

ORIGINAL ARTICLE

Examining the breastfeeding support resources of the public health nursing services in Ireland

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Aims and objectives. The aim of the study was to review breastfeeding support provided by Public Health Nurses in Ireland. The objectives were to identify the availability of appropriate guiding policies, educational preparation, attitude of Public Health Nurses and the availability and use of other supportive services.

Background. Breastfeeding rates in Ireland are among the lowest in Europe. The main source of formal support for breastfeeding mothers in the community in Ireland is from Public Health Nurses who can make referral to other non-statutory resources. The nature of this support is determined by policies guiding clinical practice and education that increases breastfeeding confidence and competence of all personnel. Consequently, an assessment of breastfeeding resources requires an analysis of all these variables.

Design. A large quantitative, cross-sectional study was conducted, involving Public Health Nurses and mothers. This paper represents the results from the perspective of Public Health Nurses.

Method. Directors of Public Health Nursing ($n = 24$) and Public Health Nurses ($n = 204$) completed self-report questionnaires by mail and online. Data were analysed using the Statistical Package for Social Sciences and reported using descriptive and inferential statistics.

Results. Public Health Nurses are well educated to support breastfeeding and have a positive attitude and a high degree of self-assessed confidence and competence. A wide variety of non-statutory support exists for breastfeeding but is not always used to their full potential.

Conclusion. Standardising educational requirements for Public Health Nurses in supporting breastfeeding is an area that requires attention. Ultimately, service delivery in relation to supporting breastfeeding mothers would benefit from being more timely and responsive.

Relevance to clinical practice. Awareness of support resources is necessary for Public Health Nurses to make appropriate referrals for breastfeeding mothers. Furthermore, Directors of Public Health Nursing need to encourage the breastfeeding supportive role of Public Health Nurses and facilitate continuing professional development.

Key words: breastfeeding, Ireland, midwifery, nurses, nursing, public health nursing, resources, support

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Introduction

To enhance the promotion, protection and support for breastfeeding in Ireland, the Department of Health and Children (DoHC 2005) published *Breastfeeding in Ireland: a Five Year Strategic Action Plan for Breastfeeding*. The Health Service Executive (HSE) has taken responsibility for implementing this strategy. The aim of the strategy is to address Ireland's very low rates of breastfeeding, currently 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' (DoHC 2005, p.12). To ensure adequate support for Public Health Nurses (PHNs), it is necessary to review current policies, practices and attitudes to breastfeeding to decipher where actions may be targeted. PHNs population health role requires health need assessments of their areas and where low breastfeeding rates are identified, measures such as the development and promotion of breastfeeding support groups are encouraged [Primary Community and Continuing Care (PCCC) 2009]. Thus, the aim of this study was to review breastfeeding support services provided by PHN in Ireland.

Background

Public Health Nurses 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]. The primary postnatal visit following birth represents the first contact between PHNs and all mothers and their babies. The primary visit is a statutory universal visit and should take place within 48 hours of discharge to home from the maternity unit (Denyer *et al.* 1999, Denyer 2005). Primary visits account for 9% of total PHN child health caseloads and 4% of total caseloads (Office of the Nursing Services Director (2009a). Early home visits by a PHN soon after births have been shown to have important implications for breastfeeding duration (Kang *et al.* 2005, Gill *et al.* 2007). The HSE examined the percentage of first visits achieved within 48 hours following discharge as a performance indicator (PI), using data supplied by PHNs, with an achievement rate of 45–99%. Strategies are being developed to improve compliance with the PI (Office of the Nursing Services Director 2009b).

Follow-up visits and contact are determined jointly between PHN and mother, ideally determined by need (O'Dwyer 2009). This is consistent with international best practice (Tappin *et al.* 2006, UNICEF UK Baby Friendly Initiative 2008). Further contact with PHNs is important as

single home visits by community nurses following early discharge were found to be ineffective in enhancing breastfeeding duration (Gagnon *et al.* 2002). Mothers who initiate breastfeeding in the maternity hospital are assessed by PHNs in the community in relation to their specific breastfeeding needs and individualised care plans are implemented. 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.

Support from families and health professionals are also critical variables which influence the duration of breastfeeding (Thulier & Mercer 2009). 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. 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 (Bernaix 2000, Tappin *et al.* 2006). This support needs to be responsive to the needs of women and provided in a timely and appropriate fashion.

