

EVALUATION OF THE BREASTFEEDING HANDBOOK: “IS THIS THE MOST
EFFECTIVE WAY TO TRANSMIT BREASTFEEDING INFORMATION?”

By

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Table of Contents

Abstract.....	iv
Acknowledgments.....	v
Introduction and Objectives.....	1
Practicum Goals.....	1
Practicum Objectives.....	1
Overview of Methods.....	2
Consultations.....	2
Integrative Literature Review.....	3
Questionnaire.....	3
Ethics.....	4
Questionnaire Distribution.....	4
Data Analysis.....	5
Summary of the Literature Review.....	5
Barriers to Breastfeeding.....	5
Effectiveness of Professional Support and Education.....	6
Effectiveness of Peer Support.....	7
Effectiveness of Media and Electronic Support and Education.....	7
Health Promotion Evaluation Frameworks.....	8
Summary of Consultations.....	10
Summary of the Evaluation Done.....	11
Methods.....	11
Results.....	12

Use of the Provincial Breastfeeding Handbook.....	13
Usefulness of the Provincial Breastfeeding Handbook and Other Sources.....	14
How Parents Prefer to Receive Breastfeeding Information and Support.....	16
Recommendations.....	17
Advance Nursing Practice Competencies.....	18
References.....	21
Appendix A: Literature Review.....	28
Appendix B: Summary Tables.....	61
Appendix C: Questionnaire.....	73
Appendix D: HREA Screening Tool.....	79
Appendix E: HREA Letter.....	82
Appendix F: Consultation Report.....	84
Appendix G: Evaluation Report.....	92

Abstract

Many resources currently exist for new parents on feeding their baby. These resources are given during the pre-natal, intra-natal, and post-natal period and offer parents information on feeding their baby. One of the vital resources given to new parents is the Provincial Breastfeeding Handbook. There has not been an evaluation of the handbook since publication. The effectiveness of paper copy educational materials is not supported in the literature yet the need for breastfeeding education and support has been reiterated for many years. The purpose of this practicum project was to evaluate the handbook. In order to do this, an integrative literature review of the various methods of breastfeeding support, education, and evaluations was undertaken. Following the literature review and consultations with the Perinatal Program of Eastern Health and Baby-Friendly Newfoundland and Labrador, a questionnaire was developed to evaluate the Provincial Breastfeeding Handbook and determine how new parents preferred to receive information on feeding their newborn. The questionnaire was distributed in both Rural and Urban Eastern Health to new parents at the two month, four month, and six month well child check-up with a Public Health Nurse. Questionnaire results indicated that while paper copies of breastfeeding educational material are still highly valued, the majority of parents agreed they would access online educational materials if provided a link. The majority of parents also indicated they use the handbook and found it very helpful. Results also showed the importance of direct education and support from Health Care Providers. Based on the questionnaire results, the continued use of the handbook along with the incorporation of electronic breastfeeding education and support is recommended.

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I want to thank my supportive, dedicated, and wonderful husband for being there every step of this journey. His listening ear and support was what made this project possible. I would also like to thank my precious daughter for being her wonderful self and igniting my interest and desire to improve breastfeeding support and education. Also, thank you to my parents who have always placed emphasis on education and believed in me from the very beginning. I want to thank them for always being proud of me.

Introduction and Objectives

After meeting with members of the Baby Friendly Newfoundland and Labrador team in April 2016 it was determined that there was a need to evaluate the current Provincial Breastfeeding Handbook. Specifically, to determine the preferred method of receiving information on baby feeding. In order to evaluate the current Provincial Breastfeeding Handbook, a questionnaire was designed using the “Evaluation Toolkit for Breastfeeding Programs and Projects” (Australian Government Department of Health and Aging, 2012) and input from key stakeholders. The questionnaire aimed to determine the preferred method of receiving baby feeding information and if the Provincial Breastfeeding Handbook is being used and if it is effective in educating and supporting new parents.

Practicum Goals

- (1) To determine the effectiveness of the handbook and improve the quality of the current Provincial Breastfeeding Handbook.

Practicum Objectives

- (1) To determine the preferred method of receiving breastfeeding education among new mothers and families.
- (2) To determine if the Breastfeeding Handbook is the most effective way to transmit breastfeeding information and to make future recommendations for breastfeeding education.
- (3) To collaborate with members of the Baby Friendly NL team, Lactation Consultants, and new parents to determine if the Breastfeeding Handbook is effective for new mothers and families.
- (4) To prepare a written report for Eastern Health’s Perinatal Program.

(5) To demonstrate an application of advance nursing practice competencies.

