A Review of the Breastfeeding Support Services Provided by Public Health Nurses in Ireland

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Executive summary  
A Review of Breastfeeding Support Services Provided by Public Health Nurses: A National Study Commissioned by the HSE

The aim of the research was to review breastfeeding support services provided by public health nurses in Ireland. Public Health Nurses (PHN) in Ireland provide a universal service to mothers and babies from birth to school going age. Breastfeeding support services encompass statutory and non statutory resources available to mothers and informal sources such as family and friends. The nature of this support includes informational, practical, emotional and appraisal support. It is internationally recognised that breastfeeding is the best form of infant feeding, with many positive outcomes for mothers and babies. However, in Ireland, the breastfeeding rates are among the lowest in Europe. In 2006, 44.5% of mothers were recorded as breastfeeding on discharge from hospital (Health Research and Information Division, 2008); 33% were breastfeeding at PHN first visit and 19.5% at 3 months (Health Service Executive, 2007). A Cochrane systematic review of studies, evaluating formal and informal support services in the postnatal period, found both formal and informal supports were effective and together they were also effective in areas where initiation and continuation of breastfeeding was not high (Britton, McCormick, Renfrew, Wade, & King, 2007). Thus a review of existing breastfeeding support services provided by the Public Health Nursing service in Ireland was called for by the Health Service Executive (HSE), to honour the commitment given in the “Breastfeeding in Ireland: a Five Year Strategic Action Plan for Breastfeeding” (DoHC, 2005). This quantitative, cross sectional study used three sample cohorts from the main stakeholders to address the aim of the study. These sample cohorts were: mothers with children under three years of age (N = 4,000), Directors of Public Health Nursing (DPHN) (N = 32), and Public Health Nurses (n = 200). Self report questionnaire were completed and returned either by mail or online. Ethical approval was sought and granted from The Clinical Research Ethics Committee of the Cork Teaching Hospitals. Data were analysed using the Statistical Package for Social Science (SPSS) and reported using descriptive and inferential statistics.

DPHN respondents were mainly from HSE South and HSE Mid-Leinster and were less well represented from the remaining areas. PHN respondents were relatively evenly distributed in the four HSE regions and clinically experienced as the majority were registered more than 5 years. Most PHNs indicated that they had attended formal WHO/UNICEF programmes which was considered appropriate to their needs and gave them confidence to support women. However, they do not have easy access to continuing education and alternatively they update their knowledge using journals and other sources. DPHNs had an overall positive attitude to breastfeeding. They overestimated the degree to which PHNs updated their breastfeeding knowledge using the selected sources and this finding was statistically significant. DPHNs had a statistically higher expectation than PHNs that they would refer mothers to breastfeeding supportive services. DPHNs indicated that there was consistency around the country in terms of a positive organisational culture towards breastfeeding. Whereas PHNs indicated that the organisational culture was not entirely supportive of breastfeeding and the difference was statistically significant. There was a significantly higher expectation among DPHNs that PHNs would refer mothers to the many potential breastfeeding services than was realised by the PHNs.
The majority of mothers who responded were relatively evenly distributed in the four HSE regions; over 35 years; married and had third level education. The majority of mothers had decided on method of infant feeding prior to pregnancy or in early pregnancy and mothers also indicated making a conscious decision to breastfeed using a whole variety of feeding combinations. Furthermore, satisfaction with breastfeeding was also related to mothers’ achieving their own goals in terms of planned duration of breastfeeding. Both these findings conflict with WHO recommendations of exclusive breastfeeding for at least 6 months. Overall, mothers had high breastfeeding self-efficacy with a sub group of mothers in which the levels were very high, indicating very high levels of confidence in the latter group. PHNs had a more positive attitude to breastfeeding than breastfeeding mothers which was highly statistically significant and an unexpected finding. PHNs’ level of assessment of breastfeeding by observing was higher than their level of assessment by questioning and the difference was statistically significant. PHNs were not always able to provide timely support services in the form of primary, follow-up visits, or week-end service. Mothers indicated that this service was not always enough to meet their needs. A wide variety of appropriate supports are available and encouraged but not always referred to by PHNs or used by mothers to their full potential, implying a lack of responsiveness. Universal services generally have universal reach, therefore it is not surprising that statutory support services were deemed more widely available than non statutory.

Mothers indicated their preference for one-to-one support in the early postnatal period, while also valuing the availability of support groups which were facilitated by over half the respondent PHNs. While mothers highly ranked 24 hour help-lines as supportive, it was also found that where this service was available, it was not used to its full potential. Specifically in relation to PHNs, mothers indicated that breastfeeding support groups in their area, phone numbers of PHNs, especially with same day response, seven day week PHN service, more home visits, and scheduled phone calls would have been considered beneficial. The majority of mothers were satisfied with their overall breastfeeding experience. The services they used and rated most highly were chat rooms/blogs and the drop-in well baby clinics run by PHNs. There are many appropriate breastfeeding support services available to mothers but they are not always responsive and timely enough. In relation to the findings and the deficiencies and/or gaps in current service provision identified, the researchers have made the following recommendations to improve breastfeeding support services nationally.

**Recommendations**

- Make best-evidence based breastfeeding education available to all PHNs at initial education and in-service levels.
- Standardise breast-feeding education for PHNs and undertake yearly audits to monitor the numbers who have attended breastfeeding courses and the numbers awaiting attendance at these courses
- Increase the availability of breastfeeding education programmes for all health professionals and monitor attendance.
- Breastfeeding education of mothers should be equivalent to that provided for health professional.
• Audit the availability for PHNs of networked access to web-based information on best evidence on breastfeeding support.
• Make electronic educational resources more readily available to health professionals and mothers.
• A strategy needs to be developed to address negative organisational culture where it exists.
• PHN primary visits should be achieved within the prescribed timeframe i.e. 48 hours to comply with the HSE performance indicator
• Early, concentrated and follow-up home visits to breastfeeding mothers should be prioritised by LHOs and DPHNs
• Breastfeeding support home visits should be prioritised for planned essential visits i.e. the PHN weekend service thus making the PHN service a seven-day service.
• Make PHNs more accessible to breastfeeding mothers e.g. by telephone.
• PHNs need to involve maternal grandmothers in the provision of breastfeeding support.
• PHNs need to undertake a community health needs assessment to identify all available resources and make the contact details of these resources available.
• Increase the frequency, availability of breastfeeding support groups and consider the needs of mothers in relation to the time they are organised.
• Encourage the development of community mothers programmes to provide breastfeeding support groups.
• Increase the accessibility of appropriate breastfeeding specialists to act as a resource for PHNs - this could be a PHN, a midwife or lactation consultant
• Develop the use of modern communication technology e.g. social networking, blogs, forums etc
• Identify appropriate 24-hour Help lines –and encourage their use as a means of breastfeeding support.
• Implement a formal mechanism for evaluating breastfeeding support services in each LHO
• Assess the facilities in health centres and public buildings in terms of their ability to support breastfeeding
Section 1 Review of breastfeeding support services provided by PHNs

1.1 Introduction
Breastfeeding has a major role to play in optimising public health. The Department of Health and Children, the Health Service Executive endorses the World Health Organisation recommendation that infants should be breast fed exclusively for the first six months of life and thereafter continue to be breastfed in combination with suitably nutritious complementary foods (solids) until they are two years of age or older (WHO 2003). Virtually every health authority worldwide also supports this best practice-based recommendation. The recommendation is based on research evidence showing the health benefits of breastfeeding both in the short and long term, for both mother and baby (Britton 2009). Interventions that effectively promote, protect and support breastfeeding have a significant impact on establishing the foundation for a lifetime of optimal health for the child, as well as having major health benefits for the mother, thereby also reducing national health spending.

Breastfeeding initiation rates are 78% in England, 70% in Scotland, 67% in Wales, and 63% in Northern Ireland, with 48% of all mothers in the United Kingdom continuing to breastfeed at six weeks, and 25% still breastfeeding at six months (Scientific Advisory Committee on Nutrition 2008). Initiation and duration rates in Scandinavia are much higher, Sweden has 98% breastfeeding initiation and 97% breastfeeding at one month with 80% still breastfeeding at six months (Centre for Epidemiology Sweden, 2002). However, in Ireland, 44.5% of mothers were recorded as exclusively breastfeeding on discharge from hospital (Health Research and Information Division, 2008); 33% were breastfeeding at PHN first visit and 19.5% at 3 months (Health Service Executive, 2007).

In order to enhance the promotion, protection and support for breastfeeding in Ireland, the Department of Health and Children (DOHC) published “Breastfeeding in Ireland: a Five Year Strategic Action Plan for Breastfeeding” in October 2005. The Health Service Executive (HSE) has taken responsibility for implementing the strategy. The aim of the strategy is to address Ireland’s very low rates of Breastfeeding-the lowest in Europe. The commitment given in Action 12 of the strategy states that “the public health nursing service will be adequately supported to meet the needs of breastfeeding mothers in the community”. There is a wealth of international literature which has attempted to measure the effectiveness of breastfeeding support. Ultimately formal breastfeeding support is seen as a public health intervention amenable to analysis in relation to clinical and/or cost effectiveness. The main source of formal support in the community is from either nurses or midwives. The exact nature of intervention activities carried out and attitudes held by nurses during home visits have been examined and illustrates the importance of consistent education on effective interventions.

The words ‘nurse’ and ‘midwife’ are used interchangeably throughout the international literature and in this report, they are used synonymously. Section 1.2 outlines the search strategy undertaken for the literature review. Section 1.3 is a discussion on health care policies and guidelines that influence breastfeeding. Section 1.4 outlines the role of the Public Health Nurse (PHN) in relation to breastfeeding support. This is followed by the effectiveness of breastfeeding support in section 1.5,
and the sources of support in 1.6., Health professionals’ perceptions and mothers’ experiences of breastfeeding support are covered in 1.7 and 1.8 respectively.

1.2 Search Strategy
An extensive literature review was conducted to review national and international literature relating to breastfeeding support services. The electronic databases of CINAHL, Cochrane, Science Direct, PubMed and Maternity and Infant care were searched during January 2009 using a search strategy devised by the School of Nursing and Midwifery’s librarian to ascertain literature published on or after 2003. The search terms used included: “breastfeeding”, “breast feeding”, “infant nutrition”, “lactation”, “support”, “community nurse”, “community midwife”, “health visitor” and “public health nurse”. The results retrieved are displayed in table 1.1 below. The reference lists of related reviews were scanned and studies relevant to community nursing/midwifery were obtained. The search results were then reviewed for applicability to the current study. Of the 5595 relevant results a total of 131 articles and other pieces of research were included in the literature review.

Table 1.1- Search results

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</tbody>
</table>

- Concept 1= Breast feeding, breastfeeding, infant nutrition, lactation
- Concept 2= Support
- Concept 3= Public Health Nurse, Community Nurse, Community Midwife, Health Visitor

1.3 Policies and Guidelines
In developing the Baby Friendly Hospital Initiative the World Health Organisation and UNICEF aimed at addressing the hospital policies and practices, such as scheduled feeding, separation of newly delivered mothers from their babies, limiting the duration of feeds and the routine supplementation of breastfeeds that were shown to be detrimental to the normal establishment of breastfeeding (WHO/UNICEF, 1992).

Hospital routines also impact on the time spent giving help with breastfeeding (Furber & Thomson, 2007; Nelson, 2007). Being short staffed, busy or rushed impacted on
the time spent with breastfeeding mothers and particularly if there was a plan of care that was time consuming. This rush pattern of care led to inconsistencies and led to the introduction of supplementary feeds (Nelson, 2007). In the hospital environment, mothers wanted midwives to stay with them during breastfeeding whereas the midwives did not stay and instead ‘popped in’ to breastfeeding mother.

In an effort to implement the research based ‘10 Steps to Successful Breastfeeding’ (World Health Organisation/UNICEF, 1989) in the hospital setting, the Baby Friendly Hospital Initiative was launched by the WHO and UNICEF in 1992 and was introduced in Ireland in 1998. The Initiative was extended to cover community health care centres in 1998 by UNICEF UK, and subsequently in some other countries. This Global Initiative was recently revised and up-dated. In September 2008 the UK published its revision of its “Seven Points for sustaining Breastfeeding in the Community”. These are evidence-based best practice standards developed to improve practice in community health care in order to effectively promote, protect and support breastfeeding. In the UK Community facilities such as GP surgeries, locality teams and health centres that adopt the Seven Point Plan for Sustaining Breastfeeding in the Community can apply to be assessed and accredited as Baby Friendly. Accredited facilities are also required to practise in line with the International Code of Marketing of Breast milk Substitutes (UNICEF UK Baby Friendly Initiative, 2008).

1.4 The Role of Public Health Nursing in Maternal and Child Health

PHNs in Ireland are population based generalist nurses. They provide a preventative and curative service to all client groups within a defined geographical area (Primary Community and Continuing Care PCCC, 2009). Until 2007, there was a basic requirement that all applicants for the one year Postgraduate Diploma in Public Health Nursing education needed to be Registered Midwives as well as Registered General Nurses. This requirement no longer applies and applicants who are not Registered Midwives must undertake a specific maternal and child health nursing module (An Bord Altranais, 2005, 2007). The role of the PHN is detailed in Circular 41/2000 (DoHC, 2000) and it explicitly states therein that duties and responsibilities include ‘antenatal care in accordance with (local) arrangements’. PHNs are also required ‘to visit homes following early discharge/birth notification and for on-going child, maternal and family health monitoring’ and ‘to liaise with and advise parents or guardians on all aspects of child health, maternal and family health monitoring’ (p.1). The most recent PHN job description (Primary Community and Continuing Care PCCC, 2009) is not as explicit in relation to duties but the maternal and child health nursing role is implicit within professional responsibilities and clinical practice.

As antenatal care constitutes such a small part of the PHN caseload the primary postnatal visit following delivery represents the first contact with all mothers and their babies and the beginning of the universal child health surveillance programme which lasts until the end of the school going period. Postnatal care constitutes 6.4% of PHN clients in Galway community care (Begley et al., 2004). However there is a policy in Galway of providing daily visits for 5 days, which is not the case nationally. This primary visit is a statutory universal visit and should take place within 48 hours of discharge home from the maternity unit (Denyer, 2005; Denyer, Thornton, & Pely, 1999). Primary visits account for 9% of total PHN child health caseload and 4% of total caseload (Office of the Nursing Services Director, 2009a). Early primary visits
are accorded a priority by the HSE and there is in place a Performance Indicator (PI) requiring all PHNs to submit data on the percentage of first visits occurring during the 48 hours following discharge. The percentage of first visits achieved during this period varies significantly around the country, from 57% to 85% (DoHC, 2008). A more recent audit indicated an achievement rate for this PI of 45% to 99% (Office of the Nursing Services Director, 2009a). In view of the difficulty achieving compliance with the performance indicator it has been recommended by the Office of the Nursing Services Director (2009) to extend the time to achieve a primary visit from 48 hours to 72 hours, until the issues which contribute to delays can be addressed.

Mothers who initiate breastfeeding in the maternity hospital are assessed by PHNs in the community in relation to their specific breastfeeding needs and care plans are implemented on an individualised basis. The care implemented may be direct care in the form of practical, informational and appraisal support and/or indirect care in the form of referral to other community resources. Follow-up visits and contact is determined jointly between PHN and mother, ideally determined by need (O'Dwyer, 2009). Anecdotal evidence relating to the impact of current economic constraints shows that home visiting by PHNs is being significantly curtailed and clinic visits encouraged more. Clinics take the form of Well Baby clinics which PHNs run mainly on a drop-in, weekly basis in their areas. The population health responsibility of PHNs requires them to carry out a health needs assessment of their area, thereby identifying needs and the available resources for health and social well-being. Where health status indicator deficiencies are identified e.g. low breastfeeding rates, measures such as the development and promotion of breastfeeding support groups are encouraged (PCCC, 2009).

1.5 The Effectiveness of Breast-Feeding Support

There is a wealth of international literature which has attempted to measure the effectiveness of breastfeeding support. Ultimately formal breastfeeding support is seen as a public health intervention amenable to analysis in relation to clinical and/or cost effectiveness. The exact nature of intervention activities carried out by nurses during home visits have been examined (Tappin, Britten, Broadfoot, & McInnes, 2006) and illustrates the importance of consistent education on the effectiveness of interventions. The main source of formal support in the community is from either nurses or midwives.

Clinical effectiveness of support measures have been studied mainly from the perspective of breast-feeding initiation and duration (Gill et al. 2007, Fallon et al. 2005, Steel O'Connor et al. 2003, Porteous et al. 2000) but also maternal perceptions of satisfaction with emotional support, informational support (Ekstrom et al. 2006) usefulness, self efficacy, confidence (Goulet, D'Amour, & Pineault, 2007; Kronborg, VÃ¡th, Olsen, Iversen, & Harder, 2007) and infant health problems. Various models used to deliver breast feeding support have also been analysed in relation to their cost effectiveness (Desmond et al. 2008, Bashour et al. 2008).