Two formal breastfeeding education programmes are currently available to PHNs in Ireland, *The Breastfeeding Management and Promotion in a Baby Friendly Hospital (18-hour Course)* [UNICEF & World Health Organization (WHO) 1993] and the updated version *The Breastfeeding Promotion and Support in a Baby-Friendly Hospital, (20-hour Course)*. Many studies internationally have found improvements following the introduction of breastfeeding education using either UNICEF WHO programme or an adaption of it. Positive associations following education included increased, health professionals breastfeeding knowledge (Wissett *et al.* 2000, Bigger & Long 2008), clinical breastfeeding support skills (Moran *et al.* 2000), exclusive breastfeeding (Coutinho *et al.* 2005) and duration of breastfeeding (Vittoz *et al.* 2004, Shinwell *et al.* 2006). Additionally, formal breastfeeding education was associated with improved confidence, positive attitudes, supportive behaviour and counselling skills when supporting breastfeeding mothers (Bernaix 2000, Dinwoodie *et al.* 2000, Bigger & Long 2008). Furthermore, lack of knowledge by health care professionals can be damaging to breastfeeding success when women receive inconsistent/inaccurate breastfeeding information (Dennis 2002). The exact nature of intervention activities carried out by nurses during home visits has been examined and illustrates the importance of consistent education and positive attitudes on the effectiveness of interventions (Tappin *et al.* 2006).

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. UNICEF UK

Baby Friendly Initiative (2008) makes strong recommendations concerning the utilisation of breastfeeding resources and the necessity of informing mothers about them, cognisant of the fact that many are determined by local need. The review of the literature leads to the conclusion that the most effective breastfeeding support is multifaceted (Di Napoli *et al.* 2004, Renfrew *et al.* 2005). The deficiency in relation to breastfeeding support in Ireland is that there has been insufficient analysis of any problems and/or gaps in current PHN service provision. Thus, the aim of this study was to review breastfeeding support services provided by PHN in Ireland. To meet this aim, specific objectives were developed: (1) to identify the availability of appropriate guiding policies; (2) to establish current PHN educational preparation and methods of updating education for breastfeeding; (3) to identify the attitude and self-assessed confidence of PHN to breastfeeding; and (4) to highlight the availability and use of other supportive services.

Methods

Design

This study is part of a larger quantitative, cross-sectional survey. The study was conducted between January–July 2009 and addresses breastfeeding support from the perspective of PHNs and mothers. This paper presents the results from the PHN's perspective.

Sample

Two sample cohorts were used, Directors of Public Health Nursing (DPHNs) and PHNs to represent both management and frontline staff. 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 2010). A sample of 220 would ensure that estimates of proportions have a precision of 6%. The sample size calculations were carried out using StatsDirect statistical software. All PHNs undertake a Postgraduate Diploma in Public Health Nursing to register with the Irish Nursing Board. In the absence of a sampling frame for PHNs in clinical practice, the preceptor mailing lists of the national coordinators of Postgraduate Diploma in Public Health Nursing education in four Higher Education Institutions (HEIs) were used to recruit participants. A large convenience sample of PHNs ($n = 285$) were invited to participate which represented PHNs with clinical caseloads from the majority of LHOs in the country. PHNs were also invited

to complete the survey online using Survey Monkey™ (SurveyMonkey.com, Palo Alto, CA, USA). The inclusion criteria for PHNs were all those carrying a client caseload, thereby excluding public health nursing management, schools and other specialist posts.

Ethical issues

The local health service ethics committee granted approval for the study. Anonymity was upheld at all times. In relation to mailed questionnaires, no databases held by other agencies were directly accessed, for example, the PHN questionnaire was sent to HEIs for mailing. Survey Monkey™ (SurveyMonkey.com) 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.