Overview of Methods

In achieving the practicum project objectives, several methods were used. In the beginning a consultation with Baby Friendly NL members to decide on a practicum focus was undertaken. An integrative literature review was completed on the various avenues of breastfeeding education and support. Further consultations with Baby Friendly NL were used as the questionnaire was constructed. Data analysis was then completed on the questionnaire results and recommendations made to Eastern Health.

Consultations

Throughout the process, there were many in-person consultations along with electronic communication. Consultations first began in April 2016 at a meeting with members of the Baby Friendly NL team to discuss possible practicum ideas. From this meeting it was determined that there was a need for an evaluation of the Provincial Breastfeeding Handbook. The Perinatal Program Coordinator was also consulted to obtain approval to circulate the questionnaire within the Eastern Health Regional Health Authority. Regional Lactation Consultants were consulted to obtain mailing addresses for each Public Health Zone. Members of Baby Friendly NL and Public Health Nurses were also consulted during the construction of the questionnaire. Feedback from stakeholders ensured the questionnaire asked questions that would answer the questions desired by the organization. A summary of the consultations completed follows.

Integrative Literature Review

An integrative literature review was completed on the various avenues of breastfeeding education and support along with the evaluation process. A mixture of PubMed, CINAHL, and the Cochrane Library were utilized to complete the integrative literature review. To ensure the

most up-to-date literature was obtained, limits were set to find articles from 2000 till present. Older research was utilized in some areas due to lack of current research. The search was also limited to articles in the English language. Keywords utilized in the search strategy included “breastfeeding” AND “interventions” AND “patient education” AND “peer support” AND “health care professional support” AND “social media” OR “electronic communication” AND “CDC Framework” OR “Framework for Program Evaluation in Public Health”. Various themes emerged from the search such as barriers to breastfeeding, peer support, electronic communication, health professional support, and evaluations of current breastfeeding programs. The Infection Prevention Control Guidelines Critical Appraisal Toolkit (Public Health Agency of Canada, 2014) was used to ensure articles chosen were strong articles. The integrative literature review can be located in Appendix A and B. A summary of the literature review follows.

Questionnaire

Following consultations, the creation of the questionnaire began (Appendix C). The questionnaire aimed to ask new parents their preferred method of receiving information on feeding their baby and questions regarding the usefulness of the Breastfeeding Handbook. The questionnaire was constructed in June and July 2016 and was administered in both Rural and Urban Eastern Health at the end of July 2016 until September 2016. The questionnaire included questions such as, “did you receive the Breastfeeding Handbook”, “how did you receive the Breastfeeding Handbook”, “did you find the Breastfeeding Handbook useful”, “how would you prefer to receive information on feeding your baby”, and open-ended questions such as ideas to improve the way information is given to new parents.

The Australian Government (2012) document, an “Evaluation Toolkit for Breastfeeding Programs and Projects” which was used along with expert advice from the Perinatal Program and

Public Health stakeholders to develop the questionnaire. The evaluation toolkit provided a guide for developing the questionnaire and the stakeholders at the Perinatal Program and Public Health ensured the questionnaire asked appropriate questions to answer the research question. A Likert scale was utilized along with open and closed ended questions.

Ethics

The “Health Research Ethics Authority Screening Tool” (Health Research Ethics Authority, 2009) was used to determine if ethical approval was necessary (Appendix D). It was determined that the project did not need to be submitted to the HREA. Eastern Health Research Proposal Approval Committee (RPAC) was also contacted on June 29th, 2016 and it was confirmed that ethics approval would not be required. A subsequent letter from HREA reaffirmed that (Appendix E). It was determined that this project was a quality assurance project rather than a research project. Ethical concerns were the privacy of patient information and ensuring that the participants responses were keep anonymous. Parents were asked not to put their name on the self-administered questionnaire and the completed questionnaires were kept in a sealed envelope and kept in a secure place after collection.

Questionnaire Distribution

Information posters and questionnaires were distributed via the Public Health Nurses at the well child clinics in both Rural and Urban Eastern Health district. The questionnaire was offered at the 2 month, 4 month, and 6 month well child check-up, to parents 19 years of age and older. The questionnaire was then collected by the Public Health Nurse, put in a sealed envelope, and sent to myself. One hundred questionnaires was distributed in Urban Eastern Health and one hundred questionnaires were distributed in Rural Eastern Health. Thirty seven completed questionnaires were returned.

Data Analysis

The Statistics Package for Social Sciences 18 (SPSS) was utilized to analyze the questionnaire results. The questionnaires were labelled 1-37 and were entered individually. Each possible response was coded. Data was rechecked upon entry into the SPSS system to ensure correct entry. Frequency and percentage distribution was used to analyze results. Pie charts and tables were utilized to display the data analysis results. The open ended questions were qualitatively analyzed for relevant themes.

