

Sub-optimal breastfeeding experience  
and its effects on women, factors  
affecting initiation and duration of  
breastfeeding in Ireland

Thesis submitted in fulfilment of the requirement for  
the Degree of Doctor of Philosophy at the University  
of Dublin Trinity College.

2012

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## Declaration

I hereby declare that I conducted all the work represented in this thesis. The thesis has not been previously submitted to this or any other University.

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Louise Gallagher

## **Sub-optimal breastfeeding experience and its effects on women, factors affecting initiation and duration of breastfeeding in Ireland**

### **SUMMARY**

**Background:** There is extensive evidence for the long and short-term benefits of breastfeeding for both the mother and infant. This has led to global and national support for encouraging its commencement and continuation. Breastfeeding an infant is also said to be symbolic for some women in validating their womanliness and motherhood. Rates of initiation and duration of breastfeeding in Ireland are among the lowest in Europe. National and regional studies also show that very few women in Ireland who initiate exclusive breastfeeding continue to do so for the recommended six months, or continue to breastfeed thereafter in combination with complementary foods. Despite the publication of national policy documents, comprehensive national information regarding infant feeding practices in Ireland has been limited.

**Aims:** This study was designed to examine rates of exclusive and partial breastfeeding at 48 hours after birth, 3-4 months and 6-7 months postnatal and to identify factors that influence a decision to breastfeed. It also aimed to explore unsatisfactory breastfeeding experiences among the survey group, and the potential impact that these might have on future infant feeding choices for those women who discontinued breastfeeding in the early postpartum period.

**Methodology:** Mixed-methods research, underpinned by a pragmatist philosophy, was chosen as the most appropriate method to address the research question as it enabled the development of a complete and full understanding of the factors affecting initiation and duration of breastfeeding. A sequential, embedded explanatory design was utilised to describe breastfeeding prevalence (quantitative survey, n=2,527 completing Phase 1 at birth), and factors affecting initiation (quantitative survey and qualitative interviews, n=15), in order to facilitate application of the results in a manner that could bring about positive consequences for breastfeeding in Ireland. Phase 2, at 3-4 months, was completed by 1,826 mothers (72% response rate) and Phase 3, at 6-7 months, by 461 mothers (71% response rate). A grounded theory approach was chosen to underpin the qualitative aspect of this study because of its ability to generate explanations to account for patterns of behaviour, thereby enabling the assignment of meaning to specific events around the breastfeeding experience. Fifteen women were interviewed 2 years after a sub-optimal experience of breastfeeding.

Findings: The results showed that the initiation and duration of breastfeeding in the study cohort remained well below other European countries, with just over half of the women initiating breastfeeding (56%) and less than one in five (19%) fully breastfeeding at 3-4 months of age. Exclusive breastfeeding was reported by 13% (n=61) of the 461 mothers who responded to Phase 3. This is just 6% of the 1002 mothers who responded to Phase 2 and who had breastfed their infants at birth.

The compelling relationship between maternal socio-demographic characteristics and breastfeeding initiation was once again demonstrated by the results of this study. Without exception, having a higher socio-economic status clearly favours breastfeeding at birth. In particular, mothers' health-insurance status mediates the effect of several other variables and has been found in this study to be an important factor in the determinant of initiation of breastfeeding initiation.

Vivid accounts of personal failure and guilt were portrayed by women who had had a suboptimal encounter with breastfeeding. Women defined this failure as not having achieved their breastfeeding goals in relation to the targets that they had set for themselves.

Findings from this study have confirmed that the messages currently conveyed around the superiority of breastfeeding also lead to significant guilt for women when they have a short and unsatisfactory breastfeeding encounter. Women in the present study viewed the widely adopted health-promotion message of 'breast is best' as a contributor to idealistic and often unrealistic notions of the ease of breastfeeding. The qualitative aspect of the present study highlights significant deficiencies in the current level and quality of postnatal support for breastfeeding. It is also evident that breastfeeding is inextricably linked to being a 'good mother', and that cessation compounds a sense of failure in both mothering abilities and the skill of breastfeeding. Furthermore, the results show that pain may have significant and long-lasting implications for mothers when considering future infant feeding choices.

Conclusion: The findings demonstrate multiple social and cultural factors pertinent to initiation and duration and have implications for breastfeeding promotion and policy together with delivery of existing antenatal and postnatal services. Achieving the recommendations of this study, designed to promote, support and change the culture of breastfeeding in Ireland will begin to bring about the significant shift required, to improve rates of breastfeeding initiation and duration.

## **Acknowledgements**

Firstly I would like to acknowledge the tremendous help, encouragement and support provided by my supervisors Professor Cecily Begley and Dr Mike Clarke. Thank you both for your generosity in sharing with me your infinite knowledge, your valuable insights, your enthusiasm for research, and your very precious time. A special thanks also to the women who gave their time to participate in this research. I feel very privileged to have been allowed to share in this journey with you in some small way.

Sincere gratitude to my wonderful colleagues at the School of Nursing and Midwifery for your support, friendship and generally for understanding what this journey is all about.

Special thanks to my dear friends Linda and Sally, whose consistent and unwavering support, not to mention wonderful sense of humour, literally kept me going. Thanks also to Shirley for the late-night walks that helped me to keep a clear head.

I am grateful to the Health Research Board and the Health Service Executive for providing the funding to undertake this study, without which I would not have been able to conduct the study full-time.

I am also hugely indebted to Tim Grant at CSTAR for statistics tuition and encouragement. You are a truly great teacher.

Thanks also go to my beautiful son Cian who has endured a distracted mother for quite some time, and yet has made this journey easy with a smile at the beginning and end of each and every day. Sincere thanks also to my parents, my sister Carol, my parents-in-law, my brother and sisters-in-law and my niece Shauna for the support, the endless offers of childcare and the sympathy when times were tough. Your support is what saw this project over the line.

Finally, I would like to thank my husband Conor. You have patiently endured the seemingly endless talk about this project. You never cease to make me believe that I can do anything. I couldn't have done this without you, thank you.

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## LIST OF ABBREVIATIONS

**BFHI:** Baby Friendly Hospital Initiative

**DOH:** Department of Health (until July 1997)

**DOH&C:** Department of Health and Children (replaced Department of Health, July 1997)

**EBM:** Expressed Breastmilk

**EC:** European Communities

**ESRI:** Economic and Social Research Institute

**EU:** European Union

**FSAI:** Food Safety Authority of Ireland

**HSE:** Health Service Executive

**LHO:** Local Health Office

**LLA:** Log Linear Analysis

**LLL:** La Leche League of Ireland

**OR:** Odds Ratio

**NALA:** National Adult Literacy Agency

**NPRS:** National Perinatal Reporting System

**PHN:** Public Health Nurse

**SPSS:** Statistics Package for Social Sciences

**UNICEF:** United Nations International Children's Fund

**WHO:** World Health Organization

**WHO/EURO:** World Health Organization Regional Office for Europe



# 1 Chapter 1: An overview of the thesis

## 1.1 Introduction

This chapter presents the background to this thesis and outlines the structure and format in which it is presented. It begins with a brief look at the significance of the breastfeeding experience for women and goes on to discuss specific benefits of breastfeeding for women, infants and society. The chapter also includes a brief exploration of the optimal duration of breastfeeding.

Breastfeeding is a biological act but is also known to be socially and culturally conditioned, meaning that the context in which it takes place is an important determinant of the behaviour (Scott & Mostyn, 2003). Perceptions of the significance of breastfeeding and its effect on women have been described in the literature from a wide variety of perspectives including feminist (Wall, 2001; Bartlett, 2005; McCarter-Spaulding, 2008), sociological (Murphy, 1999; Avishai, 2007; Wolf, 2007; Ryan *et al.*, 2010) and psychological (Manstead *et al.*, 1983; Wells *et al.*, 2002; McMillan *et al.*, 2008; O'Brien *et al.*, 2009). Britton (Britton, 2009) describes breastfeeding as an experience influenced by political, economic, social and cultural factors.

Breastfeeding an infant is said to be symbolic for some women in validating their womanliness and motherhood (Bottorff, 1990). In this regard, breastfeeding can be seen as not only important to the health and nutrition of women and infants, but as significant to the concept of motherhood (Cooke *et al.*, 2003).

### **1.1.1 Benefits of breastfeeding**

The established health benefits of breastfeeding to a nation have resulted in global and national support for encouraging the commencement and continuation of breastfeeding. There is extensive evidence of the benefits of breastfeeding for infants and mothers (Dyson *et al.*, 2005).

Two of the largest systematic reviews conducted into the effects of breastfeeding are those undertaken by Ip *et al.* (2007) and Horta *et al.* (2007). They concluded that there are both long and short-term gains for both the mother and infant from breastfeeding. Many of the studies on which the evidence to support breastfeeding is based are observational in nature (Wolf, 2007). Consequently, there are limitations to the strength of evidence provided by such studies due to potential selection bias, reverse causality and confounding effects of maternal and infant factors.

Nevertheless, evidence suggests that breastfeeding results in less infant morbidity from gastrointestinal and respiratory infections (Howie *et al.*, 1990; Chantry *et al.*, 2006; Kramer, 2010), urinary tract infections (Marild *et al.*, 1990), otitis media (Aniansson *et al.*, 1994) and fewer allergic illnesses (Gdalevich *et al.*, 2001;). However, a study by Burgess *et al.* (2006) has indicated that the protective benefits of breastfeeding on atopic disease may not be as strong as previously suggested. Data from this Australian prospective study indicate that breastfeeding had no impact on the prevalence of asthma among 7,223 14-year-old children.

Breastfeeding has, however, been consistently shown to reduce mortality among preterm (Lucas & Cole, 1990; Lucas *et al.*, 1998) and extremely preterm infants (Vohr *et al.*, 2006). Evidence also suggests that breastfeeding offers some protection against the development of childhood diseases such as

juvenile-onset insulin-dependant diabetes mellitus (Virtanen *et al.*, 1991), raised blood pressure (Singhal *et al.*, 2001), obesity (Fewtrell, 2004) and the development of diseases in later life, such as allergic diseases (Fewtrell, 2004). Prolonged and exclusive breastfeeding has also been associated with a reduced risk of the sudden infant death syndrome (Ford *et al.*, 1993). Breastfeeding has been associated with higher scores for cognitive development (Fewtrell, 2004; McCrory & Layte, 2011), although it must be acknowledged that there has been considerable discussion in the literature around the impact of other possible confounding variables such as socio-economic status, on such increases (Krugman *et al.*, 1999; Der *et al.*, 2006; Wolf, 2007). More recently, Jedrychowski *et al.* (2012) and Kramer (2010) have concluded that independent of a wide range of possible confounding factors, a significant positive association exists between duration of breastfeeding and intelligence.

Additional benefits of breastfeeding have been reported in relation to protection from childhood cancer. Davis (1998) concluded from a synthesis of available research that children who are never breastfed, or are breastfed short-term, have a higher risk of developing Hodgkin's disease. However, data supporting a reduction in childhood leukaemia are less clear, with Guise *et al.* (2005) acknowledging that there is a lack of high quality evidence to substantiate this claim.

In addition to the health benefits to infants, breastfeeding has the potential to impact on maternal health, as studies have demonstrated a lower incidence of breast cancer (Beral *et al.*, 2002) and ovarian cancer in those women who have breastfed (Rosenblatt & Thomas, 1993).

In order to minimise the potential multiple sources of bias in observational breastfeeding studies, Kramer *et al.* (2001) undertook a randomised controlled trial (RCT) that sought to randomise women to a breastfeeding promotion

intervention. The 'Promotion of Breastfeeding Intervention Trial' (PROBIT), which was conducted in Belarus, was a cluster-randomised trial of breastfeeding promotion based on the Baby Friendly Hospital Initiative (BFHI) of the World Health Organisation (WHO) and United Nations International Children's Emergency Fund (UNICEF) (Kramer *et al.*, 2001). This study provided the opportunity to compare the presence of acute infectious diseases amongst infants who were exclusively breastfed, partially breastfed and formula fed in an RCT. Data from this study have provided evidence for a significant association between breastfeeding and reduced incidence of gastrointestinal infection and atopic eczema during infancy but not for respiratory tract infection (Kramer *et al.*, 2001), child obesity, allergy, asthma or lower blood pressure (Kramer, 2010).

It has been estimated that in the United Kingdom, for every one per cent increase in breastfeeding at 13 weeks, £500,000 would be saved in the treatment of gastro-enteritis (BFHI, 2006). In the USA, it has been estimated that approximately \$3.6 billion would be saved if breastfeeding were improved from present rates (64% in-hospital; 29% at six months) to those suggested by the U.S. Surgeon General (75% and 50%, respectively) (Weimer, 2001). This figure represents cost savings from the treatment of only three childhood illnesses (otitis media, gastro-enteritis and necrotizing enterocolitis) and is, therefore, likely to be an underestimate of the total possible saving (Weimer, 2001).

## ***1.2 The optimal duration of breastfeeding***

Before 2001, the World Health Organization (WHO) recommended that infants be exclusively breastfed for 4–6 months. Following a systematic review and expert consultation this advice was changed, and exclusive breastfeeding,



wherever possible, is now recommended for the whole of the first 6 months of an infant's life (WHO, 2001a, 2001b).

A Cochrane systematic review on the optimal duration of exclusive breastfeeding also confirms that there is extensive evidence for the benefits of six months exclusive breastfeeding for infants and mothers, while acknowledging that further high-quality randomised studies are required to rule out small effects on growth and to confirm the reported health benefits (Kramer & Kakuma, 2002).

### ***1.2.1 National breastfeeding strategy***

Rates of initiation and duration of breastfeeding in Ireland are among the lowest in Europe. In response to this situation, 'A National Breastfeeding Policy for Ireland' was published in 1994 (Department of Health, 1994). The national targets set out in this policy were not fully achieved and, in 2001, the first National Breastfeeding Co-ordinator was appointed. In 2002, the National Committee on Breastfeeding was established with the remit of undertaking a comprehensive review of the 1994 policy and advising on strategies and initiatives that would help to increase the initiation and duration of breastfeeding. Following this review, the Department of Health and Children published 'Breastfeeding in Ireland: A Five Year Strategic Action Plan for Breastfeeding' in October 2005 (Department of Health & Children, 2005), which aimed to improve the nation's health by ensuring that breastfeeding would become the norm for infants and young children. Both the 1994 and 2005 policy documents endorsed national implementation of the WHO/UNICEF Baby Friendly Hospital Initiative (Department of Health, 1994; Department of Health & Children, 2005), which was first established in 1998.

Two key targets for Ireland were contained in the 2005 plan: to raise the breastfeeding initiation rate by two percentage points per year and to sustain an increase of 4% per year for socio economic groups 5-6 (Department of Health & Children, 2005). Socio-economic groups 5 and 6 refer to occupations classified as semi-skilled and unskilled, by the Central Statistics office (CSO, 2007). Evidence from the National Perinatal Reporting System (NPRS) (Economic and Social Research Institute and Department of Health and Children, 2010) would suggest that these targets have not been met, as the overall rate of breastfeeding only increased by 0.6% from 2005-2008.

### ***1.3 Format of the thesis***

This thesis is organised in 7 chapters. In chapter 2, the literature relevant to the factors affecting initiation and duration of breastfeeding is presented and the evidence relating to breastfeeding in Ireland is discussed.

Chapter three outlines the methodological and philosophical issues that were considered in planning and conducting this research. It aims to provide a clear background for the methodological underpinnings of the study, exploring the pragmatic mixed-methods approach that was chosen as most fitting to fulfil the research objectives.

In chapter four, the origins of the study are explored alongside the overarching methods that underpin this study. Methods specific to the quantitative and qualitative aspects of the study are also discussed in this section.

Chapters five and six present the findings of this study. In chapter five, the quantitative aspect of this study is discussed alongside the study setting, the recruitment of participants and the measures utilised. The quantitative phase of the research was designed to explore the factors influencing initiation and

duration of breastfeeding, by measuring these factors shortly after the birth and then contacting participants at 3-4 months to ascertain their feeding method at that time (Phase 2). Those mothers who were still breastfeeding at the time of completing Phase 2 were included in Phase 3 of the study and the results are reported at the end of chapter five. Chapter six then describes the results of the qualitative aspect of this study, which was underpinned by the principles of grounded theory. The aim of this part of the study was to explore the impact of suboptimal breastfeeding experience on future infant feeding choices, and to ascertain these women's views on the factors that would assist them to breastfeed successfully in the future.

The final chapter presents the conclusions and discussion of the study and makes recommendations relating to breastfeeding in Ireland.

## **2 Chapter 2: Literature review, context and overview of the factors affecting initiation and duration of breastfeeding**

### ***2.1 Introduction***

The role of this literature review is to ground the research in what is already known about factors affecting initiation and the duration of breastfeeding. Furthermore, the review contextualises breastfeeding in Ireland from the available published material. Consideration of what is known about breastfeeding in Ireland is necessary to provide the context in which breastfeeding rates in Ireland have been observed since the first of these studies in 1974.

#### ***2.1.1 A description of the literature search***

A systematic literature search was undertaken in May 2008 with the purpose of informing the survey tools for the quantitative aspect of this study and this was reviewed in August 2009 to include studies that would broaden the understanding of the phenomenon of interest.

The data for this literature review were sourced through Trinity College Dublin library, Health Service Executive libraries and searches of the following electronic databases: PubMed, MIDIRS, CINAHL and The Cochrane Database of Systematic Reviews. Additionally, hand searches were performed on the Irish Medical Journal and Irish Journal of Medical Science to help identify all relevant historical Irish studies. All sourced articles from 1974 - 2009 have been included in the section pertinent to breastfeeding initiation and duration in Ireland (Table 4). Otherwise, the search strategy sought to select reports from

indexed journals published after 1990, which are relevant to the survey's objectives. Languages sourced were limited to English, Spanish and German, as translation was available for these languages only.

Due to the extensive body of work published on factors affecting initiation and duration, preference was given to the inclusion of studies with the largest and most representative samples, meta-analyses of other studies or those that involved randomised trials. As has been acknowledged by other authors (Henderson *et al.*, 2007), there exists limited data from randomised trials of formula milk versus maternal breastmilk for feeding infants. This is due to ethical and moral difficulties in allocating an alternative feed to an infant whose mother wishes to breastfeed.

The initial search revealed a vast amount of literature and evidence on multiple factors associated with breastfeeding initiation and duration. Consequently the search was refined to include the three main areas relevant to the research question: context and knowledge of breastfeeding initiation and duration in Ireland, factors affecting the decision to breastfeed and prediction of initiation and duration.

A preliminary search (Table 1) of the PubMed, MEDLINE and CINAHL databases for the search terms 'Breastfeeding, Initiation, Duration' produced a significant number of hits.

**Table 1: Preliminary search terms**

<b>Database</b>	<b>Search term used</b>	<b>Number of Hits</b>
PubMed	“Breastfeeding, Initiation, Duration” [Mesh]	3,198
MEDLINE	“Breastfeeding, Initiation, Duration” [MH]	2,643
CINAHL	“Breastfeeding, Initiation, Duration” [MH]	2,261

Hence, it was not possible to review this number of abstracts and consequently a more targeted search of the three major databases was conducted in order to provide the most relevant papers while also excluding most of the non-relevant papers (Table 2).

**Table 2: Description of searches undertaken on PubMed, MEDLINE and CINAHL databases**

<b>Search terms used</b>
“Breastfeeding, Ireland, Irish, Celtic”
“Breastfeeding, Self-efficacy, theory of planned behaviour, theory of reasoned action, motivation, ” [Mesh]
“Breastfeeding, determinants, socio-economic, fathers, social norm’s ” [MH]
“Breastfeeding, parity, experience, intention ” [MH]

The three database searches identified 208 abstracts which appeared to meet the criteria for this review. From these, there were 138 articles that were applicable and these are included in this review. A number of Cochrane systematic reviews pertinent to the initiation and duration of breastfeeding

were also included, and the reference lists of these reviews were searched for applicable studies.

In the absence of randomised controlled trials, preference was given to studies that portrayed the highest methodological qualities as identified by Mantzoukas (2007), and those that provided a clear definition of breastfeeding. Due to the variety of methodologies employed by studies relevant to the search terms, a number of different checklists provided by CASP (Critical Appraisal Skills Programme (Public Health Resource Unit, 2006)) were referred to, in assessing the quality of studies. Table 3 provides a summary of the reasons for exclusion of studies:

**Table 3: A summary of the reasons for exclusion of studies**

<b>Reason for exclusion</b>	<b>Number of studies</b>
Lack of documentation of methodological details	37
No translation available	16
Poor or no definition of breastfeeding	9
Measurement or classification bias	6
Others: 1 x Large attrition rate, 1 x ethical concerns	2

Two studies that did not meet the criteria for inclusion were also incorporated in the review due to multiple citations in the relevant literature, and their contribution to the overall body of breastfeeding knowledge (Mozingo *et al* (2000) and Bottoroff 1990)).

In order to ensure that ongoing and unpublished research would be included in the review, index to thesis and dissertation abstracts were included in the search and a number of prominent authors were contacted and informed of the study and the researcher's interest in this area.

### **2.1.2 Context and knowledge of breastfeeding initiation and duration in Ireland**

This section of the literature review was approached with the view that it is necessary to consider where breastfeeding rates have come from, in order to progress and improve the uptake and duration of breastfeeding nationally. Breastfeeding trends in Ireland are important to demarcate the social context in which this research will take place. Breastfeeding has been promoted in Ireland in recent years with protection, promotion and the support of breastfeeding having been identified in many national policy documents as a major public health issue (Department of Health, 1994; Department of Health & Children, 2005).

Despite the publication of national policy documents, comprehensive national information regarding infant feeding practices in Ireland has been limited, with the earliest published reports dating from the late 1970s. Many of the studies presented in this review provide limited information regarding their methods and the validity and reliability of the research tools used, making it difficult to assess the quality of the studies. In addition, many of the studies had relatively small sample sizes and, more problematically, did not specify the definition of breastfeeding. Therefore, the reported breastfeeding rates may include anything from exclusive breastfeeding to varied amounts of supplementation with artificial formula milk. According to Cattaneo *et al.* (2000), this may artificially inflate rates and lead to unjustified optimism and inaction by governments. However, given the very low rates of breastfeeding in Ireland (regardless of the lack of definitions used) over many decades, these studies have been included in the review as they provide valuable data on the context and history of breastfeeding in Ireland.

Difficulties in collecting reliable statistics relating to breastfeeding are not unique to Ireland. In 2004, the European Commission (EC) conference in Dublin



which launched the Blueprint for Action on Breastfeeding in Europe acknowledged that data collected from the 29 participating European countries were frequently inconsistent, sometimes inaccurate and often incomplete (European Commission, 2004).

**Table 4: A summary of the published Irish studies on initiation and duration from 1974 - 2008**

<b>Authors</b>	<b>Study details</b>	<b>N</b>	<b>Initiation rates (%)</b>	<b>Comments</b>
Kalapesi & Kevany (1974)	Rotunda Hospital, Dublin (1969 -1970)	551	11	Data collected from hospital records, used social class of father to determine SE status. Educational level not recorded
Kevany <i>et al.</i> (1975)	4 Dublin maternity hospitals	198	16	Postnatal survey undertaken in hospital during a three week period. 64% of mothers reported that their mother had breastfed.
O’Herlihy (1978)	Child clinics in 3 Dublin areas	675	42	13% rate at 6 months (no specific breastfeeding definitions). Majority of women were from higher socio-economic groups.
Joyce <i>et al.</i> (1978)	Rotunda Hospital, Dublin	1193	19	Data taken from hospital records and at the 6 week check up over a two month period. Initiation rates lower for those occupying public rather than private beds (11% versus 46%). 11% of sample breastfeeding at 6 weeks.
Gilmore <i>et al.</i> (1979)	Wexford Maternity Hospital	111	24	A pilot survey of an intervention to promote breastfeeding using an antenatal leaflet. No change in feeding patterns post intervention.
Connolly <i>et al.</i> (1981)	National Maternity Hospital	143	45	Included 50% of mothers who gave birth over a two week period. No information offered on the make-up of the sample group and no definition of breastfeeding. Bottle-feeding group expressed a dislike of the idea of breastfeeding.
Mc Sweeney & Kevany (1982)	National sample (31 maternity units)	1,195	32	Data gathered during one week on all mothers leaving hospital. Overall breastfeeding rate 32%, 29% exclusively breastfeeding.

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<b>Authors</b>	<b>Study details</b>	<b>N</b>	<b>Initiation rates (%)</b>	<b>Comments</b>
Joyce <i>et al.</i> (1984)	Rotunda Hospital	12,530	35	Utilised hospital records of all infants born over a 1 year period and followed up at the 6-week check up. 19% Breastfeeding at 6 weeks. No definition of breastfeeding offered.
Sweeney (1984)	31 maternity units	1,195	32	Unpublished MSc Mothers surveyed on discharge from hospital. (Breastfeeding not defined).
McSweeney (1986)	National sample (32 maternity units)	1,067	34	31% exclusively breastfeeding, 14% at 12 weeks. Both 1983 and 1986 figures reported in this publication.
Hurley & Fogarty (1992)	Regional research Eastern Health Board	218	49	Data collected in an urban community care area at the nine month developmental clinic. Majority of mothers from social classes 1 & 2.
Lowry & Lillis (1993)	University College Hospital, Galway	877	36	Mothers interviewed on postnatal day 1 and day 5. Breastfeeding rate of 30% on day 5. Follow-up of 103 breastfeeding mothers – 28% breastfeeding at 24 weeks. No definition of breastfeeding offered.
Fitzpatrick <i>et al.</i> (1994)	Rotunda Hospital, Dublin	200	39.5	Discharge questionnaire administered to 100 consecutive breastfeeding and bottle-feeding mothers. Study aimed to investigate the factors associated with the decision to breastfeed.

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<b>Authors</b>	<b>Study details</b>	<b>N</b>	<b>Initiation rates (%)</b>	<b>Comments</b>
Sayers <i>et al.</i> (1995)	Co. Kildare	145	38	All babies born during one month in Kildare. Mothers more likely to breastfeed if maternal grandmother was reported as having done so. 13% breastfeeding at three months.
Freeman (1996)	Coombe Women's Hospital	121	53	30% breastfeeding at 1 month. Longitudinal, prospective study part of the pan-European initiative.
Ward (1996)	Rotunda Hospital survey	76	34	Sample represents all babies born in April 1996 in community care area 7. 5% breastfeeding at 16 weeks.
Howell <i>et al.</i> (1997)	North Eastern Health Board	287	35	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 10% breastfeeding at 16 weeks. No definition of breastfeeding offered.
Loh <i>et al.</i> (1997)	University College Hospital Galway	193	44 Test group 32 control group	Prospective randomised controlled trial of an intervention in late pregnancy to provide a short consultation with a medical student on the advantages of breastfeeding. Intervention not found to be statistically significant in increasing breastfeeding rate at discharge.
Greally (1997)	Mid-Western Health Board Survey Limerick.	339	34	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 12.7% breastfeeding at 4 months.
Twomey <i>et al.</i> (2000)	Eastern Health Board (EHB), random selection from birth register	197	51	Random selection from the birth register of the EHB. Part of larger study on SIDS. 8% prevalence of any breastfeeding at 6 months of age.

<b>Authors</b>	<b>Study details</b>	<b>N</b>	<b>Initiation rates (%)</b>	<b>Comments</b>
Mc Dermott & O'Neill (2000)	North-Western Health Board	300	49	Longitudinal study which recruited women from booking clinics in the region. 23% breastfeeding at 6 weeks and 6% at 4 months.
Gavin (2002)	Community Care Area 1	320	57	A pilot project to promote breastfeeding in community care area 1. Initiation rates were established from birth notification forms. 34.7% breastfeeding at 3 months – (described as maintenance but exclusivity not defined). Biased toward higher SE groups (87.2% social classes 1-3).
SLAN National Survey (2003)	Cross section of the Irish Population	5,992	37	Mothers who had breastfed any of their children. Part of the National Survey of Lifestyle, Attitudes and Nutrition.
Ward <i>et al.</i> (2004)	North-Eastern Health Board study	247	50	Survey administered by Public Health Nurses to all women who gave birth in the area over a four week period. 19% fully breastfeeding at 6 weeks and 13% fully breastfeeding at 14 weeks. Biased toward higher SE groups.
SLAN National Survey (2008)	Cross section of the Irish Population		42	Employed different recruitment methods to 2003 survey.
Cuidiú (2007)	22 hospital units and 2 midwife-led-units		30-65	Questionnaire emailed to all units seeking details of practices and policies.
Tarrant (2008)	Coombe Women and Infants Hospital	450	47 national mothers	Cross-sectional prospective study. 79.6% initiation rate among non-national mothers. <1% of Irish mothers exclusively breastfeeding at 6 months.

It would appear from a comprehensive review of the available data that by 1975 there was evidence of a steep decline in Irish breastfeeding rates in a single generation from 64% to 16% (Kevany *et al.*, 1975). Women in that survey were asked to indicate how their mothers and mothers-in-law had fed their infants and, among these women, 64% and 67% respectively, were reported to have initiated breastfeeding. This small quantitative survey, administered in a postnatal ward was also among the first to provide evidence that breastfeeding in Ireland was associated with higher socio-economic status and formal education (Kevany *et al.*, 1975). These figures, while not representing a national sample, appear to be applicable to the Dublin area as a whole. Similar findings were reported by Joyce *et al.* (1978), who found an initiation rate of 19% from data collected from computerised hospital records. The proportion of women who were breastfeeding had fallen to 11% by the time of the routine six week postnatal check-up (Joyce *et al.*, 1978). Of women who were breastfeeding, the majority were found to be occupying private beds, thus reinforcing the findings previously reported associating breastfeeding with higher socio-economic status.

A prospective survey in three Dublin areas at child welfare and developmental clinics over seven months in 1976 - 1977 was one of the first to show an increase in breastfeeding rates anywhere in Ireland (O'Herlihy, 1978). This survey of 675 mothers showed an initiation rate of 49% among first time mothers, which was higher than the previous reported studies from the 1970s. However, it is acknowledged that the majority of women in the study were from middle and upper income groups and therefore not reflective of the general population.

In the 1980s, the Health Education Bureau commissioned a series of surveys to examine the national incidence of breastfeeding in order to gain figures from a cross section of Irish women (O'Herlihy, 1978; McSweeney & Kevany, 1982;

McSweeney, 1986) (includes surveys from 1983 and 1986). The 1982 and 1983 surveys established the incidence of specific feeding methods of 90% of women who were discharged from maternity units in Ireland over a one week period. The 1986 survey also included a follow-up study of breastfeeding mothers at 3 months postpartum. In 1981, the national incidence of breastfeeding on leaving hospital was 32% (McSweeney & Kevany, 1982). In 1983, it was 34.6% and it was 33.9% in 1986. Interestingly, these studies also highlighted that the level of health education received by the women during pregnancy had a positive effect on their wish to breastfeed (McSweeney & Kevany, 1982; McSweeney, 1986). McSweeney (1986) also noted that the highest breastfeeding rates were found in the Dublin hospitals (43%) and reported that no women in Carlow or Dundalk had initiated breastfeeding.

In 1984, the Perinatal Statistics Report of the Department of Health began to publish annual national statistics on breastfeeding at discharge, collected through the birth notification form. National figures from 1984 to 1990 reveal that the incidence of breastfeeding at discharge remained around 30 - 35% throughout the period (31.8% in 1984, 33.9% in 1986, 31.7% in 1990) (ESRI 1991 – 2007 (Economic and Social Research Institute and Department of Health and Children, 2008)).

A 1992 pan-European study was one of the first to compare Irish breastfeeding rates with those in Europe (Freeman, 1996). Twenty two European countries participated in this 'Euro-Growth' study, which examined infant feeding practices. Findings confirmed that Irish breastfeeding initiation rates were the lowest in Europe and reported that 26% of mothers in Dublin were breastfeeding at 4 weeks compared to the highest rate, 99%, for mothers in Athens (Greece) (Freeman, 1996).

Studies that have investigated infant feeding outside Dublin have frequently demonstrated that there is a geographical variation in breastfeeding initiation rates. Most studies have found that women who give birth in Dublin are more likely to breastfeed than those who give birth in other centres (Lowry & Lillis, 1993, Sayers *et al.*, 1995, Howell *et al.*, 1997, Loh *et al.*, 1997, Greally, 1997, McDermott & O'Neill, 2000 and SLÁN, 2003). These studies have all recorded initiation rates of less than 40% with the exception of the study undertaken in the North Western Health Board (NWHB) in 2000, where the breastfeeding initiation rate was 49% (McDermott & O'Neill, 2000).

Findings from Lowry & Lillis (1993) also highlighted that 6% of those women who planned to and initiated breastfeeding had changed to formula feeding on discharge from hospital. The findings are consistent with other Irish studies and confirm that there is an alarming drop in breastfeeding in the early postnatal weeks following discharge, with few women offering breastmilk beyond six weeks. Rates quoted in different areas include 20% (Howell *et al.*, 1997), 21% (Greally, 1997) and 16% at 12 weeks postnatal (Twomey *et al.*, 2000). In the North Western Health Board, the proportion initiating breastfeeding was 49% but fell to 23% by six weeks and 6% at four months (McDermott & O'Neill, 2000). These studies highlight that rates would seem to be low in the Irish context in both rural and urban units and fall sharply in the early postnatal period.

Perinatal statistics show that there was a continuing increasing trend in the breastfeeding rate, reaching 44% of mothers in 2005 compared to 39% in 2001 and only 36% in 1999 (Economic and Social Research Institute and Department of Health and Children, 2008). However, these figures may have been collected at varying time intervals since birth in different maternity units and by independent midwives and the apparent trend might be more influenced by the collection methods than the reality of breastfeeding in Ireland. To date



there has been no uniform or comprehensive system of collating data relating to breastfeeding at birth, on discharge from hospital or in the longer postnatal period.

A national survey undertaken by Cuidiú (The Irish Childbirth Trust) provides information on breastfeeding initiation and discharge rates for 17 of the 20 Irish maternity units (Cuidiú, 2007). This showed wide variations in initiation rates from 65% to 30% in some units. Breastfeeding rates at discharge show equally wide variability, with one hospital reporting a decline of 19% between birth and discharge (Cuidiú, 2007). Breastfeeding rates were compiled by the individual hospitals and methods used to validate the initiation rates have not been outlined by the authors or the individual hospitals. In addition, the process used to collect the baseline data may have varied from one hospital to another, which means that while the survey provides valuable data, the results and any comparisons, should be interpreted with due consideration to these factors. More recently, a Survey of Lifestyle, Attitudes and Nutrition (SLÁN, 2008) showed an increase in breastfeeding initiation rates from 32% in 2002 to 42% in 2007. Most encouraging was an increase from 11% in 2002 to 42% in 2007 among women aged 18 - 29 years, but these findings require further investigation as the authors suggest that sampling of non-Irish women in the 2007 study may be responsible for this increase (SLÁN, 2008). This potential influence of the nationality of the mother has also been suggested by Tarrant (2008) who investigated the diets of a sample of Irish born infants during the first six months of life. This prospective study undertaken in one Dublin maternity hospital involved 450 women, consisting of 401 national and 49 non-national women. The study found that 41% of Irish and 80% of non-national women initiated breastfeeding.

## **2.2 Factors affecting initiation and duration of breastfeeding**

Many studies have sought to identify and explain factors that affect the choice of infant feeding method by women. Many of the relevant studies and key determinants are outlined in the following sections. It must be acknowledged, however, that there are likely to be contributing factors, which have yet to be examined within the international literature, and some factors may be variable between and within countries. Dyson *et al.* (2005) have suggested, for example, that the level to which individual countries have adopted the World Health Organization's International code of Marketing of Breastmilk Substitutes (WHO, 1981) may be a factor affecting initiation. However, studies of this nature, in any context could not be found.

Given that, in general, studies have identified factors that are likely to affect both initiation and duration these have not been discussed separately in this review. Where studies have only sought to examine initiation or duration this has been identified explicitly throughout.

### **2.2.1 Demographic determinants of infant feeding**

The importance of demographic factors on the initiation and duration of breastfeeding is a prevalent theme in the literature. Variables related to shaping the mothers' demographic profile that are known to influence infant feeding include socio-economic status, educational attainment, age, race, employment and marital status.

A higher socio-economic status has been positively attributed with breastfeeding initiation in numerous developed countries including Canada (Barber *et al.*, 1997), United Kingdom (Bolling *et al.*, 2007), Australia (Yeoh *et al.*, 2007) and the USA (Singh *et al.*, 2007). This has also been reflected in

numerous Irish studies (Fitzpatrick *et al.*, 1994; Ward, 1996; Ward *et al.*, 2004), as discussed above. In a study of 247 mothers in the North Eastern Health Board, Ward *et al.* (2004) concluded that higher socio-economic status and breastfeeding by the mother's own mother were the predominant determinants of initiation of breastfeeding in the Irish population. The international evidence points to socio-economic status, age and education attainment levels as being the strongest predictive variables of breastfeeding behaviour (Dyson *et al.*, 2005; Gudnadottir *et al.*, 2006).

International data and national surveys have provided strong evidence that breastfeeding initiation is associated with a woman's education level (Dubois & Girard, 2003; Bolling *et al.*, 2007; Yeoh *et al.*, 2007; Amir & Donath, 2008). While it is known that many demographic variables are inter-related, the results of a longitudinal survey of 2,223 infants in Canada suggest that, when other confounding variables were accounted for, a woman's education level had the strongest impact on breastfeeding initiation. Women who had a high school diploma were five times more likely to initiate breastfeeding. However, it should be noted that the age of the woman was found to be a more important determinant of breastfeeding at four months (Dubois & Girard, 2003). Data from a longitudinal study of 5,012 infants in Scotland also concur that maternal education status may be a better predictor of any breastfeeding initiation than occupation related social class (Skafida, 2009). In the United Kingdom Infant Feeding Survey, women who left full time education aged 16 or younger were among the group least likely to breastfeed (Bolling *et al.*, 2007). This finding is consistent with Irish studies since the early 1980s (McSweeney & Kevany, 1982; Fitzpatrick *et al.*, 1994; Grealley, 1997; McDermott & O'Neill, 2000; Tarrant, 2008).

In the United Kingdom, studies have shown that maternal ethnicity is an important determinant of breastfeeding initiation. White women are less likely

to breast feed than women from all other ethnic groups (Griffiths *et al.*, 2005). This has also been reported in Ireland, in a study in a large Dublin maternity hospital: 47% of Irish women initiated breastfeeding compared with 80% of non-national women (Tarrant, 2008). In the United Kingdom, only 51% of women in Northern Ireland initiate breastfeeding compared with 71% in the rest of the United Kingdom (Griffiths *et al.*, 2005).

Differences in the incidence of breastfeeding are also apparent among different ethnic groups in North America where lower rates of breastfeeding can be found in African American women (56%), compared to Hispanic (81%) and white women (76%) (Li *et al.*, 2005). However, a study by Gibson-Davis and Brooks-Gunn (2006), reports that every year of US residency by a Hispanic woman lessens the odds of **breastfeeding** by 4% (Gibson-Davis & Brooks-Gunn, 2006). Similar findings have been found in Australia among recently arrived immigrant Vietnamese women (Rossiter, 1992) and among Hispanic women in the USA (Gorman *et al.*, 2007). Gorman *et al.* (2007) have highlighted that although the actual process by which women become 'acculturated' to a new country is unclear, the odds of exclusive breastfeeding lower once the process has begun. Reasons reported by immigrant populations for the change in breastfeeding behaviours include interest in western lifestyles, a shift from rural to urban settings and the availability of infant formula (Bonuck *et al.*, 2005). Given the changes in the social profile of Irish society in the past decade, as reported by the 2006 census enquiry (CSO, 2007), these findings may be particularly relevant to current breastfeeding practices here.

In addition to the evidence that ethnicity seems to determine how a mother chooses to feed her infant, the available Irish data points to evidence of geographical variations. McSweeney (1986) demonstrated higher rates for the Dublin maternity hospitals, while the Mid Western Health Board (Grealley, 1997) and Howell *et al.* (1997) found disparities between local regions. Similarly, in

Dublin, Ward *et al.* (2004) and Hurley & Fogarty (1992) found that breastfeeding initiation rates were much lower in socially disadvantaged areas of the city. In the 2003 SLÁN survey, 43% of mothers in the North Eastern and Northern areas reported ever having breastfed, compared to 30% in the Southern region (SLÁN, 2003).

Internationally, the age at which the woman gives birth has been strongly associated with initiation and duration of breastfeeding. Women older than 25 years have been found to be more likely to initiate (Taylor *et al.*, 2006; Bolling *et al.*, 2007; Venancio *et al.*, 2008) and continue breastfeeding (Vogel *et al.*, 1999; Dubois & Girard, 2003). However, in Ireland, the 2007 SLÁN report showed that there was little difference between age groups for women who reported having breastfed any of their children (age 18 - 29: 42%; 30 - 44: 44%; 45 - 64: 40%; 65+: 42%) but the overall rate increased by 10% from the 2002 figures, with the highest increase (11%) in women aged 19 - 29 years (SLÁN, 2008). This conflicts with the 2005 perinatal statistics report (Economic and Social Research Institute and Department of Health and Children, 2008), which concurs with the international trends and reveals the lowest rates of breastfeeding initiation among younger women (age <20: 22%; 20 - 24: 32%; 25 - 29: 42%; 30 - 34: 47.4%; 35 - 39: 49.2%; 40 - 44: 51%). When drawing comparisons between the ESRI and SLÁN reports it should be noted that while the ESRI data reports all births during 2005, the SLÁN figures relate to the breastfeeding history of a cohort of mothers ranging in age from 18 to more than 65 years of age.

Studies in the USA have suggested that the employment status of mothers is an important but not a key influential factor in the initiation of breastfeeding (Taveras *et al.*, 2003). However, there is a significant relationship between the return to work of the woman and early discontinuation of breastfeeding (Visness & Kennedy, 1997; Berger *et al.*, 2005; Scott *et al.*, 2006). The United

Kingdom national survey supports this finding: only 18% of women who returned to the paid workforce when their baby was 4-6 months old were still breastfeeding at six months, compared with 31% of those who returned to paid work when their baby was older than six months, and 39% of those who were not in paid employment (Bolling *et al.*, 2007). Given the increase in women's participation in the labour market in Ireland (CSO, 2007), employment status may have a significant impact on shortening the duration of breastfeeding. In 2006, realisation of this fact contributed to an increase in the maternity leave entitlements by the Irish Government from 18 to 22 weeks (Government of Ireland, 2006).

Two regional studies in Ireland have demonstrated that being in paid employment positively influences the decision to breastfeed, with employed mothers more likely to initiate breastfeeding than their non working counterparts. Conversely, being in the paid workforce appeared to decrease the duration of their breastfeeding (Sayers *et al.*, 1995; Ward *et al.*, 2004). Other studies have not, however, conclusively confirmed this finding (Fitzpatrick *et al.*, 1994; Grealley, 1997). According to Taveras *et al.* (2003) who conducted a longitudinal study of 1163 mothers in California the reasons for discontinuation on return to work are restricted schedules and insufficient privacy to express breastmilk.

The decision to breastfeed has been reported to be influenced by the support offered by the woman's partner ((Earle, (2000) (UK), Arora *et al.*, (2000) (USA), Kong & Lee, (2004) (China)). Furthermore, the quality of the support offered has been suggested to have an impact on the duration of any breastfeeding (McCarter-Spaulding, 2008). This suggests that not only the father's attitude, but the strength of his commitment towards breastfeeding is important in determining if a mother will initiate and sustain breastfeeding. A study by Scott *et al.* (2006) supports this notion and concluded that mothers who perceived

their partner to be ambivalent towards breastfeeding were more likely to wean early. It should be noted that to date no Irish study has implicated the woman's partner as an important determinant of infant feeding, which highlights the need to explore the impact of the partner in an Irish setting. However, in a randomised trial of an intervention to encourage fathers to advocate for breastfeeding, Wolfberg *et al.* (2004) found no significant improvement in the duration of breastfeeding among women whose partners had attended an education programme. The authors do acknowledge some selection bias among the 59 fathers who participated in this small study and suggest that further testing of the educational intervention was necessary to assess its possible impact on the duration of breastfeeding.

### **2.2.2 The influence of social norms**

While a plethora of research has shown that demographic variables contribute to differences in breastfeeding trends, there also exist independent, socially constructed factors influencing initiation and duration (Raj & Plichta, 1998; Skafida, 2009). 'Social Norms', can be described by the standard of behaviour shared by members of a social group (Skafida, 2009). Social norms around breastfeeding relate to the exposure to breastfeeding, interactions with others and intentions and attitudes toward breastfeeding.

Ward *et al.* (2004) and Fitzpatrick *et al.* (1994) have both found evidence that maternal exposure to breastfeeding has been shown to be a significant factor influencing the initiation of breastfeeding in Ireland. In a study of 247 women in the North Eastern Health Board, Ward *et al.* (2004) concluded that, along with higher socio-economic status, having been breastfed herself was an important determinant of a woman's decision to breastfeed. This has been noted in several other Irish and international studies (Joyce *et al.*, 1978;

McSweeney, 1986; Hurley & Fogarty, 1992; SLÁN, 2003; Ward *et al.*, 2004; SLÁN, 2008).

In a qualitative study of women's decision making around infant feeding, Hoddinott & Pill (1999) found that breastfeeding interactions in the woman's life can positively or negatively impact upon the decision to choose breastfeeding. Ultimately the decision rests upon the context in which the woman views breastfeeding and how the woman perceives the interaction. In Hoddinott & Pill's study of 19 women in a deprived area of London, it was noted that confidence and commitment to breastfeeding were more apparent in the antenatal period among women who had regularly seen friends or relatives breastfeeding. However, they concluded that exposure to breastfeeding by a stranger was often experienced in a negative manner by women. This study strongly supports the notion that a positive breastfeeding role model within the woman's own social network is important to a mother's commitment to breastfeeding.

Conversely, Hegney *et al.* (2008) concluded from their retrospective case controlled study of 40 women in Queensland Australia, that growing up in a supportive breastfeeding environment was not a protective factor for early cessation of breastfeeding. Findings from this small study of women who experienced extraordinary breastfeeding problems, 20 of whom continued and 20 of whom ceased breastfeeding, highlighted the psychological distress experienced by women who continued and discontinued in the face of adverse breastfeeding situations. Conversely, Kools *et al.* (2005) concluded from their study of the behavioural determinants of breastfeeding that mothers who perceived a social norm for breastfeeding were more likely to continue breastfeeding.



These findings would seem to imply that, although a supportive environment may encourage breastfeeding initiation, the protective benefit may be diminished if the woman experiences breastfeeding challenges. Supporting this notion are findings from a metasynthesis of 7 studies examining the influence of confidence on cessation of breastfeeding by Larsen *et al.* (2008) and a qualitative study by Hauck & Irurita (2003). In a grounded theory study of 29 Australian women's journey through breastfeeding and weaning, Hauck & Irurita (2003) describe the difficult experiences encountered by women who weaned through circumstances that they felt were beyond their control. In their study it was evident that the greater the discrepancy between mother's expectation of breastfeeding and reality the more guilt, self doubt and erosion of confidence the women experienced (Hauck & Irurita, 2003). Larsen *et al.* (2008), similarly noted that despite social support from family and friends, the mother's expectations are 'shattered' by an unsuccessful breastfeeding attempt (p.655).

Thus, the literature highlights that although social norms are important to the mother's feeding method their role in enabling continuation is less well described. This may be in part due to the fact that although breastfeeding initiation and continuation are socially constructed, breastfeeding is known to be an embodied personal experience (Nelson, 2006). It is also the mother alone who assumes responsibility and feelings of failure and guilt, if she perceives that breastfeeding has been unsuccessful (Larsen *et al.*, 2008).

### **2.2.3 Parity and previous breastfeeding experience**

Nagy *et al.* (2001) suggest that breastfeeding a first child leads to an increased likelihood of breastfeeding a subsequent infant for a similar duration. This retrospective study of 327 medical records in Hungary concluded that duration of subsequent breastfeeding increased with the second child but not with a

third child. It should be noted that the mean duration of feeding with a first child for this sample was 6 months, which indicates that the context of breastfeeding is somewhat different to that existing in Ireland. In fact, it may be the case that when women discontinue breastfeeding early they may be less likely to breastfeed their subsequent children (Ingram *et al.*, 2002).

The impact of a perceived successful breastfeeding experience on subsequent infant feeding has also been described by those utilising psychological theories. Manstead *et al.* (1983) utilising the Theory of Reasoned Action, found that the previous method of feeding employed by multiparous mothers explained a significant proportion of variance in their behavioural intentions. Attitudinal factors were more important than normative factors in shaping the intentions of multiparous mothers whereas the two factors had equal influence on primiparous mothers. Wells *et al.* (2002) also concluded that women who had breastfed a previous child for any length of time had significantly higher motivation towards breastfeeding than those who had not breastfed before.

Bulk-Bunschoten *et al.* (2001) suggested that maternal parity affected duration, with those of higher parity continuing exclusive breastfeeding for longer. This longitudinal study evaluated breastfeeding in the Netherlands from birth to 4 months but did not account for any previous breastfeeding experience. However, Kools *et al.* (2005) also found that the strongest independent factor for breastfeeding initiation was any previous breastfeeding experience. Kools *et al.* (2005) evaluated the behavioural determinants of the decision to breastfeed at birth and concluded that those multiparous mothers who reported any breastfeeding experience were twice as likely to initiate. Utilising the Attitude-Social Influence-Self Efficacy (ASE) model referred to as the I-Change model, the determinants for continuation were found to differ from those found for initiation in a follow up study (Kools *et al.*, 2005). While previous experience and attitudes towards breastfeeding were most important for initiation (Kools

*et al.*, 2005), mothers who perceived a social norm for breastfeeding were more likely to continue breastfeeding, which has already been identified in this review. However, in a longitudinal study of 300 breastfeeding women in Australia, Blyth *et al.* (2004) concluded that women with previous breastfeeding experience were at least twice as likely to be still breastfeeding at four months, when compared with mothers with no previous experience. A limitation of both of these studies is that the duration of previous breastfeeding experience was not assessed. This is particularly relevant given that it has been suggested that women with a short and unsatisfactory experience may not identify themselves as having previously breastfed at all (Kruse *et al.*, 2005).

It has been suggested that early cessation of breastfeeding could lead to incremental disillusionment and cessation of attempts (Mozingo *et al.*, 2000). Women have reported a sense of failure, guilt, or shame and had protracted self-doubts about not persevering (Schmied & Barclay, 1999; Mozingo *et al.*, 2000; Hauck & Irurita, 2003). Given that evidence suggests that successful breastfeeding depends partly on maternal self-efficacy, problem-solving skills and social support (Dennis *et al.*, 2002), it seems reasonable to assume that a less than satisfactory breastfeeding experience may lead to subsequent non-recurrence for some women. Few of these studies provide any data on the duration of breastfeeding for previous infants, leading to some difficulty in interpreting the merits of these results.

#### **2.2.4 Women's experiences of breastfeeding**

Despite prolific research into breastfeeding and its determinants, it has been noted that there has been limited attention paid to women's experiences of breastfeeding in the literature (Spencer, 2008). This is significant given that some of the qualitative studies conducted have suggested that the mother's experience of breastfeeding can either positively or negatively impact on her

transition to motherhood (Mozingo *et al.*, 2000; Cooke *et al.*, 2007; Elliott & Gunaratnam, 2009). For primiparous mothers, the level of exposure to breastfeeding and the context of that encounter are known to influence her commitment to feeding (Hoddinott & Pill, 1999). In multiparous women, the method of feeding any previous children and the mother's experience with that episode of feeding are also suggested to have an impact upon future infant feeding choices (Mozingo *et al.*, 2000; Nagy *et al.*, 2001). Thus, studies describing women's experiences of breastfeeding in any context are relevant to the initiation and continuation of breastfeeding for both primiparous and multiparous mothers.

Hegney *et al.* (2008) concluded from a small study of women who experienced extraordinary breastfeeding problems, 20 of whom continued and 20 of whom ceased breastfeeding, that psychological distress is experienced by women who continued and discontinued in the face of adverse breastfeeding situations. Other qualitative studies have also argued that disparity between expectations and experiences of breastfeeding lead to the cessation of breastfeeding (Mozingo *et al.*, 2000; Cooke *et al.*, 2007). However, it is apparent from the Cooke *et al.* study that when commitment to breastfeeding is accounted for, breastfeeding challenges do not always significantly influence duration (Cooke *et al.*, 2003). In a study of women's experiences of breastfeeding during the first three months Cooke *et al.* (2003) utilised survey methods to explore the relationship between satisfaction with breastfeeding and mothers' perception of breastfeeding and any problems encountered. In a sample of 365 women they found that although having breastfeeding problems resulted in lower satisfaction scores, breastfeeding problems were not accurate predictors of weaning. These findings conflict with reports from qualitative work reported earlier by Larsen *et al.* (2008), and Hauck & Irurita (2003). Results from these studies suggested breastfeeding challenges may in fact result in early weaning.

Studies seeking to communicate positive experiences of breastfeeding are generally not available as most empirical data have sought to uncover the challenges associated with breastfeeding. One such study is a phenomenological investigation conducted by Bottorff (1990) into women's experiences of continuing breastfeeding. Although the findings from this study highlighted some positive aspects of breastfeeding, such as mothers' expressing that breastfeeding was 'a gift of giving', the pervasive experience of continuing to breastfeed was described as requiring continued commitment and perseverance. One of the limitations of this study is the lack of detail provided on the sample which is said to have included 3 women and 'interactions' with breastfeeding mothers (Bottorff, 1990). The theme of perseverance is also found to be dominant in findings by Schmied & Barclay (1999) who used discourse analysis as a means of describing the experiences of 25 Australian women in a longitudinal study. These findings highlighted that women were prepared to continue with breastfeeding in their pursuit of achieving what they considered to be 'the good mother' status (Schmied & Barclay 1999). Breastfeeding for these women was not only about infant feeding but was inextricably linked to their mothering role. Positive and pleasurable experiences of breastfeeding were recounted by 8 women in this sample who described a sense of close connection with their infants. For the majority of the sample, however, breastfeeding brought about mixed and often distressing experiences which was often categorised by a disconnect from the infant and their own bodies. The findings from this study highlight the contrasting experiences of breastfeeding women and challenge us as professionals to understand the diverse and wide ranging experiences of breastfeeding women.

Although women may appear on the face of it to overcome breastfeeding challenges and be 'successfully breastfeeding' by certain professional standards and definitions, the studies explored in this section highlight the need to

evaluate mothers' experiences using their own judgement as the measure of what is acceptable to them.

### **2.2.5 Influence of intention**

Studies have shown that breastfeeding intention can predict both initiation and duration of breastfeeding (Lawson & Tulloch, 1995; Hauck & Irurita, 2003). After controlling for the influence of the actual early breastfeeding experience, the mother's intended duration of breastfeeding has been confirmed as predictive of actual duration (DiGirolamo *et al.*, 2005). Utilising the intention construct from the Theory of Reasoned Action (TRA), DiGirolamo *et al.* (2005) highlighted the impact of intention on initiation and duration among 1,737 participants. They concluded that a negative experience mediated a woman's intention to breastfeed and identified the mothers' experience of breastfeeding during the first week as a significant predictor of breastfeeding duration.

