

**Information seeking needs of mothers who bottle-feed their young
infants: how the information seeking process affects them and what
libraries can do to help them.**

By

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Abstract:**Aim:**

The aim of the study is to examine the information seeking experiences of mothers who bottle feed young infants. What are their information needs and how do they seek to fill them? What emotional impact does the information seeking process have on this group? What role can Libraries play in helping this group find information?

Methodology:

This research utilises Dervin's *sense-making* methodology. At the heart of sense-making is the situation-gap-outcome triangle. Kuhlthau's *uncertainty principle* is also used to help analyse the results and understand the connection between emotion and information seeking. Other research is also used to understand the experiences of the interviewees and place them in a wider context.

Results:

Mothers who bottle-feed young infants often feel guilt and anger. They are often unprepared for bottle-feeding, especially if they planned to breast-feed, and access to information on bottle-feeding is limited. Health professionals are sometimes reluctant to provide information on bottle-feeding. Informal information sources, such as family, friends and other mothers, are very important. There is little awareness that Libraries are able to provide information on bottle-feeding even among mothers who are frequent Library users. Libraries can best support bottle-feeding mothers by becoming inclusive community spaces for mothers to meet and share information.

1. Introduction:

The aim of this research is to investigate the experiences of New Zealand mothers of young infants when seeking information on using breast milk substitutes (formula)? What are their information needs and how do they seek to fill them? What emotional impact does the information seeking process have on this group? What role can Libraries play in helping this group find information?

There are a number of choices that parents must make from conception through to birth and beyond. These include choosing a lead maternity carer, deciding whether you should consume alcohol while pregnant, determining whether you birth at home or hospital, opting for a drug free birth, deciding to co-sleep or use a cot... the list is endless. Some choices are straight forward, some are not, and different parents will choose differently depending on a gamut of factors. While all parents, across time and space, have needed to make many choices regarding the birth and upbringing of their offspring, it is argued that in modern western society, there is even more pressure on parents to 'get it right'. That we live in an age of "intensive motherhood" (Hays, 1996) where every choice a parent makes is framed in terms of, not only ensuring the best outcome for the child, but society as a whole (E Lee & Bristow, 2009; E. J. Lee, 2008). Healthcare professionals, educators, psychiatrics, politicians etc, all acknowledge the importance of parenting, and thus place great pressure on parents as a result, but perhaps without much consideration to parents needs or to whether they are over emphasising the individual duties of parents without much thought to wider society's role and more critical issues (Rippeyoung, 2009).

Breast-feeding- choice or directive?

One such choice that faces all new mothers is the choice of how to feed their newborn infant. From a strictly neutral viewpoint, most parents have three main options:

1. Breast-feeding
2. Formula feeding using bottle
3. A mixture of 1 & 2

Even within these three different approaches there are variations, for instance, breast-feeding from the breast or expressing milk and feeding from a bottle. This decision, however, never has been a simple, neutral decision. Through out history, the decision on how a woman should feed their newborn has been as much a political and cultural predicament as it has been a practical one (Fildes, 1986). The early 21st century is no different.

Most people are probably aware of the mantra “Breast is Best” even if they have never parented. It is the title of Dr. Penny Stanway’s influential book on breast-feeding, first published in 1978 (Stanway & Stanway, 1978). It is a catchy slogan that sums up a consensus held among many healthcare professionals, all breast-feeding advocates, and promoted vigorously by the World Health Organisation (WHO); that breast-feeding is the optimum way to feed a newborn baby from birth to 6 months and preferably beyond. For some breast-feeding advocates, in light of the scientific data, any other choice is not really a choice and that if all women knew the risks of feeding their infant anything other than breast milk they would certainly breast-feed (M. K. Minchin, 1998).

However, Ministry of Health statistics show that there are still a significant number of New Zealand women who do not exclusively breast-feed their young infants (Ministry of Health, 2002). In light of this the ministry has recently launched an education campaign in an attempt to try and increase the number of women exclusively breast-feeding their infants to 6 months and beyond (www.breast-feeding.org.nz). It would seem that even though “breast is best”, either a large section of the population has not received the message, is not listening to the message, or have their reasons for choosing differently. There has been research into what those reasons might be, and these will be addressed later in the literature review.

What this illustrates is that there are parents who are using formula to feed their infants, and who may, due to the current emphasis on promoting and ensuring the continuance of breast-feeding, experience problems in finding information to inform that decision. Couple this with an “intensive motherhood” culture that emphasises that parents must make good choices for their young child now, in order to place less burden on society in the future, and the result can be confusion, self doubt, guilt and in some cases anger (E Lee & Bristow, 2009).

The role of Libraries:

Assuming that Libraries remain apart from the health initiatives of recent years to promote breast-feeding and limit information on formula as an alternative, they have the potential to offer bottle-feeding mothers a high quality, non judgmental information service. However, is this the role that parents, particularly mothers bottle-feeding young infants, want Libraries to play?

Objective of the Research:

There is a wide-ranging body of research into breast-feeding, its benefits, possible barriers, and its promotion (or lack of). The aim of this specific research is not to bring into doubt the large body of literature that concludes that breast-feeding is the optimum method of feeding an infant. While it will be informed by scientific literature it is not the aim of this research to wholeheartedly dispute that literature. It does, however, acknowledge that some breast-feeding “facts”, such as the link with breast-feeding to IQ or the link between breast-feeding and parental attachment, are contested (Knaak, 2006). For specific examples see Cope, & Allison, (2008); Wilkinson, & Scherl (2006); Jain, Concato, & Leventhal (2002).

The aim of this research, therefore, is to examine the experiences of mothers who are bottle-feeding young infants with particular focus on:

- a. the information they sought to inform their infant feeding decisions
- b. how they sought that information
- c. the issues or problems they encountered
- d. how they felt when seeking information
- e. whether they used the library as an information source and, if so, how did they assess it, if not, why didn't they use it

Questions A – C focus on the mechanics of information seeking; what, how, where, when, why. Question D focuses on the emotional state of the mother seeking information on bottle-feeding and how the process of finding information, or having information withheld, impacts on the information seeker. Question E seeks to understand the role libraries (can) play in helping this group meet their information needs.

Definition of Terms:

- Formula feeding:** Exclusive feeding of an infant with a recognised breast-milk substitute product via a bottle. This term is interchangeable with bottle-feeding.
- Bottle-feeding:** Exclusive feeding of an infant with a recognised breast-milk substitute product via a bottle. Unless stated otherwise (e.g. may include the feeding of expressed breast milk via a bottle) this term is interchangeable with formula feeding.
- Combined feeding:** The feeding of an infant through a combination of formula feeding and breast feeding. Breast milk may be expressed and fed through a bottle.
- Breast feeding:** Exclusive feeding of an infant with breast milk from the breast.
- Young infant:** For the purposes of this research a young infant will be between the age of newborn and 3 months.
- Health professional:** Includes the lead maternity carer, family doctor, hospital nurses/midwives and any organization involved in the immediate health welfare of the mother and infant e.g. Plunket.
- Antenatal:** Period prior to the birth of the child e.g. pregnancy.
- Postnatal:** Period immediately after the birth of the child.
- WHO code:** The World Health Organisation- International Code of Marketing of Breast-milk Substitutes

The WHO code in New Zealand.

Below is a brief explanation of the WHO code and its implementation in New Zealand. The WHO code prescribes where and how information on bottle-feeding can be made available. It is therefore important to understand what it does and does not allow if we are to understand if it is:

1. Preventing health professionals from providing information on bottle-feeding
2. Being correctly interpreted by health professionals in regards to what information they are able to supply and when they can supply it

The World Health Organisation's "International Code of Marketing of Breast-milk Substitutes" (World Health Organisation, 1981) (WHO code) was the result of increasing concern over the marketing of formula during the later half of the twentieth century, particularly in developing nations.

The dangers of feeding young infants formula rather than breast milk, especially in situations where sanitation of water and equipment could not be guaranteed, had been recognised as early as 1939 by Dr Cecely Williams in an address to the Singapore Rotary Club. Dr Williams used this forum to highlight the link she was seeing between declining breast-feeding rates and increased infant mortality rates. She emotively named the address "milk and murder" (Richter, 2001). However, it was the infamous "Nestle Kills Babies" pamphlet, subsequent libel trial and consumer boycott of the 1970's that is particularly associated with the development of the WHO code. In her book "Holding corporations accountable: corporate conduct, international codes, and citizen action" (2001) Judith Richter provides a comprehensive overview

of the Nestle controversy and the subsequent development of the WHO code. She lists five specific marketing methods that many formula companies, not just Nestle, were using prior to the WHO code to promote the use of their products:

1. *Stressing equivalence or superiority to breast-feeding.*
2. *Exploiting women's anxieties:* such as fears over insufficient milk supply.
3. *Representing healthy, thriving babies:* Images of chubby babies on formula tins etc.
4. *Disguising salespersons:* 'milk nursing' giving away free samples.
5. *Gaining medical endorsement.*

(Richter, 2001, pp. 47-48)

In general these practices are common place, particularly in the marketing of health and beauty products. In "The beauty myth" Naomi Wolf identifies very similar marketing techniques used to persuade women to buy health and beauty products of dubious credibility (N. Wolf, 1991). However, mothers of newborn infants in developing countries represent an especially vulnerable group due to lack of education, support and sanitation. Thus all five practices are either banned or controlled in some way by the WHO code.

The code consists of an Introduction outlining the codes history, 11 articles, and 3 annex. The 11 articles set out the goals and scope of the code, the various practices that the World Health Organisation believes governments, healthcare workers, formula manufacturers and marketers should adhere to, and recommendations on the codes implementation and monitoring. Legally the WHO code is a recommendation

and it is the responsibility of individual governments to adopt some or all of the articles and encode them into law if deemed desirable.

In general the WHO code is designed to ensure:

1. That information on infant feeding is objective and consistent and is either produced or controlled by a competent authority. That the superiority of breast-feeding is emphasised and that formula is not, through pictures or text, idealised. (World Health Organisation, 1981, Article 4).
2. That there is no promotion or advertising of breast milk substitutes. That there is no distribution of these products, or contact by marketing staff, either directly or indirectly, to pregnant women and new mothers. (World Health Organisation, 1981, Article 5).
3. That health care systems should encourage and protect breast-feeding. That advertising, through product placement, display of posters and other materials distributed by formula manufacturers be banned from health care systems (World Health Organisation, 1981, Article 6).
4. That health workers should encourage and protect breast-feeding. That information given to health workers by formula manufacturers is scientific and factual in manner. That samples can only be provided for professional evaluation or research at an institutional level. (World Health Organisation, 1981, Article 7).
5. That manufacturers restrict sales incentives. That marketing personnel should not be involved in performing educational functions for mothers or the wider public. (World Health Organisation, 1981, Article 8).

6. That the labelling on containers does not discourage breast-feeding. That there are no images or text that idealise formula feeding. That certain misleading words, like “humanised”, are not used. That there are clear warnings about potential health hazards when not prepared correctly. That there are easy to understand and follow instructions. (World Health Organisation, 1981, Article 9).
7. That all products that fall within the scope of the code comply with recognised food standards. (World Health Organisation, 1981, Article 10).

What is particularly important to note is that the code does not prevent health workers from educating mothers in the use of formula but this can only happen on a ‘need to know’ basis. (World Health Organisation, 1981, Article 6). When education/information is provided on formula feeding, the superiority of breast-feeding should be emphasised, the cost of using formula should be highlighted and potential hazards explained. Only then can information on proper use be imparted. (World Health Organisation, 1981, Article 4).

The WHO code is not adhered to universally. While some countries have made provision for all or part of the WHO code in law, some countries have chosen to keep it as a voluntary code or have made no move to adopt it in any form (Richter, 2001). In New Zealand the WHO code was adopted in 1983. However it was not enshrined in legislation but instead, in 1997, became the basis for a voluntary, self-regulation and monitoring process.

In 2001 a review of this process was held. There had been problems identified with the process including a misunderstanding that the code prevented health workers from providing information on formula feeding (Ministry of Health, 2009). The review eventually led to a new document in 2007 titled “Implementing and Monitoring the International Code of Marketing of Breast-milk Substitutes in New Zealand: The Code in New Zealand” (Ministry of Health, 2007). This sets out, in a single document, two parallel New Zealand codes, one for health workers and one for the marketing of infant formula. These are both grounded in the WHO code but take into account New Zealand’s social and legislative framework (Ministry of Health, 2007, p. 1).

This New Zealand version of the WHO code does explicitly outline the responsibilities of health workers to ensure that mothers who are using formula receive adequate information and are not discriminated against. Sections 4 and 5 of the “Code of practice for health workers” outlines how health workers are expected to ensure the appropriate use of formula (Ministry of Health, 2007). Like the WHO code on which they are based, there is a strong emphasis on continuing to stress the superiority of breast-feeding, the various problems associated with formula feeding and avoid any idealisation of formula through images or text. Information given must be factual and objective and may include the types of formula available but not endorse any specific brand. Section 2 includes the provision to supply information to women antenatally who have decided to use formula, however, this must not occur in a class setting where breast-feeding is the only method endorsed (Ministry of Health, 2007, p. 15). In summary, health workers can share information on formula feeding

in New Zealand but they must do so only in very specific situations and under very specific terms.

Related to the WHO code is the “Baby-friendly hospital initiative”, launched in 1991 by UNICEF and the World Health Organisation. Baby-friendly is defined as supporting breast-feeding. To gain accreditation as baby friendly, hospitals and other maternity facilities must follow ten specific steps. These steps are designed to ensure that the right environment is created to ensure the optimum chance of successful breast-feeding. It includes “rooming in” mother and baby, encouraging demand feeding and giving newborn infants nothing but breast milk unless medically indicated (UNICEF, 2009). Many of New Zealand’s hospitals and maternity facilities now have baby-friendly status (Jackson, 2005).

Literature Review

The dangers of formula:

In recent times, any research into bottle-feeding has tended to be linked to research into breast-feeding. Very few researchers study bottle-feeding as a phenomenon separate from breast-feeding and often the research is focused, at least in part, on understanding the motivations behind bottle-feeding to better promote and increase breast-feeding rates. This research, and related commentaries, can vary from being sympathetic to women who bottle-feed while still promoting breast-feeding, to being outright hostile to both formula companies and mothers who choose to use formula. Maureen Minchin is an example of the latter. In her book “Breast-feeding Matters : what we need to know about infant feeding” (1998) she launches a scathing attack on formula companies, their marketing tactics, hospital practices that do not encourage breast-feeding, and society at large for normalising bottle-feeding while marginalising breast-feeding. Her book references a number of studies into the benefits of breast milk and lists a worrisome number of incidences where formula was compromised and the safety of infants put at risk. In her article “Artificial feeding and the risk: the last taboo” (M. Minchin, 2000) she likens formula feeding to smoking tobacco and calls for warning labels to be placed on infant formula packaging.

