

Supplementary Table 1: Search Diary

Database name and provider	Date range	Search completed	Search strategy	Total no of references retrieved
Pubmed	1950	18.03.08	((formula OR bottle OR artificial*) AND (milk OR feed* OR fed))) AND ((determin* OR experience* OR factor* OR belief* OR attitude* OR view* OR correlat* OR perception*)) AND ((Humans[Mesh]))	5784
NCBI entrez Medline	1950	26.03.08	((INFANT-FORMULA#.DE. OR BOTTLE-FEEDING#.DE.) OR (formula AND milk) OR (formula AND feed\$) OR (formula ADJ fed) OR (breast ADJ milk ADJ substitute\$) OR (bottle AND milk) OR (bottle AND feed\$) OR (bottle ADJ fed) OR (infan\$3 ADJ formula\$) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ milk) OR (bab\$3 ADJ formula)) AND ((HEALTH-KNOWLEDGE-ATTITUDES-PRACTICE#.DE.) OR (ATTITUDE-OF-HEALTH-PERSONNEL#.DE.) OR (perception) OR (experience\$1) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view\$1) OR (belie\$2)) AND HUMAN=YES))	2152
Datastar				
Psycinfo	1806	10.04.08	((formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	1356
Datastar				
Cinahl	1982	10.04.08	((INFANT-FEEDING#.DE.) OR (formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (ATTITUDE-TO-HEALTH#.DE.) OR (PATIENT-ATTITUDES#.DE.)OR (HEALTH-KNOWLEDGE#.DE.) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	3288
Datastar				
BNI	1994	26.03.08	((INFANT-FEEDING#.DE.) OR (formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND ((perception) OR (experience) OR (PATIENTS-ATTITUDES-AND-PERCEPTIONS#.DE.) OR (knowledge) OR (information) OR (PATIENTS-EDUCATION#.DE.) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2) OR (HEALTH-ATTITUDES#.DE.))	274
Datastar				
Embase	1974	10.04.08	((INFANT-FEEDING#.DE.) OR (formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (ATTITUDE#.W..DE.)OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	4168
Datastar				
ISI Web of knowledge (SCI and SSCI)	1970	15.04.08	Topic=((Bottle OR Formula) AND (milk OR Feed* OR fed)) AND Topic=(perception OR experience OR knowledge OR information OR view OR belief OR attitude OR intake OR quantity OR preparation OR prepare) AND Topic=(human)	3343
ASSIA	1987	16.04.08	(bottle OR formula) AND (milk OR feed* OR fed)	160
CSAillumina Sociological Abstracts CSAillumina	1952	16.04.08	(bottle OR formula) AND (milk OR feed* OR fed)	94

Social Services Abstracts		16.04.08	(bottle OR formula) AND (milk OR feed* OR fed)	33
AMED	1985	10.04.08	((formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	7
Datastar				
King's Fund	1979	10.04.08	((formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	43
Datastar				
DH	1983	10.04.08	((formula AND milk) OR (formula AND fed) OR (formula AND feed\$3) OR (bottle AND milk) OR (bottle AND feed\$3) OR (bottle ADJ fed) OR (Infan\$3 ADJ Formula) OR (infan\$3 ADJ milk) OR (bab\$3 ADJ formula) OR (bab\$3 ADJ milk) OR (breast ADJ milk ADJ substitute)) AND((perception) OR (experience) OR (knowledge) OR (information) OR (prepar\$5) OR (quantit\$3) OR (view) OR (belie\$2))	65
Datastar				

Supplementary Table 2: Qualitative studies (n=6)

Author (year) location	Participants Design	Aims	Data collection and synthesis	Key findings	Authors' Conclusions
Lee E (2007) England, UK	33 mothers age 22-40 years. Purposive sample of women who were selected because they used formula milk wholly or mostly to feed their babies from 0-3 months. Babies were less than 1 year old at the time of the study. Qualitative interview study.	'To investigate women's experience of feeding their babies in a context where breastfeeding is strongly promoted.'	Individual interviews in participants' homes. Interviews lasted 60-90 minutes and were transcribed verbatim. Thematic synthesis undertaken. Narrative and survey data discussed together. Directly attributed quotes presented and exploration of subjective experience possible.	Formula feeding emerged as an uncomfortable experience more so for women who had planned antenatally to breast feed. Women found it difficult to obtain information from official sources about formula milk. Difficulty in finding information led to feeling of guilt and anger. The fact that women were bottle feeding, affected their relationship with health professionals and other mothers.	'experience of formula feeding can be especially disorienting and demoralising' 'Departing from what is best – breastfeeding- is not experienced as acceptable and uncontroversial on pragmatic grounds, but is somehow symptomatic of a woman's failure as a mother.' 'Some women's narratives also indicate that where formula milk use was unanticipated their experience was problematic, not simply or only because they were unsure of how to make up bottles appropriately, but also because they felt anxious about feeding their baby in a way they feared was risky.'
Cloherly M (2004) South West England, UK	30 mothers, 17 midwives, 4 neonatal nurses, 3 paediatricians, 3 SHOs and 3 healthcare assistants. The unit was chosen because a variety of methods were used to give supplementary feeds including cup, bottle, syringe and mothers whose babies were thought to need supplementation were recruited. Only one mother refused to participate. Mothers were Caucasian, aged between 16-45 years, with occupations ranging from unskilled to professional. Ethnographic study involving	'To explore mothers' and healthcare professionals' beliefs, expectations and experiences in relation to supplementation of breast feeding in the postnatal ward and neonatal baby unit.'	Study carried out in a maternity unit. Interviews lasted 15-60 minutes. Observations were recorded as field notes, transcribed and coded, along with interview data. Triangulation of data provided by data from both observation and interviews. Directly attributed quotes presented and exploration of subjective experience possible.	Babies received formula feeds on the postnatal ward because healthcare professionals perceived mothers to be tired or distressed. The request was sometimes initiated by the mother (mother-led supplementation) and sometimes by the midwife (midwife-led supplementation).	'Healthcare professionals' supplemented babies with formula milk to protect mothers from tiredness or distress, although at times this conflicted with their role in promoting breastfeeding.' 'Supplementation may help mothers in the short term but may have detrimental effects on breast feeding in the longer term and both mothers and midwives need to be aware of this.'