The credibility of the available evidence has been assessed by both the Cochrane library (Britton et al., 2007; Sikorski & Renfrew, 2002) and the National Institute for Health and Clinical Excellence (Renfrew, Dyson, et al., 2005) and all forms of additional postnatal support reviewed were found to increase the duration rate of
breastfeeding before six months. Goulet et al (2007) contradicts this conclusion saying type or timing of support doesn’t affect breastfeeding duration. Instead they agree with previous literature they reviewed that states mothers’ characteristics such as age and education are the only factors that will affect the continuation of breastfeeding. Skilled peer or professional breastfeeding proactive support offered to those women who want to breastfeed in the postnatal period (Gill, Reifsnider, & Lucke, 2007; Kronborg et al., 2007; Porteous, Kaufman, & Rush, 2000) and on-going skilled peer or professional breastfeeding support in the community (Ingram, Rosser, & Jackson, 2005; Serafino-Cross & Donovan, 1992) are effective in enhancing duration of breastfeeding. Lay support was found to be effective in sustaining exclusive breastfeeding but the strength of effect on duration was found to be uncertain. Face to face contact was found to be more effective than telephone contact (Britton et al., 2007; Sikorski & Renfrew, 2002). Supportive interventions appear to be less effective in areas where initiation rates are already high (McDonald, Henderson, Faulkner, Evans, & Hagan, 2009). Various supportive practices have had a positive influence on maternal perceptions of effectiveness (Ekstrom, Widstrom, & Nissen, 2006; Kronborg et al., 2007). Practices found to be ineffective in enhancing breastfeeding duration include single home visits by community nurses following early discharge (Gagnon, Dougherty, Jimenez, & Leduc, 2002). Several randomised controlled trials found no benefits of postnatal visiting and/or telephone contacts by professionally trained providers (Di Napoli et al., 2004; Lynch, Koch, Hislop, & Coldman, 1986; McDonald et al., 2009; Quinlivan, Box, & Evans, 2003). Methodological differences and study limitations do present a challenge to identifying best evidence e.g. peer counselling varies extensively in content and implementation making comparison difficult. Nonetheless multifaceted interventions appear to be the most promising in enhancing duration and meeting the needs of women (Renfrew et al. 2005, Di Napoli et al. 2004). In a recent review, Thulier and Mercer (2009) concluded that human lactation is a complex phenomena and the duration of breastfeeding is influenced by many variables such as physical, social, psychological and demographic.

1.6 Sources of Support

On review of the literature from a wide variety of countries and a range of research designs, there appears to be several sources of support for the breast feeding mother and her family. There is difficulty in classifying peer support due to the blurred boundaries, however, Dennis (2003) defines peer support as ‘the provision of emotional, appraisal and informational assistance by a created social network member who possesses experiential knowledge of a specific behaviour or stressor or similar characteristics as the target population.’(p.329). Peer support is considered to be facilitatory to the development of breastfeeding skills and increased self-confidence in the ability to continue breastfeeding (Wilkins, 2006). However the following categories are most effective: informal support- from partners and family members or from lay people such as the mother’s social circle of friends/colleagues. Formal but voluntary support by mother-to-mother support groups like La Leche League, Cuidiú-Irish Childbirth Trust, baby café’s, or other voluntary organisations and finally formal support provided by statutory organisations.
1.6.1 Informal Support
Grandmother and partner support has been cited in the literature as very influential to a mother’s breastfeeding success (Clifford & McIntyre, 2008; Victoria Hall Moran, Edwards, Dykes, & Downe, 2007). It has been widely documented that the more supportive a mother’s social circle is to breastfeeding, the more likely she is to breastfeed her baby (Clifford & McIntyre, 2008; Jenny Ingram & Johnson, 2004). This is especially true of low income women (Matich & Sims, 1992).

1.6.2 Formal – Voluntary Support
Support provided by trained voluntary peer counsellors can be effective in helping mother’s breastfeed exclusively and for a longer duration (Clifford & McIntyre, 2008; Dykes, 2004; Graffy, Eldridge, Taylor, & Williams, 2004; Ingram et al., 2005). Mother’s satisfaction with this form of support is evident in the literature (Dennis, 2002; Hall Moran, Dykes, Edwards, & et al., 2005; Raine & Woodward, 2003). Dykes (2004) reported on a UK evaluation study of 26 peer support programmes, and concluded that the most effective peer support projects were a) informal drop in centres where peer supporters took a central role and health care professionals had a background function b) the support group had multiple points of referral from different people/organisations and c) was open to antenatal and breastfeeding women. One such organisation which provides this type of support is La Leche League (LLL). LLL is an international charity that provides “mother to mother support, encouragement, information and education” via telephone support, emails, group meetings or home visits. LLL also provides a peer counsellor training programme and regularly publishes leaflets on breastfeeding topics (Higham, 2006). The baby café is another form of support group, it is a charitable trust set up in the UK that provides mothers with a weekly drop-in breastfeeding support centre. The cafés can be facilitated by health visitors, lactation consultants, midwives or breastfeeding counsellors from a voluntary breastfeeding organization and may also have peer supporters available to mothers. The aim of the cafés is to increase breastfeeding initiation and duration, include rather than exclude mothers, and also to raise local awareness on breastfeeding. They can be part of other breastfeeding initiatives such as sure start programmes in an area (Williams, 2003). Another such organisation is Cuidiú-Irish Childbirth Trust which is involved in the promotion and support of breastfeeding in collaboration with the HSE and other voluntary groups. Cuidiu’s breastfeeding support groups provide expert breastfeeding counselling as well as an opportunity to meet other mothers who are breastfeeding their babies in a social setting. They are co-ordinated by trained counsellors.

1.6.3 Formal -Statutory
This category is made up of: physicians, nurses, midwives, trained peer counsellors working for government funded organisations, and support groups facilitated by health care professionals (HCP) (Dennis, 2002; Porter Lewallen et al., 2006). Health professionals have been cited as a valuable source of support for breastfeeding mothers (Hannula, Kaunonen, & Tarkka, 2008) but are sometimes criticised for their lack of up to date knowledge (Clifford & McIntyre, 2008), inconsistent advice (Attard Montalto, Borg, Buttigieg-Said, & Clemmer, 2009; Dennis, 2002), and busy workload (Dennis, 2002).
Breastfeeding support from those in the formal categories can be provided using the following interventions: in-hospital visits, home visits, scheduled phone calls, 24 hour help-lines, providing contact telephone numbers for HCPs, written materials, support groups, individual counselling, group education, clinics/drop in services, video support/teleconferencing, chatrooms/interactive blogs and emails (Dennis, 2002; Hannula et al., 2008). Support can be provided on a one-to-one basis or in groups, and can be face-to-face or via telephone contact or other means of communication (Britton et al., 2007). E-communication and telephone supports are emerging as alternative means of supporting breastfeeding mothers (Dennis & Kingston, 2008; Hall & Irvine, 2009; Laborde et al., 2007; Thomas & Shaikh, 2007; Wang, Chen, & Chen, 2008) and can greatly reduce the cost of providing support to mothers in their own homes (Steel O’Connor et al., 2003).

1.7 Health Care Professionals Views on Breastfeeding Support

The Cochrane reviews have indicated that support for breastfeeding mothers increases successful outcomes for breastfeeding duration (Britton et al 2007). The research into health service staff’s perceptions of breastfeeding support show a disparity between what they perceive their role to be in providing breastfeeding support and what mothers need and want from health service staff. Staff consider that they have a positive influence on breastfeeding if they have good knowledge and can thus provide skilled effective support for breastfeeding. Staff draw on their own personal and/or professional breastfeeding expertise and perceive this to be helpful for women. However, this can contrast with how mothers perceive the support provided by health care professionals, which may result in a negative experience for the mother (Gill, 2001). There is also research that indicates that lack of support from health professionals increases the inappropriate use of supplementary feeds complementary feeding (Hodnitt and Pill 1999; Mozingo et al, 2000).

The type of support provided by nurses/midwives to breastfeeding mothers tends to be verbal, informational support, which consists of; answering questions, giving advice and providing demonstrations. Nurses/midwives perceive this type of support as adequate for supporting breastfeeding mothers. However Gill (2001) found that although mothers wanted informational support, they also wanted interpersonal support and encouragement from health professionals. Taveras et al (2003) in a survey of mothers (n = 1163) found that discontinuation of breastfeeding was associated with lack of self-confidence in ability to breastfeed in the initiation period. Furthermore, mothers were less likely to discontinue breastfeeding if they received encouragement from their clinician during the initial 12-week postnatal period.

1.7.1 Experience of Providing Support

Health professionals in Nelson’s (2007) study who had more experience felt that breastfeeding support had improved in recent times and that inconsistencies in advice were less frequent, however newly qualified staff felt inconsistencies in breastfeeding advice were prevalent. Furthermore the personal experience of health professionals with breastfeeding was found to have an influence on the type of support they provided to breastfeeding mothers (Marshall, Renfrew, & Godfrey, 2006; Nelson, 2007). Thus the more positive the experience a nurse or midwife has with breastfeeding, the more positive the encouragement and support mothers receive.
(Nelson, 2007). Although midwives acknowledged that personal feelings should not influence the care of mothers (Nelson, 2007) many recognised that it is inevitable that they will bring something from their own breastfeeding experience to their interactions with individual breastfeeding women (Marshall et al., 2006).

1.7.2 Knowledge and Attitudes

Wallace and Kosmala-Anderson (2007) surveyed midwives, health visitors and non voluntary breastfeeding supporters knowledge, attitudes and competence of breastfeeding support and found that just 9.8% of the 549 respondents knew the WHO recommendations for exclusive breastfeeding. Just over 50% of staff felt competent in positioning and latching for breastfeeding and a significant proportion of staff did not feel competent in dealing with milk insufficiency or pain which are the most common causes for ceasing breastfeeding.

High levels of knowledge about breastfeeding has been found to be associated with more consistent information and positive professional practices (Sikorski & Renfrew, 2002; Spiby et al., 2009). Educational programmes were found to be beneficial for improving staff knowledge but not for changing attitudes. The attitudes mothers perceive healthcare professionals have about breastfeeding has a direct influence on breastfeeding rates (Nelson, 2007).

1.8 Mothers Experiences of Breastfeeding Support

Qualitative research which explored mothers’ experiences of breastfeeding support had consistent findings. Breastfeeding parents (n = 5) in Hunter’s (2004) grounded theory study cited the most important supportive activities provided by community midwives was reassurance and practical hands-on help. Both the baby’s mother and father wanted to be involved in the midwifery visits and they regarded continuity of care by midwives as an important support. Low income multiethnic mothers (n = 42) in Raislers (2000) study expressed support from professionals in terms of the personal relationships established. This relationship enabled a supportive environment in which appropriate information and referrals were made with regard to breastfeeding. Furthermore, health professionals were found to be supportive if they were enthusiastic about breastfeeding and available for phone calls when mothers were in distress. Similar findings were articulated from verbatim comments within a large Randomised Control Trial (Graffy & Taylor, 2005), where mothers (n = 654) indicated that professional informational support was deemed helpful when undertaken in a participatory manner. Mothers wanted information on breastfeeding, on what to expect, practical advice on positioning and acknowledgment of mothers’ experiences and preferences. This led to increased self-confidence in their ability to breastfeed, which Bandura (1977) describes as self-efficacy. Mothers (n = 9) who discontinued breastfeeding at two weeks, indicated in Mozingo’s (2000) phenomenology study, that for them, the incongruity between idealised expectations and early breastfeeding reality lead to disillusionment, lowered confidence and subsequent cessation. Similar themes emerged from Hodinott’s (2000) qualitative research with low income mothers (n = 21), who expressed how inadequately prepared they were for initiation and sustaining of breastfeeding, and this led to reduced self-confidence in their ability to continue. However in this scenario the apprenticeship-style learning of skills from family and peers to improve their self confidence and continue with breastfeeding was significant.
Conclusion
Research evidence suggests that there is a wealth of policies and guidelines to support breastfeeding, both internationally and nationally (DoHC, 2005; Health Service Executive, 2007; World Health Organisation/UNICEF, 1989). Breastfeeding rates in Ireland continue to remain low by international standards. Public health nurses have an important role to play in supporting breastfeeding in the community in Ireland. Previous evidence suggests that effective breastfeeding supports are multifaceted appropriate, responsive and timely (Britton et al., 2007). Other factors influencing initiation and duration of breastfeeding were socio-demographic factors such as: age, ethnicity, education, and previous experience. Breastfeeding support services encompass statutory and non statutory resources available to mothers and informal sources such as family and friends. The nature of this support includes informational, practical, emotional and appraisal support (Moran, Dykes, Burt, & Shuck, 2006). Peer group support rather than one-to-one support was found to be more beneficial and acceptable to mothers (Dykes, 2004). Mothers with high levels of maternal breastfeeding self-efficacy have fewer problems with breastfeeding and continue for a longer period (Dennis, 2006). Support is deemed helpful from professionals if there is a personal relationship between the professional and the mother and continuity of care (Hunter, 2004). In addition, mothers have identified preferences for the four functional activities of support. For example, they prefer tangible (instrumental) support with breastfeeding. Rather than information alone on issues, mothers preferred the professional to demonstrate and observe the mother actually breastfeeding. They want the professional to be available, flexible, non-judgemental, take the mothers’ views into account and appraise them to enable them to enhance their ability to problem-solve and their breastfeeding skills (Britton, McCormick, Renfrew, Wade & King, 2009; Graffy & Taylor, 2005). Mothers want a service that is appropriate to their needs when they want it or timely and responsive to their changing needs.
Section 2. Methodology

2.1 Aims and Objectives
The aim of the study was to review breastfeeding support services provided by Public Health Nurses in Ireland.

The study’s main objectives include:
1) To undertake a comprehensive critical review of the published national and international literature;
2) To undertake an examination of current breastfeeding service provision by the public health nursing service in Ireland;
3) To assess the effectiveness of this service from the client perspective in relation to its appropriateness, timeliness and responsiveness to their needs;
4) To assess the effectiveness of this service from the provider perspective in relation to its appropriateness, timeliness and responsiveness to client needs;
5) To identify similarities and differences of opinion between providers (i.e. PHNs) and consumers (mothers);
6) To consult with service user and provider groups and other key managerial, clinical and voluntary stakeholders;
7) To identify any deficiencies and/or gaps in current service provision;
8) To make recommendations to address any deficits.

2.2 Design
A quantitative, cross-sectional survey was used to obtain information from Directors of Public Health Nursing (DPHN), PHNs and mothers on the current breastfeeding support services provided by PHNs. Using a large scale quantitative study is desirable if the results are to be generalisable and ultimately used to influence national health policy.

2.3 Instruments
A questionnaire was developed directly from the conceptual framework and the indicators operationalised from the constructs and sub dimensions of breastfeeding support. Figure 2.1 below outlines the conceptual framework incorporating the appropriateness, timeliness and responsiveness of breastfeeding support and the items which measure each of the variables. There was found to be some overlap in these constructs.
Figure 2.1. Conceptual framework

Background variables

- HSE Region, DPHN: 2
- PHN: 2
- Mothers: 7

Experience
- PHN 3
  - Age
  - Mothers 2
- Education
  - Mothers 3
- Marital status
  - Mothers 4
- Occupation
  - Mothers 5-6

Maternal and Child history
- Mothers: 9-11
- Age of baby
  - Mothers 8
- B/F Hx
  - Mothers 12

Decision making/ intention/ initiation/ duration/ cessation
- Mothers 15-24, 28

Appropriateness

PHN education
- DPHN: 3-7
- PHN: 4-8
- Mothers: -

Policies and guidelines
- DPHN: 13-16
- PHN: 21, 22
- Mothers: -

Competence
- DPHN: -
- PHN: 28-31 scale
- Mothers: -

Breastfeeding self efficacy
- DPHN: -
- PHN: - 22
- Mothers: 34 BSES

Availability of Breastfeeding Supports
- DPHN: 18, 19
- PHN: 23, 25-26 ***
- Mothers: 25, 39

Organisational support for breastfeeding
- DPHN: 22
- PHN: 32
- Mothers: -

Responsiveness

Facilitation of support groups
- DPHN: 8
- PHN: 9

Infant feeding attitude scale
- DPHN: -
- PHN: 10, 11 (IIFAS)
- Mothers: 13-14 (IIFAS)
  - mothers have last 2 added items from a social norms scale here

Attitude towards breastfeeding support
- DPHN: 20, 21
- PHN: 24, 27
- Mothers: 37-38

Evaluations and suggestions for breastfeeding support
- DPHN: 23-26
- PHN: 33-36
  - Mothers: 41-44
  - Satisfaction
    - Mothers 36, 40

Timeliness & appropriateness

PHN practice
- DPHN: 9-11, 17
- PHN: 12, 13 UNICEF
  - 14-20
  - Mothers: 26, 27, 29, 30-33, 35

- *** PHNs asked an extra scale on opinions of voluntary or private lactation consultants

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1 The item number on each questionnaire is listed e.g. DPHN 2 corresponds with question 2 in the DPHN questionnaire, etc
2.4 Sample

Three samples were used in the study; Directors of Public Health Nursing (DPHNs), Public Health Nurses (PHNs) and mothers. There are 32 Local Health Office (LHO) areas in Ireland, each with a Director of Public Health Nursing. In view of this small number it was appropriate to access the entire population of DPHNs (N = 32). Based on the latest available figures there is a population of 1448 ordinary grade PHNs nationally (DoHC, 2009), although the accuracy of these figures has been questioned (Nelligan, 2009). Through the preceptor mailing lists of the national co-ordinators of Postgraduate Diploma in Public Health Nursing education in four Higher Education Institutions, a large convenience sample of PHNs (n = 285) were invited to participate. The benefit of this approach was that the sampling frame was readily accessible and included PHNs from the majority of LHOs in the country.

The inclusion criteria for PHNs were all those carrying a client caseload i.e. public health nursing management, schools and other specialist posts were excluded. In relation to mothers, the inclusion criteria were all mothers (regardless of feeding method) who had a child less than three years of age. The rationale for this was to ensure that any mother who had considered or attempted breastfeeding would consider completing the survey and thus provide valuable data which would inform the discussion on breastfeeding support. It was restricted to mothers with children under three years in an effort to reduce recall bias.

The researchers wished to estimate proportions related to mothers with a precision of less than 2.5%, i.e. the width of the 95% confidence interval around a proportion would be less than five percentage points (< +/-2.5%). Power analysis indicated that in order to achieve this for all possible proportions a sample of at least 1,550 was required. This was set as the minimum sample size required for the study of mothers. The national population of PHNs is 1,448. A sample of about 220 ensured that estimates of proportions had a precision of 6%.