Minchin’s approach is by no means isolated. The promotion of infant formula, especially in the United States, has instigated a number of studies and commentaries that have not been favourable to formula companies or sympathetic to mothers who use formula. For instance, “Selling out mothers and babies : marketing of breast milk substitutes in the USA” (M. Walker, 2001) refers to formula companies who produce

information on breast-feeding as “the wolf in sheep’s clothing” (p. 51) and again lists a worrisome number of poor health outcomes for infants and mothers who use formula.

Minchin and Walker are representative of a body of work on infant feeding that approaches the subject through an “ends justifies the means” mentality. While often acknowledging that their demands for:

- no marketing of infant formula at any level
- for a ban on infant formula and bottle-feeding paraphernalia in hospitals
- for greater public promotion of the risks of using formula
- and for limiting any advice on using formula from health professionals

creates guilt, anxiety and even anger in mothers using formula, they stand firm in their belief that this is the best approach for increasing exclusive breast-feeding among mothers of newborn infants (Martyn, 1997; M. K. Minchin, 1998; Palmer, 1988; Richter, 2001; M. Walker, 2001; R. Walker & Annadale, 1999). While not as extreme in their outright condemnation of formula use, there are studies into the promotion of infant formula, particularly through hospitals and popular magazines, that call for similar action (Auerbach, 2000; Declercq, Labbok, Sakala, & O'Hara, 2009; Foss & Southwell, 2006; Frerichs, Andsager, Campo, Aquilino, & Dyer, 2006; Merewood & Philipp, 2000; Rosenburg, Eastham, Kasehagen, & Sandoval, 2008).

Breast-feeding failure- how it feels:

This has led to debate among health professionals regarding how to support the breast-feeding mother without alienating the mother using formula (Kaufmann, 1999; R. Walker & Annadale, 1999) and without compromising the principles of “Breast is

best”. One approach has been to simply promote the benefits of breast-feeding, while trying to avoid reference to formula, and to study why mothers are not exclusively breast-feeding in order to identify and eliminate barriers. These studies into why women might not choose to breast-feed, or give up exclusively breast-feeding within the first year of an infant’s life, emphasis a range of factors including:

- lack of support by health professionals, friends and family
- physical problems with breast-feeding that were not overcome
- fatigue
- unrealistic expectations on how easy breast-feeding would be
- lack of information or conflicting information on how to establish and maintain breast-feeding
- misconceptions around adequate milk supply
- and modern birthing practices that can compromise breast-feeding such as the use of labour medications

(Auerbach, 2000; Basire, Pullon, & McLeod, 1997; Brodribb, Jackson, Fallon, & Hegney, 2007; Clifford & McIntyre, 2008; Elliott & Gunaratnam, 2009; Graffy & Taylor, 2005).

Some of these studies also comment on the experiences of mothers who do give up breast-feeding, how they felt about the decision to use formula, and how well they were supported in this decision. Interestingly, a common theme is the inability of the women to get information on using formula and how this only added to the guilt and anger they felt over trying and failing to breast-feed (Basire, et al., 1997; Elliott & Gunaratnam, 2009).

In their paper “Mothers’ experiences of bottle-feeding : a systematic review of qualitative and quantitative studies” Lakshman, Ogilvie & Ong (2008) also found the same common themes: that mothers bottle-feeding frequently felt negative emotions around their decision to use formula and that they received little to no information to help them with the practicalities of using formula. The authors argue that this lack of information puts infants at risk.

Problems with the quality and quantity of infant feeding information:

The quality and quantity of information on infant feeding is the concern of several studies. Like the research identified above, these studies aim to identify reasons why women fail to establish breast-feeding, but with a focus on information sharing as a major factor. Their research suggests that most women are well informed about the benefits of breast-feeding, especially during the antenatal period, but are given little information on some of the practicalities and common problems they will encounter in the postnatal period. Some have unrealistic expectations as a result while others feel as if they have been deliberately misled (Hegney, Fallon, & O'Brien, 2008; Mozingo, Davis, Droppleman, & Merideth, 2000; Spear, 2004).

In some of the studies there is again an emerging theme of women feeling abandoned by health professionals once they chose to use formula. Suddenly finding health professionals reluctant to give advice seems to increase the negative emotions they already feel about giving up breast-feeding (Mozingo, et al., 2000; Spear, 2004). These feelings of lacking support in their infant feeding choice, of being judged, feeling guilty, of being given conflicting or unsuitable advice, and of being treated differently to their breast-feeding pairs, are acknowledged in a recent report by the

Australian House of Representatives Standing Committee on Health and Aging
(House of Representatives Standing Committee on Health and Ageing, 2007).

There is also evidence that health professionals are all too willing to impart large amounts of theoretical knowledge on breast-feeding but do not necessarily follow up with practical help, on either breast or bottle-feeding, during the postnatal period (Hoddinott & Roisin, 1999). This is significant given that the immediate postnatal period is the most critical phase in the establishment of breast-feeding (Vargas & Bakken, 2009) and sound, practical advice on formula feeding is imperative to the wellbeing of a newborn (Cairney & Barbour, 2007; Lakshman, et al., 2008). Again this has left some health professionals at the frontline of mother-infant care questioning whether they are being too dogmatic and unrealistic in their promotion of breast-feeding and not doing enough to help mothers choosing to bottle-feed (Battersby, 2000; Bean, 2004; Dark, 2005; Dennett, 2001; Edwards, 1998; Scowen, 2009).

Breast is best but is formula all that bad?

In the scientific literature there are a large number of studies that confirm the positive effects of breast milk and breast-feeding. There is no doubt that when working breast-feeding is beneficial to both mother and infant although to what degree is contested. As Dobbings logically surmises (Dobbing, 1988, p. 11) “no sensible person would pretend that any alternative devised by man could completely match the excellence of what is, after all, a normal physiological function”.

However, in recent years the promotion of the “Breast is best” message has come under closer scrutiny. A growing number of studies, particularly in communication studies and sociology, have become ever more critical in how breast-feeding is being promoted and how formula feeding is being vilified. Some studies are particularly critical of breast-feeding discourses which, on the one hand, frame breast-feeding as a natural biological function that nearly all women can do, yet increasingly call upon modern science and medical discourses to justify why women should breast-feed and why they should not see formula as a “reasonable” alternative (Crossley, 2009; Larsen, Hall, & Aagaard, 2008; Stockdale, 2002). They are particularly critical of how breast-feeding has become a moral imperative and a singular mark of good motherhood. They argue that this has produced a double blow to women by placing all responsibility for breast-feeding failure on individual women without necessarily providing the conditions necessary for success (Elliott & Gunaratnam, 2009; E. Lee, 2007; Maushart, 1999; Rippeyoung, 2009; J. B. Wolf, 2007).

They also argue that many breast-feeding advocates overemphasize both the benefits of breast-feeding and the risk of using formula thus placing even greater pressure on mothers to breast-feed and making those who don't/can't feel guilt, doubt and many other negative emotions as a result (Knaak, 2006; E. J. Lee, 2007; Maushart, 1999; Murphy, 2000). This approach is also seen as ultimately ineffectual in empowering mothers and increasing breast-feeding rates (Elliott & Gunaratnam, 2009; Kukla, 2006; Schmidt, 2008; Stockdale, 2002).

Informed Choice:

Some researches are now also questioning whether the push to increase breast-feeding rates is undermining informed choice. In other words, is the information on infant

feeding currently been given to women so heavily prejudiced for breast-feeding that it is undermining their ability to choose an infant feeding method based on a rational balancing of the pros and cons of all available methods? After all informed choice can only happen if the individual has the necessary information to make that choice. If they don't then any choice cannot be seen as "informed" (Kirkham, 2004).

Within medical ethics, informed choice is linked to respect for an individual's autonomy. It acknowledges that an individual has the right to hold their own views, to make their own choices, and act accordingly. Only in situations, such as when the choice might harm innocent others, or endanger public health, should this autonomy be restricted (Beauchamp & Childress, 2009). This leads to two questions: what information do women need to make an informed choice on infant feeding and how much should the information presented be specifically selected for the benefit of breast-feeding? Lee and Bristow (2009) consider these two questions, calling on their own research, and the research of others, and suggest that infant feeding moves away from traditional definitions of choice. In particular they argue that informed choice, in the context of infant feeding, "is more and more defined as a choice made only if women fully appreciate that formula milk use is a health risk for babies. It is by becoming aware of risk that they are deemed empowered to make 'real' decisions" (Lee & Bristow, 2009, p. 86).

Knaak (2005) also comes to a similar conclusion in her examination, across more than 40 years of publication, of the famous *Dr Spock's Baby and Child Care* book. She argues that a clear shift occurs from presenting breast and bottle-feeding as both valid

options to breast-feeding becoming a directive and bottle-feeding being framed as best avoided.

The implications of these and other studies is that information presented to mothers on infant feeding is becoming more and more polarised between breast-feeding being seen as the only choice a “good” mother would make and formula feeding being framed as extremely risky in terms of infant health (Knaak, 2006; E. J. Lee, 2007, 2008). As Lee and Bristow (2009) conclude, in many cases risk and benefit are not being contextualised appropriately and attempts to educate women on infant feeding options are actually about promoting breast-feeding as the only correct choice.

What information on bottle-feeding is being made available?

As we have seen, a by-product of studies into breast-feeding has been an acknowledgement that bottle-feeding mothers feel frustration and anger from being unable to get the information they need to help them bottle feed their infants correctly. However, as Cairney & Barbour (2007) note, there has been very little recent research on bottle-feeding practices and support, including preparation of formula. This is problematic in terms of ensuring that healthcare professionals and mothers get accurate information, grounded in good research.

In 2005 researchers from the University of Kent (Ellie Lee & Furedi, 2005) tried to address the need for research on the experiences of mothers with bottle fed young infants that was not focused on why they did not breast-feed but of simply recording how these women experienced feeding their babies in the current social and cultural context. Their key findings were that there was a strong awareness of the “Breast is

best” message and that the use of formula did not mean that women thought formula and breast milk were equal. Again they documented the same feelings among bottle-feeding mothers of being pressured to breast-feed, of having feelings of guilt over using formula, and of being treated differently to their breast-feeding counterparts. Chapter 5, in particular, addresses the types of information and advice the women sought and from where (Ellie Lee & Furedi, 2005, chap. 5). The authors reveal that many women had little or no information given on using formula, especially during the antenatal period. That women often turned to unofficial sources for information, because they could not get that information from their health professional, or felt to ashamed to ask. Their information needs varied from the very practical to the philosophical. The lack of information about formula contributed overall to their negative experiences.

Placing mothers seeking information on bottle-feeding within the wider context of health information seeking:

Because breast-feeding has been promoted as a natural, healthy choice, even when not specifically stated, the implication is that formula feeding is neither natural nor healthy and certainly risky. Therefore, research regarding the information seeking needs and behaviour of individuals with health concerns will be applicable to mothers seeking information on formula feeding.

Previous research does support the idea that the majority of mothers wanting information on formula feeding are not simply seeking practical guidance, but information that will help them limit the risk of using formula, avoid any potential

health problems and feel more secure in their decision to bottle feed (Ellie Lee & Furedi, 2005).

Seeking information on a health related issue, to understand the risk factors and learn preventative measures, is an important component of coping with health related problems (Brashers, Goldsmith, & Hsieh, 2002). Individuals, and women in particular, will seek health information outside of, or instead of, their healthcare provider (Brashers, et al., 2002; Warner & Procaccino, 2004).

Some key findings to note from research into the seeking of health information is that there can be a mismatch between what the individual wants to know and what a health provider is willing to provide (Brashers, et al., 2002), that the Internet, although frequently used, is a highly problematic source for easily finding credible health information (Khoo, Bolt, Babl, Jury, & Goldman, 2008; Picerno, 2005; Warner & Procaccino, 2004), and that there is definite potential for libraries to provide targeted services to patrons seeking health related information (Dervin & Huber, 2005; Picerno, 2005; Warner & Procaccino, 2004).

Libraries are not necessarily the first place parents turn to for information, although they are frequently seeking healthcare information (Nicholas & Marden, 1998), and information on infant feeding (Gildea, Sloan, & Stewart, 2009). However, they offer parents a potential portal to information that is, or should aim to be, impartial, reliable and importantly human (Dervin & Huber, 2005; Warner & Procaccino, 2004).

The connection between information seeking and emotion:

Some of the above studies acknowledge affect/emotion as an important element in information seeking. In particular, Warner & Procaccino (2004) and Brashers, Goldsmith & Hsieh (2002) both argue that information can either increase or decrease stress by producing certainty or uncertainty, the former study specifically citing Kaththau's *Uncertainty Principle* (Warner & Procaccino, 2004, p. 711). In 2007 the book "Information and emotion : the emergent affective paradigm in information behaviour research and theory" was published and included a number of studies analysing affect as a dimension in information seeking. This included an article on understanding the information behaviour of stay at home mothers (SAHMs) through affect (Fisher & Landry, 2007). This research argues that information seeking that empowers SAHMs, reassures them and increases their happiness, has a positive affect. Equally information seeking which results in frustration, worry, resentment or anger has a negative affect. It is highly likely that these results are equally applicable to bottle-feeding mothers.

In conclusion, mothers of young infants using formula may encounter a number of barriers to finding information on bottle-feeding. This is due to a number of factors including the current pro-breast-feeding climate that frames formula as risky and tries to safeguard breast-feeding by limiting conversations on formula by health professionals, the media, and by the formula companies themselves. Because of the way formula feeding is framed as risky, and because breast-feeding has become synonymous with good mothering, mothers of bottle-feeding young infants may feel negative emotions around their decision to use formula. The information seeking process may increase or decrease these negative emotions. Libraries may not be a

source that mothers consider when they seek information on formula feeding but libraries can offer this group of mothers the ability to find credible, balanced information without feeling judged.

Methodology

There are two major themes to this research:

1. What information do mothers who bottle-feed young infants seek?
2. What information sources do mothers who bottle-feed young infants use and are these helpful?

There are also two related themes that are also of interest:

1. How does emotion affect the information seeking process?
2. What role might Libraries play in providing information on bottle-feeding?

The focus of the research is on mothers primarily because breast-feeding can only be done by them. Thus the decision on how to feed their infant does have more implications for them. However, it needs to be recognised that fathers play an important role in helping make feeding decisions and in supporting their partners through establishing a feeding method.