Of the factors investigated by Scott *et al.* (1999) in Australia, intended duration was also found to be important. Mothers who intended to stop breastfeeding before 4 months postpartum were 5 times more likely to stop breastfeeding than those who had planned a longer duration. This is also consistent with findings from Blyth *et al.* (2004) who concluded that intending to breastfeed for 12 months resulted in mothers being 2.4 times more likely to breastfeed for four months when compared with those who intended to breastfeed for 6 months.

Avery *et al.* (2009) used a modified grounded theory approach to identify the processes contributing to breastfeeding decisions, such as intention, among Caucasian and African American women in the USA. Successful breastfeeding was characterized by confident commitment and was found to have three integral components: confidence in the process, confidence in one's ability and

commitment to make breastfeeding work in the face of challenges and lack of support. Lack of commitment was evident among formula-feeding mothers who described giving up easily when confronted by common breastfeeding problems. Avery *et al.* (2009) equate the notion of confident commitment with Banduras' theory of efficacy and how people overcome challenges. These results suggest that women placed a focus on breastfeeding as a learned skill.

### **2.2.6 Predicting intention and duration of breastfeeding using behavioural models**

Health psychologists have long used behavioural models to predict and explain human behaviours. Many of these theories have gained momentum among those interested in breastfeeding, in an attempt to explain women's intentions and to derive explanations that might prove amenable to interventions. The Theory of Planned Behaviour (TpB) (Ajzen, 1991) and its predecessor the Theory of Reasoned Action (TRA) (Ajzen & Fishbein, 1980) are those that have been described most commonly in the literature. In addition, Bandura's (1977) concept of self-efficacy which shares similarities with a component of the TpB known as perceived behavioural control, has been evaluated to assess its relationship to breastfeeding initiation and duration (Dennis *et al.*, 2002).

The Theory of Planned Behaviour (TpB) (Ajzen, 1991) is based on the premise that human behaviour is determined when individuals believe their actions will have desired results (attitude), when they consider that the behaviour is valued by persons or groups they want to please (subjective norm) and when they think that the behaviour will be easy to perform (perceived behavioural control) (Janke, 1991). The Theory of Reasoned Action which was described by Fishbein & Ajzen (1975) is similar to the TpB but does not utilise Perceived Behavioural Control among its constructs.

The TRA and TpB have been utilised by many researchers seeking to understand mothers' infant feeding intentions. These studies have provided support for the predictive value of the TRA and TpB in predicting intention to breastfeed (Manstead *et al.*, 1983; Avery *et al.*, 1998). Janke (1994) also demonstrated that the theory of planned behaviour could be utilised to predict breastfeeding attrition and suggested that the TpB constructs were modifiable, which served to maintain interest in these theories to modify women's behaviour around infant feeding.<sup>1</sup> These social cognition models have provided a framework for understanding and studying initiation of breastfeeding and suggest that motivation is a component of successful breastfeeding (Rentschler, 1991). Manstead *et al.* (1983) utilised the TRA and found that the previous method of feeding employed by multiparous mothers explained a significant proportion of variation in their behavioural intentions. Attitudinal factors were more important than normative factors in shaping the intentions of multiparous mothers whereas the two factors had equal influences on primiparous mothers. Utilising the TRA they were able to demonstrate 23-65% of the variance in predicting breastfeeding intention and reported that 65% of the variance in behaviour and duration could be predicted by intention (Manstead *et al.*, 1983).

The traditional TpB and modified versions have been applied in a number of studies to predict breastfeeding intention and behaviour (Wambach, 1997; Avery *et al.*, 1998; Dodgson *et al.*, 2003; McMillan *et al.*, 2008). Wambach (1997) found some support for the notion that perceived behavioural control was one of the best indicators of breastfeeding duration. However, it must be noted that this study of 135 mothers in the USA was limited to 6 weeks post partum. However, using a modified version of the TpB, Wilhelm *et al.* (2008) contends that higher levels of intended duration were found to predict actual

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<sup>1</sup> The control construct is important to my work as it assumes that the control construct will reflect past experiences as well as anticipated obstacles and impediments.



duration at 6 months post partum. Rempel (2004) used the TpB to assess the factors that are important in predicting long term breastfeeding (to 9 months). Attitude did not strongly relate to intended duration; however, among the mothers who breastfed for 9 months their perception of the degree of control and the opinions of others significantly affected their decisions (Rempel, 2004). The longer the duration of breastfeeding the more mothers perceived less approval of breastfeeding. In contrast to other studies, Perceived Behavioural Control (PBC) did not modify effect of intentions for long term breastfeeders. Thus, the results suggest that all mothers would be likely to wean if their PBC of breastfeeding was diminished.

When the influence of subjective norms has been examined as a discrete component of the TpB, studies have not provided a definitive conclusion as to the impact of significant 'others' on breastfeeding behaviour. Swanson & Power (2005) examined the specific influence of subjective norms (SN) on breast and bottlefeeding mothers. This study found that subjective norms were an important influence on feeding behaviour at birth and 6 weeks. However, Manstead *et al.* (1983) had previously demonstrated that the influence of subjective norm was not significant following birth. Wambach (1997) also concluded that subjective norms did not exclusively predict breastfeeding intention. In a meta-analysis of 185 studies utilising the TpB in various contexts, Armitage & Conner (2001) concluded that 'the subjective norm construct is generally found to be a weak predictor of intentions' (p.471). Consequently, highlighting the need to focus on interventions that bring about changes in women's attitudes and improve their perceived control (PBC) in relation to breastfeeding.

It has been suggested that the TpB has shown some potential in shaping behaviour change modifications (Hardeman *et al.*, 2002); however, the theories have thus far provided only limited theoretical basis for interventions that

result in behaviour modification for breastfeeding women. The many different versions of utilising the theory also lead to some difficulty in interpreting the applicability of the TpB in breastfeeding research (Hardeman *et al.*, 2002; Giles *et al.*, 2007).

While the TpB was primarily developed to predict and explain human social behaviour, and to serve as a basis for interventions that may change people's behaviour, Ajzen (2006) has suggested that the theory will not assist in designing the most effective intervention. The literature would seem to concur that the TpB is best employed to assist breastfeeding researchers to decide what aspects of a person's behaviour requires modification, but is limited in bringing about change. There exists limited research utilising the TpB in qualitative studies; however, it has been suggested that it may be useful as a heuristic framework to guide questions, particularly those relating to control beliefs (Ajzen, 2006).

### **2.2.7 The influence of Motivation on initiation and duration**

Closely linked to the behavioural theories to predict initiation and duration is the use of motivational concepts in breastfeeding research. These have included cognitive evaluation theories (Wells *et al.*, 2002) and Self – efficacy (Kingston *et al.*, 2007).

The feasibility of using the cognitive evaluation theory to examine pregnant women's intent to breastfeed was examined by Wells *et al.* (2002). They concluded that women who intend to breastfeed have a higher level of intrinsic motivation than those who plan to formula feed. Additionally, women who reported having breastfed a previous child for any length of time also had significantly higher motivation towards breastfeeding than those who had not breastfed before.

Similarly, Racine *et al.* (2009b) undertook a qualitative study exploring intrinsic and extrinsic motivation for breastfeeding. The participants were part of a larger longitudinal study to predict duration among low-income women, based on an economically driven conceptual model known as the theory of individual net-benefit maximisation (INBM) (Racine *et al.*, 2009a). It suggested that breastfeeding women can be categorised into three discrete groups: intrinsically motivated, extrinsically motivated and successfully experienced (Racine *et al.*, 2009b). Results from longitudinal part of this study (Racine *et al.*, 2009a) suggest that women were likely to stop breastfeeding when they perceived that they were lacking social and professional support, when they returned to work and if they think breastfeeding will have a negative effect on their own or their infant's health. Intrinsic motivation was defined as 'doing something because of interest or enjoyment in the activity' (Racine *et al.*, 2009b) (p.175). This definition runs counter to Wells *et al.* (2002) who suggest that intrinsic motivation is internal to the person i.e., concerns about the mother and child's health.

Wells *et al.* (2002) asserted that extrinsic motivation is associated with a decrease in sustained performance of a behaviour, which is contrary to doing something for a reward as is utilised by Racine *et al.* (2009a). Motivation was labelled as intrinsic or extrinsic based reasons given by women for choosing to breastfeed. It could be suggested that this method of categorisation is crude and does not factor in many of the other components of women's motivation that have been shown to be important by other studies (Stockdale *et al.*, 2008b).

Based on the premise that de-motivation leads to breastfeeding attrition, Stockdale *et al.* (2008b) carried out an action research project to test the ARCS model of Motivational Instructional Design. The research aim was to develop

and test a motivational intervention using the ARCS Model (Stockdale *et al.*, 2008a). Phase four of this study experimentally tested a “Designer Breastfeeding” intervention, which included a motivational version of antenatal instruction, book and postnatal midwife support with Baby Friendly Initiative instruction. First-time mothers (n=182) were recruited to a randomised controlled trial. Women’s motivation was measured using a diagnostic measurement tool which had been assessed for validity in phase 2 of the study. Results demonstrated that “Designer Breastfeeding” significantly increased maternal confidence, perceived midwife support and persistence to breastfeed on discharge from hospital and at three weeks. While this design has shown promise in increasing duration to three weeks, the impact on longer duration of breastfeeding has yet to be determined.

The potential impact of motivational instruction on breastfeeding initiation was also explored by Coombs *et al.* (1998). This study evaluated a self-help manual designed to motivate low-income mothers to initiate breastfeeding. A randomised controlled trial found that the manual positively influenced breastfeeding initiation, with 60% of treatment women initiating breastfeeding compared to 44% of the control group. However, this method of motivational instruction showed no significant difference in breastfeeding duration.

Evidence highlights two motivational factors important to breastfeeding, women lack confidence and professional support (Avery *et al.*, 1998; Chezem *et al.*, 2003; Dodgson *et al.*, 2003). The concept of maternal confidence has been explored by researchers keen to prolong the duration of breastfeeding (Blyth *et al.*, 2002; Nichols *et al.*, 2009). Breastfeeding self-efficacy was first described by Dennis (Dennis, 1999) who utilised Bandura’s (1977) Social Learning Theory as a theoretical framework. Self-efficacy can be defined as ‘confidence in one’s perceived ability to regulate their motivation, thought processes, emotional states, and social environment in performing a specific behaviour’ (Dennis,

1999) (p.196). Bandura (1997) asserted that this dynamic cognitive process is mediated by four factors that determine the level of an individual's self-efficacy; a) performance accomplishment (past experiences) b) vicarious experience (seeing others breastfeed) c) verbal persuasion (encouragement from others) and d) emotional arousal (psychological responses such as stress and fatigue).

The concept of self-efficacy, while not specifically related to initiation of breastfeeding has been shown to be an important determinant of duration (O'Campo *et al.*, 1992; Papinczak & Turner, 2000; Blyth *et al.*, 2002; Dennis *et al.*, 2002; Dunn *et al.*, 2006). Furthermore, performance accomplishment is particularly relevant to a women's future breastfeeding experiences, as successful mastery of breastfeeding leads to the expectation of a similarly successful occurrence in future breastfeeding experiences (Nichols *et al.*, 2009).<sup>2</sup> Bandura (1997) has described the mastery experience as the most powerful determinant of self-efficacy. Kingston *et al.* (2007) have also demonstrated that vicarious experiences positively enhance women's breastfeeding self-efficacy. This descriptive study of women in Ontario concluded that those women who indicated that they had breastfeeding role models had higher levels of breastfeeding self-efficacy. The study utilised a modified version of the Breastfeeding-Self-Efficacy Scale (BSES), which had been developed and validated by Dennis & Faux (1999) to identify mothers with low breastfeeding confidence.

Wilhelm *et al.* (2008) looked at the influence of self-efficacy on breastfeeding intention and duration. Comparing motivational interviewing with a control group from birth to the first 6 months they concluded that women with higher levels of intention were likely to breastfeed for longer.

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<sup>2</sup> The higher the incidence of early discontinuation in a country the more limited are the opportunities, for both effective mastery and vicarious experience.

Many authors have thus speculated that increasing the mother's self-efficacy would increase the duration of breastfeeding (Blyth *et al.*, 2002; Dennis *et al.*, 2002); however, in common with other psychological theories such as the TpB, the application of interventions based on self-efficacy have been extremely limited. In a small convenience sample of 90 Australians, Nichols *et al.* (2009) demonstrated that the application of a workbook to increase women's self efficacy resulted in a trend towards higher self-efficacy and consequently higher levels of breastfeeding. Women in this study were randomly assigned to an intervention or control group. Results, while promising, are limited due to the short duration of follow-up at 4 weeks. Given that the potential impact of such interventions is aimed at increasing duration of breastfeeding, studies that evaluate the impact on duration for the recommended period of six months are required. In a randomised controlled trial of an intervention to increase self-efficacy among 110 nulliparous women, Noel-Weiss *et al.* (2006) concluded that a workshop to improve self-efficacy had a positive impact on women's scores. Although they suggest there was a detectable increase in breastfeeding duration at 8 weeks this was not found to reach statistical significance. Thus while the concept of self-efficacy has shown some promise its effect on initiation and duration has yet to be fully determined.

### **2.3 Conclusion**

This literature review has highlighted that the rate of breastfeeding at birth in Ireland has fallen well short of the World Health Organization (WHO) and UNICEF recommendations that newborn infants should be exclusively breastfed for six months and the suggestion that 98% of women are capable of doing so (WHO, 1999). The national and regional studies also show that very few Irish women who initiate exclusive breastfeeding continue to do so for the recommended six months, or continue to breastfeed thereafter in combination

with complementary foods up until the recommended two years of age or beyond. In common with the international literature, Irish women who do initiate breastfeeding are likely to be from a higher socio-economic background, be older and well-educated and have been breastfed themselves. Less clear from an Irish perspective is the influence of employment status and ethnicity on breastfeeding initiation.

The literature demonstrates clearly that women approach breastfeeding with a unique set of demographic, social and culturally predetermined perceptions of breastfeeding. A multiplicity of factors influencing both initiation and duration can be identified from the literature. However, the relevance of these to breastfeeding in Ireland is not always clear as they are derived from countries that have historically adopted breastfeeding as the predominant method of feeding. Additionally, factors affecting duration are often reported in settings where many women adopt breastfeeding for the recommended duration and it is apparent from the limited Irish data that this runs counter to the cultural norm.

Equally relevant from this literature review are women's experiences of breastfeeding. Irish women who choose to breastfeed often discontinue in the early postnatal period (Tarrant, 2008). The literature suggests that women who reported breastfeeding their first child are more likely to breastfeed subsequent infants for a similar duration. However, these studies rarely offer a clear definition for breastfeeding of previous infants. A less than satisfactory breastfeeding experience may lead to subsequent non-recurrence for some women but the full impact of this encounter on views and experiences of breastfeeding is largely un-documented.

Although there is some international scholarly work on the impact of parity and previous experience on breastfeeding, clinical research has yet to explore the

impact of a short and unsatisfactory encounter on future choices and views. Furthermore, strategies and interventions to improve breastfeeding rates confirm that the promotion of breastfeeding frequently targets low income mothers antenatally (Dyson *et al.*, 2005). These mothers represent those least likely to initiate breastfeeding in Ireland. However, women with a sub-optimal experience of breastfeeding represent women who were once motivated to breastfeed and may be more amenable to interventions than other groups of women.

This review clearly highlights the need to obtain up-to-date, accurate breastfeeding initiation and duration rates in a nationally representative sample of mothers in Ireland. Ascertaining the factors that influence their decisions to breastfeed or not is also crucial to improving breastfeeding rates and providing the environment and services that will support and enable women to breastfeed their children optimally.

To date, few international studies, and no Irish studies have been undertaken focusing specifically on the impact of sub-optimal breastfeeding experiences on future infant feeding choices. Therefore, research in this area is essential to provide a service that is responsive to women's needs and committed to increasing national breastfeeding rates as outlined in the 5 year Strategy and Action Plan (Department of Health & Children, 2005).



## **3 Chapter 3: Theoretical background and selection of appropriate methodology**

### ***3.1 Introduction***

This chapter outlines the methodological and philosophical issues that were considered in planning and conducting this research study. It aims to provide a clear context for the methodological underpinnings of the research. Selection of the research method required careful consideration of how knowledge is generated. As has been noted by many authors, differing research designs have conventionally been ascribed to one of two broad epistemological traditions, positivism or constructivism (Teedlie & Johnson, 2009). Numerous qualities have habitually been attributed to these divergent positions leading to a plethora of texts perusing the arguments and merits of one position over the other. Essentially, however, these paradigms represent belief systems that influence the kinds of knowledge researchers seek and how they interpret the evidence they collect.

The following sections provide an overview of the research question, the context of this research, the decisions and processes that guided the selection of the methodology, and the paradigmatic underpinnings of that methodology.

#### ***3.1.1 Development of the research question***

Knowledge of the cultural and societal context in which infant feeding decisions are made in Ireland is extremely limited. At present, there is no national source of data on infant feeding methods adopted following discharge from hospital or maternity care. This makes it difficult to measure breastfeeding rates against any national or World Health Organization (WHO) targets for the optimal

duration of breastfeeding (WHO, 2001). While research from other countries has identified factors that influence the selection of infant feeding methods, much of this research has been carried out in countries whose culture is predominantly one of breastfeeding. Therefore, these findings may not be relevant to Ireland, where bottle-feeding has been the predominant method of feeding for at least half a century.

While there is international, and limited national, data available on the demographic and social normative factors that influence the decision to breastfeed, the effect of a previous breastfeeding experience on subsequent decision-making has not been ascertained. Research, in general, tends to focus on the first incidence of any breastfeeding experience and ignore the potential effect of that first experience on future, related decision-making. There has, in particular, been a lack of research interest in the experiences of women with short and suboptimal breastfeeding duration. This represents a significant gap in the body of knowledge in this area, given that women who choose to formula-feed have been found to lack intrinsic motivation to breastfeed, and their profile often contains demographic factors associated with bottle-feeding, which are not easily modifiable through interventions (Wells *et al.*, 2002). In addition, it is clear that women who have had a suboptimal experience of breastfeeding were once motivated to breastfeed; however, little is known about the impact of this experience on their future infant feeding decisions, or on those of women and families with whom they have shared details of their experience.

In light of the paucity of information in the literature to date on this important issue, there is an urgent need to provide internationally comparable data on breastfeeding initiation and duration in Ireland, and the factors that influence this, in order to develop effective breastfeeding promotion programmes. Through exploring the feelings and views of survey participants who have had

suboptimal breastfeeding experiences, valuable insight and knowledge will be gained. This illumination of the issues involved will provide the basis for developing an intervention specifically targeted to assist this group of women during future pregnancies.

This study was designed to identify the context in which breastfeeding decisions are made in Ireland, and to present data on the initiation and duration of breastfeeding. Furthermore, it provided for more in-depth study of a group of women who had, in the past, had some desire to breastfeed and who might, therefore, be more amenable to interventions than those women who decided to formula-feed their previous infants.

### ***3.1.2 Study Design***

Following careful consideration of various methodologies to address the research question, a pragmatic mixed-methods approach was chosen. Mixed methods were necessary in order to give depth to the context of breastfeeding in Ireland and to explore the feelings and views of the survey participants who had had suboptimal experiences. As neither dimension of the study had previously been explored in Ireland, the objective of the study could only have been achieved through a mixed-methods approach. A sequential, embedded explanatory design was utilised to describe breastfeeding prevalence (quantitative survey), and factors affecting initiation (quantitative survey and qualitative interviews), in order to facilitate application of the results in a manner that could bring about positive consequences for breastfeeding in Ireland. Collecting both types of data from the participants allows for fuller interpretation of the survey results and elucidates the experiences and perspectives of breastfeeding women, thereby enabling factors affecting initiation and duration of breastfeeding to be comprehensively addressed.

### **3.2 Ontological and epistemological underpinnings**

Teedlie & Johnson (2009) and Oakley (2000) and have described the evolution of research paradigms as they have come to be known today, and the contrasting and often conflicting arguments that have developed around the quest for truth and knowledge. While philosophers such as Aristotle have been credited with laying the foundations for scientific reasoning, it was during the period from 1500-1700 that a scientific revolution emerged. Evidence of a divergence between scientific assumptions can be traced to this period.

Thomas Kuhn is traditionally credited with the recognition of paradigms as a way to reflect researchers' beliefs about their efforts in creating knowledge (Morgan, 2007; Denzin, 2010). Early use of the word 'paradigm' in this regard may be traced to Kuhn's work, *The Structure of Scientific Revolutions* (1962/1996). Among differing versions of the term paradigm<sup>3</sup>, Morgan (2007) treats the best known epistemological stances (positivism and constructivism) as individual belief systems that influence how research questions are asked and answered, focusing on one's worldviews within the philosophy of knowledge. However, seeking answers to research problems that require solutions rarely starts with epistemological viewpoints (Crotty, 1998). Typically, the research question informs the methods, which inform the methodology, which informs the theoretical perspective, all of which combined inform the epistemology. This demonstrates the value of a pragmatic view on research, which is in direct contrast with the idea of a paradigm or top-down approach proposed by Guba & Lincoln (2005). A paradigm approach begins with ontological assumptions surrounding the nature of reality, thus potentially imposing constraints on the nature of knowledge through rigid epistemological suppositions (Morgan, 2007).

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<sup>3</sup> Morgan (2007, p.65) chooses to avoid use of the word paradigm and considers 'pragmatic approach' to be more appropriate for his 'alternative view'.

Spencer (2008) has, however, suggested that engaging with epistemological and ontological perspectives of breastfeeding research has much to offer our understanding of the context in which breastfeeding occurs. Such a view clearly favours the constructivist paradigm, and credits it with the potential to provide answers to certain questions relating to breastfeeding, which may have merits given that decisions around breastfeeding are known to be socially constructed. However, the search for causality and prediction has meant that the positivist paradigm has also contributed much to the body of knowledge and research around breastfeeding.

Basic ontological and epistemological beliefs have been attributed to the two traditional paradigms, with positivists subscribing to the ontological notion of a single, tangible, objective reality and constructivists taking a position of socially constructed, multiple realities (Firestone, 1987; Guba & Lincoln, 2005). Reality, in the constructivist sense, is viewed as pluralistic meaning that, within studies, a range of interpretations may be made (Appleton & King, 2002). Conversely, positivists focus on verifying hypotheses through purely experimental methods. Constructivists operate in a more transactional way, connecting directly with their participants and negotiating with them in order to create findings. Thus, from an epistemological standpoint, constructivist research endeavours to reach co-created findings with participants, while positivists, in their traditional sense, seek dualist or objectivist results (Guba & Lincoln, 2005). Despite the emergence of alternative frameworks to accommodate the diversity in mixed-methods research (Creswell & Plano Clark, 2007), the two predominant paradigms continue to dominate methodological textbooks and epistemological debates (Teedlie & Tashakkori, 2009) and are likely to do so for some time to come (Feilzer, 2009).

Haase & Myers (1988) discredit any notion of incompatibility between paradigms, and suggest that both views of the nature of reality are compatible and essential to understanding the human experience. Although similar experiences can result in multiple meanings, experiences may also be grouped, to form general principles 'from which to make sense of the world' (Haase & Myers, 1988) (p.132).

Researchers from applied sciences such as nursing and midwifery have been criticised for ignoring the epistemological roots of scholarly inquiry and simply applying whatever method they deem appropriate for their work (Teedie & Tashakkori, 2009). Even if it is not articulated or made explicit, research questions and method choices are, nevertheless, a reflection of the researcher's epistemological understanding of the world (Feilzer, 2009). It may, therefore, be suggested that all research is imbued with a distinct frame of reference, reached through a particular lens.

My own perspective, both ontologically and epistemologically, is inclined towards the notion that reality is something that can be measured, and that is capable of being unique for each individual. By approaching breastfeeding from both philosophical perspectives, a greater depth of knowledge about that experience may be gleaned. Bryman (1988) proposes that jointly pursuing quantitative and qualitative research will result in 'much more complete accounts of social reality' (p.126). Truth, from a pragmatic standpoint, is constructed by reflexive and rational reasoning using a variety of eclectic tools to bring about solutions to research questions (Goodman, 2005).

### **3.2.1 *Positivism***

The positivist perspective on the nature of scientific inquiry embodies assumptions about the central tenets of confirmation and falsification. Early

scholars such as Auguste Comte endorsed methods of discovery that were based on scientific reasoning as a way to derive generalisable laws for the social world (Kincheloe & Tobin, 2009). This form of traditional positivism considers that these endeavours can be carried out objectively, a viewpoint which has led to harsh criticism from both constructivists and pragmatists alike (Lincoln & Guba, 2000; Johnson & Onwuegbuzie, 2004). In response to this reproof, philosophers of science have been engaged in developing a new post-positivist view of science. This contemporary position, which has developed since the decline of positivism and is often labelled as 'fallibilism' (Phillips, 2005) (p.582), recognises that there are no absolutely secure foundations for human knowledge. Nevertheless, post-positivists typically surmise that when considered and rigorous research has taken place, they are justified in making claims about 'truth'. The rationalisation for this stance is that the claim of 'truth' may be compelling on the basis of the evidence available, even if this is not an absolute 'truth' in the traditional positivist sense (Phillips, 2005). Kincheloe & Tobin (2009) have also suggested that, despite purporting otherwise, many of the methods used in present-day scholarship are supported by, and can be traced to, the tenets of positivism. It is recommended that researchers explore the role of the selected frameworks within which they operate, and investigate the numerous understandings of knowledge production and their true underpinnings (Kincheloe & Tobin, 2009).

### Quantitative research

Classic approaches to quantitative research involve confirmation or exploration of particular theories. These theories are subjected to deductive examination in order to support or refute hypotheses and causal relationships between variables. Inquiry in the quantitative tradition is purported to take place in a value-free, objective framework (Denzin & Lincoln, 1998). A variety of well-defined research designs is utilised in quantitative research including

correlational, survey, experimental and quasi-experimental (Teedlie & Tashakkori, 2009). This study utilises a survey as a means of ascertaining rates of exclusive and partial breastfeeding, which knowledge is essential to our understanding of the culture and context of breastfeeding in Ireland. The survey also establishes the factors that influence the decision to breastfeed, insight into which is complemented by the qualitative aspect of the study.

### **3.2.2 Constructivism**

The goals of constructivism are at odds with those of positivism in that the philosophical underpinnings of constructivism are grounded in the notion of conducting research in natural settings (Appleton & King, 2002). Thus, the constructivist ontology holds firm the notion of two interacting realities, one of which is physical, the other of which exists in parallel and is constructed and interpretative (Lincoln, 2005). Constructivism aims to emphasise a deep understanding of human complexity through multiple realities, thus supporting research that is imbued with human values which cannot, therefore, be value-free (Teedlie & Tashakkori, 2009). Although traditionally aligned with qualitative research, Lincoln (2005) has noted that constructivists come in many forms and hold various persuasions; however, they commonly share a value system that supports research to increase social justice.

### **Qualitative Research**

Guba & Lincoln (1998) have argued that the term 'qualitative' should be reserved for a description of data-collection methods. However, it is usually employed as a generic description for a wide range of research methods and methodologies (Rolfe, 2006). Qualitative studies have traditionally been designed and reported as ethnographic, phenomenological or grounded theory. These research designs discard positivism, and advocate approaches to



research that are interpretive and constructivist, the underlying premise being that multiple realities exist and that knowledge cannot be decontextualised (Bergman, 2008).

The management of breastfeeding is a significant task for many women as it symbolises motherhood and femininity (Bottorff, 1990). The processes of breastfeeding and early weaning are regarded as being influenced by social and psychological factors. The qualitative component of this study was anchored in the tenets of grounded theory, thereby recognising that the meanings assigned by mothers to breastfeeding and weaning may influence their perceptions and subsequent actions. This assumption supports the premise of symbolic interactionism, the theoretical framework for the grounded theory method, which suggests that human behaviour in relation to items or persons is influenced by the meanings attributed to them (Blumer, 1969). Glaser (1978) stressed the importance of the grounded theory method for generating explanations to account for patterns of behaviour. Grounded theory has been used extensively to generate theory around women's breastfeeding decisions and experiences (Sheehan *et al.*, 2009), and has contributed positively to the body of knowledge on breastfeeding. A grounded theory approach was, therefore, chosen because of its ability to generate explanations to account for patterns of behaviour (Glaser, 1978), thereby enabling the assignment of meaning to specific events around the breastfeeding experience. Garnering such knowledge provides the opportunity to enhance our understanding of the social and psychological processes of women who have experienced suboptimal breastfeeding, and to establish 'what is, not what might be' (Glaser, 1992) (p.67). This evolutionary process ultimately offers the potential to test such theories in order to bring about positive change for prospective breastfeeding mothers in the future.

A common criticism of studies employing grounded theory is their failure to build a theory and, instead, merely to involve the generation of concepts (Sandelowski, 2000). This is described by Sandelowski (2000) as grounded theory 'overtones', whereby a study does not follow all of the procedures of the methodology. The use of grounded theory within a mixed-methods study hinders the use of all the procedures ascribed to theory generation in that tradition. For example, a literature review was essential to the development of the questionnaire, therefore Glaser & Strauss's (1967) request to ignore the literature in order to avoid contamination of emerging categories could not be acceded to. Thus, it must be acknowledged that, in this study, not all of the ascribed procedures of grounded theory have been applied, and it must be specified that this is not a grounded theory study, but rather a study which employs grounded theory overtones. These procedures and overtones are discussed in detail in Chapter 4.

### **3.2.3 Pragmatism**

Discernible, and radically different, epistemological underpinnings have led to the development of what has been suggested to be irreconcilable conflict between the positivist and constructivist traditions and their various emergent paradigms such as post-positivism and critical theory (Guba & Lincoln, 2005). Fundamental to this argument has been the implication that the two traditions could not be combined (Morgan, 2007). Counter to this notion were arguments proposed by Howe (1988) which, using pragmatism as their philosophical basis, sought to refute the supposed incompatibility of combining positivist and constructivist methods. Pragmatism, which can be traced to the work of Peirce, James, Mead, Dewey and, more recently, Rorty and Nielsen (McDermid, 2006), is a philosophical tradition that is deconstructive in nature (Howe, 1988). It has at its core the rejection of 'either-or choices from the constructivism-positivism debate' (Teedlie & Johnson, 2009) (p.72), thereby offering an alternative

perspective on the paradigm war. Pragmatism suggests that mixing methods within paradigms is not only possible, but is often necessary in order to address research objectives adequately (Guba & Lincoln, 2005). More recently, it has been proposed as a third paradigm (Morgan, 2007) and a methodological field in itself (Creswell & Plano Clark, 2010).

While there are many forms of pragmatism, they share common ground with regard to 'concern for the future and present over the past, have a humanised and historicised view of knowledge, to see morality as experimental, art as experiential, education as democratic and reality as pluralistic' (Goodman, 2005) (p.1). Pragmatism replaces the epistemological differences between the subject and the external object with the 'naturalistic and process-orientated organism-environment transaction' (Teedlie & Johnson, 2009) (p.74). Truth, in the pragmatist tradition, is rejected as being absolute but is replaced by assertions that are warranted because they have been based on careful, rigorous and truthful foundations (Noddings, 2005). Knowledge is viewed as being both constructed and based on social reality, therefore the assumption that individuals are historically and socially situated is taken seriously. The pragmatist tradition encourages shared values, democracy, freedom, equality and progress (Rorty, 1999), thus it is an ideal philosophical basis from which to investigate socially-constructed phenomena such as breastfeeding initiation and duration. Moreover, it endorses methodological pluralism as a means to achieve practical theories that favour action over philosophical debates (Morgan, 2007).

#### ***3.2.4 Pragmatism and mixed-methods research***

Mixed-methods research is most frequently associated with the philosophical assumptions attributed to pragmatism (Morgan, 2007; Teedlie & Tashakkori, 2009). Although it is not the only philosophical approach to mixed methods,

pragmatism is seen to offer an alternative worldview to positivism/post-positivism and constructivism, and focuses on the research problem and the consequences of that research (Teedlie & Tashakkori, 2009; Creswell & Plano Clark, 2010).

As the aim of mixed-methods research is to combine approaches in a way that offers the best opportunity to address a particular research question, it fits cohesively with the tenets of pragmatism (Johnson & Onwuegbuzie, 2004). As pragmatism endorses methodological pluralism, where it is essential to gain insight into human inquiry, it allows for the use of divergent and even conflicting theories in the one study. This allows researchers to incorporate both quantitative and qualitative principles where the incorporation of both sets of principles is necessary in order to answer the specific research questions. As pragmatism has no commitment to a singular philosophy, it allows the best combination of qualitative and quantitative components, which is deemed inappropriate by those with a purist approach to these methods.

Both mixed-methods research and pragmatism are inherently placed within the context of paradigm discussions due to their stance in combining different traditions. Foss & Ellefsen (2002) argue that mixed methods lies in a comprehensive new epistemological position which holds that, due to the complex nature of research in social and health sciences, we need different and varied types of knowledge. This position rejects the mixing of two epistemological positions, but supports mixed methods as a distinct epistemological position in its own right and validates the importance of its theoretical and methodological relevance (Teedlie & Tashakkori, 2009). This is a position that transcends the paradigm wars and proposes that pragmatism offers a suitable research paradigm within which mixed-methods research can be founded (Johnson *et al.*, 2007; Morgan, 2007).

Notwithstanding the merits of pragmatism, there has been criticism of the philosophy and its proponents because of the sometimes vague rationale provided for such studies (Bergman, 2008; O'Cathain, 2009). There is, therefore, a need to position oneself clearly and provide explicit criteria and rationale for the pragmatic mixed-methods study.

Pragmatism, when considered as an alternative paradigm, has been suggested to accept, philosophically, the notion of singular and multiple realities, and positions itself towards finding solutions to practical problems (Creswell & Plano Clark, 2007). It manages, therefore, to avoid the contentious issues of truth and reality, and provides the researcher with the freedom to choose an appropriate method or technique best suited to the research question. Challenging this notion is an alternative position of 'non-paradigmatic', which is shared among many proponents of mixed-methods research (Greene & Caracelli, 2003; Teedlie & Tashakkori, 2009) (p.94 & p.97). This position has also been described as the 'dialectical thesis', by Greene & Caracelli (2003). Non-paradigmatic mixed-methods research, which may or may not be based on pragmatism, employs different research strategies which, in themselves, belong to different research paradigms.

This obliges the researcher to make a decision about the paradigm in which they consider pragmatism and mixed-methods research to belong, independent of the method and underlying theory (non-paradigmatic) or an alternative paradigm (Teedlie & Tashakkori, 2009). While it must be acknowledged that the construction of a mixed-methods paradigm is in its infancy, this work will draw on this alternative viewpoint as its epistemological foundation. Adopting a stance of 'alternative paradigm', as suggested by Morgan (2007); (O'Cathain *et al.*, 2007), allows freedom from constraints by accepting the use of multiple methods within a single study. This approach is justified in this study by the nature of the research question, which relies on a mixture of qualitative and

quantitative methods to capture the essence and reality of the factors influencing the decision to breastfeed.

Mixed-methods research, underpinned by a pragmatist philosophy, was chosen as the most appropriate method for this study because it enables a complete and full understanding of the factors affecting initiation and duration of breastfeeding. Survey data, which draws on the positivist paradigm and is deductive in nature, is required to provide the context in which breastfeeding occurs in Ireland. In order to present a full description of the phenomenon, and to ascertain how these decisions shape women's views around initiation and duration, a constructivist inductive approach is also required to meet the specific aims of this study.

### **3.2.5 *Mixed-methods research designs***

Mixed methods has emerged as a legitimate approach to addressing research questions in a variety of research fields (O'Cathain *et al.*, 2007). Its acceptance among social scientists arose from a need to address complex research questions, which could not be easily answered utilising purely quantitative or qualitative methods. The combining of qualitative and quantitative methods in one study allows researchers to draw on the merits, and minimise the weaknesses, associated with each approach (Doyle *et al.*, 2009).

As mixed methods has only come to the fore as a tradition in its own right in the past 20 years, recent efforts have become focused on devising a language and tradition to describe accurately and consistently the plethora of varieties available (Creswell & Plano Clark, 2007; Teedlie & Tashakkori, 2009). Core texts on mixed methods describe some of the variety of designs (Creswell, 2003; Tashakkori & Teddlie, 2003; Bergman, 2008; Teedlie & Tashakkori, 2009), which include concurrent nested/embedded, sequential explanatory, sequential

exploratory, sequential transformative, concurrent transformative, and concurrent triangulation. Fielding & Fielding (2008) offer an alternative typology of mixed-methods research designs, noting that researchers commonly utilise one of three designs. These are described as: 1) the validity model which seeks to validate findings within one study, 2) a complement design, where the researcher seeks a comprehensive perspective on the phenomenon of interest (as is the case in this study), and 3) the triangulation model, whereby complete integration of methods is the only way in which to view the phenomenon of interest and answer the research question.

Despite multiple typologies of mixed-methods research, a basic tenet of all these typologies remains that researchers should select a design that answers their research questions (Johnson & Onwuegbuzie, 2004). The design selected for that purpose in this study is the sequential, embedded explanatory design. Explanatory designs are typically utilised where qualitative data are necessary to add depth to quantitative findings (Creswell & Plano Clark, 2007). In this study, the quantitative survey provides comprehensive data on breastfeeding prevalence, which is essential to meet the study's aims. While the survey also provides data on the factors affecting initiation and duration, it cannot provide insight into the experiences of breastfeeding mothers. These insights and understandings may be missed by traditional mono-method research, which would not yield the knowledge necessary effectively to inform a future breastfeeding intervention.

## **4 Chapter 4: Study Methods**

### ***4.1 Introduction***

The purpose of this chapter is to outline the overarching methods that underpin this study. Methods that are specific to the quantitative and qualitative aspects of the study are also discussed in this section.

#### ***4.1.1 Origins of this study***

In December 2007, a tender was circulated by the Health Service Executive (HSE) for an organisation to undertake a 'National Infant Feeding Survey'. I immediately expressed an interest and, under the guidance of Professor Cecily Begley, I and three of my colleagues put forward a proposal and we were awarded the tender. From the outset, I expressed my desire to present this work as part of a doctoral thesis, because I felt the data were essential to filling a gap in understanding the context of breastfeeding in Ireland.

Members of the research team (Professor Cecily Begley, Margaret Carroll and Sally Millar) were involved in numerous visits to the many disparate maternity units/hospitals, because this phase of the project could not have been carried out by one individual. The team was also involved in the preparation of the study materials, including the design of leaflets, posters and questionnaires, and the formatting of the report submitted to the HSE. The workload, organisation and administration of this study were primarily undertaken by me, under the guidance and support of my supervisors.



## **4.2 Study Aims**

The overall study aims were to examine rates of exclusive and partial breastfeeding at 48hours after birth, 3-4 months and 6-7 months postnatal, and establish factors that influence a woman's decision to breastfeed.

### **4.2.1 Study Population**

The population of interest for the prospective cohort study was all women having a baby in Ireland, regardless of nationality, age, socio-economic group, country of their birth or any other factors. Mothers who gave birth in April 2008 in the Republic of Ireland were the specific population of interest.

## **4.3 The Quantitative survey**

The purpose of this part of the study was to identify rates of breastfeeding at birth, 3-4 months and 6-7 months from a nationally representative sample and to establish factors that influence a decision to breastfeed.

The specific aims were:

- To provide comprehensive data on rates of exclusive and partial breastfeeding in Ireland.
- To establish what factors influence the decision to breastfeed or not among women in Ireland.

### **4.3.1 Sample**

A representative, volunteer sample of women giving birth in Ireland was utilised for the survey of infant feeding in Ireland.

In the year before this study, 71,963 babies were born in Ireland (Economic and Social Research Institute and Department of Health and Children, 2008a). In order to reflect breastfeeding initiation and duration rates in such a potentially large population, a period of one calendar month was chosen by the funders for the sampling frame (April 2008). Consultation with the clinical sites involved revealed that there was no conflict with other research projects taking place during this period, and this timing also ensured that Phase 3 (postal survey at six to seven months) would be concluded prior to Christmas, thereby avoiding the risk of being negatively affected by the traditionally high volumes of post during this period. It was also felt that, for the midwives distributing the questionnaire, a calendar month would provide a clear beginning and end for sampling. As the study progressed, it became apparent that the response rate in some units was not going to be very high, despite strong encouragement. The duration of Phase 1 of the study, which was scheduled to run from 1-30 April 2008, was therefore extended for one week to 7 May 2008, in order to maximise the number of women who would be eligible to participate in the later phases.

All 20 maternity hospitals/units and all independent midwives listed on the Home Birth Association of Ireland's website were invited to participate. Figures provided by the maternity hospitals/units indicated that approximately 6,100 women were eligible to take part in Phase 1 of the study. Of these, a total of 2,527 women participated, 2,036 of whom gave birth in April 2008.

The accuracy of the number for the total population eligible to participate cannot be verified for every unit because, although units were asked to provide figures for the number of *mothers* who gave birth to live infants greater than 24 weeks, some units could only provide the number of *infants* born. This means that the eligibility figures supplied by these units will have been slightly distorted by any multiple births that took place in those units during the study period.

An estimated one in five births in 2007 were to mothers from outside Ireland (Economic and Social Research Institute and Department of Health and Children, 2008a, 2010) therefore, in order to facilitate participation in the study by non-native English speakers, maternity hospitals/units were contacted and asked to provide details of the languages that would be required to ensure that the sample would be inclusive of all women giving birth in Ireland, through the appropriate translation of the study materials.

Access to the population was negotiated individually with each of the 20 maternity hospitals/units through the Director of Nursing or Midwifery.

#### **4.3.2 Inclusion and Exclusion Criteria**

##### *Inclusion criteria*

All women who gave birth to a live infant, at 24 weeks gestation or greater, during the study period were eligible to participate. The 2,527 women who agreed to take part in Phase 1, and who provided their names and addresses for contact purposes, formed a volunteer sample for Phase 2. Those who took part in Phase 2, and who reported that they were still breastfeeding at that time formed the sample for Phase 3.

The inclusion criteria for the qualitative component were those mothers who indicated that they would be willing to participate in further research, who had discontinued breastfeeding when their babies were less than six weeks old, and who had indicated that this was earlier than they had intended.

#### *Exclusion criteria*

Women who had given birth to a stillborn baby or whose baby had died within the first 48 hours during the study period.

#### **4.3.3 Recruitment**

Information about the study was disseminated to women in the ante-natal clinics and postnatal wards of the maternity units and hospitals.

Each unit was visited on at least three occasions. The first visit was made during the second week in March 2008 in order to put up posters in the antenatal clinic to make women aware of the study. Information posters were displayed in all antenatal clinics (and given to all independent midwives) and information leaflets were distributed to women as they waited for their ante-natal appointment (or when they attended their independent midwife). Postnatal wards were also visited on two occasions to inform the postnatal midwives about the survey and to ask them to distribute the questionnaire and encourage mothers to complete it. Midwives were chosen to distribute the questionnaire because of their access to mothers and their ability to assess those who met the inclusion criteria. No remuneration or incentive was provided to mothers for participating in any phase of the study. Posters were displayed in the postnatal wards for the duration of the survey, to advise women that the study was taking place.

The questionnaire and survey materials were translated into languages that were identified by the 2006 census enquiry as being most commonly utilised in Ireland: Polish, Latvian, Lithuanian, Irish and French (CSO, 2007). In addition, following feedback from hospitals during the planning phase about the need for any other languages, the questionnaire was translated into Portuguese as well.

Cross-cultural surveys that employ translated formats are known to require rigorous methods in order to ensure consistency of language and interpretation (Harkness *et al.*, 2003). In acknowledging that language translation is a complex process that requires a systematic approach, a professional translation company employing native speakers was contracted to undertake this task. Forward translation was undertaken by a professional team experienced in health care translation that had been recommended by a number of other researchers. Instruction was given on the approach to translating, emphasizing conceptual rather than literal translations and clarification was provided on many of the terms used in the survey for accuracy and understanding. Further verification and back translation of the Polish translation was provided by a co-worker, as it was anticipated that this group of women would form the largest group likely to undertake the survey in a language other than English (CSO, 2007). This identified one difficulty relating to the interpretation of ethnicity which was corrected before analysis of the results.

#### **4.3.4 Survey Design**

Quantitative surveys are known to yield accurate results about populations when the researcher has made appropriate design choices (Salant & Dillman, 1994). Such design choices relate to the sample, the survey method and the questionnaire. Due to the large sample size, a self-administered postal survey was chosen as the most feasible method of data collection. However, a Cochrane systematic review by Edwards *et al.* (2007) highlighted that 'first

contact' postal questionnaires result in notoriously low response rates. For this reason, the sample for Phase 1 was obtained by direct contact methods in the hospitals and surveys were collected by the research team. This approach was favoured over the use of an anonymous birth register, which would have required a postal questionnaire as the first step. In order to maximise the response rate, and to minimise the amount of time it would take for women to complete the questionnaire, the survey instrument for Phase 1 was kept short.

A postal survey was employed for Phase 2, which consisted of all women who completed Phase 1 (n=2,527) and who had agreed to be part of this follow-up survey. A postal survey was also utilised during Phase 3, for those mothers (n=621) who indicated that they were still breastfeeding when they completed Phase 2.

#### **4.3.5 Questionnaire Design**

The questionnaire for Phase 1 (Appendix I) was confined to collecting contact information and answers to only seven questions about infant feeding, in order to minimise the amount of time required to complete it. The aim was to capture women's attention and encourage them to provide their details, in order to have a database of willing volunteers for Phases 2 and 3 of this survey. The main demographic details were then obtained in Phase 2, including information on feeding methods, reasons for discontinuing breastfeeding and other salient details.

Questionnaires for all three phases were derived from a well-tested survey instrument used in the United Kingdom over several decades (Bolling *et al.*, 2007). Changes and modifications were necessary to ensure that all items were applicable to women in Ireland and were capable of yielding the necessary data in this population. The Phase 2 questionnaire (Appendix II) contained 87

questions, which were required to collect the major demographic details sought in this phase (including socio-economic group, number of other children and type of delivery). It was designed and structured to maximise the response rate to postal questionnaires (Oppenheim, 1992; Edwards *et al.*, 2007). As suggested by Oppenheim (1992), when a questionnaire is lengthy, emphasis must be placed on the notion that each question has a covert function of motivating the respondent to continue to co-operate. Sequencing of questions was, therefore, carefully considered in order to ensure that the procedures for completing the questionnaire correctly were robust.

The Phase 3 questionnaire (Appendix III) was designed to measure rates of breastfeeding at six to seven months, whether exclusive or combined with formula-feeding, and contained 33 questions. Given the age of the babies at Phase 3, questions relating to the mothers' work status were also included.

Longitudinal studies are known to carry two inherent difficulties (Oppenheim, 1992), namely, attrition at the varying phases and complexity of analysis. A third challenge for this study concerned designing a research instrument that remained user-friendly for women who were both breast and formula-feeding (phases 1 & 2), and for those switching to different feeding methods during the study (all phases). Strategies used to minimise the impact of these difficulties involved rigorous pilot-testing of the tools for user-friendliness, and maintaining frequent contact with the sample in order to maintain their interest and reduce attrition from the study. To engage the non-breastfeeding mothers, questions relating to formula-feeding were added to the survey, although these data were not necessary to meet the objectives of the study. The procedures used to test the validity and reliability of the survey tools are described in sections 4.4.1 and 4.4.2, respectively.

#### **4.3.6 Survey protocol**

The Phase 2 questionnaire (Appendix II) was posted (in the appropriate language for the recipient), along with a pre-addressed, freepost envelope, to everyone who had volunteered from Phase 1. One week later, a reminder letter (Appendix IV) was sent to all women in this group. This was followed ten days later by a further reminder, along with another copy of the questionnaire and another pre-addressed, freepost envelope, to all those who had not responded by that time. Follow-up phone calls were made to approximately 800 women who had not returned the questionnaire during the ten days following the second reminder.

The Phase 3 questionnaire was posted (in the appropriate language) to 621 mothers who reported that they were still breastfeeding at the time of Phase 2, with a covering letter reminding them about the survey and a pre-addressed, freepost envelope. A reminder letter was sent to all women one week later. Ten days later, a further reminder, along with another copy of the questionnaire and another pre-addressed, freepost envelope, was sent to any of these women who had not responded by then. Follow-up phone calls were made to approximately 200 women who had not returned the questionnaire in the ten days following the second reminder.

#### **4.3.7 Response rate**

Non-response has been identified as a major problem in survey research (Drennan 2003). Due to the longitudinal nature of this study, three salient stages of non-response were identified as having a potential impact on the findings. These were: non-response at Phase 1, resulting in exclusion from the study, and non-response at Phases 2 and 3. As Phase 1 was administered by the midwives, it is difficult to distinguish whether non-response constituted refusal



of women to participate, or failure to invite women to participate. It was felt that asking midwives to record which women had received the survey would place an additional burden on their workload and could act as a disincentive to distributing the questionnaire.

Strategies that were adopted to address the potential for non-response in this study included informing women and midwives about the study before it began, careful pre-testing of the data collection methods, and follow up of non-respondents to Phases 2 and 3. In order to protect the confidentiality of those women who opted out of the study, it was not possible to record who received a questionnaire or to cross-check this with the birth register.

During Phase 1, all units were telephoned on every alternate day in the first week of April to remind midwives about the study and to encourage the distribution of questionnaires. After the first week, it was established that two particular units had yielded a less than satisfactory response rate. It was then decided to visit each of these units on a weekly basis for the remainder of the study period. In one unit, the method of administering the questionnaire was changed in an effort to increase the response rate. In another unit, it was noted that two other surveys were taking place therefore, in addition to a weekly visit from one of the research team, the Clinical Midwife Specialists in Lactation visited regularly to remind the midwives to distribute the infant feeding questionnaire.

As the study progressed, it became apparent that the response rate in some units was not going to be very high, despite the strong encouragement and support described above. The duration of Phase 1, which had been scheduled to run from 1-30 April was, therefore, extended for one week to 7 May 2008, in order to maximise the number of women who would be eligible to participate in the later phases. At the end of the study period, the response rate for Phase

1 was calculated by cross-referencing the numbers of women from each hospital/unit/independent midwife who completed the questionnaire during the month of April against the numbers of live births recorded during that period. In some units, mothers who had given birth on 30 and 31 March (n=105) completed the questionnaire. Although this figure was not included in calculating the response rate, these women have been included in the survey.

In line with a systematic review (Edwards *et al.*, 2007) on maximising the response rate to postal questionnaires, all study materials and correspondence issued to the women during Phases 2 and 3 used the same image on letterheads and envelopes as that used in Phase 1. Letters and reminders were kept short and a questionnaire was included with all reminder letters.

The response rate from women attending the independent midwives was 100%. The response rate varied from 6% to 70% across the different units (Table 5). Three units had a response rate below 15%, which is very disappointing. Two units (A & C), whose response rate was 25% or less, were among those with the highest number of births during the survey period, and when research team members visited these units during the survey they noted very high activity levels in these units. In sites where a Clinical Midwife Specialist in Lactation was in post, these midwives were asked to assist with the survey by emptying the boxes on a weekly basis (so that the response rate could be monitored during the survey period), and by giving regular reminders to the midwives to hand out the questionnaire. In the case of unit N, which had the lowest response rate (6%), despite several requests, no questionnaires were returned until after the end of the survey period, which meant that it was not possible to identify the poor response rate until data collection for Phase 1 had ended.

**Table 5: Unit Codes and response rates for April**

Unit/IMW* Code	Live Births for April	Response rate for April	
	N	N	%
U	8	8	100
J	172	120	70
E	232	148	64
F	146	74	51
B	166	82	49
M	127	57	45
I	298	130	44
D	193	83	43
Q	173	74	43
K	194	82	42
T	210	86	41
G	130	50	38
H	717	254	35
P	485	168	35
L	647	206	32
O	176	45	26
A	744	183	25
R	314	57	18
C	683	94	14
S	209	30	14
N	84	5	6
Total	6,100	2,036	30

\*IMW = Independent Midwife

It is impossible to determine how many women were offered the opportunity to participate but declined. All units were written to after Phase 1 had been completed and informed of their individual response rate. At this time, they were also asked to check that all completed questionnaires had been returned to the research team. Most of the units responded that all completed questionnaires had been returned. Two units (J & D) expressed their

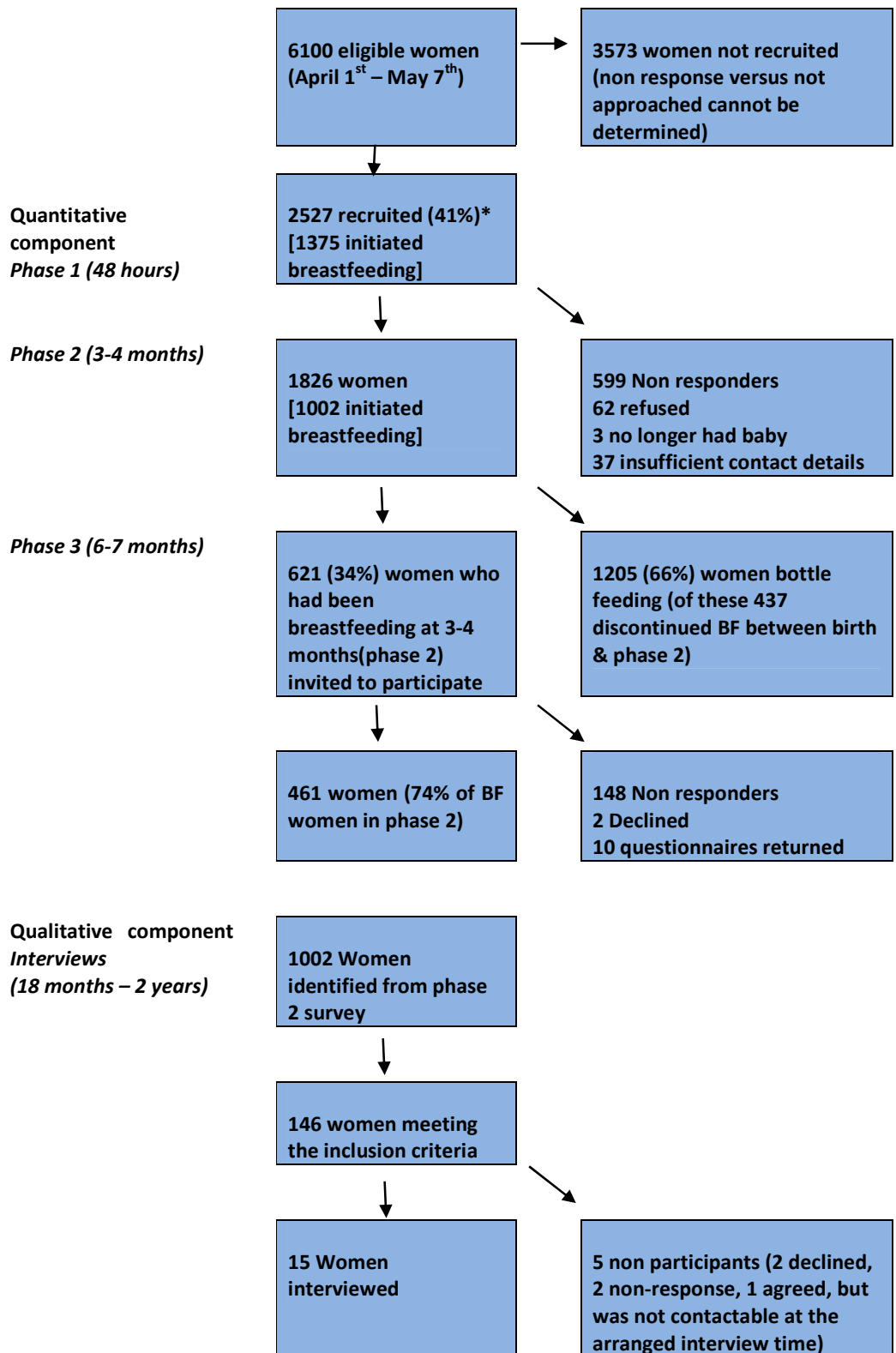
disappointment with their response rate, as they felt confident that the questionnaire had been given to the vast majority of mothers who were eligible to participate. It is interesting to note that both of these units had achieved higher than average response rates.