2.5 Pilot Study

The instruments were piloted over a two week period in March. All three questionnaires were tested online and in hard copy by DPHNs (n = 2), PHNs (n = 4) and mothers (n = 26). Expert opinion from PHNs with a management and clinical background was sought to provide feedback on the DPHN and PHN questionnaires. Considerable effort was used to get constructive feedback from mothers and the research team brought laptops with broadband connection to two large shopping centres and a health centre invited mothers to complete the pilot questionnaire online. Very valuable feedback was obtained from this process in relation to formatting e.g. page breaks, line spacing, paragraphing, size of comment boxes etc. Many respondents reported the questionnaires very straightforward and easy to complete. Others provided suggestions on the order of questions, where to add ‘skips’ and the need to add ‘not applicable’ boxes and thus encourage scale completion v. The questionnaire design was finalised after piloting.

2.6 Data Collection Procedure

Three versions of the questionnaire were developed to reflect the wording required when used with Directors of Public Health Nursing, PHNs, and mothers. The link to
the DPHN questionnaire was emailed to all DPHNs (n = 32) in the country. A number of DPHNs who experienced difficulty with completing the questionnaire online were sent a mailed version of the questionnaire. A total of 24 DPHNs completed the questionnaire indicating a response rate of 75%.

The PHN questionnaire packs were mailed or distributed for mailing (n = 285) and a total of 146 were returned indicating a response rate of 51% for the mailed questionnaires. Additionally an email was sent to all DPHNs for distribution to PHNs containing the link to access the questionnaire online if they preferred. Recent research (Office of the Nursing Services Director, 2009a) indicates that from 0% to 100% of health centres in 32 LHOs nationally has access to information technology via the email network. Two LHOs have no coverage at all and 12 have 100% coverage. Difficulties were experienced by PHNs in online access possibly due to intranet only or restrictive security firewalls, however a number of PHNs who were accessed by email did telephone the research team and requested mailed questionnaires. The total number of PHN questionnaires completed, including online (n = 71) was 204.

The strategy used to recruit mothers was via www.eumom.com which is a parenting and pregnancy resource that maintains a database of all mothers who give birth in hospital in Ireland. Eumom agreed to mail questionnaire packs to a random sample of mothers (n = 4000) meeting the inclusion criteria. A total of 1045 completed mailed questionnaires were returned and 86 were returned unopened as address incorrect. Therefore the mailed response rate was 27%. Eumom also posted a URL link on their forum page to enable a volunteer sample of mothers to complete an online version of the questionnaire. This link was later moved to the homepage for ease of access. The DPHNs and PHNs were sent reminders by email and newspaper publicity (Wayman, 2009) was used as a reminder for mothers. The total number of mothers questionnaires completed was 1,854. Of the mothers who responded, 809 (43.6%) responded online and the remaining 1,045 (56.4%) responded by postal questionnaire. A number (n = 20) of questionnaires were removed on data cleaning as they were incomplete.

2.7 Validity and Reliability

The questionnaires were developed directly from a large body of literature and utilised a conceptual framework which supports the content validity of the questionnaires (Figure 2.1). The research team invited experienced PHNs, midwives and mothers to review the instruments and offer opinion in relation to face validity. This feedback was included in modifications made after the pilot study. The instruments in the PHN questionnaire contained reliable scales used in previous studies; Iowa Infant Feeding Attitude Scale (IIFAS-SF) (de la Mora, 1999; Tappin et al., 2006); Attitude to Providing Breastfeeding Support (Bernaix, 2000); Self assessment of Breastfeeding Competence and Organisational barriers to Breastfeeding (Wallace and Kosmala-Anderson, 2007). The Breastfeeding Self-Efficacy Scale (BSES) (Dennis, 2003) was amended to reflect Irish vernacular and included in the mother’s questionnaire. Many other items in both questionnaires were drawn from a variety of literature (Knonberg et al, 2007; Kools et al, 2005; Steel O’Connor 2003; Fallon et al, 2005; de Olivera et al, 2003; Graffy et al 2004). The internal consistency of the scales used in this survey was assessed using Cronbach’s alpha coefficient. The reliability of the modified version of the Breastfeeding Self-efficacy Scale (BSES)
using Cronbach's alpha is very high at 0.95 whereas the original was 0.97 (Dennis, 2003). The reliability of the IIFAS-SF was found by Tappin et al (2006) to be 0.79 for mothers. The reliability of the various other scales was tested using Cronbach's alpha and found to be very high e.g. maternal satisfaction with PHN breastfeeding support was 0.89; maternal satisfaction with breastfeeding support was 0.97; attitude towards breastfeeding support (DPHN, 0.68, PHN, 0.81); PHN competence in providing breastfeeding support was 0.96; Assessment of breastfeeding by questioning was 0.84 and observation was 0.83; Scale measuring if organisation was supportive (DPHN) 0.86 and (PHN) 0.77.

2.8 Ethical Issues
Cognisant of the issues involved in protecting research participants the researchers adhered to ethical guidelines in relation to informed consent, the individuals right to anonymity, confidentiality and the right to withdraw from the study. Ethical approval was sought and granted from the Clinical Research Ethics Committee of the Cork Teaching Hospitals. Respondents were given study information which provided a clear explanation on the purpose of the study prior to recording informed consent. Respondents were made aware of their right to withdraw from the study at any stage, without giving reason. All information received in the questionnaire was treated with the utmost confidence. In relation to mailed questionnaires no databases held by other agencies were directly accessed e.g. the mothers questionnaire was sent to eumom.com for mailing and the similar arrangements were made with the Higher Education Institutions (HEIs) for mailing the PHN questionnaires. No identifiable information was sought in the surveys to ensure respondents’ anonymity. Survey Monkey was the chosen software to administer the online questionnaires. This software provides a secure channel for collecting data online and offers a facility for documenting consent separately. Data using this software is security protected by VeriSign plus a Secure Sockets Layer (SSL) and is not shared by any other party.

2.9 Data Analysis
Questionnaire data were initially analysed within Survey Monkey and provisional descriptive statistics generated. Mailed questionnaires were entered also into a filtered version of survey monkey in order to identify if any differences existed between the two methods of data collection. The data was then coded and transferred into the Statistical Package for Social Science (SPSS) for more detailed analysis. Measures of central tendency on the total scores of each scale and subscale were used for descriptive and comparative purposes. Comparisons were made between questionnaires as appropriate. Results were reported in line with the objectives of the study. The data from the open-ended questions was content analysed and used to illuminate the quantitative data where appropriate.

2.10 Project Management:
The study was conducted between January and July 2009 as detailed in the Gantt chart below. The research team liaised closely with and provided regular progress reports to Ms. Maureen Fallon, the HSE National Breastfeeding Co-ordinator.
Table 2.1 Timescale of a Review of Breastfeeding Support Services Provided by PHNs

<table>
<thead>
<tr>
<th>Activity</th>
<th>Dec 08</th>
<th>Jan 09</th>
<th>Feb</th>
<th>Mar</th>
<th>Apr</th>
<th>May</th>
<th>Jun</th>
<th>Jul 09</th>
</tr>
</thead>
<tbody>
<tr>
<td>Meeting with HSE to clarify and agree final plan</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Literature Review</td>
<td>✔️</td>
<td>✔️</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Questionnaire Development/Pilot</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Quantitative survey</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Data Analysis</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
<td>✔️</td>
</tr>
<tr>
<td>Preparation of report</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>✔️</td>
</tr>
</tbody>
</table>
Section 3 Findings

The objectives of this survey were to undertake an examination of current breastfeeding service provision by the public health nursing service in Ireland and assess the effectiveness of this service in relation to its appropriateness, timeliness and responsiveness to client needs, from the provider and consumer perspective. The findings of the survey are presented in three separate sections reflecting the three study cohorts and then a fourth section is provided for comparison between them where appropriate.

3.1 Directors of Public Health Nursing (DPHNs) Results

3.1.1 Characteristics of the DPHN Sample

Of the 24 Directors of Public Health Nursing who responded, nine (37.5%) worked in the HSE Dublin Mid-Leinster, four (16.7%) worked in the HSE Dublin North East, nine (37.5%) worked in HSE South and two (8.3%) worked in the HSE West.

3.1.2 Education and Training

With regard to the number of staff who had undertaken either the 18 hour or 20 hour breastfeeding training programme, 7 and 10 of the 24 respondents did not respond to these questions respectively. Of the DPHNs who responded about half indicated that more than three quarters of their staff had attended either the 18 hour (UNICEF/WHO 1993) or 20 hour (UNICEF/WHO 2006) breastfeeding training programmes (Figure 3.1).
In relation to how often PHNs require re-training and how often they receive updates between training was recorded as open questions. DPHNs indicated that retraining in breastfeeding support should occur either yearly (n = 5), two yearly (n = 6), three yearly (n = 5) and 2-3 yearly (n = 2). However four indicated that there was either no specific requirement or that retraining was unavailable.

In relation to how often PHNs require updates between formal breastfeeding retraining the responses were as follows: None (n = 3) as required (n = 4); update themselves (n = 1) “one day refresher yearly” (n = 4) “half day courses” (n = 2); “when courses become available” (n = 1).

Further data were sought as to how PHNs update their knowledge. Approximately half of the responding DPHNs indicated that the 18 hour and 20 hour UNICEF/WHO training programmes or a research database were the means by which their staff updated their breastfeeding knowledge (Figure 3.2). About three quarters of respondents indicated that updating was by journal or by another specified means, such as: local dissemination of knowledge by training/meetings (n=9); newsletter/Link to Baby Friendly Hospital initiative (n = 5); La Leche League Handbook (n = 2); Standard Operating Procedures (n = 1); Lactation consultant (n = 3).
Question 7 asked DPHNs about how prepared PHNs are in supporting breastfeeding mothers. Most respondents (n = 20) agreed that PHNs were adequately prepared. Half the respondents added further comments such as:

“There are two aspects to this response a) if PHNs had 20 hour update 3 yearly and b) coupled with knowledge following experience of working with breastfeeding mothers. PHNs are ideally placed and with experience to support and advise on ongoing breast feeding as they are largely the only nursing discipline with experience of breastfeeding following early days of breastfeeding post delivery” (Respondent 8) and another said:

“Newly qualified PHNs without midwifery are not adequately prepared to support the new Breastfeeding mother within the first few weeks of birth. They require a lot of support from experienced colleagues in there first 1- 2 years of completion of the PHN course. Extra in-service training provision and exposure to Breastfeeding support groups is required” (Respondent 11).

### 3.1.3 Provision of Breastfeeding Support

There were mixed responses from the DPHNs with regard to the levels of PHN staff engaged in facilitating breastfeeding support groups in their area. More than one in three indicated that 0-25% of their PHN staff did, whereas approximate 30% indicated that 76-100% of their PHN staff did not (Table 3.1).
Table 3.1 Levels of Facilitating Support Groups and First-Visit Within 48 Hours

<table>
<thead>
<tr>
<th>PHN staff facilitate support groups</th>
<th>PHN staff visit mothers within 48hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>n (%)</td>
<td>n (%)</td>
</tr>
<tr>
<td>0-25%</td>
<td>9 (37.5%)</td>
</tr>
<tr>
<td>26-50%</td>
<td>5 (20.8%)</td>
</tr>
<tr>
<td>51-75%</td>
<td>3 (12.5%)</td>
</tr>
<tr>
<td>76-100%</td>
<td>7 (29.2%)</td>
</tr>
</tbody>
</table>

Approximately three quarters of DPHNs indicated that 76-100% of mothers are visited by their PHN staff within 48 hours. One in four of the DPHNs indicated that 51-75% of mothers received these visits.

It can be seen from Figure 3.3 below that half of the DPHNs indicated that PHNs almost have enough time to support breastfeeding mothers whereas only 17% indicated that PHNs absolutely had enough time to do so.

About two-thirds of DPHNs were of the opinion that PHNs almost meet the support needs of breastfeeding mothers. Just 9% felt they absolutely did so.

Figure 3.3 DPHN Opinion Regarding PHN Staff Having the Time and Meeting the Support Needs of Breastfeeding Mothers
DPHNs were asked a number of closed questions to elicit their opinions on whether organisational factors known to promote breastfeeding were in place. These responses have been presented together in table 3.2 below. This table indicates a very positive adherence to step 1 of the ten steps (DoHC, 1994) and the code on infant formula marketing (WHO, 1981). The necessity of involving significant others are less well encouraged by DPHNs.

Table 3.2 Levels of “Yes” Responses by DPHNs to Questions Relating to the Concept of Appropriateness

<table>
<thead>
<tr>
<th>Question</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you encourage home visits by public health nurses as a means of breastfeeding support?</td>
<td>22</td>
<td>(100.0%)</td>
</tr>
<tr>
<td>Is it your policy to encourage PHNs to schedule further home visits for mothers who breastfeed, as dictated by the mother?</td>
<td>21</td>
<td>(95.5%)</td>
</tr>
<tr>
<td>Do you permit the advertisement and supply of formula feeds or equipment?</td>
<td>0</td>
<td>(0%)</td>
</tr>
<tr>
<td>Do you have a written breastfeeding policy promoting, protecting and supporting breastfeeding in your Local health office (LHO)?</td>
<td>21</td>
<td>(95.5%)</td>
</tr>
<tr>
<td>If so, is it available to all staff?</td>
<td>21</td>
<td>(100.0%)</td>
</tr>
<tr>
<td>Do you promote the development of breastfeeding support groups?</td>
<td>22</td>
<td>(100.0%)</td>
</tr>
<tr>
<td>Are breastfeeding support home visits prioritised on the &quot;planned essential visits&quot; at weekends?</td>
<td>3</td>
<td>(13.6%)</td>
</tr>
<tr>
<td>Do you encourage PHNs to involve the baby’s father in your education/support of breastfeeding mothers?</td>
<td>20</td>
<td>(90.9%)</td>
</tr>
<tr>
<td>Do you encourage PHNs to involve the baby’s maternal grandmother in your education/support of breastfeeding mothers?</td>
<td>15</td>
<td>(68.2%)</td>
</tr>
<tr>
<td>Do you encourage PHNs to involve family and friends in your education/support of breastfeeding mothers?</td>
<td>14</td>
<td>(63.6%)</td>
</tr>
</tbody>
</table>

Note: 22 of the 24 responding DPHNs answered these questions

DPHNs indicated that a wide variety of possible breastfeeding supports are available in their areas as shown on Figure 3.4 below
Figure 3.4 Availability and provision by PHNs of breastfeeding supports

Note: 22 of the 24 responding DPHNs answered these questions
3.1.4 DPHN Attitude to Breastfeeding Support

DPHNs were asked their individual attitude to breastfeeding support. This was scored as the sum of six four-point Likert style questions thereby giving a potential range of scores from 6 to 24 with higher scores indicating a more positive attitude to breastfeeding. The scale scores of the DPHN ranged from 16 to 24 and were therefore in the upper half of possible scores and thereby represented positive attitude towards breastfeeding. The mean and standard deviation were 20.6 and 2.6, respectively.

The distribution of scores is illustrated in Figure 3.5. Despite the limited numbers involved, there was some evidence of a divide between responding DPHNs. One group scored at or very near the maximum score thereby representing a group with an extremely positive attitude towards breastfeeding. The second group scored somewhat lower, though still high, thereby representing a group with possibly a less than completely positive attitude towards breastfeeding.

![Figure 3.5 Distribution of DPHN scores on the individual attitude to breastfeeding scale](image_url)

The scale assessing organisational culture regarding breastfeeding was scored as the sum of nine four-point Likert style questions phrased negatively thereby giving a potential range of scores from 9 to 36 with higher scores indicating a more negative organisational culture regarding breastfeeding. The scale scores of the DPHN ranged from 9 to 25 and were therefore generally in the lower half of possible scores and thereby suggested the organisation culture was not unduly negative towards breastfeeding. The mean and standard deviation were 18.5 and 4.6, respectively.
The distribution of scores is illustrated in Figure 3.6. It can be seen that the DPHNs commonly scored the organisational culture around the mean score suggesting a consistency in the organisational culture around the country.

**Figure 3.6 Distribution of DPHN Scores on Their Attitude to the Organisational Culture Regarding Breastfeeding Support**

3.1.4 DPHN Evaluation

In terms of evaluating breastfeeding services by DPHNs, it appeared that 19 of the 24 respondents answered this question. While this was an open-ended question, an examination of the 19 responses indicated that there was more or less a 50:50 split (yes: 9, 47.4%; no: 10, 52.6%) between those whose answer indicated that an evaluation of some sort had taken place; or was in the process or about to take place; and those whose answer indicated that no evaluation had taken place.

For those respondents who indicated that they evaluated their services they did not elaborate on the format of evaluation. Other respondents indicated that were developing an audit/evaluation tool.

The suggestions regarding the supports required to improve breastfeeding initiation and duration rates were many and varied. Nevertheless there were commonalities,
which facilitated categorisation. These categories included local, regional and national issues and are presented in italics in the words used by respondents.

**Local issues included** the following: Promote breast feeding antenatally; Frequent home visiting for the first 6 weeks or clinic attendance whatever the mother wishes; breast feeding support clinics and support visits from other mothers e.g. community mothers programme

**Regional issues included:** More working in collaboration with hospital / community and private enterprises; A multi-disciplinary approach would be good; Currently exploring the possibility of Training the Trainer with 2 of 4 of my newly qualified Lactation Consultants who will deliver the training to PHN staff and provide ongoing education; Peer-support programmes are particularly effective for women from low-income groups, who are less likely to breastfeed than other groups

**National Issues included:** Active development of Baby Friendly Health Facilities similar to accreditations received by Maternity Units; Improve the baby friendliness of Health Centres; PHN relief for A/L, sick/leave etc; Extension of home visiting in view of current severe restrictions on mileage allocations to PHNs to undertake their work; Provision of 7 day PHN service; Database would enable new mums, health professionals and peer supporters to quickly and easily access relevant local information and support groups; Breastfeeding awareness week – has found that peer support is the most effective way to increase the numbers of women starting to breastfeed; National standardisation, clinical effectiveness groups; Cultural shift towards breastfeeding supported in the media and very good example given by HSE; Promotion through education in schools, from teachers and education at all levels; Home Help service; More funding to voluntary organisations e.g. Cuidiu and La Leche.