	participant observation and interviews.				
Bailey C (2004) North Tyneside, UK	16 primiparous women who expressed an intention to breast feed antenatally. Sampling was purposive, aiming to recruit women expecting their first baby, who lived in low-income areas and who intended to breast feed. Qualitative interviews at 37 weeks antenatally and again at 3-9 weeks postnatally.	'To improve understanding on why mothers give up breast feeding and choose to formula feed.'	Individual interviews in participants homes. Interviews lasted 40-60 minutes and were transcribed verbatim. A topic guide was used in a semi-structured format. Grounded Theory and thematic analysis. Directly attributed quotes presented and exploration of subjective experience possible.	15 of the 16 mothers initiated breast feeding but 11 mothers had introduced formula feeds by the time of the second interview. The main reasons for introducing formula milk were- exhaustion/anxiety, pain/sore cracked nipples, not producing enough milk, baby losing weight/ very unsettled, partner wanted to be more involved. All women who experienced difficulty with breast feeding and who subsequently introduced artificial milk expressed disappointment, relief and in some cases guilt.	There was a 'give it a go' breast feeding culture, where women who intended to breast feed had a strong expectation of difficulties and even failure. Expertise and confidence with bottle feeding were more widespread among family and friends.
Mozingo J (2000) Tennessee, USA	9 mothers (who had initiated breast feeding but stopped within two weeks) ages 20-32 years. Recruited through professional networks and links in the community. Qualitative interviews.	'To explore the subjective experiences of women who initiate breast feeding but stop within the first 2 weeks after birth.'	Individual interviews, usually in participant's home. Interviews lasted 1 hour and were transcribed verbatim. In order to capture the 'lived experience', an unstructured format was used. Phenomenology and thematic analysis. Directly attributed quotes presented and exploration of subjective experience possible.	A consistent finding was that the women described a clash or incongruity between their highly idealised expectations (breast feeding as natural, intuitive, womanly, best for baby) and the reality of the difficulties of breast feeding (failure to latch on, exhaustion, engorgement, sore nipples, mastitis, afraid baby starving and failure of assistance). Most women spoke about a sense of failure, guilt, disappointment or shame, and self doubt about not continuing breast feeding. Although some women expressed immediate relief at stopping, they later felt guilty because they had felt relieved. Some women also described being angry at themselves or others.	'Women who stop breast feeding at an early date may feel guilty about doing so, and may need assistance in resolving these feelings.'
Earle S (2000) Coventry, UK	19 primiparous women age 16-30 years (recruited via 12 antenatal clinics). Participants were not recruited based on the feeding method. Only 1 mother (age 14) who was approached, declined to participate. 1 participant withdrew due to miscarriage and one due to mental health problems. Qualitative interviews at 6-14 weeks and 34-39 weeks	'To explore women's experiences and perceptions of baby feeding and to explore the explanations offered by women who choose to either breast or bottle feed.'	Individual unstructured interviews transcribed verbatim. Thematic analysis. Directly attributed quotes presented and exploration of subjective experience possible.	Women made decisions of whether to breast feed or bottle feed early in pregnancy. Of the 19 women, 12 had decided to bottle feed and 7 to breast feed and all but one had made the decision by the 6-14 weeks antenatally. All the participants had some knowledge of the benefits of breast feeding regardless of the method they had chosen. Bottle feeding was chosen as a method to enable sharing of the baby with the baby's father.	'Fathers may play an important role in the way that women reach their baby-feeding decisions.' 'Women want to involve fathers in baby care both to provide relief from the 'daily grind' of caring and because they want to share the experience of parenting.'

	antenatally and again at 6-14 weeks postnatally.				
Basire K (1997) Wellington, New Zealand	<p>38 mothers with babies aged 3-18 months (recruited by Plunket nurses and hence biased towards women who were satisfied with the care they received from the Plunket nurse). Women selected to cover a range of sociodemographic profiles and attitudes to infant feeding.</p> <p>Qualitative focus group study. The six focus groups had the following profiles. Mothers bottle feeding babies 3-6 months, breast feeding 3-6 months, breast feeding 6-12 months, breast feeding over 12 months and a group of teenage mothers.</p>	'To investigate attitudes towards baby feeding and to identify reasons why women stop breast feeding.' (start bottle feeds)	<p>Six focus groups each consisting of 5-8 participants and guided according to a planned schedule. Duration not mentioned. Discussions were audio-taped and transcribed.</p> <p>Thematic analysis undertaken. Initially separately for breast and bottle feeders and subsequently combined because themes were similar in both groups.</p> <p>No quotes presented.</p>	<p>Women felt that there was considerable pressure on them to breast feed. They stressed there was an absence of information on breast feeding problems and dealing with them. Most found breast feeding more difficult than anticipated. Almost all reported breast feeding problems such as tiredness, exhaustion, pain, cracked/bleeding/sore nipples, engorged leaking breasts, breast infections, lack of freedom and conflicting information from health professionals.</p> <p>All women who reported initiating bottle feeding said a lack of clear, consistent information about the practical aspects of bottle feeding was a problem. Some told of mistakes they had made as a result.</p> <p>Most valuable source of advice and support came from their peer groups.</p>	'...highlighted the need for non judgemental attitudes to baby feeding and consistent information and support for both breast and bottle feeding.'

Supplementary Table 3: Quantitative studies (n=17)