To assess the effect that non-response to Phase 1 may have had on the findings, comparative analysis was undertaken with the National Perinatal Reporting System (NPRS) 2006 data (Economic and Social Research Institute and Department of Health and Children, 2008b). This showed that the sample achieved in this survey was broadly similar in demographic terms (mean age, marital status and birth order), to the sample achieved in the NPRS 2006 survey.

Of the 2,527 women who completed Phase 1 of the survey, 72% (1,826) responded to Phase 2. A further sixty-five women replied to say that they no longer wished to take part, or that their baby was no longer with them; 37 women had given insufficient contact details to enable the Phase 2 questionnaire to be posted to them, and 599 women did not respond.

Figure 1 shows that of the 1,826 mothers who completed Phase 2, 621 mothers were either exclusively (n=347) or partially breastfeeding (n=274) at that time, and were thus included in Phase 3. Of these 621 women, 461 responded to Phase 3, representing a 74% response rate.

Figure 1: Flowchart showing response rates to Phases 2 & 3



\* Includes 105 women who gave birth prior to start of study (April 1<sup>st</sup>) – thus the percentage of eligible women recruited during the study period April 1<sup>st</sup> – May 7<sup>th</sup> = 40%

#### **4.3.8 Profile of non-respondents**

Of the 2,527 mothers who completed Phase 1, 701 (28%) did not participate in Phase 2. Of these non-respondents, 52% (n=343) breastfed their infants at birth and 47% (n=307) formula-fed at birth. This is slightly different from the figure for the prevalence of breastfeeding at birth in women who responded to Phase 2 (56% breastfeeding compared to 43% formula-feeding), but not statistically significantly different. The mean age of non-respondents was similar to that of respondents (30 years), but the proportion of non-respondents in the youngest age group was higher: 19% (n=67) were less than 24 years old in contrast to 8% (143) for respondents. The social classification of mothers who did not respond to Phase 2 is broadly comparable to that of respondents, although a higher percentage of unemployed mothers did not respond to Phase 2 (5%, n=32 compared to <1%, n=4).

#### **4.3.9 Measures utilised in the questionnaire**

As establishing the incidence of breastfeeding was the primary outcome, much care was taken to ensure that the measures used were as precise and valid as possible (Peat, 2002). However, as with all studies exploring the concept of breastfeeding, there were challenges to the measurement of infant feeding. This led to the inclusion of questions to determine infant feeding patterns over the previous 24 hours in addition to the previous seven days, thus allowing for accurate reflections of both exclusive and partial breastfeeding over both a short and longer time period.

Lack of precision and consistency in defining breastfeeding has, in the past, led to problems with the interpretation of data and consequent difficulty in drawing comparisons between studies (Larsen *et al.*, 2008). For this reason, consideration was given to various definitions of breastfeeding, before

ultimately adopting those recommended by the World Health Organization (WHO, 2003). These definitions (Table 6) mirror those used in an earlier study (Bolling *et al.*, 2007) and facilitated the accurate classification of infant feeding methods as well as comparisons with other international studies.

**Table 6: Definitions of breastfeeding applied in this study**

<b>Category of infant feeding</b>	<b>Requires that the infant receive</b>	<b>Allows the infant to receive</b>	<b>Does not allow the infant to receive</b>
<b>Breastfeeding</b>	The child has received breastmilk (direct from the breast or expressed)	Any food or liquid including non-human milk	
<b>Exclusive breastfeeding</b>	Breastmilk from his/her mother or a wet nurse or expressed breastmilk (EBM).	Drops or syrups consisting of vitamins, mineral supplements or medicines	Anything else
<b>Predominant breastfeeding</b>	Breastmilk or EBM from a wet nurse, predominant source of nourishment	Water and/or water-based drinks (sweetened and flavoured water, etc.); fruit juice; oral rehydration salts; drops and syrup forms of vitamins, minerals and medicines; and ritual fluids (in limited quantities)	Anything else, in particular, non-human milk, food-based fluids
<b>Artificial feeding</b>	Feeding an infant on breastmilk substitute		Breastmilk
<b>Bottle-feeding</b>	Feeding an infant from a bottle, whatever is in the bottle, including expressed breastmilk, water, formula, etc	Any food or liquid including non-human milk	
<b>Complementary feeding</b>	The child is receiving both breastmilk and solid (or semi-solid) food	Any food or liquid including non-human milk	

One further definition has been added, documented by the WHO in 2001, as follows:

**Partial breastfeeding:** The infant receives some breastfeeds, and some artificial feeds, either milk or cereal or other foods (WHO, 2001).

The Five Year Strategic Action Plan of the Department of Health and Children (Department of Health & Children, 2005) endorsed the WHO definitions of exclusive (WHO, 2003) and partial (WHO, 2001) breastfeeding as those to be applied in assigning targets related to breastfeeding duration in Ireland, and these are applied in this study.

**Formula feeding:** is frequently referred to by participants of the qualitative aspect of this study and can be taken to refer to **Artificial Feeding** as outlined in Table 3.

#### ***4.3.10 Demographic variables of interest***

The literature review had revealed that breastfeeding initiation and duration were influenced by many demographic factors including socio-economic status, education status and nationality. A review of national and international best practice was undertaken in order to ensure the selection of the most appropriate demographic variables to reflect the sample population accurately. Following considered reflection, the social classifications utilised in the 2006 census enquiry (CSO, 2007), rather than those used in the Economic and Social Research Institute and Department of Health and Children (2008a) and the Economic and Social Research Institute and Department of Health and Children (2008b), were adopted. While many similarities exist among both classification systems, it was felt that use of the CSO classification system would allow for fuller descriptions and would also facilitate ease of comparison with the largest dataset pertaining to the population of Ireland. The CSO system also allowed for



comparison of results by geographical area, which the NPRS system does not permit.

#### **4.3.11 Data Analysis**

Data analysis was carried out using SPSS versions 15 and 16 (SPSS, 2006, 2008). Following lengthy screening and cleaning of the data, analysis took place utilising the three time points for the study. As the data contained mainly categorical variables, crosstabs and chi-squared tests were most commonly applied in order to establish relationships between the variables. Additional summary analyses were also prepared independently using Microsoft Excel, for quality assurance purposes. Further multivariate analysis involved log-linear analysis and is described in-depth in Chapter 5.

#### **4.4 Validity and reliability**

The measures used in the survey to ensure validity and reliability differ from those used in the qualitative study. In both approaches to research, however, validity and reliability serve the purpose of verifying the quality of both the data and the results (Creswell & Plano Clark, 2007).

Recent scholarly writings in mixed-methods research have suggested that the terms 'validity' and 'reliability' are no longer appropriate to this type of research (Onwuegbuzie & Johnson, 2006). Onwuegbuzie *et al.* (2009b) proposed a multi-faceted framework for assessing 'legitimation' in mixed-methods research. It has been suggested that the term and notion of legitimation is more accurate in presenting issues relating to validity and reliability, as it is used by both qualitative and quantitative researchers alike

and encompasses a process of assessing the process and outcomes of mixed-methods studies (Onwuegbuzie *et al.*, 2009b; Teedlie & Tashakkori 2009).

Central to the process of legitimation is the notion that the relevant mixed legitimation types such as validity, reliability and trustworthiness should continue to be used, assessed and optimised (Onwuegbuzie *et al.*, 2009b). For this reason, these terms have been retained for the purpose of assessing this mixed-methods study. However, in providing sound and rigorous justifications for the decisions taken, it is anticipated that the central tenet of legitimation will be achieved and that valid and reliable results will be assured.

#### **4.4.1 Validity**

Validity is the term frequently used to estimate the accuracy of a study instrument, the strength of the evidence for the interpretations that arise from such tools, and the subsequent results (internal validity). External validity refers to the extent to which study results can be applied to other individuals or settings. The historical development of the notion of validity can be traced to early seminal works (Campbell, 1957; Campbell & Stanley, 1963) which highlighted the importance of minimising threats to internal and external validity of studies. More recently, authors have developed frameworks to assess validity in varying types of quantitative studies (Shadish *et al.*, 2001; Onwuegbuzie, 2003). In particular, Onwuegbuzie *et al.* (2009a) offer a comprehensive list of strategies that can be used to assess validity in mixed-methods studies. These are summarised in Table 7.

**Table 7: Areas of validity evidence in mixed-methods research, adapted from Onwuegbuzie et al (2009)**

	<b>Validity type</b>	<b>Description</b>
Criterion-related		
	Concurrent validity	Assesses the extent to which scores on an instrument are related to scores on another, already-established instrument administered approximately simultaneously or to a measurement of some other criterion
Content-related		
	Predictive validity	Assesses the extent to which scores on an instrument are related to scores on another, already-established instrument administered in the future or to a measurement of some other criterion
	Face validity	Assesses the extent to which the items appear relevant, important, and interesting to the respondent
	Item validity	Assesses the extent to which the specific items represent measurement in the intended content area
	Sampling validity	Assesses the extent to which the full set of items sample the total content area
Construct-related		
	Substantive validity	Assesses evidence regarding the theoretical and empirical analysis of the knowledge, skills, and processes underlying respondents' scores
	Structural validity	Assesses how well the scoring structure of the instrument corresponds to the construct domain

Table 7 Contd.		
	Convergent validity	Assesses the extent to which scores generated from the instrument of interest are highly correlated with scores from other instruments that measure the same construct
	Discriminant validity	Assesses the extent to which scores generated from the instrument of interest are slightly but not significantly related to scores from instruments that measure concepts theoretically, and empirically related to but not the same as the construct of interest
	Divergent validity	Assesses the extent to which scores yielded from the instrument of interest are not correlated with measure of constructs antithetical to the construct of interest
	Outcome validity	Assesses the meaning of scores and the intended and unintended consequences of using the instrument
	Generalizability	Assesses the extent that meaning and use associated with a set of scores can be generalized to other populations

It could be suggested that the use of an already well-established questionnaire (Bolling *et al.*, 2007) addresses many of the criteria outlined above. Peat (2002) also emphasises that a study does not need to demonstrate every conceivable quality measure but rather must highlight issues of validity so that readers can assess for themselves the findings of that particular study.

However, prior to using any questionnaire it is important to assess its effectiveness and to demonstrate that it provides a reasonable and valid approach to addressing the research question (Peat, 2002). This can be

achieved by conducting pre-survey research to confirm that items included in the questionnaire make sense to both the researcher and the participants. Content and face validity of the Phase 1 survey tool were, therefore, pre-tested with the assistance of 1) a representative sample of the study population (ten women) and 2) experienced lactation consultants (n=5). Women were recruited from well baby clinics at six weeks postnatal in one of the study sites and were informed of the purpose of the exercise. Some changes were made in response to the comments received. The Phase 2 survey tool was tested for face validity by asking 20 postnatal women to complete it. Cognitive interviewing was considered as a means to assess problematic questions (Drennan, 2003) but was not utilised, as a suitable location was not available for private pre-testing. Women were, therefore, interviewed after completing the questionnaire and asked to comment on its user-friendliness and the time taken to complete it, and to identify any issues relevant to infant feeding that were not addressed. A panel of eight clinicians and lactation consultants was asked to adjudicate on the content validity, which is the extent to which the items address the objectives of the survey (Peat, 2002). Phase 2 was also checked by the National Adult Literacy Agency (NALA) to assess and improve language and ease of use. Modifications were made to the survey questions based on changes suggested by NALA.

Content and face validity of the Phase 3 survey tool were pre-tested with the assistance of a representative sample of the study population (eight women), and five experienced lactation consultants. Some changes were made in response to the comments they provided.

Phase 3 contained many questions that had also been included in Phase 2 which, as noted above, had been checked by NALA to assess and improve language and ease of use. The use of the same questions in both phases allowed for comparisons to be made between different time points.

#### **4.4.2 Reliability**

The Phase 1 questionnaire could not be tested as the ethical consent for the study precluded direct contact between the researcher and participants, at this point in the study. Phase 2 and 3 questionnaires were tested for reliability of the instruments using the test-retest approach (Oppenheim, 1992). As direct access to women whose infants were of an age appropriate to each of the tools was not possible, permission was sought and granted from a local maternity hospital to approach women attending their baby clinics. The midwife in charge acted as a gatekeeper and nominated suitable mothers from that clinic who were then directly approached by one of the team and asked to complete the survey at home and return it in the pre-addressed envelope provided. The purpose of the test was explained to them and they were informed that their answers would not be part of the survey results. Two weeks later the survey was re-administered by post with a stamped, pre-addressed envelope. Approximately 48 women completed the initial stage of the test-retest but only 20 returned each of the two questionnaires required for reliability testing.

The data from the questionnaires were coded and (double) entered into SPSS. The data from the second administration of the questionnaire were then compared to the original data for the same participants. Cohen's Kappa, which measures the strength of agreement between the test and retest responses, was calculated for the cross-tabulated categorical questions. As the majority of the items on the questionnaire were categorical, the Kappa statistic was utilised to test consistency (Field, 2005). For questions for which the answers should remain stable from visit to visit (e.g. relating to feeding intentions before birth), the Kappa scores ranged from 0.87 to 1.0, indicating very strong test-retest agreement. Items that would be subject to change over the period of the test-retest (e.g. age of the infant) were not included. The result of this exercise indicated that the survey questions were robust and reliable.

#### **4.4.1 Quantitative data analysis**

The data from all phases were analysed using The Statistical Package for the Social Sciences (SPSS) versions 15 and 16 (SPSS 2006, 2008). Sample characteristics are described using percentages, means or medians and standard deviations. Comparative analyses have been carried out using Pearson's chi-squared test to analyse the relationship between categorical variables. This was favoured over the likelihood ratio because of the large sample size. Yates continuity correction was not applied to the chi-squared statistic, as the literature suggests that the resulting calculation is an over-correction in the chi-squared results (Field, 2005). Additionally, Fisher's exact test for 2x2 contingency tables was not necessary, owing to the large sample size.

Log-linear analysis was used, where appropriate, to compare the behaviour and attributes of those mothers who initiated versus those who did not initiate breastfeeding and to evaluate those mothers who continued and discontinued breastfeeding at 3-4 months. This allowed for expression of categorical data and the chi-squared statistic as a linear model by using log values. Log-linear analysis is typically used to evaluate multiway contingency tables that involve three or more variables (Azen & Walker, 2010). This provides an additional layer of analysis and highlights more specific relationships between variables; however, as log-linear analysis requires a maximum of four levels in each contingency table this can result in a loss of information in the categorical data over their original form (Zhu *et al.*, 2006). Careful considerations regarding the data were therefore taken to ensure that collapsing any category did not result in a reduction in power for testing of those associations. Consequently, log-linear analysis was selected for this data set over structural equation modelling and binary logistic regression modelling as its factors have fewer levels, providing greater stability in the resulting models (Azen & Walker, 2010).

The level of statistical significance was accepted at  $\leq 0.05$ . Some summary analyses were also prepared independently using Microsoft Excel for quality assurance. These were consistent with the main analyses from SPSS.

Analysis of socio-economic group is based on the Census Classification system utilised in the 2006 census enquiry (CSO, 2007). The code to a woman's or man's occupation is based on the kind of work she or he performs. In addition to the categories described in the census enquiry, two residual groups were added for those who were unemployed or students, as the CSO (2007) report used 'head of household' to derive classifications for these individuals and this was not deemed appropriate for this survey. Communication took place with the Central Statistics Office prior to coding for classification of occupations to ensure consistency of coding. The woman's education level was also categorised based on the system employed for the Irish population as a whole in the 2006 Census enquiry.

#### ***4.5 The Qualitative component***

The purpose of this part of the study was to explore unsatisfactory breastfeeding experiences among the survey group, and the potential impact these might have on future infant feeding choices for women who discontinued breastfeeding in the early postpartum period.

The specific aims were:

- To explore the impact of sub-optimal breastfeeding experience on future infant feeding choices
- To ascertain these women's views on the factors that would assist them to breastfeed successfully in the future



#### **4.5.1 Qualitative approach**

As has been described in Chapter 3, this aspect of the study was underpinned by the principles of grounded theory as outlined by Glaser & Strauss (1967). Grounded theory studies can be characterised by their systematic approach to theory development, through the use of theoretical sampling, constant comparative analysis, concurrent performance of data collection and analysis, and identification of core categories or variables through a progression of coding levels. The central tenets of grounded theory have been described as being aligned to a pragmatist approach (Strübing, 2007) and were, therefore, congruent with this study.

#### **4.5.2 Sample selection**

Initial sampling was purposive and interviews took place with a random sample of the mothers who had given their consent to take part. The first four mothers were chosen because of their proximity to the researcher and they had met the inclusion criteria. After analysis of these interviews, theoretical sampling was employed. Theoretical sampling involves collection, coding and analysis as joint processes before deciding what data to collect next and where to source it (Glaser & Strauss, 1967). As important themes began to emerge, such as the role of pain in future breastfeeding and reconciling the decision to stop, women were specifically selected in order to develop these emerging themes. Jean (interview 4) identified pain as an important factor in future breastfeeding and thus, the subsequent 3 participants were recruited as they had indicated on their questionnaires that they had experienced pain while breastfeeding. Analysis of these interviews suggested that parity may have some bearing on the findings and thus multiparous women were sampled to explore this relationship. As the analysis further emerged, it also became evident that the women participating in this phase were more likely to have given birth via

caesarean section. Some effort was then made to sample mothers who had experienced vaginal birth in order to obtain a fuller description of the emerging theory (Caron and Pauline). The final two women (Alison and Teresa) were theoretically sampled to confirm the key findings relating to; reconciling the decision to stop and the impact of pain on women's attitudes to breastfeeding in the future. At times theoretical sampling proved difficult, as information around phenomena of interest, had to be gleaned from the women's questionnaires. However, it did prove a useful strategy, particularly as many women had provided significant depth in their free-text answers to the questionnaire, allowing for truer theoretical sampling.

#### **4.5.3 Criteria for sampling**

Women who had consented to participate further were selected from the survey. These mothers had discontinued breastfeeding when their babies were less than six weeks old and had indicated that this was earlier than they had intended and one hundred and forty six women met these inclusion criteria. This time frame was chosen as the literature points to the first three to six weeks as being important time frames for early cessation (Bailey *et al.*, 2004). Termination of breastfeeding in the first week has been described as failure to establish breastfeeding rather than early discontinuation (Kools *et al.*, 2005) therefore the intention was to exclude these mothers. However, the emergence of pain as an important factor for mothers meant that theoretical sampling necessitated the inclusion of two women who had breastfed for two weeks and one woman who discontinued after one week.

Interviews took place when the infants were between 18 months and two years old, as the evidence suggested that this may be a time when a mother may begin to make choices about planning a future pregnancy (Royce, 2006).

Accurate recall of infant feeding events has previously been observed up to 14 years postpartum (Launer *et al.*, 1994).

Non-Irish women were included in the sample, as they had participated in the survey and had made significant contributions to the findings. Completion of the questionnaire in English was deemed as evidence of proficiency in the language and confirmation that informed consent could be obtained from the mother. There was, however, no attempt made to achieve a homogeneous sample and, although two non-Irish women were invited to take part in interviews, both declined. (One stated that she was near term with a subsequent baby and feeling unwell, and the other woman did not provide a reason).

#### **4.5.4 Recruitment**

Prospective participants were contacted by telephone and reminded of their involvement in the survey. The purpose of this aspect of the study, and the input required from them, was then explained. All but five women contacted agreed to participate. (Two women did not respond to a phone call or subsequent follow-up letter and were not contacted again). When verbal consent had been obtained over the telephone, an interview time and date that suited the participant was arranged. As all participants had one or more small children, it was more convenient for them for the researcher to conduct the interviews at their homes. The purpose of the study was clarified again at the interview, and both the participant and the researcher signed a consent form.

#### **4.5.5 Data collection**

All interviews were audiotaped and began with an open-ended question: 'Tell me about what breastfeeding was like'. This question was carefully chosen in order to indicate to the participants that the researcher was receptive to listening to their whole story about breastfeeding, and was not simply focused on how and why it had ended. Indeed, participants often shared their stories of breastfeeding and weaning for all their children. Occasionally, they also chose to discuss topics such as their birth experience or the breastfeeding experiences of others. It was felt that confining the discussion to termination of breastfeeding might have limited the depth of the discourse and the richness of subsequent data. Supplementary information often provided data that accentuated the meaning attached to particular breastfeeding or weaning decisions.

An interview guide was used by the researcher as a prompt to stimulate an open discussion on the weaning experience of the participants. This guide was not displayed to participants during the interviews and was continually changed to respond to and reflect the emerging data analysis. This recursive model of using an unstructured interview technique allowed the potential for the interview to digress (King & Horrocks, 2010). However, when participants began to relay their stories, they were extremely focused on their actual breastfeeding experiences which resulted in some interviews being shorter than expected. This was an area of concern at the beginning of the interview process and much discussion took place with supervisors and colleagues about the interview technique and the style of questioning used by the researcher. Many of the interviews subsequently conducted were also of short duration, and it was felt that the reason for this may have been the amount of time that had elapsed since the experience took place. It was evident from the vivid descriptions presented by them that women were able to focus in on the salient aspects of

the breastfeeding experience, often in a relatively short space of time. This phenomenon has previously been described by Foddy (1993) as a common feature of interviews when a considerable period of time has elapsed between the event itself and the subsequent discussion around it.

One of the major challenges of interviewing was the presence of active and lively toddlers who were vocal and who displayed an interest in the recording equipment, often wanting to engage in play with the researcher during the interview process. Toys and other props were brought to each interview to engage the toddlers so that the mother could talk freely and with minimal distraction. The presence of the toddlers also posed a challenge for the professional interview transcriber, as some sections of the interviews were overlaid with the toddlers' noise and required more time and effort to transcribe. This resulted in lengthy engagement with the material before it was possible to begin analysis.

#### ***4.5.6 The researcher as instrument***

Utilising a mixed-methods approach necessitates vigorous self-awareness (Lather, 1986), particularly when describing the researcher's position within the research and the impact of such a stance on validation. It has been suggested by Andrew & Halcomb (2009) that failure to explicate the relationship of the researcher to the subject matter lends itself to incongruence with the theoretical assumptions of mixed-methods research. In particular, not highlighting the researcher's stance within the qualitative elements of a mixed-methods study renders the positivist aspect dominant and may undermine the qualitative results (Andrew & Halcomb, 2009).

Giddings & Grant (2007) (p.55) have suggested that the mixed-methods researcher should apply 'self-reflexivity' by identifying his/her background and

how that may influence his/her perception of the research problem, thus ensuring that the reader can ascertain the pragmatism of the approach taken and the trustworthiness of the findings.

In truth, as a researcher, I entered the field of mixed-methods research with past experience predominantly in the qualitative paradigm. However, my identification of the need to utilise a grounded theory framework to support the qualitative aspect of this study provided a rigorous approach to the generation of data. Hence, many years of experience in research did not specifically influence the generation of findings in this regard. Nevertheless, my overwhelming belief in the superiority of breastfeeding and its importance to the health and welfare of both the infant and the mother is ultimately my motivation for undertaking this research. Thus, while it was my desire to conduct this study without any influence or bias, my passion to support and encourage breastfeeding mothers in their endeavours is ultimately reflected in this work.

I also believe that it is important to state that when I undertook the data collection and analysis I had no personal experience of breastfeeding, therefore the findings were not impacted in any way by subjective preconceptions. I did, however, breastfeed my gorgeous son (now fourteen months old) while writing up the findings. Breastfeeding was not always an easy journey for me either and, if anything, it consolidated the experiences of other women and the effect of the often mixed and difficult emotions that underlie infant feeding experiences.

The following excerpt from my reflexive diary shows my attempts made to overcome researcher bias during interviewing:

Reflexive diary entry: 10 June 2010

I have just left interview with x who was very upset throughout the interview but insisted on continuing as she said she wants other women to hear her story and 'find out about the realities' [of breastfeeding].

There were unresolved issues concerning breastfeeding, and related questions were directed at me. I'm finding it difficult to strike a balance here. My natural instinct as a midwife and lactation consultant is to counsel the woman about her experience. What is the morally and ethically correct thing to do? I can't just leave the woman with unanswered questions if she raises them, but equally I don't want to change the direction of the interview by offering information that might have been important to her experience. In this instance, I left it until the end of the interview to offer the information, which related to pumping.

My experience as a midwife, lactation consultant and educator brings with it perspectives which are also important to this research. Primarily, however, my philosophy is one of respect and regard for women and their families, and the decisions and choices that they make about infant feeding. This research is grounded in the notion that facilitating these choices is best served by further empirical research into how these choices are made, thereby enabling women to achieve their personal breastfeeding goals.

#### **4.5.7 Data analysis**

It has been suggested that researcher experience and interpretive creativity is implicit in studies underpinned by grounded theory (Scott & Howell, 2008). Guidelines for conducting grounded theory research tend to be attractive to novice researchers and doctoral students (Scott & Howell, 2008). There is wide and substantive discussion of the tradition of grounded theory, yet the procedure for carrying out the actual analysis has remained somewhat vague (Boeije, 2002). However, there are numerous methodological texts and tools that offer suggestions on how to analyse data in the grounded theory tradition (Holton, 2007). Data in this study can be described as being analysed in a manner that is closely aligned to the grounded theory tradition of Glaser & Strauss (1967). It was felt that, as grounded theory was being utilised within a mixed-methods study, it was more appropriate to reflect the analytic techniques rather than to espouse the generation of a grand theory, as one may propose in a purely grounded theory study. During the study, conceptual memos were maintained in longhand diaries alongside a reflexive diary. Much of the researcher's questioning, and initial thoughts about the nature of the emerging data, was stimulated through these entries, which were maintained throughout the study and served to guide ongoing coding and analysis.

Although analysis in this section is presented in a sequential manner, the reality of the analysis was not linear. Abstraction of the data and the results was achieved by continually moving back and forth through each level of coding.

##### **Open coding**

Results were derived initially using open coding, in order to break down the raw data into concepts. Analysis of these concepts took place using the constant comparative method. Words, phrases, lines, sentences and whole paragraphs were searched for concepts which were then compared for contrasts and



similarities, as suggested by Strauss & Corbin (1990). Related concepts were developed by grouping related dimensions of these categories, and considered judgements were made about the progression of data and its analysis within these categories. Grounded theory can be distinguished from other forms of interpretative analysis by the practice of grouping of categories in this way as they emerge (Strauss & Corbin, 1990). Open coding resulted in the identification of five categories: 'Motivation to breastfeed', 'Antecedents to early cessation', 'Cessation of breastfeeding', and 'Enduring views of breastfeeding'. A core category, 'reconciling breastfeeding', emerged as a result of further abstraction of the data. This category encapsulated and harnessed the essence of the other five categories.

#### Axial coding

Specific relationships between each of the categories and their relevant subcategories were developed through axial coding, thus adding depth and complexity to the open coding technique (Charmaz, 2006). Axial coding allows the category to be viewed as an axis around which the data fit (Bryant & Charmaz, 2007). A 'paradigm model' (Strauss & Corbin, 1990) was selected and used to guide this level of analysis. Application of this procedure, and the strict procedures inherent in grounded theory, has been criticised by Glaser (1992) as being 'forced conceptualisation' of data. It was felt, however, that the selective use of the paradigm model as a loose guide to axial coding, as suggested by Strauss & Corbin (1990), enabled the application of a clear strategy of coding at this level. While use of the model is a complex process, clear, contextualised links and relationships between categories were allowed to emerge, rather than being forced.

When examining the open code, the paradigm model specifies consideration of the following: causal conditions, context, actions and interactions resulting from the phenomenon, the intervening conditions and the consequences of the

actions taken. Some conditions and consequences could be found among the actions and interactions, but actions and interactions were found, predominantly, to provide a link between conditions and consequences.

The fact that the data, in the absence of ‘forcing’, fitted the paradigm in this regard supports the selection of this approach in this study. Table 8 illustrates how the selective application of the model was applied, and further examples are provided in Appendix V.

**Table 8: Illustration of Axial coding for the category ‘Motivation’**

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**Context:** Before the birth women made the choice to breastfeed their babies

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Causal Conditions	Actions/Interactions	Consequences
<ul style="list-style-type: none"> <li>• Antenatal preparation: formal/informal</li> <li>• Notions about ease or difficulty of breastfeeding</li> <li>• Desire to breastfeed</li> <li>• Commitment to breastfeeding</li> <li>• Previous experience</li> </ul>	<ul style="list-style-type: none"> <li>• Early feeding experiences</li> <li>• Mode of delivery</li> <li>• Social norms</li> <li>• Knowledge, information and confidence</li> <li>• Postnatal support</li> </ul>	<ul style="list-style-type: none"> <li>• Perceived pressure to breastfeed</li> <li>• Feeling vulnerable</li> <li>• Lack of confidence in abilities</li> <li>• Confusion (often re information received)</li> <li>• Questioning ability to breastfeed</li> </ul>

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**Intervening Variables:** Previous experience, belief in the notion of ‘Breast is Best’

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Axial coding uncovered relationships between categories and subcategories, which open coding had not revealed. For example, previous experience of, or exposure to, breastfeeding was found to be a causal condition for confidence in postnatal breastfeeding abilities, with views about ‘breast is best’ serving as an

intervening variable. Both previous experience and women's beliefs about whether or not 'breast is best' were identified as intervening variables and mediating circumstances, influencing motivation for breastfeeding and sustaining the experience.

#### Selective coding

Reconciling emerged as a potential core variable fitting the data, and subsequent data collection and coding provided confirmation of this. Although the intention was to utilise grounded theory as a guide to underpin the qualitative element of the study, selective coding ultimately resulted in a category that met many of the essential characteristics of a Basic Social Process (BSP) as described by Glaser (1978). A minimum of two clear phases were evident during 'reconciling breastfeeding', which was related to many other categories and their properties, and recurred regularly in the data. Glaser (1978) suggested that a BSP is categorised by a gerund, demonstrating a feeling of 'process, change and movement over time' (Glaser, 1978) (p.97). Reconciling demonstrates a clear example of a BSP.

#### Theoretical saturation

Dey (1999) has questioned the appropriateness of the concept of saturation in naturalistic enquiry. Strauss & Corbin (1998) also suggest that saturation is a 'matter of degree' (1998) (p.136). They propose that the longer researchers spend examining and analysing their data, the greater the potential for new data to emerge.

Saturation of the major codes was achieved, in this study, after eleven interviews. Nevertheless, a further four interviews were conducted in order to add depth to some of the emerging categories. In particular, the experience of pain during breastfeeding, and its actions and interactions, were explored during the later interviews. When subsequently analysed, these four interviews

confirmed that the initial process had been exhaustive in identifying the pertinent concepts and categories, therefore no further sampling was necessary.

Due to the volume of data in the entire study, a computer-assisted, qualitative data analysis software package (CAQDAS), NVivo version 8 (NVivo qualitative data analysis software, 2008), was used to assist data analysis. Although the researcher was experienced in qualitative analysis, this was the first time she had used the CAQDAS system. Concerns have been expressed that the use of computers in qualitative data analysis may 'guide' researchers in a particular direction (Richards, 2009). Initially, the use of the system proved extremely challenging and this prompted a return to a more traditional system of paper copies and coloured pens. However, additional training in the selected package provided the researcher with a better understanding of its functions and capabilities. As a result, fuller use of the software features, combined with the use of paper records, assisted in advancing the conceptualisation of the data. An example of data that have been coded using NVivo are included in Appendix VI to demonstrate the development and density of coding, attributed to each passage of text.

#### **4.5.8 Rigour**

The researcher, who is an experienced interviewer, conducted all the interviews and aspired to provide faithful descriptions of women's experiences and feelings about future infant feeding choices. Prolonged engagement with the data and the subject matter, and determining congruence with the quantitative data available for these women, was also undertaken in order to improve validity and reliability across both data sources. A systematic process of maintaining an audit trail in terms of sequencing, recording, analysing and reporting data is described in the preceding section and also when presenting

the findings. These elements have been described as the essential components of ensuring a rigorous approach to studies (Peat, 2002).

Mruck & Mey (2007) have highlighted that the particular variant of grounded theory being applied may influence the application of reflexivity in any such study. Traditional grounded theory (Glaser, 1992) rejects the notion of reflexivity, suggesting that investigating the impact of the researcher is only significant when specific issues are seen to emerge directly relating to them. In contrast, the constructivist grounded theory belief is that a reflexive stance and explicit acknowledgement of the conduct and relationship of researcher and participant are intrinsic to the report (Charmaz, 2006).

In this study, reflexivity is viewed as an opportunity to explore and communicate explicitly the process and development of qualitative findings. It is recognised that the sequencing of the quantitative aspect of the study prior to the qualitative element resulted in certain presumptions about the research question being formed in advance of the qualitative stage, and their influence on the reflexive process is acknowledged.

A detailed reflexive research diary was maintained in order to ensure, and provide evidence of, ongoing self-critique. Abstracts from this diary are included in the results chapter. Details of qualitative themes that had emerged were furnished to five of the women who had agreed to review them for validation and confirmation, prior to the final write-up (Perakyla, 2005). Some of the comments made by these women are also presented in the findings for verification purposes.

Samples of the interviews (three) were coded blindly by a colleague with significant experience in qualitative analysis and data interpretation. The purpose of this exercise was to explore whether similar codes and analysis

would be achieved and to verify the emerging data. This process proved very valuable as the analysis was comparable, but used different terminology and phrasing, prompting the researcher to review and consider the language utilised and its associated meanings.

#### **4.5.9 Consent**

Informed consent is a critical component of any healthcare research. It is clear that ethical matters have become integral to conducting all types of research (Sin, 2005). The issue of consent is further compounded in mixed-methods research due to the employment of varying methodological tools in the one study, giving rise to the need to utilise fluent consent procedures at each stage of the process (Creswell & Plano Clark, 2007). Participants in this study were respected throughout the entire process, by placing emphasis on adherence to models of good practice related to recruitment, voluntary inclusion, informed consent, privacy, confidentiality and withdrawal from the study without prejudice (Connolly, 2003).

Local ethical approval for the study was also sought, where necessary, from hospital ethics committees. Access was granted by all 20 units and independent midwives before the commencement of the data collection phase.

In order to protect the mothers' right to self-determination in this study, the extent of their involvement was clearly stated in all study materials. In planning the study, care was taken to include multiple time points and different methods of presenting information about the study. In Phase 1 of the survey, the participant information sheet was presented as the front cover of the questionnaire thereby ensuring full disclosure of their required involvement in the study. Women also received information about the study in the antenatal clinics and postnatal wards, in the form of posters and leaflets (Appendix VII).

These included confirmation that the data they provided would be preserved in confidence. In discussions with midwives, care was taken to remind them of their responsibility to ensure that women understood that they were under no obligation to participate in the study and that they were free to decline without prejudice to their care. Completion of the questionnaire by each woman and provision of her contact details was deemed to be consent to take part.

It has been suggested that the ethical and practical issues involved in re-contacting participants in longitudinal studies remain under-documented and are frequently underestimated (Sin, 2005). Thus, in an attempt to apply robust procedures, women were written to again in November 2009 and offered an opportunity to opt out of the interview element of the study if they so wished (Appendix VIII). This was deemed necessary due to the amount of time that had elapsed (one year) between indicating interest and participating in the interviews. In recognition of the need for participants to provide informed consent to the qualitative aspect of the study a participant information leaflet was sent, one week before the interview, to all those who had verbally agreed by telephone (Appendix IX). Informed consent was then sought in written format prior to commencement of the interview. The consent form included the study's title and purpose and a statement of the rights of the participants (including the freedom to withdraw at any time) (Appendix X).

#### ***4.5.10 Protection of participants***

National and international codes of good practice in research, and professional standards within nursing and midwifery (An Bord Altranais, 2007) have been adopted in the planning, design and conduct of this study.

Women who gave birth to a stillborn baby or whose baby died within the first 48 hours during the study period were excluded from this study. However, due

to the longitudinal nature of the study, infant deaths could have occurred during the study time frame or an infant may no longer have been in the care of his/her mother. In order to minimise distress to such women, the front cover of all follow-up questionnaires included a tick box they could use to indicate that their infant was no longer with them, without giving an explanation. Three such replies were received over the course of the study, and these women were withdrawn from further participation.

All information pertaining to participants was kept confidential. The name and address of each mother, which had been obtained during Phase 1 of the survey, was removed and replaced with a coded, unique serial identifier for each participant. Any identifying material pertaining to the women was kept separate from all raw data in a locked cupboard, and only the researcher had access to this information, ensuring that the identities of the women were protected at all times. During phases 2 and 3, women were identifiable only by the unique serial identifier.

#### **4.5.11 Summary**

This chapter has presented an overview of the origins of the study alongside the overarching methods. Methods specific to the quantitative and qualitative aspects of the study have been discussed and have highlighted some of the challenges and strengths inherent in mixed-methods research. The following chapter presents the findings from the quantitative aspect of this study.



## **5 Chapter 5: Quantitative Survey Results**

### ***5.1 Aims and objectives***

The aim of this study was to examine rates of exclusive and partial breastfeeding at 48 hours, 3-4 months and 6-7 months after birth and establish factors that influence a decision to breastfeed.

The specific objectives for the quantitative aspect of this study were:

- To provide comprehensive data on rates of exclusive and partial breastfeeding in Ireland.
- To establish what factors influence the decision to breastfeed or not among women in Ireland.
- To make practice recommendations based on the rates of exclusive and partial breastfeeding and the factors associated with this among women in Ireland.

### ***5.2 Introduction***

The established health benefits of breastfeeding have resulted in global and national support for encouraging the commencement and continuation of breastfeeding. In 2003, the World Health Organization recommended that, wherever possible, infants should be fed exclusively on breastmilk until six months of age to receive the maximum health benefits (WHO, 2003). However, less than 1% of Irish infants have been found to be exclusively breastfeeding at 6 months, resulting in few Irish infants receiving the full positive effects of breastfeeding (Tarrant, 2008).

Successive Irish Governments have made efforts to support breastfeeding as the biological and social norm. The 2005 publication of the strategic action plan for breastfeeding in Ireland, endeavored to “improve the nation’s health by ensuring that breastfeeding is the norm for infants and young children” (Department of Health & Children, 2005) (p.7). Central to the objectives of this policy was the need to collect standardised, comprehensive and timely infant feeding data (Department of Health & Children, 2005). Despite this, there remains no consistent national source of infant feeding data following discharge from hospital or maternity care in Ireland. This makes it difficult to measure rates against the targets for the duration of breastfeeding. High quality data relating to breastfeeding in Ireland is imperative to our understanding of the unique breastfeeding culture of this country in order to meet the needs of women and infants.

This chapter describes the quantitative aspect of this study and will discuss the participants, measures and results of the study. This quantitative phase of the research was designed to explore the factors influencing initiation and duration of breastfeeding, by measuring these factors shortly after the birth and then contacting participants at 3-4 months to ascertain their feeding method at that time (Phase 2). Those mothers who were still breastfeeding at the time of completing Phase 2 were included in Phase 3 of the study and their results are reported at the end of this chapter. A description of the study setting and its participants is provided at the outset.

Results in this and the following sections are reported in text, figures and tables, as appropriate. In all tables, the figures reported represent the valid percent (i.e. after excluding any missing values). Omitting the missing values when calculating the percentages is in keeping with the fact that data missing for those women who completed Phase 1 but not Phase 2, and for those women who did not participate in either survey, have to be excluded when

percentages are shown (Millar & Hollist, 2007). The numbers of missing values are presented in each table to allow for clarity of the effect that these may have on results. In some instances, percentages may not add up to 100% due to rounding.

The demographic results for the 2,527 mothers who responded to Phase 1 are not displayed, since the purpose of this Phase was recruitment to the study and the information that was gleaned from mothers in Phase 1 was also provided in Phase 2 of the survey. A profile of the non-respondents to Phase 2 has been provided in Chapter 4.

Some mothers completed section 4 of the Phase 2 questionnaire (which was intended for those breastfeeding from birth) who had not reported that they were breastfeeding at birth and discharge from hospital (n=52). Values for these mothers have been treated as errors in this section and excluded from any analysis relating to mothers who were breastfeeding from birth.

### **5.3 Phase 1 – Results**

#### **5.3.1 The rate of exclusive and partial breastfeeding from birth to 48 hours**

Breastfeeding initiation rate at Phase 1 for the total cohort of 2,527 mothers was 55% (n=1,375), which is in keeping with what was found in Phase 2 (56%, n=1,002) (Table 9). For 30% (n=747) of babies, this first feed took place within 30 minutes and for 36% (n=889), it occurred from 30 minutes to one hour after birth. Twenty-eight percent of babies were not fed until between one and four hours after birth. Only 50% of Irish women (n=1,010), compared with 76% (n=365) of non-Irish women, initiated breastfeeding.

Table 9: Results from phase 1

	N	%	Missing (n)
<b>Nationality of the mother</b>			
Irish	2029	81.0	
British	83	3.3	
Polish	93	3.7	
Lithuanian	25	1.0	
Nigerian	27	1.1	
Other	249	9.9	
Total	2506	100	
Missing	21		
<b>Age of the mother</b>			
15-19	43	2.3	
20-24	166	8.7	
25-29	408	21.5	
30-34	687	36.2	
35-39	501	26.4	
40-45	89	4.7	
45-49	6	0.3	
Total	1900	100	
Missing	627		
<b>Type of food baby received for his/her first feed after birth (Phase 1)</b>			
Breast	1375	54.7	
Formula	1123	44.6	
Not feeding yet	18	0.7	
Total	2516	100	
Missing	11		

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**Age of the infant at the first feed**

<30 minutes	747	30.1
30mins to 1hr	889	35.8
1 hour to 4 hours	689	27.9
More than 4 hours	131	5.3
Baby is not feeding yet	21	0.9
Total	2468	
Missing	50	

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Results represent the valid results (missing values have been omitted when calculating the percentages)

**5.3.2 Phase 2 – Demographics**

A profile of the 1,826 women (72% of the 2,527 participants from Phase 1) who completed Phase 2 of the survey is presented in this section along with univariate analysis of the factors affecting initiation and duration.

**5.3.3 Sample profile**

The sample consisted of 747 (41%) mothers having their first baby and 1072 (59%) mothers having their second or subsequent baby (7 missing) (Table 9.1). Almost all (99%, n=1785) mothers gave birth to one infant with 1% of mothers who responded having a multiple birth (n=28). The profile of the sample was consistent with national figures for mothers having their first baby (41.1% NPRS, 2006) and women having their second and subsequent baby (58.9% NPRS, 2006).

The majority of mothers had private health insurance (66%, n=1,198), were married (76%, n=1,374), and were employed prior to having their baby (77%, n=1,388). The proportion of the sample who were married is slightly higher than the national figures (66.5% married, NPRS, 2006).

The mean age of mothers completing the survey was 31 years with 39% (n=659) of mothers aged between 30 and 34 years. This is consistent with the national NPRS figures for 2006, where 34% of mothers were in this age group.

The Central Statistics Office's highest classification for social class is that of professional workers and this represented 7% (n=123) of mothers in the survey. There were 592 (34%) mothers who were classified as having managerial and technical professions and 596 (35%) mothers from non-manual occupations. Nine mothers were students and 4 were unemployed. Table 10 provides an overview of the demographic characteristics of the mothers who completed Phase 2.

**Table 10: Demographic profile of respondents to Phase 2**

		<b>N</b>	<b>%</b>	<b>Missing (n)</b>
<b>CSO Social Classifications</b>				
	Professional workers	123	7.1	
	Managerial and technical	592	34.2	
	Non-manual	596	34.5	
	Skilled manual	226	13.1	
	Semi-skilled	138	8.0	
	Unskilled	1	0.1	
	All others gainfully occupied and unknown	39	2.3	
	Student	9	0.5	
	Unemployed	4	0.2	
				97
<b>Highest level of education attained</b>				
	No formal education	5	0.3	
	Primary school education	17	0.9	
	Lower secondary	126	7.0	
	Upper secondary	289	16.0	

<b>Table 10 contd.</b>		<b>N</b>	<b>%</b>	<b>Missing (n)</b>
	Technical or Vocational qualification	137	7.6	
	Both upper secondary and technical and vocational qualification	113	6.3	
	Third level non degree	372	20.6	
	Primary degree	204	11.3	
	Professional qualification	73	4.0	
	Both degree and professional qualification	154	8.5	
	Postgraduate cert or diploma	162	9.0	
	Postgraduate degree	142	7.9	
	Doctorate	10	0.6	
				22
<b>Employment status before birth</b>	Working for profit or payment	1388	77.2	
	Looking for first job	14	0.8	
	Unemployed	70	3.9	
	Student or pupil	32	1.8	
	Looking after home or family	220	12.2	
	Unable to work - permanent sickness/disability	20	1.1	



<b>Table 10 contd.</b>		<b>N</b>	<b>%</b>	<b>Missing (n)</b>
	Others	54	3.0	28
<b>Marital Status</b>				
	Single - never married	372	20.7	
	Married - first marriage	1374	76.3	
	Re-married	20	1.1	
	Separated	18	1.0	
	Divorced	16	0.9	26
<b>Health Insurance status</b>				
	Yes	1198	66.3	
	No	610	33.7	18
<b>Parity</b>				
	Primiparous	747	41.1	
	Multiparous	1072	58.9	7
<b>Total</b>		<b>1826</b>		

### **5.3.4 Geographic features of the sample**

All twenty maternity units and all nineteen independent midwives participated in this survey, providing a nationally representative sample of mothers for the Republic of Ireland. All mothers who were seen by the independent midwives responded (100%), but response rates for each of the hospitals varied from 6% to 70%, thus data for initiation and prevalence of breastfeeding by hospital of birth could not be relied upon for accuracy.

This section presents statistics about breastfeeding from birth to Phase 2 (3-4 months) and the proportion of babies being exclusively and partially breastfed during this time.

## **5.4 Prevalence of breastfeeding**

### **5.4.1 Prevalence at birth**

Prevalence of exclusive and partial breastfeeding at three different time points is reported in Table 11. Just over half the women (n=1,002, 56%) initiated breastfeeding at birth and by the time of discharge from hospital the rate of exclusive breastfeeding had dropped to 49% (n=881) with 2% of infants (n=37) receiving expressed breastmilk and 7% (n=127) receiving a combination of breast and formula. It is apparent that some of the infants who were receiving breastmilk at discharge received formula for their first feed, because the overall proportion receiving some breastmilk at discharge (n=1,045, 58%) is actually higher than the proportion who received breastmilk at birth (n=1,002, 56%).

By the time the women completed Phase 2, at 3-4 months, the rate of exclusive breastfeeding had declined to 19% (n=347), with two-thirds of the

women formula feeding their infants at this point (66%, n=1,205). A further 15% (n=271) were partially breastfeeding at this time.

**Table 11: Overall rate of breastfeeding at first feed, discharge from hospital and completion of phase 2**

Total n=1,826	Incidence of feeding methods					
	at first feed		at discharge		at Phase 2*	
	N	%	N	%	N	%
Breast only	1,002	56	881	49	347	19
Formula only	774	43	755	41.9	1,205	66
Baby not feeding	11	1	2	0.1	N/A	N/A
Expressing Breast-milk	N/A	N/A	37	2	N/A	N/A
Combination of breast & formula	N/A	N/A	127	7	232	13
Combination of breast & water/juice	N/A	N/A	N/A	N/A	39	2
Missing	39		24		3	

\*feeding at phase 2 is based on responses to Q72

Results represent the valid results (missing values have been omitted when calculating the percentages)

#### **5.4.2 Prevalence of breastfeeding by HSE Administrative Area**

There are variations in the rates of exclusive and partial breastfeeding for mothers giving birth in the four Health Service Executive Administrative Areas. Initiation is highest in Dublin North East (57%, n=252) and lowest in the South at 48% (n=195) (Table 12). It is notable however, that the South has the smallest absolute decline in exclusive breastfeeding by discharge from hospital at 2%, while in all other areas the decline is 6-7%. Differences in prevalence among areas may be explained partly by the population of each catchment area and to some extent by the policy of the hospital where the mother gave birth.

**Table 12: Exclusive and partial breastfeeding for first feed, discharge and phase 2 by Health Service Executive Administrative Areas**

Health Service Executive Area	Total no. of women	Breastfed at 1 <sup>st</sup> feed		Exclusive at discharge		Partial at discharge		Exclusive - Phase 2		Partial - Phase 2	
		N	%	N	%	N	%	N	%	N	%
	1826										
Dublin Mid-Leinster	489	277	56.6	247	50.5	37	7.5	97	19.8	88	17.9
Dublin North East	441	253	57.3	223	50.5	35	7.9	91	20.6	56	12.6
South	406	195	48.0	187	46.0	24	4.6	73	17.9	72	17.7
West	468	249	53.2	214	45.7	31	6.6	84	17.9	67	14.3
Missing=22											

### **5.4.3 Prevalence of breastfeeding by hospital of birth**

Differences can be seen in the rate of exclusive breastfeeding at birth (Table 13). Overall, the small number of women who gave birth in the care of an independent midwife had the highest rates of breastfeeding, with all five of these women breastfeeding at birth, discharge and 3-4 months.

Hospital R had the highest initiation rate for a hospital with 70% of infants receiving breastmilk for their first feed. This figure should be interpreted with caution, however, because of the poor response rate in that unit (18%).

The lowest initiation rates were found among women giving birth in hospitals N (25%), S (35%) and Q (39%). These figures should, however, also be interpreted with due regard for the poor response rates evident in some of these units (6%, 14% and 43% respectively).

Rates of exclusive and partial feeding at discharge demonstrate that some infants who received formula at the first feed were either exclusively or partially breastfeeding at discharge. This is most evident in hospital Q where 30 (45%) infants were exclusively breastfeeding and 4 (6%) were combination feeding at discharge compared to only 26 (39%) who were breastfed for their first feed.

The sharpest decline in exclusive breastfeeding from birth to discharge is evident in hospital L, with an absolute fall of 19%. Worth noting, is that this hospital has the highest rate of partial breastfeeding at discharge with 25 (16%) women combining breast and formula feeding at this time (Table 13). In April 2008, seven out of the twenty units had been externally assessed as meeting the national criteria for designation as a Baby Friendly Hospital (BFHI). Although the two units with the highest initiation rates had achieved this accreditation, BFHI status was not associated with higher rates of initiation.

**Table 13: Breastfeeding numbers and rates per hospital or independent midwife for first feed, at discharge and at 3 – 4 months (Phase 2)**

Hospital / IMW	Total n=1826	Number / % breastfeeding at 1 <sup>st</sup> feed		Number / % exclusively breastfeeding at discharge		Number / % partially breastfeeding at discharge		Number / % exclusively breastfeeding at Phase 2		Number / % partially breastfeeding at Phase 2	
		N	%	N	%	N	%	N	%	N	%
U <sup>§</sup>	5	5	100	5	100	0		5	100	0	0
*R <sup>¥</sup>	56	39	70	31	55	4	7	14	25	10	18
L <sup>¥</sup>	160	111	69	81	50	25	16	29	18	38	24
*C	75	50	67	47	63	5	7	20	27	12	16
G	52	33	64	28	54	8	15	8	15	12	23
B <sup>¥</sup>	75	47	63	46	61	3	4	21	28	12	16
H	214	134	63	130	61	13	6	44	21	44	21
T	76	41	61	38	55	7	10	10	15	13	19
M	69	41	61	38	55	7	10	10	15	13	19
J <sup>¥</sup>	102	61	60	58	57	1	1	20	20	12	11
O	40	23	58	24	60	2	5	12	18	7	10
A	165	95	58	85	52	13	8	33	20	28	17

**Table 13. Continued:**

Hospital / IMW	Total n=1826	Number / % breastfeeding at 1 <sup>st</sup> feed		Number / % exclusively breastfeeding at discharge		Number / % partially breastfeeding at discharge		Number / % exclusively breastfeeding at Phase 2		Number / % partially breastfeeding at Phase 2	
		N	%	N	%	N	%	N	%	N	%
F	77	43	56	38	50	10	13	15	19	11	14
E	125	60	48	54	43	8	7	24	19	16	13
K	77	37	48	36	47	8	10	15	19	11	14
P <sup>¥</sup>	140	66	48	57	41	8	6	20	14	15	11
I <sup>¥</sup>	97	46	47	46	47	2	2	16	16	7	7
D	69	32	46	25	36	2	3	11	16	3	4
Q	67	26	39	30	45	4	6	7	11	10	15
*S <sup>¥</sup>	52	18	35	18	35	2	4	9	17	2	4
*N	4	1	25	0		0		0		0	
Total	1,797										

Missing=29

\* Denotes response rates of less than 20% for phase 1 of the survey. <sup>§</sup> Independent Midwife (IMW)

<sup>¥</sup> BFHI accredited Hospital

Tables 14 to 17 show the rates of exclusive and partial breastfeeding at birth, Phase 2 and six months for each Local Health Office (LHO). These tables include the rates of overall breastfeeding at six months and the rate for only those mothers who initiated breastfeeding in each area. The highest rate of exclusive breastfeeding is in Wicklow with 13% (n=7) of the 92 mothers from this LHO exclusively breastfeeding at six months. No mother reported exclusive breastfeeding at six months in Dublin South West, Dublin West, North Cork, Wexford, Waterford, Kerry and Sligo/Leitrim.

The highest proportion of any breastfeeding is in West Cork with 35% (n=6) of the 17 mothers from this area continuing breastfeeding until 6 months. This high rate of breastfeeding in the West Cork area may be attributed to the fact that four of the women who gave birth under the care of an independent midwife were resident in this area and, as was evident in Phase 2, these women had consistently high rates of breastfeeding over the course of the study period. The lowest prevalence of breastfeeding for a Local Health Office is in Waterford, where only two mothers (6%) were partially breastfeeding at 6 months.