Instruments

Because of the multifaceted nature of breastfeeding support resources, it was deemed necessary to create a structure to facilitate identification of pertinent variables and appropriate measurements. The questionnaire consisted of 12 sections, which were drawn directly from a large body of literature and contained background variables and reliable scales used in previous studies. The Iowa Infant Feeding Attitude Scale (IIFAS-SF) (de la Mora *et al.* 1999, Tappin *et al.* 2006) was used unaltered, and Cronbach's alpha for PHNs was 0.76. PHN respondents completed The Self-assessment of Breastfeeding Competence (Wallace & Kosmala-Anderson 2007) and Cronbach's alpha was 0.96. DPHN and PHN respondents completed The Organisational Barriers to Breastfeeding instrument (Wallace & Kosmala-Anderson 2007) which was altered to reflect Irish health service terminology only, and Cronbach's alpha was 0.77 and 0.86, respectively. The Nurses Support for Breastfeeding Questionnaire (NSBQ) (Bernaix 2000) was modified substantially from 64–6 items (PHNSBQ). The six items related to two on attitude, one on behaviour belief, one on evaluation of behaviour belief, one on normative belief and one on motivation to comply with normative belief. The rating scale was changed from a seven-point rating scale to a four-point Likert scale. Cronbach's alpha was found to be 0.68 for DPHNs and 0.81 for PHNs. Items from the 'BREAST feed observation form' [UNICEF & World Health Organization (WHO) 1993] were used to create a scale to identify to what extent PHNs assessed a breastfeed by observation and questioning. Respondents were asked to self-assess on the six dimensions (body position, responses, emotional bonding, anatomy, suckling and time spent suckling) on a four-point Likert Scale in relation to firstly questioning and secondly observing. PHNs and

midwives were invited to review the instruments and assess face validity. Questionnaires were pilot-tested online and in hard copy and modified. The reliability of the various scales is illustrated in Table 1.

Data collection

The web link to the DPHN questionnaire was emailed to all DPHNs ($n = 32$) in the country. Some DPHNs who experienced technical difficulty with completing the questionnaire online were sent a mailed version of the questionnaire. The PHN questionnaire packs were mailed or distributed for mailing ($n = 285$). Additionally, an email was sent to all DPHNs for distribution to PHNs containing the web link to access the questionnaire online if internet access was available. The DPHNs and PHNs were sent reminders by email.

Analysis

Questionnaire data were initially analysed using Survey Monkey™ and provisional descriptive statistics generated. Mailed questionnaires were entered also into a filtered version of Survey Monkey™ to identify whether any differences existed between the two methods of data collection. The data were then coded and transferred into the SPSS version 15 (SPSS Inc., Chicago, IL, USA) for more detailed analysis. The Organisational Barriers to Breastfeeding scale consisted of nine four-point Likert questions with a possible range of 9–36, with higher scores indicating more organisational barriers. The PHN Support for Breastfeeding Questionnaire (PHNSBQ) for DPHNs and PHNs was scored as the sum of six four-point Likert style questions thereby giving a potential range of scores from 6–24 with higher scores indicating a stronger intention to provide breastfeeding support to mothers. The Self-Assessment of Breastfeeding Competence instrument assessed breastfeeding support using a series of 26 item four-point Likert scale with possible scores from 26–104. The Infant Feeding Attitude Scale (IIFAS-SF) (de la Mora & Russell 1999, Tappin *et al.* 2006) was scored

as the sum of 17 five-point Likert style questions thereby giving a potential range of scores from 17–85 with higher scores indicating a more pro-breastfeeding attitude. Level of assessment of breastfeeding by questioning and by observing was measured using two four-point Likert scales with a minimum score of 4 and maximum score of 24 possible for each scale. Measures of central tendency on the total scores of each scale and subscale were used for descriptive and comparative purposes.

Results

A total of 24 DPHNs completed the questionnaire indicating a response rate of 75%. For PHNs, a total of 146 of 285 returned mailed questionnaires indicating a response rate of 51%, and 71 questionnaires were completed online, resulting in a final valid sample of 204.

Demographics

Directors of Public Health Nursing and PHNs respondents were, respectively, from the HSE South (37.5%; 21.6%), HSE Mid-Leinster (37.5%; 28.9%), HSE West (8.3%; 30.4%) and HSE North East (16.7%; 19.1%), indicating that some areas were under represented compared with others. PHN respondents were clinically experienced as the majority were registered more than five years.

Availability of appropriate policies

Directors of Public Health Nursing were asked several closed questions to elicit their opinions on whether policies and procedures known to promote breastfeeding were in place. The majority, 95.5% of 22 respondents, indicated that written breastfeeding policies were available to PHNs in the LHO. 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, $df = 1$, $p = 0.118$). All DPHNs indicated that they do not permit the advertisement and supply of formula feeds or equipment which indicates their compliance with Step 6, 'Give newborn infants no food or drink other than breast milk, unless medically indicated' (World Health Organisation/UNICEF 1989) and the *International Code of Marketing of Breast-Milk Substitutes* (WHO 1981).