The focus of this research is information-seeking on bottle-feeding after the decision to bottle-feed has been made. The intent was not to seek feedback on the availability and delivery of bottle-feeding information when a pregnant couple are still deciding on a feeding method, or when attempting breast-feeding in the postnatal period. This was in recognition of the WHO code and the restrictions it places on when and where bottle-feeding information can be made available for parents. Examining the positive and negatives of this policy and its implications on information seeking seemed beyond the scope of this study. However, it became apparent, as the interviews progressed, that many women felt that their information-seeking experiences, and the

emotions they associated with the information-seeking process, were very much affected by how information on bottle-feeding is officially delivered throughout pregnancy and immediately afterwards. Also, for many women, they defined their information experiences around bottle-feeding by directly comparing them to similar information experiences around breast-feeding. Many felt that, at best, there was a lack of balance and, at worst, clear examples of hostility and discrimination towards the bottle-feeding mother. These thoughts and feelings need to be acknowledged because for the women interviewed they clearly affected how they sought information, how they defined a helpful information source, and how they felt about the information-seeking process as a whole.

Method and Data Analysis:

The design of this research draws on *Sense-Making* methodology. Dervin's *Sense-Making* approach to studying information seeking needs and behaviour is a constructivist, user-centred methodology that acknowledges emotion as an important element in the information seeking process (Dervin & Reinhard, 2007). It also positions emotion as an important part of an individual's response to information (Dervin, 1983; Morris, 1994). At the heart of sense-making is the situation-gap-outcome triangle. Information needs are grounded in time and space. An individual encounters a situation that highlights a gap in their knowledge. The individual then seeks to bridge that gap to reach an outcome (Dervin, 1983; Naumer, Fisher, & Dervin, 2008). According to Dervin, emotion as an element in the process of sense-making that may either help or hinder, motivate or inhibit etc, but will always be informing (Dervin & Reinhard, 2007).

Sense-making is a constructivist approach to understanding the information seeking process. Its unit of analysis is the person-in-situation and its method of data collection is the Micro-Moment Time-Line Interview (Dervin, 1983). This research used a standardised open ended interview, utilising a semi-structured approach, to create micro-moment time-lines of 10 mothers who bottle-feed young infants. Every interviewee was asked 13 identical open-ended questions (see appendix 1). A semi-structure approach allowed the interviewee flexibility to ask the questions in a different order where appropriate and to answer questions and make clarifications where necessary. The interview covered three main parts:

1. What were the circumstances around the mothers decision to bottle-feed and what emotions did they experience:
 - a. They were asked to think back to when they made the decision to use formula and to try and recall any moments of uncertainty, concern or worry (these are the situations).
 - b. They were asked to think about the gaps in their knowledge that occurred during these situations- questions and confusions remembered.
 - c. The interviewee was also asked to record any thoughts or emotions that they felt within that situation.
2. What information sources did they use to answer their questions and confusions (gaps) and were those sources helpful. How did both the information seeking process, and the information received, emotionally affect them:

- a. The interviewees were asked to list what information sources were approached to help answer their questions and confusions (bridge the gaps).
 - b. Interviewees were then asked to identify the most helpful and least helpful information sources.
 - c. Interviewees were also asked to talk about how feelings they felt as they sought information.
 - d. Interviewees were also given an opportunity to talk about where they felt information on bottle-feeding should be made available.
3. What role did Libraries play in their information seeking on bottle-feeding and what role would they like Libraries to play:
- a. The interviewees were asked to look at their questions/confusions and answer either:
 - If they did use a library to get help, did it help or hinder and what could have made the experience better?
 - If they didn't use a library to get help, why not.
 - b. The interviewees were asked what role they would like the library to play in providing information on bottle-feeding (if any)?

During the third part of the interview props were used to help facilitate conversation. These were two books, one booklet, and two websites, and all were creditable sources on bottle-feeding. They were also sources that could be found at the local Public Library or quickly found by an information professional with excellent web searching skills and/or a knowledge of good online health resources. The purpose of introducing these props was to illustrate for non-library users the types of information

available through a Librarian. This proved useful since all interviewees did not use the Library as an information source and therefore were unaware of the resources available.

To help with data analysis, and to allow interviewees to see the progress of their thoughts, three different coloured cards were used during the interview. Colour one represented an information gap, colour two represented an information source and colour three represented an emotion felt. As interviewees answered questions, the gaps, information sources and emotions mentioned were scribed onto the corresponding coloured card and placed in front of the interviewee. This allowed interviewees to see their experiences and feelings and refer back to them when desired. Interviewees could also ensure that their experiences and feelings were being accurately picked up by the interviewer. Likewise, the interviewer could record gaps, information sources and emotions that came up in questions that did not necessarily ask about them. This ensured that nothing was forgotten or missed. Finally, this technique acted as a type of joint content analysis between the interviewer and the interviewees.

After each interview a verbatim transcript was created. The interview was then reread and the major themes extrapolated:

- a. What situations, gaps and emotions were common across the sample
- b. What information sources were common across the sample
- c. What were the common reasons for information sources being considered helpful or not helpful

- d. What role did Libraries play in providing information about bottle-feeding
- e. What role did interviewees want Libraries to play

The transcript analysis was then combined with the themes identified and written on cards. For instance, a card may identify “midwife” as an information source. The transcript analysis then provides details such as, what type of information they gave, how helpful that information was, what affect the midwife and the information had on the interviewee. Results were then compared to similar studies. This comparison helped give insight into the themes being identified as well as place the research into a wider context. It also helped ensure validity of results.

The main Library and Information Science theory that was drawn upon during data analysis was Kuhlthau’s *Uncertainty Principle*. This theory was used to help explain why certain information sources were deemed more helpful than others and to also explain the connection between the information seeking process and interviewees emotional state.

Limitations:

Due to the researcher/interviewer having limited ability to travel, most interviewees were sourced from in and around the Dunedin region. Contacting was done through invitations sent to local mothers groups, play groups, Plunket centres, online communities for parents etc. Because the interviewees were voluntary there was no way to ensure that the end sample was representative of all socio-economic and ethnic groups that make up New Zealand, but every effort was made to try and achieve as

diverse a sample as possible. Micro-Moment Time-Line Interviewing is highly in depth. All interviews were conducted face to face and ranged from approximately 40 minutes to 1 hour 40 minutes. This limited the number of interviews that could be reasonably completed, transcribed and analysed within the timeframe allocated for this research, to ten. Thus the small size of the sample, the limited geographical spread, and the lack of diversity, are all limitations that need to be acknowledged.

Becoming a bottle-feeding mother when ‘breast is best.’

Reasons for bottle-feeding:

Considering that breast-feeding is promoted by the World Health Organisation, the New Zealand Ministry of Health and New Zealand health professionals as the best option for feeding an infant, why do women choose to bottle-feed? As already mentioned in the literature review (see page 18), there are a number of studies that have identified several reasons why women choose to bottle-feed. These reasons are echoed by the women interviewed for this study. Eight out of the ten interviewees initially wished to breast-feed their infants but due to circumstances were unable to realise that aim. Reasons for breast-feeding failure included traumatic labour and birth experiences, health problems either with the mother or the baby, lack of support or conflicting information from health professionals, a distressed mother and baby, a belief that they lacked a good milk supply, and other demands such as caring for older children or returning to work. Of the two interviewees who made the decision to bottle-feed from birth, one made the choice because of work commitments and the other after watching her sister trying and failing to breast-feed.

All of the interviewees who had tried to breast-feed and failed understood the benefits of breast-feeding. Interviewee 3's comment is a typical example: "I know breast-feeding is the way to go and should be the way to go and certainly if anyone ever asked I would be saying give it a go". However, one of the interviewees who bottle-fed from birth expressed more scepticism: "I don't see the difference really between breast-feeding and bottle-feeding. If bottle-feeding wasn't good for a baby no-one would have ever invented this formula we are feeding our children". It is significant

that most of the participants acknowledged that breast-feeding was the ideal method to feed an infant. Later we will see that this impacts on the type of information the participants seek, where they seek it, and the emotions they feel.

Many participants were also open about the negatives of bottle-feeding, focusing on the financial disadvantages and the need to be organised especially when travelling. However, they also identified positives including the ability for Dad to feed the infant, more time to spend with other children, the ability to leave the infant in the care of others and, for one participant, not having to restrict their diet after their infant was diagnosed as lactose intolerant. It is interesting to note that of the interviewees who went on to have subsequent children only one went on to breast-feed successfully. For all the others, their attempts either failed again or they decided to bottle-feed from birth reasoning that while 'breast is best,' being bottle-fed did not harm their older child.

Breast-feeding and information sharing- problems highlighted:

The interviewees who failed at breast-feeding were highly critical of how breast-feeding information is conveyed. All interviewees commented on the differences between how breast-feeding information and bottle-feeding information is distributed. This was a source of resentment and frustration. It is important to touch on this because many of the concerns and worries that these mothers experienced as a result of choosing to bottle-feed were influenced by what they had been told about breast-feeding and how information on both types of infant-feeding were made available.

There was frustration at how information on breast-feeding was delivered. Some felt that the information they were given about breast-feeding glossed over the difficulties and did not prepare them for problems. They were also critical of the use of information carriers like pamphlets and books to teach breast-feeding. One interviewee summed it up: “They don’t tell you about cracked nipples or any of the backlash. And pamphlets are useless. I just didn’t have time to read pamphlets” (Interviewee 1). Another noted that “Those ads they have got going [on TV] really get on my goat now because, of course, you just stick them on the boob and away you go you know” (Interviewee 4). The same interviewee spoke of a disconnect between the discourse of mothering being instinctual and the reality of modern society: “I felt like I should know everything because I was a mother and my body automatically knows what to do so I should know what to do up here. And maybe in the old days, when you lived with your Mum, and you had community support, the whole raising your child sort of thing, you probably would know if you had been around a newborn” (Interviewee 4). One gains the sense that using modern methods (books, pamphlets, video etc) to teach breast-feeding is, at least for the interviewees in this study, ineffective and at odds with the message that breast-feeding is a natural process.

“Breast is best”- how this message affected the bottle-feeding mothers:

Interviewees expressed concern that the ‘breast is best’ message was being used to frighten new mothers into choosing breast-feeding. Even while agreeing with the message that breast milk is the optimum food for an infant, many interviewees worried about how that message was being conveyed and its effect on those who cannot breast-feed or do not want to breast-feed. Some interviewees expressed a

concern that the 'breast is best' message was being promoted so that anything less than breast-feeding an infant was framed as risky, deviant behaviour. Comments to this effect include: "You hear if you don't breast-feed your baby they are going to be sick all the time and breast-fed babies have good immune systems. Pretty much if you breast-feed your baby then it's never going to get sick a day in its life"

(Interviewee 9), "All you get is breast is best and bottle-feeding is bad and you are a bad mother if you do it [bottle-feed]" (Interviewee 2) and "We all know that [breast is best] but they have gone too far so that if you don't breast-feed you are an instant criminal, you are an outcast, you are the worst mother in the world" (Interviewee 4).

Interviewees went on to express concern that this approach was designed to coerce women into breast-feeding and was less than honest about how 'easy' and 'natural' breast-feeding really was. Interviewee 1 expressed it like so: "I think there is too much pressure on breast-feeding as well. I mean they sit there going breast is best but they are not giving enough information. Sometimes breast isn't best and some babies don't like breast and that is okay. I tried so hard because we have got to do this because breast is best and of what you are constantly hearing. You kind of feel you are letting your baby down". Some of the interviewees pointed out that the 'breast is best no matter what' message, if not tempered with common sense, was problematic: "I think there are some mothers out there that shouldn't be breast-feeding that are. There is a couple of people I knew through friends and stuff who were drinking shit loads of alcohol so you can't tell me that in that case breast-fed babies are better than formula babies" (Interviewee 9) and "I have got friends that smoke and they seem to be pumping it into their baby when they are breast-feeding" (Interviewee 10).

Does an emphasis on promoting breast-feeding negatively impact on bottle-feeding information?

There was a definite feeling among most of the interviewees that the push towards encouraging breast-feeding directly impacted on the amount and quality of information available on bottle and combined feeding. All interviewees expressed concern that there was no balance in the amount and quality of information provided on all forms of infant-feeding. Common comments included: “Because there’s that whole push towards breast-feeding, bottle-feeding has been left behind and for those people who really do need it [information on bottle-feeding] there is not much out there” (Interviewee 2) and “I can understand why they have to promote breast-feeding, because it is better for your baby in the long run, but I did not find it helpful that there were no pamphlets or anything given out on bottle-feeding at all” (Interviewee 3).

All interviewees had been exposed to information on breast-feeding through a variety of formats including antenatal education, videos, pamphlets, posters, television advertisements, latch on events, books and professional advice from midwives and Plunkett. They were acutely aware that they had not experienced the same level of information sharing about bottle-feeding either prior to or after they made the decision to bottle-feed. For some interviewees the lack of information only reinforced the feeling that their decision to bottle-feed their young infant, regardless of the circumstances, was deviant behaviour: “Every book gives you loads of information about breast-feeding and there is so little easily available about bottle-feeding. I found that really hard. In a sense it was sort of like bottle-feeding is, sort of, you shouldn’t be doing it so why should we be giving you information” (Interviewee 8)

and “the system often seems determined not to provide [information] for those who do not conform to the breast is best mantra” (Interviewee 4). Others felt that this reflected a lack of realism from health professionals regarding the difficulties of being a new Mum and establishing breast-feeding. They were frustrated that there seemed a reluctance to accept that formula was a necessity for some women: “You can push breast-feeding, like everyone does now, but still be open to the fact that bottle-feeding sometimes is best for some people” (Interviewee 4), “professionals sort of need to get back down to earth and realise how hard it is being a new mother” (Interviewee 6) and “It [formula] is a real need for a lot of people. I think as long as it is done with promoting breast-feeding as the best option I don’t think that it [information on bottle-feeding] is a problem” (Interviewee 8).

There was also a feeling that health professionals were being less than honest about the dangers of formula-feeding, making sweeping statements without actually providing some context: “You know obviously if you never wash your bottles then sure you are going to increase the risks of your child getting sick. In saying that if you never wash the sheets or change its nappies, well it depends on how clean you are” (Interviewee 2) and “Pretty much if you breast-feed your baby then it’s never going to get sick a day in its life. Formula fed babies, you are going to have asthma and all kinds of stuff” (Interviewee 9).