**Table 14: Health Service Executive: Dublin Mid-Leinster**

<b>Local Health Office (LHO)</b>		<b>Dublin South East</b>	<b>Dublin South City</b>	<b>Dublin South West</b>	<b>Dublin West</b>	<b>Dun Loaghaire</b>
Total no of women from LHO	<b>N</b>	37	35	17	29	32
Breastfed at first feed	<b>N</b>	29	25	12	19	23
	<b>%</b>	78	71	71	66	72
Exclusive - Phase 2	<b>N</b>	7	8	6	5	7
	<b>%</b>	19	23	35	17	22
Partial - Phase 2	<b>N</b>	11	13	0	7	7
	<b>%</b>	30	37	0	24	22
Exclusive - Phase 3	<b>N</b>	1	4	0	0	2
(all mothers from LHO)	<b>%</b>	2	11	0	0	6
(LHO mothers who breastfed at birth)	<b>%</b>	3	16	0	0	23
Partial - Phase 3	<b>N</b>	5	4	4	4	4
(all mothers from LHO)	<b>%</b>	13	11	23	13	12
(LHO mothers who breastfed at birth)	<b>%</b>	17	16	33	21	17
Missing data from Phase 3 (non-respondents)	<b>N</b>	7	5	2	5	4

**Table 14: Health Service Executive: Dublin Mid-Leinster Contd**

Local Health Office		Kildare-West Wicklow	Wicklow	Longford/Westmeath	Laois/Offaly
Total no of women from LHO	<b>N</b>	86	51	92	110
Breastfed at first feed	<b>N</b>	45	29	45	50
	<b>%</b>	52	57	49	45
Exclusive - Phase 2	<b>N</b>	18	13	18	15
	<b>%</b>	21	25	20	14
Partial - Phase 2	<b>N</b>	15	6	11	11
	<b>%</b>	17	12	12	10
Exclusive - Phase 3	<b>N</b>	2	7	5	3
(all mothers from LHO)	<b>%</b>	2	13	5	2
(LHO mothers who breastfed at birth)	<b>%</b>	4	24	11	6
Partial - Phase 3	<b>N</b>	18	10	12	8
(all mothers from LHO)	<b>%</b>	20	20	13	7
(LHO mothers who breastfed at birth)	<b>%</b>	40	34	27	16
Missing data from Phase 3 (non-respondents)		6	1	8	8

**Table 15: Health Service Executive: Dublin North East**

Local Health Office		Dublin North West	North Central Dublin	North Dublin	Cavan/Monaghan	Louth	Meath
Total no of women from LHO	<b>N</b>	82	52	96	77	42	92
Breastfed at first feed	<b>N</b>	47	38	58	45	16	49
	<b>%</b>	57	73	60	58	38	53
Exclusive - Phase 2	<b>N</b>	20	12	17	19	7	16
	<b>%</b>	24	23	18	25	17	17
Partial - Phase 2	<b>N</b>	15	1	16	12	3	9
	<b>%</b>	18	2	17	16	7	10
Exclusive - Phase 3	<b>N</b>	3	2	2	3	1	2
(all mothers from LHO)	<b>%</b>	3	3	2	3	2	2
(LHO mothers who breastfed at birth)	<b>%</b>	6	5	3	6	6	4
Partial - Phase 3	<b>N</b>	24	11	1	10	4	6
(all mothers from LHO)	<b>%</b>	29	21	12	13	9	6
(LHO mothers who breastfed at birth)	<b>%</b>	51	28	22	22	25	35
Missing data from Phase 3 (non-respondents)		2	0	5	8	4	8

**Table 16: Health Service Executive: South**

<b>Local Health Office</b>		<b>Cork-South Lee</b>	<b>Cork North Lee</b>	<b>West Cork</b>	<b>North Cork</b>
Total no of women from LHO	<b>N</b>	41	43	17	40
Breastfed at first feed	<b>N</b>	23	25	13	17
	<b>%</b>	56	58	76	43
Exclusive - Phase 2	<b>N</b>	9	8	6	7
	<b>%</b>	22	19	35	18
Partial - Phase 2	<b>N</b>	7	7	1	7
	<b>%</b>	17	16	6	18
Exclusive - Phase 3	<b>N</b>	4	2	2	0
(all mothers from LHO)	<b>%</b>	10	4	12	0
(LHO mothers who breastfed at birth)	<b>%</b>	17	8	15	0
Partial - Phase 3	<b>N</b>	3	5	4	3
(all mothers from LHO)	<b>%</b>	7	11	23	8
(LHO mothers who breastfed at birth)	<b>%</b>	13	20	30	17
Missing data from Phase 3 (non-respondents)		3	3	1	4

**Table 16: Health Service Executive: South Contd**

<b>Local Health Office</b>		<b>South Tipperary</b>	<b>Carlow/ Kilkenny</b>	<b>Wexford</b>	<b>Waterford</b>	<b>Kilkenny</b>
Total no of women from LHO	<b>N</b>	26	47	82	34	76
Breastfed at first feed	<b>N</b>	12	23	39	13	30
	<b>%</b>	46	49	48	38	45
Exclusive - Phase 2	<b>N</b>	6	7	12	5	13
	<b>%</b>	23	17	15	15	17
Partial - Phase 2	<b>N</b>	3	3	12	1	9
	<b>%</b>	12	6	15	2	12
Exclusive - Phase 3	<b>N</b>	1	1	0	0	0
(all mothers from LHO)	<b>%</b>	3	2	0	0	0
(LHO mothers who breastfed at birth)	<b>%</b>	8	4	0	0	0
Partial - Phase 3	<b>N</b>	4	5	7	2	8
(all mothers from LHO)	<b>%</b>	15	11	8	6	11
(LHO mothers who breastfed at birth)	<b>%</b>	33	22	21	15	27
Missing data from Phase 3 (non-respondents)		2	0	7	3	7

**Table 17: Health Service Executive: West**

<b>Local Health Office</b>		<b>Sligo/ Leitrim</b>	<b>Donegal</b>	<b>Mayo</b>	<b>Roscommon</b>	<b>Galway</b>	<b>Clare</b>	<b>Limerick</b>	<b>North Tipp/ East Limerick</b>
Total no of women from LHO	<b>N</b>	50	71	75	29	86	47	86	24
Breastfed at first feed	<b>N</b>	23	33	42	19	54	24	40	14
	<b>%</b>	46	46	56	66	63	51	47	58
Exclusive - Phase 2	<b>N</b>	6	11	14	5	23	8	13	4
	<b>%</b>	12	15	19	17	27	17	15	17
Partial - Phase 2	<b>N</b>	9	4	10	7	16	4	13	4
	<b>%</b>	18	6	13	24	19	9	15	17
Exclusive - Phase 3	<b>N</b>	0	2	1	2	1	3	2	3
(all mothers from LHO)	<b>%</b>	0	3	1	7	1	6	2	12
(LHO mothers who breastfed at birth)	<b>%</b>	0	6	2	11	2	13	5	21
Partial - Phase 3	<b>N</b>	5	10	8	3	12	4	8	2
(all mothers from LHO)	<b>%</b>	10	14	11	10	14	8	9	8
(LHO mothers who bf at birth)	<b>%</b>	22	30	19	16	22	17	20	14
Missing data from Phase 3 (non-respondents)		4	1	11	4	11	3	7	4

## **5.5 Results of Phase 2**

### **5.5.1 Age of the babies at Phase 2 of the Survey**

The age of infants in Phase 2 of the survey is dependent on when their mother completed the questionnaire. Although the survey design was intended to make this range as narrow as possible, this was difficult to control, as it was completely dependent on whether the mother completed the survey as soon as she received it, or following one of the postal reminders or the subsequent telephone reminder.

The key variables on incidence and duration of breastfeeding at three to four months are based on the actual age of the baby on the date the survey was completed. As most babies (80%, n=1,460) were aged between 12 and 17 weeks at that point, the objective of collecting information on infant feeding at three to four months has been achieved for the majority of the cohort. A further 8% (n=146) of babies were aged between 11 and 12 weeks. The mean age of the baby on completion of the survey was 14 weeks with a range from 10 - 25 weeks, and 11% (n=199) were greater than 17 weeks old.

The small number of infants who were reported to be less than ten weeks (n=5) or greater than 25 weeks old (n=3) were treated as data errors and these eight cases were treated as missing data for any analysis that required age of the infant. However, all other information provided for these women has been included in the other results, as appropriate.

## 5.6 Phase 2– Main findings

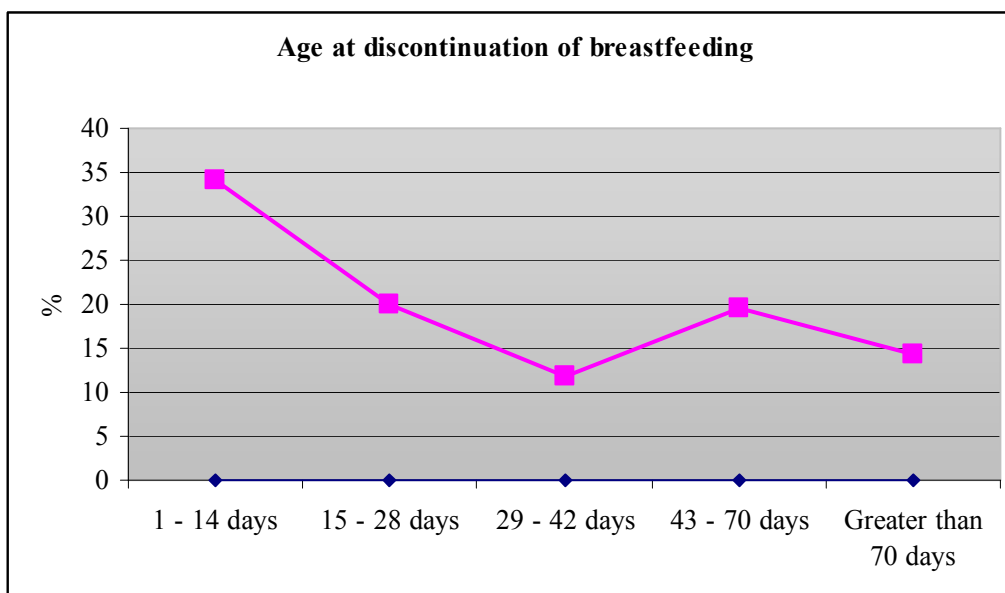
### 5.6.1 Duration of breastfeeding

Among mothers who discontinued breastfeeding between birth and completion of Phase 2 of this survey, 35% (n=153) did so in the first two weeks. By one month, more than half the mothers (55%, n=243) were fully formula feeding (Table 18).

**Table 18: Time at which breastfeeding mothers changed to full formula feeding**

Age of infants when breastfeeding was discontinued	N	%
1 - 14 days	153	35.0
15 - 28 days	90	20.6
29 - 42 days	57	13.0
43 - 70 days	88	20.1
Greater than 70 days	49	11.2
Total	437	100

**Figure 2: Age at discontinuation of breastfeeding**





A total of eighty mothers have been excluded from the above tables as they did not complete either of the relevant questions (72 or 85) of Phase 2. Responses to both questions were required for detailed analysis. These questions related to how the infant was feeding at completion of Phase 2, and when the infant had last received breastmilk.

## ***5.7 Determinates of breastfeeding initiation and duration***

Univariate analyses of the three phases of this study produced too many tables of results for inclusion in this thesis. However, the most pertinent tables and findings from the analyses are described here, with emphasis on predictors of breastfeeding at the 3 different time points.

### ***5.7.1 Effect of nationality on breastfeeding***

In total, women from 65 different nationalities responded to the survey. Irish women formed the largest group (82%, n=1,498). British and Polish women both formed approximately three percent of the mothers (n=62 and n=45 respectively).

It is evident that Irish women were less likely to initiate breastfeeding when compared with all others groups (52.6% compared to 64.5% of British, 82.2% of Polish and 74.6% of other nationalities) (Table 19). Between birth and discharge from hospital, the rate of exclusive breastfeeding fell significantly from 52.6% to 45.0% for Irish women and from 64.5% to 51.7% for British women ( $\chi^2 = 46.84$ ,  $df = 3$ ,  $p < 0.0001$ ), showing that the size of the drop is different for Irish and British women (Table 20).

**Table 19: Prevalence of feeding type at birth, by nationality**

	Type of first feed			Total
	Breast N (%)	Formula N (%)	Not feeding yet N (%)	
Irish	785 (52.6)	697 (46.7)	10 (0.7)	1,492
British	40 (64.5)	22 (35.5)	0	62
Polish	37 (82.2)	8 (17.8)	0	45
Others*	138 (74.6)	46 (24.9)	1 (0.5)	185
Total	1,000	773	11	1,784

Missing n=42

\*represents 62 nationalities, of these, Lithuanian (n=18) and Nigerian (n=15) form the largest groups

The largest absolute decrease was among Polish women where the rate fell to 68.9% from 82.2% at birth. Combining the findings from the women who make up the other 62 nationalities (i.e. excluding Irish, British and Polish) reveals a small decline of just 1.7% by discharge home from hospital. Table 20 shows that Irish women also constitute the lowest rate of combination feeding at discharge (5.6%) which is much lower than that reported for other groups of women (11.7% for British, 13.3% for Polish and 15.7% for other women) ( $\chi^2 = 119.14$ ,  $df = 6$ ,  $p < 0.0001$ ).

**Table 20: Prevalence of feeding type at discharge by nationality**

	Irish N (%)	British N (%)	Polish N (%)	Others N (%)	Total
Breast	669 (45.0)	31 (51.7)	31(68.9)	129 (72.9)	860
Formula	702 (47.2)	22 (36.7)	6 (13.3)	17 (9.6)	747
Combination	83 (5.6)	71 (1.7)	6 (13.3)	28 (15.8)	124
Expressing BM	32 (2.2)	0	2 (4.4)	3 (1.7)	37
Not feeding	1 (0.1)	0	0	0	1
Total	1487	60	45	177	1,769
Missing					57

\*Totals for type of feeding are inconsistent with Table 7 due to missing data relating to nationality of the mother

At Phase 2, only 234 (16%) Irish women were exclusively breastfeeding. The majority of Irish infants were being fully formula fed at this point (72%, n=1,077). Table 21 also highlights that infants of all other nationalities are more likely than Irish infants to still be receiving some breastmilk at 3-4 months ( $\chi^2 = 110.02, df=9, p<0.0001$ ).

**Table 21: Type of feeding in last 7 days (Phase 2) by nationality**

	Irish N (%)	British N (%)	Polish N (%)	Others N (%)	Total
Only Breastmilk	234 (15.6)	16 (26.7)	17 (38.6)	70 (36.1)	337
Combination of breastmilk, water or juices	15 (0.01)	0	6 (13.6)	17 (8.8)	38
Only infant formula	1,077 (71.9)	35 (58.3)	16 (36.4)	62 (32.0)	1,190
Combination of breastmilk and infant formula	172 (11.5)	9 (15.0)	5 (11.4)	45 (23.2)	231
Total	1498	60	44	194	1,796
Missing					30

\*Totals for type of feeding are inconsistent with Table 7 due to missing data relating to nationality of the mother.

### 5.7.2 Effect of ethnicity on breastfeeding

Along with nationality it was important to determine the prevalence of breastfeeding by ethnicity, because Irish traveller mothers have previously been identified as having low levels of breastfeeding initiation (Department of Health & Children, 2005). While Irish traveller mothers are included in this survey the very small number who participated (4, only 3 of whom responded to Phase 2) means that this cannot be reliably assessed here.

When ethnic origins of all mothers were examined, similar trends to those reported for initiation by nationality were observed, with Irish mothers being less likely to breastfeed than any other ethnic groups. Table 22 shows that, in common with the results for nationality, Irish women and Irish Traveller women are less likely to breastfeed at birth than any other ethnic group ( $\chi^2 = 46.48$ ,  $df = 8$ ,  $p < 0.0001$ ).

**Table 22: Type of first feed by ethnic origins of mothers in the overall sample**

Ethnic Origin / What kind of food did your baby receive for his/her first feed after birth?	Breast	%	Formula	%	Total
	<b>N</b>		<b>N</b>		
Irish	791	53.4	691	46.6	1,482
Irish Traveller	1	33.3	2	66.7	3
African	14	60.9	9	39.1	23
Chinese	6	54.5	5	45.5	11
Any other white background	140	75.7	45	24.3	185
Any other black background	0	0	1	100	1
Any other Asian background	22	84.6	4	15.4	26
Other including mixed background	6	85.7	1	14.3	7
Others	10	55.6	8	44.4	18
Total	990	56.4	766	43.6	1,756

Missing=70

Results represent the valid results (missing values have been omitted when calculating the percentages)

### ***5.7.3 Breastfeeding and socio-economic status***

Univariate analysis reveals significant relationships between breastfeeding initiation and the socio-economic status of the mother. Without exception, the analysis revealed that maternal socio-demographic characteristics were significantly associated with breastfeeding initiation. These include employment status, parity, social class, health insurance status, marital status and education level attained (Table 23).

**Table 23: Factors associated with breastfeeding initiation**

Category*	Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
	N	%	N	%		
<b>CSO classification</b>						
Professional, managerial and technical	485	70	213	30	$\chi^2 = 77.19, df = 2$	<0.0001
Non-manual and skilled manual	402	50	398	50		
All other categories	76	42	107	58		
<b>Employment status</b>						
Working for profit or payment	786	58	561	42	$\chi^2 = 8.47, df = 1$	0.004
Not working	216	50	213	50		

**Table 23 Contd.**

		Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
		N	%	N	%		
<b>Age ceased education</b>							
	Less than 18 years old	96	39	149	61		
	18-20 years old	251	49	266	51		
	21-23 years old	355	70	153	30		
	24 and above	194	72	77	28	$\chi^2 = 104.62,$ $df = 3$	<0.0001
<b>Education level attained</b>							
	Lower Secondary or less	46	32	96	68		
	Upper Secondary – third level non degree	428	48	460	52		
	Primary degree or above	520	72	204	28	$\chi^2 = 127.73,$ $df = 2$	<0.0001

**Table 23 Contd.**

		Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
		N	%	N	%		
<b>Health Insurance</b>							
	Yes	710	61	285	39		
	No	285	48	304	52	$\chi^2 = 24.11, df = 1$	<0.0001
<b>Marital Status</b>							
	Single	164	46	196	54		
	Married	790	59	547	41		
	All other categories	38	57	16	43	$\chi^2 = 25.41, df = 2$	<0.0001

\* Does not include infants not feeding yet due to small numbers  
 Results represent the valid results (missing values have been omitted when calculating the percentages)

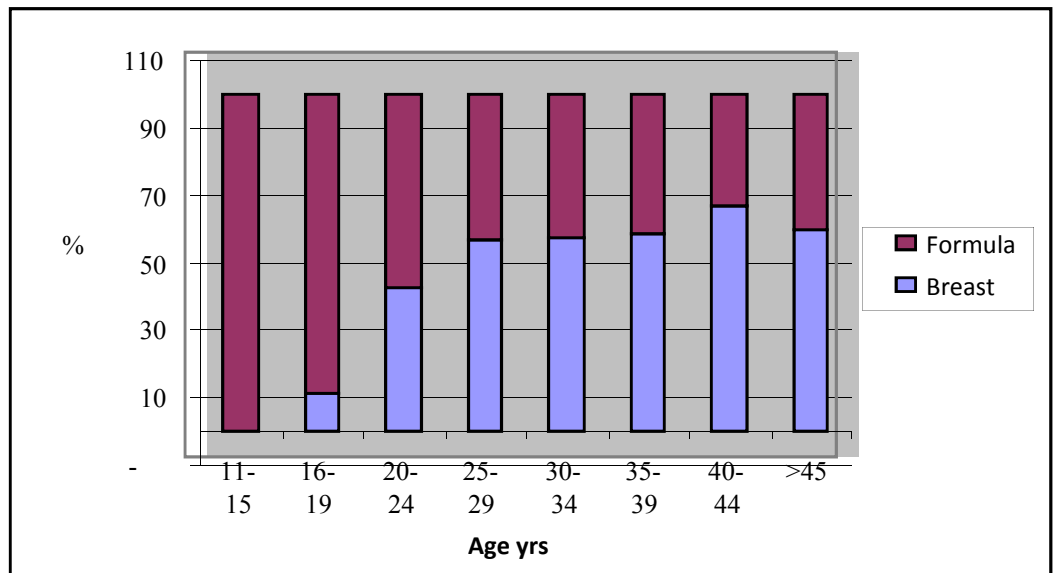


### 5.7.4 Effect of age on initiation and duration of breastfeeding

The mean age of mothers completing Phase 2 of the survey was 32 years. Two thirds of the sample were aged between 30 and 39 years (66%, n=1,124). Three mothers were younger than 16 years old (0.2%) and 5 were over 45 years old (0.3%)

Figure 3 and Table 24 show that age of the mother was a significant factor in the initiation of breastfeeding ( $\chi^2 = 40.08, df = 7, p < 0.0001$ ). The younger the mother when she gave birth, the less likely she was to initiate breastfeeding. Among mothers who initiated breastfeeding, those who were aged 40-44 were the most likely to be exclusively breastfeeding at 3-4 months (48%, n=25 of the 82 women in that group) (Table 25). However, after adjustment (categories were redefined as <20, <30, <40 and >40), the age of the mother was not found to be a significant factor influencing discontinuation of breastfeeding by 3-4 months ( $\chi^2 = 7.7, df = 6, p = .254$ ).

Figure 3: Type of first feed by age of the mother



**Table 24: showing type of first feed by age of the mother**

	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
<b>Mothers age</b>	<b>Breast</b>		<b>Formula</b>	
11-15			1	100
16-19	3	11	24	89
20-24	47	42	64	58
25-29	196	57	149	43
30-34	373	57	277	43
35-39	268	58	191	42
40-44	55	67	27	33
>45	3	60	2	40
Missing = 146				

Results represent the valid results (missing values have been omitted when calculating the percentages)

**Table 25: Showing those mothers who breastfed at birth by age and method at 3-4 months**

Age category	Only Breastmilk		Breastmilk & water or juices		Only infant formula		Breastmilk & infant formula		Total	Missing
	N	%	N	%	N	%	N	%		
16-19			1	33	1	33	1	33	3	0
20-24	8	21	3	8	21	54	7	20	39	8
25-29	61	34	12	7	74	41	35	19	182	14
30-34	106	31	5	1	152	44	83	24	236	137 <sup>a</sup>
35-39	87	35	7	3	95	39	57	23	246	22
40-44	25	48	2	4	16	31	9	17	52	3
>45	1	33			2	67			3	0

<sup>a</sup>Large number of missing values, therefore results for this category may not be reliable  
Results represent the valid results (missing values have been omitted when calculating the percentages)

### **5.7.5 Effect of birth order on breastfeeding**

Having a first baby was associated with initiation of breastfeeding (60%, n=433) at birth. More mothers having their second or subsequent baby also breastfed at birth (54% n=567, compared to 46% n= 481 who formula fed at birth), indicating that breastfeeding at birth is the predominant method of feeding among primiparous and multiparous mothers in Ireland ( $\chi^2 = 6.15$ ,  $df=1$ ,  $p=0.013$ ).

By Phase 2, the second time or subsequent mothers (54%, n=566) who breastfed at birth were more likely to be exclusively breastfeeding (38%, n=198) than women having their first baby (28%, n=110) ( $\chi^2 = 13.18$ ,  $df=3$ ,  $p=0.04$ ).

### **5.7.6 Choice of feeding method**

Feeding intentions of all mothers before they had their babies were examined, as recalled after birth. It was important to consider the possible influences on this decision, such as reasons for choosing a particular method of feeding and social pressures, because these have been identified in the literature as having the potential of being modified (Kools *et al.*, 2005).

### **5.7.7 Intended method of feeding**

More than half of all mothers said they had planned to breastfeed their infants before they were born (56%, n=999). Formula feeding was planned by 33% (n=587), and 7% (n=130) intended to combination feed. Among those who planned to breastfeed, only 89% breastfed at the first feed, meaning that about 1 in 9 mothers who had intended to breastfeed antenatally gave formula milk for the first feed ( $\chi^2 = 98.79$ ,  $df=3$ ,  $p=<0.0001$ ). However, 2% (n=11) of mothers who had reported that they had planned to formula feed, breastfed at the first feed. Among the 77 (4%) mothers who

said they had been undecided about infant feeding before their infants were born, a higher proportion began formula feeding (n=52, 68%) than breastfeeding (n=24, 32%).

Mothers who planned to breastfeed exclusively and breastfed their baby at birth were found to be less likely to discontinue in the first two weeks (n=117, 30%) than those who planned to combination feed (n=33, 45%) or those who had not decided (n=10, 56%). Of the small numbers of mothers who planned to formula feed but breastfed initially, 62% (8 of 13) discontinued in the first two weeks. Overall those mothers who planned to, and did, breastfeed initially were more likely to breastfeed for a longer duration than other mothers (Table 26). Thus, 16% (63 of 391), of those who planned to breastfeed were still breastfeeding (any) at 10 weeks compared to 8% (6 of 73) who planned to combination feed, 6% (1 of 18) who had not decided and 8% (1 of 13) who planned to formula feed.

**Table 26: Duration of any breastfeeding among mothers who breastfed at birth and how they planned to feed prior to birth.**

Stopped breastfeeding at	Before your baby was born, how did you plan to feed				Total
	Breast	Formula	Combination of breast and formula	I had not decided	
	%	%	%	%	%
1 - 14 days	30	62	45	56	34
15 - 28 days	19	0	27	17	20
29 - 42 days	13	15	3	11	12
43 - 70 days	21	15	14	11	20
Greater than 70 days	16	8	11	6	15
Total (number)	391	13	73	18	495

Results represent the valid results (missing values have been omitted when calculating the percentages)

### **5.7.8 Antenatal factors and social norms relating to prevalence of breastfeeding**

Infant feeding was not discussed with 31% (n=550) of mothers during pregnancy. However, no significant differences were observed in choice of feeding method at birth between those mothers who received information about infant feeding and those who did not (Table 27) ( $\chi^2 = 0$ ,  $df=1$ ,  $p=0.981$ ).

Factors in the antenatal period that were identified as having a significant impact on initiation were: attendance at antenatal classes, a perception that the mother's family and friends breastfed their infants and the mother having been breastfed herself (Table 27). Breastfeeding was initiated by 62% of mothers who attended antenatal classes compared to 52% initiation among those who did not attend classes during this pregnancy. Attendance at antenatal classes was found to be associated with the socio-economic status of the mother ( $\chi^2 = 62.39$ ,  $df=5$ ,  $p<0.0001$ ), with 50% (n=60) of professional and 49% (n=289) of managerial and technical workers having attended during pregnancy, compared to only 22% (n=49) of skilled manual and 38% (n=38) of semi-skilled workers.

Those mothers who said that most of their friends breastfed their babies were more likely to breastfeed at birth (79%) than those whose friends and family used formula feed (47%) ( $\chi^2 = 96.56$ ,  $df=3$ ,  $p<0.0001$ ). This suggests that peers are influential in a mother's choice of infant feeding method. This study also confirms that formula feeding is still perceived as the predominant method of feeding among mothers' peers in Ireland.

Mothers were also asked how they were fed themselves when they were newborn and the majority (72%) reported that they had been formula fed. Mothers who were breastfed as infants were more likely to initiate breastfeeding at birth (76%) than those who were formula fed (50%) or did not know how they were fed (45%) ( $\chi^2 = 96.27$ ,  $df=2$ ,  $p<0.0001$ ).

**Table 27: Antenatal factors relating to prevalence of breastfeeding**

Category	Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
	N	%	N	%		
<b>Infant feeding discussed during pregnancy</b>					$\chi^2 = 0, df=1$	.982
Yes	691	56	538	44		
No	307	56	242	44		
<b>Attended Antenatal classes</b>					$\chi^2 = 17.19, df=1$	<0.0001
Yes	449	62	271	38		
No	546	52	496	48		
<b>Infant feeding choices of family and friends</b>					$\chi^2 = 96.56, df=3$	<0.0001
Most give formula	384	47	435	53		
Most breastfeed	252	79	67	21		
Some breastfeed / some give formula	347	57	257	43		

**Table 27 Contd.**

	Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
	N	%	N	%		
<b>How mother was fed herself</b>					$\chi^2 = 96.27, df = 2$	<0.0001
Breastfed	328	77	99	23		
Formula fed	631	50	628	50		
Don't know	32	45	39	55		

\*Excludes 'Don't know' category due to small numbers (n=22)

Results represent the valid results (missing values have been omitted when calculating the percentages)



### ***5.7.9 Prevalence and duration of breastfeeding by factors relating to birth and hospital stay***

Type of birth, birth weight of the infant and skin to skin contact at birth were all found to be significant factors affecting initiation of breastfeeding at birth (Table 28). Normal birth was listed by 968 (54%) of all mothers sampled. Breastfeeding was the predominant method of feeding for all types of birth with the exception of caesarean section (Table 24). Mothers who had a caesarean section or vacuum delivery were found to be more likely to discontinue breastfeeding by discharge (n=50, 14%) than those who had a normal or forceps delivery (n=45, 8%) (Table 29). Among breastfeeding mothers who had a normal delivery, 84% (n=462) were still breastfeeding at discharge while only 73% (n=93) of those having a vacuum delivery and 72% (n=175) of caesarean section mothers reported breastfeeding at this time.

**Table 28: Factors relating to the birth**

Category	Breastfeeding at birth		Formula feeding at birth		$\chi^2$	P-value
	N	%	N	%		
<b>Type of delivery</b>					$\chi^2 = 21.07, df = 3$	<0.0001
Normal	553	59	390	41		
Forceps	51	68	24	32		
Vacuum	128	59	90	41		
Caesarean Section	242	48	262	52		
<b>Birth Weight of infants</b>					$\chi^2 = 15.88, df = 3$	<0.0001
Less than 3 Kg	106	45	130	55		
3Kg to 3.5 Kg	345	58	255	42		
3.5Kg to 4 Kg	336	57	253	42		
Greater than 4 Kg	206	61	132	39		
<b>Skin to skin contact*</b>					$\chi^2 = 40.49, df = 4$	<0.0001
Yes	841	60	556	40		
No	142	42	199	58		

\*Does not include 'can't remember category', due to small numbers (n=26)

Results represent the valid results (missing values have been omitted when calculating the percentages)

**Table 29: Breastfeeding at discharge by type of birth**

Type of birth	Breast		Switched to Formula		Combination		Total
	N	%	N	%	N	%	N
Normal	462	84.3	41	7.5	37	6.8	548
Forceps	36	72.0	4	8.0	9	18.0	50
Vacuum	93	72.7	18	14.2	11	8.6	128
Caesarean section	175	72.3	32	13.2	27	11.2	242
Total*	766		95		84		968
Missing							65

\*Mothers who were expressing breastmilk or were not feeding are not included due to small numbers (n=26)

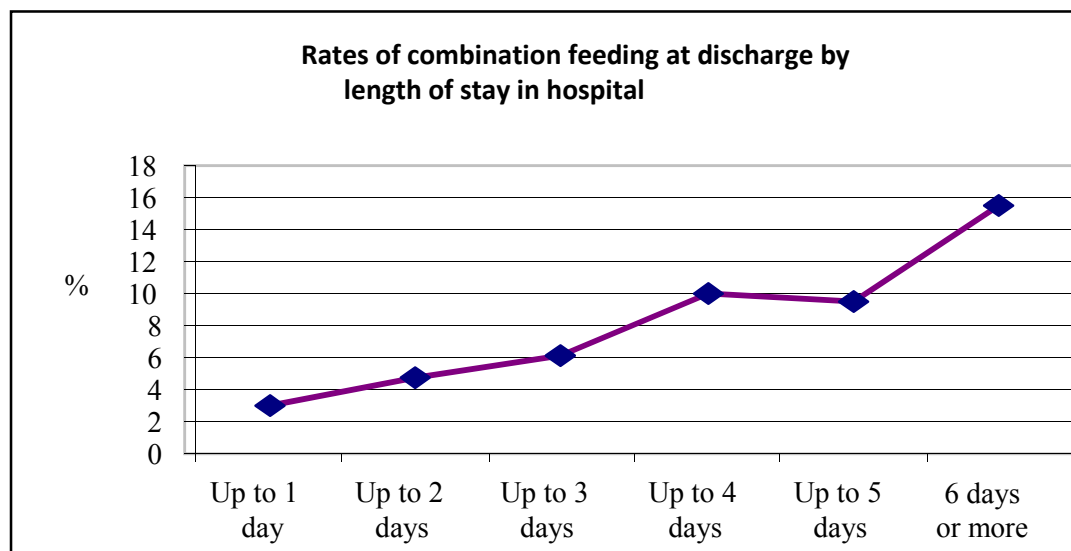
The mean birth weight for the infants in this sample was 3.4 Kg. Breastfeeding was the predominant method of feeding at birth and discharge for all of the categories of birth weight, except for those infants that were smaller than 3 Kg at birth. These infants were more likely to be formula fed at birth and discharge from hospital ( $\chi^2 = 15.88$ ,  $df = 3$ ,  $p < 0.0001$ ).

#### **5.7.10 Effect of length of stay on breastfeeding practices**

The average length of stay in hospital was three days, with 62% of women who gave birth in hospital (n=1,107) going home on or before this point. Length of stay was not found to be a significant factor on whether the mother had continued or discontinued breastfeeding by the time she went home from hospital ( $\chi^2 = 20.41$ ,  $df = 5$ ,  $p < 0.157$ ).

However for those women still breastfeeding, the longer the breastfeeding mother stayed in hospital, the more likely she was to be combination feeding at discharge (Figure 4).

Figure 4: Rates of combination feeding by day of discharge from hospital



Rooming in, the practice whereby mothers and infants remain together, was practised by 83% (n=773) of breastfeeding mothers, with 16% (n=152) reporting that their baby did not stay beside them at all times in hospital. Rooming in was found to be significantly linked with breastfeeding at discharge from hospital ( $\chi^2 = 15.61$ ,  $df = 4$ ,  $p < 0.004$ ) with 87% (n=645) of those mothers who roomed still breastfeeding at this time, compared to only 67% (n=102), of the 152 breastfeeding mothers who did not room in.

In the early days of feeding, 313 breastfeeding mothers (36%) gave their baby fluids other than breastmilk and many (n=209) of these were given advice to do so, while the rest (n=104), gave their baby fluids (formula or water) without being given any such advice. Reporting the use of other fluids in the early days of breastfeeding was associated with early discontinuation of breastfeeding, with only 4% (n=21) of those who reported exclusive breastfeeding at this time having discontinued by discharge. This compared to 9% (n=22) of those who were advised to give

something else and 22% (n=27) of those who wanted to give something else ( $\chi^2 = 1.56, df = 4, p < 0.0001$ ).

### **5.7.11 Use of pacifiers**

Use of a soother is associated with discontinuation of breastfeeding by 3-4 months: 74%, (n=342) of those switching to fully formula feeding compared with 37% (n=130) exclusively breastfeeding) ( $\chi^2 = 109.85, df = 3, p < 0.0001$ ) gave a soother. Mothers who were partially breastfeeding at 3-4 months were also more likely to give their baby a soother than those who were exclusively breastfeeding (60% of those combination feeding giving a soother compared to only 37% of those exclusively breastfeeding). Soother use was associated with socio-economic status among this sample, with 72% (n=132) of manual and unskilled workers reporting soother use, compared to 63% (n=441) of professional, managerial and technical workers ( $\chi^2 = 6.498, df = 2, p < 0.039$ ). This finding is consistent with other international studies (Pincombe *et al.* 2008).

### **5.7.12 Mothers' views of breastfeeding duration**

Mothers who breastfed initially were asked to describe how they felt about the duration of their breastfeeding experience (Table 30). Almost equal proportions breastfed for as long as they intended (n=396, 44%) as said that they would like to have breastfed for longer (n=404, 45%). The remainder, (n=102, 11%) indicated that they had breastfed for longer than intended.

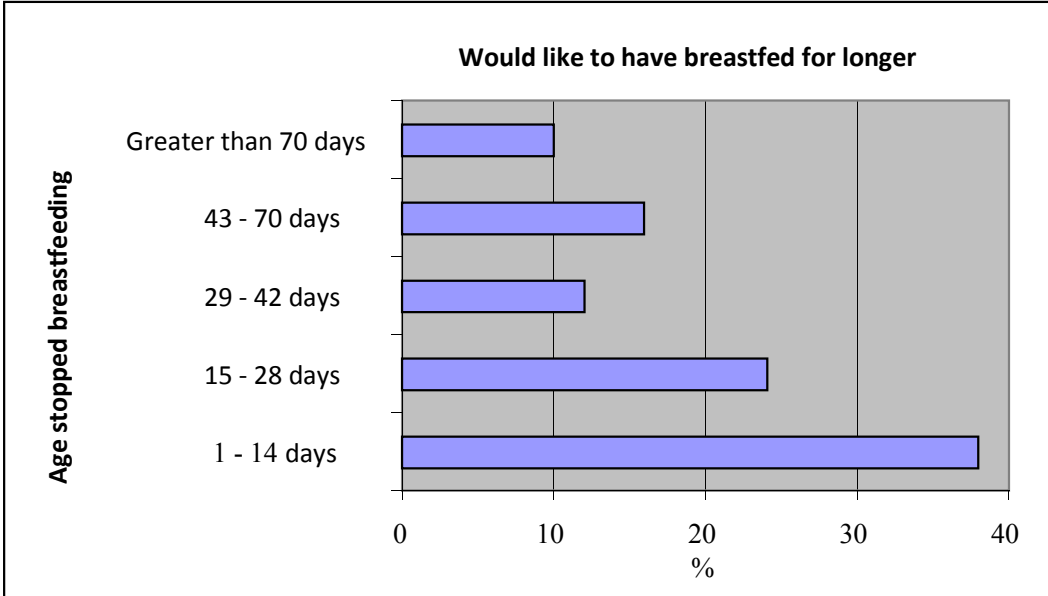
**Table 30: Whether or not mothers would like to have breastfed for longer.**

Which of the following best describes breastfeeding your baby?		
	N	%
Would like to have breastfed for longer	404	44.8
Breastfed for as long as intended	396	43.9
Breastfed for longer than intended	102	11.3
Total	902	100
Missing	100	

Results represent the valid results (missing values have been omitted when calculating the percentages)

Among those mothers who had switched to fully formula feeding at 3-4 months, 81% (n=359) said that would like to have breastfed for longer. The proportion of mothers who would like to have breastfed for longer declined with the duration of breastfeeding as indicated in Figure 5. Around three quarters of mothers (74%) who discontinued breastfeeding before six weeks indicated that they would like to have breastfed for longer.

**Figure 5: Age of the baby at which the mother stopped breastfeeding and whether she would have liked to continue for longer**



### **5.7.13 Support and assistance with breastfeeding**

Some evidence suggests that the quality of the support offered may have some impact on the duration of any breastfeeding (McCarter-Spaulling, 2008). This study therefore sought to examine the support and assistance offered to women in the immediate and subsequent postnatal period, to determine the impact and satisfaction with services offered.

Among mothers who were breastfeeding from birth, 81% (n=754) were shown how to put the baby to the breast during the first few days. This assistance was provided predominantly by a midwife (n=597, 79%), nurse (n=261, 35%) or midwifery student (n=46, 6%). The maternity care assistant provided help to 5% of mothers. Assistance with how to put the baby to the breast was not found to be a significant factor in helping mothers to continue breastfeeding until discharge, as 94% of those who discontinued, compared to 81% of all mothers who started breastfeeding, had been given assistance to put their baby to the breast ( $\chi^2 = 6.66$ ,  $df=4$ ,  $p=0.154$ ).

### **5.7.14 Support services**

Breastfeeding mothers were asked about knowledge of, access to and satisfaction with community breastfeeding support services. Mothers were asked to select multiple factors as appropriate, which means that statistics could not be computed to determine the impact of specific support services on breastfeeding duration. Results do however highlight women's access to, and satisfaction with the services offered. Contact details for the public health nurse was the support most commonly provided to mothers (n=589, 65%). Less than half of the mothers who breastfed initially (n=431, 48%) were given any information about a community breastfeeding support group. La Leche League contact details were offered to a further 42% (n = 378). Despite the adoption of the baby-friendly initiative and its goal to 'foster the establishment of breastfeeding support groups and refer

mothers to them on discharge from the hospital or clinic' (UNICEF, 2007), 14% (n =123) of the mothers in the sample reported that they were not given any information about a support service for breastfeeding.

Among the 41% (n=318) of breastfeeding mothers who accessed breastfeeding support services, 36% (n=114) indicated that the service was excellent and a further 39% (n=125) were very happy with services. Eighteen mothers (6%) said that the service was poor and two mothers thought that the service was very poor.

## ***5.8 Impact of challenges with infant feeding and infant health***

### ***5.8.1 Admission to special or intensive care baby unit***

Admission to special or intensive care baby unit after birth occurred for 15% (n=296) of infants. Jaundice (n=66, 28%) and prematurity (n=64, 28%) were the most commonly reported reasons for admission. Mothers whose infants were admitted to special or intensive care were in general less likely to be breastfeeding at discharge from hospital (40%, n=95) than those who were not admitted (52%, n=686) but were more likely to be expressing breastmilk (10% compared to 1%) or combination feeding (13% compared to 6%) ( $\chi^2 = 80.02, df =4, p < 0.0001$ ).

Admission to special or intensive care baby unit after birth was not found to affect discontinuation of breastfeeding by discharge from hospital or 3-4 months.

### ***5.8.2 Problems encountered by infants***

Mothers who were breastfeeding at discharge from hospital were more likely to report that their infants had never been sick (33%, n= 370) than those who were formula feeding (27%, n=265), combination feeding (25%,



n=45) or expressing milk (12%, n=7). Among the infants who had encountered problems, those who were breastfeeding at discharge were reported to have suffered less constipation (9%, n=101) than all other groups but were more likely to have been reported as not gaining enough weight (4% n=46), compared to formula feeding infants (1%, n=11). At 3-4 months, infants who were combination feeding were most likely to be reported to have gained insufficient weight (Table 31).

Many of the infants may not have continued breastfeeding for a long period following discharge. Table 31 therefore presents problems encountered by infants based on type of feeding at 3-4 months, restricted to those who were breastfeeding at birth.

**Table 31: Problems encountered by infants based on feeding at 3-4 months for those who were breastfeeding at birth**

Problems encountered	Only breastmilk		Comb of breastmilk water or juices		Only infant formula		Comb of breast and infant formula		Total
		%		%		%		%	
Baby has never been sick	166	38.8	14	25.5	156	24.4	92	31.0	428
Sickness or vomiting	27	6.3	3	5.5	48	7.5	16	5.4	94
Constipation	24	5.6	10	18.2	83	13.0	28	9.4	145
Diarrhoea	11	2.6	2	3.6	46	7.2	9	3.0	68
Chest infection	15	3.5	0	0	23	3.6	13	4.4	51
Ear infection	3	0.7	1	1.8	4	0.6	1	0.3	9
Urinary tract infection	1	0.2	2	3.6	6	0.9	3	1.0	12
Colic or wind	105	24.8	15	27.3	149	23.3	73	24.6	342
Thrush	24	5.6	5	9.1	55	8.6	15	5.1	99
Not gaining enough weight	7	1.6	2	3.6	24	3.8	23	7.7	56
Gaining too much weight	1	0.2	0	0	2	0.3	4	1.3	7
Others	44	10.3	1	1.8	43	6.7	20	6.7	108
<b>Total*</b>	<b>428</b>	<b>100</b>	<b>55</b>	<b>100</b>	<b>639</b>	<b>100</b>	<b>297</b>	<b>100</b>	<b>1,319</b>

\* Some mothers ticked more than one option

In this instance, those infants whose mothers were combination feeding or had switched to fully formula feeding by 3-4 months were reported as more likely to have been sick than those who were exclusively breastfeeding. Colic or wind is marginally more prevalent among breastfeeding and combination mothers than formula feeding mothers.

### **5.8.3 Challenges related to breastfeeding**

When asked if there were any problems breastfeeding their baby in the early days, 54% (n=497) of the 920 breastfeeding mothers who responded to this question (missing, n=82), reported that they had encountered a problem. Support for these early breastfeeding challenges was provided predominantly by midwives (28%, n=234), nurses (17%, n=144), lactation consultants (16%, n=129) and public health nurses (13%, n=110).

When mothers were asked to identify if they had any of the following problems as a result of breastfeeding, some mothers reported that they had encountered more than one problem. Nipple pain was the predominant problem encountered (n=459, 51%) with a further 32 mothers citing cracked nipples in the other responses. Blocked ducts were also prevalent, representing 18% (n=159) of reported problems. While nipple pain is consistently reported in the literature as a common breastfeeding difficulty, the rate of blocked ducts is higher than that reported in the United Kingdom feeding survey (10%) (Bolling *et al.*, 2007).

Having encountered one of these specific problems was not a factor relating to discontinuation of breastfeeding at 3-4 months, as those mothers who encountered no problems were just as likely (and in some instances, more likely) to have switched to full formula feeding (Table 32).

**Table 32: Problems encountered, if any, and type of feeding at 3-4 months**

Problems encountered	Only breastmilk		Comb of breastmilk water or juices		Only infant formula		Comb of breast and infant formula		Total
		%		%		%		%	
Mastitis	38	32.2	1	0.8	55	46.6	24	20.3	118
Blocked ducts	75	40.8	4	2.2	69	37.5	36	19.6	184
Thrush	18	28.6	4	6.3	25	39.7	16	25.4	63
Nipple pain	179	33.6	18	3.4	220	41.3	116	21.8	533
Others	27	32.9	3	3.7	40	48.8	12	14.6	82
No problems	107	27.0	18	4.5	184	46.3	88	22.2	397

#### **5.8.4 Mothers' experiences and views of feeding outside the home**

It has been suggested in the 5-year Strategic Action Plan for Breastfeeding in Ireland that Irish women have experienced, and expect, negative reactions to breastfeeding in public (Department of Health & Children, 2005). It is reasonable to assume that this may therefore influence mothers' infant feeding decisions. Therefore, breastfeeding mothers were asked about barriers to and prevalence of feeding in public.

Of the 1,002 women who initiated breastfeeding at birth, 918 provided information about breastfeeding outside the home (missing, n=84). Never having breastfed an infant in public at 3-4 months (18%, n=165) was found to be associated with discontinuation of breastfeeding at this time ( $\chi^2 = 3.36$ ,  $df = 9$ ,  $p < 0.0001$ ). By 3-4 months, just over half of those mothers (53%, n=165) who were breastfeeding initially had breastfed in public. Of the remainder, 18% (n=165) had never fed in a public place and 8% (n=76) had given expressed breastmilk in a bottle.

When mothers are separated into their ethnic groups it is apparent that women who are Irish are among those least likely to breastfeed in public with only 49% (n=412) having done so compared to 63% (n=100) of those from any other white background and 86% (n=6) of others including mixed backgrounds.

Variations were also observed in the prevalence of public breastfeeding among the different demographic subgroups. Mothers who breastfed initially who were classified as having achieved an educational award of primary degree or higher were more likely than their counterparts to breastfeed in public. Among mothers who had achieved a postgraduate degree 66% (n=77) had breastfed in public, compared to only 35% (n=42) who reported leaving education after completing upper secondary.

The older a mother was the more likely she was to have breastfed in public ( $\chi^2 = 19.10$ ,  $df = 6$ ,  $p = 0.004$ ). Among mothers who were 35 years old and older, 61% ( $n = 181$ ) reported breastfeeding in public compared to only 46% ( $n = 103$ ) of those who were less than 30 years old. None of the three breastfeeding mothers under 20 years of age had breastfed in public.

### 5.8.5 Barriers to mothers breastfeeding their infants in public

Mothers were asked if they had access to facilities to breastfeed their infants in public, to investigate factors that may deter them from breastfeeding in public. One third of mothers who breastfed initially ( $n = 298$ , 33%) had not encountered any problems finding somewhere to feed their baby in public (Table 33). However, a greater proportion ( $n = 351$ , 39%) said they had encountered problems finding somewhere to feed their infants and 11% ( $n = 100$ ) of mothers had been stopped or made to feel uncomfortable about breastfeeding in a public place.

**Table 33: Problems finding somewhere to breastfeed in a public place**

Have you ever had problems finding somewhere to breastfeed your baby in a public place?		
	N	%
Never tried	250	27.8
Yes	351	39.0
No	298	33.1
Total	899	100
Missing	103	

Results represent the valid results (missing values have been omitted when calculating the percentages)

Mothers were asked what factors had discouraged or put them off breastfeeding in public and 46% (n=370) cited lack of a suitable venue. A quarter (n=204, 25%) of mothers did not feel confident enough to breastfeed in public, 17% (n=136) were made to feel uncomfortable by other people and 16% (n=131) had concerns regarding hygiene standards. A third had never tried to breastfeed in public.

### ***5.9 Multivariate analysis of the factors associated with prevalence of breastfeeding at birth and 3-4 months***

Log-linear analysis was used, where appropriate, to compare the behaviour and attributes of those mothers who initiated and did not initiate breastfeeding. This allows for expression of categorical data and the chi-squared statistic as a linear model, by using log values. Log-linear analysis provides further depth to the results by adding another layer of analysis and highlights more specific relationships between variables. Structural equation modelling (SEM) could also have been used to further the analysis, but the application of SEM is often overly complex and involves multifaceted decisions about the data being observed (Azen & Walker, 2010).

In log-linear analysis the change in the value of the likelihood ratio chi-square statistic when terms are removed (or added) from the model is an indicator of their contribution. Small values of likelihood ratio chi-square mean a good model in log-linear analysis.

All factors that were found to be significant were entered into the log-linear model. These included: nationality, ethnicity, CSO classification, employment status, age ceased education, educational attainment, health insurance status, age of the mother, marital status, birth order, intention to breastfeed, attendance at antenatal classes, infant feeding choices of family and friends,

how the mother was fed herself, type of delivery, birth weight of infants and skin to skin contact. Due to the vast number of tables produced when building each log-linear model, only significant 3-way relations have been reported. This is in keeping with best practice for summarising and presenting findings (Nicol Adelheid & Pexman, 2006).

### **5.9.1 Prevalence of breastfeeding**

Log-linear analysis revealed several significant relationships between variables and initiation of breastfeeding. In particular mothers' health insurance status mediates the effect of several other variables: marital status, the age when the mother ceased education and how the mother was fed herself.

A state-sponsored health insurance scheme, Voluntary Health Insurance, was introduced in Ireland in 1957 (Barrington, 2000). This has led to what has been described as a two-tier system of health service provision with clear socio-economic divisions between those who can and cannot afford insurance (Tussing & Wren, 2006). While maternity care is provided free of charge for all women who are ordinarily resident in Ireland under the Maternity and Infant Care Scheme, health insurance status among pregnant women is a strong indicator of socio-economic status. These findings also highlight that having health insurance is predictive of breastfeeding initiation.

Tables 34-40 highlight that health insurance mediates the effect of marital status and how the mother was fed as an infant but not the number of years spent in education.



**Table 34: Observed frequencies and percentages for type of first feed, marital status and private health insurance**

Private Health Ins			Initiated Breastfeeding	Initiated formula feeding	Total
<b>Yes</b>	Single	<b>N</b>	70	40	110
		<b>%</b>	63.6	36.4	100
	Married	<b>N</b>	618	410	1028
		<b>%</b>	60.1	39.9	100
	All other categories	<b>N</b>	20	8	28
		<b>%</b>	71.4	28.6	100
<b>No</b>	Single	<b>N</b>	93	155	248
		<b>%</b>	37.5	62.5	100
	Married	<b>N</b>	169	134	303
		<b>%</b>	55.8	44.2	100
	All other categories	<b>N</b>	18	8	26
		<b>%</b>	48.5	51.5	100

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XI.

Type of first feed by marital status and private health insurance is a significant 3-way interaction ( $\chi^2$  11.23,  $df = 2$ ,  $P = 0.004$ ).

The odds ratio is 2.92 with a 95% confidence interval of 1.83 to 4.65 indicating that the odds of breast feeding is significantly greater for single mothers with private health insurance. This is not the case for married mothers, with an odds ratio of 1.20 (0.92, 1.54).

The increase in odds ratio of breastfeeding due to insurance status, 2.92 for single mothers and 1.20 for married mothers, are significantly different based on the results of the log-linear analysis. Marital status affects the odds ratio of whether a mother will breastfeed based on whether they have private health insurance.

**Table 35: Observed frequencies and percentages for type of first feed, how mother was fed as a newborn and health insurance status**

Private health insurance	How mother was fed as a newborn		Initiated Breastfeeding	Initiated formula feeding	Total
<b>Yes</b>	Breastfed	<b>N</b>	193	55	248
		<b>%</b>	77.8	22.2	
	Formula fed	<b>N</b>	487	372	864
		<b>%</b>	56.4	43.6	
	Don't know	<b>N</b>	23	21	44
		<b>%</b>	52.3	47.7	
<b>No</b>	Breastfed	<b>N</b>	133	42	175
		<b>%</b>	76	24	
	Formula fed	<b>N</b>	140	244	384
		<b>%</b>	36.5	63.5	
	Don't know	<b>N</b>	9	17	26
		<b>%</b>	34.6	65.4	

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XII.

Type of first feed by how the mother was fed as an infant and private health insurance is a significant 3-way interaction ( $\chi^2 7.184$ ,  $df = 2$ ,  $P = 0.028$ ).

As was indicated previously, having been breastfed as an infant is a significant predictor of breastfeeding initiation and this remains the case irrespective of health insurance status. However, the odds ratio for mothers who were formula fed as infants and breastfed their own infants at birth is 1.54 with a 95% confidence interval of 1.34 to 1.79 and only 0.76 (0.69, .84) for those without health insurance, indicating that the odds of breastfeeding are significantly greater for mothers who were formula fed who had health insurance than for those without insurance.

Mothers who indicated that they do not know how they were fed as infants and have private health insurance are also more likely to initiate breastfeeding (OR 1.51, 95% CI 0.83, 2.74) than their counterparts without health insurance (OR 0.76, CI 0.48, 1.10).

Table 36 also demonstrates a significant 3-way interaction based on type of first feed by private health insurance and the age when the mother ceased education ( $\chi^2$  14.389,  $df$  = 6,  $P$  = 0.026). In this three way interaction, the odds ratio for breastfeeding in a mother who is less than 18 years old and has private health insurance is 1.5236 (95% CI 1.100, 1.685) compared to 0.862 (95% CI 0.66, 0.921.01) for those without health insurance. Due to small numbers in this category, this analysis should be interpreted with caution.

**Table 36: Observed frequencies and percentages for type of first feed, mothers age when she ceased education and health insurance status**

Private health insurance	Age Ceased education		Initiated Breastfeeding	Initiated formula feeding	Total
<b>Yes</b>	less than 18 yrs old	<b>N</b>	5	7	12
		<b>%</b>	41.7	58.3	
	18-20 yrs old	<b>N</b>	169	168	337
		<b>%</b>	50.1	49.9	
	21-23 yrs old	<b>N</b>	293	124	417
		<b>%</b>	70.3	29.7	
	24 yrs and older	<b>N</b>	145	68	213
		<b>%</b>	68.1	31.9	
<b>No</b>	less than 18 yrs old	<b>N</b>	6	10	16
		<b>%</b>	37.5	62.5	
	18-20 yrs old	<b>N</b>	82	97	179
		<b>%</b>	45.8	54.2	
	21-23 yrs old	<b>N</b>	59	23	88
		<b>%</b>	67.0	33.0	
	24 yrs and older	<b>N</b>	48	9	
		<b>%</b>	84.2	15.8	

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XIII.

