www.birthcare.co.nz/uploads/documents/Wahakura%20Project%20\(Safe%20Bed%20Sharing\).pdf](http://www.birthcare.co.nz/uploads/documents/Wahakura%20Project%20(Safe%20Bed%20Sharing).pdf)
- Tipene-Leach, D., (2007b) The Wahakura: the safe bed-sharing project. Accessed 10.3.11 from [www.maorisids.org.nz/assets/files/pdf/presentations/2007/MSIDS%20Wahakurabook5.3.07\[1\].pdf](http://www.maorisids.org.nz/assets/files/pdf/presentations/2007/MSIDS%20Wahakurabook5.3.07[1].pdf)
- Tipene-Leach D and Abel S. (2010) The wahakura and the safe sleeping environment. *Journal of Primary Health Care* 2: 1; 81.
- Tipene-Leach, D., Abel, S., Finau, S.A., et al. (2000). Maori infant care practices: implications for health messages, infant care services and SIDS prevention in Maori communities. *Pacific Health Dialog*, 7(1), 29-37.
- Tully, K.P. & Ball, H.L. (2011) Trade-offs underlying maternal breastfeeding decisions: A conceptual model *Maternal and Child Nutrition*. doi: 10.1111/j.1740-8709.2011.00378.x (published online ahead of print).
- Tuohy, P.G., Smale, P., et al. (1998). Ethnic differences in parent/infant co-sleeping practices in New Zealand. *New Zealand Medical Journal* 111, 364-6.
- Valentin, S.R. (2005). Sleep in German Infants - The "Cult" of Independence. *Pediatrics* 115(1), 269-271.
- Van Sleuwen, B.E. (2003). Infant care practices related to cot death in Turkish and Moroccan families in the Netherlands. *Archives of Disease in Childhood*, 88(9), 784-788.
- Vennemann, M.M., Bajanowski, T., et al. (2009). Does breastfeeding reduce the risk of sudden infant death syndrome? *Pediatrics*, 123(3).
- Volpe, L.E., Ball H.L., McKenna, J.J. (in press). Night-time Parenting Strategies and Sleep-Related Risks to Infants. *Social Science and Medicine* special issue on 'Sleep and Health'.
- Von Kohorn I., et al. (2010) Influence of prior advice and beliefs of mothers on infant sleep position. *Archives of Pediatric and Adolescent Medicine* 164, 363-69.

- Weese-Mayer, D. (1998). Modifiable risk factors for Sudden Infant Death Syndrome: When will we ever learn? *Pediatrics* 132, 197-198.
- Welles-Nystrom, B. (2005). Co-sleeping as a window into Swedish culture: considerations of gender and health care. *Scandinavian Journal of Caring Sciences*, 19(4), 354-60.
- Willinger, M., Hoffman, H.J., et al. (1998). Factors associated with the transition to non-prone sleep positions of infants in the United States: the National Infant Sleep Position Study. *Journal of the American Medical Association* 280, 329-335.
- Willinger, M., Ko, C., & Hoffman, H. (2003). Trends in infant bed sharing in the United States, 1993-2000: the National Infant Sleep Position study. *Archives of Pediatrics*, 157, 43-49.
- Willinger, M., James, L.S., et al. (1991). Defining the Sudden Infant Death Syndrome (SIDS): deliberations of an expert panel convened by NICHD. *Pediatric Pathology* 11, 677-684.