Author (year) location	Participants Design	Aims	Data collection and synthesis	Key findings	Authors' Conclusions
Lee E (2007) England, UK	503 women age 16-35+ years. Quota sampling based on age of the baby (half aged 0-3 months and half aged 4-6 months) and mother's parity (half first time mothers and half had more than one child). Sample obtained from a list held by a scheme funded by manufacturers of baby products. Respondents were not selected based on feeding method. Quantitative (interview) survey.	'To generate both statistical and qualitative data on socio-cultural context of milk feeding.'	Findings reported from data on 405 mothers who had used formula milk. Percentages for particular response reported.	Relieved that baby was being fed-88% Pleased to find a solution that made things easier -76% Uncertain were doing the right thing -48% Guilt about using formula-33% Sense of failure -32% Worried about what professionals might say-23% Worried about effect on baby's health-20% Made to feel guilty about not breastfeeding-44% Put under pressure to breast feed-50% Received information about formula milk-47%	'Formula feeding was widely experienced as a feeding option with pragmatic advantages'. However 'a large minority experience doing so as a challenge to feeling like a 'good mother'. '...experiences of infant feeding did not emerge as clearly polarised according to social class. The existence of 'two cultures' in which the experience of working class and middle class mothers was highly differentiated, was not identified.'
Cairney P (2007) Scotland, UK	500 primiparous women age 16-42 years recruited in 1998 from community midwife registrations at 34 weeks gestation. Both rural and urban areas covered. Response rate 54% (500 of 944 contacted). Longitudinal postal questionnaire survey –one month (n=366, 78%) and three months (n=328, 66%) postnatally.	'To assess if there is a difference in mothers' perceptions of the support they receive about bottle feeding from a range of professional and non-professional sources.' Support was intended to mean affirmation and information-giving rather than practical, hands-on assistance.	Postal questionnaire. 6 statements relating to sources of support about infant feeding and 1 statement about knowledge, rated on a five point Likert scale. Odds ratios and confidence intervals for exclusive breast feeders versus bottle feeders were reported.	Younger women reported feeling they had more knowledge about feeding their infant than older women. Women who breast fed were twice as likely, as those not, to feel they had enough knowledge. At one month postnatally, women who considered that they had enough knowledge were more likely to say the community midwife supported them. Support from professionals, friends or partner were not associated with whether mothers were breast feeding or bottle feeding. However mothers who were giving bottle feeds were more likely to report support from relatives.	'...the greater levels of confidence in younger women, as documented in this study, may in fact be misplaced.' Since bottle feeding mothers were more likely to report support from relatives, 'there was potential for misinformation to be passed on from one generation to the next'. 'As high confidence levels in some new mothers may be accompanied by inappropriate practices, there may be a case for targeting relatives in health promotion initiatives concerned with infant feeding.'
Cairney P (2006) Scotland, UK	297 primiparous women age over 23 years (recruited in 1998 from community midwife registrations at 34 weeks gestation. Subset of Cairney 2007 study).	'To elicit how first-time mothers felt about the amount and type of support they received from health professionals about infant feeding.'	Postal questionnaire. 6 statements about perceived behaviour and attitudes of different health professionals (hospital midwife, community midwife, health visitor and family doctor) were scored on a five	Both breast and bottle feeding mothers considered that hospital midwives spent more time with breastfeeding mothers than with bottle feeding mothers and they were more likely than other health professionals (family doctors, community midwives and health visitors) to expect mothers to breast feed.	'Mothers see hospital midwives as more likely than other health professionals to expect mothers to breast feed. This may lead to reluctance on the part of expectant new mothers to discuss bottle feeding with midwives, despite the fact that

	<p>Response rate 54%.</p> <p>Postal survey at one month postnatal age (78% of recruited sample).</p>		<p>point likert scale.</p> <p>Perceptions of bottle feeders versus breast feeders were compared and different health professionals were compared using non-parametric tests.</p>	<p>Women choosing to bottle feed compared to breast feeders were less likely to think that hospital midwives gave enough information about infant feeding antenatally, spent enough time and gave enough help to new mothers.</p>	<p>they are the people most available and knowledgeable to provide appropriate information and advice about bottle feeding.'</p> <p>'inability to deal with bottle-feeding difficulties can result in traumatic interaction between mother and baby, with constant and inappropriate changing of feeds and the possibility of early introduction of solid foods.'</p>
<p>Bolling K (2006)</p> <p>UK</p>	<p>Infant feeding survey 2005.</p> <p>9,416 mothers based on a representative sample of births registered during August and September 2005.</p> <p>Longitudinal survey. Stage 1 at 4-10 weeks postnatal (n=12,290), Stage 2 at 4-6 months (n=10,814) and Stage 3 at 8-10 months (n=9,416).</p> <p>Response rate 62% at stage 1, 88% at stage 2 and 87% at stage 3.</p>	<p>'To provide estimates on the incidence, prevalence and duration of breastfeeding and other feeding practices adopted by mothers in the first eight to ten months postnatally.'</p>	<p>Postal questionnaire survey (with telephone follow-up of non-responders).</p> <p>Percentages for particular response reported.</p>	<p>Of the mothers who had bottle fed in the last 7 days. 27% followed the recommendation of preparing only one feed at a time.</p> <p>59% were following the recommendation of using boiled water that had been left to cool for 30 minutes or less.</p> <p>94% were usually putting water in the bottle first and then adding powder (as recommended).</p> <p>13% followed all three recommendations of only making one feed at a time, making feeds within 30 minutes of the water boiling and adding water to the bottle before powder (54% followed the two main recommendations about boiling water and adding powder before water).</p> <p>Reasons give for stopping breastfeeding/introducing formula were insufficient milk (39%), baby rejected breast (20%), painful breasts/nipples (14%) and took too long/tiring (14%). In later months return to work began to feature as a reason for stopping (7%).</p> <p>A third (33%) of mothers who breastfed for less than two weeks experienced discomfort increasing to 55% of mothers breastfeeding for six months or more.</p>	<p>Only 45% of mothers were exclusively breastfeeding at one week, 21% at six weeks and less than 1% at six months.</p> <p>'Just under half of all mothers who had prepared powdered infant formula in the last seven days had not followed the key recommendations for preparing formula: either by not always using boiled water that had cooled for less than 30 minutes or not always adding the water to the bottle before the powder.'</p> <p>Mothers who breastfed were more likely to report feeding problems compared with mothers who formula fed. 'This indicates that many mothers committed to longer-term breastfeeding are prepared to continue despite problems and discomfort they may experience.'</p>
<p>Borghese-Lang T (2003)</p> <p>Ohio, USA</p>	<p>Parents of 54 first born bottle fed infants (infants aged 0-4 months) from 3 paediatric practices.</p> <p>Chart and phone log reviews</p>	<p>Not clearly stated- Probably to identify problems with bottle feeding.</p>	<p>Feeding charts were reviewed in 3 paediatric practices.</p> <p>Table of feeding problems presented.</p>	<p>Of the 54 charts reviewed, 55.6% revealed specific feeding issues. Many questions related to weight gain, formula intolerance, frequency of feeding, the correct amount of formula to give at each feed and spitting up. Spitting up may have been due to overfeeding but more than half the mothers thought it was due to milk</p>	<p>'Bottle feeding probably gives the parent more control and the infant less self-regulation, thereby potentially overriding infant satiation cues.'</p>