How the mother was fed herself was shown by the bivariate analysis to be predictive of breastfeeding initiation. Log-linear analysis demonstrates that age has a significant impact on this 3-way relationship ( $\chi^2$  17.237,  $df$  = 4,  $P$  = 0.002). The odds ratio for initiating breastfeeding for a mother aged 30-34 years who was formula fed as an infant is 0.78 (95% CI 0.72, 0.86), compared to 0.61 (CI .53, 0.70) among mothers under 30.

Log-linear analysis demonstrates that age also has a significant impact on the 3-way relationship with how the mother was fed herself as an infant ( $\chi^2$  16.947,  $df$  = 4,  $P$  = 0.002). While all age categories who were breastfed as a newborn were more likely to initiate breastfeeding, this was not the case for mothers who were formula fed as infants. Among mothers having been formula fed as an infant, those who were aged less than 30 years had an odds ratio for initiating formula feeding of 1.46 (95% CI 1.20, 1.78) compared to 0.77 (CI 0.66, 0.89) for mothers aged 30-34 years.

**Table 37: Observed frequencies and percentages for type of first feed, how the mother was fed as a newborn and mothers age**

Mothers age	How mother was fed as a newborn		Initiated Breastfeeding	Initiated formula feeding	Total
<b>Less than 30yrs old</b>	Breastfed	<b>N</b>	113	35	148
		<b>%</b>	76.4	23.6	
	Formula fed	<b>N</b>	120	196	316
		<b>%</b>	38.0	62.0	
	Don't know	<b>N</b>	11	6	17
		<b>%</b>	64.7	35.3	
<b>30-34yrs old</b>	Breastfed	<b>N</b>	118	38	156
		<b>%</b>	75.6	24.4	
	Formula fed	<b>N</b>	239	222	461
		<b>%</b>	51.8	48.2	
	Don't know	<b>N</b>	12	17	29
		<b>%</b>	41.4	58.6	
<b>35yrs and older</b>	Breastfed	<b>N</b>	71	26	97
		<b>%</b>	73.2	26.8	
	Formula fed	<b>N</b>	242	175	417
		<b>%</b>	58.0	42.0	
	Don't know	<b>N</b>	8	15	23
		<b>%</b>	34.8	65.2	

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XIV.

Age of the mother also has a significant association with the 3-way relationship with infant feeding practices of friends and family ( $\chi^2$  10.678,  $df=4$ ,  $P = 0.030$ ). Among mothers having friends and family who give formula who were less than

30 years old the odds ratio for initiating breastfeeding is 0.45 (95% CI 0.37, 0.54) compared to 0.68 (0.59, 0.79) for mothers aged 30-34 years.

**Table 38: Observed frequencies and percentages for type of first feed, infant feeding choices of her family and friends and mothers age**

Mothers age	How friends and family fed their infants*		Initiated Breastfeeding	Initiated formula feeding	Total
<b>Less than 30yrs old</b>	Most of them give formula	<b>N</b>	90	157	247
		<b>%</b>	36.4	63.6	
	Most of them breastfeed	<b>N</b>	70	16	86
		<b>%</b>	81.4	18.6	
	About half formula feed and half breastfeed	<b>N</b>	77	63	140
		<b>%</b>	55.0	45.0	
<b>30-34yrs old</b>	Most of them give formula	<b>N</b>	149	136	285
		<b>%</b>	52.3	47.7	
	Most of them breastfeed	<b>N</b>	85	26	111
		<b>%</b>	76.6	23.4	
	About half formula feed and half breastfeed	<b>N</b>	134	111	245
		<b>%</b>	54.7	45.3	
<b>35yrs and older</b>	Most of them give formula	<b>N</b>	127	114	241
		<b>%</b>	52.7	47.3	
	Most of them breastfeed	<b>N</b>	77	24	101
		<b>%</b>	76.2	23.8	
	About half formula feed and half breastfeed	<b>N</b>	114	76	190
		<b>%</b>	60.0	40.0	

\*Does not include don't know category due to small numbers (n=25).

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XV.

Antenatal feeding intention, type of first feed and birth weight of the infant was also a significant 3-way interaction ( $\chi^2 16.90$ ,  $df = 6$ ,  $P = 0.010$ ). It is evident that those mothers who had decided to use combination feeding were likely to initiate breastfeeding except when the infant weighed less than 3 Kg.

**Table 39: Observed frequencies and percentages for type of first feed, antenatal feeding intention and birth weight of the infant**

Birth weight of infant	Antenatal feeding intention		Initiated Breastfeeding	Initiated formula feeding	Total
Less than 3 Kg	Formula feed	N	5	66	71
		%	7.0	93.0	
	Breastfeed	N	88	31	119
		%	73.9	26.1	
	Breast and formula feed	N	11	19	30
		%	36.7	63.3	
	Had not decided	N	2	12	14
		%	14.3	85.7	
From 3 to 3.5 Kg	Formula feed	N	6	177	183
		%	3.3	96.7	
	Breastfeed	N	273	45	318
		%	85.8	14.2	
	Breast and formula feed	N	43	14	57
		%	75.4	24.6	
	Had not decided	N	21	19	40
		%	52.5	47.5	



**Table 39 Contd.**

Birth weight of infant	Antenatal feeding intention		Initiated Breastfeeding	Initiated formula feeding	Total	
3.5 to 4 kg	Formula feed	<b>N</b>	9	189	198	
		<b>%</b>	4.5	95.5		
	Breastfeed	<b>N</b>	255	36	291	
		<b>%</b>	87.6	12.4		
	Breast and formula feed	<b>N</b>	52	13	65	
		<b>%</b>	80.0	20.0		
	Had not decided	<b>N</b>	13	15	28	
		<b>%</b>	46.4	53.6		
	Greater than 4 kg	Formula feed	<b>N</b>	2	104	106
			<b>%</b>	1.9	98.1	
Breastfeed		<b>N</b>	169	12	181	
		<b>%</b>	93.4	6.6		
Breast and formula feed		<b>N</b>	26	6	32	
		<b>%</b>	81.2	18.8		
Had not decided		<b>N</b>	9	10	19	
		<b>%</b>	47.4	52.6		

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XVI.

Attendance at antenatal classes, type of first feed and feeding preferences of the family and friends was also a significant 3-way interaction ( $\chi^2 7.819$ ,  $df = 2$ ,  $P = 0.020$ ). It is apparent from this analysis that attendance at antenatal classes mediates the effect of having friends and family who formula feed. The odds ratio for those reporting that friends and family formula feed and that they attended antenatal classes, and initiating breastfeeding is 0.73 (95% CI 0.64,

0.89) compared to 0.51 (0.45, 0.58) for those who did not attend antenatal classes.

**Table 40: Observed frequencies and percentages for type of first feed, infant feeding choices of her family and friends and attendance at antenatal classes**

Attendance at antenatal classes	How friends and family fed their infants*		Initiated Breastfeeding	Initiated formula feeding	Total
<b>Yes</b>	Most of them formula feed	<b>N</b>	170	131	301
		<b>%</b>	56.5	43.5	
	Most of them breastfeed	<b>N</b>	104	31	135
		<b>%</b>	77.0	23.0	
	About half formula feed and half breastfeed	<b>N</b>	161	106	267
		<b>%</b>	60.3	39.7	
<b>No</b>	Most of them Formula feed	<b>N</b>	211	301	512
		<b>%</b>	41.2	58.8	
	Most of them Breastfeed	<b>N</b>	145	35	180
		<b>%</b>	80.6	19.4	
	About half formula feed and half breastfeed	<b>N</b>	181	150	331
		<b>%</b>	54.7	45.3	

\*Excludes 'don't know' category due to small numbers (n=25)

A summary of the hierarchical steps involved in arriving at the final model is included in Appendix XVII.

Bivariate analysis of the factors associated with discontinuation at discharge from hospitals had revealed three variables of interest: nationality of the mother, admission to NICU/SCBU and the practice of rooming in. Log-linear

analysis of these variables did not however reveal any 3-way hierarchical relationships. Similarly, log-linear analysis did not clarify any further relationships relating to discontinuation at 3-4 months for the variables of significance (nationality, birth order, pacifier use and breastfeeding in public).

### **5.10 Results of Phase 3**

All infants were at least six months old at the time of Phase 3, with an age range of 24-38 weeks. The majority of infants were between 24 and 28 weeks (61%, n=270) (Table 41) with 79% (n=352) between 26 and 30 weeks, ensuring that the objective to collect information on infant feeding at 6-7 months was achieved. Analysis from Phase 2 had revealed variations in the reporting of breastfeeding by individual mothers when they were asked about the previous 24 hours and the previous 7 days, which is dependent on when they completed the questionnaire. Therefore, the Phase 3 questionnaire also collected information from mothers about feeding when their infant was exactly 6 months old, in addition to their “current” feeding method.

**Table 41: Baby age in categories**

	<b>N</b>	<b>%</b>
24 weeks	13	2.9
25-28 weeks	257	57.8
29-32 weeks	144	32.4
33-38 weeks	30	6.7
Total	444	100
Missing	17	
Total	461	

### 5.10.1 Prevalence of exclusive and partial breastfeeding at six months

Prevalence of exclusive and partial breastfeeding at six months is reported in Table 42. Exclusive breastfeeding was reported by 13% (n=61) of the 461 mothers who responded to Phase 3. This is just 6% of the 1002 mothers who responded to Phase 2 and had breastfed their infants at birth. A further 51% (n=230) of Phase 3 mothers were partially breastfeeding at six months and 36% (n=167) reported that they had discontinued breastfeeding.

**Table 42: Type of feeding at six months old**

	N	%
Breastmilk only	61	13.3
Formula milk only	12	2.6
Breastmilk and other fluids	20	4.4
Formula and other fluids	2	0.4
Breastmilk and solid food or spoon feeds	85	18.6
Formula milk and solid foods or spoon feeds	69	15.1
Breastmilk, solid foods or spoon feeds and other fluids	125	27.3
Formula milk, solid foods or spoon feeds and other fluids	84	18.1
Total	458	100
Missing	3	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

Tables 43 and 44 show rates of any breastfeeding when mothers completed the Phase 3 survey. The rate of exclusive breastfeeding is highest when measured in the previous 24 hours, with 21% (n=94) reporting exclusive breastfeeding for

this period. Further analysis reveals that this is because many women who are breastfeeding supplement their babies with other fluids once a week or less.

These tables exclude solid foods, which would be expected to form part of the infant’s diet after six months of age. At completion of Phase 3, 74 mothers (16%) report that the only fluid their infant has ever received is breastmilk, while 174 mothers (38%) report some breastmilk feeding in the past seven days. The proportion of women who discontinued breastfeeding between six months and completion of Phase 3 is 10% (n=44).

**Table 43: Milk and other fluids given to baby in the past 24 hours**

	<b>N</b>	<b>%</b>
Only breastmilk	94	20.6
Combination of breastmilk and water or juice	53	11.6
Only infant formula	102	22.3
Combination of breastmilk and infant formula	57	12.5
Combination of breastmilk, infant formula and water or juice	37	8.0
Combination of infant formula milk and water or juice	114	24.9
Total	457	100
Missing	4	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

**Table 44: Milk and other fluids given to baby in the past 7 days**

	<b>N</b>	<b>%</b>
Only breastmilk	74	16.3
Combination of breastmilk and water or juice	57	12.6
Only infant formula	81	17.8
Combination of breastmilk and infant formula	56	12.3
Combination of breastmilk, infant formula and water or juice	61	13.4
Combination of infant formula milk and water or juice	125	27.5
Total	454	100
Missing	7	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

In common with the findings of Phase 2 for the period up to 3-4 months, Irish women were more likely to have discontinued breastfeeding than women from other nationalities over the subsequent months. Among Irish mothers who participated in Phase 3 (n=327), 39% (n=127) had discontinued breastfeeding compared to 31% (n=40) of non-Irish mothers.

### ***5.10.2 Use of supplementation and weaning***

Of those mothers who were breastfeeding at 3-4 months, 92 mothers (21%) reported that had not given formula milk to their baby since Phase 2 (Table 45). An additional 30 mothers (7%) had given their baby formula only once or twice since Phase 2 and a further 21 (5%) reported using formula for a few feeds but not every week. This supports the need to measure breastfeeding in longitudinal studies rather than at defined time intervals or on a specific day.

**Table 45: How often mothers have given formula milks since they completed Phase 2**

	<b>N</b>	<b>%</b>
Never given formula	92	21.2
All feeds	77	17.8
Almost all feeds	79	18.2
About half of all feeds	54	12.5
One or two feeds a day	57	13.1
A few feeds each week, but not every day	23	5.3
A few feeds, but not every week	21	4.8
Only one or twice	30	6.9
Total	433	100
Missing	28	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

Between 15 and 20 weeks is the most common time for the introduction of other fluids (n=119, 31%) among breastfed infants with 22% (n=75) of infants having other fluids between 1 and 6 weeks and 19% between 21 and 24 weeks (n=73).

When asked why they give their baby drinks other than breast or formula milk, the most common reason in Phase 3 was that mothers felt that their baby was thirsty (22%, n=105). This was followed by helping with the baby's constipation (13%, n=61) and to prepare the baby for drinking from a cup (17%, n=41), which was given in response to the "Some other reason" option.

### **5.10.3 Challenges with breastfeeding**

Women were asked if there were any difficulties breastfeeding their baby since Phase 2, and 78% (n=346) reported that there had been no problems. The nature of the difficulties described by the 22% (n=95) who reported that they had encountered problems are summarised in Table 46.

**Table 46: Problems encountered with breastfeeding since Phase 2**

<b>Category</b>	<b>N</b>	<b>%</b>
Specific problems related to the breast	28	30.1
Baby led difficulties	23	24.7
Insufficient supply/hungry baby	18	19.4
Problems introducing bottles	14	15.0
Baby biting	10	10.8
Total	93	

### **5.10.4 Specific breastfeeding problems since Phase 2**

When mothers were asked to identify if they had any of a list of specific problems as a result of breastfeeding, some mothers provided more than one answer (Table 47). Blocked ducts were the commonest problem encountered (n=41, 10%). A further 36 mothers cited nipple pain (8%). Mastitis was a problem for 28 mothers (7%).



**Table 47: Problems experienced since Phase 2**

	<b>N</b>	<b>%</b>
Blocked ducts	41	9.5
Nipple pain	36	8.4
Mastitis	28	6.5
Thrush	13	3.0
Other	12	2.8
None of the above	324	75.6
Total	454	
Missing	7	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

#### ***5.10.5 Assistance with breastfeeding related problems***

Women who had experienced a problem with breastfeeding since Phase 2 were asked if they had received any help with these difficulties (Table 48). The most common answer given was that no-one had helped them with the difficulties (n=46, 11%). Where they had received help, women reported in similar numbers that they had received help from a friend or relative (n=20, 5%), doctor or general practitioner (n=18, 4%) and public health nurse (n=18, 4%). Thirteen women (3%) cited other people as the sources of help, the most common of which was partner or husband (n=6), followed by the internet (n=4) and own experience (n=2).

**Table 48: People who helped mothers with problems**

	<b>N</b>	<b>%</b>
I didn't have any problems	293	67.9
No one helped me with these problems	46	10.6
Friend/relative	20	4.6
Doctor/GP	18	4.1
Public health nurse	18	4.1
Other people	13	2.8
Member of local support group	11	2.5
Breastfeeding midwife in hospital	7	1.6
Lactation consultant helped me	3	0.6
Private lactation consultant	2	0.4
Total	431	100
Missing	30	
Total	461	

Results represent the valid results (missing values have been omitted when calculating the percentages)

### **5.10.6 Infant feeding and employment**

Three-quarters of the mothers in Phase 3 were (or are) currently employees in their main job (n=333, 74%). A further 15% (n=69) categorised themselves as looking after home or family.

At the time of completing Phase 3, 34% (n=153) of these mothers had returned to paid work. This is considerably lower than the proportion in work before the birth of this baby (n=376, 83%), possibly due to still being on maternity leave

when they completed the survey. Statutory maternity leave in Ireland is for 26 weeks, after which time, mothers can avail of a further 16 weeks unpaid leave.

Table 49 shows that mothers who are not in paid employment are more likely to be breastfeeding at six months than those who were employed. This is the case for both exclusive and partial breastfeeding. Of those mothers exclusively breastfeeding at Phase 3, 72% (n=43) were not in employment compared to 28% (n=17) who were employed at that time. However, being in current employment was not found to correlate significantly with breastfeeding at six months ( $\chi^2=1.8$ ,  $df =2$ ,  $p=0.40$ ). This could suggest that the duration of maternity leave and return to work do not fully explain discontinuation of breastfeeding between 3 and 6 months in Ireland.

**Table 49: Type of feeding at 6 months and mother’s current employment status**

Type of feeding at 6 months	In paid work at Phase 3				Total
	Yes	%	No	%	
Exclusive breastfeeding	17	28.3	43	71.7	60
Partial breastfeeding	75	34.2	144	65.8	219
Formula feeding	61	37.9	100	62.1	161
Total	153	34.8	287	65.2	440

Missing = 21

Results represent the valid results (missing values have been omitted when calculating the percentages)

Although variations can be observed, the number of hours that the mother worked ( $\chi^2 4.7$ ,  $df =6$ ,  $p=0.57$ ) and the age of the baby when a mother returned to work ( $\chi^2=3.67$ ,  $df =10$ ,  $p=0.96$ ) were not found to be significantly associated with breastfeeding rates at six months.

Facilities to express breastmilk were provided by the employers of 17% (n=22) of the mothers when they returned to work. A further 9% (n=12) of mothers who had returned to work indicated that their employer provided facilities to breastfeed their infant. No facilities were provided by the employers of 47% (n=60) of mothers, and 27% of mothers who had returned to work reported that they did not know if any facilities are provided.

When the provision of facilities to express breastmilk or breastfeed at work is compared against the feeding patterns of those mothers in employment, more mothers are found to continue any breastfeeding if these facilities are available (19%, n=17 breastfeeding compared to 15%, n=9 formula feeding) ( $\chi^2=11.79$ ,  $df=3$ ,  $p=0.008$ ). However, it should be noted that most breastfeeding mothers have an employer who does not provide facilities to breastfeed or express breastmilk (46%, n=70) and this proportion is higher for the proportion of mothers who switched to formula feeding (51%, n=47 of breastfeeding mothers compared to 39%, n=23 of formula feeding mothers).

All mothers were asked if they planned to work again within the next year and a large majority plan to do so either full-time (n=156, 41%) or part-time (n=130, 34%) (Table 50). When the mother's type of feeding is compared with her plans for employment over the next year, it is apparent that those mothers who had discontinued breastfeeding were more likely to be planning to resume work ( $\chi^2=18.47$ ,  $df=6$ ,  $p=0.005$ ). This finding is interesting given that among mothers who have already returned to work there is no correlation with discontinuation of breastfeeding. This suggests that anticipating returning to work when the child is older has more impact on duration of breastfeeding than the actual return to work prior to 6-7 months.

Among mothers who were continuing any breastfeeding at Phase 3, 25% (n=45) did not plan to resume work over the next year compared to 29% (n=29) of formula feeding mothers. More breastfeeding mothers were also unsure of

their plans to work over the next year (12%, n=26) than those who had switched to formula at Phase 3 (6%, n=6).

**Table 50: Type of feeding by mother’s plans to work in the next year**

<b>Do you plan to start work again within the next year</b>						
	Any breastfeeding		Formula feeding		Total	
	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>	<b>N</b>	<b>%</b>
Yes, full-time	62	34.3	42	42.9	104	37.3
Yes, part-time	48	26.5	38	38.8	86	30.8
No	45	24.9	29	21.0	57	20.4
Don't know	26	11.6	6	6.1	32	11.5
Total	181	100	98	100	279	100

Missing = 29

Results represent the valid results (missing values have been omitted when calculating the percentages)

### **5.10.7 Preferred length of breastfeeding**

Mothers were asked about the duration of breastfeeding and among those still breastfeeding at Phase 3, 56 mothers (20%) reported that this is longer than they intended and 171 (61%) intended to breastfeed for this duration.

Among mothers who have discontinued any breastfeeding at Phase 3, 40 (42%) indicated that they breastfed for as long as they intended. However, 34 (n=36%) would like to have breastfed for longer.

### **5.10.8 Support services**

When asked at Phase 3 about the breastfeeding support services women had used since birth, 44% (n=245) indicated that they did not use support services. The most common support service used was the public health nurse (20%, n=111), followed by a community breastfeeding support group (13%, n=74).

Among those women who did seek support services, 83 (19%) found it very easy to find such services. However, some women indicated that they found it difficult (n=18, 9%) or very difficult (n=5, 1%), and 8 (2%) women were unable to access support services. After adjustment (recoded to three levels, 'did not seek support services', 'found it easy to access services' and 'had difficulty accessing support services'), the ease with which mothers could access services significantly affected any breastfeeding at 6 months ( $\chi^2=15.82$ ,  $df=4$ ,  $p=0.015$ ). Of the 23 mothers who had difficulty accessing support services, 70% (n=16) had discontinued breastfeeding compared to only 36% (n=61) who reported that services were easy to access.

All mothers were asked if they had been given any information on how to get help with feeding their babies since Phase 2. The majority (58%, n=262) had not received such information from anyone.

### **5.10.9 Reasons for discontinuing breastfeeding**

Mothers who had discontinued breastfeeding between Phase 2 and Phase 3 were asked why they stopped breastfeeding and a total of 148 women responded to this question, giving 192 reasons. The responses are summarised in Table 51 and fell into seven main categories.

**Table 51: Breastfeeding mothers' reasons for stopping breastfeeding**

<b>Category</b>	<b>N</b>	<b>%</b>
Discontinued due to busy lifestyle/other children	48	25.0
Perceived insufficient milk supply/hungry baby	39	20.3
Lack of facilities or uncomfortable with feeding in public	33	17.2
Felt it was time to stop/breastfed as long or longer than intended	25	13.0
Problems associated with breastfeeding	19	9.9
Returning to work	18	9.4
Lack of support for breastfeeding/wanted partner to share feeding	10	5.2
Total	192	

Reasons given for discontinuing breastfeeding were varied and women provided lengthy descriptions that were categorised using thematic content analysis.

#### **5.10.10 Age of infants when Phase 3 mothers discontinued breastfeeding**

The mean age of the infant when the mothers who responded to Phase 3 discontinued breastfeeding was 20 weeks, with 105 mothers (53%) having discontinued between 12 and 20 weeks (Table 52). This analysis includes all mothers who had discontinued at time of completing Phase 3 (n=220), remembering that these women are the subset who were still breastfeeding at Phase 2 (i.e. when their baby was 3-4 months old).

**Table 52: Age of infants when they were last given breastmilk or breastfed**

	<b>N</b>	<b>%</b>
12-16	55	27.5
17-20 weeks	50	25.0
21-24 weeks	51	25.5
25-28 weeks	36	18.0
29-32 weeks	5	2.5
33-34 weeks	3	1.5
Total	200	100
Missing = 20		

#### **5.10.11 Factors influencing discontinuation**

Among mothers who had discontinued breastfeeding by Phase 3, the majority 64% (n=144) cited their own experience as influencing them to stop breastfeeding, which is congruent with results from Phase 2. Health professionals were found to be less influential on the decision to stop at Phase 3 than they had been for mothers who had discontinued by Phase 2 (13% in Phase 2 compared to 3.5% in Phase 3). This is not surprising given that the mothers would have less contact with health professionals in the interval between Phase 2 and Phase 3, than in the interval between birth and Phase 2.

Mothers who had discontinued breastfeeding at the time of Phase 3 were asked what, if anything, would have assisted them to continue and the responses are provided here. A total of 171 mothers responded to this question, providing 189 different replies. While 38% (n=72) felt that nothing would have assisted them to continue breastfeeding, 26% (n=49) felt that additional support would



have prolonged the duration of breastfeeding and 16% (n=30) would like longer maternity leave.

#### **5.10.12 Summary**

This chapter has presented much needed evidence on the factors influencing initiation and duration of breastfeeding in Ireland. In particular, the results show that among Irish women rates of initiation remain low, and fall sharply in the postnatal period. Demonstration of rates of breastfeeding following discharge from hospital in a sample of this size, is essential to the ongoing monitoring and promotion of breastfeeding in Ireland. Chapter six will now explore the impact of suboptimal breastfeeding experience on future infant feeding choices.

## **6 Chapter 6: Reconciling the decision to stop breastfeeding in the first six weeks after birth**

### ***6.1 Introduction***

This chapter describes the results of the qualitative part of this study, the aim of which was to explore the impact of sub-optimal breastfeeding experience on future infant feeding choices, and to ascertain these women's views on the factors that would assist them to breastfeed successfully in the future. These data represent a comprehensive account of the women's experiences of breastfeeding, each making a unique and important contribution to the findings. In order to present a rich account of all the data, women's own words are presented in italics, and reflexive notes and memos appear in text boxes. Pseudonyms have been used for the women throughout the reporting of this study.

#### ***6.1.1 Characteristics of participating women***

Interviews were conducted with 15 women between February and July 2010. The time-lag between cessation of breastfeeding and the interview taking place was approximately two years, with children ranging from 22-26 months old, at that time. Table 53 provides characteristics of the participating women, derived from their questionnaires.

Seven of the participants were first-time mothers (primiparous) and eight already had one or more children (multiparous). Of those who had other children, three had breastfed before for more than 3 months and one mother had previously breastfed for two weeks. The length of previous breastfeeding experience was not ascertained in any of the questionnaires, thus the duration

of prior breastfeeding was not known before the interviews took place. Two of the participants were non-Irish and both had been living in Ireland for more than three years. Eight of the women had undergone a caesarean section, four had had a ventouse delivery and three had had a normal birth. Quantitative analysis had already indicated that mothers who had had a caesarean section or vacuum assisted delivery were more likely to have discontinued breastfeeding by the time of discharge from hospital and it was, therefore, unsurprising that a higher proportion of these mothers met the inclusion criteria. As normal birth was listed by 54% of all mothers sampled in the quantitative aspect of this study, two mothers were specifically selected to ensure that the experiences of this group of women were also explored. The highest level of educational attainment varied from lower secondary to postgraduate degree, and twelve of the women were married. Three of the women gave birth in the same large, urban maternity unit and all of the others experienced care in different maternity units or hospitals throughout Ireland.

Durations of breastfeeding ranged from one to six weeks, and women reported discontinuing for a variety of reasons including perceived milk insufficiency or hungry baby (6), pain (4) and issues relating to pumping (2). One woman, Maryanne, indicated on her Phase 2 questionnaire that she had discontinued 'because she was going to America for 5 days', and Teresa also discontinued due to an overnight separation from her baby and difficulty with pumping. Sarah indicated that she discontinued due to postnatal depression. Decision-making around discontinuation will be further explicated in the course of the qualitative findings. Some of the women gave more than one reason for stopping breastfeeding (Table 53).

**Table 53: Characteristics of women participating in the qualitative aspect of the study**

	<b>*Name</b>	<b>Duration of Breastfeeding</b>	<b>Parity</b>	<b>Nationality</b>	<b>Age</b>	<b>Type of delivery</b>	<b>Marital status</b>	<b>Education level</b>	<b>Infant feeding History</b>	<b>Reason for cessation on questionnaire</b>	<b>Supplementary information on cessation from interview</b>
1	Niamh	2 weeks	Primip	Irish	37	Ventouse	Married	Postgrad degree		Baby wouldn't breastfeed/pain	Felt baby wasn't interested in breastfeeding Too painful
2	Sharon	4 weeks	Primip	Irish	34	Ventouse	Married	Third level non degree		Hungry baby	
3	Maryanne	4 weeks	Multip	Irish	40	Ventouse	Married	Third level non degree	Breastfed previously (3 and 5 mths)	Separation from baby	Was going to a wedding and didn't know how to maintain supply
4	Jean	4 weeks	Primip	Irish	19	Normal	Single	Technical or vocational qual		Pain	
5	Emily	2 weeks	Primip	Irish	28	CS	Married	Third level degree		Difficulty latching/pain	

**Table 53 Contd:**

6	Shannon	3 Weeks	Primip	American	32	CS	Married	Upper secondary		Twins/milk supply issues	Feeding and expressing from birth. Started introducing after 2 weeks
7	Patricia	3 Weeks	Primip	Irish	37	CS	Married	Third level non degree		Difficulty with latching	
8	Sarah	6 weeks	Multip	Irish	32	CS	Married	Technical or vocational qual	Breastfed previously (7 mths)	Post natal depression	Felt breastfeeding was contributing to PND
9	Katie	4 weeks	Multip	Irish	38	CS	Married	Lower secondary	Never breastfed before	Hungry baby	Breastfeeding too demanding/ other children
10	Sadie	5 weeks	Multip	Irish	34	CS	Married	Lower secondary	Breastfed before (5mths)	Hungry baby	Preterm delivery, expressing initially and then breastfed well. Felt supply was not adequate

**Table 53 Contd:**

11	Mairead	4 weeks	Multip	Irish	37	CS	Married	Lower secondary	Never breastfed before	Hungry baby	
12	Caron	1 week	Multip	Scottish	29	Normal	Married	Upper Secondary	Breastfed before (4weeks)	Pain	Breastfeeding was painful from first feed. No pain on previous baby.
13	Pauline	3 Weeks	Multip	Irish	39	Normal	Married	Third level non degree	Never breastfed before	Embar- rassed / difficulty pumping	Difficulty latching on. Exclusively pumping from discharge and embarrassed in front of other children
14	Alison	5 weeks	Primip	Irish	33	CS	Single	Third level non degree		Pain/ Insufficient supply	
15	Teresa	4 weeks	Multip	Irish	30	Ventouse	Single	Third level non degree	Never breastfed before	Separation from baby/ difficulty with pumping	Could not express to maintain supply for 1 night away

\*Pseudonym

The process of 'reconciling breastfeeding' consolidates the experiences of these women and reflects the core variable that described their experiences of breastfeeding. Underpinning this core variable (Figure 6) are four theoretical codes termed: 'Motivation to breastfeed', 'Antecedents to early cessation', 'Cessation of breastfeeding', and 'Enduring views of breastfeeding'. The data presented in this chapter describe how these categories, and a further 27 sub-categories, contribute to women's enduring views of their breastfeeding experience. The findings will show that this experience is encapsulated in a process of reconciliation about breastfeeding and mediated by many factors.

Reconciling breastfeeding is a linear progression from pre-pregnancy to current views and attitudes about breastfeeding. Although this is presented here in a sequential manner, not all participants shared this orderly experience.

**Figure 6: Reconciling breastfeeding**



## **6.2 Motivation to breastfeed**

Although the original focus of this aspect of the study was to explore the impact of sub-optimal breastfeeding experience on future infant feeding choices from the perspective of mothers, analysis of the data revealed that experiences of weaning could not easily be separated from the breastfeeding experience as a whole.

Expectations around breastfeeding, birth and the postnatal period were interrelated, as preconceptions, achievements or disappointments impacted on other facets of the experience. In sharing their experiences about breastfeeding cessation, participants frequently described their motivation and the activation of that behaviour. Motivation, in this study, relates to why women wanted to breastfeed and the strength, depth and root of that feeling. It encompasses facets of antenatal preparation and their expectations and early breastfeeding experiences. The term motivation in relation to breastfeeding has become synonymous with psychological theories such as the Theory of Planned Behaviour, Self-efficacy and the ARCS model (Stockdale *et al.*, 2008). However, while aspects of all those theories (especially intrinsic and extrinsic motivation) were, at times, visible in this study through women's accounts of their experiences, it was never the intention to test any such theory. Rather, motivation relates to why women wanted to breastfeed and the activation of that behaviour.

The concept of 'motivation' is made up of four categories that encapsulate women's rationale, commitment and influences around breastfeeding as an infant feeding choice.



Figure 7: Motivation to breastfeed



### 6.2.1 *Desire to breastfeed*

Despite some evidence that women with short duration of breastfeeding may have initiated breastfeeding due to social and peer group ‘coercion’ (Bailey & Pain, 2001), all of the participants expressed their desire to breastfeed their infants.

*I was so determined that I was going to breastfeed him for six months or whatever. I just think it's a more kind of natural way of feeding a child and you know it's there for a reason and you're giving them the best that you can give them initially to start with anyway. (Patricia)*

It was, however, apparent that there was some diversity in the strength of the desire and commitment to breastfeeding. Aspirations around breastfeeding varied from doing it 'if they could', or 'giving it a go', while others had fixed

ideas and said they wanted it for themselves and their babies and 'definitely wanted to try'.

*Yeah, well before I had Brian, I always said that I was going to try breastfeeding, and do you know, I wasn't going to put myself under any pressure, that I'd see how it would go. And do you know, if it didn't work so be it. So I went in, and I said "Right, I will, I'll be breastfeeding" (Alison)*

*I suppose I really wanted to do it, that was my mindset... I purposely didn't go like and buy the sterilisers and bottles because I said that would have given me the easy route ... my mind was made up it was something I really wanted to give my best shot. (Emily)*

There was a clear link to giving the baby 'the best start' for many women, highlighting their belief about the benefits of breastfeeding, which is often challenged after their early discontinuation.

*L: And why did you choose to breastfeed this baby?*

*Well, I knew Adam was going to be my last baby and I really wanted to give it [breastfeeding] one last shot and give him the best start in life that he can have, you know what I mean. I was kind of hoping that he would get all the goodness and that he would have, the immunes ... that it would give him a good start healthwise in life...I just felt that I wanted for myself, it was something that I wanted for him too. (Pauline)*

### **6.2.2 Pressure to breastfeed**

While an intrinsic desire to breastfeed was evident for many women, the existence of a 'culture of pressure' regarding breastfeeding was also evident. Many felt an external pressure to breastfeed, particularly from midwives during

the antenatal period. Thus, even though most of them held breastfeeding as an important value, the emphasis currently placed on breastfeeding was continually being reinforced.

*I thought it was pushed an awful lot...every time you go down for a visit, and they [midwives] say "Now aren't you going to breastfeed, because breast is best" you know, this kind of, every single time, I don't think that's necessary at all. (Katie)*

There was a sense for some that the midwives were constantly 'talking about it' and applying pressure on them.

*But I do feel like in hospital there is an awful lot of pressure to do it [breastfeed]... the midwives. You'd think they were on a commission (laughing). (Sadie)*

This pressure to breastfeed, in their encounters with other women and midwives, was also seen by some as coercion.

*One woman [in the postnatal ward] every time she tried to breastfeed she was crying and so distressed but they still kept forcing her to do it, they kept saying you know it's best, it's best, even though we were all in different cubicles and we could hear her crying and you know she was nearly screaming with the pain but it was still forced. God almighty sure that cannot be right. (Jean)*

*Like my sister-in-law was feeling that too when she was up there [Hospital name] and she said "Don't even go down that road of promoting breastfeeding to me" because she actually got, you know, down about it ... once she said to them... "Don't be you know pressurising" now they didn't do it as much. But you really have to be strong with them [Midwives]. (Katie)*

Pressure to breastfeed was also expressed as something that could be internal to the woman, a particular mindset. One woman suggested that breastfeeding mothers were more likely to impose this form of pressure, than bottle-feeding mothers.

*So it is like, do you know, I read somewhere that mothers who breastfeed are the type of mothers who put so much pressure on themselves that they have to do everything, and I find that myself, I still do. (Alison)*

### **6.2.3 Previous experience**

The previous breastfeeding experience of multiparous women was an important factor in their desire to breastfeed this infant. However, having had a satisfactory outcome in the past did not always protect them from breastfeeding challenges and subsequent early weaning.

*Well you know I suppose I just assumed I'd feed him as long as the last fella and that worked out fine, so I had no idea really that it might be so hard the second time around. That kinda caught me on the hop, really I thought the first time was supposed to be the hardest not the second time around. (Caron)*

Many perceived either past success or previous failure as the driving force behind their desire to breastfeed this infant.

*Well I had planned to breastfeed from day one, because on Lola [1<sup>st</sup> child] I'd had a caesarean, and I was in recovery for way too long, because like the nurse had had to put her on formula because I was unconscious, and I had wanted to breastfeed. So with Aimee like I was adamant that I was breastfeeding before she came because I just didn't get a chance the last time. (Teresa)*

Failure has been described by Janoff-Bulman and Brickman (1982) as the label that people attach to experiences that cause them to stop what they are doing, assess the situation, and adopt a different or altered orientation to this situation. In this instance 'failure' is attributed by many participants to the falling short of their fixed expectancy or planned duration of breastfeeding. It has been suggested that if people have no fixed expectancy for how far or how much they wish to achieve, that stopping points may be equally termed success or failure, depending on the individual (Janoff-Bulman and Brickman, 1982). However, since national and international guidelines (Kramer and Kakuma, 2001; Department of Health & Children, 2005; Ip *et al.*, 2007) have recommended optimal durations for exclusive breastfeeding, women may be sensitised to the notion that breastfeeding for a short duration is 'failure'. Sarah demonstrates this belief, as she intended to breastfed for a year and perceives her present and previous experience of breastfeeding for seven months, as unsatisfactory.

*Again you know you want to give them the best start, and I suppose as well because you know part of me felt, well I didn't get there the first time with Ciara, maybe I'll get there the second time with Faith, do you know that kind of way. (Sarah)*

#### **6.2.4 Commitment to breastfeeding**

Prior to the birth, women were steadfast in their commitment to breastfeeding, and when difficulties began to arise which frustrated their efforts this often led to great dissatisfaction. Many had a fixed duration that they planned to feed for and never intended to discontinue early. Determination, for some women, was linked to the notion of 'breast being best', not wanting to bottle-feed and a belief that breastfeeding would work for them. Although not all women

expressed this determination, they equally shared feelings of guilt and disappointment after early cessation.

*There was no way I'll bottle-feed, I never wanted to bottle-feed, it just wasn't my intention to bottle-feed. But I had no idea of the reality [breastfeeding], not a single clue (shrugging shoulders and throwing eyes to heaven). (Sharon)*

*Well you know breast is best is what you hear and I really didn't want to give him formula I was finding it difficult anyway and I think the thrush kind of was the spur I needed to give up and then I felt terrible because I was determined, I was so determined that I was going to breastfeed him for six months or whatever. And I didn't realise that it was going to be so difficult to start with and I didn't, then I suppose the pain of the thrush and everything, I mean I didn't want to stop but yet I did (laugh). (Patricia)*

The desire to breastfeed was evident in women's preparation for the actual experience. Many of the participants identified formal methods of education like attending classes but particularly they referred to leaflets.

*There was continuous leaflets being handed "Breast is Best" and all of this like. But I had kind of decided myself that I would so I kind of didn't pay too much attention to the leaflets, do you know. (Alison)*

*Yeah, I mean I went to the breastfeeding class that they did in the hospital before he was born and you know it's very difficult for them to predict how it might go for everyone there, everybody's bodies are different I think. Those classes just give you kinda the rough basics. And they are forever giving you leaflets about it, but I didn't find them much good to be honest. (Patricia)*

Those women who referred to classes felt that the videos were outdated and painted a rosy picture which did not reflect their actual experiences. Some talked about reading up on it themselves, while one woman deliberately didn't read anything or attend classes in order to avoid hearing horror stories.

*You know it will be great, easy, and they latch straight on and great, just like that video. Just even you know you could tell they were all in the 80s and you know. It could, it would be better if you could have something newer, for newer age. (Jean)*

### **6.2.5 Satisfaction with early feeding**

Many women in the sample started out with quite positive experiences of breastfeeding. For some, this was confined to the first feed, but others had a positive experience for some weeks before difficulties arose. The satisfaction that was gained from enjoying these early breastfeeding encounters was clearly evident.

*It came easy enough to us in the beginning. We were totally comfortable, and I felt real proud of myself that I was doing it, do you know that kind of a way, oh aren't I a great mammy. ... You know I didn't expect things initially to flow as easy as they did at the beginning. It was actually too good, I should have realised...I don't think anyone finds breastfeeding that easy do they? (Katie)*

*The first feed was great, we slept for two hours afterwards and I was delighted that it went so well and then after that it was fine, I mean I loved breastfeeding when it was going well, you know I liked it. I remember the night after he was born, it was about half five in the morning when I got to feed him, he was screaming and roaring and it was a lovely sense of feeding him myself. To be*

*kind of satisfied and sleep, it was just a nice feeling yeah. That's what I really missed after [weaning]. (Patricia)*

Examples of the satisfaction that women derived from early breastfeeding experiences were evident through their descriptions of how they felt it enhanced the bond between them and their infant. The bond was described as a kind of intimacy between mother and child: 'our little thing'.

However, this added to their sense of loss when breastfeeding didn't meet their expectations.

*... you feel that there is that bit of intimacy between you and your child, and yeah it does kind of help you, and it's something that is only between you and them. Whereas like if you're bottle-feeding them, you feel "Well you know anyone can do that", but this (breastfeeding) I felt was just our little thing. I think that was the worst part about stopping, the fact that you can never get that back again. (Sarah)*

Teresa, however, clearly did not agree that this was the case and suggested that breastfeeding could only enhance bonding for those mothers who breastfed for longer durations:

*I know it was only a few weeks, but as soon as she smelt me coming into the room she wanted food. But it wasn't a mammy thing, it was "Here's my food" you know. So I actually felt I had a better bond with her, when I was formula-feeding because she was more interested in me, as opposed to the fact that "I'm her bottle" do you know that way. But like again, I think had I of done it for longer, it would have been a different outcome, I would have had, you know I would have built up the same bond anyway...(Teresa)*

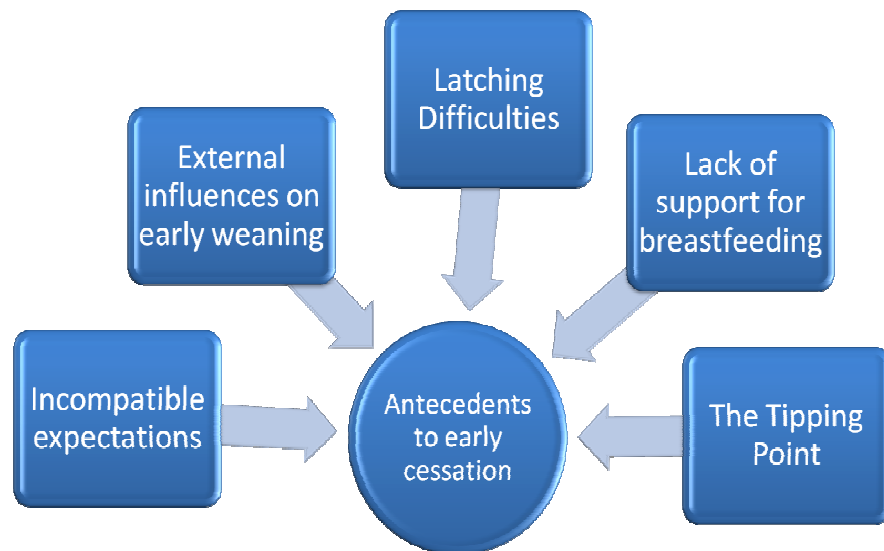


The literature does not highlight any evidence to support the notion of enhanced bonding for women with a short duration of breastfeeding, with most studies focusing on exclusive breastfeeding for six months.

### **6.3 Antecedents to early cessation**

Factors that contributed either directly, or indirectly, to early cessation were apparent to all the participants. While some could identify one specific precursor to stopping breastfeeding, most felt that there was a combination of factors responsible for cessation. The model displayed below conceptualises the antecedent factors, which in turn impact upon their attempts to reconcile the entire breastfeeding experience as a whole.

**Figure 8: Antecedents to early cessation**



### **6.3.1 Incompatible expectations**

There was a clear disconnect for many participants between their expectations of breastfeeding and the reality as they had experienced it. Many had an image of breastfeeding as a 'natural' and innate skill that was very different from the reality.

*I expected it to be a lot easier and more natural than I felt it was to be honest. I mean I loved breastfeeding when it was going well for those few days at the beginning, you know I liked it. I had bought special breastfeeding tops and everything thinking it was going to be all rosy (laughing). (Patricia)*

Participants were also very clear that mothers and babies were either 'good' at breastfeeding or were not. This notion appeared to stem from their own internal perception of breastfeeding as the natural thing for some mothers and babies, but this was clearly not the case for them.

*L: How did you feel when the difficulties started?*

*Well bad, because obviously I was not doing it right, because he was, you know not happy, for the amount I was feeding him. (Alison)*

For some women, the notion of not being proficient related again to latching the baby on or, in Patricia's case, she describes her breasts as 'not designed for breastfeeding'. In addition, some participants also referred to their babies' willingness or ability to breastfeed.

*She wouldn't, she didn't really want to feed. And she'd turn her head away and then I think in the end she just kind of didn't want it. And I knew it would be hard work I suppose but it never occurred to me that she wouldn't like it. But that really seemed to be the case, it was down to her I think. (Niamh)*

Shannon, who had breastfed twins, could clearly see a difference between the feeding abilities of each and was surprised that it did not appear to come naturally to them after birth:

*One of them was better than the other...The one that was feeding well was fine and the one who hasn't been feeding well never got better. (Shannon)*

While some women did not have any preconceived ideas or expectations about what breastfeeding would be like for them, others expected the experience to be easy and were surprised when it was not. This was particularly true for women who had pain during feeding and for those who were surprised by the time commitment that they felt breastfeeding necessitated.

*You know people have often said to me you shouldn't be sitting in the chair all day and I would have often said to the nurse, asked the nurse directly "well should I be sitting in the chair for two and a half hours", I used to time it, all this time, two and a half hours at night maybe between two and half four, is this the norm and she'd [Public Health Nurse (PHN)] say "there's no norm, like every child is different". (Sharon)*

*You were never told really it will be sore, you could have all these cracked nipples and bleeding and if it doesn't feel right don't force yourself. I just kind of wish, they said it could be a little sore to start with, so I was thinking okay maybe the first time give it a try and then it will be okay. But they all say it will come naturally, well it didn't feel one bit natural. (Jean)*

Exposure to other breastfeeding mothers and their experiences of breastfeeding were important to women, as they often used other women's stories as a reference point for their own breastfeeding experience.

*It was easier than expected, just from what people had said, like I actually I didn't find it as sore like, and I used to hear horror stories from other people.*

(Teresa)

Having heard 'horror stories' from other women, some anticipated or expected that there might be challenges but, for the most part, women described either being open-minded about breastfeeding or not knowing what to expect.

*I just, I don't know, I kind of, I don't think I had any picture in my head or anything like, I just, do you know, I was going to do it, and see how it went and whatever, you know. And it just went, it just went belly-up on me, do you know. Like I never had any, you know, "Oh you'll be sitting in a garden of roses, and it will all be fabulous" you know.* (Alison)

Alison, along with other mothers, felt that despite the 'horror stories', some breastfeeding mothers went to great lengths to shield them from the actual realities of breastfeeding:

*It was only after I had Brian, and then I started talking to my sister-in-laws, that these women who were like literally, you know, stirring pasta while they were feeding the youngest... one of my sister-in-laws in particular, she's just immaculate, like she's just literally, she's fabulous in every way, and everything she does is perfect.... And it was only after, she was ringing me to see how I was getting on ... and she was like "Oh God yeah, ... come the fifth day, put the baby on" and she said "I would just be like, screech, when they latch on". And she said "that like would go on for the first, you know, from the fifth day until two weeks, and then it would be grand again". But I never knew any of this in the first place like do you know.* (Alison)

Several of the women were surprised at how demanding they found breastfeeding which, for many, related to the time spent feeding. For some, it was the length of feeds and for others it was the sheer number of feeds. Some described feeling 'tied' to breastfeeding.

*Yes. I just seemed to be attached for the whole time, I couldn't go anywhere because I wouldn't have enough time before the next feed. (Jean)*

*I possibly didn't think it would be quite as em . . . I suppose I didn't realise the whole thing is you have to feed with one breast and then the other and that takes nearly half an hour and then you have to start again in two or three hours, so I didn't expect it to be as intensive to be honest in terms of time. (Niamh)*

This also links to the concept of hungry baby as some of these women felt that their babies were excessively hungry and that may have contributed to the demands that they felt.

*Near the end it got really hard, she was more on me, than off me, I wasn't expecting it (hungry baby) at all. (Katie)*

These quotes from women demonstrate that the factors that contribute to the demands of breastfeeding are unique and complex for many women and are dependent on their personal situation, support systems and many aspects of the birth and postnatal experience. Ultimately for these women, these factors culminated in the cessation of their breastfeeding experience.

Participants often expressed the view that tiredness directly contributed to early cessation (although this was also linked to the notion of a hungry baby).

*I just said I can't do this anymore, I just, I was too tired, I was wrecked in bed in the evenings, wanted to go to bed nearly before he had his last feed and it just was, I can't do it. Yeah and I just felt a bit awkward even though I was expressing, I was just too tired and very emotional as a result (participant gets upset). (Pauline)*

Some women were also influenced by others' perceptions of their tiredness, namely mothers or partners.

*And Brian was, Brian was, like his feeding was, for six hours solid, out of every, it would be twenty minutes feeding, ten minutes lying down, twenty minutes feeding, ten minutes lying down, and that would go on solidly for six hours, and then he would sleep solidly for six or eight hours, and then he'd wake up and the cycle would start again, and he would just, feeding, feeding, feeding, feeding, feeding, feeding. And it got to the stage, he was about five or six weeks old, and my partner came home from work, and I was just crying with exhaustion and he said "Right, listen, that's it" he said "Get up to bed now" and we had little small bottles of formula, packets of formula, and he said "Right, that's it, I'm giving it to him now, I don't care what you say", and I was "No, no, no" and he said "No, I'm giving it to him now". So then for a few days I did both. (Alison)*

Sadie, who had expressed and exclusively breastfed her last child who was born prematurely at 32 weeks, was very clear on the link between tiredness and poor milk supply.

I just found the lack of sleep, I found that was part of the [reason for discontinuation], ... because Aimee was two and a half like when Aaron [2<sup>nd</sup> child] was born, she was an active two and a half year old, and then I was finding the sleep pattern was down, and he was waking up through the night, so yeah, I was kind of exhausted from the sleep, and ...I think, looking back on it

now, I think that was the reason why [early cessation], because of the lack of sleep (Sadie).

### **6.3.2 External influences on early weaning**

Almost all the women said that they themselves made the ultimate decision to stop breastfeeding; however, their interviews revealed that many of them had sought and received re-enforcement of this decision from someone else. In most instances, this was their mother, mother-in-law or partner. Many had suggested that their mother, in particular, had been supportive of breastfeeding but that when they decided to stop, most mothers had concurred that this was a good idea. It appeared from their accounts that this was a protective mechanism on the part of the mothers who were concerned about the breastfeeding struggles their daughters were experiencing. Those participants who referred to their mothers-in-law suggested that they did not support or encourage breastfeeding.

*I discussed it with my mum and stuff like and then I suppose she probably saw the pain and the upset I was going through ... and then I said I was going to go and switch to bottles and she said 'well maybe that's the better idea rather than', because I was getting upset about it...she (mum) said 'right well at least you tried it ... you know at least you gave it your best shot'. (Emily)*

*Well I was thinking about it myself because I think I'd probably have tried to struggle on for another month or two if it hadn't been for my mum and my aunt saying 'you know if you are not happy don't feel you have to push yourself. Don't feel you have to feed just because everyone says it's better'. (Jean)*

The affirmation was important to women, as their confidence in their own decision-making became undermined as breastfeeding became increasingly challenging.

*My mother said to me, she had breastfed the eight of us, she said "I think you're right" she said "She's too hungry" you just wouldn't keep her fed, she just wouldn't settle, she's impossible. (Mairead)*

In relation to husbands and partners, most women said that he left it up to them, but there are subtle clues in their comments that men were also encouraging the decision to stop and women often suggested that their husbands were happy when they did. There was a sense for some women that, although their partners were supportive of them while they were breastfeeding, they appeared happier when they had discontinued.

*Even though my husband was full-on, he kind of felt a little bit left out, if anything, because he couldn't feed her, you know. Yeah, yeah, he would do a few during the night for me or that, you know. And then I was trying to get practical and get ahead and get bottles filled up (Expressed Breast Milk (EBM)), it just didn't work. (Katie)*

*I think from his point of view he felt very helpless that he couldn't do anything and I think it (weaning) meant that we had a routine and I wasn't stressed you know, life was a lot more reasonable. And the effects it has on the relationship as well as the marriage...I think it does cause an awful lot of stress if it's not plain sailing. (Niamh)*

Sarah also describes the influence of other well-meaning friends which, in this instance, was the catalyst for her stopping breastfeeding altogether.



*So then, I'd given her that bottle, and I had no intention of stopping the breastfeeding, but I was going "Ok, she's fine for now, she's settled a bit", and a friend of mine rang later on that evening, and when I said about having given Ciara a bottle, she went "Oh you know" she said "you can't mix the two"...and she goes "What milk did you give her?" And she sounded so much in the know, and I said "Oh it was this" and "Oh no, no, it's only the [brand of infant formula] you can mix with the breastfeeding". And I took her for her word. And I never thought to query it with anyone. (Sarah)*

Shannon described her feelings of discomfort when breastfeeding in front of her mother-in-law:

*She stayed for the first two weeks and the only thing is that it just made, you know it was a bit more awkward for me, she had nothing to do with it, she never said don't do or do or any of that but I felt awkward. I thought it would be easy enough, but when you're struggling and doing that in front of other people it's hard enough, do you know. (Shannon)*

Quantitative results confirmed that formula-feeding is still perceived as the predominant method of feeding among mothers' peers in Ireland, and that those mothers who said that most of their friends breastfed their babies were more likely to initiate breastfeeding.

Participants reiterated these findings and were very clear in their view that formula-feeding and not breastfeeding was the norm in Ireland, as is described by Maryanne:

*L: Did you have any experience of anyone breastfeeding that you knew?*

*Goodness, no one around here really breastfed anyway, very few that I know around here would have breastfed. I just did it myself. (Maryanne)*

*My friend told me that [name] the local hairdresser is breastfeeding too. Like as if we are the only two in the parish doing it. That made me laugh, it really did, like we're in a cult or something for breastfeeding [laughing]. (Sadie)*

The participants gave vivid descriptions of those whom they had perceived as succeeding and those for whom breastfeeding had not worked out. During the discussions, a lot of emphasis was placed on the experiences of their friends and family, and the impact of their infant feeding decisions.

*So it's kind of, it's the done thing in my house to give the bottles, my sister didn't, with her three children she didn't [breastfeed], she didn't even try it, she just didn't, and there was nobody ever ... like it's not as if my mother would be like "Oh you must breastfeed and all that" like my mother she was there "For God's sake you're getting them out again!" (Alison)*

Accounts of the advice that they would offer to other women were described and it was clear that this was influenced by their own experiences, both positive and negative. Some made reference to being breastfed themselves or not, and one likened herself to her mother whom she suggested had encountered similar problems to her.

