

**INFANT FEEDING PATTERNS
IN THE
NORTH EASTERN HEALTH BOARD**

A QUANTITATIVE STUDY

2003

DEPARTMENT OF PUBLIC HEALTH



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Summary

In a previous North Eastern Health Board study (1996), only 35% of mothers initiated breastfeeding their babies. This decreased to 10% at 14 weeks postnatal. Since this time, *A Regional Breastfeeding Policy* has been published (1999). This study was undertaken to determine if there had been any improvements in breast feeding rates and duration as a result of the policy initiatives.

A total of 430 babies were born in the region during the study period, of which 36 babies were excluded from the study. Of the 394 questionnaires distributed, 247 were completed and returned, giving a response rate of 62.7%.

Mother's personal details:

- The mean age of mothers was 30.5 years. Almost three quarters (73.3%; n=181) of mothers reported they were married. Over 60% of respondents reported having other children, in addition to their new baby.
- All mothers reported completion of some level of education, with 40% reporting to have completed third level education.
- The majority (60.0%; n=141) of mothers reported being in employment outside the home at the time of first postnatal visit, while one fifth (n=52) reported to work in the home. Only 33 (13.4%) reported to be unemployed. The majority of respondents were in the SC2 and SC3.
- Over 40% (44.9%) of respondents reported to hold private medical insurance, while one fifth (n=52) reported holding a medical card.
- Over 55% (n=136) of respondents described themselves as 'non-smokers'.
- Almost all mothers (n=231) reported taking folic acid supplements during their pregnancy, with one third (n=72) taking them prior to becoming pregnant.

- In general, respondents reported receiving combined antenatal care from both hospital staff and GPs. Of note is that 14 (6%) respondents reported receiving no antenatal care at all.
- Only 13 (5.3%) mothers reported being referred to their Public Health Nurse prior to the delivery of their baby.
- Over 70% of babies included in this study were born in hospitals within the NEHB area, with almost a quarter born in Dublin hospitals.

Infant feeding Pattern on Day one:

- Over 50% (n=127) of respondents reported breastfeeding their baby on Day one. The majority (n=83) of mothers reported deciding on the method prior to becoming pregnant.
- In general, attendance at parentcraft classes during pregnancy was reported to have no influence on the respondent's initial infantfeeding method. When respondents reported that attendance at these classes influenced them, it was primarily because they were informed of the positive effects of breastfeeding for their baby.
- Over 40% of respondents reported that no health professional spoke to them about the benefits of breastfeeding.
- The vast majority of respondents reported their husband/partner to be supportive of their breastfeeding.
- Less than half of respondents reported attending breastfeeding support groups. For the majority, attendance had no influence on the duration of time they intended to breastfeed.
- The factors which were found to be positively associated with initiation of breastfeeding were: mothers age \geq 24; a completed third level education; being married; being a non-smoker; history of baby's maternal grandmother breastfeeding; social class (I, II and III); early decision to breastfeed (up to 3 months); having breastfed a previous child and being a resident of county Meath.

Infant feeding pattern at hospital discharge:

- At the time of hospital discharge, there was a slight decrease in the numbers of mothers who reported breastfeeding their infants. From a total of 127 initial breastfeeders, 115 (90.5%) were still breastfeeding their babies.
- In addition, five respondents, who had fed their babies by artificial methods, had commenced breastfeeding at hospital discharge. Thus, 48.6% (n=120) of all respondents were breastfeeding at hospital discharge.
- The majority (81.8%; n=11) of the eleven respondents, who stopped breastfeeding prior to hospital discharge, were first-time mothers. They reported stopping breastfeeding because the baby was hungry or unhappy; the mother was tired and was experiencing breast problems.

Infant feeding pattern at time of survey:

- Almost 90% (n=104) of mothers who were breastfeeding at time of discharge, reported to be still breastfeeding at time of survey. Thus, 42.1% of all respondents were still breastfeeding at time of survey, when the median age of baby was 14 days.
- Over 65% (n=70) of respondents reported to be practicing ‘full breastfeeding’ at time of survey, representing 28.3% of all respondents included in the study. However, thirty-four (32.7%) respondents had already commenced their baby on artificial formula.

Infant feeding pattern at six-week follow-up:

- Over three quarters (78.4%; n=80) of respondents who reported breastfeeding at time of survey were still breastfeeding at approximately six weeks postnatal. Thus, 32.4% of all respondents were still breastfeeding at six weeks postnatal
- Almost 60% (n=47) of respondents were practicing ‘full breastfeeding’, representing 19.0% of all respondents included in the study. Thirty-three respondents reported to have commenced their baby on artificial formula.

Infant feeding pattern at fourteen-week follow-up:

- Over 70% (n=55) of respondents, who reported breastfeeding at 6-week follow-up, were still breastfeeding when contacted at approximately 14 weeks postnatal. Thus, 22.3% of all respondents were still breastfeeding 14 weeks postnatal.

- Thirty-three (60%) respondents reported to be practicing ‘full breastfeeding’, representing 13.4% of all respondents, while 22 respondents had commenced their baby on artificial formula.

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Introduction

Breastfeeding is a key public health measure that offers considerable benefits to both mother and baby. Yet the number of mothers initiating breastfeeding has, to date, been disappointingly low. A previous study in the North Eastern Health Board (NEHB) estimated that only 35% of mothers commenced breastfeeding their babies¹. Since that time many relevant regional and national health sector initiatives, which promote breastfeeding, have been developed. Among these was the development of a regional Breastfeeding Policy in the NEHB (1999)². This policy made numerous recommendations for the promotion and development of breastfeeding in the three community care areas and the two maternity units in the region. Other regional developments include the participation of both maternity units in the Baby Friendly Hospital Initiative and the provision by the Board's Education and Training Department of an accredited breastfeeding education course for community and hospital nurses.

Developments that have occurred on a national level include the appointment of a National Breastfeeding Co-ordinator and the establishment of a National Committee on Breastfeeding. In addition, there has been an extension of both paid and unpaid maternity leave to 18 and 8 weeks, respectively.

In 2003, the Department of Public Health carried out a quantitative study to determine whether or not these initiatives have resulted in an improvement in the initiation rate and duration of breastfeeding in the region. While this report presents positive and encouraging results, it also highlights specific deficiencies in current practice that need to be remedied if the rate and duration of breastfeeding in the region is to further improve.

Aims and Objectives

Aim:

The overall aim of this study was to document the number of mothers resident in the NEHB area who breastfeed their babies, and the influences on their choice of infant feeding method.

Objectives:

- To document (i) the numbers of mothers who initiate breastfeeding their infants (ii) the duration and (iii) the exclusiveness of their breastfeeding.
- To establish a demographic and social profile of mothers who chose to breastfeed their infants.
- To document the pregnancy related health behaviour of mothers in terms of smoking status, taking of folic acid supplements, visits to health professionals and attendance at parentcraft classes.
- To document the reasons why mothers stop breastfeeding.
- To make recommendations for increasing the numbers of mothers who breastfeed their babies.

Literature Review

This literature review begins by stating the World Health Organisation (WHO) definition of breastfeeding and current breastfeeding policy in Ireland. It then looks at the recommended duration of breastfeeding and documents the WHO review which resulted in this recommendation, in addition to the health benefits of breastfeeding for both mothers and babies. The world-wide prevalence and trends in breastfeeding are outlined as well as the difficulties in comparing such data. There are many determinants of breastfeeding, which are looked at separately: demographic; psychosocial, healthcare and biomedical; community and policy attributes. In conclusion, the review looks at the interventions which promote breastfeeding, as well as the strategies which have been shown to be non-effective in increasing the breastfeeding rates. Finally, the few situations, where breastfeeding is contraindicated for medical reasons, are outlined.

Definition:

The following are the agreed definitions of the WHO on Breastfeeding³.

- **Breastfeeding:** The child has received breast milk (direct from the breast or expressed)
- **Exclusive breastfeeding:** The infant has received only breast milk from his/her mother or a wet nurse, or expressed breast milk, and no other liquids or solids with the exception of drops or syrups consisting of vitamins, mineral supplements or medicines
- **Predominant breastfeeding:** The infant's predominant source of nourishment has been breast milk. However, the infant may also have received water and water-based drinks (sweetened and flavoured water, teas, infusions etc.); fruit juice; oral rehydration salts; drops and syrup form of vitamins, minerals and medicines; and ritual fluids (in limited quantities). With the exception of fruit juice and sugar-water, no food-based fluid is allowed under this definition.

| |
|---|
| Predominant breastfeeding and exclusive breastfeeding constitute full breastfeeding. |
|---|

- **Complementary feeding:** The child has received both breast milk and solid (or semi-solid) food.

- **Bottle-feeding:** The child has received liquid or semi-solid food from a bottle with a nipple/teat.

Breastfeeding policy in Ireland

WHO actively supports and promotes breastfeeding through their policy documents:

- Ten steps to successful breastfeeding,
- The Baby Friendly Hospital Initiative,
- The WHO International Code of Marketing of Breast Milk Substitutes³.

In Ireland, the Department of Health and Children (DOHC) promotes breastfeeding as the infant feeding method of choice⁴. The international Code of Marketing of Breast-milk substitutes was followed in Ireland by the adoption of a Code of Practice for the Marketing of Infant formulae. The Principal aim of the Irish Code was to contribute to the safe, adequate nutrition of infants in the country.

In addition, there is a legal framework governing and monitoring the marketing of infant formula in Ireland. The Food Safety Authority in Ireland is responsible for the enforcement of this legislation³.

Duration of breastfeeding

As a global public health initiative, the WHO recommends that infants should be exclusively breastfed for the first six months of life to achieve optimal growth, development and health⁵. In 2001, the WHO published this population-based recommendation, based on a systematic review of scientific evidence on optimal duration of exclusive breastfeeding. This review, based on two small controlled trials and 17 observation studies compared exclusive breastfeeding for four to six months with exclusive breastfeeding for six months. Conclusions of the review were that exclusive breastfeeding to six months confers several benefits on the infant and mother.

It was, however, acknowledged that exclusive breastfeeding to six months can lead to iron deficiency in susceptible infants. Extended breastfeeding may be associated with

some other adverse outcomes. Leeson et al⁵ found that individuals who had been breastfed for more than four months had significantly lower brachial artery distensibility, increased cholesterol and systemic blood pressure than those breast fed for less than four months. While there is no doubt that breastfeeding is the best way to promote infant and maternal health, these findings require further corroboration and investigation before their impact can be assessed⁶.

Health benefits for babies

There is extensive evidence of the short-term and long-term health effects of breastfeeding. Babies who are fed on formula milk are more likely to suffer from gastroenteritis,^{5,8} inflammatory bowel disease⁵, coeliac disease⁵, respiratory infections,^{5,8} otitis media,^{8,9} obesity¹⁰ childhood lymphoma⁵ and bone and joint infections⁵. In addition, in high-risk infants, it has been shown that exclusive breastfeeding until the age of 6 months has a protective effect on the risk of developing asthma and atopic symptoms in the first 18 months of life¹.

Compared with formula fed infants, breastfed infants have a lower risk of dying from sudden infant death syndrome (SIDS). The possible reasons behind breastfeeding as a protective factor are not yet fully understood, but may include the suckling reflex, bacterial binding to epithelial cells, aggregation of bacteria by antibodies and the binding of bacterial toxins by breast milk IgA⁵.

Health benefits for mothers

In addition, breastfeeding is beneficial to mothers' health. Women who breastfeed their babies are significantly less likely to develop epithelial ovarian cancer¹¹, and premenopausal breast cancer^{12,13} than women who do not breast feed. Additional advantages include substantial savings on the expense associated with artificial formula feeding (except when formula feeds are subsidized and available freely), the convenience of breastfeeding and the increased utilization of body fat deposited in pregnancy.¹⁴ In addition, in some countries, breastfeeding has an important role to play in child spacing⁵.