	for feeding concerns and review of handouts available to parents of bottle fed infants.			allergy and many of these infants were treated for gastro-esophageal reflux. A review of the handouts available to parents of bottle-fed infants found that many of the handouts were fairly brief and did not address the common questions parents have.	
Cairney P (2001) Scotland, UK	296 primiparous women age over 23 years (recruited in 1998 from community midwife registrations at 34 weeks gestation. Subset of Cairney 2007 study). Response rate 54%. Postal survey at one month postnatal age (78% of recruited sample).	'To assess mothers' perception of information given to them about bottle feeding.'	Postal questionnaire. Mothers asked if they had been given information antenatally about sterilising bottles, making up feeds and how much formula to offer. Percentages of women receiving information. Comparison of women according to antenatal feeding intention (breast or bottle) and between those using bottle feeds at one month or not.	Although only 63 mothers had intended to bottle feed, by one month 175 were giving bottle feeds. Fewer than 50% of women reported being given information about sterilising equipment, making feeds and how much to offer during the antenatal period and this percentage was similar irrespective of intention to breast or bottle feed. In the postnatal period more women who intended to bottle feed or introduced bottle feeds recalled receiving information about bottle feeding than those who intended to breastfeed or exclusively breastfed. Postnatally, of the women who intended to bottle feed 59% received information on sterilising equipment and making-up feeds, 68% received information on how much feed to offer. Of the women who introduced bottle feeds, 57% received information on sterilising equipment, making up feeds and how much feed to offer.	Information about bottle feeding was not adequately provided despite high levels of breast feeding attrition in the first post-natal month with most new mothers needing this information. Health professionals should consider how to improve this information giving.
Chezem J (2001) Midwest, USA	89 women recruited during the third trimester of pregnancy age 16-39 years (recruited from two medical practices). 99% were white, 72% had some college education and 58% were experienced mothers (all the experienced mothers had previously formula fed an infant). Antenatal postal survey.	'To examine sources of information used during the prenatal period by women who plan to exclusively breast feed, or exclusively formula feed or feed a combination of breast milk and formula milk to their infants.'	Postal questionnaire survey. Percentages for particular response presented separately in 3 groups (women who planned to breast feed, bottle feed or mixed feed). Infant feeding resources used by each group and initiator of information tabulated.	The most frequent sources of prenatal infant feeding information were health care providers (82%) and reading materials (81%). 75% discussed infant feeding with family and 73% with friends. Audiovisual materials were utilized by 21%. There were no significant differences among the three feeding groups. Health care providers were more likely to initiate a conversation about infant feeding but women were four times more likely to initiate the conversation with family or friends rather than their health care provider.	'Although health care providers were the most common source of infant feeding information, women were more likely to reach out to family and friends for information.' 'While women were somewhat reluctant to initiate infant feeding discussions with healthcare providers, they frequently sought information from family and friends.'
Fein S (1999)	Infant Feeding Practices Survey (IFPS) 1993, 94.	'To describe practices related to infant formula	Postal questionnaire survey	89% of women reported using infant formula and most of these mothers introduced formula before 2 months	'Advice from a health care professional can improve formula-

<p>USA</p>	<p>1,140 women of the 2,615 eligible women (recruited in the third trimester) from a national mail panel of 500,000 households. Average age 28.5 years.</p> <p>98% were white, 90% were married, 38% were primiparas and 31% had more than 4 years of college education. (More likely to be white, older, married and of higher income and education than the nationally representative sample).</p> <p>Response rate 69%.</p> <p>Longitudinal survey at 2 months (n=1140), 5 months (n=1046) and 7 months (n=1079) postnatally. 58% completed all 3 months and 25% completed in 2 months.</p>	<p>feeding and to analyse characteristics related to compliance with recommended practices.'</p>	<p>Logistic regression and percentages and odds ratios presented. Analysed cross-sectionally at each age.</p>	<p>postnatal age (79%).</p> <p>21% of mothers of 2 month old infants and 35% of mothers of 7 month old infants, received instruction from a health care provider about formula preparation.</p> <p>Mothers of 2 month old infants who received instruction from a health care provider and who breast fed showed increased compliance with the recommendations.</p> <p>Almost 100% (except 2 mothers) said they could understand the manufactures directions.</p> <p>33% of mothers mixed formula with warm tap water and up to 48% heated bottles in a microwave oven.</p> <p>2% of mothers concentrated formula and 10% diluted formula (some of them on the recommendation of a physician).</p> <p>35% added food to the bottle at 2 and 5 months (21-22% added cereal, others added sweetener, vitamins/minerals and medicines)</p>	<p>handling behaviours.'</p> <p>'Experience with feeding an infant may not help a mother to decide which practices are important for her infant's health because failure to follow recommendations does not generally have consequences that are obviously linked to feeding practices.'</p> <p>'Very few mothers intentionally over concentrate formula, a large percentage heat bottles in a microwave oven and a substantial percentage feed cereal to young infants.'</p> <p>'Mothers were more likely to sterilize bottles, nipples and water and less likely to heat bottles in a microwave for 2 month old infants than for older infants.'</p> <p>'The mothers in our sample may have partly decided which recommendations to follow on the basis of time required; the greatest non-compliance was with practices that require extra time.'</p>
<p>Polack F (1999) Michigan, USA</p>	<p>175 parents of infants aged 1-7 months (median age 107 days). Convenience sample of 175 parents attending paediatric well child out-patient clinics (75 of these were attending private clinics). Infants had to be exclusively formula fed from birth and born after 36 weeks gestation.</p> <p>Response rate 99%.</p>	<p>'To establish the frequency of, reasons for and outcome of formula changes in infants.'</p>	<p>Face to face interview survey and follow-up telephone survey in a subgroup who had changed formula.</p> <p>Percentages of parents following different practices relating to formula feed changes presented.</p>	<p>9% of infants were started on non-standard formulas at birth. 36% of the remaining infants were changed from regular to non-standard formulas.</p> <p>Colic and regurgitation were the main reasons for switching formulas.</p> <p>In 47% the decision to change formula was made by the mother and in 44% by the paediatrician.</p> <p>72% said the change had improved symptoms but this could have been due to spontaneous resolution because infants who were re challenged with the standard formula did well.</p>	<p>'Although published estimates of formula intolerance range from 2% to 7.5%, one in three infants experience a formula change, suggesting that nonstandard formulas are used excessively by mothers and physicians.'</p>