Responses with regard to how the PHN service could be improved to help provide better breastfeeding support to mothers were categorised. The first category related to **education and training** for the PHNs e.g. More support from management by provision of literature and continuous training; Continuing Education and policy development supported by practice development; 3 yearly training20 hour training is limited and in the present environment staff have to travel to any available training at their own expense; regular updates between 20 hour training; Availability of ongoing training courses and continuous in service training.

Another category identified was that of a **dedicated trained lactation consultant** available as a resource support for the PHNs: PHN lactation consultants in each LHO; availability of expertise of lactation consultant; access to lactation consultant as a resource, use of internet, up to date information and local policies on breastfeeding; Availability of a Breastfeeding Support Assistant; Develop a dedicated lactation consultant post.

Another category identified was the **prioritisation of breastfeeding:** Support and recognition of the importance of breastfeeding by LHOs to the extent that no PHN post is left unfilled for any significant time; not have current mileage restrictions which limits the amount of home visiting possible; PHN phone contact to mums; PHNS supporting the need to support mums; When a PHN is allocated a case load it
must be taken into account the time needed to support breastfeeding mothers; decrease the caseload sizes of PHNs; Earlier referral to PHN service.

Finally, a category identified the need for more peer support for mothers: Set up of more Breast Feeding support groups with facilities and dedicated time for same; peer support; Nurses to give more time to parents; develop more support groups; Increase access to health-centre based breast-feeding support; Increase availability of antenatal breast-feeding education for all family members; initiation of and support for breast feeding support groups.

Summary

A sample of 24 Directors of Public Health Nursing mainly from the HSE Dublin Mid-Leinster, and HSE-South areas responded. The DPHS encouraged and facilitated attendance at appropriate breastfeeding education. Responses indicated a lack of knowledge and clarity in relation to the most up-to-date breastfeeding education packages and the frequency with which they should be undertaken. Overall DPHNs indicated their encouragement for PHN breastfeeding support and adherence to breastfeeding policy and guidelines, however, a negligible percentage ensured that breastfeeding home support visits were prioritised on the ‘planned essential visits at the weekends’. A small proportion of DPHNs indicated that PHNs ‘absolutely have’ enough time and are meeting the support needs of mothers.
3.2 Public Health Nurse (PHN) Results

Of the 217 PHNs who responded, 71 (32.7%) responded online and the remaining 146 (67.3%) responded by postal questionnaire. A number of PHN respondents (n=13) were dropped from the online file as they had clearly responded to no more than a few questions before quitting.

3.2.1 PHN characteristics

In total 204 of the nurses specified the HSE Region in which they worked. Of these, 59 (28.9%) worked in the HSE Dublin Mid-Leinster, 39 (19.1%) worked in the HSE Dublin North East, 44 (21.6%) worked in HSE South and 62 (30.4%) worked in the HSE West.

![Figure 3.7 Distribution of PHNs by HSE Region](image)

As can be seen from Table 3.3, over half of the respondents were registered more than five years ago.

<table>
<thead>
<tr>
<th>Time as a registered PHN</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1 year</td>
<td>3</td>
<td>(1.5%)</td>
</tr>
<tr>
<td>2 years</td>
<td>22</td>
<td>(10.8%)</td>
</tr>
<tr>
<td>3 years</td>
<td>18</td>
<td>(8.9%)</td>
</tr>
<tr>
<td>4 years</td>
<td>22</td>
<td>(10.8%)</td>
</tr>
<tr>
<td>5 years</td>
<td>25</td>
<td>(12.3%)</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>113</td>
<td>(55.7%)</td>
</tr>
</tbody>
</table>
3.2.2 Training

About one in six (17.3%) had attended a breastfeeding training programme in the previous year (see table 3.4)

Table 3.4 Time since last PHN breastfeeding training programme.

<table>
<thead>
<tr>
<th>Time since last breastfeeding training programme</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤1 year</td>
<td>36</td>
<td>(17.3%)</td>
</tr>
<tr>
<td>2 years</td>
<td>60</td>
<td>(28.8%)</td>
</tr>
<tr>
<td>3 years</td>
<td>52</td>
<td>(25.0%)</td>
</tr>
<tr>
<td>4 years</td>
<td>21</td>
<td>(10.1%)</td>
</tr>
<tr>
<td>5 years</td>
<td>12</td>
<td>(5.8%)</td>
</tr>
<tr>
<td>&gt;5 years</td>
<td>27</td>
<td>(13.0%)</td>
</tr>
</tbody>
</table>

Two-thirds of the PHNs (140, 66.7%) indicated that they had received the 18 hour (UNICEF/WHO 1993) training for providing breastfeeding support. An additional one in four (54, 25.7%) had received the 20 hour (UNICEF/WHO 2006) programme. Twelve (5.7%) indicated that they had received other training and four (1.9%) indicated that they had received no training for providing breastfeeding support. Of the 12 respondents who specified ‘other’ the nature of this training included: Lactation consultant, Midwifery training/experience, PHN education and various courses.

Respondents were asked to indicate how often they received updates between training and a variety of responses were received. The majority indicated no updates or very rarely received (n = 111).

Responses regarding the means by which PHNs update their breastfeeding knowledge is summarised in Figure 3.8. Almost two-thirds of the responding PHNs indicated that updating was by journal. The 18 hour and 20 hour UNICEF/WHO training programmes were the means by which 22.6% and 11.1% updated their knowledge. A database or other specified means were cited by 30.0% and 41.5%, respectively.
Question 7 asked respondents how they update their own breastfeeding knowledge. Self updating was done in a number of ways such as books and journals, attending conferences; collaborating with others including lactation consultants and HSE colleagues; utilising HSE literature, policies and guidelines. Some PHNs also indicated that they liaise with voluntary organisations such as Ciudiu and La Leche League. A small number of PHNs were qualified lactation consultants.

When asked openly whether respondents felt they were adequately prepared to support breast-feeding mothers the majority (n=130) felt they were. Additional qualifying comments were ‘concerned about the loss of midwifery for PHNs’. Workload and the lack of availability of breastfeeding updates were raised regarding the ‘time to support mothers, case load, time to update, time involved in supporting and that breastfeeding not recognised by managers’.

### 3.2.3 Provision of Breastfeeding Support by PHNs

Approximately half (n=106, 51.2%) of the nurses indicated that they facilitate support groups on breastfeeding in their area. A further 13.0% (n=27) indicated that they sometimes do so. Thus, slightly more than one in three responding nurses (74, 35.7%) do not facilitate support groups on breastfeeding in their area.

A positive attitude towards breastfeeding by health professionals is a precursor of effective breastfeeding support. The breastfeeding attitude scale (IIFAS) (de la Mora, 1999) was scored as the sum of 17 five-point Likert style questions thereby giving a potential range of scores from 17 to 85 with higher scores indicating a more positive attitude to breastfeeding. The scale scores of the PHNs ranged from 47 to 85 and were therefore in the upper half of possible scores and thereby represented positive attitude towards breastfeeding. The mean and standard deviation were 70.2 and 7.5, respectively. The distribution of scores is illustrated in Figure 3.9. There was some evidence of a trailing effect whereby a small number of PHNs had less positive attitude, with scores in the 47-55 range, than the vast majority. There was also a small peak close to the maximum score indicating the presence of a group of PHNs with extremely positive attitude towards breastfeeding.
3.2.3.1 Practice and Workload Relating to Breastfeeding
Approximately 60% of the PHNs indicated that less than 1% of their workload would be purposeful antenatal contact with women (Figure 3.10). Almost three-quarters of the nurses (133, 71.9%) indicated that discussion around breastfeeding would constitute part of their antenatal contact with women. A further 16.8% (n=31) indicated that such discussion would sometimes constitute part of this contact. Whereas 21 (11.4%) indicated that no such discussion would be part of the contact.
Figure 3.10 Percentage of PHN Workload That Would Be Purposeful Antenatal Contact With Women

<table>
<thead>
<tr>
<th>Percentage</th>
<th>Count</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-5%</td>
<td>50</td>
<td>24.5%</td>
</tr>
<tr>
<td>6-10%</td>
<td>15</td>
<td>7.4%</td>
</tr>
<tr>
<td>11-20%</td>
<td>6</td>
<td>2.9%</td>
</tr>
<tr>
<td>&gt;20%</td>
<td>8</td>
<td>3.9%</td>
</tr>
</tbody>
</table>

Three in four respondents indicated that in their area, 76-100% of all new mothers are visited within 48 hours. One in eight indicated that the level was 51-75% but approximately 7% indicated that the level was at 26-50% and the same proportion indicated that no more than 25% of new mothers are visited within 48 hours.

Over 80% (172, 82.7%) of the PHNs stated that it was their practice to schedule further home visits for mothers who breastfeed as dictated by the mother. A further
13.0% (n = 27) indicated that they sometimes did so. Whereas only 9 (4.3%) stated it was not part of their practice.

Respondents were asked in an open question to indicate how many breastfeeding mothers were on their caseload and most respondents responded both with numbers and percentages indicating a strong familiarity with their caseloads. The caseload size ranged from none to greater than 51 mothers for 171 respondents. Analysing the data for those who indicated percentages show that 1 PHN’s breastfeeding caseload had 15% of mothers, 13 had 20=50% and 9 had 60-95%.

This variation was identified by one PHN:
Have recently moved areas. Previous area had 140 births for 2008. On average 3-4 a month. Current area I am working in Has had 6 births for 2009 and no breastfeeding mothers

Almost three in four PHNs indicated that an average visit to a breastfeeding mother would last 30-60 minutes (Figure 3.12)

Figure 3.12 Duration of an Average Visit to a Breastfeeding Mother

Collecting data on breastfeeding performance indicators is part of the workload of the PHN. Regarding the recording of breastfeeding rates, 201 (95.3%) of the 211 who responded indicated that they record information relating to the initiation or duration of breastfeeding.

The sum of a series of six four-point Likert questions were used to measure the degree to which the PHNs assessed the process of breastfeeding by questioning. The same questions were then used to assess the degree to which the nurses assessed the breastfeeding process by observing. Therefore, each measure had a potential range of scores from 6 to 24 with higher scores indicating better assessment. The scores of the
PHNs ranged from 6 to 24 with respect to both the assessment by questioning and the assessment by observing measures (Figures 3.12 & 3.13). Respectively, the mean and standard deviation of the assessment by questioning measure were 19.8 and 4.0 and of the assessment by observing measure were 21.0 and 3.3. The magnitude of the difference in means was small (1.3) but it was statistically significant difference ($t = 5.81$, df = 204, $p < 0.001$). Thus, on average, PHNs’ level of assessment by observing was higher than their level of assessment by questioning. From comparison of Figures 3.12 and 3.13, it can be seen that a larger subgroup of PHNs scored the maximum on the assessment by observing measure than did so on the assessment by questioning measure. In addition, there was a strong linear association between PHN scores on the two measures (Pearson’s correlation coefficient, $r = 0.635$, $p < 0.001$). Thus, high scores on one measure were generally associated with high scores on the other and vice versa.

Figure 3.13. Degree to which PHNs assessed the process of breastfeeding by questioning
3.2.4 Organisational Factors

Over 80% (170, 82.5%) of the nurses indicated that their local health office had a written breastfeeding policy promoting, protecting and supporting breastfeeding. Almost one in four PHNs were ‘very confident’ in their knowledge of “The 10 steps to successful breastfeeding” guidelines while a further 64% were ‘confident’ in their knowledge (figure 3.15)

Figure 3.15 PHN Confidence in Their Knowledge of “The 10 Steps to Successful Breastfeeding” Guidelines

<table>
<thead>
<tr>
<th>Confidence Level</th>
<th>Number of Respondents</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>not at all confident</td>
<td>5</td>
<td>2.4%</td>
</tr>
<tr>
<td>not very confident</td>
<td>20</td>
<td>9.5%</td>
</tr>
<tr>
<td>confident</td>
<td>135</td>
<td>64.0%</td>
</tr>
<tr>
<td>very confident</td>
<td>51</td>
<td>24.2%</td>
</tr>
</tbody>
</table>
The baby’s father was very often involved by PHNs in their education/support of breastfeeding mothers, almost twice as commonly as the baby’s maternal
grandmother. In one in three cases, other family or friend(s) are involved (figure 3.17).

**Figure 3.17 Degree To Which PHNs Involve Others In Their Education/Support Of Breastfeeding Mothers**

![Bar chart showing the percentage of PHNs involving various individuals in their support of breastfeeding mothers.](chart1)

**Figure 3.18 PHNs’ Opinion of The Utility Of Referring To And Consulting With “Voluntary Or Private Lactation Consultants”**

![Bar chart showing the opinion of PHNs on referring to and consulting with voluntary or private lactation consultants.](chart2)
Figure 3.19 PHNs’ Satisfaction with “Voluntary or Private Lactation Consultants”

<table>
<thead>
<tr>
<th>Service</th>
<th>Not at all satisfied</th>
<th>Somewhat satisfied</th>
<th>Mostly satisfied</th>
<th>Very satisfied</th>
</tr>
</thead>
<tbody>
<tr>
<td>Availability</td>
<td>41 (20.9%)</td>
<td>52 (26.5%)</td>
<td>75 (38.3%)</td>
<td>28 (14.3%)</td>
</tr>
<tr>
<td>Quality of care</td>
<td>27 (14.0%)</td>
<td>44 (22.8%)</td>
<td>88 (45.6%)</td>
<td>34 (17.6%)</td>
</tr>
<tr>
<td>Quickness of response to health care professionals</td>
<td>29 (15.3%)</td>
<td>51 (26.8%)</td>
<td>78 (41.1%)</td>
<td>32 (16.8%)</td>
</tr>
<tr>
<td>Quickness of response to mothers</td>
<td>27 (14.1%)</td>
<td>47 (24.6%)</td>
<td>82 (42.9%)</td>
<td>35 (18.3%)</td>
</tr>
<tr>
<td>Feedback to you</td>
<td>83 (43.5%)</td>
<td>46 (24.1%)</td>
<td>44 (23.0%)</td>
<td>18 (9.4%)</td>
</tr>
</tbody>
</table>

Figure 3.20 PHNs’ satisfaction with “voluntary or private lactation consultants”

Attitude to breastfeeding support was assessed by a series of six four-point Likert questions thereby providing a measure ranging from 6 to 24 with higher scores
representing more positive attitude. As can be seen from Figure 3.21, the scores of the PHNs spanned the whole range though only because a few PHNs scored at or near the minimum. These were outliers relative to the other nurses whose attitude scores ranged from 16 to 24. The overall mean and standard deviation were 20.8 and 2.7, respectively (21.1 and 2.1, if the outliers were excluded).

Figure 3.21 PHN scores on the attitude to breastfeeding support scale

Competence regarding breastfeeding support was assessed by a series of 26 four-point Likert questions. The possible range of scores ranged from 26 to 104. The actual scores of the nurses ranged from 26 to 100 and their distribution is illustrated in Figure 3.22. The mean and standard deviation were 72.5 and 12.4, respectively, and the majority of scores were clustered around the mean.
The scale to measure the level of organisational barriers to supporting breastfeeding consisted of nine four-point Likert questions and therefore had a possible range of 9-36 with higher scores indicating greater organisational barriers. The actual scores of the nurses ranged from 9 to 31 (Figure 3.23). The mean and standard deviation were 21.2 and 4.3, respectively, and the majority of scores were clustered relatively close to the mean.
3.2.5 PHN Evaluation

Respondents were asked if they evaluated the service they provided to breastfeeding mothers. Many indicated that their evaluation of the service was informal in that they relied on direct feedback from women who expressed satisfaction with the services. This was often seen as a good attendance at breastfeeding support groups as suggested by one respondent:

‘... The mothers who attend have stated that it has been very reassuring, positive and supportive service and has given them great confidence with Breast feeding. Our attendance figures are increasing’

The return of data on breastfeeding rates was also an indication of success.

Some respondents (n=28) formally evaluated or audited support services in their areas which may include questionnaires distributed at breastfeeding groups, local audits or more extensive evaluations:

*I keep in my register whether mother is exclusively BF or partially, then repeat at 3 months, 7, 9 and 1 yr. Mothers always appreciative of any help or advice*

‘Yes just finished a thesis on parents’ satisfaction of PHN service, section on BF support and parents very satisfied of BF service and support’.

Reasons for not evaluating the service were related mainly to time/ workload issues - ‘(I) have prepared an evaluation form but lack of time due to heavy caseload prevents more work being done’

PHNs were asked to list the supports that could be provided to improve breastfeeding rates and data obtained was grouped into the following categories: Promoting breastfeeding in schools; media; antenatally; maternity hospital issues; PHN issues; infrastructure such as health centres; wider community supports. Some respondents used this opportunity to provide more elaborate comments.

Many PHNs would welcome opportunities to meet with women in pregnancy to prepare them for BF. More time for home visits in the early postnatal days and the increased availability of support groups was also important. Several PHNs cited the poor facilities in Health Centres for BF support groups, lack of space, parking, provision for older children, and availability of refreshments were seen as important. Access to a lactation specialist, mother to mother support services was also recommended.

Changes in social attitudes and the need to dispel the myths about breastfeeding were also identified as important:

‘A culture shift is needed that would ensure that it was culturally acceptable and promoted for mothers to be able to feed their baby anywhere in public as needs of the baby require. A society where it is as culturally unacceptable to produce a bottle as it is to produce a breast or a cigarette is now would be a necessary shift’.
‘Access for breastfeeding should be as mandatory as wheelchair access in public offices’.

‘If the mother chooses to breastfeed in public there should be signs up saying "we actively support breastfeeding. If there is anything you need to enable you to feed your baby here please inform a member of staff and you will be facilitated."