*My friend was asking me about it and I said "It was lovely, because it's a bond, and you just feel good, because you're giving the child, your body stores up all that milk while you're pregnant, and when you give birth, like all that milk is there and waiting and so it should go to the child" and she said "That makes me feel better, because you know it's where I should be going". (Sadie)*

*Yeah and she [neighbour] was an avid breastfeeder, her little boy who is a year old, you know he did, he thrived, she got thinner and he got bigger, it's*

*unbelievable, very good at it and she'd probably be the only other person as an adult that I've ever seen breastfeeding. (Shannon)*

There was also a sense that Irish women who did breastfeed often did so for short durations. Sarah could also clearly see the potential impact of living in an environment that supported formula-feeding on women of other nationalities, in whose countries breastfeeding is perceived as the cultural norm:

*My brother's wife, she is from Poland, and over there a lot of women, it's just the norm to breastfeed, but I guess she was feeling a little bit unsettled because she is here [Ireland], and again I told her the same thing, "Try it". (Sarah)*

### **6.3.3 Latching difficulties**

First time mothers highlighted the challenges of getting the baby latched on and their concerns about whether they had the baby latched on properly or not. Some felt that they never really got the hang of it and that this was the beginning of the end for them and breastfeeding. Others described how they felt their nipples were 'flat' and that this was the reason for difficulties.

*That was probably the biggest, the biggest problem was that I just couldn't, I couldn't get him to latch on properly, you know. (Alison)*

*... whatever way he was latching on, or you know it didn't feel right when he was latched on. (Jean)*

A few of the women looked for strategies to overcome these problems like seeking out help from the public health nurse (PHN) or, in Patricia's case, a lactation consultant, after they came home from hospital.

*I had fierce problems getting him latched on ...*

*He'd be very hungry or whatever and he'd be flaying and his arms would be and I'd try and get him latched on and then... I would just have him latched on and kind of fall off again and then I'd try the other breast and I just, I found it really, really difficult, I don't know, my breasts are quite large anyway and obviously they were a lot larger than and I think, I don't know, a culmination of that and the flat nipples, really kind of, I found it difficult (participant becomes upset). (Patricia)*

Problems associated with latching the baby on led to a great deal of frustration and anxiety:

*And when my milk really came in like you know your breasts are kind of hard and full and I found that difficult to get her on, frustrating then and I had a lot of teary moments. (Niamh)*

In addition to latching difficulties, some women described some initial discomfort during breastfeeding. However, this discomfort was not a factor in the decision to stop breastfeeding, among those who perceived this as simply a minor degree of discomfort.

*It was just uncomfortable like, really, but the feeling didn't, thanks be to God, it wasn't painful or anything, there was nothing too bad about it. It wouldn't put you off [breastfeeding] like. (Katie)*

This type of discomfort with breastfeeding was something that many of the women anticipated, and consequently, they were not surprised when it occurred. However, other women experienced severe pain with breastfeeding that was not congruent with their expectations of breastfeeding. Alison, Caron, Emily and Mairead all vividly described excruciating pain, bleeding and/or

bruising while breastfeeding, which caused them severe levels of physical and emotional distress.

*Come the fifth day, put the baby on and I would just be like, screech, when they latch on. Do you know, the pain started to slowly build up, and then next thing you'd go to put him on, and it was just like as if, you know, there was acid coming out. That was maybe, I'd say, it was after I came home, so maybe about seven days or eight days, something like that.*

*L: And did it last for long?*

*It lasted maybe up until about two weeks, and then it wasn't as painful any more*

*L: And do you remember what feeding was like with that pain?*

*I don't know how I did it, I just did. I used to just sit when I was breastfeeding, you know the comfy chairs, the rocking chairs, and I'd be just sitting there like this, and I'd be like (crying sound) ok I'll sit back and relax you know, and then it would be alright like, but the agony of that. (Alison)*

Caron's experience of pain during breastfeeding also highlights that pain and latching difficulties, were not unique to those women breastfeeding for the first time. She described having previously breastfed for 4 weeks 'with no pain at all'.

Pain had a profound impact for at least two of the sample, as their experience led them to feel that they would never again attempt breastfeeding. What was unique to these two women was that they had both thought that the pain they felt while breastfeeding was normal and they had not been able to identify a reason for that pain. While other women had severe pain, most were able to understand or provide some insight into what had caused the pain. In one case, the woman had previously had a pain-free breastfeeding experience. Women also provided accounts of pain experienced by other breastfeeding women whom they knew, highlighting the need for women to understand why pain

may occur during breastfeeding, as they share these accounts with other women who in turn may become influenced by such accounts.

*I had constant. Absolutely constant pain. Ah, yeah, my toes were curling you know that way.*

*L: Did you talk to anyone about the pain, any of the midwives or the public health nurse?*

*Yes, and it was really just 'stick with it'. Like they said, as somebody said, 'it's like breaking in a new pair of shoes' ... that it was all like this was normal. It couldn't be normal, just didn't, no, didn't feel right. It was just so painful .... The hospital, they gave me like cream and stuff and like it didn't really help. You know it was like I should have expected pain and just get on with it but honestly it was unbearable. I can't believe that anyone could stick feeding through that pain. And I was beginning to dread every single feed ...because the pain would be so severe. And the fact that everybody was telling me that that pain should be normal was really contributing to that. (Emily)*

*She was born on a Wednesday night, and by Saturday I was just too sore... my nipple was all cracked and bruised, and really really sore... and every time it came to feeding, I was bursting into tears, because I felt so much pressure, you know. I just felt that ...I couldn't feed her, you know it was excruciating. It was just too sore, and I didn't get the support, you know. (Mairead)*

Women who experienced pain but who had that pain validated by an underlying cause such as improper latch or a diagnosis of thrush had very different views about pain. For these women the pain was pathological, something abnormal that had a root cause and could, therefore, be avoided in future breastfeeding attempts.

*The pain in my nipples was just unbelievable, excruciating in my breasts and they were sore, you know really sore and I thought it was because I wasn't latching him on properly and that whatever way he was sucking it was hurting. And I managed to feed him this night and I just went to bed and cried because it was very painful and it was painful throughout the night. It was a throbbing pain, deep kind of inside my breast with very sore nipples. Your nipples were kind of itchy and raw. I know you can get cracked nipples anyway with breastfeeding and that was fine because I did suffer a bit with that but that was nothing compared to this, the pain of the thrush. (Patricia)*

#### **6.3.4 Lack of support for breastfeeding**

Accounts of breastfeeding cessation were closely associated with women's views around postnatal support in general and postnatal support relating specifically to breastfeeding. Despite having given birth in thirteen different maternity units, all of the women felt that there was insufficient support available to them in the postnatal period. It was suggested by many that the quality and level of postnatal support was specifically responsible for either encouraging them to continue breastfeeding or influencing the decision to stop breastfeeding.

*Nobody showed me, you know, when you say to people "I'm going to breastfeed" it's not as easy as putting the babies to the breast and they feed. Whatever they told me to try, I tried. But I felt like, if someone had said to me on the very first night that I had her, "Would I breastfeed her", and showed me how to do it properly, maybe I would have been able to do it with a bit more success. (Mairead)*

The following excerpt from my diary, written after my interview with Mairead shows how the concept of support began to gain significance in the emerging data.

Diary entry: 5/5/2010

Very difficult interview for many reasons, toddler wanting me to play with her throughout the interview and Mairead very upset and distressed about the lack of support she felt she received for breastfeeding, in the postnatal period. She was looking to me to validate her postnatal experience as unsatisfactory. Professionally, it is really difficult to hear a woman who has so clearly been let down by the system in which I work. Although she cited pain as the reason for abandoning breastfeeding, could lack of postnatal support be the real reason? I am beginning to get a sense from women who felt unsupported that they feel this was critical to early cessation. Need to revise interview guide to seek further clarity on this aspect of care from future participants.

*They never showed me how to pick him up, they never showed me like to change him, never showed me anything really... they just latched him on for me and watched for a minute and then left but he let go and I had to try and do it myself not really knowing what to do. I think if ...they had listened to the fact it was painful and said 'maybe if you lift your arm up this way', but it was, there wasn't very much of that. It was kind of put him on and go for it yourself then. I think that if someone had come maybe more regularly...not to criticise but to help or something. (Jean)*

Some level of support, both formal and informal, could be ascertained from women's accounts but the overwhelming feeling among women was that there was insufficient support for breastfeeding both in hospital and when they came



home. In keeping with their experiences of support from midwives many women felt isolated, as if they were abandoned and left to get on with breastfeeding by themselves. They felt they needed better instruction, more reassurance and longer time spent with them. There were instances of midwives latching babies on without teaching the mother how to do it and ignoring women's requests for help.

*And I was in a ward, and I was just inside the door, and the curtain was thrown open, not even "Can I come in?" And someone who I had never met before in my life, a woman walked in, and the door was open out to the hall, and she said "That child needs to be fed" and lifted up my top and shoved him straight on my boob! And I said "Excuse me, what's your name? My name is Alison, what's your name?" And she said "That child needs to be fed" and she just kept shoving him, and grabbing my nipple, and grabbing at me, and I was there "Hold on a minute, he's not hungry, I've just fed him", "He is hungry, I know he's crying, he's hungry, I know that cry". And I said "I'm washing his face, that's why he was crying" and she wouldn't listen to me. And I just, my experience went downhill from there. (Alison)*

*She was unsettled, and the midwife came in, and now I know they're busy, but she just, like left again and she [baby] kept screaming, you know, she was a few hours old, you know I didn't know what to do. (Mairead)*

Almost all the women felt that the lack of support was attributable to staff shortages and the activity levels in each of the maternity units:

*The lactation nurse came up to me, and she just said "Oh you're sore because you're not feeding her properly". She didn't really give me any support, she just told me I was doing it wrong, and well, she basically just held my boob and put Catherine to it, and said "This is the way you're supposed to be doing it", and*

*that was fine while she was there, but when she was gone then, you know. I was at a loss, I was. (Mairead)*

*I just felt like I needed that serious hand-holding for the first few days. And I just felt that that wasn't there ...We had to go and seek help rather than them offering help. (Emily)*

The majority of women were very dissatisfied with the level of support for breastfeeding from midwives in the postnatal period. Most acknowledged that midwives wanted women to breastfeed, but women felt that midwives were too busy to provide support and assistance with breastfeeding. Women referred to needing much more assistance and 'hand-holding' during the early days of feeding. Bullies and 'lactation Nazis' were terms used to describe midwives. One woman commented that it's unfair to encourage breastfeeding antenatally if you won't or can't follow that up with the postnatal support. There are numerous examples of unpleasant encounters with midwives in the postnatal period. Women felt that midwives had little or no time to spend with them and that they provided limited information.

*Shoving breastfeeding down your throat and then leaving you to sink once they are actually born. It's not right really... all talk and no action to back it up, just get on with it yourself. (Sharon)*

There were a few accounts of individual midwives who, women acknowledged, had spent time and encouraged them with breastfeeding. There was a sense among women that some midwives were 'just into breastfeeding more than others'. These midwives were recalled vividly (usually by name). Alison, who was extremely dissatisfied with her postnatal care, describes how she felt when these supportive midwives were on duty:

*The times that, like the likes of that midwife [Name], and the other one [Name], the two of them, when they were there I had confidence, and I did it [breastfed] without even looking, do you know, and they'd be going "Don't worry, don't worry" (Alison)*

*... especially that one German nurse, you know she used to really kind of help me get him latched on and spend time with me and showed me different kind of positions, try him out here, try him here and got me cushions and stuff that you can rest him on and all that kind of thing. (Patricia)*

Maryanne and Sarah both expressed a view that postnatal support for breastfeeding had improved since they had given birth previously.

*The attitude from the midwife towards breastfeeding had changed an awful lot, between the two [pregnancies], yeah, yeah, big change, and you know they were even going so far as to get Paul [husband] involved, and not make it seem like breastfeeding was just my job. (Maryanne)*

*... they were just, better trained, like they pulled themselves together...[in the previous pregnancy] they'd bring you down to the room, and say "Oh this is the breastfeeding class" and it just it felt very systematic, and it felt like a lot of the midwives who were doing it really didn't understand or know what they were talking about. (Sarah)*

Among multiparous mothers there was an assumption about, or a process of socialisation to, the realities of postnatal care based on their previous experiences. In her account of postnatal support for breastfeeding Maryanne highlights an acceptance of lack of support due to staff shortages:

*They [midwives] do their best now to help you with breastfeeding but you know they are just too busy to be spending loads of time with you, especially if you*

*have done it [breastfeeding] before. That's just the way it is nowadays, not enough [midwives] to go around. (Maryanne)*

Pauline recounted poor experiences of postnatal support following the birth of two of her three children:

*Cause just with Adam [last child] the postnatal care was just awful. Because I wasn't able to get out of the bed [post caesarean section], I still had the catheter in and the nurse took him away and then one of the other, it must have been the senior nurse came in and said that, told the girl to take the baby back in that they hadn't enough staff (crying) and they just didn't seem to care. (Pauline)*

Poor experiences of postnatal support were compounded by inconsistent information from staff, leading to confusion and frustration for women.

In keeping with much of the literature over the past 20 years, women in this study highlighted a lack of consistency in the advice they were given, particularly in hospital. The consequences of this, for many women, were confusion and lack of confidence in both themselves and their caregivers.

*I suppose between the different nurses we were dealing with in the hospital and then when we went back to the hospital for the prick test ... we were just saying for God's sake you know we are getting, there's no consistency in terms of what we were being told. (Niamh)*

*And it was also, they weren't all singing off the same hymn sheet, you know, you'd have one nurse say "Oh no, never mix formula" you'd have another nurse say "Look, you know, if you need to get them settled, and you're not feeling right, don't be afraid to give them a bottle" . . . [interruption talking to child] so*

*that really confused me then, because I was getting different stories from them.*  
(Sarah)

Shannon highlighted that the lack of consistent information contributed to confusion not just for women, but for their partners too, and also demonstrated a lack of communication among staff:

*Yeah everyone had different ways of going about things, some nurses were like every three hours for breastfeeds, some nurses every four hours, some nurses were just feed one [twin] at a time and I'll give the other the bottle and some other ones would put the two of them to you and walk away. Very contradictory information . . . And you know even my husband was confused and he wasn't on morphine. If they could have got together and just said, you know let's deal with the woman, the American with the twins this way (laugh).* (Shannon)

Despite postnatal support for breastfeeding being less than satisfactory for most women, Teresa had a good experience and felt that mothers who had chosen to breastfeed got more attention postnatally than their formula-feeding counterparts:

*Well I know like in [Hosp name] I thought they [midwives] were brilliant, I know it's terrible to say, but I actually think because I was breastfeeding, I actually had more help on hand than people that were formula-feeding.* (Teresa)

Some women observed that while in hospital after the birth they were in a vulnerable state and that midwives held all the power over decisions and their care. There were references to bullying and feeling intimidated during this time, noting that it's not an easy time to speak up for yourself if you are not feeling in control.

*I think if you are a bit more equal it's easier but I think it's just, it's almost that you know they [midwives] come into your bedroom in hospital or your house [Public Health Nurse] and they say 'oh don't get up' you know and 'don't touch a thing' but you are in your dressing gown and you know you are just, it's not a comfortable situation I think to be breastfeeding. It feels a bit like a test. (Niamh)*

Sadie describes her experience of her baby's admission to the Neonatal Intensive Care Unit (NICU):

*They says "... will we give him SMA, till you get down to the ward? (postnatal)" and when she comes in the ward later, do you know "You're not allowed to come down to the neonatal ward until he's settled". Sure how was I supposed to try and breastfeed him then so? (Sadie)*

Both forthright and subliminal messages from midwives about 'doing it wrong' were particularly upsetting for many of the mothers who had difficulties in the early postnatal period.

*"Oh the breastfeeding nurse is coming to see you, and help you out". I found her atrocious, I really found her atrocious, do you know... "You're doing it wrong" is not a thing you should say to somebody "You're doing it wrong, you're doing it wrong, you should be doing it this way, your child needs to be fed", telling somebody, you know. I just think that, I think that when people are in such a vulnerable state, they should not be bullied. And I definitely was bullied, definitely, do you know. (Alison)*

Given their dissatisfaction with postnatal care, it was unsurprising that women felt their length of stay in hospital was a factor influencing cessation. Among

women who experienced a caesarean birth, many suggested that they would have preferred to establish their own routine earlier.

*I stayed in for four days, I discharged myself on the fourth day.*

*L: Why did you decide to do that?*

*Just couldn't, I just didn't want to be there. Really was just awful, with no support you are better off at home. And I was so happy to get home. (Pauline)*

Jean, who had requested an additional night in hospital, felt that other women in the ward had to advocate on her behalf and this led to a sense of isolation from the professionals in the hospital, combined with a feeling of social isolation as there was no one at home to support her:

*They [hospital] wanted to send me home after one day and I'd never seen a newborn baby let alone feed it or anything like that, and I was very nervous and there was no one at home, my mum had gone down the country to see my uncles. And my boyfriend he's in the army and he was on duty so I came home I was all on my own. There was no one there, so it was kind of the older women in the ward who were having children, women in their 30s and early 40s said to the midwives look she's all alone, she's young you know if she goes home she's all alone you know. So they kind of, after a bit of persuading from the older women they [midwives] kind of said you can stay another night, they didn't want me there, they were kind of ushering me out straight away. (Jean)*

A sense of isolation from professionals and support services was compounded by women's own reluctance to seek out peer support groups, despite almost all women having some knowledge of their existence. Information about support groups was frequently provided in hospital but no mother contacted a group for support.

*They [midwives] gave me a leaflet in the hospital, yeah. Ah no, I didn't feel comfortable just chatting to anyone like. (Caron)*

Most could not perceive that service as being of benefit for overcoming their own breastfeeding challenges, and some felt that they might be subject to criticism about the challenges they were facing and the strategies they had employed to overcome such difficulties.

*I didn't want them to think I was doing it wrong and I didn't, it was hard because what if they criticised me for trying and not getting it right . . . like people saying you are doing it wrong and I was already so emotional and then having someone saying oh you are not doing it right and you should do it this way, I couldn't. (Jean)*

Women who knew of La Leche League expressed a view that this was a particularly 'hardcore' breastfeeding organisation and were concerned that they would be criticised for expressing or giving formula.

*I was actually put off, by even contacting them, just because I heard an awful lot of people saying "They're very hardcore altogether" and so that kind of . . . that was the impression that was given to me by a few people, that put me off even thinking about ringing them.*

*L: Can I ask what you mean by hardcore?*

*Em . . . well only say for people who want to breastfeed till the child's at school say (laughing), like long-term feeding types. (Sarah)*

Emily also highlights the fact that the logistics of getting to the support groups can be challenging in the early postnatal period:



*No, no, I know that like the public health nurse said get you know some groups or something but like it kind of, you know with a new baby your whole world is turned upside down and it's the last thing I was going to do was starting to join groups in the area. (Emily)*

The real reluctance to approach services for support while they were struggling with breastfeeding is a major area for future consideration. Among these women, Patricia was the only mother to seek specific support services for breastfeeding. She contacted a lactation consultant whom she knew and who had offered her support prior to discharge from hospital:

*A woman that we know is actually a breastfeeding consultant in [Hosp name] and we didn't know her very well but we bumped into her when I was in hospital and she said if you have any problems to give her a ring, so I gave her a ring and she came out to the house and she was very good. (Patricia)*

Websites were also referred to by some women as sources of information, as were books on breastfeeding.

*I had my book (laugh), which is kind of like to me the bible on breastfeeding and it was a great book, it's an American book, I can't remember it now, I've given a loan of it to my friend but I'd read a lot and watched videos on the internet and stuff, some American doctor guy.*

*L: Was it Dr. Jack Newman?*

*Yeah that's it (laugh), that's it, they [video clips] are quite good actually. (Alison)*

The impact of social and family support on their breastfeeding experience was highlighted in their stories around cessation. Most were happy with the support and assistance which came mainly from partners, mothers and mothers-in-law.

*So my mum came down, and she helped out, and then I'd go up and have my naps . . . And really all mothers they do need support and help and stuff like that, and that helps a lot, because when I look back on my mother, when he was born, and it was such a benefit to have her there. (Sadie)*

*Eddie [husband] stayed at home for two weeks. I found that great, because, do you know, like I couldn't carry anything more than Brian after the section, I wasn't fit for much really. I found it like a massive help like do you know, like to even, just change him [baby], and hand him to me when he needs to be fed. (Alison)*

Practical and emotional support was referred to as essential:

*So she'd come in (sister-in-law), and she'd bring me in scones, and we'd have scones and tea. And then she'd take them, and she might go for a walk or something like that like. It was essential to get those moments where everything is just normal or have five minutes to yourself. (Shannon)*

While practical help around the house from sisters and friends was recognised as important to the continuation of breastfeeding, comments demonstrate that these individuals often re-enforced the mother's decision to stop breastfeeding when she began to consider giving up.

*It was fantastic, it really was, [referring to friend who came to stay for five days to support her] and you know I did say to her, do you know, "that I felt bad" and you know I did say to her "Oh maybe I should try" [to continue breastfeeding] and she went, "Look" she said "If this is what you need to get your mind back in balance" she said "then you're doing the right thing, because at the end of the day, it's more important that they have a happy Mummy" (Sarah)*

There were also a few women who had no social or physical support after leaving hospital. It was clear that these women felt very isolated and they often described a sense of vulnerability at being at home with their baby in the early postnatal days.

*Now my mam was working the week after [birth] and so she was busy and like I said my partner is in the army and so they don't get any special leave or anything [referring to paternity leave], or even get home if they are overseas. So I guess, like I said I was more or less on my own from the beginning. (Jean)*

Paternity leave is not enshrined in employment law in Ireland therefore employers are not obliged to grant male employees paternity leave (either paid or unpaid) following the birth of their child.

Public Health Nurses (PHNs) were referred to by some women as a source of support for breastfeeding. However, many women did not see breastfeeding support as part of the role of the PHN.

*The nurse [PHN] came the day after we came home. She didn't ask me about the feeding just weighed the baby I think, I don't think I even, no I didn't really discuss it, not in any great detail anyway, that's for sure. (Patricia)*

There were positive experiences of support from the PHN, but women were acutely aware of her workload and the constraints of her role.

*I'll tell you, my Public Health Nurse that I had this time around, she was just brilliant, she came out to me and like I knew her, her workload was, do you know she was maxed out with work, but God love her like, she'd come over to me here some evenings, and it would be quite late, and you knew she was maybe calling on her way back from her last call, and that kind of thing, and so I*

*didn't really feel, now she gave me numbers and stuff like that, and she gave me a few leaflets, but she was just, she was a Godsend. (Sarah)*

Women often felt that the support from the PHN came too late after discharge, or that the level of support she provided was something they should have received while they were still in hospital. Those who experienced early challenges with breastfeeding felt that by the time the PHN came to visit them, the difficulties were insurmountable.

*The public health nurse came like probably a day or so after being you know released from hospital and as often as she could after that. She looked at the positioning, put my feet up on pillows, told me different things to do, but at that point I felt it was all too late. I was just so sore. (Emily)*

*I didn't feel that I needed to ask her advice at that stage [referring to breastfeeding difficulties], I just kind of knew in my heart, I felt I had done my best and I was happy enough. (Pauline)*

There were also instances where it was clear that the PHN had been ambivalent about whether the mother continued breastfeeding or not, and many women welcomed this attitude from PHNs and found it to be supportive.

*Yeah, she was good, she was great in that "Just do what you feel comfortable with, don't feel pressurised." (Katie)*

*And the Public Health Nurse herself was like, do you know, I could kind of tell by her, she didn't want to influence my decision, but she was fully supporting my decision to introduce formula. She was like "Well you know like, try and continue breastfeeding, but you know if you think that introducing formula is a good idea, then I think that that's a fantastic idea, and you should do it*

*immediately”, do you know, kind of thing, you know . . . She was “Look, what’s working will work what won’t, won’t, and don’t be putting yourself under pressure or feeling guilty at all.” (Alison)* There was a sense that some public health nurses were attempting to support the mother without unduly influencing them, but what was apparent, was that some felt that this vindicated their decision to stop breastfeeding.

### **6.3.5 The tipping point**

In contrast with the positive early experiences of breastfeeding described earlier, most women were able to pinpoint an actual time and feed when they began to have difficulties with breastfeeding. For some, this was very early in the breastfeeding experience while for others, it came a few days or even weeks after birth. Weaning varied from a sudden pivotal occurrence that signalled the end of breastfeeding to a more gradual progression, from initial difficulty to cessation.

*I was having a really bad day one day, but, yeah I was having a bad day and my cousin and my aunt were on their way out to visit, and they rang to see if I needed anything. I was there trying to make lunch, and I was just, I was feeling quite frustrated that day trying to feed Ciara, she was really upset, and I felt that it was something I was doing wrong, so I asked them to stop and get me baby formula and that was the beginning of the end I’m afraid. (Sarah)*

This excerpt from my reflexive diary highlights the developing analysis in the context of the literature.

Diary entry: 4/5/10

What was very interesting to hear was not just the explicit reason for the difficulty but the vividness with which she can recall the actual time of day, the physical moment when problems arose. The child is two now but she's telling me the story as if it happened yesterday. I'm finding this with many of the women. I need to begin to tease out in greater depth how this memory is actually impacting not just on their long-term views about infant feeding but also on their relationships with the child and their views about motherhood in general. There does seem to be some link between breastfeeding and mothering for many of these women (see also Schmied and Barclay (1999) for a description of same in the literature).

Women who had undergone a caesarean section often commented that this had resulted in some negative impact on their feeding experience. This was particularly true for those who had an unplanned or emergency caesarean section (EMCS).

*I wanted to do it this time, the last pregnancy I had I couldn't afterwards, I had an emergency section, and literally my nipples went in the way they have never seen anything like it, and I couldn't even try. So I wanted to try this time really.*  
(Katie)

As least two of the women felt that having had a caesarean section had made them more resolute in their desire to breastfeed, as if they felt breastfeeding could in some way make up for not having experienced a natural birth.

*I didn't have the whole kind of natural childbirth thing, so then I felt that breastfeeding was kind of a bonding thing anyway...I felt the breastfeeding was kind of ... some way towards making up for that. (Patricia).*

*I don't know, I think part of why I felt so bad is that because I had an emergency section with Ciara and I wanted as natural as possible a birth, so I was feeling a lot of let-down over that. And so then I think that (EMCS) made me want, want to be able to feed, I wanted to be as natural as possible, you know. (Sarah)*

Pauline also suggested that her baby was 'automatically' given formula because she had had an emergency caesarean section, and identified practical difficulties that she faced after the surgery:

*You know firstly he wasn't hungry because he had the bottle and then I would find it hard to get a comfortable position after the section, it was just crap, sorry, but it was and I hadn't really got anyone there as a pillar to support me and to support the baby. (Pauline)*

This feeling was common among women who had undergone an EMCS and suggests that feeding is more difficult after a caesarean section not only due to practical physical reasons, but also because of the complex emotions that can arise as a result of an unplanned caesarean section.

#### **6.4 Cessation**

This major theme addresses the actual moment when women decided to stop breastfeeding and explores their feelings and experiences at that time. For some women, it was a sudden decision while for others, there was clearly a sequence of events or a specific period leading up to that decision. There was

evidence for many women of trying to problem-solve or to manage the difficulties before they made the decision to stop.

This theme links very closely to the factors that influenced this decision as it does to the notion of reconciling the decision.

**Figure 9: Cessation**



#### **6.4.1 Strategies to manage difficulties**

When breastfeeding difficulties began, women tried various methods and strategies in an effort to maintain either exclusive or partial breastfeeding, and in some instances to give breastmilk by any means. The most common method that women used when difficulties of any sort arose was to start expressing breastmilk and giving it via a bottle. Many women had purchased pumps prior to the infant being born and there were numerous accounts of difficulties related to pumping. Thus, for many, the actual pump or act of pumping presented its own challenge which was not always related to the initial



breastfeeding difficulty. This often resulted in insurmountable challenges which culminated in the cessation of breastfeeding.

*I was hoping to carry on really, if I could, and then I'd get home, I had the pump that I was going to use. Yeah, and I had borrowed another one, to have the spare one, but I just didn't. I was too sore, and every time it came to feeding, I was bursting into tears, because I felt so much pressure, you know. (Mairead)*

In situations where the pump exacerbated the pain that women were already experiencing and this led to an unsuccessful outcome, it was common for women to blame the type of pump they were using rather than the original difficulty.

Teresa stopped breastfeeding when she had a one night separation from her baby. Her attempts to express milk in advance were unsuccessful and her baby was given formula instead. Despite having given birth in a hospital which had been Baby Friendly Accredited, Teresa had no knowledge of hand expression, instruction in which is one of the 10 steps to successful breastfeeding advocated by the Baby Friendly Health Initiative (BFHI).

*I remember saying to my husband, at the time if they had something that was like a baby's lips, and if it could, you know, because most of the suction is on your whole boob, but obviously a baby just feeds from around your nipple, and I was saying "If they had something that was more comfortable, just around the nipple, and had the same motion as a baby." (Teresa)*

Along with pumping, women tried nipple shields and various creams when they experienced nipple pain and most of the sample did not find these useful.

*I bought shields and my mother brought creams and stuff, but they were too fiddly and anyhow it was too late, I had already put him onto the formula.*  
(Mairead)

Soothers were also used when women were concerned that the baby was feeding too much or 'comfort sucking'.

*He was just feeding a lot, so I thought maybe he wasn't hungry all the time, he just wanted something to suck on so that's why I tried that [soother].* (Caron)

Nearly all the mothers moved on to mixed feeding rather than abruptly stopping breastfeeding. The amount of time spent mixed feeding varied widely from a few days to several weeks. This resonates with the notion of 'circumstantial impossibility' (Janoff-Bulman and Brickman, 1982), whereby further progress at something is seen as impossible under current circumstances, but may become possible if altered or adapted in some way. For some women, mixed feeding presented this alternative, which was acceptable to them as a means of continuing to provide some breastmilk to their infant.

*I just, I weaned him off after a while. So it was kind of, I was giving him both for a bit, and then started weaning him off, so by maybe about two months he was off it, and he was on formula only.* (Alison)

None of the women sought help or assistance from a professional when they started expressing or mixed feeding but once again, they sought advice or assistance from a friend or relative.

*I honestly think that with my next children I would be buying an electric pump myself, because I got the loan of it from my sister-in-law and it has gone around,*

*done the rounds, one [sister-in-law] bought it, and it has done the rounds for everybody. (Alison)*

Sadie, whose baby was admitted to NICU, was experienced at pumping because she had maintained her supply for six weeks with her previous child, Aimee, and then successfully breastfed her for six months. However, her subsequent encounter with pumping demonstrates that having experience without professional support does not always guarantee the same outcome:

*I came down in the middle of the night, and used the pump, to see how much I was getting out of the breastmilk, and that would have been three hours' rest, and I think it was five [ounces], I got like three from one and two from the other, and that was five, and I knew that on Aimee she would have been drinking ...six or something like that at that stage . . . So then I thought maybe that's why he was frustrated when he's feeding, he needed that wee bit extra, and he wasn't getting it. It was the pumping that showed me how much I was getting out of the breast and it wasn't enough<sup>4</sup>. (Sadie)*

Many women perceived that exclusive expressing was a potential solution to breastfeeding challenges, but most found that the reality of pumping was demanding in its own right:

*It was hard (laughter) it was more time-consuming because I just had a wee manual pump, do you know what I mean and maybe I was thinking should I maybe have got the electronic one and maybe it would have been that bit quicker and it was so. (Pauline)*

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<sup>4</sup> Sadie discontinued breastfeeding the following morning, perceiving that her supply was insufficient.

### **6.4.2 Self-handicapping**

Self-handicapping is a term that has been utilised to describe a phenomenon of a particular occurrence of 'failing to persist' (Eisenberger *et al.*, 1992). As has been highlighted previously by Bottoroff (1990), persistence is integral to continuation of breastfeeding in the face of difficulties. While some level of persistence is evident among this group of women, their perseverance was severely tested by the problems they encountered.

*Well I was in tears for a couple of days, and every time my husband came in, he said "Well how did you get on?" And even those few days, I kept going, and then I just, I couldn't any more, you know, I really couldn't even though I desperately wanted to. (Mairead)*

*But it just, then at that stage I just felt like I'd just lost the will of even continuing on with it. I had put him on formula the day I left hospital, yeah before I left, and then I came home and then I started again, once the public health nurse came and gave me a few tips but I felt I was persevering through the pain it was just something that I couldn't continue with because it was just too painful and I was really getting upset and anxious about it. (Emily)*

The following diary entry relates to the emergence of persistence in the open coding phase of analysis. This was further developed to explain the construct of 'self-handicapping'.

Diary entry: 22/04/10

. . . Developed a new category of persistence in my coding strategy after yesterday's interview with Emily. I have already encountered this in some of the previous interviews. I am going to reformat the interview discussion guide to seek out other views that either support or refute this. I'm not yet quite sure if persistence is quite the correct term? Is this diligence to get on with the task, or persistence? There is a sense of inability to persist and this is directly linked to making the switch to formula. Am a bit conscious that persistence has been used in the literature and perhaps that is imprinted in my mind. Will revisit this term in the near future to see if the fit remains consistent . . .

In determining if they should continue or not, some women wrestled with whether breastfeeding was worth pushing through the difficulties that they experienced. This also links to comments made by mothers about a happy mother being just as important as a happy baby. Some of the women also questioned if breastfeeding is 'worth' the persistence that they would have needed to continue.

*So I just felt it wasn't worth it, because it was just so sore and so painful.*

*L: What do you mean by worth it?*

Well is it really worth all the pain and that, and me being distressed over the sake of it. (Emily)

*So I kept on trying "I'll wait a little bit and then I'll try her again" and see if I can do it. I think the question for me was, "Is it worth pushing through the difficulties". That's the, you know, question for yourself at that stage. (Niamh)*

*When I got home, I persevered at it and I did find it difficult, I never found it easy. They say I think that you should at least try eight weeks anyway and then you kind of start getting into it or it becomes easier or something. And I just think well fair play to you [referring to other women], I just couldn't. (Patricia)*

As participants could not see the 'value' in continuing at this point, the cost of persistence became too much for many to bear. This links to 'dissonance theory' as described by Festinger (1964), which suggests that when the expenditure of effort on a task becomes dissonant with the expectation that one is doing well on that task, individuals will devise ways to reduce this dissonance. In this instance, this was usually resolved by switching to formula feeding.

### **6.4.3 Making the switch to formula**

Understanding how women switch to formula-feeding and identifying the point at which they do so is important, in order to plan interventions at this important juncture to support women who wish to continue breastfeeding.

Consideration of formula introduction was linked to a breastfeeding experience that was becoming increasingly difficult.

*And then I was kind of doing with the bottle as well. So in the end I kind of (child laughing) . . . I put him on the bottle just because I was finding it so difficult. He wasn't full, I had to do something. (Jean)*

Significantly, most women in this sample recognised the introduction of formula as the beginning of the end of their breastfeeding. However, while most gradually introduced formula there were examples of women who

stopped more abruptly, often due to pain or infection. This also links to the notion of persistence described previously.

*I was giving a bottle, I was giving a bottle a day to her, the [formula brand]. It was the final nail in the coffin.*

*L: Do you mean the mastitis or the bottle of formula a day?*

*Both really, the mastitis was too painful to feed with, and the supply went down then with the bottle. And I needed a break at that stage, so it was great that someone else could feed her. (Katie)*

*...So then for a few days I did both. He gave him that first formula, and I was grand about it, and then I continued just the breast again for another couple of days. But then I did both for a while [combination feeding] and I knew that was it [breastfeeding] coming to an end. (Alison)*

*I put him on (formula brand). I'd been thinking for I'd say two weeks before I finished, it was going around in my head, will I do it for more, will I try and it just came to the stage I think near enough the end, I just said I can't do this anymore. (Pauline)*

Some of the women felt that combination feeding was 'confusing' or not recommended for infants.

*I didn't want to confuse her, because I was using the [formula brand] you know the easy digest formula, and she just, she took to that really really well, and she wasn't really a great eater. (Teresa).*

Therefore, the Baby Friendly recommendation that newborns receive 'no food or fluids other than breastmilk unless medically indicated' (WHO and UNICEF, 1989), may actually be encouraging cessation among some women who may otherwise choose combination feeding.

#### **6.4.4 The right to self-determination over infant feeding decisions**

Although there was clear evidence of women seeking reassurance from others about the decision to stop breastfeeding, most felt quite strongly that the woman needs to decide for herself when it's time to stop breastfeeding. Women suggested that as only mothers can breastfeed, they should ultimately decide the timing of cessation.

*You need to make up your own mind and don't be necessarily accepting everything you are told I think, in terms of the prevailing wisdom. You have to decide for yourself when it's time to stop. (Niamh)*

*They left it very much up to me [referring to husband and mother], yeah, I didn't really kind of discuss it with them in a kind of a way that, you know, I wasn't looking for their advice and whether they think I should or shouldn't or they didn't have to deal with it. (Patricia)*

The belief that women were responsible for their own fate and were in control of that fate enabled reconciliation towards making that difficult decision. This is the epitome of reconciling their breastfeeding journey.

#### **6.5 Reconciling**

This core category encapsulates the experiences of the process from initiation to cessation of breastfeeding. Each of the five concepts that have been developed to describe women's overall experiences, are influenced by their attempts to reconcile the early and unplanned discontinuation of breastfeeding. The theme 'reconciling' encompasses four categories that

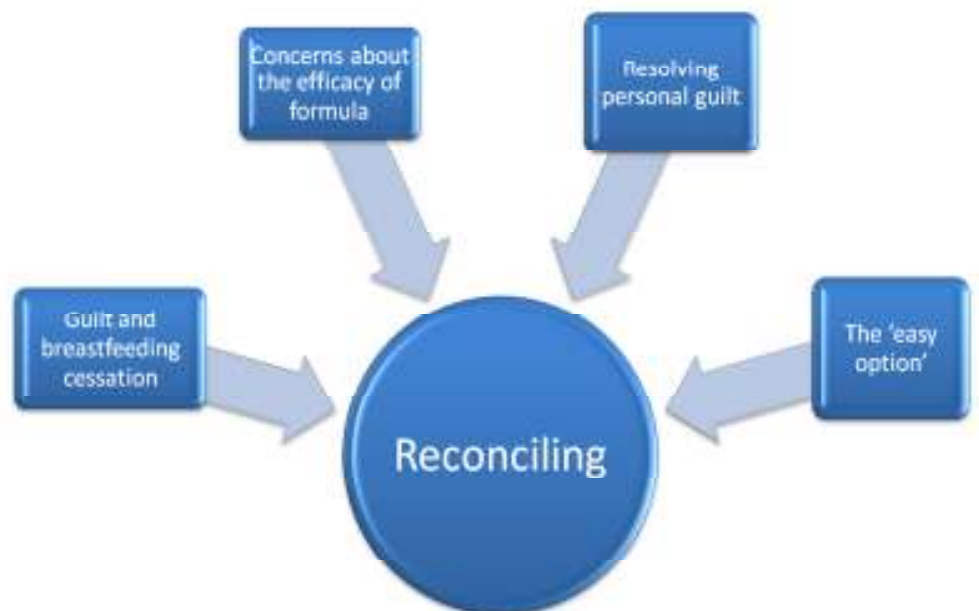


demonstrate how they begin to consider alternatives to breastfeeding and rethink the value of their exposure with breastfeeding.

Cognitive dissonance is evident in women's account of 'reconciling' and coming to terms with their breastfeeding experiences. The term describes an uncomfortable feeling experienced when actions and beliefs are contradictory (Festinger *et al.*, 2008). When their beliefs about the value of breastfeeding become contradictory with their actions (cessation), women become motivated to reduce dissonance by adjusting their beliefs to be in line with cessation.

Women described feelings of being a failure, disappointment and guilt when they were challenged with breastfeeding difficulties that lead to early discontinuation. These women articulate a process whereby they begin to resolve feelings of guilt by reconciling their decision to stop, while continuing to have concerns about formula-feeding.

**Figure 10: Reconciling**



### **6.5.1 Guilt and cessation of breastfeeding**

Irrespective of the duration of breastfeeding or the reason for cessation, all the mothers described strong feelings of guilt around this decision.

*Definitely guilt came into it. But then I felt at least I'd tried it and given it the best shot.* (Emily).

*I just felt that I was her mother, and I wanted to do this for her, and I couldn't, and when I couldn't then I felt really disappointed and consumed with guilt.* (Mairead)

Despite these feelings of guilt, this negative emotion was not a factor that in any way enabled or motivated women to continue.

*I didn't want to give her an infection either, do you know if I stopped, I was worried about that. But I said "well I tried" and she got the goodness out of me the first few days. You're giving them more of a chance, you know, all that kind of thing, going forward, but ah, I did the best I could and you just have to accept it.* (Katie)

Guilt is a common form of emotional distress and is considered to be a common factor in behavioural decisions (Baumeister *et al.*, 1994). Accounts of these women demonstrate that many were consumed with guilt when they made the decision to stop breastfeeding, and this feeling stayed with them for quite some time afterwards.

*After a few difficult weeks of trying, I finally switched to formula. But I really was consumed with guilt. Everywhere you look, even on the formula packages, breastfeeding is portrayed as best for your baby. To some extent you feel like everyone is trying to tell you that you are a bad person.* (Patricia)

Despite having stopped breastfeeding because of the challenges they had faced, some women felt a sense of loss when they stopped breastfeeding:

*For the initial first two or three days I did feel, I actually missed it, I wasn't like oh this is great, it's over, for me it was more a missed bit and then maybe even a week later I was feeling, I wonder if I kept it up would it have worked. (Sharon)*

This feeling of loss was coupled with a sense of finality when the breasts physically began to suppress breastmilk:

*. . . when it completely stopped then, there was no milk there to give, so you don't feel bad, [pause] you just can't. (Sadie)*

Women had their own sense of how they would be judged by 'others' for stopping breastfeeding. They described feelings of inadequacy about their mothering roles, as many felt that breastfeeding was integral to the notion of a 'good mother'. Anyone who was not breastfeeding was therefore not fulfilling the societal ideal of the 'perfect mother'.

*Oh God "breastfed is best, you know, and you're less of a mother if you don't breastfeed" this kind of an attitude is very bad. (Katie)*

This led Niamh to reconstruct her view of motherhood in response to the cessation of breastfeeding:

*Of course I'd have loved if it had all gone to plan and I was sitting here telling you how wonderful breastfeeding is, but sometimes you have to be the best mother you can and make the right choices...(Niamh)*

Women felt that guilt was also perpetuated through the health promotion message of 'breast is best', which has been used nationally and internationally to convey the superiority of breastfeeding over formula feeding.

*I think that message of breast is best it's not right. I think it's very condescending, and I think it's also, it's a very bullying message. Do you know I used to hear it and say ah alright you know I mean like, it's all fine and grand for them to say "Oh breast is best" but it is a bullying message. The whole kind of attitude around breastfeeding is very, is very pressure driven. (Alison)*

Blum (1993) noted that women who decide against breastfeeding often seem acutely aware of the health promotion message of 'breast is best', and speak of having to resist social pressures and huge personal guilt. In addition to this sense of personal guilt, women in this study articulated feelings of personal failure when they were unable to continue breastfeeding:

*I felt you know I should be able to do this. Why am I not able to do it? (Jean)*

Most also had a planned duration in mind and were disappointed when they had discontinued sooner, contributing to that sense of personal failure.

*I had that time in my head, yea, and I couldn't believe that it was just five or six weeks. (Sadie)*

As demonstrated earlier, there was a common assumption among these women that breastfeeding is a natural and innate skill, something that women just know how to do. This assumption compounded the guilt experienced when women felt they could not achieve mastery in the skill of breastfeeding.

*You know I suppose I'm disappointed with it because I'm a person who usually succeeds at the task that they set out and I usually persevere with things. You know, nobody else made me feel guilty really, it wasn't external factors or you know that kind of media, it was really more my own idea that I wanted to try it and give it my best shot. But it didn't happen. (Emily)*

Although guilt was evident among all the participants, multiparous mothers seemed to be less likely to equate breastfeeding with the notion of being the perfect mother.

### **6.5.2 Concerns about the efficacy of formula**

In stark contrast to the notion that 'breast is best', women were acutely aware of subliminal messages about the risks associated with not breastfeeding their infants. First-time mothers expressed grave concerns about giving formula to their infants, thus demonstrating their belief in the superiority of breastfeeding:

*I felt terrible about it, I didn't want to stop and I remember we bought our first box of formula, reading it and reading the ingredients thinking oh God what am I doing, I just felt really guilty but I spoke to lots of different people and everyone was saying look you know we were all probably raised on formula, well a lot of us were and people do it all the time. (Patricia)*

*I'd prefer to feed her something less complicated [referring to formula] of course, but really a bottle is a lot more practical solution for today's world. (Niamh)*

There was evidence of many conflicts for the women about the benefits of breastfeeding and the messages around formula-feeding. Teresa was aware that Vitamin D is recommended as a supplement for breastfed babies in Ireland

(Food Safety Authority of Ireland (FSAI), 2010), but felt that despite this, breastmilk still remains superior to formula:

*I suppose the only downfall for me with the breastfeeding was, yeah, you know the way they have to get the vitamin.*

*L: D supplement?*

*Yeah, like they've got their added vitamins, extra, that wouldn't be in my breastmilk, so they got their added Vitamin D or E or whatever it is, outside of that. But you know that they are getting so much more from what's inside you, than you know, what's coming out of the formula. (Teresa)*

Switching to formula challenged many women and led to some doubting the evidence on the advantages of breastfeeding:

*I felt well if my mum and my aunty who have all had, well all my aunts had four or five children and if they are saying it and all their children have grown up and they've never had any problems, then you know, it must be true [referring to formula as an acceptable alternative to breastfeeding]. (Jean)*

Risk messages, such as those presented around formula feeding, are known to be influenced by the extent to which an individual trusts the source from which they are receiving their information (McComas, 2006). Such a strategy is clearly evident in Niamh's account of questioning breastfeeding:

*And I have to say I would doubt now some of the prevailing wisdom in terms of breastfeeding... I think like it's very important obviously that you give the antibodies and stuff like that but ... there's no actual study that figures out how long, you know, is it good enough to give the colostrum but there's nothing that seems to say oh well you get x amount more antibodies by another week or another week. [pause] So no one seems to know that . . . All of them focus on*

*the nutrients and all that kind of stuff and I think the nutrients stuff is questionable. (Niamh)*

Reducing the dissonance between knowledge of the advantages of breastfeeding, and the associated negative interpretation of formula feeding was also evident in Teresa's account of probing the superiority of breastfeeding. Teresa felt that the advantages of breastfeeding had not been evident in her experience of breastfeeding one child and formula feeding another:

*I know like statistically they say like you know "breastfed is better" and you know the whole lot, but like, when I'd just do a comparison on my own two children, it was like Lola was six weeks premature, she was formula-fed, and she hasn't been sick a day in her life in six years. Aimee was two weeks overdue, she was initially breastfed, and she has been hospitalised like fifty times in two years. (Teresa)*

Attempting to achieve a harmony between their desire to breastfeed and the early cessation of breastfeeding was evident in the accounts of all these women. There was a discernible process of becoming comfortable with the undesirable or challenging breastfeeding situation they experienced through various processes that enabled a personal reconciliation with the sub-optimal breastfeeding experience.

### **6.5.3 Resolving personal guilt**

Alongside dissonance reduction, women often articulated the means by which they came to terms with feelings of guilt. This usually involved the notion that 'they had done their best' or had at least attempted breastfeeding:

*I felt at least I'd tried it and given it the best shot. (Emily)*

*You know, I think that the most important part is the first couple of days that he gets that. (Alison)*

Katie also highlighted the fact that her husband was attempting to ease her guilt by suggesting that he could become more involved with feeding her infant:

*Well I said "Well I tried" and she got the goodness out of me the first few days but I still felt guilty you know. But I have to say my husband was great support "Sure amn't I involved now" and all this, you know, "It will bring me and her closer", and I was trying to look at all sides of it then . . . but ah, I did the best I could and you just have to accept it. (Katie)*

There was also a sense that they believed breastfeeding could work for some, but that they were women for whom breastfeeding had not worked on this occasion:

*I started breastfeeding him but that it didn't work for me. (Jean)*

*I tried it [breastfeeding] but it just wasn't for me . . . and I wasn't happy that I wasn't able to continue with it. (Emily)*

Women felt a need to justify cessation continually but equally felt considerable relief when they had made the decision, and switched to formula:

*So we switched over to the bottle feed and everything was okay, it was like a weight lifted off my shoulders. (Mairead)*

*I wasn't stressed you know, life was a lot more reasonable after that [referring to switching to formula]. (Niamh)*



Rationalising their personal feeding difficulties was also a strategy that women used to reconcile their decision to stop breastfeeding.

*It was difficult because I wanted that [to breastfeed], everyone says you have the bond and it's you know better for him and then I felt you know is he losing out because I'm not going to be giving him breastmilk. I was starting to get a little bit depressed over it [breastfeeding]. But I felt I wasn't doing my best for him, he was still hungry all the time. (Jean)*

*It was very hard, yeah, when you have a small baby, and you're not well yourself, it's very hard. Every bit of me was sore after the section, and that all only added to the problems with the feeding, it was just too much. (Mairead)*

#### **6.5.4 Formula-feeding as the 'easy option'**

In stark contrast to the concerns about the risks of formula introduction, when women made the switch there was a sense of ease with this method of feeding. As a result of the struggles they had encountered with breastfeeding, formula feeding was felt to be the 'easy option'.

*...so between one thing and another, it was just easier then to give her the bottle. (Mairead)*

Women generally considered that when breastfeeding and formula feeding were viewed in direct opposition to one another, that breastfeeding mothers endured a greater personal burden.

*The only thing I do see is that from my friends the ones that have really . . . you know stuck with the breastfeeding and stuff like that they all looked awful for*

*the first six weeks. They looked miserable and haggard and stressed whereas I actually I think once that initial guilt was over I enjoyed Isabelle and I had a great time and it was way better than I'd expected on the whole. (Niamh)*

## **6.6 Enduring views of breastfeeding**

Any attempt at breastfeeding in the future would undoubtedly be influenced by the knowledge and experience gained from this short and predominantly sub-optimal breastfeeding exposure. Despite the negative experiences that most encountered, many women held aspirations about subsequent breastfeeding attempts but these were offset by the risk of failure.

**Figure 11: Enduring views of breastfeeding**



### **6.6.1 Hopes and aspirations for future breastfeeding experiences**

Despite the challenges and lack of support that women encountered around this breastfeeding experience, there was a sense that most would like to breastfeed again following any subsequent pregnancy. While they held firm beliefs about breastfeeding, their optimism about breastfeeding in the future, was cautious.

*I'd still do it [breastfeeding] again like, it's different for everyone like so, I'd still prefer to use that method if I had another [child]. (Caron)*

*I'd definitely breastfeed, yeah if I had another. I have thought about it, I'd like to do it for three months, I would try and do it for three months the next time. (Maryanne)*

Many women affirmed the belief that breastfeeding was the most beneficial method of infant feeding. However, the possibility or impossibility of breastfeeding would be circumstantial and dependent how 'how things might go':

*I'm hoping to breastfeed now this time again...please God, if all goes well and I will do it for as long as it works out. I'm not going to say a week, I'm not going to say three months, I'm not going to have any timeframe in my head . . . this time I'm more, I think I'm more open-minded and I feel it will be fine, I'm going to be, I think that maybe I've even become a little bit more laid back, I think because it's my second time round.<sup>5</sup> (Sharon)*

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<sup>5</sup> Sharon was 20 weeks pregnant at the time of interview.

As demonstrated by Sharon, setting and achieving a fixed expectancy on the duration of breastfeeding remains an important determinant of 'success' for women when embarking on breastfeeding in the future.

### **6.6.2 Perpetual attitudes of preparing for failure**

Although the majority of women remain committed to breastfeeding, it was clear from their accounts, that they were acutely aware of the risk of future failure. While breastfeeding future infants 'mattered' to women, they actively prepared themselves for another sub-optimal attempt through attitudes of preparing to fail.

*I would give it a go but I wouldn't beat myself up as much when I couldn't do it. If it works, great, if it doesn't it's not the end of the world. (Niamh)*

*Like the next child I would be saying to them in the hospital "I'm going to bottle-feed" and then I'm just going to breastfeed him, and do whatever, and then when I come home, I'm going to express it [referring to future infant feeding]. Because I just, I don't feel confident in the latching on, and I just feel that, do you know, if I have another big baby like Brian, and that baby is as hungry as him and starts losing as much weight again, at least I would know that this is the amount that's going in, and that, you know, like twenty minutes on the left breast, how many ounces is that? (Alison)*

*I'd say that I'd "give it a try" if I had another, but now I won't [laughing]. It's a unique experience, and it is, it's a wonderful experience, it really is. But I'd say to others like, don't feel that you have to. I'd say just try it, and if it works, it works, don't push yourself or the baby because the baby could be suffering from stress as well as you. (Katie)*

In making sense of their own experiences, women could be seen to be perpetuating attitudes of breastfeeding as problematic and a difficult task. It was also very common for these women to offer advice to other women on their infant feeding choices, demonstrating the impact that their views may have on their own family and peer group:

*I would say breastfeeding, okay may not be for everybody long term but to give it a go and don't have any big high expectations or set yourself any big time limits, or I'm going to do this for X number of weeks, days, months, just to go with the flow and if your child is born healthy and it works stick with it as long as you can until, six months, nine months, every woman is so different and every child is. (Sharon)*

### **6.6.3 Pain and its impact on future breastfeeding**

Women for whom pain was the primary reason for cessation were more reluctant to consider breastfeeding a future infant. Attributions of pain as the primary reason for the failure of breastfeeding, and a sense that pain is intrinsic to breastfeeding, hindered their expectation of the potential for a future successful experience.

Jean displays a mechanism for protecting herself against future disappointments by placing emphasis on what she perceives as the enjoyable and manageable aspects of motherhood, rather than the impossible task of breastfeeding and its associated pain.

*Oh definitely not, definitely not. The whole experience has put me off all together. After trying so hard and feeling down in myself that it wasn't going right. I don't think I'd like to put myself through that from the start. I think that I'd rather concentrate on the bonding and you know bringing a new baby into*

*the house, into my life rather than feeling so stressed out because I'm so young and it's not going right, so putting added pressure on myself. I definitely would not breastfeed, no. (Jean)*

Emily also believed that her experience of pain during breastfeeding would deter her in the future.

*I suppose I don't, I think I'd be put off by it now, you know, like I would see it as something painful and not easy and I suppose if I had another child I don't even know if I'd try it or not again. (Emily)*

#### **6.6.4 Learning the hard way**

Women would approach any future breastfeeding with a sense of knowledge and wisdom about the realities of breastfeeding. They acknowledged the unpredictable nature of breastfeeding and understood that breastfeeding was not a 'stable thing' (Maryanne), thus they had learned some coping strategies through their own experiences. For many this involved realigning the lessons learned from this experience with future expectations about breastfeeding.

*I'd do it different if I was to ever do it again . . . I would let them eat when they're hungry because I also don't think that they ever got really hungry enough to eat well enough, to feed well enough. (Shannon)*

*It was like a whole learning curve, I think the first time it's like you want to do everything right and unfortunately we all try sometimes to do things by the book and that's sometimes not the right thing, sometimes it's to do something else. It's funny, it's something I'll never forget and I'm going back in to feed again and I think if someone came in to assist me, if it happens again, I would say to them, you know, please don't. (Sharon)*

The enduring strategy that they would take to any future breastfeeding attempt often involved the utilising a specific pump or cream that they perceived might have helped them on this occasion.