	Quantitative (interview) survey.				
Daly A (1998) Birmingham, UK	<p>100 mothers (mean age 25years) living in a deprived inner city area who introduced cow's milk before the recommended age of 12 months (this was 20% of the total 500 mothers approached).</p> <p>74% Caucasian, 24% Afro-Caribbean, 2% Asian. Only 10% married and 79% left school at 16 yrs.</p> <p>Questionnaire survey at mean age 7.8 months postnatally.</p>	'To examine the dietary intakes of infants who had been given cow's milk before the recommended age of 12 months.'	<p>Participants were recruited from households where there was an infant aged 6 to 8 months (names supplied by health visitor).</p> <p>Mothers filled in a detailed questionnaire about milk feeding and weaning practices. They also completed a 3 day weighted food intake which was validated in situ.</p> <p>Percentages for particular response reported.</p>	<p>69% of mothers changed formula at least once and 8% changed more than once due to hunger, sickness or brand preference.</p> <p>10% added powder before water and 20% added an extra scoop.</p> <p>30% used microwave ovens for heating up the milk.</p> <p>47% added cereals to the bottle especially with the last feed.</p> <p>It was common practice to put an extra bottle of milk into the cot so if the infant woke up at night they would be able to feed themselves.</p> <p>92% did not attend parent craft classes because they felt they knew what to do as a result of helping younger siblings.</p> <p>Median age of weaning was 9 weeks and >80% failed to meet the RNI for iron, zinc and vitamin D.</p>	<p>In this group of mothers from a deprived inner city area who had not followed the recommendation of not introducing cow's milk before the age of 12 months, mistakes in the preparation and use of formula milk were common despite the perception that they knew what to do.</p> <p>'There appears to be a general reluctance by the mothers to change long-established methods of weaning handed down by their own mothers.'</p>
Lucas A (1992) Cambridge, UK	<p>43 babies whose mothers had decided to bottle feed recruited at a maternity unit (excluded babies with a birth weight outside 2 SDs from the mean). Parents approached within 72 hours of delivery.</p> <p>Randomised controlled trial.</p>	'To compare the growth of babies randomly assigned to a ready-to-feed formula and a standard formula that needed to be reconstituted.'	<p>Infants randomly assigned (stratified by sex) to ready-to-feed or powdered formula</p> <p>Growth of babies during first 6 months in both groups compared and also compared to growth of breast fed babies.</p> <p>Infants were monitored at recruitment, 1, 2, 4, 6, 10 and 26 weeks of age. During this period anthropometric measures were collected and also energy expenditure, energy intake, measurement of activity, bowel habits, accuracy of feed reconstitution and bacteriological monitoring of</p>	<p>1 infant dropped out due to kidney disease and 4 others dropped out because parents wanted to change formula. Drop out rates were similar in both groups. There were 19 infants in each group and they were compared to 20 breastfed babies.</p> <p>Despite similar nutrient composition of the two formulas and similar birth weight, infants fed the powdered formula had significantly larger gains in body weight and skin-fold thickness compared to the ready-to-feed formula group and a group of 20 breast fed babies. 6/19 of the babies fed powdered formula were >90th centile at 6 months while only 1/19 of the ready-to-feed formula milk were >90th centile weight at 6 months. The ready to feed formula group and breast fed babies had similar growth.</p> <p>There was no significant difference in milk volume intake (obtained by weighing all formula consumed for</p>	<p>'In this study, infants fed a ready-to-feed formula had a pattern of weight gain that closely resembled the physiological patterns seen in breast fed infants. In contrast, use of a powdered formula, perhaps because of the risk of formula reconstitution errors, appeared to be associated with a greater rate of fat deposition.'</p> <p>'As a group, babies fed powder formula approached the 75th weight centile by 6 months of age, whereas those fed ready-to-feed formula along with those fed by breast lay close to the 50th centile for the unit's reference data.'</p>

			milk were undertaken.	<p>a 1 week period at 5 and 11 weeks) between the two groups.</p> <p>Of the babies fed powdered formula, 9 babies were >8kg and 9 were <8kg weight at 6 months. The mean milk energy content was 73.3 kcal/100 ml (manufacturers intended energy content 68kcal/100ml) in babies with weigh>8kg and this was significantly higher than the mean milk energy content of 67.3 kcal/100 ml in the babies with weight <8kg.</p> <p>At 6 months 6/19 of the babies in the powdered formula group were overweight (>90th centile) compared to only 1/19 in the ready-to-feed formula group (not statistically significant).</p>	
<p>Jefferis S (1989)</p> <p>Chester, UK</p>	<p>28 mothers attending infant welfare clinics, one situated in a large council estate and the other in an area of mixed council and private housing.</p> <p>Quantitative measurement of formula milk powder scooped by mothers.</p>	<p>'To determine the amount of variation in reconstitution of formula feeds.'</p>	<p>Mothers were asked to measure 3 scoops of formula milk powder (using the same scoop and milk powder packet) and the amount of powder was weighed to the nearest 0.01g. Mothers were asked to measure the first 2 scoops in the normal way and the third scoop as if she was in a hurry.</p>	<p>19 mothers levelled the scoops with knife or finger while 9 mothers did not.</p> <p>There was wide variation in the amount of powder scooped (range 5.6g to 2.8g) and some mothers said they add an extra scoop to 'satisfy' the baby. One mother was adding 8 scoops in 5 ounces of water.</p> <p>Scooping in a hurry sometimes resulted in much more or much less powder being obtained. For some mothers it made no difference. The main factor determining the quantity of powder obtained was the method of scooping (the force and compression used).</p>	<p>'It is interesting to note that all mothers said they had read the instructions on the packet and all thought they were measuring correctly.'</p> <p>'scoop method of measuring milk powder is very inaccurate'</p>
<p>Lilburne A (1988)</p> <p>Sydney, Australia</p>	<p>274 mothers (mean age 28years) who were bottle feeding their infants.</p> <p>223 mothers were from a predominantly working class, multicultural area (south) and 51 were middle class, predominantly Australian-born mothers (north).</p> <p>Response rate >95%.</p> <p>Quantitative interview at 1-7 months postnatally.</p>	<p>'To gather data about where mothers seek nutritional advice about feeding their babies and what factors affect their choice of infant feeding methods; whether bacterial contamination of milk formulae was common; whether errors are made frequently in reconstitution and whether nutritional status is correlated with the early introduction of solids or the preparation</p>	<p>Face to face interviews at Baby Health Clinics.</p> <p>Percentages reported and women in two socio economic groups compared. (working class south n=223 and affluent north n=51).</p> <p>Mothers who had a bottle of reconstituted milk were asked for a sample of the milk and this was tested for bacterial contamination and osmolality (n=81).</p>	<p>82% mothers attempted breast feeding. 61% of mothers from the south and 31% of mothers from the north stopped breast feeding at 4 weeks. The commonest reasons for ceasing to breast feed were not enough milk (33%), convenience (12%), difficulty with the baby suckling (12%) and personal preference (11%).</p> <p>Errors in reconstitution -36%. Most of these were minor (20% diluted and 13% concentrated feeds).18% prepared a dilute feed by not lightly compressing the powder in the scoop, 2% added less scoops, 7% compressed the powder too much, 4% added more scoops, 2% heaped the scoop and 3% made multiple errors.</p>	<p>Errors in formula feed preparation were common and 'mothers who choose to bottle feed after they leave the maternity hospital, have little opportunity for instruction in correct methods of preparation, sterilization and feeding technique.'</p>