Prevalence and trends of breastfeeding

It is difficult to accurately measure breastfeeding rates in individual countries and regions within countries. Data from various countries are difficult to compare because: definitions for the breastfeeding indicators vary, sample sizes and data sampling vary, the ages of children when data are reported vary and data is not regularly collected. In addition, most data refers to *all* breastfeeding, i.e., not only exclusive but also partial breastfeeding. Despite these shortcomings, the collected data can serve as a rough indicator for tracing prevalence and trends in different countries⁵.

There is wide international variation in initiation breastfeeding rates between and within countries. In the Scandinavia and Eastern Europe, many countries have a high incidence of women starting to breastfeed. Initiation rates in excess of 90% in these countries are the norm. Other countries with high breastfeeding rates include Japan, Switzerland, Luxembourg and Turkey.

In central and southern Europe, the breastfeeding rate is also traditionally quite high, with initiation rates generally in excess of 70% common in Israel, Italy and Greece. However, in Northern America and Western Europe lower initiation rates of breastfeeding prevail. In 1997, 62% of women in England and Wales had started to breastfeed. However, in Scotland, Northern Ireland and Ireland initiation rates were only 48%, 41% and 34% at that time¹⁵.

Determinants of Breastfeeding

▪ Demographic Attributes:

It has been shown that young mothers are less likely to breastfeed than older mothers. A low educational attainment, having a first baby and single marital status are also important negative determinants of breastfeeding. Mothers with small families are more likely to breastfeed than those with numerous children. In addition, employment of the mother is an obstacle for breastfeeding, even for initiation, and is certainly a risk factor for duration and exclusiveness of breastfeeding¹⁶.

▪ **Psychosocial Attributes:**

Fathers have an important role in the decision whether the mother will breastfeed or not. Having had a previous successful breastfeeding experience, having a mother or friends who have successfully breastfed, or being willing to breastfeed in front of others all increase the chance of breastfeeding successfully. Also, women, who decide prior to or early in pregnancy to breastfeed their babies, who intend to breastfeed for a longer time and who have a negative attitude to formula feeding have a greater chance of success¹⁶.

However, in societies where breastfeeding is not the norm and where breastfeeding in public is difficult, young mothers from low-educated families often find themselves isolated and generally do not receive the positive influence of exposure to breastfeeding mother^{16,17}.

▪ **Healthcare and Biomedical Attributes:**

Early initiation of breastfeeding, prenatal class participation, skills training, low birth weight baby, maternal belief regarding breastfeeding, and the health of the baby, have all been demonstrated to have a positive impact on breastfeeding. In contrast, premature birth, difficult labour, use of analgesics, sore nipples, maternity ward use of teats and bottle-feeding, distribution of free samples of breast milk substitutes, and smoking, have been demonstrated to have a negative impact on breastfeeding rates^{16,18}.

▪ **Community Attributes:**

Work place programmes that allow mothers to take extended maternity leave and provide facilities for expressing breast milk or breastfeeding at work are positive determinants of breastfeeding and greatly increase breastfeeding duration¹⁶.

▪ **Policy Attributes:**

Official recommendations, consensus statements and surveillance and support systems, which demonstrate official concern, have a positive influence on the

prevalence of breastfeeding. A prolonged maternity leave is very important, not only for the duration of breastfeeding, but also for its initiation¹⁶. The International Code of Marketing of Breast Milk Substitutes also provides support to vulnerable mothers^{5,16}. The steps included in the Baby Friendly Hospital Initiative have also been shown to increase the initiation and duration of breastfeeding^{16,19}.

Interventions to promote the initiation of breastfeeding

A systematic literature review of interventions undertaken to promote the initiation of breastfeeding identified 59 studies dealing with this topic^{20,24}. In total, 14 randomised controlled trials, 16 non-randomised controlled trials and 29 before-after studies were evaluated.

Three types of interventions have been shown to be useful in the initiation of breastfeeding when delivered in developed countries as a stand-alone intervention. Informal, small group health education, delivered in the ante-natal period, is effective in increasing these rates. One-to-one health education can be effective in increasing initiation rates among women on low incomes. Peer support programmes (in the ante and post-natal periods) have also been shown to be effective in increasing both the duration and initiation of breastfeeding among women on low incomes, particularly among women who expressed the desire to breast feed.²⁰ Overall, the result of this review suggests that small informal discussion classes emphasizing the benefits of breastfeeding can increase initiation rates.

There is little evidence that level of knowledge increases rates of breastfeeding, as most women who chose formula feed know that breastfeeding is better for their babies.¹⁷ Professional support postnatally for women wanting to breastfeed has a small overall benefit, but not for women in the lower socio-economic groups. The knowledge, skill and commitment necessary to breastfeed may be more effectively gained through antenatal apprenticeship to a breastfeeding mother than from advice given in consultations or from books. Qualitative research has provided evidence that women are more likely to breastfeed if they had regularly seen a relative or friend successfully breastfeed²¹.

Packages of interventions that have also been shown to be effective in increasing both the initiation and duration of breastfeeding include: a peer support programme and/or media campaign, combined with structural changes to the health sector (for example, rooming-in) and/or health education activities.²⁰

Structural changes in hospital practices have also been shown to be effective in increasing both the initiation and duration of breastfeeding. Rooming-in and early contact, either as stand-alone interventions or as one component of a package of interventions, is an example of an effective health sector intervention to increase the rate of breastfeeding^{20,21}.

There is limited evidence to suggest that the training of health professionals is useful in improving the knowledge of midwives and nurses²⁰. Also, social support intervention from health professionals does not significantly increase initiation rates of breastfeeding compared with standard care^{20,21}.

The media rarely presents positive information on breastfeeding. Breast and bottle-feeding are portrayed very differently by the mass media. Bottle-feeding is shown more often than breastfeeding, and is presented as being less problematic²³. However, there is limited evidence that media campaigns as stand-alone intervention can influence breastfeeding rates and attitudes towards breastfeeding.

There is limited information available on the effectiveness of the implementation of government policy on infant feeding on breastfeeding rates. Infant feeding practices were monitored in Scotland over a three-year period following recommendations from the Department of Health. During this time the media gave extensive coverage to the advantages of breastfeeding and initiation rates were reported to have increased by 20%²².

Several studies demonstrated that multifaceted interventions are effective in increasing initiation rates. Most of these multifaceted interventions comprised a media campaign

and or peer support, combined with structural changes in the health services or combined with health education activities²².

Strategies that are not effective in increasing breastfeeding rates

The provision of literature alone, or combined with a formal, non-interactive method of health education, appears to have limited impact on initiation rates, especially among women on low incomes²⁰. However, an Irish study indicated that minimal intervention and use of a fact sheet illustrating positive aspects of breastfeeding may result in improved breastfeeding rate²⁴. Also, small-scale interventions with contradicting messages and no face-to-face interaction have no effect on initiation rates²⁵.

When is breastfeeding contraindicated

There are very few situations where breastfeeding is contraindicated for medical reasons. The principal reasons are maternal HIV infection and concurrent maternal medication. Many women are concerned about taking medications that may harm their babies. In fact, only a few drugs pose a clinically significant risk to breastfed babies. In general, anti-neoplastics, drugs of abuse, some anticonvulsants, ergot alkaloids and radiopharmaceuticals should not be taken. In addition, the levels of amiodorone, cyclosporine and lithium should be monitored²⁶.

Breastfeeding is associated with a doubling of the risk of mother-to-child transmission of HIV^{27,28}. It is recommended by the WHO that HIV infected women who have access to safe artificial feeding methods should avoid breastfeeding while those living in areas where artificial feeding may be unsafe because of unclean water supplies should breastfeed their infants²⁸. However, among HIV-infected women who choose to breastfeed, exclusive breastfeeding is recommended because of its general health advantages over mixed feeding²⁷.

Methodology

Preparatory work:

Staff from the Department of Public Health met with the Assistant Directors of Public Health Nursing (ADPHN) from the three Community Care Areas in the region on two occasions. At these meetings the protocol for the study was developed and the methodology and questionnaire for use in the study was agreed.

Organisation of the study:

Subsequently, the ADPHNs met with their public health nursing (PHN) staff and obtained their commitment for participation in the study. Every PHN was asked to give a questionnaire to eligible mothers during the defined study period. It was felt that this more personal method would increase the response rate to the questionnaire. Mothers were then asked to complete a self-administered questionnaire. A cover letter was sent with each questionnaire explaining the purpose of the study (Appendix A). Mothers were also advised that further contact at six and fourteen weeks would be made with breastfeeding mothers. Free post envelopes were enclosed with all questionnaires.

To ensure a complete population frame each PHN was requested to complete a specifically designed master-form detailing the contact details of all new mothers visited by her during the 4-week study period. This form facilitated direct follow-up of non-responding mothers.

Population Frame:

All mothers, with an address in the NEHB area, who gave birth between January 20th and February 16th 2003, were included in the study.

Exclusion criteria:

- (1) A small number of mothers were excluded from the study on the advice of the visiting public health nurse. In general, this was when mothers and/or baby were considered too ill to participate in the study.
- (2) In addition, asylum-seeking mothers who were living in the Mosney Dispersal Centre were also excluded from the study. These were excluded for three reasons:
 - (a) During the study period all pregnant women, from 32 weeks gestation onwards, received a health board rent allowance. This enabled them to leave the dispersal centre and settle in any part of the country. Therefore, many mothers left while pregnant, or almost immediately after the baby was born. Initial follow-up and at six weeks and fourteen weeks would therefore have been problematic due to the widespread movement of these mothers throughout the country.
 - (b) Many of the mothers were considered to have substantial written language difficulties and would have difficulty completing the questionnaire. Consequently, a different methodology such as interview-administered questionnaire would be more appropriate for these mothers.
 - (c) There had been a recent in-depth study assessing the infant feeding pattern among this client group.
- (3) Finally, mothers of multiple births were also excluded from the study. There had been a previous infant feeding study carried out in the NEHB in 1996. As this study assessed only singleton births, a similar sampling frame was used in this study to maximize comparability between the studies.

Questionnaire administered at first postnatal visit:

For the study, original questionnaires were used. These were developed from previous local quantitative research, discussion with key personnel and literature review on infant feeding. The first questionnaire contained 67 questions, the majority of which were ‘closed’ (tick-box) and explored the following areas: demographics of mother, pregnancy and delivery details, infant feeding pattern and the factors that influenced infant feeding choice. The questionnaire also included ten ‘open’ questions that allowed factors that influenced infant feeding choice to be further explored (Appendix B). This questionnaire was piloted among ten postnatal mothers. Minor amendments were made to the questionnaire following this pilot. The questionnaire took approximately twenty minutes to complete.

Follow-up of Non-respondents:

Mothers who failed to complete and return the questionnaire within four weeks were sent a reminder letter with an additional copy of the questionnaire.

Mothers who did not respond to this postal reminder were telephoned directly by the survey staff in the Department of Public Health and encouraged to complete the questionnaire.

Follow up at six weeks:

All mothers who reported breastfeeding at the initial survey were contacted again by telephone at approximately six weeks postnatal, by survey staff in the Department of Public Health. This follow-up brief questionnaire contained eight questions. These questions explored the following areas: current infant feeding pattern, change in infant feeding pattern and influences on choice of infant feeding (Appendix C). This questionnaire took approximately five minutes to complete.

Follow up at fourteen weeks:

At approximately 14 weeks postnatal, survey staff in the Department of Public Health again contacted all mothers, who were still breastfeeding at the six-week follow-up. This follow-up questionnaire was similar to the six-week questionnaire. Again, it explored the areas of infant feeding pattern, changes in infant feeding pattern and influences on choice of infant feeding (Appendix D).