Not striking the right balance- informed choice or coercion:

Many interviewees perceived the way information on infant-feeding was delivered to be unbalanced and heavily biased towards breast-feeding. Interviewee 2 worked in the media and seemed particularly concerned with how the media portrayed bottle-

feeding and felt people should be critical of some media messages. One incident she described as disturbing was a community radio show where the host for a segment on breast-feeding described death as a side effect of formula-feeding: “I felt sorry for anyone else who was listening and got worried about it. I knew that it was stupid but there again young Mums listening to the radio might not have”. Interviewee 2 did not deny that death was possible but instead was concerned that the radio host had neglected to quantify the statement, that is to say the host did not explain that poor hygiene and unclean water might cause death and that good practice would minimise that risk substantially. Her concern was shared by other interviewees in the sense that they also suspected that the media was not always even-handed in how it portrayed formula-feeding: “If they show formula on the TV they don’t show you how to make it or putting it into a bottle, they show you the can. They won’t even show a baby drinking one bottle except that one with toddler milk they show pouring and that could be anything they are pouring” (Interviewee 4) or “You hear just little things like you hear about your bench being covered in bacteria, the bench will make you sick. So all the stuff that they go on about with bacteria and formula... is that the hyped up version of a health issue or is that a real health risk?” (Interviewee 8). Interviewee 2 felt strongly that people needed to exercise perspective when it came to listening to media messages about both breast and formula-feeding. She recommended being wary of big negative statements but acknowledged that this was not easy for some people: “The whole thing with the media is that people tend to believe it”.

Many interviewees were concerned that this unbalanced approach to informing parents about different infant-feeding methods directly impacted on their rights to choose what worked best for them. Some were particularly concerned that not being

given information on bottle-feeding at the antenatal stage had a negative impact on their postnatal period. As we have seen above, many interviewees felt that information on breast-feeding tends to overemphasise the positives while glossing over problems, perhaps out of fear that to talk about potential problems in any depth might indirectly encourage bottle-feeding. As a result, interviewees who attempted to breast-feed and failed felt ill-equipped to quickly change from one form of infant-feeding to another. Many noted that this was amplified by the general tiredness and emotional turmoil that new mothers feel during the first few weeks after giving birth. This led to a number of interviewees being highly critical of the way infant-feeding is treated during antenatal education: “So you can sit there [at an antenatal class] and you can watch a video of a caesarean and a video of a natural birth and a video of a natural birth using an epidural, using pethidine, using gas, but you cannot find out information about bottle-feeding” (Interviewee 4), “They [antenatal class] talk about epidurals and talk about all the other stuff and they discuss all the different options for labour, all the different everything for your birth plan. Your type of car seat, your type of buggy, whatever, but they don’t talk about bottle-feeding. Like, you know, they should be giving every option to you but they don’t” (Interviewee 5) and “Even if you chose not to breast-feed that should be your choice, not influenced by antenatal because all they are doing is influencing for breast-feeding” (Interviewee 10).

Interviewees questioned whether they had truly experienced informed choice when it came to infant-feeding. There were a number of statements to this effect: “It shouldn’t be pro this or pro that. It should be here are the options, what do you want to do? Because it [current situation] is taking the choice away from parents really” (Interviewee 2), “It [book: *What to expect...* series] is not you must breast-feed. It is

not hammered into you, it is not a negative tone, not even in a different tone. It's not even positive. It is just in the middle, here is what you can do and here is the pros and cons, you make up your own mind. That is what these guys [health professionals] should have done. If they showed you both, you can make up your own mind, and you can decide" (Interviewee 4) and "They [antenatal] spent about two sessions on breast-feeding. They should at least spend half a session on bottle-feeding. You know there is a flip side to everything and they need to give both sides you know" (Interviewee 5). Interviewee 10, who had made the decision to bottle-feed from birth, felt that hospital staff actively tried to undermine that choice: "It made me angry because it didn't matter how many times I said I have chosen formula and that is my choice they would say you should be breast-feeding, breast is best".

WHO code- barrier?:

Many interviewees were aware of the WHO code on the marketing of breast milk substitutes and its sister policy, the Baby Friendly Initiative. Some interviewees argued that it was a significant barrier for bottle-feeding mothers gaining information, particularly during the antenatal period. Interviewee 3, despite at the time being committed to breast-feeding, questioned the lack of bottle-feeding information when she attended her antenatal class: "And I said but what happens with some of us in this room if breast-feeding does not work? And she [midwife/educator] goes well due to world health organisation policy in the hospital here we are not allowed to discuss that. We are not allowed to give out this information". Interviewee 4 described a similar incident in her antenatal class: [midwife/educator gives an answer to a question about bottle-feeding] "I would like to but I cannot give you any information

about bottle-feeding. I cannot by law because of the World Health Organisation's guidelines. But I [Interviewee 4] didn't pursue it with the women because I was going to breast-feed. It was going to be easy". Interviewee 4 also went on to criticise how restrictions on formula marketing added to the guilt mothers felt around bottle-feeding: "It's just so awful, it's making Mums out to be criminals. It is criminalising mothers and in a really insidious way that you don't even know it is even happening". Interviewee 8 noted that the WHO code also affected midwives, Plunket and GP's: "They can apparently answer if you ask [about bottle-feeding] but they are not allowed to encourage formula-feeding or suggest it. If you have gone that way then they can help you a bit I think but they are not supposed to encourage you to go that way".

How it feels to be a bottle-feeding mother when ‘breast is best’.

Emotions and information-seeking.

Choosing to bottle-feed is an emotional decision:

Despite recognising the contradictions and discrepancies in the ‘breast is best’ message, and even though they felt the decision to bottle-feed their infant was the right decision, all interviewees felt, at some point, feelings of guilt, anger or disappointment. For Interviewee 2 the anger was directly related to being thought a bad mother because they chose to bottle-feed: “Everyone knows that breast is best so obviously if you are not giving your baby breast feeds you don’t care about your baby. I resent people telling me that I don’t care about my child”. However, for Interviewee 8, anger was also a direct result of feeling that the midwife had been less than honest in the information they provided and the support that they gave: “Once we were fully formula-feeding and she was a much happier baby I actually felt quite angry that nobody had pointed us in that direction sooner because it was so clear that it [breast-feeding] was the problem and I had no experience with babies so I didn’t pick it up but I do believe that the midwife should have and given me more help in that direction” and “At the time I just believed her [midwife] because I just trusted her information and I thought my supply would get better and that would be okay. In hindsight when I see, you know, how much we were struggling with sleep and all that kind of stuff, and how distressed she [baby] was all the time, in hindsight I am quite angry that she [midwife] wasn’t more ready to suggest actually maybe your milk supply isn’t adequate and you need to be more serious about giving formula every feed”.

There are examples of where midwives and other health professionals have supported the decision to begin using formula as Interviewee 8 had wished her midwife had.

Those interviewees who encountered this spoke about how it helped them come to terms with breast-feeding failure. In particular, they talked about having permission to use formula and of being able to show that they were not lazy or bad mothers: “The only reason why I don’t feel guilty now is they [Plunket lactation consultant] actually gave us a diagnosis. If they didn’t say she was tongue tied then I don’t know what I would have done” (Interviewee 2), “So thank goodness for this nice midwife that said it does not have to be like this and it was almost like I felt at the time that she had given me permission which was silly because it was my body and my baby” (Interviewee 3) and “all those kinds of things did just take that pressure off. Knowing that I was doing the right thing [regarding the support of a lactation consultant who help her change to formula]” (Interviewee 6).

Dealing with self doubt and feeling judged:

However, even with the support of health professionals, many interviewees still felt they were being judged as poor mothers by society in general because of the way they fed their infants: “[For] some people like myself bottle-feeding was actually best, because if I breast-fed my baby would have died. So why would people have me feel guilty for saving my baby’s life, I don’t know” (Interviewee 2) or “It just makes you feel this big, this tiny little person, like the worst mother in the world and then everybody reacts to it” (Interviewee 4). Interviewee 6, despite having sound medical reasons for changing from breast to bottle, continued to express doubt and guilt: “You feel like you are letting down your child by not doing the best thing... I remember

feeling extremely stressed. Was I doing the right thing, was I causing him pain by giving him the wrong formula? You know it was horrible, it was really, really horrible at times”.

Many interviewees oscillated between certainty over their decision to bottle-feed and doubt, with all the negative feelings of anger and guilt that accompany it. Interviewee 8 sums up this situation like so: “On the one hand I was feeling disappointed that I could not have continued [breast-feeding] but on the other hand I knew it was the best thing for all of us and I had done the best I could”. It is interesting to note that the two interviewees who chose to bottle-feed from birth did not experience these feelings of self doubt or guilt. They knew about the benefits of breast milk, and they did have moments of concern or worry about specific feeding issues, but not once in either interview did they express feelings of doubt or remorse: “I made this decision, I chose it, just chose it straight away. I never wanted to breast-feed. It didn’t even cross my mind... No I made the decision and I thought no one is going to tell me what I can do” (Interviewee 10) and “I just knew I was just going to bottle-feed because I knew he [first son born overseas] was fine, there was no problems with him” (Interviewee 7).

Discrimination:

We have established that many of the interviewees felt judged because they bottle-fed their infant. Sometimes the feeling was something they just perceived through a look or tone of voice: “I was feeding a bottle and I saw a little old lady and she walked past and she was quite, you know, she gave me this look that made me feel, yea” (Interviewee 2) or “My midwife was okay about it when I said look I don’t care what

you think I am going to bottle-feed. She said that's fine if you need to go on the bottle then go on the bottle but the way she said it was like oh you should be breast-feeding" (Interviewee 4). But interviewees also recounted incidences that they felt demonstrated real evidence of judgement and discrimination: "Interestingly when I was in hospital with *second child*, and had my bottles and my disposable nappies, I was put in a side room by myself and hardly saw anybody" (Interviewee 3), "I had another friend who has two babies she bottle-fed and a woman, complete stranger, came up to her in a coffee shop when she was bottle-feeding her baby and said why aren't you breast-feeding" (Interviewee 4), "my colleague, she is breast-feeding and she is allowed a certain amount of time, not on the call breaks but on call, for her to breast-feed, but I am not entitled to them because I am bottle-feeding" (Interviewee 8) and "I actually had a woman in hospital, after I made the decision to feed him a bottle, she actually came in and told me off. One of the older midwives told me off like I was a five year old child" (Interviewee 9).

Interviewee 3 was particularly upset about an episode when her infant was hospitalised and kept in isolation. As his mother she had to stay in isolation with him but, due to not being a breast-feeding mother, was not eligible for any meals: "Because I wasn't breast-feeding I was not getting meals delivered, which is difficult when you can't leave the room. So it was a real discrimination thing". In the end a nurse took pity on her and smuggled food into her room. Her feelings of anger over this episode were still raw at the time of the interview approximately three years later. These feelings of judgement and discrimination, whether real or perceived, did act as a barrier to seeking information. There was real concern for some interviewees that they couldn't predict how people would react to the fact they were bottle-feeding and

so they found themselves reluctant to disclose: “I remember a couple of times sitting there thinking oh I don’t know, should I tell them that I am bottle-feeding?”

(Interviewee 3), “ I think people do judge you, like people do sort of change their opinion of you when you say you are formula-feeding” (Interviewee 5) and “My other little concern, at the back of my mind, was about peoples perception and what they would think of me for not breast-feeding” (Interviewee 8).

Interviewee 8 was so trapped by negative feelings that she felt almost paralysed when it came to seeking help: “You don’t feel free to ask. You feel almost embarrassed to ask Plunket, midwives anything like when they are so pro breast-feeding. You feel embarrassed to ask them how to bottle-feed or anything like that. Yea you do, you don’t feel like you should be asking, you don’t feel like you can ask, you don’t feel free to ask, you feel embarrassed, ashamed to ask. You feel hesitant to ask anybody for help, anybody professional for help”.

Positive feelings associated with bottle-feeding:

The decision to bottle-feed their infant was an incredibly emotional and upsetting experience for nearly all interviewees. However, some interviewees also expressed emotions of relief when they did finally make the decision: “I was a cot case. It was not until I bottle-fed that I was fine again” (Interviewee 3); “I was happier during the day and I could tell he [baby] was too” (Interviewee 5) and “When I say she [friend who came and helped establish bottle-feeding] saved my life I am not exaggerating. I was this close to probably plunging into postnatal depression and ending it all” (Interviewee 4).

So I am bottle-feeding my baby... now what?

Common concerns, uncertainties and worry of mothers bottle-feeding young infants:

All interviewees could express at least one uncertainty, concern or worry that they felt during the period immediately after choosing to bottle-feed. Overall, 22 specific concerns or worries can be identified although some relate to breast-feeding rather than bottle-feeding.

By far the most frequent bottle-feeding concern is around health with seven out of ten interviewees expressing at least one health related concern. The message that formula is a greater health risk, and is inferior to breast milk, was clearly understood by the interviewees: “I was worried that I was going to end up with a sickly baby because she had not received the start she should have” (Interviewee 8), “I did have a hard time thinking is it [formula] healthy. Like is she going to lose out on all those valuable nutrients [in breast milk]” (Interviewee 4) and “I was terrified that she would end up with gastro because I had done something wrong and I would have beat myself up if anything had happened. But also I was worried that she was missing out because I could not breast-feed” (Interviewee 8).

Quality of formula was another related concern: “It was really important for me [choosing a formula]. I think it took most of the pregnancy just to decide what formula I wanted” (Interviewee 10). Many of the Interviewees were either pregnant or in the newborn stage during the China formula milk scandal of 2008. Two

interviewees indicated this as a real catalyst in creating concern around using formula: “That [Sanlu formula scare] freaked me out” (Interviewee 2) and “Something else which heavily impacted on me was that whole thing on the China formula saga. When I first, you know, started with formula I thought this is a bit scary” (Interviewee 5). Interviewee 7 indicated that a formula recall in New Zealand also caused her concern: “They had that formula recall, I think it was last year, and I just had to make sure that I wasn’t going to be using that type of formula”. Interviewee 7 couldn’t remember the particulars of the recall but it is likely to be the recall of Karicare Gold infant formula sparked by a concern about the ingredient FOS which was added to help with digestion and bowel movement.

Other concerns expressed included financial concerns “The amount he [baby] kept bringing up, it was frustrating and it was costing me money” (Interviewee 5), concerns around the effects of combined feeding on breast milk supply “I was worried that [formula] would effect my breast milk supply” (Interviewee 8), and concerns about I.Q. “He [partner] said to me once you don’t want your son to be a dumb ass do you?.” (Interviewee 5). Interviewee 6 expressed concern over not getting any guidance around what she was doing: “Just having that she’ll be fine, it will be fine, just doesn’t cut it. You want to know why will it be fine, you know. Just tell me what I am doing right and what I am doing wrong”. Interviewee 10, who chose to bottle-feed from birth, was the only interviewee who initially did not feel they had experience concerns or worries. This might be explained by the help she had received from her sister and secondly her midwife who both provided support and information, coupled with her strong conviction that bottle-feeding was the right choice for her

family. However, as the interview progressed it did become apparent that she had experienced moments of uncertainty, concern or worry around choosing a formula.