Organisational barriers to breastfeeding

Public Health Nurses scores ranged from 9–31, and DPHNs' scores ranged from 9–25. The mean and standard deviation

Table 1 Reliability coefficient for instruments

Scale	DPHN α	PHN α
PHN Support for Breastfeeding Questionnaire (PHNSBQ)	0.68	0.81
Self-assessment of breastfeeding competence	N/A	0.96
Assessment of breastfeeding by questioning	N/A	0.84
Assessment of breastfeeding by observation	N/A	0.83
Organisational barriers to breastfeeding	0.86	0.77
Iowa Infant Feeding Attitude Scale (IIFAS-SF)	N/A	0.76

DPHN, Directors of Public Health Nursing.

of the PHNs' and DPHN's scores were 21.2 (4.3) and 18.5 (4.6), respectively (Table 2). The results of a *t*-test indicated that this was a statistically significant difference ($t = 2.69$, $df = 217$, $p = 0.008$). On average, PHN scale scores were 14.6% higher than DPHN scale scores indicating that they significantly perceived more Organisational Barriers to Breastfeeding than DPHNs.

Educational preparation

Directors of Public Health Nursing encouraged and facilitated attendance at appropriate breastfeeding education and almost half indicated that more than three quarters of their staff had attended either the 18 hours [UNICEF & World Health Organization (WHO) 1993] or 20 hours (UNICEF & WHO 2006) breastfeeding training programmes. DPHNs indicated a lack of knowledge and clarity in relation to the availability of programmes and the frequency with which they should be undertaken. 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 including meetings, newsletter/Link to Baby Friendly Hospital initiative; La Leche League Handbook; Standard Operating Procedures and lactation consultants. DPHNs overestimated the degree to which PHNs updated their breastfeeding knowledge, and this finding was statistically significant for formal training and 'other sources' (Table 3).

PHN support for breastfeeding

The scale scores of 203 PHNs [mean, (SD) 20.84 (2.7)] and 20 DPHNs [20.55 (2.6)] ranged from 16–24 and were, therefore, in the upper half of possible scores. This repre-

sented moderately strong intention to provide breastfeeding support.

Confidence, self-efficacy and competence

When asked in an open format if PHNs were adequately prepared for supporting breastfeeding mothers, all DPHNs answered affirmatively, whereas the majority of PHNs (64%, $n = 130$) felt they were. Almost one in four PHNs were 'very confident', while a further 64% were 'confident' in their knowledge of 'The 10 steps to successful breastfeeding' guidelines.

Scores for PHNs ranged from 26–100 on the Self-Assessment of Breastfeeding Competence instrument. The mean and standard deviation were 72.5 and 12.4, respectively, and the majority of scores were clustered around the mean indicating a high degree of self-assessed competence (Table 4).

Infant feeding attitude

The scale scores of the PHNs ranged from 47–85 and were in the upper half of the possible scores, thereby representing positive attitudes towards breastfeeding. The mean and standard deviation were 70.2 and 7.5, respectively. 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.

The nature of the PHN breastfeeding support role

Three quarters of PHNs indicated that in their area, they visited 76–100% of all new mothers within the recommended

Table 2 Organisational barriers to breastfeeding

Scale item	DPHNs ($n = 20$) mean (SD)	PHNs ($n = 99$) mean (SD)
1. The Local Health Office (LHO) organisational culture is unsupportive towards breastfeeding	1.8 (0.6)	2.2 (0.8)
2. It is difficult for PHNs to recommend breastfeeding to mothers who have many other problems	1.8 (0.7)	2.1 (0.7)
3. PHN staffing levels are too low to provide mothers with enough support	2.5 (0.9)	2.7 (0.9)
4. Guidelines for PHNs regarding breastfeeding are difficult to follow in practice	1.8 (0.6)	2.2 (0.7)
5. There are no guidelines for PHNs practice regarding breastfeeding in my workplace	1.7 (0.7)	2.0 (0.8)
6. Some PHNs do not adhere to the guidelines for breastfeeding	2.1 (0.7)	2.4 (0.7)
7. Mothers are given conflicting advice about breastfeeding in my LHO	2.0 (0.7)	2.5 (0.8)
8. It is difficult to keep PHNs up to date with research and policy on breastfeeding	2.3 (0.8)	2.5 (0.7)
9. The health centre facilities we provide are not helpful to breastfeeding women	2.6 (0.9)	2.7 (1.0)
Total	18.5 (4.6)	21.2 (4.3)

DPHN, Directors of Public Health Nursing.