Where there was a difficulty contacting mother by telephone at six and fourteen-week follow-up, appropriate questionnaires were posted to the address provided by the PHN master-list. A cover letter was enclosed with each questionnaire explaining the purpose of this follow-up study.

Data analysis:

A coding protocol was devised for each of the questionnaires used. A special coding frame was used for each of the open-ended questions. One researcher coded all questionnaires. A clerical member of staff input the data. The project researcher validated this data. Data was analysed using JMP statistical analysis package.

Social class scale:

The social class scale used was the 2002 Census scale where there are seven social class groups defined on the basis of occupation. In deciding the social class of mothers, current or most recent occupation was used to assign them to a social class.

Survey Results

Response rate

A total of 430 babies were born to mothers residing in the NEHB during the study period. Thirty-six infants were not included in the study for reasons presented in Table 1:

Table 1: Reasons mothers were excluded from the study

| Reason | Number of Mothers |
|---|-------------------|
| Residing in Mosney Dispersal Centre | 21 |
| Mother moved outside health board area in post-natal period | 5 |
| Multiple (twin) births | 4 |
| Maternal language difficulties | 3 |
| Sick baby | 3 |
| Total | 36 |

Consequently, 394 questionnaires were administered. Of these, 247 were returned giving a response rate of 62.7%.

1. Profile of Mothers

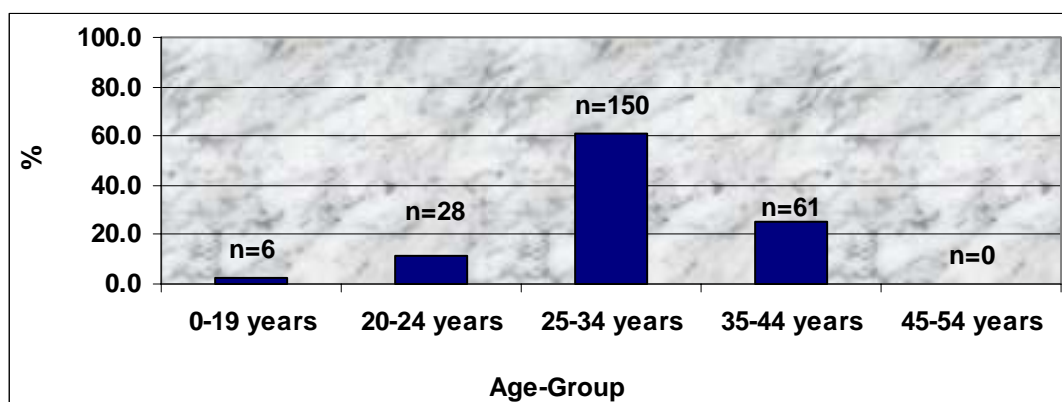
Almost half, (45.3%; n=112) of the mothers, were from County Meath. Sixty-nine mothers (27.9%) were from County Louth, 34 (13.8%) resided in County Cavan and 32 (13.0%) resided in County Monaghan

1.1 Mother's Personal Details

i. Age of mother

The mean age of mothers was 30.5 years, ranging from 15 to 43 years. The majority of mothers were in the 25-34 year age group. The age groups of the mothers are presented in Figure 1. Two respondents did not report their age.

Figure 1: Reported age group of mothers



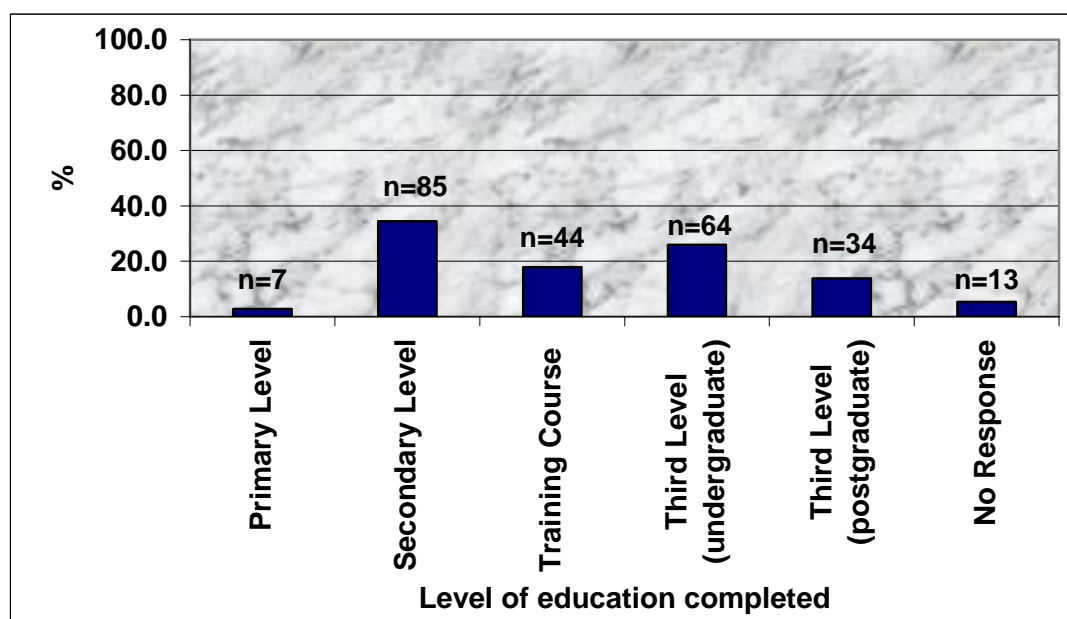
ii. Marital status of mothers

One hundred and eighty one (73.3%) mothers reported being married. An additional 36 (14.6%) stated they were single mothers and 26 (10.5%) mothers stated they were cohabiting. Two respondents reported that they were separated or divorced; one respondent reported she was engaged, while one respondent did not comment on her marital status.

iii. Educational status of mothers

Figure 2 illustrates the highest level of education reported by respondents. All mothers reported completion of some level of education. In fact, in excess of 40% of mothers had completed either a third-level undergraduate or postgraduate degree. Thirteen (5.3%) respondents did not state the level of education they had completed.

Figure 2: Reported highest level of education completed by mothers

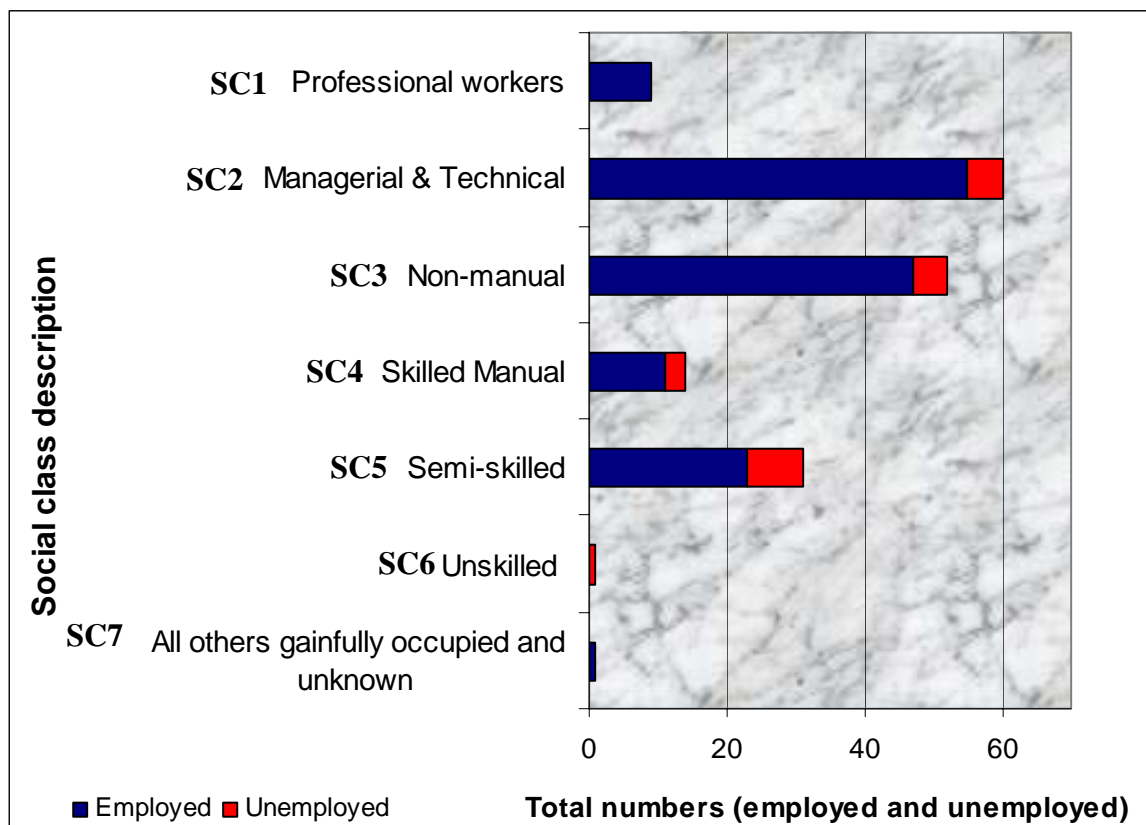


iv. Employment status of mother

Almost 60% (n=141) of mothers reported being in employment at the time of the first postnatal visit. Fifty-two (21.1%) respondents reported working in the home caring for dependents, nine stated they were still in full-time education, five stated they were self-employed and four reported they were sick or disabled. Thirty-three (13.4%) reported being unemployed at the time of the study. Three respondents did not report their employment status.

Figure 3 details the social class (SC) of the 168 (93.9%) respondents who provided details of their current or previous occupation. The majority of respondents were in SC 2 ('Managerial & Technical') and SC 3 ('Non-Manual') categories.

Figure 3: Social Class of respondents based on current and previous occupation



v. Work pattern of mothers

Up to the birth of the baby, 98 (69.8% of those in employment) mothers worked full-time, with a little over a quarter (n=37) of mothers reported working on a part-time basis. Six respondents did not report their work pattern. The majority, 113 (80.1%) mothers, reported they planned returning to work after maternity leave. Only three (2.1%) mothers did not report intending returning to work. However, 18 (12.8%) reported they were undecided about whether or not they would return to work. One respondent did not comment on her work pattern.

vi. Medical cover

The most common type of medical cover reported by mothers was private medical insurance, with 111 (44.9%) mothers reporting having either voluntary health insurance (VHI) or BUPA. Only 52 (21.1%) mothers reported having a medical card. Seventy-nine mothers (32%) reported having neither private medical insurance nor a medical card. Five respondents did not comment on their medical cover.

vii. Other children

Ninety-three (37.7%) mothers were primagravidas (first time mothers), while 153 (61.9%) mothers reported having other children in addition to their new baby. The mean number of other children in the household was two children (ranging from 1 to 6). One respondent did not comment on having any other children.

1.2 Health behaviour of Mothers

i. Smoking status of mothers

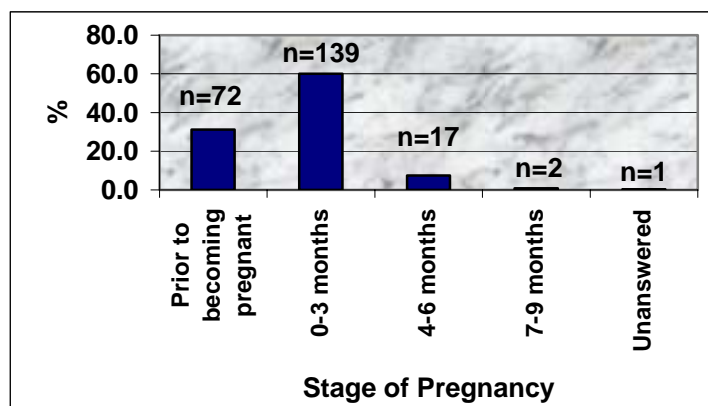
The majority (55.1%; n=136) of mothers reported being non-smokers. Thirty-four (13.8%) mothers reported having given up smoking in the twelve months prior to the survey. However, 49 (19.8%) mothers reported smoking at the time of survey.

ii. Uptakes of folic acid supplements

Almost all mothers, (93.5%; n=231), reported taking folic acid supplements during their pregnancy, while almost one third reported taking folic acid prior to becoming pregnant. The stage of pregnancy at which the respondents reported taking the folic acid supplements is presented in Figure 4.