Uncertainties, concerns or worries, related to bottle-feeding, as identified in the interviews:

Constipation and formula

Health of baby

Hunger of baby

I.Q.

Lack of balanced information

Lack of instruction on using formula

Money/finances

Negative perception of bottle-feeding

Quality of formula

Reading and trusting formula labels

Reflux

Safety

Wind

Specific gaps in the knowledge of mothers bottle-feeding a young infant:

Once they had identified any uncertainties, concerns or worries, interviewees were asked to try and remember the specific gaps in their knowledge that these moments highlighted. Gaps, in this context, were the specific questions or confusions they had.

Overall, 19 specific gaps can be identified.

The most common gaps were those pertaining to the “how” of formula-feeding. For instance, interviewees identified gaps in how to make up formula, sterilise equipment, choose a bottle and choose a formula: “I didn’t know about sterilising, she [a friend] told me about that” (Interviewee 4), “What type of formula to put him on because of the fact he was premature. I had to be very careful with his stuff” (Interviewee 6) and “what type of bottles, because there are different brands, the good brands and the cheap brand bottles” (Interviewee 7).

Some interviewees expressed frustration at having a general knowledge of the do’s and don’ts but of being deficit on specifics: “Do you fill the whole thing [bottle] up and give them all of it? What happens if she doesn’t drink it all and that sort of thing” (Interviewee 4), “One of the bigger concerns was probably about hygiene and things like not reusing milk. But how long? It can take quite a while to have their milk and sometimes you have to feed them in two stages” (Interviewee 8) and “Everyone says check a bottle on your wrist. That was by biggest thing. Well what are you checking for?” (Interviewee 9).

Some interviewees expressed a lack of information about bottle-feeding in general as a gap that caused confusion. This confusion was often amplified by not feeling like they had someone to turn to for help: “[regarding combined feeding] I had no information about how much of either [breast milk and formula] I was meant to be going in, I mean to be giving her. I really had no information.” (Interviewee 5), “We had no idea what to do [using formula]. She [baby] was starving. We didn’t know who to call or who to even ask for help you know” (Interviewee 9), and “The other thing is the first time a lot of people use formula is late at night when nothing else is

working and you want to know that you have done stuff right. And I was really hesitant to ring my midwife at that time of night” (Interviewee 8).

Specific information gaps, related to bottle-feeding, as identified in the interviews:

Can formula be reheated?

Formula- should you premix in bulk or make “as needed”?

How do you change formula?

How do you clean bottles?

How do you combine feed?

How do you prepare formula?

How do you sterilise bottles?

How do you travel and prepare bottles?

How do you warm the bottle?

How do you wean from breast to bottle?

How long have you got to use formula once made up?

How much should you feed your baby?

What are the differences between formulas?

What temperature should formula be?

What type of teat should you use?

What type of bottle should you use?

What is ‘best practice’ with formula use?

What is the best formula to use?

Who can I call for help?

Connection between information gaps and negative emotions:

Many interviewees spoke of being caught off guard by their information gaps. Used to being in control and independent, suddenly not knowing what to do was a shock for some: “I felt like an idiot. Like an absolute idiot. Like how could you not know that because you are supposed to be a mother” (Interviewee 4), “I was just lost, I was a little, I was quite angry for a wee while. I really had not an idea” (Interviewee 9) and “I had turned from this much in control, organised special person into this absolutely blithering idiot mess” (Interviewee 3).

Information sources used by mothers who bottle-feed a young infant:

Once the specific gaps were identified, the next step was to identify how the interviewees tried to bridge those gaps. In other words, where did the interviewees turn to answer the questions identified above? The aim was not simply to identify the information sources consulted but to determine how helpful those sources were. The term ‘helpful’ encompasses whether the information sources had a positive, negative or neutral impact on how interviewees felt about both the information presented to them and the information-seeking process itself.

Overall, 32 different people or situations were identified as being sources of information on infant-feeding that impacted both positively and negatively on interviewees after they made the decision to bottle-feed. Most identified are in relation to bottle-feeding only, although some, like midwife and lactation consultant, were often in relation to both bottle and breast-feeding. One information source, antenatal class, was mentioned as a source of information on breast-feeding but not, as we have already recorded, on bottle-feeding. It is still relevant however, because

the lack of disclosure about bottle-feeding at this stage did impact on how many interviewees felt about bottle-feeding once they made the choice to use formula.

All ten interviewees identified their midwife as an information source. This was followed closely by other mothers (mother networks) whom they knew through play groups, parent centres, coffee groups, online chat rooms and message boards (9), Plunket nurse (8), friends (7), the child's father (7), their own mothers (6), immediate family members (5), family doctor (5), and hospital staff (5). Less common were information sources like pamphlets (4), websites (3), books (2), radio (1), magazines (1), television (1) and formula companies (1). There was a very strong bias towards seeking information from people which was best summed up by Interviewee 9: "Sometimes you just don't like to read everything. You would like a bit of personal information".

Specific sources of information as identified in the interviews:

Antenatal education classes

Back of boxes

Booklets e.g. *Thriving under five*

Books

Chemist

Day-care

Experience/intuition

Family doctor

Family members e.g. sisters

Father of the baby

Father of the mother

Formula Company

Formula tin

Friends

Healthline (often called Plunket infoline by Interviewees)

Hospital staff

La Lache League

Lactation consultant

Magazines

Midwife

Medical Centre Nurse

Mother

Mother in law

Mother networks including those online.

Pamphlets

Paediatrician

Parents Centre

Plunket nurse

POI study¹

Radio

Television

Websites

¹ POI: Prevention of Overweight in Infancy. Edgar National Centre for Diabetes Research (ENCDR). University of Otago.

Personal experience as a key information source:

Experience was a surprising but frequently cited information source (cited by seven different interviewees). It offered an important counter balance to messages about the dangers and inferiority of formula and was a great influence on feeding decisions with subsequent infants.

Interviewees noted that contrary to the rhetoric their bottle-fed infant did not seem to suffer from bad health: “All my babies are good, healthy, strapping babies and when they were breast-fed babies they just weren’t” (Interviewee 1), “So now I feel good about that decision because I can see that actually my kid is so thriving. There is nothing wrong with her” (Interviewee 2), “My daughter is healthy, happy, bouncing off the walls. Hardly ever sick, apart from normal childhood diseases” (Interviewee 4) and “I really believed that her health was going to suffer but there are lots and lots of formula-fed babies that are perfectly healthy. I mean at six months old she has had only one cold. So she is certainly not a sickly baby as a result of formula-feeding, which is what all the evidence would tell you should be” (Interviewee 8).

They also noted that being bottle-fed did not lead to developmental delays or signs of a decrease in I.Q.: “And the other thing I heard, they are not as smart as kids who are breast-fed. Yet *daughter* is top of her class at maths and is really good at making up stories” (Interviewee 2) or “It [bottle-feeding] worked. She was a contented, happy baby. She was meeting her milestones. She was average weight, average height, so was doing all the things she should be doing at the right stages” (Interviewee 3).

The experience of watching a friend or relative fail at breast-feeding also had a profound effect on some interviewees. Sometimes this was an influence on their decision to bottle-feed from birth: “She [sister] had problems with her first one and I

still remember it. I remember her having cabbage leaves down her top. My God I don't want to be like that" (Interviewee 10). Sometimes it was the knowledge that others had been through breast-feeding failure, and that they and their child were fine, that gave moral support: "I do have a friend with an older child that's, I am pretty sure, was formula-fed right from an early age and this friend pretty much said to me do what you think is right. Look at my child, there is nothing wrong with her you know" (Interviewee 5) or "I had my sister, who's got a wee boy and wee girl who were bottle-fed and a couple of friends who were bottle-feeding and their kids were perfectly fine so I just made the decision and stuck to it" (Interviewee 3).

Positive experiences with bottle-feeding also helped inform interviewees' decisions around the feeding of subsequent children: "I was in control that time [second pregnancy] and knew exactly what I was going to do. I was going to bottle-feed because I just didn't want to go through what I had with *daughter*" (Interviewee 3), "I just knew I would bottle-feed because I knew he [first child] was fine, there was no problems with him" (Interviewee 7) and "Formula did *daughter* no harm so I knew I wasn't doing *son* any harm" (Interviewee 9).

Helpful information sources- the importance of how they make you feel:

When asked to identify which information sources were particularly helpful and why, some common themes emerged. Many Interviewees felt that information sources that put them at ease were helpful. In particular, interviewees appreciated information sources that did not make them feel any further doubt or guilt over their decision to use formula: "She [lactation consultant] stopped me from feeling bad, that I was possibly doing harm to him. You know, reassured us that we were on the right track

and he was growing really well and that we weren't doing anything wrong. She just made me feel a good mother again" (Interviewee 6), "She [Plunket nurse] never questioned the decision which I really liked and just gave the next stage of information" (Interviewee 8) and "There was one woman [nurse at medical centre] who went over everything with me and explained a few things and probably put me at ease about not breast-feeding because a lot of people that you speak to just think that you should be breast-feeding" (Interviewee 9).

Helpful information sources- the importance of what they say:

Interviewees also felt that information sources that were willing to give direct answers were more helpful: "I rang Plunketline for help and actually that was the most helpful information I got. She said go down to the shop... this is the formula you need. Go down and find some and bring it back and he [husband] took off in his car and went away and found it and came back and followed the instructions on the packet and made it up and gave it to the baby and she stopped crying because she wasn't hungry anymore" (Interviewee 4), "The lactation consultant was fantastic. She put me at ease within about five minutes, just like that. She told me exactly what formula I needed to be on and why the other formula was wrong" (Interviewee 6) and "Midwife because she gave me the type of formula to use... She recommended one and said that this is the one they used in the hospital" (Interviewee 7).

Balance and perspective were considered important factors in a helpful information source. Interviewee 4 did not want pro bottle-feeding sources, merely sources that handle all forms of infant-feeding in an even-handed way: "They [Book: *What to expect...* series] are not biased and they talk about the bottle and they talk about breast as well. They are very even-handed how they handle it, really nice and very well

written books”. Interviewee 2 liked their family doctor because they put things into perspective better: “I think my GP was actually good because they gave you medical reasons as to why things were happening. I think Plunket kept going this is wrong you need to do something about it right now but these guys [GP] said well yeah this is a problem but in the grand scheme of things”. Interviewee 8 felt that her Plunket nurse genuinely cared when she discovered that the advice she had been given was personalised to her situation: “You know getting me to get *daughter* onto water. I know that a girlfriend of mine who is breast-feeding, that same advice didn’t happen, like I didn’t know that was specific advice related to formula-feeding her. But I found out later that it was, so she [Plunket nurse] obviously took into account that I am formula-feeding without making me feel because you are formula-feeding you must do this”.

Interviewee 3 and Interviewee 10 both appreciated help from close family members who had experience in bottle-feeding: “My mother was good as well. She had bottle-fed and didn’t have a flash steriliser and all that but she could tell me to put them in a pot and boil for however long” (Interviewee 3) and “My sister told me a lot. She has got four children and I think I always go to her if I need to know things” (Interviewee 10).

Some of the interviewees were either given or, in most cases, sought out written information such as pamphlets and booklets. For some, these were helpful information sources: “It [bottle-feeding] is easier to learn from a pamphlet” (Interviewee 1), “In *overseas country* you got a pack as well, like books about if you are bottle-feeding. I used that as well” (Interviewee 7), “There is a book down here, it has lots of information as well. It was the only one. You know how they get bounty books and plunket books. It was the only one that had bottle-feeding information”

(Interviewee 8) and “It [booklet] had pictures of how to hold your baby, how to feed them” (Interviewee 10).

Networks of other mothers- the importance of peer-support:

By far the most often cited helpful information source, as identified by the interviewees, was other mothers. Mother networks, whether they existed in the physical or virtual worlds, provided both information and support for many interviewees.

For many interviewees, other mothers who had been there themselves and who knew how hard bottle-feeding could be, were as much valued for their moral support as for the direct ‘how to’ information they provided: “And then I spoke to a friend of mine who basically saved my life and she has four children now and she bottle-fed them all because of poor milk supply... She came over and she showed me how to make up formula, she took me on a shopping trip and we brought a steriliser and bottles and formula. She showed me how to use the formula that she used and after that I was just much happier” (Interviewee 4), “You could ask any question you liked [on this online forum] and there was someone who had the experience. People tend to be pretty good and not judge and if people don’t agree they just tend to not comment. You don’t feel judged” (Interviewee 8) and “I thought I would be the only one with the formula-feeding but after talking to some girls in my antenatal group and some other friends I found it was common. So that was quite good and talking to them about different formula they fed, how much they gave their babies, that’s really the only information I had” (Interviewee 5).

Mother networks broke the isolation that many of the interviewees felt after becoming bottle-feeding mothers. Once they discovered that they were not alone, and that people understood their decision to bottle-feed, many felt better about their situations: “That there are other people out there knowing what you are going through. You are not the only person on earth who is having trouble with it. You are not the only person on earth feeling like that, missing, mourning the breast-feeding” (Interviewee 6), “Just having someone to talk to, somebody who knows, who has been there, who didn’t lecture you, didn’t look at you like you were trying to kill your child” (Interviewee 4) and “There was one girl in particular [from antenatal group], we sort of battled through the whole formula thing together at the same time... I didn’t feel like I was completely abnormal and alone” (Interviewee 9).

Having been helped and supported by their mother network, Interviewee 3 went on to recount how they in turn helped and supported other mothers: “I have had a couple of people ring me since this time saying, oh my God, I got this friend in a terrible state and doesn’t know anything about bottle-feeding and has decided to bottle-feed and needs some help. And there was a neighbour over here and she rung me, would you please come around and help me. She didn’t know how to make up bottles and stuff”.

Recognising the limits of information sources:

Interviewee 2 and Interviewee 8 did see the potential risks in gaining their information through family and friends: “The thing with breast-feeding is all the information you got you knew was real. The thing with all the information I got on bottle-feeding, there was no kind of proof. All the info about bottle-feeding was kind of like hearsay. It was things people said, things people experienced. There was actually no hard data about bottle-feeding and what you should get and steps or

anything like that. So it was hard to know if what you were doing was actually the right way to do things or whether you were just doing something on somebody else's misguided point of view" (Interviewee 2) and "The lady next door, who had bottle-fed her kids, they are now 16 and 19, and she used to mix all the milk at the start of the day and keep it in the fridge and just heat it up. But that is a big no-no now.