Summary of the Literature Review

For the literature review, recent literature pertaining to barriers to breastfeeding and the effectiveness of various breastfeeding interventions on breastfeeding initiation and duration were reviewed. The effectiveness of peer support, professional education/support, written information, and media/electronic communication on breastfeeding were also explored. A review of health promotion evaluation frameworks and breastfeeding program evaluations was also briefed along with key gaps in the literature. The complete literature review can be found in Appendix A along with the summary tables in Appendix B.

Barriers to Breastfeeding

Successful breastfeeding is dependent on a variety of factors including whether a woman is having breastfeeding difficulties, her knowledge about breastfeeding, life style choices, and her attitude toward breastfeeding (Scott, Binns, Oddy, & Graham, 2006; Odom, Scalon, Perrine, and Grummer-Strawn, 2013; Ahluwalia, Morrow, & Hsia, 2005). These researchers concluded that barriers to breastfeeding included maternal infant feeding attitudes, breastfeeding difficulties, maternal smoking, introduction of a pacifier, and early return to work. Many of the studies found emphasized the importance of anticipatory guidance, professional support, and

education on breastfeeding duration. For example, Odom et al. (2013) studied reasons for early cessation of breastfeeding. Data was analyzed from 1177 surveys that showed that barriers to breastfeeding included difficulties with lactation, concern regarding infant nutrition and weight, maternal illness, and the effort associated with pumping milk. These findings also indicate the need for extensive breastfeeding support and education. It becomes evident that successful breastfeeding is dependent on multiple factors. A review of the barriers to breastfeeding highlighted the need to ensure that proper breastfeeding education and support is given to new parents. In order to overcome the barriers to breastfeeding, it is important to determine the most effective way to educate and support new parents.

Effectiveness of Professional Support and Education

Breastfeeding support and education offered by Health Care Professionals has been shown to be an effective measure in increasing breastfeeding rates and duration (Khanal, Lee, Karkee, and Binns, 2015; Kronborg, Vaeth, Olsen, and Harder, 2015). The researchers highlighted the importance of breastfeeding instruction and one on one support during the hospital stay and in the early post-partum time period on breastfeeding initiation and duration. The randomized controlled studies by Labarere et al. (2015) and Porteous, Kaufman, and Rush (2000) demonstrate the efficacy of breastfeeding support by trained Health Care Providers. Research studies by Barnes, Pratt, Finlayson, Courtney, Pitt, and Knight (2008) and Craig and Dietsch (2010) revealed mothers ideas of and needs for breastfeeding education and support. The researchers discovered that new parents appreciated information resources on breastfeeding but still require support and instruction to feel comfortable with breastfeeding.

Another avenue of breastfeeding support and education from Health Care Professionals is paper copies of information. Pannu, Giglia, Binns, Scott, and Oddy (2011) and Hauck and

Dimmock (1994) studied the effectiveness of health promotion materials on breastfeeding outcomes. The results indicate that while the use of health promotion materials is an effective mechanism of breastfeeding education and support, health promotion materials alone are not enough to support and educate new parents. A review of health care professional support revealed the importance of health care professionals on breastfeeding rates and duration. A review of the literature determined the need to evaluate paper materials on breastfeeding education and support due to the lack of support for paper materials alone in significantly improving breastfeeding rates and duration.

Effectiveness of Peer Support

Peer support is often provided by a mother from the same area who is currently breastfeeding or has breastfed in the past (Center for Disease Control and Prevention, 2013). According to Chapman, Damino, Young, and Perez-Escamilla (2004) and Ingram, Rosser, and Jackson (2004), peer support has been known to improve breastfeeding rates and remove various barriers to breastfeeding that often exist, such as lack of support. Dennis, Hodnett, Gallop, and Chalmers (2002) and Kaunonen, Hannula, and Tarkka (2011) also determined that peer support has been found to be effective in increasing breastfeeding duration and increasing breastfeeding satisfaction among women. Peer support enables mothers to feel supported and gives them the confidence they need to continue breastfeeding.

Effectiveness of Media and Electronic Education and Support

The internet has quickly become an important tool for patients when it comes to their knowledge regarding health issues (Thomas & Shaikh, 2007). Haung, Kuo, Avery, Chen, Lin, and Gau (2007) and Thomas and Shaikh (2007) researched the effects of web-based breastfeeding education and support on breastfeeding rates. The researchers found that the use of

breastfeeding education sites increased breastfeeding knowledge. While Ahmed, Roumani, Szucs, Zhang, and King (2015) and Ahmed and Quzzani (2012) also noted higher rates of breastfeeding when online breastfeeding support has been used. Online breastfeeding support allows new parents to feel connected at all times to a support group and assists them with breastfeeding concerns. Through the literature review it became evident that the media and electronic education is quickly becoming a popular mode of breastfeeding education and support in recent years.