Fourteen (5.7%) respondents reported taking no folic acid supplements, while two respondents did not comment on this question.

Figure 4: Stage of pregnancy at which mothers reported taking folic acid supplements



Although, the overall uptake of folic acid supplements was high, the uptake was higher among respondents from SCI, SCII and SCIII when compared to those from the lower social classes. This difference was statistically significant, ($p < 0.05$).

2. Pregnancy & Birth

2.1 Antenatal care

The type of antenatal care mothers reported receiving is presented in Table 2. Combined care, provided by both hospital staff and general practitioner (GP), was the type of antenatal care most commonly reported by respondents. However, 14 (6%) mothers reported receiving no antenatal care during their pregnancy.

Table 2: Reported type of antenatal care received by respondents

| Service Provider | Number | % |
|-------------------|------------|--------------|
| Hospital & GP | 145 | 58.7 |
| Hospital | 69 | 27.9 |
| GP/Practice Nurse | 13 | 5.3 |
| No Antenatal Care | 14 | 5.7 |
| Unanswered | 6 | 2.4 |
| Total | 247 | 100.0 |

Of these non-attenders, six (42.9%) were from county Meath, with five from county Louth, two from Cavan and one from county Monaghan. The majority of these respondents were in the 25-34 year ($n=8$) and 35-44 year ($n=4$) age-groups. One respondent was aged less than 19, with the age of one unknown. Nine respondents were married, with five reporting to be single. Ten (71.4%) respondents reported having other children in addition to their new baby. Eight (57.1%) respondents reported being in employment at the time of survey, with two unemployed, two working in the home, one in fulltime education and one on sick leave. Based on current and previous occupations, 50% of respondents were in SC2, with two in SC5, one in SC4 and one in SC1.

2.2 Referral to PHN

The majority (91.9%; $n=227$) of mothers reported that they were not referred to their PHN, prior to the delivery of their baby. Just 13 (5.3%) were referred. Seven respondents did not answer this question.

2.3 Hospital of Birth

Over 70% (70.9%; n=175) of the babies included in this study were born in hospitals within the NEHB area; the majority (n=124) were born in Our Lady of Lourdes Hospital, Drogheda. Almost a quarter (n=55) of babies in the study were born in the three major public Dublin maternity hospitals. Only 4% were born in Northern Ireland hospitals. In total, 93.1% (n=230) of the babies in this study were born in either North Eastern Health Board or Dublin Hospitals.

Table 3: Reported hospital of birth of babies included in this study

| Hospital of Birth | Number | % |
|--|------------|--------------|
| Our Lady of Lourdes Hospital, Drogheda | 124 | 50.2 |
| Dublin Hospitals | 55 | 22.3 |
| Cavan General Hospital | 51 | 20.6 |
| Northern Ireland Hospitals | 10 | 4.1 |
| Other | 5 | 2.0 |
| Unknown | 2 | 0.8 |
| Total | 247 | 100.0 |

As presented in Table 4, the county of residence affected the hospital in which the respondents gave birth. The majority of respondents from counties Cavan, Louth and Monaghan gave birth in either Cavan or Drogheda maternity hospital, while respondents from county Meath gave birth in Dublin Hospitals and North Eastern Health Board Hospitals. Two respondents did not state in which hospital their baby was born.

Table 4: County of residence of mother and hospital of birth

| | NEHB Hospitals | | | | Dublin Hospitals | | Northern Ireland Hospitals | | Other Hospitals | |
|---------------------|------------------------|-----------|-------------------------------|----|------------------|-----------|----------------------------|-----------|-----------------|----------|
| | Cavan General Hospital | | Our Lady of Lourdes, Drogheda | | Dublin Hospitals | | Northern Ireland Hospitals | | Other Hospitals | |
| County of Residence | % | n | % | n | % | n | % | n | % | n |
| Louth | - | - | 88.1 | 59 | 3.0 | 2 | 9.0 | 6 | - | - |
| Meath | 4.5 | 5 | 42.9 | 48 | 46.4 | 52 | 1.8 | 2 | 4.5 | 5 |
| Cavan | 91.2 | 31 | 5.9 | 2 | 2.9 | 1 | - | - | - | - |
| Monaghan | 46.9 | 15 | 46.9 | 15 | - | - | 6.3 | 2 | - | - |
| Total | | 51 | | | | 55 | | 10 | | 5 |

2.4 Type of Birth

Almost two thirds (n=155) of births were reported to be by normal delivery, with a little over a quarter (n=65) of babies reported as being delivered by caesarean section. The remaining 27 births were described as ‘assisted births’. There was a difference in the type of delivery reported by first-time mothers and mothers with other children. First-time mothers more commonly reported assisted deliveries. This difference was statistically significant, ($p < 0.0001$).

2.5 Difficulty of Birth

All the respondents (n=182) who gave birth by normal delivery and assisted delivery rated the difficulty of the birth. The respondent was asked to assign a mark from ‘very easy’ to ‘very difficult’ indicating the difficulty of the birth. Respondents who reported an assisted delivery were more likely to rate the birth as ‘difficult’ and upwards. This difference was statistically significant, ($p < 0.05$) (table 5).

Table 5: Rate of difficulty associated with assisted and normal deliveries as reported by mothers

| Difficulty of Birth | Normal Delivery | | Assisted Delivery (forceps/vacuum) | | Total | |
|-----------------------|-----------------|------------|------------------------------------|-----------|--------------|------------|
| | % | n | % | n | % | n |
| Very Easy | 5.8 | 9 | 3.7 | 1 | 5.5 | 10 |
| Easy | 8.4 | 13 | 3.7 | 1 | 7.7 | 14 |
| Not Difficult | 46.1 | 71 | 22.2 | 6 | 42.5 | 77 |
| Difficult | 33.2 | 51 | 40.8 | 11 | 34.3 | 62 |
| Very Difficult | 6.5 | 10 | 29.6 | 8 | 9.9 | 18 |
| Total | 100.0 | 154 | 100.0 | 27 | 100.0 | 181 |

Note: One respondent did not rate the difficulty of her birth.

Respondents with previous children were more likely than primagravidas to rate the difficulty of the birth as ‘not difficult’ or ‘easy’. This difference was statistically significant, ($p < 0.005$).

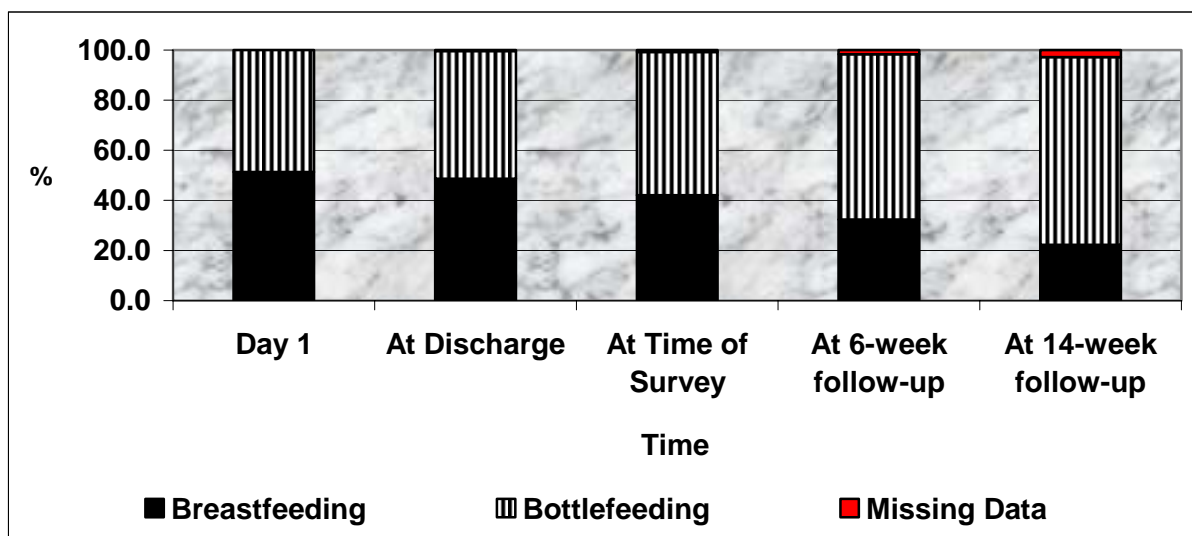
2.6 Baby’s Weight

The mean weight of baby included in this study was 3.5kg, ranging from 1.4kg to 4.8kg. Respondents, who reported having other children in addition to their new baby, reported significantly higher birth weights for their new baby, compared to primagravidas, (mean weight: 3.6kg versus 3.4kg), ($p < 0.05$). In addition, non-smokers reported higher birth weights than current smokers (mean weight: 3.6kg versus 3.2kg). This difference was statistically significant, ($p < 0.0001$).

3. Feeding Pattern

Figure 5 illustrates the prevalence of breastfeeding and bottle-feeding at each of the five stages of survey: day one following birth; at hospital discharge; at initial survey; at 6-weeks postnatal and at 14-weeks postnatal. This graph will assist in the reading of this section.

Figure 5: The rate of breastfeeding and bottle-feeding at each stage of survey



3.1 Feeding Method on Day one

A total of 127 (51.4%) respondents reported breastfeeding their babies on day one. The remaining 120 (48.6%) mothers reported commencing bottle-feeding.

Profile of Respondents who chose breastfeeding on day one

The mean age of mother who chose to breastfeed on day one was 31.4 years, with the majority of respondents in the 25-34 year (n=81) and 35-44 year (n=36) age-groups. Over 80% (n=101) of the respondents were married and almost 60% (n=76) of them reported having other children, on average two, in addition to their new baby. Over 50% (57.5%; n=73) of respondents were in employment up to the time of the birth, and the majority (82.2%; n=60) of them intended returning to work following their maternity leave. Based on current and previous occupations, the majority (81.0%; n=68) of respondents belonged to SC1, SC2 and SC3. Almost 50% (n=63) of respondents had completed third level education. Most respondents had decided to breastfeed their baby prior to becoming pregnant or within the first three months of pregnancy.

The following section details reported reasons for respondents choosing their method of feeding. In some cases more than one reason was given for their infant feeding choice.

i. Reason for Decision

Table 6 outlines the main reasons why respondents chose breastfeeding on day one. The majority of respondents chose breastfeeding because they considered it 'best for baby'.

Table 6: Reason respondents chose breastfeeding on day one

| Reason for Breastfeeding Baby | n | % |
|--------------------------------|----|------|
| 'Best for baby' | 95 | 74.8 |
| 'Previous positive experience' | 16 | 12.6 |
| 'More convenient option' | 15 | 11.8 |
| 'Preferred Method' | 11 | 8.7 |
| 'Benefits to Mother' | 11 | 8.7 |
| 'Most natural method' | 10 | 7.9 |

Note: N>127 as respondents reported more than one reason for breastfeeding their baby.

The most frequent reasons for choosing bottle-feeding were, in equal numbers, a previous positive experience of bottle-feeding and a desire not to 'breastfeed'. Table 7.