Knowing when people give you advice, what to listen to, because a lot of people's advice is actually really helpful" (Interviewee 8).

Some interviewees, while not critiquing the advice they got from family and friends, did place more weight on advice from professional sources: "She was a lactation consultant about breast-feeding. She was still hearing exactly what I was saying and exactly what I was concerned about and she knew what she was talking about and she was extremely reassuring" (Interviewee 6) or "I wanted a lactation consultant that would help me with the breast-feeding and the bottle-feeding as well. With the breast-feeding for a start and when it turned to custard, you know, maybe a little bit of information that was, sort of, professional as opposed to my friend, who was like, you are doing it right. Sort of professional back-up" (Interviewee 4). For Interviewee 2, the professional they turned to was also a family member: "We also had *partner's* mother who is a doctor... and she was telling us the medical reasons why you shouldn't do that and then she was also saying the flip side".

Unhelpful information sources- reluctance and resistance:

When asked to identify which information sources were not helpful and why, again some common themes emerged. Many interviewees were damning of health professionals as information sources on bottle-feeding. For some interviewees, requests for information on bottle-feeding, at best, were answered in a haphazard,

unhelpful way and, at worst, not answered at all: “The Plunket nurse we had told us which one [formula] would be really good. It was for unsettled and hungry babies. So we started him on that and he immediately just wouldn’t stop crying and we had constipation really, really bad. And I asked another Plunket nurse about it and was told it was too strong for him... It wasn’t a very nice introduction to bottle-feeding at all. It was horrible ... just given the wrong information. I think that it was almost like any formula would do, that was the impression we got” (Interviewee 6), “They [Plunketline] were helpful sometimes but they also tended to be very factual, like your baby is this way, she should be having this amount of formula, this often, sleeping this long. There is not a kind of, no room for, you know, not all babies do the same thing” (Interviewee 8) and “I turned up to Plunket in tears saying help me, you know, thinking that maybe they would help me with weaning her onto a bottle... You know they flat out refused to give me any information” (Interviewee 4).

Unhelpful information sources- reinforcing negative emotions:

Health professionals who were unable to be empathetic to the interviewees situations, especially when accompanied by continued insistence that breast-feeding should be persisted with, were also identified as being unhelpful: “I know that she [midwife] was all for breast-feeding and she didn’t really like the idea of me going on to bottle-feed but what was the point of me sticking to breast-feeding when he was not content. I was tired and stressed” (Interviewee 1), “Professionals sort of need to get back down to earth and realise how hard it is being a new mother” (Interviewee 6), “I made the decision to go bottle-feeding and he [family doctor] wanted to go right back to the beginning of why and, you know, oh you didn’t need to make that decision, there was other things that we could have done blah, blah. By then it was too late and that was

not helpful... Before he started to give advice or anything else he questioned the decision” (Interviewee 8) and “Every time I asked her [Plunket nurse] anything she just chopped me down, didn’t give me anything. I said look I really am thinking about switching to the bottle and she said why would you want to do something like that? She said breast is best and that is all she would tell me” (Interviewee 9).

Unhelpful information sources- Plunket and Parent Centres:

Plunket nurses were particularly singled out by some interviewees for their inability to provide support and advice on bottle-feeding: “I guess Plunket made me feel really stressed and paranoid and worried” (Interviewee 2), “Plunket should be backing people up. If they want donations and they want our help then they should be helping us. They should be backing up mothers” (Interviewee 4) and “You do not really need to be brushed off, like just anything will do. I think that is, sort of, how we felt a little bit... The Plunket nurse we first talked to, it was almost like they [formulas] are all the same and they are not” (Interviewee 6). One interviewee’s experience of Plunket was so unsatisfactory that she chose not to engage with them when she had a subsequent child. While mother networks were often cited as helpful sources of information, Interviewee 5 was critical of her local Parents’ Centre: “I realised there is nothing at the Parents’ Centre about formula-feeding. Because I didn’t know I like had to scan around there and there is heaps of information about everything else but I didn’t see anything about bottle-feeding... I really would like to see Parent Centres get more involved in it. Provide information for formula-feeding mothers”

Unhelpful information sources - The Internet:

Searching websites for information, as opposed to engaging with other parents in online forums and message boards, also proved unhelpful to some interviewees. Sometimes this was due to the volume and type of information: “I did look on the Internet but, you know, there is so much, where do you start” (Interviewee 9) or “I think they [websites visited] were an American source and really didn’t give me the information that I needed. It just had all about the formulas, not about actual formula-feeding” (Interviewee 10). Sometimes interviewees expressed lack of desire to use the Internet as an information source: “I know there are websites and stuff but I can’t be bothered with websites” (Interviewee 5) or “As I say I am a *professional* and look up lots of stuff but I have never actually looked up on bottle-feeding on the Internet” (Interviewee 3).

Unhelpful information sources - The professional versus the untrained practitioner:

As we have seen, interviewees placed a lot of trust in their various networks of mothers, family and friends. They also wanted more information and support from health professionals and became very upset when they were unable to get it. Above all other things, many interviewees place most faith in information sources that were mothers, preferably with bottle-feeding experience: “She [sister] knew what she was doing, she had the experience, and I think I kind of looked up to that” (Interviewee 10), “one friend in particular, she had like tried them [formulas] all and she knew which ones worked and which ones didn’t... that was quite cool” (Interviewee 5) and “[friend was a helpful source] because she had done it with four babies prior” (Interviewee 4).

Interviewee 5 felt unable to approach her antenatal educator because she had not bottle-fed her children: “But she, of course, breast-fed both her kids, or how many kids she has had, so she is, you sort of feel, you don’t feel like approaching anybody who only breast-fed a child because they had it easy and they have no idea what you are going through and all that sort of stuff”. For Interviewee 1, even health professionals lacked credibility as an information source if they had not experienced motherhood first hand: “Nine times out of ten none of them [Plunket nurses] have got kids so how would they know”.

Unhelpful information sources- Formula companies and formula tins:

Formula companies and formula tins were not often cited as a source of information despite the fact that many formula companies provide websites and 0800 hotlines and that the back of formula tins always have step by step instructions on making formula. Interviewee 6 was highly sceptical of formula tins as a trustworthy source after noticing discrepancies in the labelling: “It is quite eye opening, you know, the sort of things they [formula tins] say. One would say that it’s got more iron in it for six months but the starter formulas got more iron in it which is a bit odd. If they say they are going to have more iron in it then they should have more iron in it. I can’t, I don’t trust labels”.

Interviewee 8 was sceptical of formula companies putting commercial interests ahead of good advice: “How much is real or how much is just hype and how much of it is formula companies. Of course they are going to tell you to throw it [used formula] out because you have to use a bit more”. Interviewee 9 was critical of formula tin instructions: “You know the instructions are on the back of the formula tins but they are so confusing”.

Choosing formula and equipment in a marketing vacuum:

When faced with no marketing of a product, or readily accessible information on a product at the point of sale, some interviewees and their partners reverted to price as their only means of differentiating formula: “He [partner] ended up with going and buying the most expensive stuff” (Interviewee 2) or “*Husband* just one afternoon, just shot off to the supermarket and the only way he guessed about formula is that she brought the most expensive. He figured it to be the best” (Interviewee 9).

Interviewee 1 used the formula that she believed was used in the hospital and Interviewee 2 found out what equipment people were buying on TradeMe and used that as a guide: “I thought if everyone is buying it then maybe it’s good”. Interviewee 5 felt more confident buying equipment and formula made and certified in New Zealand. Interviewee 10 chose a formula specifically because it was labelled ‘Gold’. Others, as we have seen, were guided by family and friends and, on rare occasions, recommendations by health professionals. There is no complete marketing vacuum around breast milk substitutes despite the WHO code. Through price, packaging and word of mouth, companies can still send messages and consumers will still differentiate products.

Where do mothers bottle-feeding a young infant want information made available and by whom?:

Having listed the information sources, both good and bad, that they used to bridge their information gaps, interviewees were given the opportunity to state where they felt information should be available.

Some interviewees returned to antenatal education and again stated their preference for information to be made available then: “I think antenatal is a big thing. I think it should definitely be able to be discussed. I know the World Health Organisation would not like that but that is just my opinion” (Interviewee 3) or “Maybe someone could come in [to antenatal classes] and show us how to bottle-feed a baby, show us how to make up formula, show us how to sterilise the bottle” (Interviewee 4).

There was also support for a pamphlet or sheet, preferably as part of a take home pack from the hospital or some other related organisation: “They could give you a pack the first time and they could have it [pamphlet] in the pack so you have all the right information” (Interviewee 7), “In *hospital name*. Definitely. Like when you have just had your baby. You know a booklet or something like that would be quite good” (Interviewee 6), “When you join the Parents’ Centre they give this, the same like, five or so sheets from Watties and Plunket with the coloured sheets with the food, you know, the baby can eat this at this time. Why can’t they put something like that out about formula?” (Interviewee 5) and “You know those packs from *hospital name* and you get all those little brochures about this and that, samples and bits and pieces. A little handbook or something there would be good” (Interviewee 3).

Many interviewees never anticipated needing information on bottle-feeding and were caught completely off guard when they had to seek it. This was amplified by being emotionally and physically tired and stressed at the time when they suddenly realised they would be bottle-feeding. Many interviewees clearly felt that, even if they didn’t think they needed it at the time, they would have been better prepared had bottle-feeding information been made available at an earlier time. Interviewee 6 and interviewee 8 sums up this position: “I think as a first time mother the more

information you get, even if you don't look at it, you still got it there if you need. That's the kind of thing that would be invaluable for most women" (Interviewee 6) and "I read a lot before she was born but I didn't have a bottle of formula in the house. Actually the need to top up is pretty common but I didn't feel I needed to have anything and that's not real for many people. I think it [information] should be made available [at antenatal]" (Interviewee 8).

Did you ever consider the Library?

Did mothers go to the Library to look for information on bottle-feeding?

One information source that was not used by interviewees was a Library. Interviewee 6 mentioned that she had looked for items in her local Parents' Centre library but had been disappointed to have found nothing on the topic of bottle-feeding. Only two interviewees named books as a source of information and only three interviewees named websites.

Some of the interviewees were library users but they simply did not think to look for information about bottle-feeding there: "I certainly go to the Library but I assumed there wouldn't be anything there" (Interviewee 3), "Well I love the Library. I have a Library card and so does my daughter. We go to the Library an awful lot, especially for kids' books. Much easier than buying them all the time. So I go there for books that I want to read or something. I didn't know that they had a section on parenting books" (Interviewee 4) and "I honestly hadn't thought of looking there [Library] for information on bottle-feeding. It hadn't crossed my mind to be honest" (Interviewee 8).

Some interviewees simply were not Library users: "I don't have a Library card. I didn't even think about going to the Library" (Interviewee 10), "I don't really go to Libraries very much" (Interviewee 7) and "If I want a book I buy it. I just wouldn't go to the Library" (Interviewee 9).

Interviewee 2 felt that the public nature of a library was a barrier: "Because it [Library] was public. I didn't really want anyone else to know that I was considering bottle-feeding". However, Interviewee 4 felt that an advantage of the Library was the

ability to find information privately without needing to talk to someone else: “You do not have to ask a librarian. You don’t have to ask anybody. You just need to go and find a book. They have got a catalogue so you don’t even have to ask them where the books are”.

Interviewee 5 felt that searching the Internet was quicker and easier: “It never crossed my mind to seek information in a library. And I think that, like you have got it at your fingertips, all the up to date information [on the Internet]. You just type in a keyword and its there for you”. This is a surprising statement considering that Interviewee 5 also stated that she “couldn’t be bothered with websites”. Interviewee 5 did make another statement, however, that suggested this was related to a perception that library material was not up to date, and included a charge, as opposed to having a good experience with Internet searching: “If you want a book that’s recent and up to date you have to pay for it and most are not [up to date] that I have looked at”.

Reactions to information sourced in a Public Library and/or found by a Librarian:

To highlight the information that libraries could help connect interviewees to, interviewees were asked to examine some examples of resources. Two examples where books written specifically about bottle-feeding in New Zealand and sourced from a local public library:

Ferguson, A. (1998). *Bottle babies : a New Zealand guide to guilt-free bottle-feeding*. Auckland, NZ: Celebrity books.

Derry, N. (2008). *Make mine a bottle*. Porirua, NZ: National Pacific Press.

One was a booklet published by the Ministry of Health but also available online at www.healthed.govt.nz

Ministry of Health, & Plunket (2008). *Feeding your baby infant formula*. New Zealand: Ministry of Health.

Two were websites:

The New Zealand food safety authority: Safe feeding for infants

<http://www.nzfsa.govt.nz/consumers/low-immunity-child-pregnancy/safe-feeding-for-infants/index.htm>

The International Formula Council: Infant Feeding and Nutrition

<http://www.infantformula.org/>

No interviewees were aware of the two books examined. No interviewees were aware of the two websites examined. Only two interviewees expressed familiarity with the Ministry of Health booklet. One had seen a copy in her midwife's rooms but was not given a copy. One had been given a copy by their midwife and was very impressed with it as a resource. Of the eight remaining interviewees, all expressed surprise and anger that such a resource existed, was developed by the Ministry of Health in conjunction with Plunket, and had not been made available to them.

There was also surprise at the existence of books written specifically for bottle-feeding in New Zealand. Interviewee 7 was typical of the reaction of many

interviewees: “I didn’t think they [the Library] would have books on bottle-feeding. Only because there are more [books] about breast-feeding. I didn’t think they would have books... I think they [the books] would be something I would use. I will have to go more to the Library”. This was a complete change from her earlier comment that she did not go to the Library much.

Increasing awareness - how Libraries might better market their resources to mothers:

Having seen what resources could be made available to them, including virtual resources as well as books, some interviewees expressed a need for libraries to make these resources more visible: “Make them [parenting books] more readily available and in your face so you can see them. You don’t have to try searching them out and feel silly about asking someone. It is more obvious in your face and I think it gives you more power” (Interviewee 6) or “I know all about non-fiction, mostly on the top floors, but I stay out of there. I see the kids’ books. I just never thought of the parenting side of things and I didn’t think about the parenting section” (Interviewee 4).

One suggestion to increase visibility was to bring all parenting resources together in a special section rather than have them scattered: “A destination area for mothers to get that kind of thing. They need their own area. When you go and have a look through the Library they [books] are just everywhere” (Interviewee 1). Parenting books displayed in the children’s section did get noticed: “It [small display of parenting books in children’s section] is wonderful but it is not big enough, that wee display in the corner. Maybe they have got more somewhere else” (Interviewee 4).