		of overly dilute or concentrated formula.'	171 infants had triceps skin fold thickness measured.	<p>Preparation of more than one bottle at a time- 61%. More likely in the affluent north (77% vs 58%).</p> <p>Reheat bottle in microwave- 21%. More likely in the affluent north (42% vs 20%).</p> <p>Consider it necessary to sterilise bottles after the first 6 months -25%. Less likely in the in the affluent north (16% vs 32%)</p> <p>22% learned to make up feeds in hospital and 48% from the instructions on the container.</p> <p>21% added cereal to the bottle.</p> <p>36% changed formula and 13% made multiple changes. Almost all the changes were made in the first 4 weeks (97%).</p> <p>4% used soy milk and 8% used modified milk. Most had decided on their own (13/21) and some were recommended by their health professional (7/13).</p>	
<p>Mc Junkin J (1987)</p> <p>Boston, USA</p>	<p>133 mothers (mean age 24.4 years).The infants mean age was 2.7 months.</p> <p>95% were black, 71% made <\$5000/year, 71% received medical aid.</p> <p>Response rate >95%.</p> <p>Questionnaire survey and analysis of formula milk sample.</p>	'To determine the prevalence of errors in formula preparation and to explore factors related to such errors.'	<p>Mothers with infants less than 6 months age were recruited from the WIC program - well child clinic. Only those who brought formula to the clinic and consented were enrolled.</p> <p>Mothers filled in a questionnaire and supplied a sample of formula milk. If the fat content of the formula was above or below 17.5% of the mean value, they were classified as hyper/hypo concentrated.</p> <p>Growth measurements were obtained from 88% of the infants.</p>	<p>93% of the formulas were cow's-milk based and 7% were soy based. 43% were ready-to-feed formula and 57% were made from liquid concentrate.</p> <p>Although the mean concentration of 3.51g/dl was consistent with the manufacturers' specification, there was wide variability, with the fat content of the formula milk samples analysed varying from 1.6g/dl to 6.8g/dl</p> <p>6% of formulas were hypo concentrated (<2SD from the mean) and 5% were hyper concentrated (>2SD from the mean). 2 of the samples were undiluted concentrate and 2 were half strength.</p> <p>Half of the mothers who used hypo concentrated formula said it was very difficult to pay for the formula and this was related to their income level.</p> <p>Use of hyper concentrated formula was related to low growth centiles.</p>	<p>'These findings suggest that financial need is a risk factor for dilution of formula.'</p> <p>'The findings further suggest that small infant size is a risk factor for hyper concentration of formula. We suspect that parents of small infants tend to overconcentrate formula in an attempt to promote growth.'</p>
Jacob F (1985)	30 mothers with infants aged 5 months.	'To investigate whether there was room for	Interviews conducted in participants homes.	All mothers were using powdered milk formula.	Small alterations in technique of measuring formula milk can cause