Table 7: Reasons respondents chose bottle feeding on day one

| Reason for Bottle-feeding Baby | n | % |
|---|----|------|
| 'Previous positive experience' | 17 | 14.2 |
| 'I didn't want to breastfeed' | 17 | 14.2 |
| 'Preferred Method' | 15 | 12.5 |
| 'More convenient option' | 14 | 11.7 |
| 'Easier Option' | 13 | 10.8 |
| 'Ill Mother' | 13 | 10.8 |
| 'Previous negative experience of breastfeeding' | 10 | 8.3 |

Note: N<120 as some respondents did not report any reason for choosing to bottlefeed their baby.

Table 8 details when the two groups of respondents decided on the method of feeding their baby. The majority of breastfeeding mothers decided on the method of feeding prior to becoming pregnant. Similarly, a significant proportion of bottle-feeding mothers also decided on their infant feeding method at this time. Therefore, the majority of women, both breastfeeders and bottle feeders decided on the method of feeding prior to becoming pregnant.

Table 8: Reported stage of pregnancy at which respondents decided on method of feeding

| Time of decision on infant feeding method | Breastfeeding | | Bottle-feeding | | Total | |
|---|---------------|------------|----------------|------------|--------------|------------|
| | % | n | % | n | % | n |
| Before became pregnant | 65.4 | 83 | 40.0 | 48 | 53.0 | 131 |
| 0-3 months of pregnancy | 17.3 | 22 | 21.7 | 26 | 19.4 | 48 |
| 4-6 months of pregnancy | 7.1 | 9 | 9.2 | 11 | 8.1 | 20 |
| 7-9 months of pregnancy | 4.7 | 6 | 12.5 | 15 | 8.5 | 21 |
| After Birth | 5.5 | 7 | 15.8 | 19 | 10.5 | 26 |
| Unanswered | - | - | 0.8 | 1 | 0.4 | 1 |
| TOTAL | 100.0 | 127 | 100.0 | 120 | 100.0 | 247 |

ii. Parentcraft Classes

A total of 159 (64.4%) respondents stated they did not attend parentcraft classes during their pregnancy. There was no statistical difference in the rate of parentcraft attendance between mothers who reported bottle-feeding their baby and mothers who reported breastfeeding their baby. However, primagravidas were more likely to report attendance than respondents who reported having other children. This difference was statistically different, ($p < 0.0001$). In addition, attendance was more commonly reported by those who reported completing third level education, than those who had not. This difference was also statistically significant, ($p < 0.05$).

Of the 86 (34.8%) mothers who reported attending parentcraft classes, 59 (68.6%) said they had not influenced them in deciding on the method of feeding their baby. Three mothers were unsure whether attendance at classes had influenced their infant feeding decision. However, of the 24 (27.9%) respondents who reported being influenced by attending parentcraft classes, just one was influenced not to breastfeed. Attendance at parentcraft classes influenced the other 23 respondents, as a result of information on the positive effects of breastfeeding for their baby.

iii. Health Professionals

Less than 50% (40.9%; $n=101$) of respondents reported no professional speaking to them about the benefits of breastfeeding. When a professional did speak with a mother about the benefits of breastfeeding, this was most frequently a hospital nurse (Table 9). A slightly higher proportion of respondents who were spoken to by a health professional chose to breastfeed their baby. However, this difference was not statistically significant.

Table 9: Categories of health professionals whom respondents reported speaking to about the benefits of breastfeeding

| Health Professional | Number | % |
|-------------------------------------|--------|------|
| No Professional | 101 | 40.9 |
| Hospital Nurse | 94 | 38.1 |
| General Practitioner/Practice Nurse | 45 | 18.2 |
| Hospital Doctor | 24 | 9.7 |
| Public Health Nurse | 11 | 4.5 |
| Other | 1 | 0.4 |
| Unanswered | 9 | 3.6 |

Note: N>247 as some respondents reported that more than one health professional spoke to them about the benefits of breastfeeding.

iv. Other Personnel who Influenced Respondents in method of infant feeding

Table 10 details the personnel who most influenced mothers in deciding their infant feeding method. As is evident, the majority (n=130) of mothers reported that the principal influence in their decision was themselves.

Table 10: Personnel who respondents stated most influenced them in deciding their method of feeding

| Categories of associates/contacts whom influenced mothers in choosing their method of infant feeding | No. | % |
|--|-----|------|
| Myself | 130 | 52.6 |
| General information | 25 | 10.1 |
| Professional advice | 19 | 7.7 |
| Parents | 19 | 7.7 |
| Family | 15 | 6.1 |
| Spouse/partner | 13 | 5.3 |
| Friends | 12 | 4.9 |
| Antenatal classes | 10 | 4.0 |
| Sister/sister-in-law | 9 | 3.6 |
| Don't know | 2 | 0.8 |
| Peers | 1 | 0.4 |

Note: N>247 as some respondents reported being most influenced by more than one person

v. Other Children

A total of 153 (61.9%) respondents reported having other children. Ninety (58.8%) mothers reported that they had breastfed some of these children. The mean number of weeks a respondent reported having breastfed her last child was 23 weeks (range 0.5 to 102 weeks). Respondents who had breastfed previous children were more likely to initiate breastfeeding

their newborn baby than mothers who had not previously breastfed any of their babies. This difference was statistically significant, ($p < 0.0001$).

vi. Supports

(a) Partner/Husband

The vast majority of respondents reported that their husband or partner was supportive of their breastfeeding. Of the total of 132 mothers who commenced breastfeeding, 118 (89.4%) stated their husband or partner was supportive of their breastfeeding. Four (3.0%) respondents reported that their husband or partner 'doesn't care'. Three (2.3%) respondents had no husband or partner at the time of survey, while six (4.5%) did not answer the question. (There was no information available on one mother who initially breastfed her baby).

(b) Members of Family & Community

Table 11: Members of family and community who respondents stated were supportive of their breastfeeding

| Person | No. | % |
|----------------------|-----|------|
| Friends & neighbours | 35 | 34.0 |
| Brother/sister | 28 | 27.2 |
| Family | 28 | 27.2 |
| Mother | 26 | 25.2 |
| Non-immediate Family | 21 | 20.4 |
| Parents | 12 | 11.7 |
| Public health nurse | 10 | 9.7 |
| Voluntary groups | 5 | 4.9 |
| Everybody | 3 | 2.9 |
| Childminder | 1 | 1.0 |
| General practitioner | 1 | 1.0 |
| Midwife | 1 | 1.0 |

Note: $N > 103$ as respondents selected more than one person who was supportive of breastfeeding.

The majority (78.0%; $n=103$) of respondents reported family members and members of the community to be supportive of their breastfeeding. Table 11 details the members of families and communities who were supportive of respondents' breastfeeding. Fourteen (10.6%) respondents reported family members and others to be unsupportive of their breastfeeding. The majority ($n=10$) of these respondents were married, and were on average age 31.6 years. Nine (64.3%) respondents reported being in employment, while five worked in the home. Where occupation was available, five (62.5%) belonged to the higher (I, II and III) social classes.

One respondent didn't know if they were supportive or not, while thirteen respondents did not answer the question. (There was no information available on one mother who initially breastfed her baby).

(c) Breastfeeding Support Group/Clinics

In total, 100 (75.8%) respondents who commenced breastfeeding were given written information on breastfeeding support groups in their area prior to discharge from hospital. For the majority (n=80), this information was in the form of a leaflet or booklet. Only 18 (18.0%) respondents reported receiving written contact details and numbers of the local groups. Almost one fifth (n=25) of respondents reported receiving no written information, while five respondents did not comment. (There was no information available on two mothers who initially breastfed her baby).

Less than half (47.7%; n=63) of respondents attended breastfeeding support groups. For the majority of these (79.4%; n=50), attendance at these classes had no influence on the duration of time they intended to continue breastfeeding.

Factors positively affecting breastfeeding

The overall breastfeeding initiation rate was 51.4%; whereas the initiation rate among the lower socio-economic groups was 34.8%. Many factors were positively associated with the initiation of breastfeeding. Those factors that reached statistical significance are presented in Table 12.

Table 12: Factors associated with the initiation of breastfeeding

| Contributing Factor | Breastfeeding | | Artificial (Bottle) Feeding | | Chi-square | p< |
|--|---------------|-----|-----------------------------|-----|------------|--------|
| | % | n | % | n | | |
| Breastfed previous child | 77.8 | 70 | 22.2 | 20 | 69.1 | 0.0001 |
| Completed third level education | 67.4 | 66 | 32.7 | 32 | 19.6 | 0.0001 |
| Early decision (up to 3 months of pregnancy) | 58.7 | 105 | 41.3 | 74 | 13.2 | 0.001 |
| Non-smoker | 56.5 | 108 | 43.5 | 83 | 10.7 | 0.005 |
| Maternal Grandmother had breastfed | 69.4 | 43 | 30.7 | 19 | 7.1 | 0.01 |
| Social class (I, II, III) | 56.2 | 68 | 43.8 | 53 | 6.2 | 0.05 |
| Married | 55.8 | 101 | 44.2 | 80 | 5.8 | 0.05 |
| County of residence (Meath) | 59.8 | 67 | 40.2 | 45 | 5.8 | 0.05 |
| Age >=24 | 54.0 | 121 | 46.0 | 103 | 5.1 | 0.05 |

**Over 85% of births in Dublin hospitals were to mothers in Social class I, II and III.*

Therefore, having breastfed a previous child, having completed third level education and making an early decision to breastfeed were most strongly associated with initiation of breastfeeding on day one.

3.2 Feeding Method on Discharge from Hospital

At time of discharge from hospital, there was a slight decrease in the number of respondents who were still breastfeeding. From the total of 127 initial breastfeeders, 115 (90.5%) were still breastfeeding their babies.

In addition, five respondents who had fed their baby by artificial methods on day one were actually breastfeeding their babies at the time of hospital discharge. The reasons these five respondents were unable to breastfeed on day one were a combination of mother and infant factors including: baby in Special Care Baby Unit (n=1); mother needed rest (n=1); mother recovering from a caesarean section (n=1) and poor milk supply (n=2). Thus 48.6% of all respondents were still breastfeeding on hospital discharge.

i. Breastfeeding discontinued prior to hospital discharge

Eleven respondents who initially breastfed their babies stopped breastfeeding prior to discharge from hospital. Nine (81.8%) of these were first-time mothers. The remaining two mothers had other children. Table 13 details the age of baby when the mother stopped breastfeeding, prior to discharge from hospital.

Table 13: Age of baby when mother stopped breastfeeding prior to hospital discharge

| Age of baby when stopped breastfeeding | No | % |
|--|-----------|--------------|
| Day 1 | - | - |
| Day 2 | 3 | 27.3 |
| Day 3 | 2 | 18.2 |
| Day 4 | 2 | 18.2 |
| Day 5 | 1 | 9.1 |
| Day 6 | - | - |
| Day 7 | - | - |
| Week 2 | 2 | 18.2 |
| Unanswered | 1 | 9.1 |
| Total | 11 | 100.0 |

(a) Reasons why respondents stopped

Respondents selected from a list of options, the reasons why they stopped breastfeeding. The results are detailed in Table 14. The most commonly cited reasons were that the mother was tired, that the baby was unhappy and hungry and that the mother was experiencing breast problems.

Table 14: Reasons why respondents stopped breastfeeding prior to discharge from hospital

| Reason | Number | % |
|---------------------|--------|------|
| Mother Tired | 8 | 72.7 |
| Baby unhappy/Hungry | 7 | 63.6 |
| Breast Problems | 7 | 63.6 |
| Didn't enjoy | 4 | 36.4 |
| No Support | 2 | 18.2 |
| Poor Milk Supply | 2 | 18.2 |
| Other Children | 1 | 9.1 |
| Tied Down | 1 | 9.1 |

Note: $N > 11$ as mothers indicate more than one reason for discontinuing breastfeeding

Only two (18.2%) of the eleven respondents who stopped breastfeeding their baby prior to hospital discharge said they would definitely not breastfeed another baby. Four (36.4%) said they would, while five (45.5%) were undecided as to whether they would or would not breastfeed again.