Interviewee 3 was impressed with the virtual resources and talked about the possibility of libraries promoting these through their website concluding that: “Probably something online would be much more user friendly for the general Mum”. Her reasoning was that leaving home with a young baby was difficult, especially if having feeding problems: “It’s a huge thing to pack up your baby and go out to visit your mother for two hours. You just have so many things to think about... So I wouldn’t have gone trucking into the library”. She also added: “If you could get books sent out to you that would be helpful”.

Making libraries more attractive to mothers with young infants, especially those who bottle-feed:

The last question asked interviewees to consider whether they felt libraries could genuinely play a role in helping inform mothers bottle-feeding young infants. Having seen some resources many interviewees were positive about the role of the Library as an information source provided that the resources became more visible and the Library made them feel welcome.

Some suggestions on how to achieve this focused on the physical layout of the Library and how it could become more inclusive: “Just providing a space to bottle-feed your children in the Library... You have all these breast-feeding areas... but what about us bottle-feeding Mums? I mean sometimes we don’t want to be sitting in public bottle-feeding our babies” (Interviewee 2) or “I think they should expand the children’s section. They probably don’t have a budget to do it, but I think they should have a wee place to breast-feed or bottle-feed. Like a feeding sort of area... Maybe a

separate room, like a parents' room, that has changing facilities, places to breast-feed, bottle-feed, like a bottle warmer" (Interviewee 4).

Interviewee 4 also stressed the need for libraries to be an inclusive community space for all mothers that help facilitate the development of mother networks: "A big area where all the Mums can come together and they could have Mum meetings there, or coffee groups there, or things like that, and then you are right there and your older kids can go into the Library and, you know, it is a community thing. They have a teen space so why not a parent space?" Interviewee 5 also expressed the potential for libraries to become community spaces for mothers to meet. She felt this would make libraries more attractive to visit: "The best thing a library could do is have a mothers and babies session morning because I wouldn't go to the Library just to look at books. I would go more actively if I was part of a group".

Both Interviewee 4 and Interviewee 7 suggested bringing more parenting books into the children's section to increase visibility and accessibility: "Maybe they could have a stand, like you know, where they have books. Probably it would be in the children's section" (Interviewee 7) and "If they [the Library] brought their parenting books down and have them in that section, in the kids' [children's] section, I think it would be better" (Interviewee 4).

Suggestions on how to better market resources were also made by some interviewees. Interviewee 8 expressed the potential for libraries to become partners with Plunket: "Maybe letting Plunket or the local Plunket nurse know what the Library has. Then they would be able to send on [parents]". Interviewee 4 suggested expanding on the

marketing already present in the packs given to mothers after the birth: “I think in the bounty pack, right after you have had your baby, they have like the form to fill out to get your baby a library card. So maybe they could have something in there. They could say for a range of parenting books on everything possible here is where you go, this section of the Library offers you this”.

Do mothers see libraries as a potential provider of quality information on bottle-feeding?

Interviewee 4 expressed the most enthusiasm for using the Library in general and was very supportive of the Library having a role in informing and supporting mothers bottle-feeding young infants. She was already a confident user of the Library and clearly trusted it as a provider of information. She saw the Library as a positive place that was inclusive and non-judgemental: “There probably are that many different people, with that many different ideas and religions and needs and all that sort of thing, who are in there every day mingling and talking and stuff like that so I think it [the Library] could be a neutral space for bottle-feeding parents or breast-feeding parents. Just parents”.

However Interviewee 10 sums up the general impression most interviewees gave about where they wanted their information to come from: “I don’t know if a Library is the place to put things about feeding children. I kind of think hospitals, you know, you think hospitals and doctors’ rooms and things like that when you think of that kind of information”.

Discussion

Comparison to similar research:

In 2005 Lee and Furedi studied the experience of British mothers who used infant formula in the early months (Ellie Lee & Furedi, 2005). Part of their study examined the information and advice that these mothers were given. Their findings are strikingly similar to the experiences of the interviewees in this study:

1. A difference in the tone between the delivery of breast-feeding information and bottle-feeding information.
2. At antenatal education formula was only talked about as clearly a second choice. Often it was not talked about at all.
3. Parents had to be self sufficient and seek out the information for themselves. They could not rely on health professionals.
4. Some sources moralised and only gave advice begrudgingly.
5. Unofficial sources, such as friends and family, were often turned to for information.
6. Manufacturers of formula were not a common source for information.
7. Parents wanted practical information about how to “do it”.
8. Parents wanted information on different brands and types of formula and the types of equipment available.
9. Parents wanted to know that the formula was safe.
10. Parents who intended to breast-feed were particular susceptible to feelings of being stuck and confused.
11. Bottle-feeding was for many a lonely and isolating experience.

Mirroring the participants in Lee and Furedi's study, interviewees were also surprised when breast-feeding didn't go as planned. Likewise interviewees found this failure, and the lack of information and support that followed it, a lonely and isolating experience. Lee and Furedi believed this was because women were unprepared for bottle-feeding and did not have sufficient information to guide them (Ellie Lee & Furedi, 2005). If Lee and Furedi are correct then this might explain why these negative feelings seemed to be less common in the two interviewees who decided to bottle-feed from birth. They were not taken by surprise, they knew they were going to bottle-feed and were mentally prepared for that. They also had the equipment and formula ready. It is also possible that those interviewees who attempted and failed to breast-feed had bought into the 'breast is best' ethos more strongly than those who chose bottle-feeding from birth. Having that conviction that breast-feeding is vital to the wellbeing of your child, and is central to good mothering, means that failure to do so will be harder to handle. One interviewee expressed this connection like so: "I assumed that I was going to have the perfect birth, perfect baby and perfectly be able to breast-feed. So I felt extremely guilty and terrible about the fact I couldn't" (Interviewee 3).

Lee and Furedi's study also reinforces what interviewees identified as problems with infant-feeding information at antenatal education, namely lack of disclosure over breast-feeding problems and lack of bottle-feeding information in general. In attempting to encourage breast-feeding are health professionals setting parents up with unrealistic expectations because they fear parents will not chose to breast-feed if they know what potential pitfalls they might encounter? It is not in the scope of this

study to answer this question but research funded by the Royal New Zealand Plunket Society did come to the conclusion that when informing parents about breast-feeding there was an absence of information around identifying and dealing with problems (Basire, et al., 1997).

Connection between information and emotion:

Interestingly, Lee and Furedi go on to draw a direct line of relationship between lack of information on formula and feelings of being marginalised and vilified felt by mothers who bottle-feed (Ellie Lee & Furedi, 2005). There is some evidence from the interviewees in this study that they also felt that lack of information on bottle-feeding had a negative impact on them emotionally: “I just can’t understand why they didn’t [give information on bottle-feeding]. You just feel so much alone. Why would they do something like that purposely? But they do, they make you feel alone, lost. Not listened to. God, just listened to, you know, without judgement” (Interviewee 4); “It reinforced that I was a bad mother because I couldn’t find any information about it, anywhere. I mean this is 2009 nearly 2010, there is information about everything everywhere except bottle-feeding” (Interviewee 2) and “I did find it really frustrating that it was so hard to find information, but you just couldn’t” (Interviewee 8).

The problem with formula companies as information sources:

Another parallel between Lee and Furedi’s participants and the interviewees in this study was the non-use of formula manufacturers as information sources. For some interviewees, formula companies lacked credibility as an information source because of a perceived conflict of interest and this was why they were never contacted. It might also be that, because the WHO code limits how much formula company

information lines can be marketed, especially to mothers with newborn babies, many interviewees were simply unaware of them. Lee and Furedi argue that lack of awareness was a major barrier to connecting mothers to formula companies (Ellie Lee & Furedi, 2005).

Summary of major themes:

Lee and Furedi's study helps confirm some of the major themes that have been identified in this study. Women who bottle-feed young infants enter the information-seeking process usually, although not always, with an already weighty sense of guilt and anger. They are likely to have a heightened sensitivity to being judged. They are likely to be well informed of the benefits of breast-feeding and the risks of bottle-feeding. However, they will not feel adequately prepared to bottle-feed their infant, particularly if bottle-feeding is the result of breast-feeding failure. It is unlikely that any information on bottle-feeding would have been given during antenatal education classes.

The importance of trust in an information source

Lee and Furedi (2005) is not the only example of research that addresses the information-seeking habits of new parents. Gildea, Sloan and Stewart (2009), also examined what sources of feeding advice were valued by parents in the first year of an infant's life. In their research, parents overwhelmingly valued advice from health professionals. They cite other research which also concluded that parents wanted support from trained health professionals with up-to-date information (Family and Parenting Institute as cited in Gildea, et al., 2009). However, they note that professional and managerial occupations were over-represented in their sample and

that there is research that suggests that working-class parents are less likely to seek information from health professionals (Edwards & Gillies as cited in Gildea, et al., 2009). Since the socio-economic status and occupation of interviewees in this research was not recorded, we cannot draw any similar conclusions. However, Gildea, Sloan and Stewart (2009) do offer some insight into why networks of mothers, family and friends are often favoured sources of information for mothers bottle-feeding a young infant: “Advice from networks of family and friends has the advantage of being accessible. Such networks are most valued and trusted, especially by those who find social or health-related services difficult to access” (Gildea, et al., 2009, pp. 29-30). Many interviewees indicated that as mothers bottle-feeding a young infant they did find health-related services difficult to access. They felt judged by some health-professionals for not breast-feeding. They did not always receive satisfactory answers to their questions. They felt compelled to turn to sympathetic and more accessible sources, such as family, friends and other mothers, despite often knowing the limitations of their advice.

Health professionals as information sources- problems encountered:

While health-professionals were often cited by interviewees as sources of information that were not helpful, many interviewees also understood the limitations of the unofficial sources they turned to instead. This is significant because the health of a young bottle-fed infant is strongly linked to applying best practice in the storage, mixing and disposal of formula coupled with best practice in the cleaning and sterilisation of bottles and other equipment. There is an inherent danger in learning these skills from non-professional sources. Misinformation and inappropriate practices may be passed on from generation to generation (Cairney & Barbour, 2007;

Gildea, et al., 2009; Lakshman, et al., 2008). We know that many interviewees expressed a desire for more support and information from professional sources. The fact that so many professional sources seemed to fail in providing even the most basic of bottle-feeding information to some interviewees could have had drastic consequences for the newborn baby. This is certainly the conclusion of Lakshman, Ogilvie and Ong (2009) who strongly argue that babies are being put at risk by the lack of professional support for mothers bottle-feeding young infants.

The seeming lack of empathy from some health-professionals was a significant problem for some interviewees. It often led to advice which in turn led to further confusion and uncertainty for the interviewees. The case of Interviewee 8 is particularly revealing. Interviewee 8 clearly felt that the information she really needed, that breast-feeding was not working and she needed to try formula, was purposely withheld from her by the midwife. Instead the midwife insisted on giving her information about breast-feeding and milk supply and talked about the need for perseverance. Interviewee 8 encountered a disconnect between the information being supplied by the midwife (that things will improve with time) and what she was actually experiencing (that things were not improving). This is reminiscent of Crossley's experiences (Crossley, 2009) or more accurately, the experiences of Crossley's partner: "...he felt 'very frustrated; with this at the time because he claimed he 'would never believe a theory over something that was quite obviously happening'. From his perspective, the breast-feeding 'quite obviously wasn't working'. Moreover, it seemed to him that the midwives were 'making *outlandish* claims that couldn't possibly be true'..." (Crossley, 2009, p. 80).

There are indications that health professionals are questioning certain practices in relation to breast and bottle-feeding. Cloherty, Alexander, & Holloway (2004), in examining supplementation of breast-fed babies, discuss the conflict many midwives face between promoting breast-feeding and alleviating a mother's distress. Battersby (2000) discusses the dangers of pressurising mothers to breast-feed and how some midwives now feel uncomfortable talking about the benefits of breast-feeding for being misunderstood as trying to force it. Edwards (1998) draws attention to how the WHO code has been misconstrued and used to justify not providing access to information on formula when that was not its intent.

The experiences of the interviewees suggest that health professionals ultimately choose to supply information and support based on personal rather than professional convictions. This led to inconsistencies where some interviewees found their midwife, family doctor or Plunket nurse to be a positive source of support and information and others did not.

Should information on bottle-feeding be made available to women who have decided to breast-feed or are undecided on an infant feeding method?

Interviewees were all similar in that they felt there was an imbalance in how they were informed about infant-feeding prior to and after the birth of their child. They were all similar in being sceptical about how the 'breast is best' message is delivered. Most accepted that breast-feeding was the best way to feed an infant but they felt that the negative aspects of breast-feeding were too often glossed over while formula was made out to be far worse than it was. Interviewees were acutely aware of how little information about bottle-feeding was made available by health professionals because they could directly compare it to what was made available about breast-feeding. The

general lack of information on bottle-feeding antenatally, combined with the perceived misinformation around breast and bottle-feeding from health professionals and the media, made interviewees feel that when it came to infant-feeding they had not been given the opportunity to exercise informed choice.

As highlighted in the literature review (pages 21-23), these experiences and feelings are in keeping with what other research has revealed. Knaak (2006) is particularly critical of how infant-feeding is framed by the health sector. All the points made by the interviewees; that information on infant-feeding is purposely biased towards breast-feeding as the only choice, that there is selectivity in what information, on both breast and bottle-feeding, is shared and when, and that the risks of formula use are exaggerated, are echoed by Knaak. Knaak argues that this approach does undermine autonomous choice and is a barrier to developing policies and practices that truly support breast-feeding mothers while easing the emotional burdens that current practices place on mothers who bottle-feed.

Likewise Bean (2004) questions whether current practices around the promotion of breast-feeding have turned into a moral crusade that undermines informed choice. Bean is especially critical of the UNICEF/WHO Baby Friendly Initiative which, she argues, is a barrier to bottle-feeding mothers receiving the information and support they need. In particular, Bean notes that bottle-feeding discussions are not held at antenatal education classes because of a perceived fear that it will normalise and encourage bottle-feeding despite there being research to the contrary (Cairney & Alder, 2001 as cited in Bean, 2004). Bean, like Knaak and the interviewees, is also highly critical of how mothers are pressured into breast-feeding by health

professionals and the destructive effect this has on mothers who do not breast-feed. Bean agrees with the interviewees that in the current climate mothers who bottle-feed their infants are being charged as poor mothers. According to Bean, breast-feeding advocates are in denial of the reality that not everyone will want to, or feel rewarded by, breast-feeding, no matter what support is put in place for them. Bean concludes that, contrary to the prevailing discourse around breast-feeding and choice, bottle-feeding can be “a rational, sensible and safe choice. It is also a choice which many mothers make without adversely affecting the health of their babies” (Bean, 2004, p. 157). This articulates what many of the interviewees tried to express about their decision to bottle-feed: that there are circumstances when choosing to bottle-feed is a rational choice, not deviant behaviour.