<p>Wales, UK</p>	<p>A random sample of six was chosen from the catchment areas of 5 child health clinics (which the researcher who was a health visitor did not visit). Mothers not attending child health clinics were also included.</p> <p>Quantitative (interview) survey at 5 months postnatal age.</p>	<p>improvement in the way bottle feeds were prepared and sterilised. To find out how infant milks were prepared; how bottles and teats were sterilised; if there were common factors associated with feeding and sterilising practices and from where and whom mothers were obtaining their knowledge.'</p>	<p>Percentages for a particular response presented.</p>	<p>63% of mothers were preparing feeds as per the manufactures instructions and 37% were not. 6/11 were scrapping the scoop by the side of the packet; 5/11 were adding cereals; 3/11 were adding an extra scoop; 1/11 was measuring the scoop by shaking it; 1/11 was heaping the scoop and 1/11 was adding water to the powder.</p> <p>28/30 mothers used cold method (hypochlorate solution); 1/30 used boiling and one mother was not sterilising the equipment.</p> <p>63% of mothers who followed the manufacturers' instructions also sterilised correctly but 86% of those who did not sterilise correctly also did not follow the manufactures instructions.</p> <p>86% of primiparas followed manufactures' instructions but only 44% of multiparas did so.</p> <p>First time mothers were more likely than multiparas to receive instructions on feeding and also to prepare feeds correctly and sterilise equipment correctly. Correct technique was associated with higher social class and receiving instructions from health professionals.</p>	<p>over-concentration of feeds hence 'health professionals must give attention to reducing the potential dangers of bottle feeding.'</p> <p>'The fact that multiparous mothers made more mistakes could be due to a cavalier approach to bottle feeding. Multiparous women received less information from health professionals.'</p> <p>'It appears that one of the important factors determining how a mother prepares a feed is whether a health professional is her source of information hence health professionals should not overlook the subject of bottle feeding. It is essential to ensure all mothers in the antenatal and postnatal period receive information on bottle feeding from health professionals.'</p>
<p>Forsyth B (1985) Connecticut, USA</p>	<p>373 mothers of singleton well babies (mean age 28 years) born in a hospital between July and October 1980 and cared for by private paediatricians. Equal numbers of breastfed and formula fed infants were enrolled.</p> <p>92% white, 95% married, 57% more than high school education, 47% had a family income of >\$20,000/year, 46% primiparas.</p> <p>Baseline response rate 78%, follow-up 98%.</p>	<p>'To determine the percentage of infants for whom cow milk formula is changed to a soy or casein hydrosylate formula (special formula); to describe maternal beliefs about causes of problems that lead to such a change and to compare the beliefs of these mothers with those mothers whose infants had similar problems but no formula change.'</p>	<p>Baseline questionnaire and structured telephone interview at 4 months postnatal age.</p> <p>Percentages for particular response presented in tables.</p> <p>Responses of mothers who initially breast fed and initially formula fed babies were compared.</p> <p>Differences in the beliefs of mothers whose infants had received a formula change and those whose infants had problems but no formula change were tested for statistical significance by chi-square test.</p>	<p>51% of mothers were in the initially breastfed group and 49% were in the initially formula fed group.</p> <p>51% reported that their infant had at least one problem and 44% considered it to be moderate or severe.</p> <p>The problems reported were excessive crying (23%), colic (11%), spitting up (14%- 10% in breastfed and 18% in formula fed), constipation (13%- 8% breastfed and 18% formula fed), diarrhoea (9%- 3% breastfed and 15% formula fed), sleep difficulties (9%), poor growth (4%- 6% breastfed and 2% formula fed), vomiting (4%), eczema (1%), feeding difficulties (6%).</p> <p>In the formula fed group, 25% had changed to special formula and in the initially breastfed group, 11% had changed to a special formula. Reasons given by mothers to change formula were excessive crying (21%), colic (21%), vomiting (12%), diarrhoea (12%),</p>	<p>'We found that a very large proportion of mothers believed that their infants have problems during the first few months, and these problems often lead to a change to a special formula.'</p> <p>'The results of our study raise concerns about the implications of the easy and seemingly innocuous practice of changing an infant's formula. These changes of formula may lead to an erroneous belief that a child has some kind of intrinsic abnormality.'</p>

	Quantitative survey immediately postpartum and again at 4 months postnatal age.			spitting (12%), constipation (11%), feeding difficulties (6%) and others (5%). A further 5% of infants in the formula fed group and 11% in the initially breast fed group had received special formula feeds since the time of introduction of formula. Mothers of infants whose formula were changed were more likely to believe in an intrinsic cause (allergy/intolerance rather than behavioural or extrinsic) than infants with no formula change.	
Jones R (1978) London, UK	265 mothers, from a population-based sample of births over a period of 5 months in 1975. Infants with birth weight <2.5 kg and multiple births were excluded. A random sample was taken, stratified by 7 child health centre catchment areas. Response rate 95%. Quantitative (interview) survey.	'To see how far recommendations for infant feeding were being followed.'	Face to face interviews in participants homes, 12 weeks postnatally. Percentages for particular response presented in tables.	Breast feeding was attempted by 62%, but by 12 weeks, 89% of mothers were giving artificial milk and 38% had changed brands, some several times. Some mothers regularly used two or more types of milk. 46% of mothers were measuring correct number of scoops flattened with a knife. 23% were preparing dilute feeds (17.2% were measuring the scoops correctly but adding extra water while 5.6% were adding too few scoops, often on the health visitor's advice). 6% were over concentrating feeds (heaped scoops or too many scoops) 4.2% added cereal and 3.3% did not measure the milk powder. 90% attended the child health clinic and primiparas were more likely to attend than multiparas (95% vs 87%). Clinic attendance was not related to social class. The commonest source of advice was the health visitor (53%), although 66% of mothers decided on their feeding method themselves. 80% of health visitors advised introduction of solids before 15 weeks. Other sources of advice were books/magazines (48%), friends or relatives (35%) and General Practitioner (14%). Inaccuracies were more likely with increasing parity.	'93% of mothers gave their infants formula milk within the first 12 weeks of life. Two important hazards to the infant, those of incorrect feed preparation and overfeeding, were often encountered, though both may be avoided...it is especially important that all mothers, including those who are breast feeding, are given careful instructions on feed preparation and an explanation of the hazards.' 'Many brands of powdered milk are available which have different instructions for preparation and different sized scoops. Since mothers change readily from one brand to another, the manufacturers should be strongly encouraged to standardise and simplify instructions.' 'People working with infants should be aware of the frequent errors made in preparing feeds and take every opportunity to ask the mother to describe her method in detail.'
Oates R (1973) London, UK	100 mothers with infants less than 6 months attending infant welfare clinics for routine checks. 42% were attending with their first baby and 36% had one other child. Multiracial population (52	'To learn the pattern of infant feeding in the first 6 months of life, with particular reference to methods of reconstitution of powdered milk formulae.'	Face to face interview at infant welfare clinics. Percentages for particular response presented in tables and text. Ages at which infant's milk was	Of 26 mothers who changed their infant's milk in the first two weeks, 8 changed for no definite reason and 3 on the advice of their midwife or doctor. Multiple changes were noted in 9 infants, 5 being on their third milk formula by 8 weeks of age. 90 of the 100 mothers were using formula milk. 62/90 were following the manufacturer's instruction. 20/90	'Over a quarter of the mothers had changed to a different milk preparation in the first 2 weeks and the reasons for changing were vague or suggested a feeding difficulty. Feeding difficulties are often due to faulty technique and it is not necessary to change the formula.'