Table 3 Responses in relation to how PHNs update their breastfeeding knowledge

Update method	DPHNs <i>n</i> = 24	PHNs <i>n</i> = 204	χ^2	<i>p</i> -value
18 hour (UNICEF & World Health Organization WHO 1993)	10 (41.7%)	49 (22.6%)	4.26	0.039
20 hour (UNICEF & WHO 2006)	12 (50.0%)	24 (11.1%)	25.79	0.001
Database	11 (45.8%)	65 (30.0%)	2.52	0.112
Journal	17 (70.8%)	139 (64.1%)	0.44	0.510
Other	19 (79.2%)	90 (41.5%)	12.39	0.001

DPHN, Directors of Public Health Nursing.

Table 4 Self-assessment of breastfeeding competence

Subscale	Item	Not competent	Adequate	Competent	Expert
		<i>n</i> * (%)	<i>n</i> (%)	<i>n</i> (%)	<i>n</i> (%)
Dealing with specific problems and promoting self-care	1. Nipple trauma	2 (1.0)	24 (11.7)	152 (73.8)	28 (13.6)
	2. Mastitis	4 (2.0)	26 (12.7)	149 (72.7)	26 (12.7)
	3. Thrush	7 (3.4)	31 (15.1)	142 (69.3)	25 (12.2)
	4. Milk insufficiency	7 (3.4)	41 (19.9)	135 (65.5)	23 (11.2)
	5. Pain management	5 (2.4)	41 (19.8)	142 (68.6)	19 (9.2)
	6. Engorgement	2 (1.0)	25 (12.1)	140 (68.0)	39 (18.9)
	7. Teaching hand expressing	15 (7.3)	46 (22.3)	121 (58.7)	24 (11.7)
	8. Advising on services	2 (1.0)	24 (11.7)	138 (67.0)	42 (20.4)
Provision of information and support	1. Understanding physiology of lactation	4 (1.9)	40 (19.4)	137 (66.5)	25 (12.1)
	2. Encouraging initiation	4 (1.9)	28 (13.6)	142 (68.9)	32 (15.5)
	3. Facilitating antenatal group discussion	41 (20.2)	55 (27.1)	91 (44.8)	16 (7.9)
	4. Giving antenatal education	41 (20.2)	57 (28.1)	87 (42.9)	18 (8.9)
Practice skills	1. Supporting/informing with regard to early breastfeeding concerns	3 (1.5)	30 (14.6)	138 (67.3)	34 (16.6)
	2. Breastfeeding for unwell/Caesarean section mothers	9 (4.4)	33 (16.0)	136 (66.0)	28 (13.6)
	3. Baby-led/demand feeding	3 (1.5)	24 (11.7)	138 (67.0)	41 (19.9)
	4. Breast refusal	15 (7.3)	62 (30.1)	114 (55.3)	15 (7.3)
	5. Promoting mother and baby skin-to-skin care	2 (1.0)	19 (9.2)	138 (67.0)	47 (22.8)
	6. Positioning and attachment	2 (1.0)	19 (9.2)	143 (69.4)	42 (20.4)
	7. Breastfeeding for special care/unwell babies	37 (18.0)	67 (32.5)	88 (42.7)	14 (6.8)
Sociocultural aspects of breastfeeding support	1. Advising about return to work	2 (1.0)	48 (23.2)	133 (64.3)	24 (11.6)
	2. Understanding local cultural practices of infant feeding	23 (11.1)	66 (31.9)	103 (49.8)	15 (7.2)
	3. Working with refugees	37 (18.0)	83 (40.3)	78 (37.9)	8 (3.9)
	4. Working with teenage mothers	10 (4.8)	63 (30.4)	119 (57.5)	15 (7.2)
	5. Working with peer supporters/volunteers	12 (5.8)	73 (35.4)	106 (51.5)	15 (7.3)
	6. Working with minorities	23 (11.2)	80 (38.8)	92 (44.7)	11 (5.3)
	7. Advising about weaning	1 (0.5)	27 (13.0)	138 (66.7)	41 (19.8)

*The number of Public Health Nurses responding to each item ranged from 203–207.

48 hours. 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. PHNs were not always able to provide timely support services in the form of primary, follow-up visits or planned essential weekend service. Support groups were facilitated by over half of the respondent PHNs.

Public Health Nurses were asked to identify their level of assessment by questioning and by observing breastfeeding on

a four-point Likert scale. PHN's scores for both assessments by questioning and by observing breastfeeding were moderately high and high, respectively (Table 5). PHNs' level of assessment of breastfeeding by observing was higher than their level of assessment by questioning. The mean difference in scale scores was 1.3 (95% CI = 0.9–1.7), which was highly statistically significant ($t = 5.81$, $df = 204$, $p < 0.001$).