*And I think, with hindsight, if I was to do it again, I would tell the midwife that I would bottle-feed, and I'd breastfeed of my own accord. I'd pump then and give it as a bottle, like I think if I had of had the electric pump earlier, I wouldn't have stopped. (Alison)*

*I'd keep the cream on more from the beginning, because it was after a week before I started using the cream, so probably just keep the cream on, just use the cream even if I wasn't sore from the beginning to try and stop it occurring. (Caron)*

In summary, 'learning the hard way' enabled women to reframe their breastfeeding experiences to allow for the circumstantial possibility of breastfeeding in the future dependent on that encounter with breastfeeding.

## **6.7 Conclusion**

Interviews provided rich data, ascertaining the impact of sub-optimal breastfeeding experience on future infant feeding choices. These results demonstrate that women with a short and sub-optimal experience of breastfeeding, navigate a process of 'reconciling' that exposure after cessation. Despite their unsatisfactory breastfeeding experience, most women would consider breastfeeding in the future but this is mediated by experiences of pain and knowledge of its aetiology.

Women in this study were motivated to breastfeed through their belief in breastfeeding as the optimum method of infant feeding. Despite their desire

and commitment to breastfeeding, many women felt that the pervasive message of 'breast is best' and the antenatal focus on breastfeeding, was overtly pressurising.

Multiple factors were thought to impact on breastfeeding cessation, including lack of support and challenges associated with the skill of breastfeeding. Expectations about breastfeeding and the reality of their experiences were often incongruous, and many women felt dissatisfied in the support they were given in the postnatal period. Deficiencies were highlighted in both the level and quality of professional support offered to women and present challenges to all those involved in the provision of postnatal services.

Complex and challenging emotions around motherhood, guilt and the efficacy of formula feeding, permeate the cessation of breastfeeding. In reconciling this decision, women's knowledge and beliefs in the superiority of breastfeeding are often challenged and undermined.

A specific objective of this part of the study was to ascertain women's views on the factors that would assist them to breastfeed successfully in the future. Participants, in general, could not specifically identify how this may be achieved. However, their overall accounts highlight multiple aspects of support around breastfeeding that require attention, if women who are motivated to breastfeed are to be enabled to achieve the breastfeeding goals that they have set for themselves. Findings suggest that this may also impact on other women's perceptions of breastfeeding and diminish the negative accounts and inaccurate information that appear to be a common feature of pregnancy and the postnatal period.



## **7 Chapter 7: Discussion, conclusions and recommendations**

This final chapter provides a discussion of the mixed-methods study, outlines the overall conclusions reached from this research and discusses their implications in the context of contemporary breastfeeding literature. The previous chapters have comprehensively discussed the methodological and theoretical aspects of the research, reviewed the relevant literature, and presented and analysed the data. It is not the aim of this final chapter to deliberate those arguments further. Rather, this chapter interprets the findings and provides a summation of the outcomes of the present research and its principal contributions to breastfeeding knowledge. It concludes by making recommendations for future research.

### ***7.1.1 Integrating data***

A sequential, embedded explanatory design was utilised to describe breastfeeding prevalence (quantitative survey), and factors affecting initiation (quantitative survey and qualitative interviews), in order to facilitate application of the results in a manner that has the potential to bring about positive consequences for breastfeeding in Ireland. In this regard, the qualitative findings build on the results of the quantitative dataset thus contributing to the overall objectives of this study, which were to examine rates of exclusive and partial breastfeeding at 48 hours after birth, 3-4 months and 6-7 months postnatal, and to establish factors that influence a decision to breastfeed.

The 'point of interface' between the quantitative and qualitative findings can, therefore, be viewed as the sequential design combined with the use of qualitative methods to explain and elaborate quantitative findings, in a manner that has provided multi-dimensional and collaborative findings about

breastfeeding in Ireland. This can be described as integration by 'embedding data', and is suggested to be the most logical and practical approach for the presentation and interpretation of thesis findings (Creswell & Plano Clark, 2010).

### **7.1.2 Breastfeeding rates**

The results showed that the initiation and duration of breastfeeding in the study cohort remained well below other European countries, with just over half of the women initiating breastfeeding (56%) and less than one in five (19%) fully breastfeeding at 3-4 months of age. Of further concern is the finding that just 6% (n=61) of the 1002 mothers who responded to Phase 2 and who had breastfed their infants at birth, report exclusive breastfeeding at six months. These over-arching issues will be discussed first.

A national strategic action plan for 2005-2010 (Breastfeeding in Ireland: A Five Year Strategic Action Plan) aimed to increase the national breastfeeding duration rate by at least 2% per year and, for socio-economic groups 5 and 6, by 4% per year (Department of Health & Children, 2005). It is impossible to deduce from the findings of this study whether the national target has been achieved, as the only reliable data source available, the National Perinatal Reporting System (NPRS), collects data solely on breastfeeding rates at discharge from hospital (Economic and Social Research Institute and Department of Health and children, 2011). It is also important to note that the previous nationally representative data reporting on breastfeeding initiation at birth was collected in 1985 and is not, therefore, useful for comparison (McSweeney, 1986). Despite this, the results of this study, when viewed alongside the available NPRS data (Table 54), suggest that there would appear to be a marginal upward trend in the total number of mothers breastfeeding at discharge from hospital.

However, this falls well below the 2% increase per year targeted in the national breastfeeding strategy (Department of Health & Children, 2005).

**Table 54: NPRS data on initiation of breastfeeding**

	<b>Breastfeeding at discharge %</b>
<b>Current Study</b>	<b>49</b>
NPRS 2005	44.1
NPRS 2006	44.5
NPRS 2007	45.2
NPRS 2008	44.5
NPRS 2009	45.5

Significantly, when findings for Irish women are viewed separately from those of other nationalities who responded to the survey, it is apparent that rates among Irish women remain consistently lower than those of their non-national counterparts. It has been established in other contexts that a woman's ethnicity influences her choice of infant feeding method (Singh *et al.*, 2007). Tarrant (2008) has also noted this as a feature of breastfeeding decisions in a sample of women in Dublin. Ethnic variations which may, to some extent, be explained by cultural norms around breastfeeding in a woman's country of origin, have also been shown to be an important determinant of initiation in the present study.

Findings suggest, therefore, that any future recording system must take account of nationality when recording breastfeeding initiation and duration. In 2008, 22.5% of all births in Ireland were to non-Irish-born women, which is an increase of 7% from 2004 (Economic and Social Research Institute and Department of Health and Children, 2010). This information, combined with the knowledge from this and other studies (Tarrant, 2008) that this group are more likely to breastfeed their infants, suggests that although NPRS figures indicate a marginal increase in the rate of breastfeeding initiation, this may not have

occurred among Irish women. On the basis of this evidence, it is more likely that any increasing trend can be accounted for by the rise in births among non-Irish women. This raises questions about the national breastfeeding promotion strategy (Department of Health & Children, 2005) and its effectiveness with regard to increasing breastfeeding rates among Irish women.

In the current study, although a higher proportion of non-Irish women initiated breastfeeding, the greatest proportion of discontinuation from birth to discharge from hospital was found among Polish women. Previous studies have noted that acculturation to a society where breastfeeding is not the cultural norm can have a deleterious effect on breastfeeding initiation and duration when these women have assimilated into that new environment (Gibson-Davis & Brooks-Gunn, 2006; Gorman *et al.*, 2007; Hawkins *et al.*, 2008; van Rossem *et al.*, 2010). This suggests that non-Irish women, for whom breastfeeding may have been the cultural norm, may face other challenges when attempting to sustain breastfeeding in Ireland.

A decline in exclusive breastfeeding at discharge from hospital has been noted in many other contexts (Sheehan *et al.*, 2001; Colin & Scott, 2002; Bailey *et al.*, 2004; Bolling *et al.*, 2007). In the present study, exclusive breastfeeding had dropped to 49% (n=881) by the time of discharge from hospital, and by 3-4 months (Phase 2) the rate of exclusive breastfeeding had declined to 19% (n=347), with a further 15% of mothers (n=271) partially breastfeeding at this time.

Exclusive breastfeeding was reported by 13% (n=61) of the 461 mothers who responded to Phase 3. This is just 6% of the 1002 mothers who responded to Phase 2 and who had breastfed their infants at birth. A further 51% (n=230) of Phase 3 mothers (6% of the 1002 who responded to Phase 2) were partially breastfeeding at six months and 36% (n=167) reported that they had

discontinued breastfeeding. These findings indicate that very few women and infants in Ireland are receiving the benefits of breastfeeding for the duration recommended by the World Health Organization (WHO) (2001b).

These data highlight the need for a comprehensive, national system of monitoring breastfeeding rates at predetermined intervals, and any related or contributory factors, in order to assess the ongoing success of current, and any future, breastfeeding promotion strategies directed towards rates of initiation and duration (Cattaneo *et al.*, 2000). Additionally, the data support the need for an urgent review of the national strategic action plan, alongside local and hospital initiatives that propose to promote and support breastfeeding in Ireland.

## **7.2 Factors affecting initiation of breastfeeding**

The compelling relationship between maternal socio-demographic characteristics and breastfeeding initiation was once again demonstrated by the results of this study. Without exception, having a higher socio-economic status clearly favours breastfeeding at birth (Earle, 2002; Dubois & Girard, 2003; Bolling *et al.*, 2007; Yeoh *et al.*, 2007; Amir & Donath, 2008). In particular, mothers' health-insurance status mediates the effect of several other variables and has been found in this study to be an important factor contributing to breastfeeding initiation.

A state-sponsored health insurance scheme, Voluntary Health Insurance (VHI), was introduced in Ireland in 1957 (Barrington, 2000). Competition in the health insurance market was first allowed in 1994 and private health insurance was held by 50% of the population in 2007 (The Competition Authority, 2007). This led to what has been described as a two-tier system of health-service provision, with clear socio-economic divisions between those who can and cannot afford

such insurance (Tussing & Wren, 2006). Large increases in health insurance premiums of up to 45% since 2008 (Pope, 2012) are likely to have reinforced the disparity between those who can and cannot afford health insurance, and consequently socio-economic status. While maternity care is provided free of charge for all women who are ordinarily resident in Ireland, under the Maternity and Infant Care Scheme, health-insurance status among pregnant women is a strong indicator of socio-economic status and, accordingly, of breastfeeding initiation.

While education has been shown to be a good indicator of social class in other contexts (Roig *et al.*, 2010), these findings strongly suggest that future initiatives aimed at increasing breastfeeding rates in Ireland should factor in the health-insurance status of the mother when targeting those least likely to consider this feeding method.

In addition to the importance of socio-economic factors affecting initiation, the qualitative results highlighted that women's beliefs in the superiority of breastfeeding, any previous experience of breastfeeding, and a desire to enhance 'bonding' with their infants, were motivating factors in the decision to breastfeed. Previous studies have suggested that a woman's personal belief in the advantages of breastfeeding and her conviction in the superiority of the method can have a positive effect on both initiation and duration (Earle, 2002; Brodribb *et al.*, 2007). The results from this study suggest that while this is true for initiation, breastfeeding is not sustained through consideration of its superiority when women are faced with considerable challenges.

The increased likelihood of breastfeeding a subsequent child after an initial exposure to breastfeeding (Nagy *et al.*, 2001; Colin & Scott, 2002) has been confirmed by the results of this study. However, while previous studies have demonstrated that a prior successful experience can motivate women to

breastfeed future infants (Manstead *et al.*, 1983; Wells *et al.*, 2002), the present study highlights that a previous negative experience can also encourage some mothers to breastfeed a subsequent infant. This is in contrast with Colin and Scott's (2002) findings that a previous unsatisfactory experience is a deterrent to breastfeeding again. The present findings highlighted that some women for whom previous exposures to breastfeeding a child had been unsatisfactory, had been prompted to breastfeed this infant, in an effort to 'get it right this time'. This finding confirms the importance of all breastfeeding experiences that a woman may have, regardless of the duration and perceived outcome (Humphreys *et al.*, 1998), and suggests that breastfeeding, even for a short duration, among mothers who plan to formula-feed may actually encourage future breastfeeding.

Similar to previous findings (Battersby, 2000; Bailey *et al.*, 2004), a culture of coercion to breastfeed was experienced by women in their antenatal encounters with midwives. This culture of pressure to breastfeed was pervasive and often at variance with the health promotion message of 'breast is best'. Undoubtedly, women in this study were aware of the underlying message that breastfeeding is the optimum method of feeding for infants, but there was clear evidence of 'message fatigue' as has been described previously by Hoddinott *et al.* (2010). Women in the present study viewed the widely adopted health promotion message of 'breast is best' (Stanway & Stanway, 1978) as a contributor to idealistic and often unrealistic notions of the ease of breastfeeding (Sheehan *et al.*, 2010). As Jean commented in her qualitative interview, '*You know it will be great, easy, and they latch straight on and great, just like that video*'. Addressing the disharmony between the dominant discourse for promoting breastfeeding and the realities of women's actual encounters is, therefore, a critical step in the continued promotion of breastfeeding both in Ireland and internationally. These findings highlight the need to re-evaluate the strategy of endorsing a singular 'breast is best'

message, in favour of assessing the individual information needs of women and their families in the antenatal period.

Undoubtedly, women continue to require information about breastfeeding in the antenatal period. However, it was disappointing to note that infant feeding was not discussed with many women during pregnancy (31%, n=550), and this is confirmed by the views of the women who participated in the qualitative part of the present study. Previous research has highlighted that breastfeeding often presents women with experiences that are incongruent with its common portrayal as natural and easy (Hoddinott & Pill, 1999; Schmied & Barclay, 1999; Mazingo *et al.*, 2000; Hauck & Irurita, 2003; Sheehan *et al.*, 2010). Results of this study support the need to present women, antenatally, with individualised and realistic expectations around experiences of breastfeeding in order to prepare them for the realities.

Findings from this study have confirmed that the messages currently conveyed around the superiority of breastfeeding also lead to significant guilt for women when they have a short and unsatisfactory breastfeeding encounter. It could be suggested, on the basis of these results, that a strategy of continuing to promote the advantages of breastfeeding in the absence of adequate levels of professional support to sustain its continuation is unethical and disrespectful to women (Guttman & Salmon, 2004). Issues relating to professional support will be discussed in the subsequent section.

Murphy (1999) has acknowledged that infant feeding is a 'moral minefield' (p.22), that carries considerable moral baggage. While this is particularly evident for women who choose formula-feeding over breastfeeding (Murphy, 1999), it is also apparent among women in the present study. The demand for an increase in risk messages and discussions around the inherent dangers of formula-feeding (Wolf, 2007) is also likely to be contributing to the moral



dilemmas that these women encounter. However, while it appears that no single approach to the promotion of breastfeeding is devoid of drawbacks and repercussions for women, there is a need to assess which messages are most likely to motivate initiation, and any such campaign must be underpinned by the professional support that will enable women to overcome any challenges that they encounter.

### ***7.3 Factors affecting duration of breastfeeding***

This study sought to determine what factors affect the duration of breastfeeding and assessed a large number of socio-economic, antenatal and postnatal factors that had been demonstrated in other contexts to be of interest.

Results indicated a rapid decline in breastfeeding rates in the first two weeks postpartum. Among mothers who discontinued breastfeeding between birth and completion of Phase 2, 35% (n=153) did so in the first two weeks. By one month, more than half of the mothers (55%, n=243) were exclusively formula-feeding.

Noteworthy was the finding that among those mothers who had switched to exclusive formula-feeding at 3-4 months, 81% said that they would like to have breastfed for longer. This finding demonstrates that, despite research consistently showing high rates of early discontinuation (McSweeney, 1986; Hurley & Fogarty, 1992; Tarrant, 2008), the majority of women in Ireland who commence breastfeeding do not set out with the intention of doing so for very short durations. Given that previous research suggests that intended length of breastfeeding is associated with actual duration (Vogel, 2003), there is an urgent need to support women to breastfeed for their desired longer durations. Alongside this, however, was the finding from the qualitative part of the current

study that when women cease breastfeeding due to difficulties, predetermined durations contribute to the sense of 'failure' and 'guilt' that women feel as a result of not reaching either their own targets or those set by the WHO's global recommendations to breastfeed exclusively for six months.

Previous research has noted that the idealism inherent in setting the duration of exclusive breastfeeding at six months conflicts with women's real experiences of breastfeeding (Hoddinott & Pill, 1999; Cooke *et al.*, 2003; Dykes *et al.*, 2003; Hauck & Irurita, 2003; Lavender *et al.*, 2005; Hoddinott *et al.*, 2010; Redshaw & Henderson, 2012). This study calls for a policy that would support the incremental setting of breastfeeding objectives, an approach which is more preferable to women than that of target setting, albeit laudable. A previous Irish study of the role of the public health nurse (PHN) also noted that satisfaction for women around breastfeeding related to meeting their own goals (Leahy-Warren *et al.*, 2009). The adoption of such a philosophy around breastfeeding objectives may, in turn, lead to a reduction in the sense of 'failure' which women in the present study attributed to not reaching their predefined targets. Nonetheless, a system that would encourage women to set their own breastfeeding targets, irrespective of that duration, would continue to require adequate support in order to meet those goals. The qualitative part of the present study, however, highlights significant deficiencies in the current level and quality of that support.

### **7.3.1 Impact of care on duration of breastfeeding**

In keeping with previous Irish (Tarrant, 2008) and United Kingdom research findings (Bolling *et al.*, 2007), breastfeeding was initiated by a higher proportion (62%) of mothers who attended antenatal classes. However, attendance among this sample was found to be associated with the socio-economic status of the mother, which is also a determinant of breastfeeding initiation. A lack of

antenatal education and information around breastfeeding has been attributed to early cessation in New Zealand (McLeod *et al.*, 2002); however, a Cochrane Review on the effect of antenatal education on duration concluded that although a combination of breastfeeding booklet plus video plus lactation consultant, was significantly better than routine care for exclusive breastfeeding at three months, the small sample size precluded recommending any one educational intervention over another (Lumbiganon *et al.*, 2011). Thus, in Irish settings, future studies are required to assess the effect of antenatal educational initiatives on breastfeeding initiation and duration. Such studies should control for socio-economic status, which the present study has shown to be a feature of women attending such programmes.

Factors relating to birth, postnatal care and support revealed that those mothers who had discontinued shortly after birth were more likely to have had a caesarean section or vacuum delivery. It has been noted in other studies that having a caesarean section is a risk factor for early cessation (Colin & Scott, 2002; Dewey *et al.*, 2003; Li *et al.*, 2005). Physiological reasons that have been suggested to contribute to this attrition include a delay of about one day in 'milk coming in' (Dewey *et al.*, 2003) and the post-operative pain associated with the procedure (Karlström *et al.*, 2007; Smith, 2007). Given that Ireland, like many countries, has seen a steady rise in this practice (Larkin *et al.*, 2012) this finding has implications for both mothers and maternity-care providers. Leung *et al.* (2002) have also previously noted that vacuum delivery was associated with 'early abandonment' of breastfeeding and it has been reasoned that this is likely to be as a result of perineal trauma and the discomfort felt by the baby following the procedure (Smith, 2007).

Results also revealed that the longer a mother stayed in hospital after birth the more likely she was to be combination-feeding at discharge from hospital. It should be noted that this may be attributed to mode of delivery, because

women who have caesarean births may have a longer stay than those who experience a normal birth. Nevertheless, the practice of supplementing breastfeeding infants in hospital is known to be a risk factor for early cessation and is frequently not medically indicated (Tender *et al.*, 2009).

### **7.3.2 Support services**

The impact of specific support services on breastfeeding duration was not assessed by the survey results. However, they do highlight the low level of access women had to the support services offered. Less than half of the mothers who breastfed initially were given any information about a community breastfeeding support group. This finding is disappointing given that over 150 Health Service Executive and voluntary breastfeeding support groups are available nationally (Health Service Executive, 2009).

The public health nurse (PHN) was the service that mothers most commonly cited as the support service accessed. PHNs in Ireland are population-based generalist nurses. They provide a community-based nursing service to all client groups within a defined geographical area (Primary Community and Continuing Care, 2009). Until 2007, a basic requirement for admission to the one-year Postgraduate Diploma in Public Health Nursing education was being both a Registered Midwife and a Registered General Nurse. In 2007 the requirement to be a Registered Midwife was abolished, and a specific maternal and child health nursing module for non-midwives was introduced (An Bord Altranais, 2005, 2007). Postnatal care following birth constitutes 6.4% of the PHN workload (Begley *et al.* 2004). A statutory universal visit should take place within 48 hours of discharge home from the maternity unit (Denyer, 2005).

The percentage of first visits actually achieved during this period varies significantly around the country, from 57% to 85% (DoHC, 2008). More recently,

the Office of the Nursing Services Director (2009) recommended extending the time specified to complete a primary visit from 48 hours to 72 hours. Staffing and economic constraints are also thought to be contributing to the failure to meet the target for home visits (Leahy-Warren *et al.*, 2009). This means that alongside the trend for a reduction in postnatal stays in hospital, some women do not receive any professional support for at least two to three days following discharge from hospital. A study of the role of the PHN in providing breastfeeding support to mothers has previously indicated that this service was not always sufficient to meet their postnatal support needs (Leahy-Warren *et al.*, 2009) and this is confirmed by the results of the present study. While some mothers valued the input of the PHN, there was a lack of responsiveness to the postnatal needs of women experiencing challenges with breastfeeding.

Dissatisfaction with postnatal support for breastfeeding was not confined, in this study, to the period after discharge. Accounts of women in the qualitative aspect highlight that the quality and level of postnatal support in the hospital was insufficient, resulting in women feeling isolated, abandoned and left to get on with breastfeeding by themselves. They felt they needed better instruction, more reassurance and longer time spent with them and some were clear that this experience was a direct influence on the decision to stop breastfeeding. Dykes (2005) has previously identified that the constraints of providing breastfeeding support in busy maternity units leads to 'unrelenting pressure' (p.249) on midwives' time, and results in an absence of many midwives taking time in their encounters with women. Maternity care in Ireland has become increasingly centralised leading to few opportunities for women to experience care beyond the maternity hospital. Accordingly, discontent with other aspects of care has been articulated (Larkin *et al.*, 2012), in a system that is described as 'grossly under resourced' (Devane *et al.*, 2007). Such difficulties and challenges are clearly demonstrated by women in the present study and suggest much

room for change in the structure and delivery of postnatal breastfeeding support.

The quantitative part of the study highlighted that women who had experienced a problem with breastfeeding since Phase 2 were most likely to report that no-one had helped them with the difficulties (n=46, 11%). This reinforces the lack of professional support available to women in both the long and short term while breastfeeding. Where they had received help, women reported in similar numbers that they had received help from a friend or relative (n=20, 5%), doctor or general practitioner (n=18, 4%) and PHN (n=18, 4%). The ease with which mothers could access services was found to have significantly affected any breastfeeding at six months.

The real reluctance to approach support services, among the participants in the qualitative part of this study, is a major area for future consideration. Breastfeeding support groups are provided in Ireland by a number of voluntary organisations (including La Leche League and Cuidiú), alongside those organised by maternity hospitals and PHNs. Despite the increase in the number of support services in recent years (Health Service Executive, 2009), women's narratives suggest that support services could not help them to overcome their own breastfeeding challenges, and there was also a sense that attendance might leave them open to criticism. Such views, and descriptions of La Leche League as 'hard core', have been highlighted previously by Bobel (2001). La Leche League was founded in 1954 and supports breastfeeding mothers in over 22 countries through helplines and support group meetings (La Leche League, 2000). The organisation promotes 'attachment parenting' and the long-term breastfeeding that may result from this, as well as encouraging full-time motherhood as a philosophy of parenting (Bobel, 2001). This has resulted in criticism of the organisation and its role in 'pushing women into socially-prescribed roles rooted in biological determinism' (Wall, 2001) (p.593). Women

in this study were also acutely aware of subliminal messages around breastfeeding and mothering.

Attendance at support groups requires the confidence and self-assurance to be able to talk openly in front of others (Hoddinott *et al.*, 2010). It could, therefore, be suggested that when difficulties have already occurred and women are feeling more '*vulnerable*' (Alison), this may not be the ideal time for them to engage with such a group. A previous study by Graffy *et al.* (2004) supports the need to be proactive in linking women with the appropriate support services before problems arise, rather than after they may have occurred.

Both La Leche League and a United Kingdom parenting charity, The National Childbirth Trust (NCT), have acknowledged that their membership does not reflect broader society, with most members coming from predominantly 'white, middle-class' backgrounds (La Leche League, 2000; Hoddinott *et al.*, 2009). This prompted the NCT (UK) to suggest recently that it was dropping 'its evangelical approach to breastfeeding' in an attempt to encourage more diverse participation in the organisation (Henry, 2012). Such evangelical attitudes towards breastfeeding may be acting as a deterrent to women who encounter breastfeeding difficulties. In particular, the findings from the present study highlight that women are fearful of the attitudes they may encounter towards the strategies that they have employed to overcome such challenges, such as the introduction of combination-feeding or expressing. Thus, the perceived, philosophically different positions of support groups and mothers regarding supplementation and duration of breastfeeding will have to be bridged if all breastfeeding mothers are to be encouraged to engage with such organisations.

Similarly, discourses around infant feeding and good/bad mothering (Murphy, 1999; Wall, 2001) and maternal responsibilities (Blum, 1999) would appear to present considerable conflicts for mothers when breastfeeding difficulties

become overwhelming and they are considering cessation. Women in the present study were concerned about no longer fulfilling the perfect mother role. Notions of 'good and bad' mothers being ascribed to infant feeding choices have previously been discussed in the context of women who choose formula-feeding from birth (Murphy, 1999). However, what the present study demonstrates is that such role concepts may be further heightened when a woman who considers breastfeeding to be best for her infant is forced to change that position.

For these women it seems evident that breastfeeding their infant is inextricably linked to being a 'good mother', and cessation compounds a sense of failure in both mothering abilities and the skill of breastfeeding.

Vivid accounts of personal failure and guilt were portrayed by women who had had a suboptimal encounter with breastfeeding. As has already been outlined, women defined this failure as not having achieved their breastfeeding goals in relation to the targets that they had set for themselves. Previous research has outlined 'persistence' as an important aspect of many women's encounters with breastfeeding (Bottorff, 1990). However, Janoff-Bulman and Brickman (1982) have suggested that the ability to recognise when persistence will, and will not, pay off is an essential skill for human existence. The capacity to realise when persisting with a particular endeavour is futile can protect people from wasting time on potentially unsolvable tasks. Conversely, when a person has 'failed' at a particular task, there is a tendency to expect subsequent failures at the same task (Bottorff, 1990). In addition, people with low expectancy for success are less likely to persist with tasks (Stockdale, 2001), following both success and failure (Janoff-Bulman & Brickman, 1982). While the present study did not assess any psychological theories related to breastfeeding, women's accounts of unanticipated early cessation are analogous with aspects of these theories. Future breastfeeding attempts among the qualitative participants



would be undertaken with an acute awareness of the risk of failure. Low expectancy for success was evident in their consistent attitudes of preparing themselves for subsequent breastfeeding failures. Previous research has demonstrated that the dominance of a formula-feeding culture has contributed to negative discourses about breastfeeding, even before the birth of the baby (Bailey *et al.*, 2004). Therefore, it is unsurprising that women who have had a negative encounter with breastfeeding would anticipate future difficulties. This finding illustrates the need to consider both previous experience and the cultural context in which breastfeeding takes place while planning and offering breastfeeding support services to women.

### **7.3.3 Cultural context of breastfeeding in Ireland**

Relatively unique to an Irish population was the finding that the busyness of the women's lifestyles and the demands of family life (25%, n=48) were the predominant reasons for discontinuing breastfeeding between 3-4 months and six months. This is consistent with Tarrant (2011) who also found that tiredness/frequent feeding/lack of freedom commonly featured as reasons for discontinuation of breastfeeding among women in Ireland. In other contexts it has been acknowledged that breastfeeding is an additional burden on the already demanding lives of women and their families (Lavender *et al.*, 2006). This suggests a need to address the psychosocial aspects of breastfeeding in order to assist Irish women and their families to integrate breastfeeding into daily life and hence, to extend the duration of breastfeeding.

Consistent with numerous other reports (Vogel & Mitchell, 1998; Colin & Scott, 2002; Lande *et al.*, 2003; Li *et al.*, 2004; Merten & Ackermann-Liebrich, 2004; Yeoh *et al.*, 2007; Gatti, 2008; Venancio *et al.*, 2008), many women in the present study perceived insufficient milk supply as a barrier to successful

breastfeeding and this was cited as the second most common reason for cessation.

The lack of facilities for, and embarrassment associated with feeding in public were also cited as reasons for discontinuing breastfeeding by Phase 3. Phase 2 findings had also confirmed that never having breastfed an infant in public at 3-4 months was associated with discontinuation of breastfeeding at this time. Additionally, over one third (39%, n=351) of breastfeeding mothers reported problems finding somewhere suitable to feed their infants in public. More worryingly, 11% (n=100) of women had been stopped from, or made to feel uncomfortable about, breastfeeding in a public place. The literature also suggests that embarrassment related to breastfeeding in public is a deterrent to initiation of breastfeeding for Irish mothers (Tarrant, 2008).

In the United Kingdom, there is some evidence to suggest that legislation to protect mothers who breastfeed in public may enhance women's experiences. Bolling *et al.* (2007) found that Scottish residents had the most positive experiences of breastfeeding in public among UK residents, in the same year that legislation had been introduced in that country to protect mothers breastfeeding in public (Hoddinott *et al.*, 2010). This suggests that similar legislation in Ireland may not only raise awareness of the problems around this issue, but may also lessen their impact as a deterrent to initiation and duration.

It has been suggested that the decision to breastfeed is influenced by the level of support offered by the woman's partner (Arora *et al.*, 2000; Earle, 2000; Scott *et al.*, 2004) and that mothers who perceive their environment to be supportive of breastfeeding are more likely to initiate breastfeeding (Kools *et al.*, 2005). Correspondingly, evidence suggests that when a woman perceives that her partner prefers breastfeeding, she is less likely to stop at any time,

than a woman who considers that her partner prefers formula-feeding (Scott *et al.*, 2001).

In the present study, a lack of support for breastfeeding, or wanting the partner to share feeding, were not commonly cited as reasons for discontinuation (5%, n=10). Women who participated in the qualitative part of the study also suggested that their partners were ambivalent about their decision to breastfeed and preferred to 'leave it up to them'. While this finding seems to conflict with previous studies (Scott *et al.*, 2004), and suggests that in an Irish context the partner is not important to the initiation of breastfeeding, analysis of women's accounts of early cessation highlight that women did look to their partners and mothers for affirmation of the decision to stop breastfeeding. This suggests that Irish men and grandmothers may have a pivotal role in either supporting women to continue or reducing the sense of failure or guilt that they experience, when they reach 'the tipping point'.

Social support in the form of grandmothers has been explored in Australia and the findings highlight challenges and dilemmas faced by grandmothers in their supportive role for the new mother in her breastfeeding and early parenting experience (Reid *et al.*, 2010). Support from grandmothers has also been suggested to be an important determinant of a mother's ability to cope with breastfeeding (Ekstrom *et al.*, 2003). Findings from the present study highlight that they also have a pertinent role in determining the duration of breastfeeding, as their affirmation of the challenges involved and the decision to switch to formula was an important validation for many of the qualitative participants. There was also evidence from Shannon's account of her interactions with her mother-in-law (section 6.3.2) that some grandmothers may unwittingly undermine the breastfeeding experience (Lavender *et al.*, 2006).

Qualitative findings also suggest that women place a lot of emphasis on the experiences of their friends and family, and the impact of their infant feeding decisions. This is also apparent in the survey results where those mothers who said that most of their friends breastfed their babies were more likely to breastfeed at birth (79%) than those whose friends and family used formula feed (47%). However, previous research has demonstrated that the influence of different, informal support sources is likely to vary depending on the woman's own social and cultural context (McInnes & Chambers, 2008; Barona-Vilar *et al.*, 2009). In particular, it has been suggested that the influence of family and friends is particularly evident among women from lower socio-economic groups (Hoddinott & Pill, 1999; Khoury *et al.*, 2005; McInnes & Chambers, 2008). In the present study, it has been demonstrated that the feeding habits and experiences of family and friends are also relevant to breastfeeding in Ireland.

Taken together, these findings reinforce the need to consider the multiple social perspectives that influence a woman in choosing to both initiate and continue breastfeeding. Most mothers considered some sort of support from their family or social network to be important, and findings from the present study and a previous research synthesis (McInnes & Chambers, 2008) suggest that it may be even more important to breastfeeding mothers than health service support, due to the continuous nature of the contact and the current pressures on postnatal services.

Despite the relative importance placed on informal support by women, interventions to improve both initiation and duration of breastfeeding through peer support have had limited success in other high-resource environments (Morrell *et al.*, 2000; Graffy *et al.*, 2004; Lavender *et al.*, 2005; Hoddinott *et al.*, 2009; Jolly *et al.*, 2012). The impact of such interventions on initiation and continuation is more pronounced in low- or middle-income countries, when delivered at high intensity (Britton *et al.*, 2007; Jolly *et al.*, 2012). A qualitative

synthesis (McInnes & Chambers, 2008) and a metasynthesis (Schmied *et al.*, 2011) of breastfeeding support have concluded that women still value social support over professional support however, those authors acknowledge that postnatal support from health professionals in the very early days of breastfeeding is required to combat early cessation.

Importantly, aspects of the postnatal support for breastfeeding that have been shown to be valuable to women include: continuity of care, consistent advice, facilitative approach and women-centred communication styles (Dykes, 2005; Schmied *et al.*, 2011; Redshaw & Henderson, 2012). Analysis for the qualitative part of this study, combined with the sharp drop in breastfeeding in the first two weeks, demonstrates that in Irish maternity care settings many of these desirable features of care are lacking. Inconsistent advice along with a lack of postnatal support for breastfeeding was reported. This has been reported by countless women in numerous other studies (Hoddinott & Pill, 1999, 2000; Hauck & Irurita, 2003; Brown *et al.*, 2005; Nelson, 2006; Cooke *et al.*, 2007; McInnes & Chambers, 2008; Frei & Mander, 2011; Redshaw & Henderson, 2012). It must also be acknowledged that organisational systems and services that facilitate continuity of caregiver are extremely limited in Ireland (Devane *et al.*, 2007). However, a recent evaluation of midwifery-led care in the Health Service Executive North Eastern Area (the MidU study) did not find any statistical difference in breastfeeding initiation related to midwifery-led care compared to consultant-led care and concluded that, in common with the present findings, midwifery support for breastfeeding was insufficient (Begley *et al.*, 2009).

Many of the women in the qualitative part of the present study gave birth in Baby Friendly Accredited hospitals, one of the aims of which programme is to train all staff in breastfeeding management, so that advice offered to mothers is consistent. The reality of the situation, however, raises questions about the

value and efficacy of this aspect of the Baby Friendly Hospital Initiative (BFHI) in meeting this aim. In particular, it suggests that the education of staff is not reducing the conflicting messages that women are continuing to receive from health professionals. Overall, there is limited evidence that the BFHI (UNICEF, 2007) is effective in prolonging the duration of breastfeeding beyond the first postnatal week (Kramer *et al.*, 2001; Broadfoot *et al.*, 2005; Pincombe *et al.*, 2008; Hoddinott *et al.*, 2009). In Ireland, despite Government endorsement of the initiative (Department of Health & Children, 2005) there is no evidence that implementation of the BFHI has led to increases in initiation or duration. Given that this remains the primary focus of the national strategic plan, there is an urgent need to assess the implementation and effectiveness of BFHI in this setting.

#### **7.3.4 Guilt and breastfeeding**

Early cessation of breastfeeding among the participants in the qualitative study led to considerable feelings of guilt and remorse at having stopped. This is congruent with a previous study by Mazingo *et al.* (2000) where participants shared a sense of failure, guilt, and had lingering self-doubts about not continuing with breastfeeding. Mairead's account from the present study typifies the feelings that mothers encountered, irrespective of the duration of breastfeeding: '*I felt really disappointed and consumed with guilt*' (section 6.5.1). This guilt has repercussions for future breastfeeding attempts and for the woman's wider social circle. Guilt and persistent doubts lead to a process whereby women begin to resolve these feelings by reconciling their decision to stop and reducing the dissonance between cessation and their beliefs about the superiority of breastfeeding. Consequently, many question the advantages of breastfeeding, and the associated negative or risk associations of formula-feeding. This, in turn, may impact not only on their own views but also on the advice offered to friends and family about feeding their infants. Women felt a

need to justify cessation continually in order to reduce the guilt that they encountered.

What these findings have clearly demonstrated is that guilt is not an affective emotion for sustaining breastfeeding. Hence, this raises questions about the effective promotion of breastfeeding and, in particular, about strategies that endorse the presentation of risk and associated connotations of formula-feeding in direct opposition to breastfeeding. Such messages, while factually correct, contribute to the guilt experienced by women who stop breastfeeding after they encounter challenges that they are unable to overcome due to lack of support and a lack of persistence.

Barclay *et al.* (1997) have highlighted guilt as a common feature of becoming a mother, particularly when seeking support from others, as women feel they should be able to cope on their own. This may also partially account for the experiences of the qualitative participants in this regard.

### **Challenges relating to breastfeeding and cessation**

Consistent with other studies, nipple pain was the predominant problem encountered (51%, n=459) by women in the early days of breastfeeding, with a further 32 mothers citing cracked nipples in the other responses (Bolling *et al.*, 2007).

Blocked ducts were also prevalent, representing 18% of reported problems. While nipple pain is consistently reported in the literature as a common breastfeeding difficulty, the rate of blocked ducts in this study is significantly higher than that reported in the United Kingdom infant feeding survey (10%) (Bolling *et al.*, 2007). There is a lack of research examining the incidence, risk

factors, causes, and treatment for plugged breast ducts (Campbell, 2006), hence the reason for the prevalence in the present study is unknown.

While these problems impact negatively on the breastfeeding experiences of women, consistent with previous research they were not reliable indicators of cessation (Bottorff, 1990; Cooke *et al.*, 2003; Campbell, 2006). Those mothers who encountered no breastfeeding problems were just as likely (and in some instances, more likely) to have switched to exclusive formula-feeding in the present study.

### **7.3.5 Pain and its consequences for breastfeeding mothers**

While reports of painful nipples did not impact upon weaning in the survey results, the qualitative results highlight that pain may have significant and long-lasting implications for mothers when considering future infant feeding choices. Although not empirically tested, it is evident from women's accounts that perceptions of pain can determine the 'possibility' or 'impossibility' of any subsequent breastfeeding attempts. 'Universal impossibility' can be defined as a sense among individuals that something will always be impossible for them (Janoff-Bulman & Brickman, 1982). Jean and Emily both viewed pain as intrinsic to breastfeeding, thus they anticipated that future attempts would also be unsuccessful (section 6.6.3). In contrast, women who understood the reasons for pain during breastfeeding were more likely to consider breastfeeding as 'possible' in the future.

Women in this study also gave vivid accounts of breastfeeding pain experienced by others, which highlights the need for women to understand why pain may occur as they, in turn, share these accounts with other women. This could be described as the socially normative effect of suboptimal breastfeeding.



In the 1990s, breastfeeding textbooks began to suggest that pain was not a normal phenomenon during breastfeeding and this message was passed on to women who were consistently told to reposition the baby if this occurred (Bernshaw, 1992). Hence, the literature pertaining to pain during breastfeeding predominantly focuses on the incidence, causes and interventions to relieve pain (Morland-Schultz & Hill, 2005). Consequently, Amir *et al.* (1996) is the only published study looking specifically at the psychological aspects of pain associated with lactation and they concluded that it led to high levels of emotional distress. Findings from the present study, Amir *et al.* (1996) and an Australian study by Schmied and Barclay (Schmied & Barclay, 1999) describe considerable levels of distress associated with breastfeeding that are rarely acknowledged by contemporary discourses. These warrant exploration and consideration beyond professional recognition of incorrect positioning, in order to understand the real and lasting impact of pain on women's experiences of breastfeeding. This study has demonstrated the need for health professionals to assess this issue in greater depth and to provide women with clear and consistent information about the cause of pain during breastfeeding. Furthermore, suggestions that significant levels of pain during breastfeeding are 'normal' must be discouraged as they undermine women's confidence in their breastfeeding and militate against subsequent attempts.

### **7.3.6 Insights gained from mixing methods**

In this study, the quantitative survey provides comprehensive data on breastfeeding prevalence, meeting the study's aims. While the survey also provides data on the factors affecting initiation and duration, it does not provide insight into the experiences of breastfeeding mothers. Collectively, the analysis provides an understanding of the importance of the sociocultural aspects of breastfeeding in Ireland.

In particular, the mixing of methods provided pertinent information on the need to reassess the quality and delivery of information being provided to women around the optimum duration of breastfeeding. The survey and the qualitative data demonstrate that the vast majority of Irish women fall short of the recommended target of six months exclusivity for a variety of reasons. This study has shown that the factors are complex and will require a multifaceted approach in order to improve these outcomes.

Additionally, the mixing of methods highlighted that the individual nature of breastfeeding requires much more input and support from skilful communicators with time to respond to a woman's individual needs. Despite a number of survey questions focusing on support, this pertinent finding was not evident from these singular results. Similarly, while it is acknowledged that further research is required, the importance of pain on women's breastfeeding experiences could only be appreciated following the mixing of methods.

These findings indicate the need for interventions challenging the multifaceted nature of breastfeeding decisions which would not have been established with a single method. The knowledge that has been gained from this design has justified the use of mixed methods for this study.

### **7.3.7 Limitations**

As is the case with the majority of scientific research, there are limitations to the current study which should be taken into account when drawing conclusions from the results. It is impossible to know if this sample is representative of women in Ireland, without more data on the non-respondents, but the congruence with the findings of other research and with demographic data for Ireland is re-assuring. However, it is possible that over-sampling of women who were breastfeeding at birth may have occurred. Some

midwives in distributing the questionnaire may have interpreted the focus of the survey as being to assess breastfeeding rates and, therefore, may have been more inclined to give the Phase 1 questionnaire to women who were breastfeeding rather than those who were formula feeding. In addition, women who were breastfeeding may have been more motivated to respond to a questionnaire of this type.

There was wide variation in response rates among the different sites. It is impossible to be certain that non-responses have not introduced bias into the findings. However, the large number of women who took part still provides extremely useful, unique data for understanding breastfeeding in Ireland at the end of the first decade of the twenty-first century. The low sample size achieved in some units, limits the ability to make broader generalisations from the results. Strategies to improve recruitment that have been shown to increase participation in postal surveys (Edwards *et al*, 2007), such as offering small unconditional monetary incentives at the beginning of the study, were not possible due to the financial constraints on this study.

The large number of analyses undertaken in the quantitative part of this study may have increased the likelihood of false positive results and thus call for some caution in the interpretation of statistically significant associations. Such multiple comparisons have been suggested to be a necessity in public health research surveys (Ottenbacher, 1998). The use of multivariate analyses in this thesis was employed as a strategy to overcome the possibility of producing such errors in the results, and has been suggested to lessen such effects (Azen & Walker, 2010).

The qualitative aspect of this study included a small sample of English-speaking women and therefore the findings may not be transferable to different settings. Nevertheless, the findings present vivid accounts of women attempting to

reconcile their breastfeeding experiences after a short and sub-optimal encounter. These experiences provide useful insights into the organisation and structure of breastfeeding promotion and support that is required to enhance services, so that women who plan to breastfeed for longer durations can be assisted to meet their own breastfeeding goals and targets.

#### **7.4 Conclusion**

This study presents pertinent data on the factors affecting initiation and duration of breastfeeding in Ireland and has fulfilled the stated objectives. It has identified and discussed the wide range of issues that impact upon women's infant feeding choices and shown that the duration of breastfeeding in Ireland remains critically low at birth, 3-4 months and particularly, at 6 months.

This study has demonstrated multiple social and cultural factors pertinent to initiation and duration and has implications for breastfeeding promotion and policy together with delivery of existing antenatal and postnatal services. Findings question the endorsement of the Baby Friendly Hospital Initiative as a primary strategy to improve rates and supports the need to review both the current national breastfeeding strategy and local delivery of breastfeeding services.

There is a need to increase professional understanding of the complex and diverse circumstances within which women make infant feeding decisions, with a clear need to share the realities of the breastfeeding experience and re-evaluate the provision of effective breastfeeding support for postnatal women.

Ultimately, the data have shown that the factors affecting initiation and duration of breastfeeding in Ireland must take cognisance of each woman's unique social and the cultural context. Failure to recognise the distinctive role

of these factors has resulted in minimal increases in breastfeeding rates in recent years, and requires immediate and priority attention if future generations of Irish children are to obtain the optimum nutritional start.

## **7.5 Recommendations**

### **Promotion of breastfeeding**

The most recent national strategy on promotion of breastfeeding in Ireland was published in 2005 and was due for revision in 2010. While some of its targets and recommendations have been achieved, many have not. It also lacks co-ordination of promotion strategies and a clear vision for dissemination of appropriate information on breastfeeding to women and their families. It relies heavily on the implementation of the Baby Friendly Hospital Initiative (BFHI) as a primary means of improving breastfeeding initiation and duration in Ireland. Achieving breastfeeding as the norm in a society that now readily accepts that infant formula is at least as good as breastmilk, is a much more complex process that will require a coordinated, multifaceted approach from a wide range of sources if it is to succeed.

Women understand the message that 'breast is best' but feel pressurised by the alternative message that formula feeding is risky. This consequently leads to guilt when they are unsupported to maintain breastfeeding in the postnatal period. Guilt is not an effective emotion for sustaining breastfeeding in women with postnatal challenges.

**It is recommended that:**

- a comprehensive, national system of monitoring breastfeeding rates at predetermined intervals is set up, to assess the ongoing success of breastfeeding promotion strategies on initiation and duration rates.
- strategies that women use to help them to cope with the challenges inherent in breastfeeding, be investigated through research; these include the use of pumping as an alternative to feeding at the breast and the use of combination feeding as a substitute to cessation.

**Support for breastfeeding**

Findings from this study suggest that due to factors including increasingly high workloads, chronic midwife shortages and shorter postnatal stays, women's postnatal breastfeeding needs are not being met. Current postnatal support is ineffective in supporting women to breastfeeding when faced with challenges during this period. Redefining services and postnatal care, is now critical to breastfeeding outcomes. Qualitative data from this research also suggest that women would like additional antenatal education regarding the realities of breastfeeding and potential breastfeeding problems and challenges.

In addition to the support from health professionals, there exists a need for all existing voluntary breastfeeding organisations to ensure that they are encouraging and facilitating the needs of all breastfeeding mothers and not just those who plan to exclusively breastfeed for the recommended duration.

**It is recommended that:**

- postnatal support be re-evaluated and tailored to meet the needs of women who have committed themselves to breastfeeding in order to

provide them with the knowledge, skills and mastery to sustain breastfeeding and meet their own breastfeeding objectives

- specific antenatal and postnatal education strategies be designed to inform women of the realities of breastfeeding and potential breastfeeding problems, challenges and solutions.
- further education is provided to improve midwives' self awareness and communication skills in relation to encouraging women to breastfeed without exerting undue pressure.
- irrespective of previous infant feeding experience, all breastfeeding mothers receive support in the initial days following birth and continued help from midwives is following discharge from hospital.
- primigravid mothers receive breastfeeding support at every feed in the first few days to reduce the incidence of feeding challenges at this time.
- the coverage and accessibility of breastfeeding support service to women at all stages of breastfeeding be reviewed, to ensure that lactation problems are identified early.
- consideration should be given to the establishment of a 24 hour telephone service providing access to suitably trained breastfeeding supporters.
- maternity facilities and public health nurses work to establish greater links with community breastfeeding support groups to ensure seamless services.
- some consideration should be given to funding the establishment of sustainable, financially supported, walk-in breastfeeding support cafes available to all new mothers in the community.

### **Pain and breastfeeding**

Findings from the present study highlight the need to explore the impact of pain on women's experiences of breastfeeding further. This study has

demonstrated that health professionals require the skills to assess and give women clear and consistent information and advice about pain during breastfeeding.

It is recommended that:

- further research is conducted to explore the impact of pain on women's experiences of breastfeeding
- messages to women that significant levels of pain during breastfeeding are 'normal' must be discouraged, as they are undermining women's confidence in their breastfeeding and mediate against subsequent attempts.

### **Changing the culture of breastfeeding in Ireland**

It is recommended that:

- an ongoing and sustainable campaign be instituted and monitored, to encourage the owners of public places such as restaurants, parks, childcare facilities and shopping centres to provide suitable facilities for women who are breastfeeding.
- consideration should also be given to the enactment of legislation to protect breastfeeding in Ireland.

It is hoped that this research and its ensuing recommendations will result in improved understanding of the needs of breastfeeding mothers, to ensure optimal health outcomes for mothers and infants. Achieving these recommendations designed to promote, support and change the culture of breastfeeding in Ireland will begin to bring about the significant shift required, to improve rates of breastfeeding initiation and duration.



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<b>Appendix 1.</b>	5. How are you feeding your baby today?
<b>Confidential National Infant Feeding Survey 2008</b>	Breast only <input type="checkbox"/>
This information will not be shared with anyone outside of the study group.	Formula <input type="checkbox"/>
Your Name:.....	Combination of breast/formula/water <input type="checkbox"/>
Home Address:.....	Expressed breast milk <input type="checkbox"/>
.....	My baby is not feeding yet <input type="checkbox"/>
Phone Number:.....Your Date of Birth:.....	6. If your baby is more than two days old, how were you feeding him/her at 48hrs?
Your baby's date of birth:..... Today's Date:.....	Breast only <input type="checkbox"/>
1. Is your baby in the special care unit or at another hospital?	Formula <input type="checkbox"/>
Yes <input type="checkbox"/>	Combination of breast/formula/water <input type="checkbox"/>
No <input type="checkbox"/>	Expressed breast milk <input type="checkbox"/>
2. Before your baby was born, how did you plan to feed her/him?	My baby was not feeding at 48hrs <input type="checkbox"/>
Breast <input type="checkbox"/>	My baby is less than 48hrs old <input type="checkbox"/>
Formula <input type="checkbox"/>	7. What is your nationality?
Combination of breast and bottle <input type="checkbox"/>	Irish <input type="checkbox"/>
I Hadn't decided <input type="checkbox"/>	British <input type="checkbox"/>
3. What kind of food did your baby receive for his/her first feed after birth?	Polish <input type="checkbox"/>
Breast <input type="checkbox"/>	Lithuanian <input type="checkbox"/>
Formula <input type="checkbox"/>	Nigerian <input type="checkbox"/>
My baby is not feeding yet <input type="checkbox"/>	Other .....
4. How old was your baby at his/her first feed?	8. What age were you when you finished full-time education? .....
Less than 30 minutes old <input type="checkbox"/>	9. What is your occupation?
Between 30 minutes and 1 hour <input type="checkbox"/>	.....
More than 4 hours <input type="checkbox"/>	10. What is the occupation of the baby's father?
My baby is not feeding yet <input type="checkbox"/>	.....
	<b>Thank you for taking the time to complete this survey.</b>

<div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-right: 5px;"></div> <div style="border: 1px solid black; width: 20px; height: 20px; display: inline-block; margin-left: 5px;"></div>	<p><b>Confidential</b></p>	<p><b><u>Who is conducting the study?</u></b> The survey is being conducted by researchers from the School of Nursing and Midwifery, Trinity College Dublin on behalf of the Health Services Executive.</p>
<p><b>National Infant Feeding Survey 2008</b></p>	<p><b><u>What is the study about?</u></b> The purpose of the survey is to identify current feeding practices including what and how mothers feed their babies</p>	
	<p><b><u>What do I have to do?</u></b> Please complete the questions in this survey and put it in the box.</p> <p><b><u>Will I be contacted again?</u></b> We would like to contact you again in a few months time to find out how you are feeding your baby as he or she gets older. That is why at the beginning of the survey we have asked you to give us your contact details.</p>	<p>If you require any further information about the survey please call <u>01 8963874 / 3553</u>. The success of this research depends entirely on your participation so we do hope that you will be able to take part.</p>
<p>We have been asked by the Health Services Executive to conduct a confidential infant feeding survey among all new mothers in Ireland</p> <p>The success of this research depends entirely on your participation so we do hope that you will be able to take part.</p>	<p><b><u>Is the information I give confidential?</u></b> Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence.</p> <p>No information that you provide will be passed on to anyone outside the research team.</p> <p><b>Thanks you very much for your help</b></p>	<p><b><u>What approval does this study have?</u></b> This study has received research ethical approval from the research ethics committee Faculty of Health Sciences, University of Dublin Trinity College.</p> <p><b><u>Where can I get more information or ask questions about the study?</u></b> You are free to ask any questions about the study or about being a participant and you may contact the researcher on the below contact details if you have further questions.</p>

**Appendix II**

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**Confidential**

**National Infant Feeding Survey  
2008**

**Phase Two**

---

If for some reason your baby is no longer with you or you do not wish to complete the questionnaire, please tick one of the following boxes and return the questionnaire so that we do not contact you again.

My baby is no longer with me

I do not wish to complete the  
questionnaire



If you need any further information about the survey please call 01 8963874 or 01 8963553.

**Is the information I give confidential?**

Yes. No information that you provide will be passed on to anyone outside the research team. Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence.

**Changing address?**

If you have changed your address or are planning to change address soon. Please provide your new address so that we may contact you again if necessary

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**How to fill in this questionnaire**

1. If you had twins or a multiple birth, please answer these questions for the baby who was born first.
2. There are 5 sections in this questionnaire.

**Please complete Section 1 and 2.**

**Then follow the instructions that apply to you.** This will mean you only fill in the questions that apply to you.

2. Most of the questions can be answered by putting an X in the box next

to the answer that applies to you.

**Example**

Yes  1

No  2

3. At a number of questions, it says you can put an X in more than one box.

***Please put an X in one or more boxes***

4. Sometimes you are asked to write the answer in your own words.
5. Sometimes you are asked to write in a number. Please enter numbers as figures rather than words.

**Example**

***Please give your answer in days***

Days

6. If you find that you cannot answer a particular question, please write in why (for example “don’t know”, “can’t remember”).
7. When you have finished, please post this questionnaire to us in the free post envelope provided, even if you are not able to answer all of it.

**Thank you very much for your help.**

**Section 1. About your baby**

**Q1 What is your baby's first name?**

.

\_\_\_\_\_

**Q2 How old is your baby?**

. Please write the numbers in the boxes  
for the whole weeks and any additional days

Whole weeks plus any additional days

Weeks and  Days

**Q3 Is this your first baby?**

.

Yes  <sub>1</sub>

No  <sub>2</sub>

**Q4 Is your baby one of twins, triplets or other multiple births?**

.

No  <sub>1</sub>

Yes, twin  <sub>2</sub>

Yes, triplet or other multiple birth  <sub>3</sub>

**If you have twins or triplets, please answer these questions for the baby who was born first**

---

**Q Was your baby admitted a special or intensive care baby unit after  
5 birth?**

.