3.3 Feeding Method at Time of Survey

From a total of 120 respondents who were breastfeeding at the time of hospital discharge, 104 (86.7%) were still breastfeeding at initial completion of the questionnaire. Thus, 42.1% ($n=104$) of all respondents were still breastfeeding at time of survey. This questionnaire was completed when the newborn baby was a median age of 14 days (range 3 to 109 days).

i. Intended Duration of Breastfeeding

Almost half ($n=47$) of respondents intended to continue breastfeeding for more than 16 weeks. The length of time respondents intended to continue breastfeeding is presented in Table 15.

Table 15: Mothers stated intended duration of breastfeeding

| Intended duration of breastfeeding | No. | % |
|------------------------------------|------------|--------------|
| 4 weeks or less | 3 | 2.9 |
| 5-8 weeks | 18 | 17.3 |
| 9-12 weeks | 7 | 6.7 |
| 13-16 weeks | 9 | 8.6 |
| >16 weeks | 47 | 45.2 |
| Don't know | 8 | 7.7 |
| As long as possible | 12 | 11.5 |
| Total | 104 | 100.0 |

(a) Other Fluids

At the time of survey, 65 (62.5%) respondents were exclusively breastfeeding their babies. Where additional fluids were given to the baby, this was, in most cases, artificial formula. In fact, 34 (32.7%) mothers reported giving additional formula milk to their babies. Of these, 20 (58.8%) gave the formula milk within the first week of birth. Only 5 (4.8%) mothers gave water-based fluids to their babies. These fluids were generally given at a later stage, usually when the baby was two weeks or older. Thus, 70 (67.3%) mothers practiced 'full' breastfeeding at time of survey, representing 28.3% of all respondents included in the study.

ii Stopped breastfeeding after hospital discharge

Fifteen respondents who were breastfeeding on hospital discharge had stopped breastfeeding at the initial survey contact. Six (40%) of these were first time mothers, while nine reported having other children. Of the nine respondents who reported having other children, 7(77.8%) had breastfed a previous child for an average of 11 weeks (ranging from 1 to 42 weeks).

Table 16: Age of baby when mother stated she stopped breastfeeding after hospital discharge

| Age of baby when stopped breastfeeding | No | % |
|--|-----------|--------------|
| Week 1 | 5 | 33.3 |
| Week 2 | 4 | 26.7 |
| Week 3 | 1 | 6.7 |
| Week 4 | 1 | 6.7 |
| Week 5 or after | 4 | 26.7 |
| Total | 15 | 100.0 |

(a) Reasons why respondents stopped breastfeeding

Table 17 details the reasons stated by the 15 respondents who stopped breastfeeding following discharge from hospital. The most commonly cited reason was again that the baby was unhappy/hungry.

Table 17: Reasons why mother stopped breastfeeding following discharge from hospital

| Reason | Number | % |
|----------------------------|--------|------|
| Baby unhappy/hungry | 8 | 53.3 |
| Perceived poor milk supply | 3 | 20.0 |
| Mother tired | 3 | 20.0 |
| Ill mother | 3 | 20.0 |
| Other children | 3 | 20.0 |
| Breast problems | 3 | 20.0 |
| Didn't enjoy | 2 | 13.3 |

Note: N>15 as some respondents reported more than one reason for discontinuing breastfeeding.

Respondents were asked if there was any one thing that would have helped them to continue breastfeeding. Six (40.0%) respondents did not answer this question. Three (20%) respondents reported that there was nothing in particular that could have helped them. Two (13.3%) reported that if they had not experienced breast problems, they would have continued. Two (13.3%) would have continued if they had received more professional advice and support. One (6.6%) respondent reported that breastfeeding had an effect on her other child, while one (6.6%) respondent required more help in the home. However, when asked if they would consider breastfeeding another baby, eleven (73.3%) respondents said that they would, one (6.6%) said that she would not and three (20%) were undecided.

3.4 6-week Follow-Up

It was only possible to contact, by telephone, 102 (98.1%) of the 104 respondents who were breastfeeding at the time of completion of the questionnaire for follow-up at 6-weeks. (Two respondents had moved from their stated address). The mean age of baby at 6-week follow-up was 7 weeks (range from 6-12 weeks).

i. Rate of Breastfeeding

A total of 80 (78.4%) of the respondents who were breastfeeding at initial survey contact were still breastfeeding at the 6-week follow-up. Thus, 32.4% of all respondents were still breastfeeding at 6 weeks postnatal.

(a) Intended Duration of Breastfeeding

The details of the intended duration of feeding of the 80 clients who provided details are presented in Table 18.

Table 18: Reported intended breastfeeding duration at six week follow-up

| Intended duration of breastfeeding at 6-week follow-up | No. | % |
|--|-----------|--------------|
| 6-10 weeks | 3 | 3.8 |
| 11-14 weeks | 16 | 20.0 |
| 15-18 weeks | 5 | 6.2 |
| >18 weeks | 36 | 45.0 |
| As long as possible | 20 | 25.0 |
| Total | 80 | 100.0 |

Looking back to time of survey, the majority (81.8%; n=9) of those who intended stopping breastfeeding prior to six weeks, had stopped breastfeeding at the time of their 6-week follow-up, while the majority (93.0%; n=66) of those who intended breastfeeding for longer than six

weeks, were still breastfeeding at the 6-week follow-up. This difference was statistically significant, ($p < 0.0001$).

The mean age of the five mothers, who did not succeed in breastfeeding for the intended six weeks, was 33.2 years. Three of them were primagravidas, while two had other children and they had both breastfed previous children (8 and 24 weeks, respectively). Two of the respondents decided to breastfeed following birth, one decided between 4-6 months of pregnancy, with the other two deciding early in the pregnancy. All five respondents reported their husbands and members of the community to be supportive of their breastfeeding. The babies were an average age of 4 weeks, when the respondents stopped breastfeeding. The most commonly reported reasons for stopping breastfeeding was that the mother was experiencing breast problems and was feeling tired.

(b) Other Fluids

Half ($n=40$) of the breastfeeding respondents were exclusively breastfeeding their babies at the six week follow-up, with seven respondents predominantly breastfeeding their babies. Thus, 47 (58.8%) respondents practiced 'full' breastfeeding, representing 19.0% of all respondents. Thirty-three (41.3%) respondents had introduced their baby to artificial formula (complementary feeding). Complementary feeding was introduced when the baby was a mean age of 5 weeks (range 1 to 10 weeks).

ii. Stopped Breastfeeding Prior to 6-week Follow-Up

A total of 22 (21.6%) respondents who were breastfeeding at initial survey contact had stopped breastfeeding at the 6-week follow-up. This occurred when the baby was a mean age of 5 weeks (range 1-8 weeks).

(a) Reasons for Stopping Breastfeeding

The principal reason why respondents stopped breastfeeding prior to the 6-week follow-up was because their baby was unhappy or hungry as presented in Table 19.

Table 19: Stated reasons for stopping breastfeeding prior to 6-week follow-up:

| Reason | No. | % |
|----------------------------|-----|------|
| Baby unhappy/hungry | 12 | 54.5 |
| Breast Problems | 6 | 27.3 |
| Mother Tired | 4 | 18.2 |
| Mother Sick | 4 | 18.2 |
| Tied Down | 2 | 9.1 |
| Perceived Poor Milk Supply | 2 | 9.1 |
| Embarrassed | 1 | 4.5 |

Note: As some respondents gave more than one reason, $N > 22$

(b) Plans to Breastfeed another Baby in the Future

From the total of 22 respondents who had stopped breastfeeding, the majority (81.8%; $n=18$) would breastfeed again. Two (9.1%) respondents remained undecided. Two (9.1%) did not comment.

3.5 14-Week Follow-Up

It was only possible to contact, by telephone, 77 (96.3%) of the 80 respondents who were breastfeeding at 6-week follow-up. (Three (3.7%) respondents were not contactable at their stated address by telephone or letter). The mean age of baby at follow-up was 14 weeks (range from 13-17 weeks).

i. Rate of Breastfeeding

A total of 55 (71.4%) of the contacted respondents who were breastfeeding at 6-week follow-up contact were still breastfeeding at the 14 weeks. This equates to 22.3% of all respondents. Twenty three (41.8%) respondents intended to continue breastfeeding for more than 6 months as presented in Table 20.

Table 20: Stated intended breastfeeding duration at 14week follow-up

| Intended Duration of Breastfeeding at 14 week follow-up | Number | % |
|---|-----------|--------------|
| < = 6 months | 17 | 30.9 |
| 7-9 months | 7 | 12.7 |
| 10-12 months | 15 | 27.3 |
| > 12 months | 1 | 1.8 |
| As long as possible | 15 | 27.3 |
| Total | 55 | 100.0 |

Looking back to the time of survey, the majority (76.5%; $n=13$) of those who intended stopping breastfeeding prior to 14 weeks, had stopped at 14 weeks postnatal, while almost 90%

(n=42) of those who intended breastfeeding for longer than 14 weeks were still breastfeeding at the time of their 14-week follow-up. This difference was statistically significant, ($p < 0.0001$).

Six respondents did not succeed in breastfeeding for longer than 14 weeks. The majority (n=5) of these respondents had decided to breastfeed early in their pregnancy. Five respondents had other children in addition to their new baby, and four of them had breastfed a previous baby. However, on this occasion they stopped breastfeeding, mainly because the baby was hungry.

(a) Other Fluids

In excess of half (54.5%; n=30) of breastfeeding respondents were still exclusively breastfeeding their babies at the 14 week follow-up, with three (5.5%) respondents predominantly breastfeeding their babies. Thus, 33(60.0%) mothers practiced 'full' breastfeeding at 14 week follow-up, representing 13.4% of all respondents. The remaining 22 respondents had introduced artificial formula at this stage. Fifteen (68.2%) had introduced artificial feeding by six weeks and seven (31.8%) had introduced it between weeks 2-14.

ii. Stopped Breastfeeding Prior to 14-week Follow-Up

A total of 22 (28.6%) respondents who were breastfeeding at six weeks had stopped breastfeeding at the 14-week follow-up. This occurred when the baby was a mean age of 11 weeks (range 6-14 weeks).

(a) Reasons for Stopping Breastfeeding

The reasons why respondents stopped breastfeeding prior to the 14-week follow-up were varied. However, at this stage of follow-up issues affecting the mother predominated as presented in Table 21.