**Summary**

A sample of 204 PHNs were representative of the four HSE regions and were clinically experienced as the majority were greater than 5 years qualified. The majority attended a formal breastfeeding education programme, and in the absence of formal updates being available, respondents indicated utilising whatever means were available to them, the most frequently cited being journals. The majority of PHNs facilitate support groups in their arrears and have a positive attitude towards breastfeeding. Furthermore, they express confidence and competence in relation to the provision of breastfeeding support. PHNs’ level of assessment of breastfeeding by observing was higher than their level of assessment by questioning and the difference was statistically significant. Furthermore, there was a strong linear association between PHN scores on the two measures, thus, high scores on one measure were generally associated with high scores on the other and vice versa.

The majority of PHNs indicated that they achieve timely primary visits to mothers. Over 80% indicated that it was their practice to schedule follow-on visits to breastfeeding mothers as appropriate. PHN assessment of the progress of breastfeeding took the form of questioning with a greater reliance on observation. Overall, PHNs involve baby’s father in breastfeeding support and maternal grandmothers but to a lesser extent. They considered it either useful or very useful to refer to and consult with private lactation consultants. Evaluation of breastfeeding support services is not carried out in a systematic manner.
3.3 Mothers Results
Of the 1,854 mothers who responded, 809 (43.6%) responded online and the remaining 1,045 (56.4%) responded by postal questionnaire. A number (n = 20) of questionnaires were removed on data cleaning as they were incomplete.

3.3.1 Mothers’ Characteristics
Approximately 80% of the mothers who responded were either aged 30-34 years or over 35 years, had attained third level education and were married. One in three lived in the HSE Dublin Mid-Leinster Region and the remained were spread reasonably even between the other three HSE Regions.

<table>
<thead>
<tr>
<th>Table 3.5 Mothers’ characteristics</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Under 25 years</td>
<td>90</td>
<td>(4.9%)</td>
</tr>
<tr>
<td>25-29 years</td>
<td>290</td>
<td>(15.8%)</td>
</tr>
<tr>
<td>30-34 years</td>
<td>713</td>
<td>(38.8%)</td>
</tr>
<tr>
<td>35 years+</td>
<td>744</td>
<td>(40.5%)</td>
</tr>
<tr>
<td><strong>Highest education level attained</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary</td>
<td>5</td>
<td>(0.3%)</td>
</tr>
<tr>
<td>Secondary</td>
<td>355</td>
<td>(19.4%)</td>
</tr>
<tr>
<td>Third level</td>
<td>1472</td>
<td>(80.3%)</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>56</td>
<td>(3.0%)</td>
</tr>
<tr>
<td>In a relationship</td>
<td>262</td>
<td>(14.2%)</td>
</tr>
<tr>
<td>Married</td>
<td>1511</td>
<td>(82.2%)</td>
</tr>
<tr>
<td>Separated/divorced</td>
<td>9</td>
<td>(0.5%)</td>
</tr>
<tr>
<td>Widowed</td>
<td>1</td>
<td>(0.1%)</td>
</tr>
<tr>
<td><strong>HSE Region of residence</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Dublin Mid-Leinster</td>
<td>598</td>
<td>(32.6%)</td>
</tr>
<tr>
<td>Dublin North East</td>
<td>375</td>
<td>(20.5%)</td>
</tr>
<tr>
<td>South</td>
<td>475</td>
<td>(25.9%)</td>
</tr>
<tr>
<td>West</td>
<td>385</td>
<td>(21.0%)</td>
</tr>
</tbody>
</table>
3.3.2 Maternal and Infant Characteristics
Responding mothers were relatively evenly split in terms of the age of their baby. A little more than a quarter had a baby of no more than 6 months of age or 7-12 months whereas almost one in four had a baby aged 13-18 months or 19 months to 3 years.

Table 3.6. Baby’s characteristics

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby's age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 months or less</td>
<td>500</td>
<td>(27.5%)</td>
</tr>
<tr>
<td>7-12 months</td>
<td>493</td>
<td>(27.1%)</td>
</tr>
<tr>
<td>13-18 months</td>
<td>409</td>
<td>(22.5%)</td>
</tr>
<tr>
<td>19 months-3 yrs</td>
<td>419</td>
<td>(23.0%)</td>
</tr>
<tr>
<td>Type of birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vaginal delivery</td>
<td>1052</td>
<td>(57.5%)</td>
</tr>
<tr>
<td>Assisted vaginal delivery</td>
<td>298</td>
<td>(16.3%)</td>
</tr>
<tr>
<td>Planned caesarean section</td>
<td>224</td>
<td>(12.2%)</td>
</tr>
<tr>
<td>Unplanned caesarean</td>
<td>256</td>
<td>(14.0%)</td>
</tr>
<tr>
<td>Baby's maturity at birth</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Premature</td>
<td>183</td>
<td>(10.0%)</td>
</tr>
<tr>
<td>Full term</td>
<td>1641</td>
<td>(90.0%)</td>
</tr>
<tr>
<td>Mother's first child</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>815</td>
<td>(44.6%)</td>
</tr>
<tr>
<td>No</td>
<td>1013</td>
<td>(55.4%)</td>
</tr>
<tr>
<td>Mother breastfed her other children*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>755</td>
<td>(72.0%)</td>
</tr>
<tr>
<td>No</td>
<td>293</td>
<td>(28.0%)</td>
</tr>
</tbody>
</table>

*excluding mothers who did not have other children

Most of the births had been by vaginal delivery. Similar proportions (12-16%) were by assisted vaginal delivery, planned caesarean section or unplanned caesarean section. The vast majority of the pregnancies had gone full term with 10% being premature births.

There was a relatively even split of the mothers between those whose baby was their first (44.6%) and those for whom it was not (55.4%). Of the mothers who had other children, almost three quarters (72.0%) of them had breastfed their other children.

The infant feeding attitude scale IIFAS (de la Mora, 1999) was scored as the sum of 19 five-point Likert style questions thereby giving a potential range of scores from 19 to
95 with higher scores indicating a more positive attitude to breastfeeding. The scale scores of the mothers ranged from 19 to 78 and were therefore in the lower three quarters of possible scores. The mean and standard deviation were 57.1 and 5.7, respectively. The distribution of scores is illustrated in Figure 3.24. The scale scores were relatively clustered around the mean value.

Figure 3.24 Distribution of mothers’ scores on the infant feeding attitude scale

A little more than half of the mothers had decided how they wanted to feed their baby before getting pregnant (Table 3.7). More than 20% decided in early pregnancy. The remaining quarter of mothers were relatively evenly split between those who decided in late pregnancy or directly after the birth. Approximately 60% of the mothers decided to breastfeed their baby. At about 20%, the decisions to bottle/formula feed only or to feed using a combination of breastfeeding and bottle/formula were equally common.
Table 3.7 Timing and outcome of mothers’ decision regarding how to feed her baby

<table>
<thead>
<tr>
<th>Timing of decision</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Before pregnancy</td>
<td>937</td>
<td>(52.2%)</td>
</tr>
<tr>
<td>Early pregnancy (&lt;12 weeks)</td>
<td>385</td>
<td>(21.5%)</td>
</tr>
<tr>
<td>Late pregnancy (12-38 weeks)</td>
<td>259</td>
<td>(14.4%)</td>
</tr>
<tr>
<td>Directly after baby was born</td>
<td>213</td>
<td>(11.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Feeding decision</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Breastfeed only</td>
<td>1070</td>
<td>(59.8%)</td>
</tr>
<tr>
<td>Bottle/formula only</td>
<td>377</td>
<td>(21.1%)</td>
</tr>
<tr>
<td>Combination of both</td>
<td>342</td>
<td>(19.1%)</td>
</tr>
</tbody>
</table>

In keeping with the 80% of mothers who had decided to breastfeed (60% solely and 20% in combination with bottle/formula), 80% of the mothers began breastfeeding their youngest child (Table 3.8). Two-thirds of mothers indicated that they were encouraged to breastfeed within one hour of the birth.

The current feeding method, at 54%, was most commonly a combination of formula and solids. In contrast, only 15% of mothers were currently feeding their youngest child using a combination of breastfeeding and solids.

Approximately 30% of mothers’ breastfed as long as they had planned and a further 22% were still breastfeeding as planned. Excluding the 21% for whom the question did not apply, revealed that 27% of all the mothers who responded were not able to breastfeed for as long as they had planned.

From the open questions at least 113 women who did not breastfeed cited various reasons such as: ‘breastfeeding was not for me’; ‘I would not feel comfortable breastfeeding’; ‘I knew no one who breastfed’; ‘the convenience of formula feeding’; ‘previously formula fed other children who were well and healthy’. Other women cited problems such as the health/wellbeing of mother after birth or health problems for the baby.

In relation to those women who ‘gave breastfeeding a try’ but felt it did not work out for them or had a negative experience with breastfeeding comments included: ‘the baby did not latch on’; ‘feeding never established’.

Women who were successful in breastfeeding cited the influence of partners, husbands, family and friends, breastfeeding literature and internet as contributory factors to their success. Health professionals were mentioned by a few mothers including midwives in the maternity hospitals.
Reasons for stopping breastfeeding included a broad range of issues: e.g. breastfeeding too difficult, breastfeeding painful, not enough milk, lack of support from midwives/PHNs. Social issues included; returning to work, unwilling to breastfeed in public, formula more convenient, fed as long as I had intended, age of the baby and time commitments to family.

Table 3.8. Mothers’ feeding experience with youngest child

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Started breastfeeding</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1423</td>
<td>(79.6%)</td>
</tr>
<tr>
<td>No</td>
<td>364</td>
<td>(20.4%)</td>
</tr>
<tr>
<td><strong>Encouraged to breastfeed within 1 hour of birth</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1195</td>
<td>(67.1%)</td>
</tr>
<tr>
<td>No</td>
<td>465</td>
<td>(26.1%)</td>
</tr>
<tr>
<td>Not applicable</td>
<td>122</td>
<td>(6.8%)</td>
</tr>
<tr>
<td><strong>Current feeding method</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Breastfeeding only</td>
<td>177</td>
<td>(11.2%)</td>
</tr>
<tr>
<td>Breastfeeding and water or juices</td>
<td>15</td>
<td>(0.9%)</td>
</tr>
<tr>
<td>Breastfeeding and formula</td>
<td>84</td>
<td>(5.3%)</td>
</tr>
<tr>
<td>Breastfeeding and solids</td>
<td>244</td>
<td>(15.4%)</td>
</tr>
<tr>
<td>Formula only</td>
<td>209</td>
<td>(13.2%)</td>
</tr>
<tr>
<td>Formula and solids</td>
<td>856</td>
<td>(54.0%)</td>
</tr>
<tr>
<td><strong>Able to breastfeed as long as planned</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>526</td>
<td>(29.5%)</td>
</tr>
<tr>
<td>No</td>
<td>480</td>
<td>(26.9%)</td>
</tr>
<tr>
<td>Still breastfeeding as planned</td>
<td>397</td>
<td>(22.3%)</td>
</tr>
<tr>
<td>Not applicable</td>
<td>379</td>
<td>(21.3%)</td>
</tr>
</tbody>
</table>

A little over half of mothers indicated that they had started breastfeeding but had now stopped. A further 26.2% were currently breastfeeding while 21.6% had never breastfed (figure 2.25).
Current feeding method was further examined for the 500 mothers who indicated that their baby was no more than six months of age (Figure 3.26). One in three mothers were breastfeeding exclusively compared to 27.3% who were feeding formula only. Breastfeeding and solids were being fed by 5.5% of mothers whereas 19.9% were feeding using formula and solids. A combination of breastfeeding and formula was being provided by 13.3% of the mothers.
The sum of a series of 14 five-point Likert questions were used to measure the degree of confidence (BSES) (Dennis, 2003) felt by mothers regarding their breastfeeding. The confidence measure had a potential range of scores from 14 to 70 with higher scores indicating greater confidence. The actual scores of the mothers spanned the full range of 14 to 70 (Figure 3.27). The mean and standard deviation of the confidence measure were 52.3 and 13.7, respectively, and it can be seen from Figure 3.26, that a large proportion of mothers had confidence levels similar to the mean. A secondary peak is evident at the maximum confidence level suggesting the presence of a subgroup of mothers with very high confidence in their breastfeeding.
Figure 3.27 Level of breastfeeding confidence in breastfeeding mothers

From the list of services provided, almost half of mothers indicated that help from a breastfeeding specialist at home or at hospital would have helped them to decide to breastfeed or to continue to breastfeed. A 24 telephone helpline and access to a trained peer counsellor was chosen by almost 40% of mothers (figure 3.28)
Approaching half of mothers (43.8%) received their first visit from the PHNs within 48 hours of coming home from hospital (Table 3.8). A further 38.9% were visited 2-4 days after hospital. For 5.5% of mothers, the PHNs visit was made at least 8 days after their arrival home.

Two-thirds of mothers received up to two visits by the PHN in their first six weeks after the birth. A further 30.4% received 3-8 such visits whereas more than eight visits were received by 1.3% of mothers.
Table 3.8 PHN visits to mothers after hospital discharge

<table>
<thead>
<tr>
<th>Time interval to PHN visit after hospital discharge</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 48hrs</td>
<td>778</td>
<td>(43.8%)</td>
</tr>
<tr>
<td>2-4 days</td>
<td>691</td>
<td>(38.9%)</td>
</tr>
<tr>
<td>5-7 days</td>
<td>211</td>
<td>(11.9%)</td>
</tr>
<tr>
<td>More than 8 days</td>
<td>98</td>
<td>(5.5%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Number of PHN visits in 1st 6 weeks</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-2 visits</td>
<td>1215</td>
<td>(68.3%)</td>
</tr>
<tr>
<td>3-8 visits</td>
<td>541</td>
<td>(30.4%)</td>
</tr>
<tr>
<td>more than 8 visits</td>
<td>24</td>
<td>(1.3%)</td>
</tr>
</tbody>
</table>

Almost one in three (30.9%) of mothers who were breastfeeding or had breastfed felt that the number of contacts (table 3.9) they had with their PHN was not at all enough to meet their breastfeeding needs. At the other end, a slightly lower proportion of mothers (28.5%) indicated that the number of contacts completely met their breastfeeding needs.

Just over half of breastfeeding mothers had not been observed breastfeeding by their PHN whereas 20.6% were observed once and 27.5% more than once.

Almost 40% of breastfeeding mothers felt that their PHN had actively assessed their breastfeeding. Twice that proportion (79.8%) indicated that their PHN had not shown them how to breastfeed though the PHN had talked to the mother about breastfeeding in over 80% of cases.
Table 3.9 Breastfeeding mothers experience of PHN visits

<table>
<thead>
<tr>
<th>Number of contacts with PHN was enough to meet my breastfeeding needs</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No, not at all</td>
<td>417</td>
<td>(30.9%)</td>
</tr>
<tr>
<td>Somewhat</td>
<td>380</td>
<td>(28.1%)</td>
</tr>
<tr>
<td>Almost</td>
<td>168</td>
<td>(12.4%)</td>
</tr>
<tr>
<td>Completely</td>
<td>385</td>
<td>(28.5%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHN observed the process of breastfeeding</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes, more than once</td>
<td>281</td>
<td>(20.6%)</td>
</tr>
<tr>
<td>Yes, just once</td>
<td>375</td>
<td>(27.5%)</td>
</tr>
<tr>
<td>No, never</td>
<td>707</td>
<td>(51.9%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHN actively assessed my breastfeeding skills</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>512</td>
<td>(38.2%)</td>
</tr>
<tr>
<td>No</td>
<td>827</td>
<td>(61.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHN showed me how to breastfeed</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>273</td>
<td>(20.2%)</td>
</tr>
<tr>
<td>No</td>
<td>1079</td>
<td>(79.8%)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>PHN talked to me about breastfeeding</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>1137</td>
<td>(83.6%)</td>
</tr>
<tr>
<td>No</td>
<td>223</td>
<td>(16.4%)</td>
</tr>
</tbody>
</table>

Note: questions applied only to mothers currently breastfeeding and those who started and had stopped

Three four-point Likert questions were used to assess the PHN contribution to supporting breastfeeding mothers (Figure 3.29 below) in terms of teaching or informing them, spending adequate time demonstrating to them and instilling confidence in mothers’ ability to breastfeed. The possible range of this scale was 3-12. Mothers’ ratings spanned this range and had a mean and standard deviation of 6.9 and 2.7, respectively. It can be seen from Figure 3.29 that the majority of ratings were in the 6-9 range, a very small group of women gave the maximum rating of 12 whereas a large group of women gave the lowest rating of 3. Therefore, PHNs were not assessed by mothers to have made a considerable contribution to support.
Half of breastfeeding mothers indicated that they were very satisfied (figure 3.30) with their overall breastfeeding experience. A further 25.8% were mostly satisfied but 13.1% and 11.9%, a total of one in four, were somewhat satisfied or not at all satisfied, respectively.

Figure 3.30 Mothers’ satisfaction with their overall breastfeeding experience

Not at all satisfied: 161 (11.9%)
Somewhat satisfied: 178 (13.1%)
Mostly satisfied: 350 (25.8%)
Very satisfied: 666 (49.2%)
The vast majority of breastfeeding mothers (84.5%) felt that the baby’s father was very supportive in relation to breastfeeding (figure 3.31). This compared to 58.1% for the baby’s maternal grandmother, 40.6% for friends and relatives and 34.7% for work colleagues.