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 of breastfeeding rates for PI measurement.

Use of breastfeeding support services

Directors of Public Health Nursing had higher expectations regarding the referral of mothers to breastfeeding support services by PHNs, than the actual number of referrals made. The contrast was most pronounced and highly statistically significant regarding PHN home visits, phone calls from PHNs, contact numbers of health care professionals, written materials, general practitioners (GP) practice, Well Baby Clinic and informational videos ($p < 0.001$) (Table 6).

Public Health Nurses found it useful to refer to and consult with voluntary or private lactation consultants. They were mostly or very satisfied with the availability, quality, speed of response and feedback provided by lactation consultants.

Encouraging informal breastfeeding support

Approximately, 90% of DPHNs indicated that they encouraged PHNs to involve the baby's father in the education/support of breastfeeding mothers. A similar percentage of the PHNs indicated that they do this in practice. However, 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 (Fig. 1).

Discussion

The majority of DPHNs indicated that a breastfeeding policy is available in the LHO, which was supported by 82.5% of PHNs. These figures are higher than in the UK where 51.1% ($n = 284$) of healthcare practitioners identified the availabil-

ity of policies in their organisation (Wallace & Kosmala-Anderson 2007).

Directors of Public Health Nursing and PHNs perceived organisational barriers as neither positive nor negative towards breastfeeding. On statistical analysis, PHNs scored higher on the scale indicating that they generally perceived more negative organisational barriers regarding breastfeeding than DPHNs. This is not unusual as DPHNs are operating at a strategic level, whereas PHNs are frontline staff and see the consequences of non-prioritised services more clearly. This was supported by Wallace and Kosmala-Anderson (2006) where both GPs and paediatricians experienced Organisational Barriers to Breastfeeding with a significantly higher incidence reported among paediatricians. Further findings were somewhat supported by Wallace and Kosmala-Anderson (2007), whereby healthcare practitioners including non-professionals, health visitors and midwives considered the organisational culture unsupportive. Dykes (2006) highlighted this issue from a hospital perspective. Wallace and Kosmala-Anderson (2007) found that longer career experience was associated with fewer organisational barriers and suggested that 'practitioners who are very committed to breastfeeding seek to minimise the negative impact of the organisation' (p. 37).

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). In the current study, some PHNs and DPHNs indicated that formal breastfeeding education was either inaccessible or infrequently available in their LHO. A total of 46.1% ($n = 96$) had received formal breastfeeding training within the past two years compared with 61% of health visitor respondents in other research (Tappin *et al.* 2006). Sixty-eight per cent of healthcare practitioners ($N = 549$) expected to undertake formal training within two years in the UK (Wallace & Kosmala-Anderson 2007). However, Renfrew *et al.* (2006) identified deficits in the provision breastfeeding education in the UK. UNICEF UK Baby Friendly Initiative (2008) recommended mandatory BF training. When breastfeeding education is not mandatory for any specific group of health care professionals, staff rely on other methods to update their breastfeeding knowledge (Renfrew *et al.* 2006, Smale *et al.* 2006, Wallace & Kosmala-Anderson 2006). This finding is supported by DPHNs and PHNs in this research although DPHNs overestimated the degree to which PHNs updated their breastfeeding knowledge using the selected sources.

Attitude to Providing Breastfeeding Support was assessed for PHNs using the IIFAS, and results were in the upper half

Table 5 Public Health Nurses level of assessment of breastfeeding by observing/questioning

Scale item	Questioning ($n = 208-209$) mean (SD)	Observing ($n = 207$) mean (SD)
1. Body position of mother and baby	3.6 (0.8)	3.8 (0.6)
2. Responses from baby	3.4 (0.9)	3.7 (0.7)
3. Emotional bonding between mother and baby	2.9 (1)	3.4 (0.9)
4. Anatomy of the breast	2.8 (1)	3.2 (0.9)
5. Suckling behaviour of the baby	3.6 (0.7)	3.7 (0.6)
6. Time spent suckling	3.4 (0.8)	3.4 (0.8)
Total	19.7 (4.0)	21.0 (3.3)