Health Promotion Evaluation Framework and Breastfeeding Program Evaluation

Completing evaluations is critical for any program. An evaluation assesses and improves program quality and determines the helpfulness of the program (McKenzie, Neiger, & Thackeray, 2013). In 1999, the Centers for Disease Control and Prevention (CDC) published an evaluation framework to assist people in evaluating public health programs (McKenzie et al., 2013). The framework for program evaluation in public health is comprised of six steps: engaging stakeholders, describing the program, focusing the evaluation design, gathering credible evidence, justifying conclusions, and ensuring the sharing of the lessons learned during the evaluation (CDC, 1999). The purpose of a standardized program evaluation in public health is to improve evaluations and to overall improve the effectiveness of evaluations. The CDC framework has been used to evaluate several programs and is popular among evaluators. Logan, Boutotte, Wilce, & Etkind (2003), Gallivan, Greenberg, & Brown (2008), and Mai, Correa, Kirby, Rosenberg, Oetros, & Fagen (2015). The researchers comment that the CDC framework empowered them to develop a roadmap for asking key evaluation questions, engaging key stakeholders, developing a logic model, and making a sound link between data and action.

Various breastfeeding interventions and programs have been evaluated using other frameworks. Both McInnes, Love, and Stone (2000) and Huang, Kuo, Avery, Chen, Lin, and Gau (2006) completed breastfeeding program evaluations. A common evaluation method is the use of questionnaires. The “Evaluation Toolkit for Breastfeeding Programs and Projects” (Department of Health and Ageing, 2012) was developed by the Australian Government as part of their national breastfeeding strategy. The tool kit is specifically designed for breastfeeding programs and projects and acts as a guide for developing and completing evaluations.

There is a wide selection of literature on breastfeeding interventions. While the effectiveness of various breastfeeding interventions were shown to be proven in the literature, confusion remains on the best option for breastfeeding support and education. In a systematic review completed by Harron, Das, Salam, Imdad, and Bhutta (2013) on breastfeeding promotion interventions, it was concluded that combined individual and group counselling was the superior mode of breastfeeding support and education. A synthesis of literature completed by McInnes and Chambers (2008) revealed that peer support was superior in breastfeeding interventions and mother’s preferred social support over health service support. On the other hand, in a systematic review completed by Hannula, Kaunonen, and Tarkka (2008), interventions combining various methods of education and support were the most effective means to increase breastfeeding rates. It remains unknown the preferred method of new parents to receive breastfeeding support and education and the most effective means to increase overall breastfeeding rates. The effectiveness of printed material was questioned in the literature. Printed material alone is often not sufficient to improve breastfeeding initiation and duration. Hands-on instruction and support is also needed to improve breastfeeding rates and duration. Hence the need for the current Breastfeeding Handbook to be evaluated.

Summary of Consultations

To begin my practicum project, contact was made with Janet Murphy GoodRidge, a newly retired Provincial Breastfeeding Consultant, via email and a phone call was arranged. A discussion of various options took place and a meeting was scheduled. On April 22, 2016 a meeting was held at Janet Murphy-GoodRidge's house. Along with Janet Murphy-GoodRidge, Janine Woodrow, a Registered Dietitian and chair member of Baby Friendly NL was also in present. They noted that there is a need to evaluate the current Provincial Breastfeeding Handbook. The Provincial Breastfeeding Handbook is a costly endeavour and it is unknown if the handbook is being utilized by new parents. After this meeting and discovering the need for an evaluation of the Provincial Breastfeeding Handbook, I decided to evaluate the handbook for my practicum project. I set out to discover how new parents preferred to receive information on feeding their baby and if the handbook was being used in the Eastern Health Regional Health Authority.

On June 14, 2016 a meeting was held at the Perinatal Offices of Eastern Health between myself, Janine Woodrow (Baby Friendly NL Council) and Lorraine Burrage, RN (Coordinator of Perinatal Program, NL) to discuss possible questionnaire questions. A discussion occurred surrounding the purpose of the provincial Breastfeeding Handbook and what questions would accurately answer the evaluation aims. Janine Woodrow, who is a chair member of the BabyFriendly NL council and Heidi Boyd, Health Promotion Consultant gave me feedback on the questionnaire prior to finalizing it and distributing it to Eastern Health. Public Health Nurses were also consulted in the questionnaire implementation phase as they helped with the dissemination and retrieval of the questionnaires. A full consultation report can be found in Appendix F.