**Figure 3.31 Degrees of breastfeeding support from informal sources**

<table>
<thead>
<tr>
<th>Source</th>
<th>Not at all supportive</th>
<th>Somewhat supportive</th>
<th>Mostly supportive</th>
<th>Very supportive</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baby’s father</td>
<td>3.5%</td>
<td>10.6%</td>
<td>84.5%</td>
<td></td>
</tr>
<tr>
<td>Baby’s maternal grandmother</td>
<td>7.5%</td>
<td>14.0%</td>
<td>20.5%</td>
<td>58.1%</td>
</tr>
<tr>
<td>Friends and relatives</td>
<td>1%</td>
<td>18.6%</td>
<td>37.6%</td>
<td>40.6%</td>
</tr>
<tr>
<td>Work colleagues</td>
<td>11.6%</td>
<td>23.2%</td>
<td>30.5%</td>
<td>34.7%</td>
</tr>
</tbody>
</table>

There was a degree of variation in satisfaction with formal sources of support (figure 3.32). In total, 40% of breastfeeding mothers were very satisfied with midwives in hospital and similar proportions were very satisfied with support groups in the mothers’ area and other organisations. Almost 30% were very satisfied with PHNs and with GPs. There was a relatively even distribution of breastfeeding mothers in terms of their satisfaction with PHNs and GPs. Thus, roughly similar proportions were not at all satisfied as were somewhat satisfied, mostly satisfied and very satisfied. This would suggest that breastfeeding mothers have very mixed experiences with formal sources of breastfeeding support.
Figure 3.32 Breastfeeding mothers’ satisfaction with formal sources of support

Figure 3.33 below indicates the availability and use of various breastfeeding support services. PHN services in the form of visits, phone calls and well-baby clinics when considered together featured strongly.
Figure 3.33 Availability and use of breastfeeding support services by breastfeeding mothers

- PHN home visits
- Phone calls from a PHN
- 24 hour help line
- Contact number of a PHN for same day response to breastfeeding queries
- Written materials
- Support groups run by health professionals
- Mother to mother support groups by La Leche League
- Mother to mother support groups by Cúdiú
- One to one counselling on breastfeeding
- One to one breastfeeding education
- A peer counsellor (breastfeeding mother) working independently
- A peer counsellor (breastfeeding mother) working for government organisations
- Breastfeeding / lactation "consultant"
- GP practice
- Drop-in well baby clinic
- Informational video on breastfeeding
- Baby cafe
- Chat rooms/Forums/Interactive blogs for breastfeeding issues
- Email contacts for information/advice
- Help from a breastfeeding specialist at home

Percentage

Available in area
Used by mother
Breastfeeding mothers were asked to rate their satisfaction with the breastfeeding support services they used. The satisfaction levels were ‘Not at all satisfied’, ‘Somewhat satisfied’, ‘Mostly satisfied’ and ‘Very satisfied’. These were assigned the values 0, 1, 2 and 3, respectively. The mean satisfaction rating of breastfeeding mothers for each support service used is illustrated in Figure 3.34.

Figure 3.34 Mothers’ satisfaction with breastfeeding support services used

When ranked according to satisfaction with the various services used (figure 3.35) it can be seen that social networking and Well Baby clinics provided by PHNs have the highest satisfaction ratings.
3.3.2 Maternal Evaluation
Mothers’ opinions were sought on how they could be better supported with breastfeeding following discharge from hospital/maternity care. Responses indicated the importance of timing with breastfeeding support and the necessity of relevant breastfeeding support as stated in the following:
‘Early breastfeeding support seems to be vital – this is all about the practicalities of feeding, support and encouragement for mothers, home visits important because in the early days women cannot get to the health centre easily’

‘Later issues are more about community support for breastfeeding, changing attitudes, acceptability about feeding outside the home. ‘Importance of networking and meeting other breastfeeding mothers’.

‘Approach the subject with more humour. Some of the breastfeeding 'specialists' approach the topic like nuns and place too much emphasis on expressing when the mother has barely gotten to grips with feeding. In the early days it is important to learn how to feed the baby and expressing can be taught later on’.

‘Respect a mother's modesty. Just because you chose to breastfeed doesn't mean you want a nurse touching your boobs! This happened to me and a few others and I really did not appreciate this. This again was in relation to the technique for hand expression. Your nipples are sore at the beginning so extra pulling on them is not a good idea’.

‘Tell mothers how HARD it is, how tired they will be, how drained they will be and how they will be the only one responsible for feeding that baby at the beginning. But tell them IT WILL GET EASIER. They just need to persevere to month three’

Some very positive comments about the support provided by the PHN, other mothers indicated that they got no support (including women who did not see a PHN) or the support that they received was unhelpful. There were many very positive comments about PHNs and the active support and the service provided by them. Mothers recommended more visits – daily in the first week, more time at visits - one to one support, timely visits, phone support, PHN to observe a breastfeed and a weekend service. Mothers wanted information on the practicalities of breastfeeding, sometimes they indicated that this would be best provided by another mother rather than a health professional. Internet support was mentioned frequently by mothers and they recommended that health professionals should be aware of discussions on Irish parenting web sites e.g. www.RollerCoaster.ie It was suggested that there should be a media campaign aimed at public support for breastfeeding in public – one woman valued a waitress who brought her a glass of water when she was breastfeeding her baby.

Summary
A large representative national sample of 1,854 mothers responded. The breastfeeding rate for the mothers’ cohort from 0-6months was 34% breastfeeding exclusively and 18.8% non-exclusively breastfeeding however these figures do not indicate duration of breastfeeding as data were not collected specifically at six months. Twenty one percent of the overall sample had never breastfed. The majority of mothers had decided on method of infant feeding prior to pregnancy or in early pregnancy and mothers also indicated making a conscious decision to breastfeed using a whole variety of feeding combinations. Overall mothers had a positive attitude to breastfeeding but many were not able to breastfeed for as long as they had planned. Overall, mothers had high breastfeeding self-efficacy with a sub group of mothers with very high levels. Mothers’ preferences for breastfeeding support that would
enable them to decide about breastfeeding or to continue included: one-to-one support from either the statutory or non-statutory services; 24 hour help lines and access to peer counsellors. Nearly half of mothers indicated receiving timely primary visits from PHNs. The number of follow-up visits varied, and the majority of mothers indicated that the number of such visits were not enough to meet their breastfeeding support needs. The majority of mothers did not believe that the PHN had actively assessed them breastfeeding. However, most mothers were either satisfied or very satisfied with their breastfeeding experience. The vast majority of mothers indicated that the baby’s father was very supportive of breastfeeding and the maternal grandmother to a lesser extent. In relation to formal sources of support, more than half of mothers were either mostly or very satisfied with breastfeeding support. The highest satisfaction rates for breastfeeding support services were firstly chat rooms, forums, interactive blogs, etc, and secondly PHN drop-in well baby clinics.
3.4 Comparative Results
Comparing DPHN and PHN responses in relation to how PHNs update their breastfeeding knowledge had generated interesting findings. It can be seen from Figure 3.36 that, in general, DPHNs overestimated the degree to which PHNs updated their breastfeeding knowledge using the selected sources. This was particularly pronounced and statistically significant regarding the 18 hour (UNICEF/WHO 1993) training programme (Chi-square = 4.26, df = 1, \( p = 0.039 \)), the 20 hour (UNICEF/WHO 2006) training programme (Chi-square = 25.79, df = 1, \( p < 0.001 \)) and other means (Chi-square = 12.39, df = 1, \( p < 0.001 \)).

Figure 3.36 How PHNs update their breastfeeding knowledge according to DPHNs and PHNs

In relation to scheduling further home visits the responses for DPHN and PHN were merged for ‘yes’ and ‘sometimes’. In total, 95.5% of DPHNs indicated that it was their policy to encourage PHNs to schedule further home visits for mothers who breastfeed as dictated by the mother. Similarly, 95.7% of PHNs indicated that it was their practice to schedule such visits.

The presence of a written breastfeeding policy in the LHO was identified by 95.5% of DPHNs. This was indicated to be the case by a lower proportion of PHNs (82.5%) but the difference was not statistically significant (Chi-square = 2.45, df = 1, \( p = 0.118 \)).

Across the many potential breastfeeding support services, there was a clear pattern whereby the expectation of DPHNs that their PHNs would refer to the service was far
higher than the degree to which the PHNs routinely referred mothers to the service. This is illustrated in Figure 3.37. The contrast was most pronounced and highly statistically significant (i.e. \( p < 0.001 \)) regarding PHN home visits, Phone calls from PHNs, Contact numbers of health care professionals, Written materials, GP practice, Well baby clinic and Informational videos.

Figure 3.37 Referral of mothers to breastfeeding support services

- PHN home visits
- Phone calls from PHNs
- 24 hour help-lines
- Contact numbers of health care professionals
- Written materials
- Health professional support groups
- Mother to mother support groups by La Leche League
- Mother to mother support groups by Cúidiú
- A peer counsellor (breastfeeding mother) working independently
- A peer counsellor (breastfeeding mother) working for government funded organisations
- Breastfeeding / lactation "consultant"
- GP practice
- Well baby clinic
- Informational videos
- Baby café
- Chat rooms/Forums/Interactive blogs with other mothers/professionals
- Email contacts of professionals

PHN routinely refers mothers to the support

DPHN expects PHNs to refer to the support

0 10 20 30 40 50 60 70 80 90 100 Percentage

Percentage
In terms of encouraging involvement of informal personal support, approximately 90% of the responding DPHNs indicated that they encouraged PHNs to involve the baby’s father in the PHNs’ education/support of breastfeeding mothers. A similar percentage of the PHNs indicated that they do this in practice.

The degree to which PHNs involved the baby’s maternal grandmother or family and friends was significantly lower (Chi-square = 5.17, df = 1, p = 0.023 and Chi-square = 8.04, df = 1, p = 0.005, respectively) than the degree to which DPHNs indicated that they encouraged PHNs to do so (figure 3.38).

**Figure 3.38 Involvement of significant others in the PHNs education/support of breastfeeding mothers**

The attitude to breastfeeding support from the perspective of DPHN and PHNs was scored as the sum of six four-point Likert style questions thereby giving a potential range of scores from 6 to 24 with higher scores indicating a more positive attitude to breastfeeding. The scale scores of both the PHNs and the DPHNs ranged from 16 to 24 and were therefore in the upper half of possible scores and thereby represented positive attitude towards breastfeeding. The similarity of the distribution of scores in both groups is illustrated in Figure 3.39. The mean and standard deviation were 21.1 and 2.1, respectively for the PHNs. The mean and standard deviation were 20.6 and 2.6, respectively, for the DPHNs. A t-test indicated that there was no significant difference between the attitude scores of the two groups (t = 0.86, df = 22, p = 0.399).
Figure 3.39 Distribution of PHN and DPHN scores on the individual attitude to breastfeeding support scale

The scale to assess the organisational culture regarding breastfeeding support consisted of nine four-point Likert questions and therefore had a possible range of 9-36 with higher scores indicating more negative organisational culture. The actual scores of the PHNs ranged from 9 to 31 and the scores of the DPHN ranged from 9 to 25 (Figure 3.40). The mean and standard deviation of the PHNs’ scores were 21.2 and 4.3, respectively. The mean and standard deviation of the DPHN scores were 18.5 and 4.6, respectively. The results of a t-test indicated that this was a statistically significant difference ($t = 2.69$, $df = 217$, $p = 0.008$). Thus, on average, PHNs score higher on the scale indicating that they generally perceived a more negative organisational culture regarding breastfeeding than DPHNs.
In relation to PHN visits to mothers within 48 hours three quarters of the PHNs indicated that in their area, they visited 76-100% of all new mothers within 48 hours (Figure 3.41). However, this was not supported by the responses of the mothers. Less than half (43.8%) indicated that they received their first visit from PHNs within 48 hours of coming home from hospital (Table 3.10).
Figure 3.41 Percentage of all new mothers visited within 48 hours in PHN areas

Table 3.10 PHN visits to mothers after hospital discharge

<table>
<thead>
<tr>
<th>Time interval to PHN visit after hospital discharge</th>
<th>n</th>
<th>(%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Within 48hrs</td>
<td>778</td>
<td>(43.8%)</td>
</tr>
<tr>
<td>2-4 days</td>
<td>691</td>
<td>(38.9%)</td>
</tr>
<tr>
<td>5-7 days</td>
<td>211</td>
<td>(11.9%)</td>
</tr>
<tr>
<td>More than 8 days</td>
<td>98</td>
<td>(5.5%)</td>
</tr>
</tbody>
</table>

A comparison of PHNs and mothers’ awareness of breastfeeding support services is illustrated in Figure 3.42. There was a clear pattern whereby there was greater availability of the services according to PHNs than according to breastfeeding mothers. This could also be interpreted that PHNs had greater awareness of breastfeeding support services in their area than breastfeeding mothers had of services.
Figure 3.42 Availability of breastfeeding support services according to PHNs and breastfeeding mothers

- PHN home visits: 95%
- Phone calls from PHNs: 94%
- 24 hour help-lines: 26%
- Contact numbers of health care professionals: 83%
- Written materials: 92%
- Health professional support groups: 75%
- Mother to mother support groups by La Leche League: 58%
- Mother to mother support groups by Cùidìú: 50%
- A peer counsellor (breastfeeding mother) working independently: 18%
- A peer counsellor (breastfeeding mother) working for government funded organisations: 6%
- Breastfeeding / lactation "consultant": 48%
- GP practice: 60%
- Well baby clinic: 76%
- Informational videos: 31%
- Baby café: 2%
- Chat rooms/Forums/Interactive blogs with other mothers/professionals: 40%
- Email contacts of professionals: 11%
The breastfeeding attitude scale (IIFAS-SF) was scored as the sum of 17 five-point Likert style questions thereby giving a potential range of scores from 17 to 85 with higher scores indicating a more positive attitude to breastfeeding. The scale scores of the PHNs ranged from 47 to 85 and were therefore in the upper half of possible scores and thereby represented positive attitude towards breastfeeding (Figure 3.43). The mothers’ scores ranged from 17 to 68 and were therefore in the lower three quarters of possible scores. The mean and standard deviation of the PHNs’ scores were 70.2 and 7.5, respectively. The mean and standard deviation of the mothers’ scores were 50.2 and 5.1, respectively. Therefore, the breastfeeding attitude of PHNs and mothers differed greatly and highly statistically significantly ($t = 37.57$, df = 231, $p < 0.001$). In general, PHNs had a far more positive attitude to breastfeeding than mothers.

Figure 3.43. Distribution of breastfeeding attitude scores among PHNs and mothers

Summary

DPHNs overestimated the degree to which PHNs updated their breastfeeding knowledge using the selected sources. DPHNs and PHNs were in agreement in relation to scheduling home visits. There was a significantly higher expectation among DPHNs that PHNs would refer mothers to the many potential breastfeeding services than was realised by the PHNs. Best practice in relation to achieving timely primary visits, while acknowledged by all parties is not being achieved in practice. PHNs perception of organisational support was more negative than that of the DPHNs. PHNs had a statistically significant more positive attitude to breastfeeding than breastfeeding mothers. PHNs had a greater awareness of breastfeeding support services available in their area than mothers.
Section 4 Discussion

The findings of this research are discussed in this section. The discussion is structured around the characteristics of the sample and background variables as well as the various constructs as already described in the conceptual framework (figure 2.1). These constructs include: PHN education; policy and guidelines; competence and confidence; availability of breastfeeding supports; organisational support; PHN practice and evaluation of breastfeeding support.

4.1 Background Variables

DPHNs were drawn from the national population and came mainly from HSE South and HSE Mid-Leinster, less well represented from HSE Dublin North East and HSE West. PHNs were relatively evenly distributed in the four HSE regions and clinically experienced as the majority were registered more than 5 years. Similarly Begley et al (2004) found that the mean level of experience as a PHN was 15 years.

The majority of mothers in the survey were over 35 years, married and educated to third level. Like the PHN sample they too were relatively evenly distributed in the four HSE regions. In relation to socioeconomic status 5.5% (n = 351) categorised themselves as ‘stay at home mothers’ and interestingly health professionals were strongly represented. For future studies it would be interesting to know how many of the remainder work full-time versus part-time.

The women’s sample therefore fit the profile of women who breastfeed in Ireland and in the Netherlands (Kools, Thijs, Kester, van den Brandt, & de Vries, 2005). The literature indicates that women most likely to breastfeed are from higher socio-economic backgrounds, have stayed within the educational system for longer, are older when having their babies and have attended antenatal classes. Whereas the women who bottle-feed come from lower socio-economic backgrounds, have left school early, were younger for their first birth and have not attended antenatal classes (Duggan-Jackson, 2000; Mid-Western Health Board, 1997; Wiley & Merriman, 1996). Similar findings were supported by Fitzpatrick et al (1994) and Lowry and Lillis (1993) in smaller studies into women’s attitudes to breastfeeding.

4.1.1 Maternal and Child History

Mothers were relatively evenly split in terms of the age of their baby from under 6 months to over 18 months indicating an even response rate from each age category. Only the mailed questionnaires were sent to the different age groups so it was fortuitous that the response rate was even from all age groups. The majority of women had full term normal births. The percentage of women who had preterm births is comparable with national figures (Central Statistics Office, 2009). There was a relatively even split between first time mothers (44.6%) and those who had other children (55.4%). Of the mothers who had other children, almost three quarters (72.0%) of them had breastfed their other children.

4.1.2 Breastfeeding: From Decision-Making to Cessation

A little more than half of mothers had decided how they wanted to feed their baby before getting pregnant. More than 20% decided in early pregnancy. The remaining quarter of mothers were relatively evenly split between those who decided in late pregnancy or directly after the birth. Approximately 60% of mothers decided to
breastfeed their baby. Approximately 20% of mothers decided to bottle/formula feed only or to feed using a combination of breastfeeding and bottle/formula.

Two-thirds of all mothers indicated that they were encouraged to breastfeed within one hour of the birth. Excluding those for whom this was not applicable and who did not intend to breastfeed, all but approximately 300 were not encouraged to breastfeed within one hour of delivery. Encouraging early feeding is consistent with accepted best practice (WHO, 1998).

The current feeding method, at 54%, was most commonly a combination of formula and solids. In contrast, only 15% of mothers were currently feeding their youngest child using a combination of breastfeeding and solids.

Approximately 30% of the mothers’ breastfed as long as they had planned and a further 22% were still breastfeeding as planned. Excluding the 21% for whom the question did not apply, revealed that 27% of all the mothers who responded were not able to breastfeed for as long as they had planned.

Current feeding method was further examined for the 500 mothers who indicated that their baby was no more than six months of age (Figure 3.23). One in three mothers were breastfeeding exclusively compared to 27.3% who were feeding formula only. Breastfeeding and solids were being fed by 5.5% of mothers whereas 19.9% were feeding using formula and solids. A combination of breastfeeding and formula was being provided by 13.3% of the mothers. Current WHO (2003) recommendations are that babies are exclusive breastfed for at least six months. Therefore it would seem that Irish mothers are making their own decisions to breastfeed as they themselves decide.