Table 6 DPHN expectation of and PHN referral to support services

Resource	Availability indicated	Referrals expected or made	<i>p</i> -value	DPHN	PHN	<i>p</i> -value
	<i>n</i> (%)	<i>n</i> (%)		<i>n</i> (%)	<i>n</i> (%)	
PHN home visits	22 (92)	207 (95)	0.426	58 (27)	21 (88)	< 0.001
Phone calls from PHNs	22 (92)	204 (94)	0.652	64 (30)	21 (88)	< 0.001
24 hour helplines	4 (17)	57 (26)	0.305	72 (33)	7 (29)	0.691
Contact numbers of health care professionals	22 (92)	180 (83)	0.271	92 (42)	21 (88)	< 0.001
Written materials	22 (92)	199 (92)	0.995	69 (32)	21 (88)	< 0.001
Health professional support groups	18 (75)	163 (75)	0.990	101 (47)	18 (75)	0.008
Mother to mother support groups by La Leche League	21 (88)	126 (58)	0.003	119 (55)	21 (88)	0.002
Mother to mother support groups by Cùidiù	18 (75)	75 (35)	< 0.001	87 (40)	18 (75)	0.001
Peer counsellor (breastfeeding mother) working independently	5 (21)	40 (18)	0.775	39 (18)	7 (29)	0.185
Peer counsellor (breastfeeding mother) working for government funded organisations	1 (4)	12 (6)	0.779	18 (8)	3 (13)	0.488
Breastfeeding/lactation 'consultant'	12 (50)	104 (48)	0.847	84 (39)	14 (58)	0.063
GP practice	19 (79)	131 (60)	0.071	50 (23)	18 (75)	< 0.001
Well baby clinic	22 (92)	165 (76)	0.081	69 (32)	20 (83)	< 0.001
Informational videos	8 (33)	67 (31)	0.805	19 (9)	11 (46)	< 0.001
Baby café	2 (8)	12 (6)	0.577	21 (10)	3 (13)	0.661
Chat rooms/Forums/Interactive blogs with other mothers/professionals	3 (13)	31 (14)	0.812	34 (16)	4 (17)	0.899
Email contacts of professionals	1 (4)	30 (14)	0.180	17 (8)	5 (21)	0.036

DPHN, Directors of Public Health Nursing; GP, general practitioners.

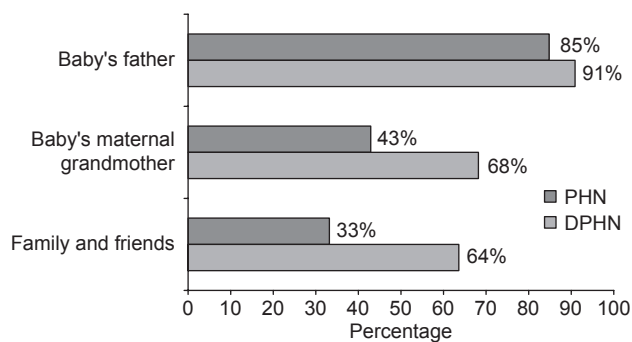


Figure 1 Involvement of significant others in the Public Health Nurses education/support of breastfeeding mothers.

of the possible scores which represented a positive attitude highly supportive of breastfeeding. Tappin *et al.* (2006) reported a mean score of 71.2 SD (8.4) on the IIFAS for 146 health visitors in the UK comparable to the findings from the present study. They express concern, however, that 25% of respondents had a score of 66 and below. In this study, there was also cause for concern whereby a small number of PHNs had less positive attitudes, with scores in the 47–55 range.

Bernaix (2000) found moderately high support for breastfeeding in a sample of maternal newborn nurses using the NSBQ and despite major modifications to the scale in the

current study results depict an equally moderate support level for PHNs. Notwithstanding this, 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.

The majority of PHNs rated themselves as either confident or very confident in their knowledge of 'The 10 steps to successful breastfeeding' (World Health Organisation/UNICEF 1989). Similarly on the 26-item competence scale, the majority of scores were high. These findings contrast with Wallace and Kosmala-Anderson (2007) who found that competence levels were more variable and less positive for midwives, health visitors and non-qualified voluntary breastfeeding supporters. Also, Wallace and Kosmala-Anderson (2006) found that while GPs and paediatricians believed themselves for the most part competent, there was a worrying number who identified themselves as not competent in key aspects of practice. Furthermore, findings from a national survey of 752 health practitioners in the UK also highlighted deficits in breastfeeding knowledge and skills and low levels of self-assessed competence (McFadden *et al.* 2007). Self-assessed competence does not indicate actual competence with all skills necessary to support breastfeeding mothers (Wallace & 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. It is important for staff to realise that mothers' views of support can be in complete contrast, contributing to a negative experience for mothers (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.