Yes  1

No  2

---

**Q Which of the following best describe the reason why your baby was  
6 admitted?**

.

**Please put an X  
in all boxes that apply**

My baby was not admitted to special or intensive care

baby unit  1

Premature  2

Jaundice  3

Breathing difficulty  4

Meconium at the delivery  5

Low blood sugars  6

Unwell  7

Others (please cross and write in)  8

---

**Q7. Does your baby use a soother or dummy?**

Yes  <sub>1</sub>

No  <sub>2</sub>

**Q8. How old was your baby to the nearest weeks or days when you first gave it to them?**

Number of days

Days

Or in whole weeks plus any additional days  and   
Weeks Days

My baby has never used a soother or dummy

---

**Q9. Do you give your baby anything other than breast or formula milk for example water, baby rice, fruit or juices?**

Yes  <sub>1</sub>

No  <sub>2</sub>

---

**Q10. If solids / spoon feeds are already introduced, how old was your baby to the nearest weeks when you first gave solids (anything other than breast or formula milk) to them?**

Weeks

---

---

**Q11. Has your baby suffered from any of the following problems?**

**Please put an X  
in all boxes that apply**

- My baby has never been sick or had any problems  1
- Sickness or vomiting  2
- Constipation  3
- Diarrhoea  4
- Chest infection  5
- Ear infection  6
- Urinary tract infection  7
- Colic or wind  8
- Thrush  9
- Not gaining enough weight  10
- Gaining too much weight  11
- Others (please cross and write in)  12
-

**Section 2. About you**

**Q12. Thinking back to before you had your baby, how did you plan to feed her / him?**

- Formula feed  1  
Breastfeed  2  
Breastfeed and formula feed  3  
Had not decided  4

---

**Q13. Why did you think you would feed your baby by this method?**

Please write in all your reasons

---

**Q14. What type of antenatal care did you receive?**

- I did not have antenatal care  1  
Midwife led care  2  
Hospital based antenatal care  3  
Hospital based antenatal care and GP care  4  
Semi-private care  5  
Private antenatal care from a consultant obstetrician  6  
Care from an independent midwife  7

---

**Q15. Did anyone discuss feeding your baby with you during pregnancy?**

Yes  1

No  2

---

**Q16. Who discussed feeding your baby with you?**

Midwife  1

Obstetrician  2

GP  3

Practice Nurse  4

Public Health Nurse  5

Others (please cross and write in)  6

---

**Q17. While you were pregnant did you attend any antenatal classes?**

Yes  1

No  2

---



---

**Q18. While you were pregnant with this baby, did you receive any information about the health benefits of breastfeeding?**

Yes  1

No  2

---

**Q19. Where did you receive this information from?**

I did not receive any information about the benefits  1

Partner/mother/other family members  2

Friend  3

Midwife  4

Obstetrician  5

GP  6

Public Health Nurse  7

Practice Nurse  8

Magazine /book /leaflet  9

TV /radio  10

Somewhere/someone else (please cross and write in)  11 \_\_\_\_\_

---

**Q20. How have your friends and family fed their children when they were babies?**

Most of them give formula milk  1

Most of them breastfeed  2

About half of them formula feed and half breastfeed  3

Don't know  4

---

**Q21. How were you fed when you were a newborn baby?**

Breastfed  1

Formula fed  2

Don't know  3

---

**Q22.**

**Was your baby born in hospital or at home?**

Hospital

Home

---

**Q23.**

**How long after the birth of your baby did you stay in hospital?**

Please give your answer in days

My baby was born at home

---

---

**Q24. On the day that you left hospital (or at 48 hours if you had a home birth), what most accurately describes how you were feeding your baby?**

**Please put an X**

**in one box only**

- Breast  1  
Formula  2  
Combination of breast and bottle (formula)  3  
Expressing breastmilk  4  
My baby was not feeding when I went home  5  
Can't remember  6

---

**Q25. Thinking about the birth itself, what type of delivery did you have?**

- Normal  1  
Forceps  2  
Vacuum extraction (ventouse or suction)  3  
Caesarean section  4

---

**Q26. While you were in labour, what kind of pain relief did you have, if any?**

- Epidural or spinal injection  1  
Pethidine  2  
Gas and air to breath (Entonox)  3  
A general anaesthetic  4  
Water  5  
TENS  6  
Nothing at all  7

---

**Q27. How much did your baby weigh when they were born?**

**Please give your answer in pounds and in ounces or in Kilograms**

Either in pounds (lbs) and ounces

lbs

Or in kilograms

---

**Q28. Did you have skin to skin contact with your baby after they were born (in the first hour after birth)?**

Yes  <sub>1</sub>

No  <sub>2</sub>

Can't remember  <sub>3</sub>

---

**Q29. What is the main reason that led you to choose the way you fed this baby?**

Please write in your reason

---

**Q30. If you had previous children, how did you feed them?**

This is my first baby  <sub>1</sub>

Combination    Breast only    Formula only

Eldest child	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>1</sub>	<input type="checkbox"/> <sub>1</sub>
Second eldest child	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>2</sub>	<input type="checkbox"/> <sub>2</sub>
Third eldest child	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>3</sub>	<input type="checkbox"/> <sub>3</sub>
Fourth eldest child	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>4</sub>	<input type="checkbox"/> <sub>4</sub>

---

**Q31. If you had another baby, how do you think you would feed that baby?**

Breast  1

Formula  2

Combination of breast and formula  3

---

**Q32. If you are aware of any health benefits of breastfeeding for you as a mother, please write them in below?**

---

**Q33. If you are aware of any health benefits of breastfeeding for the baby, please write them in below?**

---

**Q34. Have you ever seen an advertisement on television, radio or in a magazine for infant formula?**

Yes  1

No  2

---

**Q35. Have you ever seen an advertisement on television, radio or in a magazine for breastfeeding?**

Yes  1

No  2

---

**Q36. Since you had your baby, has anyone given you information on how to get help with feeding your baby if you need to?**

Yes  1

No  2

---

**Q37. How old was your baby when the Public Health Nurse first came to visit?**

Please give your answer in

Days

---

**Q38. Thinking about the most helpful information you received about feeding since your baby was born. Who or what had the most impact on you?**

**Please put an X  
in all boxes that apply**

- Own experience  1
  - Friends / other mothers  2
  - Partner  3
  - Your mother  4
  - Mother-in-law  5
  - Sister  6
  - Other relatives  7
  - Health professionals (midwife / nurse / G.P)  8
  - Peer or support groups  9
  - Voluntary organisations (Cuidiú, La Leche League)  10
  - Books /magazines / TV  11
  - Others (please cross and write in)  12
-

---

**Q39. In the early days of feeding your baby, did you have any help at home with you?**

**Please put an X  
in all boxes that apply**

- My partner was a great help  <sub>1</sub>
- My partner had to return to work so I did not get as  
much help as I would have liked  <sub>2</sub>
- My mother / relative came to stay  <sub>3</sub>
- I live with my family who helped out  <sub>4</sub>
- I lived with my family but did not get as much help as I  
would have liked  <sub>5</sub>
- I live alone but had a lot of help  <sub>6</sub>
- I live alone and did not get as much help as I would have  
liked  <sub>7</sub>
- I employed someone to help me at home in the early  
days  <sub>8</sub>
- I am able to use my private health insurance to pay  
someone to help me  <sub>9</sub>
- I didn't feel that I needed any help  <sub>10</sub>
- Others (please cross and write in)  <sub>11</sub>
-

---

**Q40. Do you have private health insurance?**

Yes  <sub>1</sub>

No  <sub>2</sub>

---

**Q41. What is your place of birth? Please write in the county if you were born in Ireland. Otherwise, please write in the country.**

Please write in one letter per box

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**Q42. What is your nationality?**

Please write in one letter per box

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**Q43. Where did you usually live one year ago?**

Please write in one letter per box

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**Q44. What is your current marital status?**

- Single (never married)  1  
Married (first marriage)  2  
Re-married (following  3  
widowhood/divorce/ annulment)  4  
Separated  5  
Divorced  6  
Widowed
- 

**Q45. What is your ethnic background?**

- Irish  1  
Irish traveller  2  
African  3  
Chinese  4  
Any other white background  5  
Any other black background  6  
Any other asian background  7  
Other, including mixed background  8  
Others (please cross and write in)  9

---

**Q46. Have you finished your full time education?**

- Yes  1  
No  2  
If yes, please write in the age at   
which you ceased  
Years
-

**Q47. What is the highest level of education (full-time or part-time) which you have completed to date?**

<sub>1</sub> No formal education

<sub>2</sub> Primary school education

<sub>3</sub> Lower secondary Junior/Intermediate/Group certificate, 'O' levels/ GCSE, NCVA Foundation certificate, basic skills training certificate, or equivalent

<sub>4</sub> Upper secondary Leaving certificate – applied and vocational programmes, 'A' levels, NCVA level 1 certificate, or equivalent

<sub>5</sub> Technical or Vocational qualification Completed apprenticeship, NCVA level 2/3 certificate, Teagasc certificate, Diploma, or equivalent

<sub>6</sub> Both Upper secondary and Technical or Vocational qualification

<sub>7</sub> Third level non degree National certificate, Diploma NCEA / Institute of Technology or equivalent, Nursing Diploma

<sub>8</sub> Primary degree Third level Bachelor degree

<sub>9</sub> Professional qualification Of degree status at least

<sub>10</sub> Both degree and a professional qualification

<sub>11</sub> Postgraduate certificate or diploma

<sub>12</sub> Postgraduate degree Masters

<sub>13</sub> Doctorate PhD

---

**Q48. How would you describe your main employment status just before you had your baby?**

- Working for payment or profit  1  
Looking for first job  2  
Unemployed  3  
Student or pupil  4  
Looking after home family  5  
Unable to work due to permanent sickness / disability  6  
Others (please cross and write in)  7

---

**Q49. Do (did) you work as an employee or are (were) you self-employed in your main job?**

- Employee  1  
Self-employed, with paid employees  2  
Self-employed, without paid employees  3  
Assisting relative / other (not receiving a fixed wage or salary)  4  
Looking after home/family  5
-

---

**Q50. What was your occupation in your main job?**

Please describe the occupation fully and precisely  
giving your full job title

---

**Q51. Are you doing any paid work at the moment?**

- Yes  1  
On paid maternity leave  2  
On unpaid maternity leave  3  
No  4

---

**Q52. Do you plan to start work again within the next  
two years?**

- Yes, full-time  1  
Yes, part-time  2  
No  3  
Don't know  4  
Working at the moment  5



**Thank you for completing the questionnaire so far**

If you have been **fully formula feeding** your baby from birth, **please go to the next page**

If you were **breastfeeding or expressing breastmilk** for your baby at birth (even if this was for a short time), please skip to **page 15**

---

**Section 3. Mothers of babies who were formula feeding from birth**

**Q53. Did anybody show you how to prepare formula feeds during pregnancy or after your baby was born?**

Yes  1

No  2

---

**Q54. Who was this?**

Nobody showed me how to prepare feeds  1

Midwife  2

Midwifery student  3

Nursing student  4

Public Health Nurse  5

Friend  6

Family member  7

Partner  8

Others (please cross and write in)  9

---

**Q55. When making up formula feeds for your baby, do you usually .....**

Make up one feed at a time as you need it  1

Make up several feeds at a time and store them  2

Only ever use ready to feed formula  3

---

**Q56. When making up formula feeds for your baby, do you usually .....**

Use water that has just boiled  1

Use water that has been left to cool for 30 minutes  2

Use water that has been left to cool for longer than 30  
minutes  3

---

Use water from the tap  4

Use bottled water  5

Others (please cross and write in)  6

---

**Q57. Who or what helped the most in assisting you to bottle  
feed your baby?**

Own experience  1

Friends / other mothers  2

Partner  3

Your mother  4

Mother-in-law  5

Other relatives  6

Health professionals (midwife / nurse/ public Health

Nurse / GP)  7

Peer or support group  8

Voluntary organisations (Cuidiú, La Leche League)  9

Books / magazines / TV  10

Others (please cross and write in)  11

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---

**Q58. Who or what helped the least in assisting you to bottle feed your baby?**

- Own experience  1
  - Friends / other mothers  2
  - Partner  3
  - Your mother  4
  - Mother-in-law  5
  - Other relatives  6
  - Health professionals (midwife / nurse/ public Health  
Nurse / GP)  7
  - Peer or support group  8
  - Voluntary organisations (Cuidiú, La Leche League)  9
  - Books / magazines / TV  10
  - Others (please cross and write in)  11 \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
- 
-



---

If you were **formula feeding your baby from birth then you have completed** the questionnaire.

Please return it in the envelope provided.



If you would be willing to take part in an interview about infant feeding please tick the box provided.

Thank you very much for taking the time to complete this questionnaire

Please complete the following questions if you were **breastfeeding your baby at birth or expressing breastmilk** (even if this was for a short time).

---

**Section 4. Mothers of babies who were breastfeeding at birth**

**Q59. During the first few days, did anyone show you how to put the baby to the breast?**

Yes  1

No  2

---

**Q60. Who was this?**

I was not shown  1

Midwife  2

Nurse  3

Midwifery student  4

Friend / relative  5

Doctor  6

Maternity care assistant  7

Other (please cross and write in)  8

---

**Q61. Did they stay with you while you were breastfeeding?**

I was not shown  1

Stayed the whole time until the baby fell asleep  2

Left once the baby was feeding but came back to check on  
you  3

Left once the baby was feeding  4

Left before the baby had started feeding  5

---

**Q62. How useful did you find this help at the time?**

I was not given any help at all at this time  1

Extremely useful  2

Very useful  3

Not very useful  4

Not useful at all  5

---

**Q63. If your baby had any fluids (water or formula) other than breastmilk in the early days of breastfeeding, was it because you were advised to or because you wanted your baby to have it?**

Advised to give something else  1

I wanted to give my baby something else  2

I only gave my baby breastmilk in the early days of feeding  3

---

**Q64. Did your baby stay beside you at all times while you were in hospital?**

Yes  1

No  2

My baby was born at home  3

---

---

**Q65. Were there any problems breast feeding your baby in the early days?**

Yes  1

No  2

**If so, what were they?**

---

**Q66. Did anyone give you help with these problems in the early days?**

I didn't have any problems  1

Midwife helped me  2

Nurse helped me  3

Lactation consultant or dedicated breastfeeding midwife

in hospital helped me  4

Public Health Nurse helped me  5

Private lactation consultant helped me  6

Doctor / GP helped me  7

Friend / relative helped me  8

Member of local support group helped me  9

Other (please cross and write in)  10

---

**Q67. In the two weeks after you left hospital, did you receive any home visits from any of the following?**

Community midwife  1

Public Health Nurse  2

Independent midwife  3

GP  4

No visits in the first two weeks  5

**If you received visits, how many did you receive?** Please write in the number in the box

---

**Q68. Were you given information about any of the following to help with breastfeeding after you went home?**

I was not given any information about support services

- Community mothers programme  1
  - Cuidiú (Irish Childbirth Trust)  2
  - La Leche League  3
  - Community breastfeeding support group  4
  - Association of Lactation Consultants in Ireland  5
  - Private lactation consultant  6
  - Contact details for Public Health Nurse  7
  - Others (please cross and write in)  8
  - 9
-

---

**Q69. How easy was it for you to find breastfeeding support services?**

- I did not seek any support services  1
- Very easy  2
- Easy  3
- Fairly easy  4
- Difficult  5
- Very difficult  6
- I was unable to access support services  7

---

**Q70. Which of the following breastfeeding support services did you use?**

- I did not use any support services  1
- Community mothers programme  2
- Cuidiú (Irish Childbirth Trust)  3
- La Leche League  4
- Community breastfeeding support group  5
- Hospital breastfeeding support group  6
- Association of Lactation Consultants in Ireland  7
- Private lactation consultant  8
- Public Health Nurse  9
- Others (please cross and write in)  10 \_

---

**Q71. If you accessed any breastfeeding support services, please tell us about how helpful these services were.**

- I did not access any support services  1
- Excellent  2
- Very good  3
- Satisfactory  4
- Poor  5
- Very poor  6
-

---

**Q72. Thinking about the milk and other fluids that your baby has had in the last 7 days, have they had ....**

- Only breast milk  1  
Combination of breastmilk and  2  
water or juices  3  
Only infant formula  4  
Combination of breastmilk and   
infant formula milk

---

**Q73. Thinking about the milk and other fluids that your baby has had in the 24 hours, have they had ....**

- 
- Only breast milk  1  
Combination of breastmilk and water or  2  
juices  3  
Only infant formula  4  
Combination of breastmilk and infant formula  5  
milk
-

---

**Q74. How old was your baby when they were first given infant formula?**

Either in days

Days

Or in weeks

Weeks

My baby was never given infant formula  1

---

**Q75. Since your baby was born, what best describes how often you have given him or her infant formula?**

I have never given my baby infant formula  1

Almost all feeds  2

About half of all feeds  3

One or two feeds a day  4

A few feeds a week, but not every day  5

A few feeds since they were born but not every week  6

Only once or twice since they were born  7

---

**Q76. Since your baby was born, have you had any of the following as a result of breastfeeding?**

Mastitis  1

Blocked ducts  2

Thrush  3

Nipple pain  4

Other (please cross and write in)  5

None of the above  6



---

**Q77. Since your baby was born, have you ever fed him/ her in a public place?**

No - never fed in a public place  1

Yes – breastfed in a public place  2

Yes – bottle fed infant formula in a public place  3

Yes – bottle fed expressed breastmilk in a public place  
 4

---

**Q78. Have you ever had problems finding somewhere to breastfeed your baby in a public place?**

I have never tried to breastfeed my baby in a public place

Yes  1

No  2

3

---

---

**Q79. Have you ever been stopped or made to feel uncomfortable about breastfeeding in a public place?**

I have never breastfed my baby in a public place  1

Yes  2

No  3

---

**Q80. Have any of the following things ever put you off or discouraged you from breastfeeding in a public place?**

I never tried to feed my baby in a public place  1

Not feeling confident enough  2

Being stopped or asked not to breastfeed  3

Being made to feel uncomfortable by other people  4

Lack of a suitable place available to breastfeed  5

Concerns about hygiene in public places  6

Baby wouldn't always feed when you try  7

Other (please cross and write in)  8

---

**Q81. Since your baby was born, did anyone advise you not to breastfeed or to stop breastfeeding to take a prescribed medication?**

Yes  1

No  2

---

**Q82. Which of the following best describes breastfeeding your baby?**

I would like to have breastfed for longer  1

I am breastfeeding for as long as I had intended  2

I have breastfed for longer than I had intended  3

---

---

**Q83. Who or what helped you most to continue breastfeeding?**

- Own experience  1
  - Friends / other mothers  2
  - Partner  3
  - Your mother  4
  - Mother in law  5
  - Other relatives  6
  - Health professionals (midwife/nurse/Public Health Nurse/GP)  7
  - Peer or support group  8
  - Voluntary organisation (Cuidiú, La Leche League)  9
  - Books / magazines / TV  11
  - Others (please cross and write in)
-

---

**Q84. Who or what helped you least to continue breastfeeding?**

- Own experience  1
  - Friends / other mothers  2
  - Partner  3
  - Your mother  4
  - Mother in law  5
  - Other relatives  6
  - Health professionals (midwife / nurse / Public Health
    - Nurse / GP)  7
    - Peer or support group  8
    - Voluntary organisation (Cuidiú, La Leche League)  9
    - Books / magazines / TV  10
    - Others (please cross and write in)  11
- 



If you are **still breastfeeding** your baby, then you have **completed** the questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in an interview about infant feeding, please tick the box provided.

Thank you very much for taking the time to complete this questionnaire.

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**Please continue to complete the following questions if you were**  
**breastfeeding your baby at birth**  
**but**  
**you now use only formula feeding**

---

**Section 5. Mothers who breastfed at birth but are now fully formula feeding**

**Q85. How old was your baby when he / she was last given breastmilk or you put your baby to your breast?**

Please give your answer to the nearest number of weeks or days

Either in days

Days

Or in whole weeks plus any additional days

and

Weeks

Days

**Q86. If you planned to and started breastfeeding, what were your reasons for stopping breastfeeding?**

Please write in all your reasons

**Q87. Who or what influenced you to stop breastfeeding?**

Own experience  1

Friends / other mothers  2

Partner  3

Your mother  4

Mother in law  5

Other relatives  6

Health professionals (midwife/nurse/Public

Health Nurse/GP)  7

Peer or support group  8

Voluntary organisation (Cuidiú, La Leche League)  9

Books / magazines / TV  10

Others (please cross and write in)  11

**Appendix III**

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**Confidential**

**National Infant Feeding  
Survey 2008**

**Phase Three**

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If for some reason your baby is no longer with you or you do not wish to complete this questionnaire, please tick one of the following boxes and return the questionnaire so that we do not contact you again.

My baby is no longer with me

I do not wish to complete the questionnaire

If you need any further information about the survey please call 01 8963874 or 01 8963553

**Is the information I give confidential?**

Yes. No information that you provide will be passed on to anyone outside the research team. Your participation is entirely voluntary. Any information that you give will be treated with the strictest confidence.

### **Changing address?**

If you have changed your address or are planning to change address soon, please provide your new address so that we may contact you again, if necessary.

---

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### **Will I be contacted again?**

If you do not return the questionnaire, we will contact you again, in a few weeks time, by letter and/or by phone to remind you to complete this questionnaire.

If you indicated on the last questionnaire that you would like to take part in an interview, we may contact you again shortly to see if you are still interested in taking part.

### **How to fill in this questionnaire**

1. If you had twins or a multiple birth, please answer these questions for the baby who was born first.

2. There are Three 3 sections in this questionnaire.

**Please complete Section 1 and 2.**

**Then follow the instructions that apply to you.** This will mean you only fill in the questions that apply to you



- 
- 3** Most of the questions can be answered by  
· putting an X in ONE of the boxes relevant to you.

**Example**

Yes  <sub>1</sub>

No  <sub>2</sub>

- 
- 4** At a number of questions, it says you can put an  
· X in more than one box.

***Please put an X in one or more boxes***

- 
- 5** Sometimes you are asked to write the answer in  
· your own words.

***Please write in all your reasons***

- 
- 6** Sometimes you are asked to write in a number.  
· Please enter numbers as figures rather than words.

**Example**

***Please give your answer in days***

**5**

Days

- 
- 7** If you find that you cannot answer a particular  
· question, please write in why (for example  
“don’t know”, “can’t remember”).

- 
- 8** When you have finished, please post this  
· questionnaire to us in the free post envelope  
provided, even if you are not able to answer all  
of it.

---

**Thank you very much for your help.**

---

**Section 1. About your baby**

**Q1. How old is your baby?**

Please write the numbers in the boxes

for the whole weeks and any additional days

Whole weeks plus any additional days

Weeks  and Days

**If you have twins or triplets, please answer these questions for the baby who was born first**

**Q2. Thinking about the milk and other fluids that your baby has had in the last 7 days, has he / she had ....**

Only breastmilk  1

Combination of breastmilk and water or juices  2

Only infant formula milk  3

Combination of breastmilk and infant formula milk  4

Combination of breastmilk, infant formula milk and water

or juices  5

Combination of infant formula milk and water or juices

6

**Q3. Thinking about the milk and other fluids that your baby has had in the last 24 hours, has he / she had ....**

Only breastmilk  1

Combination of breastmilk and water or juices  2

Only infant formula  3

Combination of breastmilk and infant formula milk  4

Combination of breastmilk, formula milk and water or

juices  5

Combination of formula milk and water or juices  6

---

**Q4. When your baby was six months old (24 weeks) which of the following best describes his or her type of feeding?**

Breastmilk only (no other food or fluids)  1

Formula milk only (no other food or fluids)  2

Breastmilk and other fluids (e.g. formula milk,  
juice or water but no solid foods)  3

Formula and other fluids (e.g. juice or water  
but no solid foods)  4

Breastmilk and solid foods or spoon feeds  5

Formula milk and solid foods or spoon feeds  6

Breastmilk, solid foods or spoon feeds and  
other fluids (e.g. formula milk, juice or water)  7

Formula milk, solid foods or spoon feeds and  
other fluids (e.g. juice or water)  8

---

---

**Q5. Since you filled out our last questionnaire, what best describes how often you have given your baby infant formula?**

- I have never given my baby infant formula  1
- All feeds  2
- Almost all feeds  3
- About half of all feeds  4
- One or two feeds a day  5
- A few feeds each week, but not every day  6
- A few feeds, but not every week  7
- Only once or twice  8

---

**Q6. If you give your baby fluids other than breastmilk, how old was your baby to the nearest number of weeks when you gave them any kind of fluid other than breastmilk?**

Weeks

My baby has never had any fluids other than  
breastmilk

---

**Q7. If you give your baby drinks other than milk, is this mainly...?**

- I don't give my baby drinks other than milk  1
- Because he/she is thirsty  2
- To give him/her extra vitamins  3
- To help his/her colic/wind/hiccups  4
- To help his/her constipation  5
- To settle him/her  6
- Some other reason (please cross and write  
in)  7

---

**Q8. If you give your baby infant formula and breastmilk, please tell us the main reason why you started to give your baby infant formula along with breastmilk?**

Please write in all your reasons

---

**Q9. If you give your baby solids or spoon feeds, how old was your baby to the nearest number of weeks when you first gave solids foods to her / him?**

Weeks

My baby has never had solids or spoon feeds

---

**Q10. Has your baby suffered from any of the following problems**

**Please put an X**

**in all boxes that apply**

My baby has never been sick or had any  1

problems  2

Sickness or vomiting  3

Constipation  4

Diarrhoea  5

Chest infection  6

Ear infection  7

- Urinary tract infection  8
- Colic or wind  9
- Thrush  10
- Not gaining enough weight  11
- Gaining too much weight  12

Others (please cross and write in)

**Section 2. About you**

**Q11. Since you completed the last questionnaire, has anyone given you information on how to get help with feeding your baby if you need to?**

- Yes  1
- No  2

**Q12. Thinking about the most helpful information you received about feeding since your baby was born. Who or what had the most impact on you? Please put an in all boxes that apply**

- Own experience  1
- Friends / other mothers  2
- Partner  3
- Your mother  4
- Mother-in-law  5
- Sister  6
- Other relatives  7
- Health professionals (midwife / public health nurse /practice nurse/ G.P)  8
- Peer or support groups  9
- Voluntary organisations (Cuidiú, La Leche League)  10
- Books /magazines / TV  12

Others (please cross and write in)

---

**Q13. Where or from whom did you get advice or information about when to give your baby solid foods?**

Nobody gave me any advice  1

Own experience  2

Friends / other mothers  3

Partner  4

Your mother  5

Mother-in-law  6

Sister  7

Other relatives  8

Health professionals (midwife / public health nurse  
/practice nurse/ G.P)  9

Peer or support groups  10

Voluntary organisations (Cuidiú, La Leche League)  11

Books /magazines / TV  12

Others (please cross and write in)  13

---

**Q14. Do (did) you work as an employee or are (were) you self-employed in your main job?**

Employee  1

Self-employed, with paid employees  2

Self-employed, without paid employees  3

Assisting relative / other (not receiving a fixed wage or  
salary)  4

Looking after home/family  5

---

---

**Are you in paid work at the moment?**

Yes  <sub>1</sub> **Go to Q16**

No  <sub>2</sub> **Go to Q20**

---

**Q16. How many hours a week do you work?**

Less than 15  <sub>1</sub>

Between 15 and 30  <sub>2</sub>

31 or more hours  <sub>3</sub>

Varies  <sub>4</sub>

---

**Q17. What age was your baby when you returned to work?**

Less than 3 months  <sub>1</sub>

Less than 4 months  <sub>2</sub>

Less than 5 months  <sub>3</sub>

Less than 6 months  <sub>4</sub>

Less than 7 months  <sub>5</sub>

More than 7 months  <sub>6</sub>

---



---

**Q18. How is your baby cared for while you are at work?**

- Childminder/nanny  1
- Workplace crèche or nursery  2
- Other crèche or nursery  3
- Husband or partner  4
- The child's grandparents(s)  5
- Another relative  6
- Friend  7
- Baby is cared for by me at work  8
- Other person or place (please cross and write in)  9

---

**Q19. Does your employer provide facilities at work for you to express milk, or breastfeed your baby?**

- Yes - to express milk  1
- Yes - to breastfeed  2
- No - neither  3
- Don't know  4

---

**Q20. Do you plan to start work again within the next year?**

- Yes, full-time  1
  - Yes, part-time  2
  - No  3
  - Don't know  4
-

---

**Q21. Which of the following best describes breastfeeding your baby?**

- I would like to have breastfed for longer  1
- I am breastfeeding for as long as I had intended  2
- I have breastfed for as long as I had intended  3
- I have breastfed for longer than I had intended  4

---

**Q22. Were there any problems breast feeding your baby since our last questionnaire?**

- Yes  1
- No  2

**If so, what were they?**

---

---

**Q23. Did anyone give you help with these problems?**

- I didn't have any problems  1
- No one helped me with these problems  2
- Lactation consultant helped me  3
- Breastfeeding midwife in hospital helped me  4
- Public Health Nurse helped me  5
- Private lactation consultant helped me  6
- Doctor / GP helped me  7
- Friend / relative helped me  8
- Member of local support group helped me  9
- Other (please cross and write in)  10

---

**Q24. How easy was it for you to find breastfeeding support services?**

- I did not seek any support services  1
- Very easy  2
- Easy  3
- Fairly easy  4
- Difficult  5
- Very difficult  6
- I was unable to access support services  7

---

**Q25. Which of the following breastfeeding support services did you use?**

- I did not use any support services  1
- Community mothers programme  2
- Cuidiú (Irish Childbirth Trust)  3
- La Leche League  4
- Community breastfeeding support group  5
- Hospital breastfeeding support group  6
- Association of Lactation Consultants in Ireland  7
- Private lactation consultant  8
- Public Health Nurse  9
- Others (please cross and write in)  10

---

**Q26. If you accessed any breastfeeding support services, please tell us how helpful these services were.**

- I did not access any support services  1
- Excellent  2
- Very good  3
- Satisfactory  4
- Poor  5
- Very poor  6

---

**Q27. Since our last questionnaire, have you had any of the following as a result of breastfeeding?**

- Mastitis  1
- Blocked ducts  2
- Thrush  3
- Nipple pain  4
- Other (please cross and write in)  5
- None of the above  6

---

**Q28. Who or what helped you most to continue breastfeeding?**

- Own experience  1
- Friends / other mothers  2
- Partner  3
- Your mother  4
- Mother in law  5
- Other relatives  6
- Health professionals (midwife/public health nurse/practice nurse/GP)  7
- Peer or support group  8
- Voluntary organisation (Cuidiú, La Leche League)  9

Books / magazines / TV  10

Others (please cross and write in)  11

---

**Q29. Who or what helped you least to continue breastfeeding?**

Own experience  1

Friends / other mothers  2

Partner  3

Your mother  4

Mother in law  5

Other relatives  6

Health professionals (midwife / public health nurse/  
practice nurse/ GP)  7

Peer or support group  8

Voluntary organisation (Cuidiú, La Leche League)  9

Books / magazines / TV  10

Others (please cross and write in)  11

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If you are **still breastfeeding** your baby (even if only occasionally), then you have **completed** the questionnaire.



Please return it in the envelope provided.

If you would be willing to take part in an interview about infant feeding, please tick the box provided.

Thank you very much for taking the time to complete this questionnaire.

---

**Please continue to complete the following questions if you were breastfeeding your baby at birth**

**but**

**you now use only formula feeding**

---

**Section 3. Mothers who breastfed at 3-4 months but are now fully formula feeding**

**Q30. How old was your baby when he / she was last given breast milk or you put your baby to your breast?**

Please give your answer to the nearest number of weeks and days

Whole weeks plus any additional days  and   
Weeks Days

---

**Q31. What were your reasons for stopping breastfeeding?**

Please write in all your reasons

---

**Q32. Who or what influenced you to stop breastfeeding?**

- Own experience  1
- Friends / other mothers  2
- Partner  3
- Your mother  4
- Mother in law  5
- Other relatives  6
- Health professionals (midwife/public health nurse/**practice** nurse/GP)  7
- Peer or support group  8
- Voluntary organisation (Cuidiú, La Leche League)  9
- Books / magazines / TV  10

Others (please cross and write in)  11

---

**Q33. What, if anything, would have helped you to continue breastfeeding?**

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Thank you very much for taking the time to complete this questionnaire.

Please return it in the envelope provided.

If you would be willing to take part in an interview about infant feeding please tick the box provided.



## Appendix IV

XX XX 2008

### National Infant Feeding Survey 2008

Dear Mother

We recently sent you a questionnaire asking for information on how you have fed your baby since birth. We are writing to encourage you to complete the questionnaire and return it to us as soon as possible.

This confidential national infant feeding survey will provide information about infant feeding when babies are 48hrs old and again at three to four months. The survey is being conducted by researchers from the School of Nursing and Midwifery, Trinity College Dublin on behalf of the Health Services Executive. The success of this research depends entirely on your participation so we do hope that you will be able to take part.

The information that you give will be treated in strict confidence by us. It will be used only for the purpose of the study.

We do hope that you will be able to participate in this research. If you feel unable to complete the questionnaire please return it anyway and we will not bother you any further. If you have any questions about the survey, **please call 01 8963874/ 3553.**

If you have already completed and returned the questionnaire to us, thank you for your help and we apologise for troubling you again.

Thank you very much for your help with this important study.

Yours sincerely,

Louise Gallagher  
Lecturer in Midwifery

**On behalf of the national infant feeding survey 2008 research team:**

**Professor Cecily Begley, Ms. Margaret Carroll, Ms Louise Gallagher, Ms. Sally Millar, Professor Mike Clarke**

**Appendix V: Paradigm model displaying Axial Coding for**

Illustration of Axial coding for category ‘antecedents to cessation’

Context: After birth, women began to experience the realities of breastfeeding			
Causal Conditions	Actions/Interactions	Consequences	
<ul style="list-style-type: none"> <li>• How early feeding is experienced</li> <li>• How postnatal period is perceived</li> <li>• Mode of delivery</li> <li>• How and when information and support is conveyed</li> <li>• Level of confidence</li> <li>• Where they give birth</li> <li>• Length of stay (mode of delivery)</li> <li>• How mother feels about interaction with HP's</li> <li>• Feeling isolated</li> </ul>	<ul style="list-style-type: none"> <li>• Postnatal tiredness</li> <li>• Influence of others</li> <li>• Social norms</li> <li>• Coping with difficulties</li> <li>• Feeling isolated (trial and error)</li> <li>• Seeking information and consistency of same</li> <li>• Enjoying breastfeeding or not</li> <li>• Information sources</li> <li>• Positive and negative postnatal experiences</li> <li>• Attitudes towards support services</li> <li>• Role of PHN</li> <li>• Seeking formal and informal support</li> </ul>	<ul style="list-style-type: none"> <li>• Tiredness</li> <li>• Isolation of father</li> <li>• Lack of knowledge, information and confidence</li> <li>• Sense of isolation</li> <li>• Focusing on strategies to manage difficulties</li> <li>• Problem solving</li> <li>• Mother or baby are ‘good’ or ‘bad’ at breastfeeding</li> <li>• Perseverance with difficulties or after isolated event</li> <li>• Early cessation</li> </ul>	
Intervening Variables: Previous experience, reconciling			

**Appendix V: Contd**

Illustration of Axial coding for category 'cessation of breastfeeding'

Context: Women discontinued breastfeeding sooner than they had intended			
	Causal Conditions	Actions/Interactions	Consequences
	<ul style="list-style-type: none"> <li>• Demands of breastfeeding</li> <li>• Other children</li> <li>• Knowledge of strategies to manage difficulties</li> <li>• How breastfeeding is experienced</li> <li>• Experience of pain</li> <li>• Night time feeding pattern</li> </ul>	<ul style="list-style-type: none"> <li>• Support for breastfeeding (practical, informational and emotional)</li> <li>• Persistence with breastfeeding</li> <li>• Belief in ability of mother or baby to breastfeed</li> <li>• Frustration and tiredness</li> </ul>	<ul style="list-style-type: none"> <li>• Isolation and sense of trial and error</li> <li>• Lack of confidence in ability</li> <li>• Decision making and need for self determination over decisions</li> <li>• 'giving up'</li> <li>• Guilt and inadequacy</li> </ul>
Intervening variables: Postnatal support, Guilt and Reconciling			

Appendix VI: An example of NVivo coding for selected codes

A When I got home, I persevered at it and I did find it difficult, I never found it easy and after 3 weeks, they say that you should at least try 8 weeks anyway and then you kind of start getting into it or it becomes easier or something. But I did ring the Le Leche League and I spoke to a woman on the phone or I think they rang me back, somebody rang me back and you know she was very helpful and everything, you know but its difficult when you haven't got somebody there with you.

Q **Ok**

A But a woman that we know is actually a breast feeding consultant in [Hosp name] and we didn't know her very well but we bumped into her when I was in hospital and she said if you have any problems to give her a ring, so I gave her a ring and she came out to the house and she was very good. I had fierce problems getting him latched on because he was kind of, I think because of my nipples as well, I don't know, he was.

Q **What would happen?**

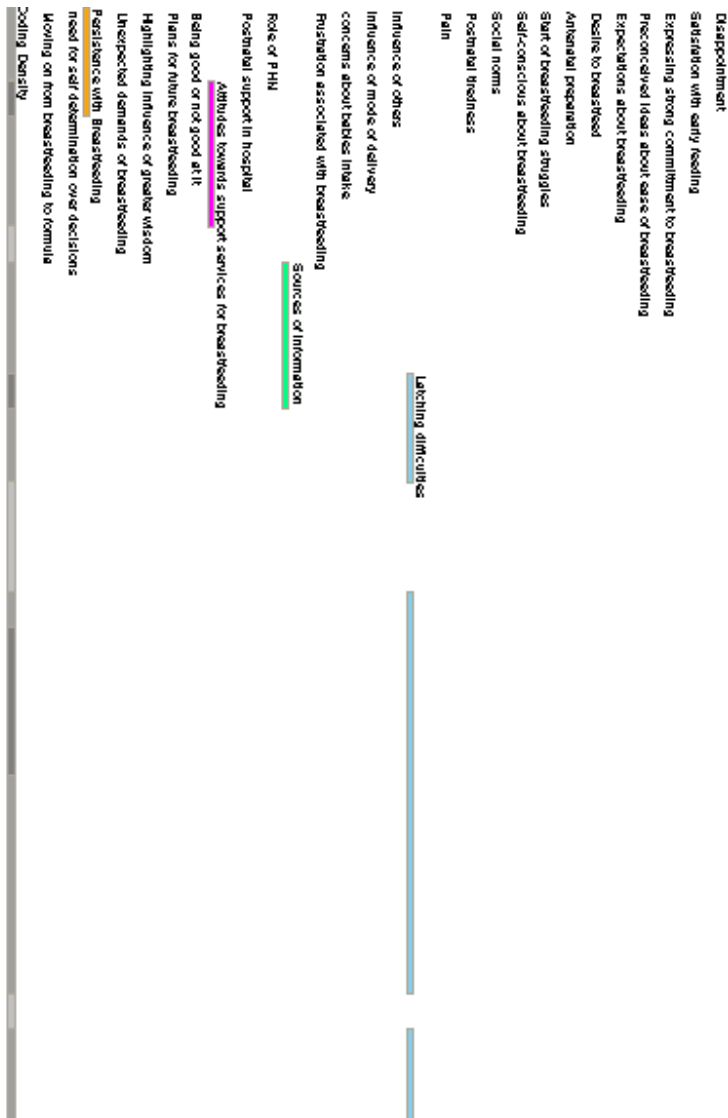
A What would happen with trying to get him latched on?

Q **Yeah**

A He'd be very hungry or whatever and he'd be flaying and his arms would be and I'd try and get him latched on and then, because its all about trying to, I'd read books and stuff and its all about trying to get the breast into their mouth in a certain way so I was kind of preoccupied with that because if I didn't do it that way then I knew he wasn't getting anything, the milk wasn't coming out. And I just found that really hard, that he would be flaying and I'd just get him latched on or something and... (interruption)... I would just have him latched on and kind of fall off again and then I'd try the other breast and I just, I found it really, really difficult, I don't know, my breasts are quite large anyway and obviously they were a lot larger then and I think, I don't know, a culmination of that and the flat nipples, really kind of, I found it difficult.

Q **Like everything was going against you**

A Yeah and I mean like sometimes when I fed him and it went really well you know, I did use actually, I did use nipple shields and they recommended those in



Appendix VI: An example of NVivo coding for selected codes

A That was probably, I think after 3 days I just couldn't, it was just, my nipples were too sore, the pain I probably could have put up with but the nipples were just so sore.

Q **Really and did you get anything other than the herbal remedy or any other.**

A No, no and it worked, it was fine, it worked, there's a great fruit, seed extract, I can't remember what it's called and I applied that and he actually got thrush in his mouth as well and a little bit on his bum, I did get him the Daktarin but I used the herbal stuff and I did find that it worked.

Q **It got rid of it.**

A Yeah.

Q **Can you tell me about, can you remember about the decision to stop, was it sudden or was it coming on for a while or how did that come about.**

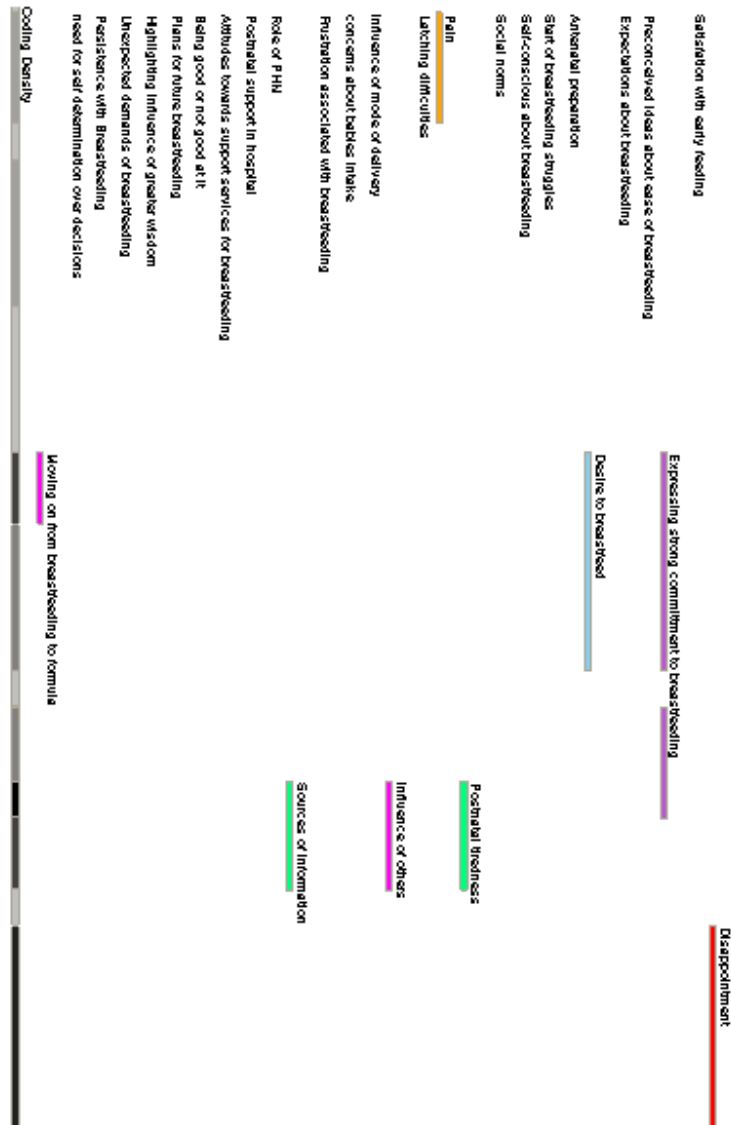
A I was finding it difficult anyway and I think the thrush kind of was the spur I needed to give up and then I felt terrible because I was determined, I was so determined that I was going to breast feed him for 6 months or whatever. And I didn't realise that it was going to be so difficult to start with and I didn't, then I suppose the pain of the thrush and everything, I mean I didn't want to stop but yet I did (laugh).

Q **I know.**

A I was so determined to start with but I suppose I didn't feel like a failure but it was a bit like ah you know breast is best is what you hear and I really didn't want to give him formula, now he did have the odd bottle of formula in hospital, the nurses said to give it to him because he just wanted to suckle all the time and I was getting no sleep so (laugh). It was to give me a rest kind of thing.

Q **And do you remember when you did actually stop, how you felt about it.**

A Yeah I felt terrible about it, I didn't want to stop and I remember we bought our first box of formula, reading it and reading the ingredients thinking oh god what am I doing, I just felt really guilty but I spoke to lots of different people and everyone was saying look you know we were all probably raised on formula, well a lot of us were and people do it all the time.



**Is your baby due in April 2008?**  
**Confidential National Infant Feeding Survey**



**Dear Mum and Dad to be: we need your help with the 2008 survey of infant feeding in Ireland.**

This confidential survey will provide information about infant feeding in all Irish maternity units when babies are 48hrs old and again at three or four months.

If your baby is born in the month of April you will be asked in hospital to complete a short questionnaire when your baby is about 48hrs old about how your baby is feeding.

So if you have your baby in April make sure that you have the opportunity to take

Your participation is entirely voluntary and any information that you give will be treated with the strictest confidence.

No information that you provide will be passed on to anyone outside the research team.

The survey is being conducted by researchers from the School of Nursing and Midwifery, Trinity College Dublin on behalf of the Health Services Executive.

The success of this research depends entirely on your participation so we do hope that you will be able to take part.

If you require any further information about the survey, please call 01 8963874 / 3553

The questionnaire will be available in different languages. Please ask the midwife on the postnatal ward for more information.

## **Appendix VIII: Opt out letter to qualitative participants**

xx Nov 2009

<b>National Infant Feeding Survey 2008</b>
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Dear [name],

Thank you for taking part in the National Infant Feeding Survey in 2008 when [name] was born and again at around 4 months old. Your questionnaire indicates that you may be willing to take part in an interview about infant feeding and once again I would like to thank you for your interest.

We were overwhelmed with the generous response from mothers who indicated that they would be willing to participate in interviews and I will be randomly selecting women who are still interested in January 2010.

I am writing to you now to give you the opportunity to let me know if you no longer want to take part, or to let me now if for some reason, your baby is no longer with you. Please call the number below and leave a message so that we do not contact you again.

If you have any further questions you may contact me by calling 01 8963874.

Thank you very much for your help with this important research.

Yours sincerely,

Louise Gallagher  
Doctoral student

## **Appendix IX: Participant information sheet**

**Study Title: Factors affecting initiation and duration of breastfeeding in Ireland**

**Investigator: Louise Gallagher**

This information sheet contains information that may help you decide if you would like to take part the interview.

### **What this study is about**

In 2008 you participated in the National Infant Feeding Survey after the birth of you baby and again at around 3-4 months. This study will provided information about infant feeding in Ireland and I want to undertake interviews to explore further issues that it is not possible to explore adequately by questionnaire. The purpose of this study is to evaluate the infant feeding decisions of Irish mothers who stopped breastfeeding sooner than they had intended. I hope these interviews will provide me with information to enable maternity services to offer more effective support. The feedback you provide will help us gain an understanding of your views and experiences. The success of this research depends entirely on your participation so we do hope that you will be able to take part.

### **What will my participation involve?**

Taking part will involve talking to me on 1 occasion at a time and place that is convenient to you. This can be in your home if preferred.

### **Do I have to participate?**

No, participation is voluntary. You would are free to stop the interview at any time. If you decide not to participate you will not be asked why, and there will be no consequences because of this.



**What will happen to the information interview?**

Once the interview is over, the information on the tape will be transcribed onto paper so I can read it and begin the process of looking at the information for common meanings between participants.

**Where will the information be stored and for how long?**

The tape recording will be stored in a locked drawer in my workplace. The tape recording will then be transferred to a password protected computer. Any subsequent printed transcripts of the interviews will also be stored in a locked drawer. At no stage will your name appear on the interview tape or the transcript. Each participant will be allocated a code number/pseudonym. Each tape recording and written transcript will be given a number for identification purposes. I am the only person who will know the number corresponding to your name and I will not divulge this to anyone. This means that you will not be identifiable from the information you provide.

**Who will have access to the information?**

The only people who will have access to the tape-recording are the researcher and the person who types up the tape recordings, who will assure us of confidentiality in data recording and storage. At no stage will your name appear on the tape or in the transcript. Information will be treated as confidential.

I hope this leaflet has answered some of your questions. If you wish further information regarding this part of the data collection process please contact me by calling 01 8963874.

**Thank you very much for your help**

**Ms Louise Gallagher**

## Appendix X: Consent form

### Consent Prior to Interview

Date \_\_\_\_\_

Time \_\_\_\_\_

This is to certify that I \_\_\_\_\_, give my consent to be included in the above study.

I confirm that I have read the information leaflet and received an explanation on the aim, purpose, duration and effects of my involvement in the study.

I understand that my participation is voluntary and that I am free to withdraw from the study at any stage if I so wish, without giving an explanation.

I have been informed that I will not be compromised in any way if I decide not to participate in the study or withdraw my consent at any stage during the study.

I give permission to be interviewed and for the interview to be tape-recorded.

I understand that (i) I may decline to answer any question during the interview, (ii) at the end of the interview I may request that a section of the interview be not used, and (iii) at the end of the interview I may request that the total of my contribution to the interview not be used in the study.

I understand that on completion of the interviews the contents of the tapes will be transcribed.

I understand that the information may be published but my name will not appear on any part of the study, nor will any information that may identify me be used in the study.

**Name of participant:** \_\_\_\_\_

**Signature of participant:** \_\_\_\_\_

**Signature of the researcher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

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**Withdrawal from the Study**

**Post Interview**

This is to certify that I \_\_\_\_\_, no longer wish to take part in this study and ask that you erase all contributions made by me from the transcript of the interview.

**Name of participant:** \_\_\_\_\_

**Signature of participant:** \_\_\_\_\_

**Signature of the researcher:** \_\_\_\_\_

**Date:** \_\_\_\_\_

**Appendix XI: Summary of hierarchical steps involved in arriving at the final model for type of first feed, marital status and private health insurance (Data from Table 34)**

K-Way and Higher-Order Effects							
	K	df	Likelihood Ratio Chi-Square	Sig.	Pearson Chi-Square	Sig.	Number of Iterations
K-way and Higher Order Effects	1	11	2154.866	.000	2639.561	.000	0
	2	7	317.274	.000	370.155	.000	2
	3	2	11.238	.004	11.110	.004	4
K-way Effects	1	4	1837.592	.000	2269.406	.000	0
	2	5	306.037	.000	359.044	.000	0
	3	2	11.238	.004	11.110	.004	0

**Appendix XII: Summary of hierarchical steps involved in arriving at the final model for type of first feed, how mother was fed as a newborn and health insurance status (Data from Table 35)**

K-Way and Higher-Order Effects							
	K	df	Likelihood Ratio		Pearson		Number of Iterations
			Chi-Square	Sig.	Chi-Square	Sig.	
K-way and Higher Order Effects	1	11	1730.557	.000	1839.708	.000	0
	2	7	162.037	.000	153.552	.000	2
	3	2	7.184	.028	7.201	.027	4
K-way Effects	1	4	1568.520	.000	1686.156	.000	0
	2	5	154.853	.000	146.351	.000	0
	3	2	7.184	.028	7.201	.027	0

**Appendix XIII: Summary of hierarchical steps involved in arriving at the final model for type of first feed, mother’s age when she ceased education and health insurance status (Data from Table 36)**

K-Way and Higher-Order Effects								
	K	df	Likelihood Ratio		Pearson		Number of Iterations	
			Chi-Square	Sig.	Chi-Square	Sig.		
K-way	1	23	4669.074	0.000	7570.815	0.000	0	
and Higher Order	2	17	225.540	0.000	241.012	0.000	2	
Effects	3	6	14.389	0.026	15.996	0.014	5	
K-way	1	6	4443.535	0.000	7329.803	0.000	0	
Effects	2	11	211.151	0.000	225.016	0.000	0	
	3	6	14.389	0.026	15.996	0.014	0	

**Appendix XIV: Summary of hierarchical steps involved in arriving at the final model for type of first feed, how the mother was fed as a newborn and mothers age (Data from Table 37)**

K-Way and Higher-Order Effects							
	K	df	Likelihood Ratio		Pearson		Number of
			Chi-Square	Sig.	Chi-Square	Sig.	Iterations
K-way and Higher	1	17	1473.385	0.000	1412.096	0.000	0
Order Effects	2	12	140.149	0.000	137.281	0.000	2
	3	4	16.947	0.002	17.237	0.002	4
K-way Effects	1	5	1333.236	0.000	1274.815	0.000	0
	2	8	123.202	0.000	120.044	0.000	0
	3	4	16.947	0.002	17.237	0.002	0

**Appendix XV: Summary of hierarchical steps involved in arriving at the final model for type of first feed, infant feeding choices of her family and friends and mothers age (Data from Table 38)**

K-Way and Higher-Order Effects								
			Likelihood Ratio		Pearson		Number of	
			Chi-Square	Sig.	Chi-Square	Sig.	Iterations	
K-way and Higher Order Effects	1	17	386.452	0.000	334.219	0.000	0	
	2	12	115.831	0.000	115.543	0.000	2	
	3	4	10.678	0.030	10.494	0.033	3	
K-way Effects	1	5	270.621	0.000	218.676	0.000	0	
	2	8	105.153	0.000	105.049	0.000	0	
	3	4	10.678	0.030	10.494	0.033	0	



**Appendix XVI: Summary of hierarchical steps involved in arriving at the final model for type of first feed, antenatal feeding intention and birth weight of the infant (Data from Table 39)**

<b>K-Way and Higher-Order Effects</b>									
			K	df	Likelihood Ratio		Pearson		Number of Iterations
					Chi-Square	Sig.	Chi-Square	Sig.	
K-way and Higher Order Effects			1	23	1956.119	0.000	2255.941	0.000	0
			2	17	1178.869	0.000	1013.475	0.000	2
			3	6	16.900	0.010	22.336	0.001	10
K-way Effects			1	6	777.250	0.000	1242.466	0.000	0
			2	11	1161.969	0.000	991.140	0.000	0
			3	6	16.900	0.010	22.336	0.001	0

**Appendix XVII: Summary of hierarchical steps involved in arriving at the final model for type of first feed, infant feeding choices of her family and friends and attendance at antenatal classes (Data from Table 40)**

<b>K-Way and Higher-Order Effects</b>								
		K	df	Likelihood Ratio		Pearson		Number of
				Chi-Square	Sig.	Chi-Square	Sig.	Iterations
K-way and Order Effects	Higher	1	11	446.815	0.000	412.781	0.000	0
		2	7	130.577	0.000	127.941	0.000	2
		3	2	7.819	0.020	7.921	0.019	3
K-way Effects		1	4	316.239	0.000	284.840	0.000	0
		2	5	122.758	0.000	120.020	0.000	0
		3	2	7.819	0.020	7.921	0.019	0