Table 21: Stated reasons for stopping breastfeeding between 6 and 14 week follow-up

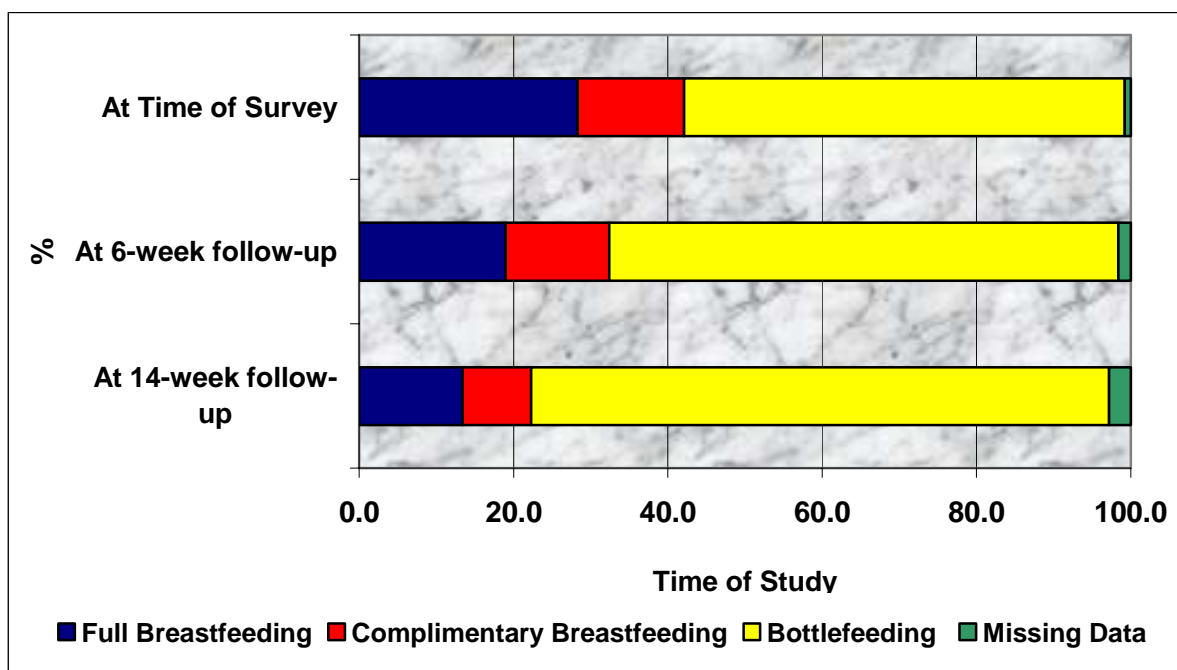
| Reason | Number | % |
|-----------------------------------|--------|------|
| Baby unhappy/hungry | 8 | 36.4 |
| Mother Tired | 6 | 27.3 |
| Perceived Poor Milk Supply | 6 | 27.3 |
| Return to work | 6 | 27.3 |
| Other Children | 6 | 27.3 |
| Tied Down | 3 | 13.6 |
| Breast Problems | 2 | 9.1 |
| Embarrassed | 2 | 9.1 |
| No Public Facilities | 1 | 4.5 |
| No Privacy | 1 | 4.5 |
| Baby showed preference for bottle | 1 | 4.5 |

Note: As some respondents gave more than one reason, No > 22

(b) Plans to Breastfeed another Baby in the Future

All respondents who had stopped breastfeeding between 6 and 14 week follow-up stated they would breastfeed again.

From the previous results, it is evident that the number of breastfeeding mothers (full and complementary) gradually decreased throughout the study period. At the same time, the number of bottle-feeding mothers gradually increased, as presented in Figure 6.

Figure 6: Rate of breastfeeding (full and complementary) and bottle-feeding at each stage of the study

Discussion

This report presents the results of a survey into infant feeding practices in the North Eastern health Board. It details the type and duration of different infant feeding practices in the region. It also outlines respondents' views on infant feeding and the influences on their infant feeding choice. Of the total of 394 questionnaires administered, 247 were returned giving a satisfactory²⁹ response rate of 62.7%. There was no information available on non-respondents.

Mothers demographic details

The majority of respondents were married and gave birth at an average age of 30.5 years. This is similar to the situation nationally as most mothers are married at the time of giving birth at approximately 30.4 years³⁰. There was slight over representation of social classes 2 and 3 in the social class groupings of this study. This is slightly at variance with the social class distribution in the NEHB where social class 4 was the most common social class in the 1996 population census³¹. In addition, the average number of children per family at 2 was slightly higher than the national average of 1.6³⁰.

There was also some notable differences between respondents and the national population. A substantially higher proportion of respondents had completed third level education than was found in National Health and Lifestyle (SLÁN 2)³². In addition, there were fewer medical card holders in the respondents, that is 21% compared to 34% in the general population³². On the other hand, the percentage of respondents who reported being unemployed, at 13.4%, was notably higher than the reported national average for 2002 of 4.3%³⁰.

Health behaviour

The harmful effects of smoking on both mother and child have previously been well documented³³. Despite this, one fifth of respondents were current smokers. While this is less than both the figure reported previously in the NEHB breastfeeding study (29%)¹ and the national reported for female smokers (26%)³², this is an area where there remains a high priority to identify effective methods of reducing smoking. In contrast, the percentage of mothers who took folic acid supplements at the appropriate stage of their pregnancy is encouraging and is higher than the figure reported nationally³⁴.

Pregnancy and birth

While the great majority of women received conventional antenatal care, delivered in both hospital and general practice settings, a substantial minority (6%) of respondents stated they had not received any antenatal care. While this is an improvement from the previous NEHB study (14%)¹, this is considerably higher than the national figure of 0.4%³⁵. As perinatal outcome is significantly worse in unbooked patients, compared to those who are regular antenatal attenders, the reason for the high rate of nonattenders documented requires further research. Also, only a very small proportion of respondents were referred antenatally to their PHN. Thus, opportunities to discuss infant feeding choices and other relevant concerns, with a health professional are minimal. However, the health board GP unit has recently developed a mechanism whereby mothers can request a visit from their PHN in the antenatal period. Therefore, in the future, expectant mothers should have the opportunity to be visited by their PHN in the antenatal period.

The majority of respondents delivered their babies in one of the two maternity hospitals in the region. However, almost half of births to Meath respondents were in one of the three major Dublin maternity hospitals. The previous NEHB study¹ reported that mothers who delivered their babies in one of the Dublin maternity hospitals were more likely to initiate breastfeeding their babies. Our study indicates that this situation remains unchanged. This may be partly explained by the preponderance of mothers in higher social classes who deliver their babies in Dublin. Alternatively it may be due to breastfeeding policies and practices within these hospitals that result in higher numbers of mothers commencing breastfeeding.

Initial feeding pattern

The number of mothers commencing breastfeeding their babies has improved from the previous documented figure of 35%¹. In fact, the breastfeeding initiation rate overall, and the rate among lower socio-economic groups, has reached the target of the National Breastfeeding Policy⁶. However, there is an early progressive decline in rates from hospital discharge to 14 weeks. Similar drop out rates have previously been documented^{37,38}.

Initiation of breastfeeding was found to be strongly related to a number of socio-demographic factors including, maternal age and socio-economic status, marital status, level of education and smoking status. To ensure higher rates of breastfeeding, especially in the lower socio-

economic groups, it is essential that these factors are considered by health professionals and policy-makers. In the revision and updating of both local and national policies there must be an evidence based approach to breastfeeding with particular emphasis on the reduction of inequalities, in accordance with the recent Health Strategy⁴.

The majority of mothers decided on their infant feeding method prior to becoming pregnant, with two thirds of breastfeeding mothers deciding to breastfeed their baby at this early stage. This is higher than reported in previous Irish studies^{1,39}. As a consequence, the opportunity for both nursing and medical personnel, to positively influence breastfeeding rates may be limited to the smaller proportion of women who remain undecided on their infant feeding method at the later stages of pregnancy. However, even in the last month of pregnancy simple intervention by medical professionals has been shown to increase breastfeeding rates²⁴.

There is some evidence that attendance at small informal discussion classes, similar to parentcraft classes that highlight the benefits of breastfeeding, may increase breastfeeding initiation rates²⁰. However, this intervention is limited by two factors. Firstly, the number of mothers attending these type of classes is disappointingly low, as evidenced by this and previous studies in the NEHB and other health boards^{1,37,39}. Only one third of respondents attended parent craft classes. Secondly, attendance at these classes is generally during the later stages of pregnancy when most mothers have already decided on their infant feeding method. Perhaps alternative models of antenatal education need to be explored and developed to ensure that instruction methods that optimize breastfeeding rates are used.

This study, and the previous NEHB study¹, documented the substantial proportion of mothers who do not receive any antenatal instruction, from either doctors or nurses, on infant feeding. Thus, there is considerable room for improvement in the role played by both the nursing and medical profession in the promotion of breastfeeding in the antenatal setting. Development of both doctors' and nurses' roles should begin at an early age. There is a need to educate young people at home and at school about breastfeeding. In addition, their roles should be further developed at undergraduate level as highlighted in the national breastfeeding policy³⁶.

Increasing the duration of exclusive breastfeeding is one of the goals of the WHO³. However, this study again highlighted the decline in breastfeeding rates that commences even prior to

hospital discharge. This is a similar finding to previous Irish studies^{37,38}. Maternal tiredness, breast problems and having a hungry or unhappy baby were cited as the most common reasons for discontinuing breastfeeding. These are constantly documented as reasons for discontinuing breastfeeding. Attendance by healthcare workers at approved training courses can result in both improved initiation and continuation rates for breastfeeding, by providing the necessary skills and knowledge on how to manage such problems⁴⁰. Most mothers who stopped breastfeeding at this early stage were first-time mothers. Thus, this specific group should be prioritized and visited by trained healthcare staff early in the postnatal period.

Infant feeding pattern at first survey contact

The gradual decline in breastfeeding rates continued after hospital discharge. In conjunction with the decline in full breastfeeding, there was an early and progressive increase in the number of mothers who bottle fed their babies. Many mothers introduced bottle-feeding during the baby's first week. By ensuring that public health nurses visit all breastfeeding mothers as early as possible after hospital discharge, the opportunity exists to affect this decline in breastfeeding rates.

Infant feeding pattern at six weeks

The gradual decline in breastfeeding duration and exclusivity continued at the six week follow-up. Again, the principal reasons for discontinuing were having a hungry or unhappy baby. Peer support programmes, for example breastfeeding support groups, offered by experienced and trained peers may help increase the number of women who continue to breastfeed exclusively²⁰. Increasing the accessibility of such breastfeeding support groups may be a way in which mothers continue to breastfeed for longer.

Infant feeding pattern at fourteen weeks

Approximately one fifth of respondents were breastfeeding at this stage of follow-up. While this figure falls short of the national target of a 30% breastfeeding rate at 4 months, it is encouraging to note that over half of mothers breastfeeding at this stage were practicing full breastfeeding. At this stage issues affecting mothers were more important as reasons for discontinuing breastfeeding.

The additional support or services required to prolong the duration of breastfeeding is unclear as maternal health issues, family problems and professional support factors were all indicated as influences on respondents decision to stop breastfeeding. Maximising professional and peer support and the availability of consistent correct information to mothers throughout their intended breastfeeding period may address the issues that negatively affect breastfeeding

Acknowledgements:

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Recommendations

- 1.** The decision on infant feeding method is made against the background of attitudes prevailing in society, as well as those of the mother's more immediate network of family and friends. Thus, breastfeeding is an issue that needs to be addressed in a wide socio-cultural context. A positive approach to breastfeeding needs to be developed in schools, workplaces and all healthcare settings. Policy makers at regional and national level should take a leading role in developing and implementing evidence based policies supportive of breastfeeding in all relevant settings.
- 2.** Primary care professionals must inform all pregnant women of the benefits of breastfeeding in primary care. Practice nurses and GPs should have access to approved breastfeeding education and training to ensure that they have the skills necessary to encourage and promote breastfeeding from this setting.
- 3.** Secondary care professionals must inform all pregnant women of the benefits of breastfeeding. All healthcare staff in maternity hospitals caring for pregnant women, mothers and infants should receive training in the skills necessary to promote and encourage breastfeeding.
- 4.** All pregnant women should be referred to their public health nurse early in the antenatal period. The proposed initiative by the health board GP unit to facilitate this process should to be implemented throughout the health board as rapidly as possible.
- 5.** The reasons for the low attendance rates at antenatal parentcraft classes need further examination.
- 6.** The possibility of introducing more appropriate and relevant antenatal education (such as antenatal apprenticeship to a known breastfeeder from a similar socioeconomic background or peer support programmes), need to be further explored.
- 7.** Healthcare personnel in maternity hospitals, needs to examine their policies and practice of providing and distributing infant formula to breastfeeding mothers.