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, and two-thirds of PHN respondents indicated that they facilitate breastfeeding support groups to varying degrees. According to Tappin *et al.* (2006), breastfeeding support groups were available to 63% of health visitor caseloads in Glasgow.

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 45–99% that did not support this level of achievement of the PI. However, the latter collected interval data and the current survey collected categorical data; therefore, data cannot be compared. Nevertheless, the results indicate that full compliance with the 48 hours 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, which was encouraged by DPHNs. However, the practice of scheduling visits according to maternal need is not continued on a seven-day week basis as there is currently no routine weekend service available.

In the current study, PHNs were significantly more likely to observe rather than question in their assessment of a breastfeed. This contrasts to health visitors in the UK who were 'unlikely to have observed an episode of breastfeeding in the designated week' (Tappin *et al.* 2006, p. 4).

All respondents were asked about the availability of supports in their areas and the extent to which they were used. Supports included the following: statutory, informal, voluntary and private which reflected the value of multifaceted interventions that effectively support breastfeeding (Britton *et al.* 2007, Hannula *et al.* 2008). At a strategic level, the results indicated that DPHNs have knowledge about the resources available in their areas and do expect PHNs to refer mothers to a variety of non-statutory resources. While PHNs appear to have awareness of support services in their area, 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 and may have been misinterpreted by some as meaning a formal referral process.

Public Health Nurses 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. Alternatively in the Netherlands, Kools *et al.* (2005) found that 80% of caregivers (maternity nurses, child health care nurses and physicians) experienced support from lactation consultants; however, consultants were funded for the study duration which may have affected outcome.

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. To a significantly lesser degree than anticipated by DPHNs, most PHNs indicated that they involve the baby's father in breastfeeding education and support and more infrequently the maternal grandmother. The literature indicates, however, that partners and maternal grandmothers are highly influential on the success of breastfeeding, and more PHN involvement is required in this area (Hoddinott & Pill 2000, Cronin 2003, Khoury *et al.* 2005).

Conclusion

This research indicates that statutory breastfeeding support is provided by clinically experienced PHNs with the majority being qualified for practice over five years. Education for providing breastfeeding support is highly endorsed by DPHNs, and 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. Standardising educational requirements for PHNs in supporting breastfeeding is, therefore, an area that requires attention.

Positive organisational culture is significant for creating an environment whereby PHNs can provide an appropriate, responsive and timely service. However, there were evident significant discrepancies between DPHNs and PHNs perceptions of how supportive the culture of the organisation was to supporting breastfeeding. One aspect of a positive organisational culture is the availability of written policies that both DPHNs and PHNs indicated was available in their area.

Directors of Public Health Nursing have an overall positive attitude to breastfeeding; however, there were those who were 100% positive and those who were less positive. PHNs also have a positive attitude to breastfeeding and have high levels of self-assessed competence in their ability to provide breastfeeding support. However, PHNs were not always able to provide timely support services in the form of primary, follow-up visits or weekend service. This finding indicates that there needs to be recognition in prioritising breastfeeding support. The health promotional aspects and the long-term health to be gained from 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 that are encouraged but not always referred to by PHNs or used to full potential. 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.

Public Health Nurses 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. In conclusion, there are many appropriate breastfeeding support services available to mothers, but they are not always responsive and timely enough.

Limitations

This review of public health nurses has not examined their level of communication skill in relation to breastfeeding, which is a limitation. The PHN participants are not dissimilar to the PHN population in terms of qualifications or experience, but may be more motivated because they actively participate in education of student PHNs, and this needs to

be acknowledged as a possible limitation. Not all four HSE regions were equally represented.

Relevance to clinical practice

Recommendations to standardise breastfeeding education and to improve breastfeeding support services nationally are paramount to effective clinical practice. The development of strategies that address organisational cultures that are ambivalent or antagonistic to breastfeeding promotion and support is equally necessary. Ensuring that early and follow-up home visits to breastfeeding mothers are prioritised and supported by DPHNs and LHO managers is important to ensuring a clinically efficient support service for breastfeeding mothers.

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Contributions

Study design: PL-W, HM, AP, PC; data collection and analysis: PL-W, HM, AP, PC and manuscript preparation: HM, PL-W, AP, PC.

Conflict of interest

No conflict of interest has been declared by the authors.

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