4.2 PHN Education
A lack of knowledge by health care professionals can be damaging to breastfeeding success when women receive inconsistent/inaccurate breastfeeding information (Dennis, 2002).

DPHNs indicated that PHNs attended two formal education programmes which are available to staff. These include The Breastfeeding Management and Promotion in a Baby Friendly Hospital an 18 hour course for maternity staff (UNICEF & World Health Organization WHO, 1993) and the updated version The Breastfeeding Promotion and Support in a Baby-Friendly Hospital, a 20-hour Course for Maternity staff (UNICEF & WHO, 2006). If staff had attended a formal breastfeeding education programme particularly before 2006 then it would be recorded as the ‘18hour Breastfeeding Programme’. Currently both programmes are available to staff but efforts are being made to change to the more evidence based 20 hour programme.

Sikorski et al (2004) suggest that support from an appropriately skilled practitioner can have a positive effect on women’s initiation, duration and experience of breastfeeding. Many studies internationally have found a positive association following the introduction of breastfeeding education using either UNICEF World Health Organisation programme or an adaption of it, either on health professionals breastfeeding knowledge (Bigger & Long, 2008; Wissett, Dykes, & Bramwell, 2000)

Some PHNs and DPHNs indicated that formal breastfeeding education was either inaccessible or infrequently available in their LHO. National policies for the promotion and support of breastfeeding recommend that staff attend breastfeeding education programmes, however it is not specified how frequently staff should attend these programmes (Department of Health, 1994; DoHC, 2005). Smale et al (2006) identified that when breastfeeding education is not mandatory for any specific group of health care professionals, staff rely on other methods to update their breastfeeding knowledge. These methods include colleagues within the multidisciplinary team and journals to inform practice. This finding is supported by DPHNs and PHNs in this research.

PHNs acknowledged that they felt prepared to support breastfeeding mothers. They also indicated that supporting mothers appropriately with their acquired evidenced based knowledge and skills were affected by lack of time to spend with breastfeeding mothers and other workload issues. This indicates that the reality of adequately supporting mothers is a concern for PHNs.

Some PHNs raised issues about loss of midwifery and their perceived impression that it had a negative impact on supporting women breastfeeding. A midwifery qualification has not been a pre-requisite for applying for the Pre-registration education PHN programme since 2007. Students without Registered Midwife qualification undertake a module in Maternal and Child Health Nursing (An Bord Altranais, 2005) that has to include a formal UNICEF/WHO breastfeeding educational programme for health professionals. The impact of health education interventions for mothers on initiation and duration of breastfeeding is significant only when current practices are incompatible with what is been taught (EU Project on Promotion of Breastfeeding in Europe, 2004). Therefore the issue is to do with breastfeeding education rather than the midwifery qualification. Breastfeeding mothers are most concerned about receiving support from staff with up to date knowledge and competence.

4.3 Breastfeeding Policy
The majority of DPHNs indicated that a Breastfeeding Policy is available in the Local Health Office (LHO), which was supported by 82.5% of PHNs agreeing with this statement. It is not surprising therefore that 88% of PHNs’ indicated that they were ‘confident to very confident’ in their knowledge of ‘The 10 steps to successful breastfeeding’ (World Health Organisation/UNICEF, 1989).

All DPHNs indicated that they do not permit the advertisement and supply of formula feeds or equipment which indicates their compliance with to Step 6 (World Health Organisation/UNICEF, 1989) and the International Code of Marketing of Breast-Milk Substitutes (WHO, 1981).
4.4 Breastfeeding Competence and Confidence
This section covered a number of areas relating to PHNs and mothers and will be addressed in detail in the subsections below.

4.4.1 PHN Breastfeeding Confidence and Competence
As stated in the previous section the majority of PHNs rate themselves as either confident or very confident in their knowledge of the 10 steps to successful breastfeeding. Similarly on the 26 item competence scale the majority of scores were high. These findings contrast with Wallace & Kosmala-Anderson (2007) who found that competence levels were more variable. Furthermore, findings from a national survey of 752 health practitioners in the UK (McFadden, Renfrew, & Wallace, 2007) also highlighted deficits in breastfeeding knowledge and skills and low levels of self-assessed competence. There was also a lack of knowledge of current national guidelines for breastfeeding. Differences may be related to samples being untrained or coming from either the hospital or community setting, where breastfeeding skills practice were limited. Consequently it is difficult to compare findings.

Findings from this research are very positive in terms of providing appropriate breastfeeding support to women as it indicates that PHNs are able to address women’s needs. However it is important for staff to realise that mothers views of this support can be in complete contrast, contributing to a negative experience for the mother (Gill, 2001). Therefore the necessity for practitioners to evaluate their own practice to assess whether their confidence and competence is being reflected with better breastfeeding outcomes in their areas is essential.

4.4.2 Mothers Breastfeeding Confidence
Mothers’ confidence as measured by the modified BSES-SF (Dennis, 2003) spanned the full range of scores available, indicating a wide variability in confidence. The majority were moderately confident but interestingly there was a subgroup of mothers with very high confidence in their breastfeeding. Confidence about breastfeeding is an important indicator of success and duration (Dennis & Faux, 1999) and as such fits the profile of the participants in this research. Confidence is also affected by previous positive breastfeeding experience. Results from Mozingo’s (2000) phenomenology study, found that the incongruity between idealised expectations and early breastfeeding reality lead to disillusionment, lowered confidence and subsequent cessation. Similar themes emerged from Hodinott and Pill (2000) qualitative research with low income mothers (n = 21), who expressed how inadequately prepared they were for initiation and sustaining of breastfeeding, and this led to reduced self-confidence in their ability to continue. The results obtained in this latter research were lower than Dennis’ (2003) study where the mean was found to be 56-58. However this latter study measured women from one to eight weeks postpartum when confidence levels are expected to be lower. Dennis (2003) concluded that as confidence increased it was a greater predictor of increased duration of breastfeeding. It is important for all practitioners to realise that confidence is a modifiable variable and those lacking in confidence should be targeted (Dennis, 2003).

4.4.3 Infant Feeding Attitude Scale
Attitude to breastfeeding support was assessed for PHNs and found to be in the upper half of possible scores and thereby represented positive attitude towards
breastfeeding. There was also a small peak close to the maximum score indicating the presence of a group of PHNs with extremely positive attitude towards breastfeeding. Whereas, the distribution of maternal scores were more negative than expected in view of the large number of breast feeders in the survey. When compared, the breastfeeding attitude of PHNs and mothers differed greatly and was highly statistically significant. In general, PHNs had a far more positive attitude to breastfeeding than mothers. This is unexpected as both samples are drawn from the same population pool. This contrasts with the findings of Tappin et al (2006). In their study health visitors had a more negative score than mothers. Tappin et al (2006) acknowledged that this was the first time that the IIFAS had been used with health care professionals. Shaker et al (2004) found differences in attitude between parents who breastfed and parents who formula fed, especially around items to do with breastfeeding in public and use of alcohol. Further analysis is required in the current study in relation to what items precisely brought down the overall score for mothers but is beyond the scope of this report. The implications of findings from the current research for future developments in Ireland however demand that efforts to promote positive attitudes need to occur at a population level.

4.5 Availability of Breastfeeding Supports

All respondents were asked about the availability of supports in their areas and the extent to which they were used. The list of supports provided to respondents was drawn from the literature. The range of supports included: statutory, informal, voluntary and private. The range of support services were cognisant of the value of multifaceted interventions which effectively support breastfeeding (Britton et al., 2007). PHNs deliver a social model of care and have a long tradition of utilising all the resources i.e. statutory, voluntary and private ((DoHC, 2001; Hanafin, Houston, & Cowley, 2002) which are present in any mixed economy of welfare.

At a strategic level the results indicated that DPHNs have knowledge about the resources available in their areas and do encourage PHNs to refer mothers to a variety of non-statutory resources. Analysis of the PHN results is less clear and would seem to indicate an awareness of the breastfeeding supports in their area. However the referrals to statutory services did not coincide with the availability as expected, possibly because the term referral is not perceived as recommending mothers to attend PHN services. It is possible that referral is understood as a formal rather than informal process.

When PHNs and mothers’ awareness of breastfeeding support services is statistically compared there is a clear pattern whereby there is greater availability of the services according to PHNs than according to breastfeeding mothers. This could also be interpreted that PHNs had greater awareness of breastfeeding support services in their area than did the breastfeeding mothers. Maternal results indicate the availability and use of various breastfeeding support services. PHN services in the form of visits, phone calls and well-baby clinics, when considered together featured strongly in the findings. However, the PHN service is the statutory postnatal service which is universally available to all mothers and thus is familiar.
4.5.1 Facilitation of Support Groups

It is appropriate that breastfeeding support groups are encouraged and facilitated by the PHN service (Department of Health, 1994). In this research the majority of DPHNs stated that their staff did facilitate breastfeeding support groups, indicating appropriate support of breastfeeding. Two thirds of PHN respondents indicated that they facilitate breastfeeding support groups to varying degrees. It should be noted that it is only possible to establish breastfeeding support groups where there is a critical mass of breastfeeding mothers, because if numbers are too low the group will not self-sustain. The fact that PHNs identified that their caseload of breastfeeding mothers varied widely would support this factor.

4.5.2 Attitude towards Breastfeeding Support

In terms of encouraging involvement of informal personal support most of the responding DPHNs indicated that they encouraged PHNs to involve the baby’s father in education/support of breastfeeding mothers. Most PHNs indicated that they involve the baby’s father in breastfeeding education and support and to a lesser extent the maternal grandmother. The degree to which PHNs involved the baby’s maternal grandmother or family and friends was significantly lower than the degree to which DPHNs indicated that they encouraged PHNs to do so. This possibly reflects the degree to which the reality of the work environment and what is achievable in clinical practice. This suggestion would however require further study. Nevertheless the literature indicates that partners and maternal grandmothers are highly influential on the success of breastfeeding and more PHN involvement is required in this area (Hoddinott, Pill, & Hood, 2000; Khoury, Mozazzem, Jarjoura, Carothers, & Hinton, 2005).

From mothers perspective the vast majority of them indicated that the baby’s father was very supportive in relation to breastfeeding. The baby’s maternal grandmother was the second most supportive, followed by friends and relatives and lastly work colleagues. Similarly Leahy-Warren (2005; 2009) found that informal social support in the post-natal period was provided in this order. The value of apprenticeship-style learning of skills from family and peers to improve self confidence and continue with breastfeeding is significant for mothers (Hoddinott & Pill, 2000).

There was a degree of variation in satisfaction with formal sources of support. In total, 40% of breastfeeding mothers were very satisfied with midwives in hospital and similar proportions were very satisfied with support groups in mothers’ area and other organisations. Almost 30% were very satisfied with PHNs and with GPs. There was a relatively even distribution of breastfeeding mothers in terms of their satisfaction with PHNs and GPs. Thus, roughly similar proportions were not at all satisfied as were somewhat satisfied, mostly satisfied and very satisfied. This would suggest that breastfeeding mothers have very mixed experiences with formal sources of breastfeeding support (McInnes & Chambers, 2008). These findings were echoed by Leahy-Warren (2009; 2007) in relation to postnatal support. Raisler’s (2000) study indicated that participants valued professional support in terms of the personal relationships established. This relationship enabled a supportive environment in which appropriate information and referrals were made with regard to breastfeeding. Furthermore, health professionals were found to be supportive if they were enthusiastic about breastfeeding and available for phone calls when mothers were in distress. Similar findings were articulated from text comments within a large
Randomised Control Trial (Graffy & Taylor, 2005), where mothers (n = 654) indicated that professional informational support was deemed helpful when undertaken in a participatory manner. Mothers wanted information on breastfeeding, on what to expect, practical advice on positioning and acknowledgment of mothers’ experiences and preferences. This led to increased self-confidence in their ability to breastfeed their infants. Goonan (2005) in a survey of breastfeeding mothers (n = 180) found that breastfeeding advice was rated by mothers as the most important reason for attending a breastfeeding support group and the enthusiasm of the PHN facilitator was rated very highly.

A high positive attitude towards breastfeeding support by PHNs and DPHNs was found and is a precursor to effective breastfeeding support. Interestingly there was no significant difference between these two cohorts. McInnes and Chambers (2008) suggest that a positive attitude to breastfeeding by health professionals is not always reflected in how the mother is cared for. PHNs rated highly the usefulness of referring to and consulting with voluntary or private lactation consultants and were largely satisfied with their appropriateness and responsiveness to support breastfeeding mothers. However PHNs were less satisfied with their availability. This was not found by Kools et al (2005) but it is well acknowledged that the variety and availability of supports in the Netherlands differs significantly to Ireland.

From the list of services provided, almost half of mothers indicated that help from a breastfeeding specialist at home or at hospital would have helped them to decide to breastfeed or to continue to breastfeed. A 24 telephone helpline and access to a trained peer counsellor was chosen by almost 40% of mothers.

4.6 Organisational Support for Breastfeeding

Results from DPHN and PHN perceptions of barriers to organisational support indicated that they perceived that organisational culture as neither positive nor negative towards breastfeeding. On statistical analysis PHNs scored higher on the scale indicating that they generally perceived a more negative organisational culture regarding breastfeeding than DPHNs. This may not be unusual as DPHNs are operating at a strategic level, whereas PHNs are frontline staff and see the consequences of non-prioritised services more clearly. Findings were somewhat supported by Wallace and Kosmala-Anderson (2007) whose respondents considered the organisational support more negatively. The cohort in the latter study included non-professionals, health visitors and midwives.

4.7 PHN Practice

In terms of the timeliness of PHN breastfeeding support to mothers, results from DPHNs and PHNs indicate that nearly three quarters of primary visits are achieved within the recommended 48 hours. However the Office of the Nursing Services Director’s (2009a) found an overall range of 45% to 99% that did not support this level of achievement of the performance indicator. However, the latter collected interval data and the current survey collected categorical data, therefore data cannot be compared. In contrast to PHNs nearly half of mothers indicated that they received their first visit from the PHN within 48 hours of coming home from hospital. A further 38.9% were visited 2-4 days after hospital. For 5.5% of mothers, the PHN visit was made at least 8 days after their arrival home. The results therefore indicate that full compliance with the 48 hr primary visit is not being achieved.
In relation to follow up visits according to need in the postnatal period, over 80% of PHNs indicated that they were being provided. Furthermore, DPHNs indicated that PHNs ‘almost’ have the time to meet the support needs of breastfeeding mothers and early and follow-up home visits are encouraged by DPHNs. Two-thirds of mothers reported that they had received up to two visits by the PHN in their first six weeks after the birth. A further 30.4% received 3-8 such visits whereas more than eight visits were received by 1.3% of mothers. Therefore there are differences between PHNs and mothers but the samples were not matched.

Analysis of the data does however reveal that the PHN sample in the main had relatively high breastfeeding caseloads. Some respondents completed this section numerically and others by percentage, therefore caution should be exercised in drawing inferences here. However the practice of scheduling visits according to maternal need is not continued on a seven day week basis as evidenced by home visits not being prioritised for planned essential visits i.e. the week-end service. According to Begley et al, (2004) PHN workloads vary hugely and this impacts on their ability to provide primary as well as secondary care. According to the Office of the Nursing Services Director (2009b) there are currently 62.1 whole time equivalent (WTE) PHN vacancies and this is predicted to rise to 114.3 WTE projected vacancies in 2010. Therefore the impact of increasing workloads with reducing staff numbers is likely to result in further reduction in breastfeeding support services to mothers.

Antenatal contact as reported by PHNs is very low and is supported by existing dated workload surveys. More recently Begley et al (2004) included it within the child health category rather than assigning a separate category. One of the research team (HM) has anecdotal evidence from student PHN caseload analysis that antenatal care constitutes approximately 1% of total caseloads. Despite this very low figure however, over three quarters of PHN respondents indicated that discussion around breastfeeding constitutes part of this contact, which is highly appropriate.

As expected from the nature of providing breastfeeding support the duration of the average visit by a PHN to a breastfeeding mother lasted 30-60 minutes for over 70% of respondents. Additionally the majority of PHNs were involved in the collection of initiation and duration breastfeeding rates.

PHNs scores with respect to both the assessment by questioning and the assessment by observing of breastfeeding were moderately high and high respectively. The magnitude of the difference in means was small but there was a statistically significant difference. Thus, on average, PHNs’ level of assessment by observing was higher than their level of assessment by questioning. From comparison of both methods a larger subgroup of PHNs scored the maximum on the ‘assessment by observing’ measure than did so on the ‘assessment by questioning’ measure. In addition, there was a strong linear association between PHN scores on the two measures. Thus, high scores on one measure were generally associated with high scores on the other and vice versa.

In contrast, as far as mothers were concerned just over half of them stated that they had not been observed breastfeeding by their PHN, whereas 20.6% were observed once and 27.5% more than once. Almost 40% of breastfeeding mothers indicated that
their PHN had actively assessed their breastfeeding. Even though the assessment of breastfeeding was measured differently for the PHN and mother cohorts it would appear that PHNs overestimated how much they observe and question mothers. Twice the proportion of mothers (79.8%) indicated that their PHN had not shown them how to breastfeed, though PHNs had talked to mothers about breastfeeding in over 80% of cases. The former finding is not unusual as it could be assumed that breastfeeding mothers have already been shown how to breastfeed prior to discharge from the maternity hospital. It is extraordinary that PHNs did not talk about breastfeeding to all these mothers who were breastfeeding. Hunter’s (2004) grounded theory study cited the most important supportive activities provided by community midwives was reassurance and practical hands-on help.