8. First-time breastfeeders should be prioritised during their hospital stay for early and intensive postnatal assistance with breastfeeding.
9. All mothers should be provided with written information about breastfeeding prior to discharge. This information should include contact details of local support personnel and groups close to the area where the mother resides.
10. Breastfeeding peer support groups offered by experienced and trained personnel may increase the number of women who continue to breastfeed. Such programmes should be further developed to ensure mothers have adequate access to these groups in their own area.
11. An qualitative study that would increase our understanding of the *how* and *why* issues pertaining to the duration and cessation of breastfeeding especially in the lower socioeconomic groups should be undertaken as soon as feasible.

| | |
|-------------------|--|
| Appendix A | Covering explanatory letter to Mothers |
| Appendix B | Infant feeding Questionnaire |
| Appendix C | 6 week Follow-up Questionnaire |
| Appendix D | 14 week Follow-Up Questionnaire |

Appendix A

Dear Ms. _____

The Department of Public Health is currently undertaking a survey to determine the infant feeding pattern in the North Eastern Health Board. We are asking all new mothers to complete the accompanying questionnaire on the method of feeding they have chosen for their baby. To complete the questionnaire will take approximately 20 minutes.

All information obtained from the questionnaire will be treated confidentially

We may be contacting you at 6 and 14 weeks for further information. Consequently we would appreciate if you included your telephone number as indicated on the questionnaire.

Ms. Aishling Sheridan or Dr. Mary Ward will be available to assist you should you have any difficulties or queries with the questionnaire or any aspect of the survey:

Thank you for taking the time to complete the enclosed questionnaire. Your co-operation and assistance in this survey is greatly appreciated.

Thank you

Yours sincerely,

Dr. Mary Ward
Specialist Registrar in Public Health Medicine

A. 1 Name _____

A. 2 Address _____

A. 3 Phone No. _____

A. 4 What is the name of your public health nurse?

A. 5 How many days is it since you left hospital?

_____ days

A. 6 What is your baby's date of birth?
 ____/____/____

A. 7 What is your baby's age now (in days)?

_____ days

A. 8 What was your baby's birth weight?

A. 9 In which hospital was your baby born?

- A. 10 What type of birth did you have?
- Normal delivery
 - Assisted (forceps/vacuum)
 - Caesarean Section
 - Other(specify) _____

A. 11 Can you rate difficulty of birth? (Please circle)

| | | | | |
|-----------|------|---------------|-----------|----------------|
| Very Easy | Easy | Not difficult | Difficult | Very difficult |
|-----------|------|---------------|-----------|----------------|

A. 12 What is your age (in years)? _____ years

- A.13 Are you...
- Single?
 - Cohabiting?
 - Married?
 - Separated/Divorced?
 - Widowed?
 - Other? (specify) _____

- A.14 Are you...
- In full-time employment?
 - In regular part-time employment?
 - Working in the home (Caring for dependents)?
 - In casual part-time employment?
 - Unemployed?
 - Student?
 - Other? (specify) _____

A.15 If you are in employment, what is your occupation?

A.16 If you are currently unemployed, what was your most recent occupation?

A.17 Are you still in education?
 Yes No

- A.18 What level of education have you completed?
- Did not attend school at all
 - Primary Level
 - Secondary Level
 - Training Course (e.g., FAS, VEC, apprentice)
 - Third Level (Undergraduate)
 - Third Level (Postgraduate)

A.19 Which of the following do you have?

- Medical Card
- VHI/BUPA
- None of the above

Section B. Infant Feeding Details

Appendix B

B. 1 What method of feeding did you choose for baby's *first* feed on Day 1?

Breast
Artificial (bottle)

B. 2 Why did you choose this method of feeding?

B. 3 When did you decide on the method of feeding for baby? (Tick the earliest period applicable)

- Before became pregnant
- Between 0-3 months of pregnancy
- Between 4-6 months of pregnancy
- Between 7-9 months of pregnancy
- After the birth
- Other (please specify)

B. 4 Did you attend parent craft classes?

Yes No

B. 5 If 'Yes', did these classes influence you when deciding on the method of feeding of your baby?

Yes No Don't know

B. 6 If 'Yes', how did the classes influence you?

B. 7 Who did you attend for antenatal care?

- Hospital
- GP/practice nurse
- Hospital and GP
- No antenatal care

B. 8 Were you referred (prior to delivery of your baby) to your public health nurse?

Yes No

B. 9 If 'Yes', by whom were you referred?

B.10 Have you other children?

Yes No

B.11 If 'Yes', how many?

B.12 If you have other children, did you breast-feed any of these children?

Yes No

B.13 If 'Yes', for how many weeks did you breastfeed the last child who was breastfed(No. of weeks)

B.14 Did your mother breastfeed any of her children?

Yes No Don't know

B.15 Who influenced you most in deciding the method of feeding your baby?

B.16 Did any of the following talk to you specifically about the benefits of breastfeeding during your pregnancy?

- GP/practice nurse
- Hospital Doctor
- Hospital Nurse
- PHN
- No professional spoke to me

B.17 Did you work outside the home up to this pregnancy or birth?

Yes No

If 'NO', skip to Q B.23

B.18 If 'Yes', was this work?

Full time Part-time

B.19 If 'Yes', do you intend to return to work?

Yes No Don't know
 If 'NO', skip to **Q B.25**

B.20 If you intend to return to work, what age will the baby be when you return?

weeks

B.21 Did the fact that you intend to return to work affect your decision when choosing the method of feeding for your baby?

Yes No Don't know

B.22 If 'Yes', how did it influence you?

After you have answered Q B.22, SKIP TO Q B.27

B.23 Did the fact that you do not work outside the home influence your choice of method of feeding for your baby?

Yes No Don't know

B.24 If 'Yes', how did it influence you?

Skip to Q B. 27

B.25 Did the fact that you do not intend to return to work outside the home influence your choice of feeding method for your baby?

Yes No Don't know

B. 26 If 'Yes', how did it influence you?

B. 27 Which of the following applies to you?

- I currently smoke
- I have never smoked
- I gave up smoking in the last year
- Other (specify) _____

B.28

(i) Did you take Folic Acid supplements during your pregnancy?

Yes No

(ii) If 'Yes', when did you commence taking them?

- Prior to becoming pregnant
- Between 0-3 months of pregnancy
- Between 4-6 months of pregnancy
- Between 7-9 months of pregnancy

IF you commenced breastfeeding at all, please complete Section C.

Otherwise, **THANK YOU** for completing the questionnaire!

Please return in the freepost envelope provided.

Section C. Breastfeeding Details

The following questions apply only to mothers who have commenced breastfeeding their baby

C. 1. Have you given your baby any fluids in addition to breast milk? Yes No

If 'Yes', please specify... (please indicate the first time in space provided)

- Artificial formula
On Day/Week _____
- Other (flavoured water/ fruit juices/ Oral rehydration salts)
On Day/Week _____

C. 2 Is your partner/husband supportive of your breastfeeding?

- Yes
- No
- Doesn't care
- No husband/partner

C. 3 Are there any others in your family or the community supportive of your breastfeeding?
Yes No

C. 4 If 'Yes', please specify who?

C. 5 Were you still breastfeeding on discharge from hospital? Yes No

If 'Yes', skip to Q C.8

C. 6 If 'No', what age was the baby when you stopped? _____ Days/Weeks

C.7 Why did you stop breastfeeding?
(Tick all that apply)

- Baby unhappy/hungry
- Advised by other person
- Breast problems
- Mother tired
- No privacy
- No support
- Tied down
- No public facilities
- Other child/children
- Didn't enjoy
- Embarrassed
- Perceived
- poor milk supply
- Other (please specify)

C. 8 Are you still breastfeeding now?
Yes No

If 'Yes', skip to Q C.12

C. 9 If 'No', what age was the baby when you stopped breastfeeding?

_____ (Weeks)

C.10 Why did you stop breastfeeding at this time?

C.11 What, if anything, would have helped you continue to breastfeed?

Section C. Breastfeeding Details Continued...

C.12 If you had another baby would you choose to breastfeed?

Yes No Don't know

C.13 Were you provided with written information on breastfeeding support group/clinic on your discharge from hospital?

Yes No

**THANK YOU FOR COMPLETING
THE QUESTIONNAIRE**

*Please return in the freepost envelope
provided*

C.14 If 'Yes', please specify what kind?

C.16 Did your attendance at parentcraft classes influence your duration of breastfeeding?

Yes No Didn't attend

C.17 If 'Yes', how?

C.18 Did your attendance at breastfeeding support groups influence your duration of breastfeeding?

Yes No Didn't attend

C.19 If 'Yes', how?

C.20 Will your return to work (if relevant) affect your duration of breastfeeding?

Yes No Not returning to work

C.21 How long more do you intend to breastfeed?

Weeks _____ Months _____

Appendix C

| | |
|-------------|---|
| Name: _____ | Telephone no: Survey no: <input type="text"/> <input type="text"/> <input type="text"/> |
|-------------|---|

Questionnaire to be completed when the baby is six weeks old

D.1. What age is the baby now? _____ weeks.

D.2 Are you still breastfeeding now? Yes No

If 'Yes', skip to Q D.6

D.3 If 'No', what age was the baby when you stopped breastfeeding? _____(Weeks)

D.4. Why did you stop breastfeeding? (Tick all that apply)

- | | | |
|---|---|--------------------------|
| Breast problems <input type="checkbox"/> | Advised by other person <input type="checkbox"/> | |
| Mother tired <input type="checkbox"/> | Baby unhappy/hungry <input type="checkbox"/> | <input type="checkbox"/> |
| No public facilities <input type="checkbox"/> | Other child/children <input type="checkbox"/> | <input type="checkbox"/> |
| No privacy <input type="checkbox"/> | Embarrassed <input type="checkbox"/> | <input type="checkbox"/> |
| No support <input type="checkbox"/> | Perceived poor milk supply <input type="checkbox"/> | <input type="checkbox"/> |
| Tied down <input type="checkbox"/> | return to work <input type="checkbox"/> | <input type="checkbox"/> |
| Other (please specify) _____ | | |

D.5 What, if anything, would have helped you continue to breastfeed?

D.6 If you had another baby would you consider breastfeeding? Yes No

D.7 How long do you intend to breastfeed for? _____ weeks _____ months

D.8 If you are still breastfeeding, have you given your baby any fluids in addition to breast milk? Yes No

If yes, please specify

Artificial formula on week _____

Other (flavoured water/ fruit juices/oral rehydration salts) on week _____

Appendix D

| | |
|-------|---------------|
| Name: | Telephone no: |
|-------|---------------|

Survey no: _____

Questionnaire to be completed when the baby is 14 weeks old

D.1. What age is the baby now? _____ weeks.

D.2. Are you still breastfeeding now? Yes No If 'Yes', skip to Q D.6

D.3. If 'No', what age was the baby when you stopped breastfeeding? _____(Weeks)

D.4. Why did you stop breastfeeding? (Tick all that apply)

| | | | |
|------------------------|--------------------------|----------------------------|--------------------------|
| Breast problems | <input type="checkbox"/> | Advised by other person | <input type="checkbox"/> |
| Mother tired | <input type="checkbox"/> | Baby unhappy/hungry | <input type="checkbox"/> |
| No public facilities | <input type="checkbox"/> | Other child/children | <input type="checkbox"/> |
| No privacy | <input type="checkbox"/> | Embarrassed | <input type="checkbox"/> |
| No support | <input type="checkbox"/> | Perceived poor milk supply | <input type="checkbox"/> |
| Tied down | <input type="checkbox"/> | Return to work | <input type="checkbox"/> |
| Other (please specify) | _____ | | |
| _____ | | | |
| _____ | | | |

D.5. What, if anything, would have helped you continue to breastfeed?

D.6. If you had another baby would you consider breastfeeding?

Yes No

D.7. How long do you intend to breastfeed for? _____ weeks _____ months

D.8. If you are still breastfeeding, have you given your baby any fluids in addition to breast milk? Yes No *If yes, please specify*Artificial formula on week _____Other (flavoured water/ fruit juices/oral rehydration salts) on week _____

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