The impact of the WHO code on informing parents around bottle-feeding antenatally:

On page 13 it was noted that the WHO code does restrict what health professionals can and cannot say regarding bottle-feeding and where and how they should be saying it. In brief, should a request for information on bottle-feeding be made by someone *who has made* the decision to bottle-feed then that information may be provided on a one-to-one basis and in a factual manner. This does limit antenatal educators from answering questions on bottle-feeding in a class atmosphere. Interviewees found this frustrating, however, as this precluded being prepared for every eventuality and assumed that should a mother decide to breast-feed then there would be no foreseeable need for bottle-feeding information. On the contrary, eight interviewees tried and failed to establish breast-feeding and many then also found themselves totally unprepared for bottle-feeding because it was not taught antenatally. Many

interviewees also found that in spite of having made the decision to bottle-feed their infant they still found the various health professionals they came into contact with reluctant to help support that decision with information. In short, the assumption that when needed, information on bottle-feeding will be readily available may not match reality and, this may be more the result of personal opinions among health professionals than implementation of the WHO code.

What do parents who are bottle-feeding a young infant want from an information source:

Empathy was an important trait that the interviewees wanted in an information source. They knew the limits of some of their favoured information sources but still valued any information that was given in support of their decision to bottle-feed and that made them feel better about themselves. In many ways, the best information sources served a dual purpose for mothers bottle-feeding a young infant. They provided practical information to reduce risk and they helped relieve the guilt and anger. Within this context there is clearly a connection between information-seeking and emotion. Interviewees clearly wanted to avoid information sources that they perceived to be hostile or judgmental. On the other hand, they continued to seek out information sources that were understanding, compassionate and, where possible, had shared similar experiences. It also highlights how emotionally vulnerable the interviewees were and how any negative comment, even when made with the best intentions, could completely turn them away from an information source. (Brashers, et al., 2002) also conclude that people actively seek out information to help them maintain good health. That they want to know about potential risks and seek information on how to best minimise them. The researchers also recognise that not all

information will decrease uncertainty although that is the desired outcome of the information seeking process. They argue that support networks of friends, families and health care providers, can be important for exchanging information that helps facilitate coping. They also argue that information avoidance is also a coping mechanism. They conclude that seekers of health related information often have to delicately balance their need to find information to reduce risk against a need to avoid information to reduce anxiety. This same attempt to get balance can be recognised in the information seeking behaviours of the interviewees.

Moving from uncertainty to understanding:

Kuhlthau's *Uncertainty Principle* (Kuhlthau, 1993) states that uncertainty is a cognitive state that can cause negative emotions such as anxiety and is often associated with lacking knowledge on a topic or question. Increased confidence occurs as the individual attains more knowledge and thus moves from uncertainty to understanding. It seems reasonable to conclude that the interviewees were in a state of uncertainty during the initial stages of establishing bottle-feeding. This was due to a number of factors including; uncertainty around the safety of formula feeding, lack of antenatal training, lack of professional support, and lack of clear instructions on how to use formula. This uncertainty, however, was often reinforced through the information seeking process, rather than dissipated. This occurred when health professionals refused to support the decision to bottle-feed and/or only begrudgingly gave advice. This occurred when interviewees were constantly reminded that they had chosen "second best" for their babies. This occurred every time interviewees looked for information only to find that there was nothing available or what was

available was not comprehensive. These circumstances only served to exasperate the feelings of guilt and isolation that these mothers already felt.

However, when an interviewee encountered a friend, family member or fellow mother who had knowledge and was willing to share it in a non-judgemental manner, they felt better and their confidence grew. When coupled with their own positive experiences of using formula, the result was to help interviewees move from the uncertainty state to a state of understanding, and confidence levels increase accordingly.

Kuhlthau's Uncertainty principle includes six corollaries. One of the corollaries is the redundancy corollary. Redundancy may occur as uncertainty decreases and information that does not fit into what is already known is considered either relevant or irrelevant. It can be argued that once interviewees began to move towards understanding, information about the dangers of bottle-feeding and the superiority of breast-milk become redundant. As they watched their formula-fed children grow without ill effects, as they talked to other mothers who used formula effectively, and as they experienced less stress, they became more sceptical of the "breast is best" message. They become more certain that for them "breast was not best". For many this conviction then extended to subsequent infants. This also links to Kuhlthau's prediction corollary which states that information choices, such as where to seek information and what information to seek, are based on previous experiences. This can be observed in the choice of one interviewee to not use Plunket for a subsequent infant after having had a bad experience with her Plunket nurse over bottle-feeding her first infant. It can be argued that the interviewee predicted that seeking

information from Plunket for her second infant would not be useful and thus discounted Plunket as an information source altogether. An inability to predict the outcome may also effect the information seeking process. Many interviewees spoke of their fear of being judged and how they were often reluctant to talk to people about bottle-feeding unless they knew what the reaction would be.

Is there a role for Libraries to help provide information to mothers who bottle-feed young infants?:

Interviewees did not use the Library as a place to find information on bottle-feeding. There was a general lack of awareness that the Library could provide resources on bottle-feeding. There was a general lack of awareness that a Librarian was an individual who could connect them to information sources. Some interviewees did use the Library for recreational reading.

After considering examples of information, either found at a public Library or located on the Internet by a Librarian, some interviewees did feel that the Library might have a role to play. Many felt, however, that it was the Library's role as a community space, rather than as an information provider, that was more valuable, although some interviewees felt that if they had known about the parenting resources the Library had in its collection they would have used them. Interviewees often felt that the Library needed to do more to market these resources and not simply rely on mothers knowing to look for them and having the ability to find them using an online catalogue.

When studying parents and their information needs, (Nicholas & Marden, 1998) also concluded that parents, even those who regularly use Libraries, did not see Libraries

as a key information source of parental information. They argued that this could be explained by:

- Libraries not being open when needed
- Only seen as resources of print information and not as providers of advice
- That parents were reluctant to discuss personal problems with people they hardly knew or who may not understand

((Nicholas & Marden, 1998, p. 46)

This matches comments made by the interviewees. Some interviewees did not use books as an information source. Many interviewees spoke of not wanting to disclose that they were bottle-feeding their infant to anyone where they could not predict the reaction. Interviewee 2 spoke directly of her reluctance to talk to a Librarian about bottle-feeding for fear of being judged.

Ultimately, like the interviewees, Nicholas and Marden suggest that the role of the Library need not be to provide information but to be a place that connects parents to each other.

Warner and Procaccino (2004) see the role of the Librarian as a mediator. Warner and Procaccino note that despite increasing movements toward electronic information there is still a need for mediation to occur face-to-face. They see the Librarian as someone who can offer this human interaction. They also conclude that outreach into the community is the most effect way for Libraries to achieve this.

The role of a mediator:

The role of mediator, as used by Warner and Procaccino, is another Kuhlthau concept that is useful for understanding why many interviewees turned to family, friends and other mothers for information. Kuhlthau describes the role of mediator as “human intervention to assist information seeking and learning from information access and use” ((Kuhlthau, 1993, p. 128). Kuhlthau discovered that during the uncertainty period of the information seeking process informal mediators were often selected because they understood the uncertainty and could offer encouragement, they could be a good sounding board to talk about a topic and they were accessible. However, the limitations of informal mediators in providing professional guidance were recognised by Kuhlthau’s information seekers. Likewise, the interviewees often recognised the limitations of their informal mediators and wanted professional mediation as well. Librarians are well placed to provide both informal mediation, for instance by providing parents spaces to facilitate informal communication, as well as formal mediation, such as reference interviews and subsequent information retrieval.

Why it is important for Libraries to be more than just books:

Parents turn to a wide variety of information sources but tend to favour those that provided information orally ((Nicholas & Marden, 1998). Similarly, a study of parents seeking health information in the age of the Internet (Khoo, et al., 2008) concluded that parents still preferred traditional sources of health information and often do not trust information from the Internet. This may explain why online forums and message boards were considered useful by the interviewees. They are electronic versions of an already trusted source- a network of mothers, family and friends.

Websites, however, were considered a different type of information source despite both being online and often hosted on the same domain.

While a Library's print and electronic resources are important they are not necessarily what Library users seek from their Library. In the case of the interviewees, there was little desire to use the library for information on bottle-feeding. Instead, most interviewees spoke repeatedly of their frustration at not being able to get information from their preferred source- health professionals. However, interviewees were positive about the role Libraries could play as a place that facilitated information sharing. This could be providing a space for mothers to meet, providing programmes where health professionals could be guests, or providing outreach to mothers who felt they could not come to the library e.g. virtual resources and book delivery.

Libraries are also about Librarians and Library Assistants. Mothers who bottle-feed young infants need understanding and compassion. It is important that Library staff who are approached by mothers to find information on bottle-feeding understand the emotional baggage that the mother may be carrying and be sensitive to that. The mother may be reluctant to speak for fear of being negatively judged. On the other hand, she may want to talk about her situation and to vent her frustration. Collection staff need to ensure that the Library contains a variety of infant feeding books including some on bottle-feeding. Library staff need to be aware that visiting the parenting section may be difficult for a mother seeking information on bottle-feeding if all she encounters are books on breast-feeding.

Conclusion:

What are the experiences of New Zealand mothers of young infants when seeking information on using breast milk substitutes (formula)?

The experiences of the interviewees in this study suggest that seeking information on bottle-feeding in New Zealand is very similar to the experiences recorded in overseas studies. Interviewees received no information at antenatal classes. Interviewees were well informed of the benefits of breast-feeding but were less aware of common breast-feeding problems. Interviewees knew of the risks of using formula but had very little information on how to best minimise those risks.

The decision to bottle-feed was a difficult one for most interviewees to make. Most felt guilty and feared being judged a bad mother for not breast-feeding. Many encountered significant barriers to finding information including:

- Reluctance from health professionals to provide information even after the decision to bottle-feed was made
- Lack of information about or from formula manufactures, most likely because of compliance with the WHO code.
- Fear of being ridiculed or judged a poor mother
- Lack of awareness of alternative sources of information such as parenting sections in Libraries

Interviewees who experienced breast-feeding failure felt unprepared for bottle-feeding. They felt that something should have been provided during antenatal

education and were angry with the WHO code which they perceived to be the main source of the problem.

Overall, interviewees questioned whether they had been allowed to exercise true informed choice over how to feed their infant. They felt that the information they received on infant feeding was unbalanced and bias towards breast-feeding. They did not question the health benefits of breast-feeding but did question whether breast-feeding is always the “right choice” for a family.

What are their information needs and how do they seek to fill them?

Interviewees wanted information that accurately answered the “how to” questions around preparing, feeding and storing formula. They also wanted information that helped them minimise risks. They wanted information sources to be understanding and non judgemental. Many interviewees also understood the importance of accurate, professional advice.

Health-professionals were not helpful sources of information for most interviewees. Although most health professionals were probably well meaning, their inability to accept when breast-feeding had failed and to adequately support the interviewee’s decision to bottle-feed, often destroyed trust and served to reinforce the negative feelings an interviewee felt.

In the absence of professional sources of information, many interviewees turned to mother networks, family and friends. However, many interviewees recognised the limitations of these sources and still wanted professional advice as well. Interviewees

valued these alternative sources of information because they were less judgemental, were more accessible, gave direct answers and helped interviewees feel better about bottle-feeding.

Drawing on Kuhlthau's Uncertainty Principle, we can see that interviewees favoured information sources that help them move from uncertainty to understanding. As interviewees experienced positive outcomes from bottle-feeding, and became more confident in their decision to bottle-feed, information about the benefits of breast-feeding and the dangers of bottle-feeding became redundant. The information seeking process was also affected by how interviewees predicted a source would react to an information request. When in doubt interviewees chose not to engage.

Interviewees did not seek out information at the Library. Some were not Library users. Some only used the Library for recreational reading. The Internet was also an information source that was not used by the majority of interviewees although some enjoyed talking to other mothers through message boards and online forums.

Interviewees did not contact formula manufactures for information.

What emotional impact does the information seeking process have on this group?

Emotion played a central role in the information seeking process of the interviewees:

- The negative emotions most interviewees felt acted as a barrier to approaching information sources, especially where the interviewee couldn't predict how the source would react to their request.

- Information sources that helped relieve negative emotions were valued as helpful by all interviewees. This was regardless of the credibility of the information source.
- Information sources that reinforced negative emotions were not valued as helpful. This was also regardless of the credibility of the information source.
- Ideally, interviewees wanted information sources that were both credible and helped relieve negative emotions.
- Interviewees constantly had to find the balance between seeking information to reduced risk and avoiding information to decrease anxiety. Thus the interviewees often felt vulnerable during the information seeking process.

What role can Libraries play in helping this group make informed decisions?

Interviewees were clear in what they wanted Libraries to do:

- To become inclusive, community spaces for mothers to network
- To provide outreach for mothers unable to travel to the Library
- To market their parenting books more and make parenting books more visible to mothers who visit the Library
- To work with health-professionals rather than set themselves up as an alternative to them for health information.

Essentially Libraries can help mothers of bottle-feeding infants by supporting the information networks that they are a part of, rather than trying to replace them. They potentially can achieve this by becoming information mediators rather than simply information sources.

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Substitutes Available from

http://www.who.int/nutrition/publications/code_english.pdf

Appendix 1

Interview questions:

- 1) Please begin by telling me about how you made the decision to bottle-feed your infant.
- 2) As you think back to when you made the decision to use formula, and the period immediately afterwards, can you recall any moments of uncertainty, concern or worry?
- 3) During the situations you have identified, what gaps in your knowledge were highlighted?
- 4) What emotions did you feel as a result of these gaps in your knowledge?
- 5) Where did you turn for help? What sources of information did you (either successfully or not successfully use?
- 6) What sources were particularly helpful and why?
- 7) What sources did not help and why?
- 8) How did the information seeking process itself influence how you made sense of your situation and the feelings you had?
- 9) Did any information you were given change how you felt?
- 10) Where should information on bottle-feeding be made available and how should it be presented?
- 11) You indicated that you used a library to help find information on bottle-feeding. Was the Library helpful? Please explain.

OR

You don't mention Libraries as a place you used to find information on bottle-feeding. Can you explain why?

- 12) Here are some resources on bottle-feeding that I found at the Public Library and on the Internet. Are you familiar with them? Please have a look at them and give me your thoughts on them.
- 13) In your opinion how could Libraries help bottle-feeding mothers?