4.8 Evaluation of Breastfeeding Support

In terms of evaluating breastfeeding services half of the DPHNs indicated that an evaluation of some sort had taken place; or was in the process or about to take place but they did not elaborate on the format of evaluation. A small number of PHNs did indicate informal, anecdotal self-evaluation had taken place and PHNs on occasion used attendance, duration of breastfeeding or use of services to measure effectiveness. Reasons for not evaluating were related mainly to time/workload issues. At an individual clinical level, practitioners aim to include evaluation as part of the nursing process. However at the community or population level the results indicated that evaluation of breastfeeding support did not appear to be a high priority. The amount of evaluation being undertaken may however be under-represented because of the widespread collection by PHNs of performance indicators, which focus on statistical outputs. By focussing on initiation and duration rates the value of PHN practices such as home visits, clinics, support groups, follow-up telephone calls, etc, are not being assessed in relation to their appropriateness, responsiveness and timeliness.

Evaluation of breastfeeding support is carried out primarily in relation to duration of breastfeeding (Britton et al 2009). Health professional’s performance has been evaluated in relation to competence and confidence with supporting breastfeeding mothers. Self-assessed competence does not indicate actual competence with all skills necessary to support breastfeeding mothers (Wallace and Kosmala-Anderson 2007). The incongruence between perceived competence and actual competence indicate the need for systematic, comprehensive evaluation that will inform the content of updates for education and training.

The suggestions from respondents to improve breastfeeding initiation, duration rates and support are categorised according to local, regional and national issues.

Local Issues:

DPHNs believe that a multifaceted approach is required to promote breastfeeding from the antenatal to the postnatal period and including early primary visits. This would entail frequent and longer duration for home visiting/clinic visits for the first 6 weeks, breast feeding support clinics and support visits from other mothers e.g. community mothers programme. This approach ideally would be mother led. DPHNs believed there should be increased access to health-centre based breast-feeding support. Allocation of caseload size needs to be cognisant of the time needed to support breastfeeding mothers. Mothers’ opinions support these suggestions. They too value early and focused visiting e.g. daily in the first week, more time devoted to
visits etc. Mothers particularly emphasised the importance of home visits because in the early postnatal period women cannot get to the health centre easily.

In relation to the active support provided by PHNs, some mothers were very positive whereas others were not, about the services they received. Mothers wanted information on the practicalities of breastfeeding, and they wanted support and encouragement. Sometimes they indicated that this would be best provided by another mother rather than a health professional. Many mothers stressed the importance of networking and meeting other breastfeeding mothers. Mothers also provided suggestions in relation to how they would like support delivered by PHNs such as being more person-centred, taking account of a woman’s reality and adopting a hands-off approach when demonstrating skills. The consideration of providing Home Help hours was suggested by some DPHNs as a means of supporting some breastfeeding mothers.

**Regional Issues:**
It was suggested by DPHNs that there needs to be more working in collaboration with the multifaceted resources available in each area. The usefulness of a multi-disciplinary approach was suggested. PHNs also commented on the availability of wider community supports but they acknowledged could be used more. Furthermore DPHNs suggested a database would enable new mums, health professionals and peer supporters to quickly and easily access relevant local information and support groups. The resource is already available to locate local statutory community services via the www.hse.ie website but is not specifically integrated or linked with the www.breastfeeding.ie support website. Therefore a mother has to navigate two websites to locate all the breastfeeding support services available to her. PHNs commented unfavourably on infrastructure such as health centres. DPHNs also suggested the need to improve the baby friendliness of Health Centres. Anecdotally the poor condition of health centres is well documented. DPHNs suggested the further development of peer-support programmes especially in disadvantaged areas where breastfeeding rates are low. This approach to promoting and supporting breastfeeding has been established and positively evaluated with mothers from disadvantaged areas (Curtis, Woodhill, & Stapleton, 2007; Dykes, 2004). Some suggestions overlapped the regional and national issues and where appropriate have been moved to the section below.

**National Issues:**
There was widespread consensus on the need to change the breastfeeding culture in Ireland from all respondents; DPHNs, PHNs and mothers. Suggestions as to how this could be achieved included promotion through education from teachers in schools, education at all levels and antenatally in maternity units. It was considered that the media portrayal of breastfeeding was not utilised to full advantage. More media promotion is required to normalise breastfeeding to ensure that it becomes culturally acceptable and mothers are able to feed their baby anywhere in public. Scott and Moystn (2003) suggest that Television is an untapped resource with the potential to provide actively visual images of women breastfeeding to women who would not usually see breastfeeding in their own community. There were further suggestions to address this by making bottle feeding culturally unacceptable. Results from a recent study found the prevalence of a cultural barrier to breastfeeding in Ireland (Tarrant & Kearney (2008). In the current study there was a suggestion from a PHN respondent
that breastfeeding facilities should be as mandatory as wheelchair access in public offices; however this issue requires further debate and consultation with mothers and relevant stakeholders. It is perceived by PHNs that more active promotion in public places is required such as a sign stating "we actively support breastfeeding. If there is anything you need to enable you to feed your baby here please inform a member of staff and you will be facilitated”.

DPHNs suggested the implementation of Baby Friendly accreditation standards similar to that received by Maternity Units. This has been achieved in the UK in community areas by using The Seven Point Plan For Sustaining Breastfeeding In The Community (UNICEF UK Baby Friendly Initiative, 2008). DPHNs also suggested more national initiatives are required for breastfeeding awareness week. DPHNs believe that peer support is the most effective way to increase the numbers of women breastfeeding. The need was acknowledged by DPHNs to set up of more Breast Feeding support groups with facilities and dedicated time set aside. Mothers also commented enthusiastically on the source of support received via the internet e.g. www.rollercoaster.ie and other Irish parenting web sites. They recommended that health professionals should be aware of content on these sites and type of discussions around maternal breastfeeding needs. These sites contain a lot of advertising and the breastfeeding information on the sites does not appear to be mediated, therefore there is a risk of misinformation and dissemination of non empirical advice. Possibly other breastfeeding sites are better e.g. La Leche but women did not mention them. It appears that mothers value more the local (Irish) information apart from those who cite WHO information.

Mothers’ opinions were sought on how they could be better supported with breastfeeding following discharge from hospital/maternity care. Responses indicated the importance of the timing with breastfeeding support and the necessity of relevant breastfeeding support. DPHNs believed that breastfeeding needs to be prioritised. At a national level this translates into human resource management i.e. vacant PHN posts should not be left unfilled for any significant time. There should be a commitment from the HSE to provide PHN relief for annual leave and sick leave. DPHNs acknowledged the impact on breastfeeding support brought about by current mileage restrictions which limits the amount of home visiting possible. Another important point in relation to responsive service is the provision of a seven day PHN service.

Responses with regard to how the PHN service could be improved to be more appropriate and responsive to breastfeeding mothers were primarily related to education and training for the PHNs. There needs to be more PHN managerial support by provision of literature and regular education. Breastfeeding education needs to be available, accessible, consistent and standardised in relation to frequency of updates. This approach to breastfeeding education is acknowledged internationally. The current approach to breastfeeding education is consistent with that provided for health professionals internationally and has been shown to increase the duration of exclusive breastfeeding (Britton et al 2009). Another broadly suggested initiative was a commitment by the HSE to fund a dedicated trained lactation consultant as a resource support for the PHN in each LHO. This person could provide expert opinion in complex breastfeeding problems and could also be responsible for the coordination and provision of breastfeeding education.
Summary
There were representative samples from all three cohorts of DPHNs, PHNs and mothers. The majority of mothers had breastfed to some degree whereas twenty one percent of the overall sample had never breastfed. In line with previous research decisions about breastfeeding were mainly taken either before pregnancy or in early pregnancy. Many women had also clearly decided not to exclusively breastfeed as recommended by the WHO (2003). Statutory breastfeeding support is provided by clinically experienced and appropriately educated PHNs. Most PHNs had attended formal WHO/UNICEF programmes considered appropriate to their needs and gave them confidence to support women. There is lack of knowledge or awareness about what type of education is appropriate to attend and the frequency for attendance for different types of education. Easy access to continuing education is also a problem and needs to be addressed nationally.

DPHNs indicated a positive organisational culture towards breastfeeding, whereas PHNs indicated that it was not entirely supportive. DPHNs were positively predisposed to breastfeeding. PHNs had high levels of self assessed competence in their ability to provide breastfeeding support, however PHNs were more likely to assess breastfeeding by questioning than by observing a breastfeed. PHNs had a more positive attitude to breastfeeding than breastfeeding mothers which was an unexpected finding. A possible explanation for this is that the PHNs had received breastfeeding education. The literature indicates that increased knowledge increases the positive attitude to breastfeeding and in view of these findings points to the need to educate mothers the same way as health professionals. PHNs were not always able to provide timely services in the form of primary, follow-up visits, or week-end service, which is not meeting mothers’ assessed needs. Over half PHNs facilitate support groups in their areas and there are a wide variety of breastfeeding supports available, which are not used to full potential.

Mothers’ most highly ranked supports were: 24 hour help lines and access to peer counsellors. Where the help lines exist and PHNs encourage mothers to use this service, mothers did not indicate that they used them. Specifically in relation to PHNs, mothers indicated that breastfeeding support groups in their area, phone numbers of PHNs, especially with same day response, seven day week PHN service, more home visits, and scheduled phone calls would have been considered beneficial. PHNs involve mothers’ informal social network in breastfeeding education and support but could be used to a greater extent. The majority of mothers were satisfied with their overall breastfeeding experience. The services used and rated most highly were chat rooms/blogs and the drop-in well baby clinics run by PHNs.
Conclusion

There is a wealth of international literature which has attempted to measure the effectiveness of breastfeeding support. Ultimately formal breastfeeding support is seen as a public health intervention amenable to analysis in relation to clinical or cost effectiveness. The main source of formal support in the community is from either nurses or midwives. The exact nature of intervention activities and attitudes carried out by nurses during home visits have been examined and illustrate the importance of consistent education on the effectiveness of interventions. In summary mothers want a support service that is appropriate to their needs, available when they want it or timely and responsive to their changing needs. The literature concludes that the most effective breastfeeding support is multifaceted. The deficiency in relation to breastfeeding support is that there has been insufficient analysis of any deficiencies and/or gaps in current PHN service provision in Ireland.

Conceptually, for breastfeeding support to be effective it needs to be provided by health professionals who are appropriately trained and supportive of breastfeeding, operating within organisations that have an appropriate positive attitude to breastfeeding to women who have a positive attitude towards breastfeeding. This support needs to be responsive to the needs of women and provided in a timely and appropriate fashion. To measure the appropriateness, responsiveness and timeliness of breastfeeding support provided by PHNs in Ireland a quantitative, cross-sectional study was conducted. Three sample cohorts were obtained; mothers with children under three years of age (n= 1854), DPHNs (n=24), PHNs (n=204). Self report questionnaires were completed by mail and online. Data were analysed using the Statistical Package for Social Science (SPSS) and reported using descriptive and inferential statistics.

There were representative samples from all three cohorts of DPHNs, PHNs and mothers. The breastfeeding rate for the mothers’ cohort from 0-6months was 34% breastfeeding exclusively and 18.8% non-exclusively breastfeeding however these figures do not indicate duration of breastfeeding as data were not collected specifically at six months. Twenty one percent of the overall sample had never breastfed. As with previous research mothers in this study indicated that they make decisions about breastfeeding before pregnancy and 20% decided in early pregnancy. Many women had also clearly decided not to exclusively breastfeed for six months, which clearly contradicts the recommendation of the WHO (2003).

This research indicates that statutory breastfeeding support is provided by clinically experienced PHN’s with the majority being qualified for practice over five years ago. Education for providing breastfeeding support is highly endorsed by DPHNs and attended by the PHNs themselves. Most PHNs indicated that they had attended formal WHO/UNICEF programmes which was considered appropriate to their needs and gave them confidence to support women. However, they do not have easy access to continuing education and alternatively they update their knowledge using journals and other sources. There is lack of knowledge or awareness about what type of education is appropriate to attend and the frequency for attendance for different types of education. This finding is similar to previous research about the provision of breastfeeding education for health professionals. DPHNs overestimated the degree to
which PHNs updated their breastfeeding knowledge using the selected sources and this finding was statistically significant.

Positive organisational culture is significant for creating an environment whereby PHNs can provide an appropriate, responsive and timely service. DPHNs indicated that there was consistency around the country in terms of a positive organisational culture towards breastfeeding. Whereas PHNs indicated that the organisational culture was not entirely supportive of breastfeeding and the difference was statistically significant. One aspect of a positive organisational culture is the availability of written policies which both DPHNs and PHNs indicated was available in their area and PHNs reported confidence in knowledge of the Ten Steps to Successful Breastfeeding. Organisational culture was not measured from mothers’ perspective. There was a significantly higher expectation among DPHNs that PHNs would refer mothers to the many potential breastfeeding services than was realised by the PHNs.

DPHNs have an overall positive attitude to breastfeeding however there were those who were 100% positive and those who were less positive. PHNs have high levels of self assessed competence in their ability to provide breastfeeding support, however PHN’s are more likely to assess breastfeeding by questioning than by observing a breastfeed and this difference was statistically significant. Furthermore, there was a strong linear association between PHN scores on the two measures, thus, high scores on one measure were generally associated with high scores on the other and vice versa. PHNs have a more positive attitude to breastfeeding than breastfeeding mothers which was highly statistically significant and an unexpected finding. A possible explanation for this is that the PHNs had received breastfeeding education. The literature indicates that increased knowledge increases the positive attitude to breastfeeding and in view of these findings points to the need to educate mothers the same way as health professionals.

PHNs were not always able to provide a timely support services in the form of primary, follow-up visits, or week-end service. Mothers are not happy with this service and this finding indicates that there needs to be recognition to prioritise breastfeeding support. The health promotional aspects and the long term heath to be gained form breastfeeding support are being lost in a service that has to prioritise curative outcomes that are short term.

There are a wide variety of appropriate supports available, they are encouraged but not always referred to by PHNs or used by mothers to full potential. Statutory supports are more widely available than non statutory, this is not an unexpected finding as the reach of statutory services would be greater than that of voluntary or private services that may only be available where there is a demand. Over half PHNs facilitate support groups in their areas. When Mothers were asked about preferences for breastfeeding support that would enable them decide about breast feeding or to continue, overall they favoured one-to-one support from either the statutory or non statutory services in the hospital or community. Other highly ranked supports were 24 hour help lines and access to peer counsellors. It was considered by mothers that a 24 hour help line for breastfeeding issues would be a positive support. However where this service exists and PHN’s encourage mothers to use this service, in this research this cohort of mothers did not indicate that they used it. The facility of introducing a 24hour helpline would need further research if it could be implement to
ascertain specifically how this service is currently provided and to explain why it is perceived by mothers positively or negatively. Specifically in relation to PHNs, mothers indicated that breastfeeding support groups in their area, phone numbers of PHNs, especially with same day response, seven day week PHN service, more home visits, and scheduled phone calls would have been considered beneficial.

PHNs involve fathers, maternal grandmother, family and friends in breastfeeding education and support of the mother. Support from Lactation consultants was highly valued by PHNs as a referral resource for themselves and for mothers. The majority of mothers were satisfied with their overall breastfeeding experience. The services they used and rated most highly were chat rooms/blogs and the drop-in well baby clinics run by PHNs. Other PHN services such as home visits and telephone contact were appreciated by mothers as were the other non-statutory services mentioned in this report. In conclusion there are many appropriate breastfeeding support services available to mothers but they are not always responsive and timely enough. In relation to the findings and the deficiencies and/or gaps in current service provision identified the researchers have made the following recommendations to improve breastfeeding support services nationally.

Recommendations

- Make best-evidence based breastfeeding education available to all PHNs at initial education and in-service levels.
- Standardise breast-feeding education for PHNs and undertake yearly audits to monitor the numbers who have attended breastfeeding courses and the numbers awaiting attendance at these courses
- Increase the availability of breastfeeding education programmes for all health professionals and monitor attendance.
- Breastfeeding education of mothers should be equivalent to that provided for health professional.
- Audit the availability for PHNs of networked access to web-based information on best evidence on breastfeeding support.
- Make electronic educational resources more readily available to health professionals and mothers.
- A strategy needs to be developed to address negative organisational culture where it exists.
- PHN primary visits should be achieved within the prescribed timeframe i.e. 48 hours to comply with the HSE performance indicator
- Early, concentrated and follow-up home visits to breastfeeding mothers should be prioritised by LHOs and DPHNs
- Breastfeeding support home visits should be prioritised for planned essential visits i.e. the PHN weekend service thus making the PHN service a seven-day service.
- Make PHNs more accessible to breastfeeding mothers e.g. by telephone.
- PHNs need to involve maternal grandmothers in the provision of breastfeeding support.
- PHNs need to undertake a community health needs assessment to identify all available resources and make the contact details of these resources available.
• Increase the frequency, availability of breastfeeding support groups and consider the needs of mothers in relation to the time they are organised.
• Encourage the development of community mothers programmes to provide breastfeeding support groups.
• Increase the accessibility of appropriate breastfeeding specialists to act as a resource for PHNs - this could be a PHN, a midwife or lactation consultant.
• Develop the use of modern communication technology e.g. social networking, blogs, forums etc.
• Identify appropriate 24-hour Help lines –and encourage their use as a means of breastfeeding support.
• Implement a formal mechanism for evaluating breastfeeding support services in each LHO.
• Assess the facilities in health centres and public buildings in terms of their ability to support breastfeeding.

Strengths and Limitations
The main strength of this study was the size of the sample cohorts and its national focus. Using a quantitative design which collected data from both providers and consumers of breastfeeding support generated important data in relation to the concept of breastfeeding support in the community setting in Ireland. The large DPHN and PHN samples with good response rates were representative of the public health nursing service. The use of a stratified random sample of mothers who were representative of breastfeeding mothers nationally ensures that the findings can be generalised nationally which is important to the development of breastfeeding support policy. Using self report questionnaires can increase the potential for socially desirable responses from respondents but the scales used were found to be highly reliable. Furthermore measuring the same data from the perspective of providers and consumers of breastfeeding support ensures more balanced results.
References


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