	<p>British, 10 Irish, 17 other EU, 14 West Indian, 4 Asian, 3 African).</p> <p>Quantitative (interview) survey.</p>		<p>first changed presented as bar chart.</p>	<p>were preparing a concentrated formula by using heaped or packed scoops or adding an extra scoop. One mother was adding one scoop powder to one scoop water. 8/90 were making a dilute formula and of these 4 were diluting milk by over 25%.</p> <p>52/90 poured boiling water on the milk powder and 33/90 added rusk or cereal to the milk.</p> <p>77% prepared each bottle separately and 90% used hypochlorite solution to sterilise bottles.</p> <p>First choice for advice were- health visitor 51%, immediate family 20%, family doctor 12%, books 5%, friends 4%, maternity unit 8%.</p>	<p>'It should be cause for concern that there is such a high proportion of concentrated feeds prepared by a group which has been given correct feeding instructions. This suggests that the incidence of errors made by mothers who do not receive instructions at infant welfare clinics may be even higher and that a large number of babies are at increased risk of developing hypernatremia. Educational efforts may be needed to avert the trend to obesity and the dangers of hypernatraemia.'</p> <p>'Manufactures could improve the mixing instructions by illustrating the procedure step by step on the packet.'</p>
<p>Wilkinson (1973)</p> <p>Newcastle, UK</p>	<p>29 mothers in postnatal wards, 4 midwives and 6 nurses working on the special care baby unit.</p> <p>Quantitative study with weighing of the milk powder scooped out by study participants.</p>	<p>'To study the frequency and magnitude of errors in reconstitution of formula milk.'</p>	<p>Each participant was asked to scoop out 4 scoops of powder into a paper bag and the bags were weighed in the hospital pharmacy. 5 Different brands of powder and types of scoops were used.</p> <p>The amount of formula milk measured out was presented in tables.</p>	<p>There was wide variation in the amount of milk powder measured.</p> <p>All the mean weights measured were higher than the manufacture's recommendations. The type of scoop used (shallow or deep) and powder (whether the powder was roller-dried or spray-dried) affected how accurately the powder was measured. Spray-dried powders were more accurately measured than roller-dried powders. Scoops with smaller diameter and greater depth were more accurate than shallow scoops with bigger diameters.</p>	<p>Mothers and healthcare providers made mistakes in measuring milk powder. Four of the preparations tested were made up in excessive strength and only one in a strength equivalent to the manufacturer's intention.</p> <p>'Mothers-to-be should be given practical instruction in the preparation of milk feeds before the birth of their babies and these instructions should be repeated before they leave hospital.'</p>

Supplementary Table 4: Quality Appraisal

Study	Research questions clearly stated	Approach appropriate for the research question	Qualitative approach clearly justified	Study context clearly described	Role of the researcher clearly described	Sampling method clearly described	Sampling strategy appropriate for the research question	Method of data collection clearly described	Data collection method appropriate	Method of analysis clearly described	Analysis appropriate for the research question	Conclusions supported by sufficient evidence
Qualitative Studies												
Lee* (2007)	+	+	+	+	-	+	+	+	+	+	+	+
Cloherly (2004)	+	+	+	+	-	+	+	+	+	+	+	+
Bailey (2004)	+	+	+	+	-	+	+	+	+	+	+	+
Mozingo (2000)	+	+	+	+	+	+	+	+	+	+	+	+
Earle (2000)	+	+	+	+	-	+	+	+	+	+	+	+
Basire (1997)	+	+	+	+	+	+	+	+	+	-	-	+/-
Quantitative Studies												
Lee* (2007)	+	+	n/a	+	+	+	+	+	+	+	+	+
Cairney [†] (2007)	+	+	n/a	+	+	+	+	+	+	+	+	+
Cairney [†] (2006)	+	+	n/a	+	+	+	+	+	+	+	+	+
Bolling (2006)	+	+	n/a	+	-	+	+	+	+	+	+	+
Borghese (2003)	-	Not clear	n/a	-	-	+	+/-	+	+/-	-	+/-	+/-
Cairney [†] (2001)	+	+	n/a	-	-	+	+	+	+	+	+	+
Chezem (2001)	+	+	n/a	+	-	+	+	+	+	+	+	+
Fein (1999)	+	+	n/a	+	-	+	+	+	+	+	+	+
Polack (1999)	+	+	n/a	+	-	+	+	+	+	+	+	+
Daly (1998)	+	+	n/a	+	-	+	+	+	+	+	+	+
Lucas (1992)	+	+	n/a	+	-	+	+	+	+	+	+	+
Jeffs (1989)	+	+	n/a	-	-	-	+/-	+	+	+	+	+
Lilburne (1988)	+	+	n/a	+	-	+	+	+	+	+	+	+
Mc Junkin (1987)	+	+	n/a	+	-	+	+	+	+	+	+	+
Jacob (1985)	+	+	n/a	+	+	+	+	+	+	+	+	+
Forsyth (1985)	+	+	n/a	+	+	+	+	+	+	+	+	+
Jones (1978)	+	+	n/a	+	-	+	+	+	+	+	+	+
Oates (1973)	+	+	n/a	+	-	+	+	+	+	+	+	+
Wilkinson (1973)	+	+	n/a	+	+	-	+/-	+	+	+	+	+

+ satisfied the criterion, - did not satisfy the criterion, +/- partially satisfied the criterion

* Lee (2007) 2 studies 1 paper

[†] Cairney (2007, 2006, 2001) 1 study, 3 papers

Supplementary Table 5: Studies reporting reconstitution errors (n=11)

Study	Population characteristics	Frequency of reconstitution errors		
		Over concentration	Under concentration	Adding Cereals to bottle
Bolling (2006)	n= 9416, General population	6% (added powder to bottle first)	Not reported	Not reported
Fein (1999)	n=1140, General population	2%	10%	22%
Daly (1998)	n=100, Deprived population	30% (10% added powder to bottle first, 20% added extra scoop)	Not reported	47%
Lucas (1992)	n=43, Selective population	Occurred	Not reported	Not reported
Jeffer (1989)	n=28, Deprived population	Occurred	Not reported	Not reported
Lilburne (1988)	n=274, Mixed population	13%	20%	21%
Mc Junkin (1987)	n=133, Deprived population	5%	6% (difficult to pay for formula)	Not reported
Jacob (1985)	n=30, General population	17%	Not reported	17%
Jones (1978)	n=265, General population	6%	23% (often on the advice of a health visitor)	4.2%
Oates (1973)	n=100, Deprived population	22%	9%	37%
Wilkinson (1973)	n=29, Selective population	Occurred	Occurred	Not reported