Summary of the Evaluation

A full evaluation report can be found in Appendix G.

Methods

A non-experimental design was used to evaluate the Provincial Breastfeeding Handbook. Using the the Centers for Disease Control and Prevention Framework for Program Evaluation in Public Health (CDC, 1999) as a guide, an evaluation was planned. By engaging stakeholders, describing the program, focusing the evaluation design, gathering credible evidence, justifying conclusions, and ensuring use and lessons learned, an evaluation was planned that would effectively evaluate the Provincial Breastfeeding Handbook. The target population for this evaluation was English speaking, 19 years or older, and parents who had been given the handbook. A review of the Health Research Ethics Authority (HREB) check list indicated no ethical approval was required. Members of Public Health, Baby Friendly NL, and the Perinatal Program were consulted to assist in the development of the questionnaire so that it would appropriately evaluate the handbook. Along with consulting key stakeholders, the Australian Government Department of Health and Aging Evaluation Tool for Breastfeeding Programs and Projects (2012) was used to help guide questionnaire development. The evaluation questions were prioritized to ensure the preferred method of receiving feeding information among new parents was sufficiently determined. Public Health Nurses in both Rural and Urban Eastern Health offered the questionnaire to individuals at the two, four, and six month well child check-up who met the inclusion criteria.

Convenience sampling was used to recruit parents to complete the questionnaire as it was an easy and efficient way to recruit individuals for this study (Polit & Beck, 2012). Public Health Nurses in both Rural and Urban Eastern Health offered the questionnaire to parents in a

one month period during the summer of 2016. Recruiting for approximately one month allowed for a sufficient number of participants to enable an understanding of the effectiveness of the Provincial Breastfeeding Handbook and if it is being utilized by parents. This allowed the illumination of patterns and an in-depth understanding of the usefulness of the handbook. Data was managed using a computer at the Nursing Research Laboratory at Memorial University. The program called “Statistical Package for the Social Sciences” (SPSS) was utilized to assist with analysis of the data collected. Percentages and frequencies were used to analyse the data. The sections where participants are encouraged to make comments were analysed for relevant themes.

Results

Parental age ranged from 19-40 years, with 45.5% of the parents falling in the age 31-35 year old range. Table 1 demonstrates the age distribution of parents. While 79.4% of the parents were from the Rural Avalon, only 20.6% were located in the Urban Avalon area. Thirty-three percent of parents reported breastfeeding before, while 66.7% of parents reported it being their first time breastfeeding. The mean age of the parents’ child was 3.94 months, ranging from 2 weeks to 6 months. 46.2% of the parents were breastfeeding while 26.9% of parents were using infant formula the other 26.9% were using a mixture of breastfeeding, infant formula feeding, solids, and other fluids.

Table 1. Frequency and Percentages of Participant Demographics (n=33 *4 participants did not answer this question)

Variables	Frequencies	Percentages
<i>Age</i>		
19-25 years	4	12.1%
26-30 years	10	30.3%
31-35 years	15	45.5%
36-40 years	4	12.1%
<i>Locations (n=34 *3 participants did not answer this question)</i>		
Urban Avalon	7	20.6%
Rural Avalon	27	79.4%

Use of the Provincial Breastfeeding Handbook

When asked if they used the Provincial Breastfeeding Handbook, 75.7% answered yes and 24.3% answered no. Ninety three percent of parents were given a paper copy of the handbook while 6.9% were given an electronic link to the online version of the handbook. Table 2 depicts the time in which the Provincial Breastfeeding Handbook was received by the parents. The majority of parents, 53.3%, received the handbook during a home visit by the Public Health Nurse after their baby was born. While only 6.9% of parents report receiving the electronic link to the online version of the handbook, 83.9% of parents indicated they would still access the Provincial Breastfeeding Handbook if it were only available online. Out of the 6.9% that were given the electronic link to the Provincial Breastfeeding Handbook, 42.9% were given it by a Public Health Nurse.

Table 2. When the Provincial Breastfeeding Handbook was received by Parents (n=30 *7 participants did not answer this question)

	Frequency	Percentages
During prenatal class	6	20%
In the hospital when your baby was born	4	10.8%
During a home visit by the Public Health Nurse after your baby was born	16	53.3%
I did not receive a paper copy	1	3.3%
In the mail	1	3.3%
Had used previously working in JER and NICU	1	3.3%
From a friend	1	3.3%

JER= Janeway Emergency Room

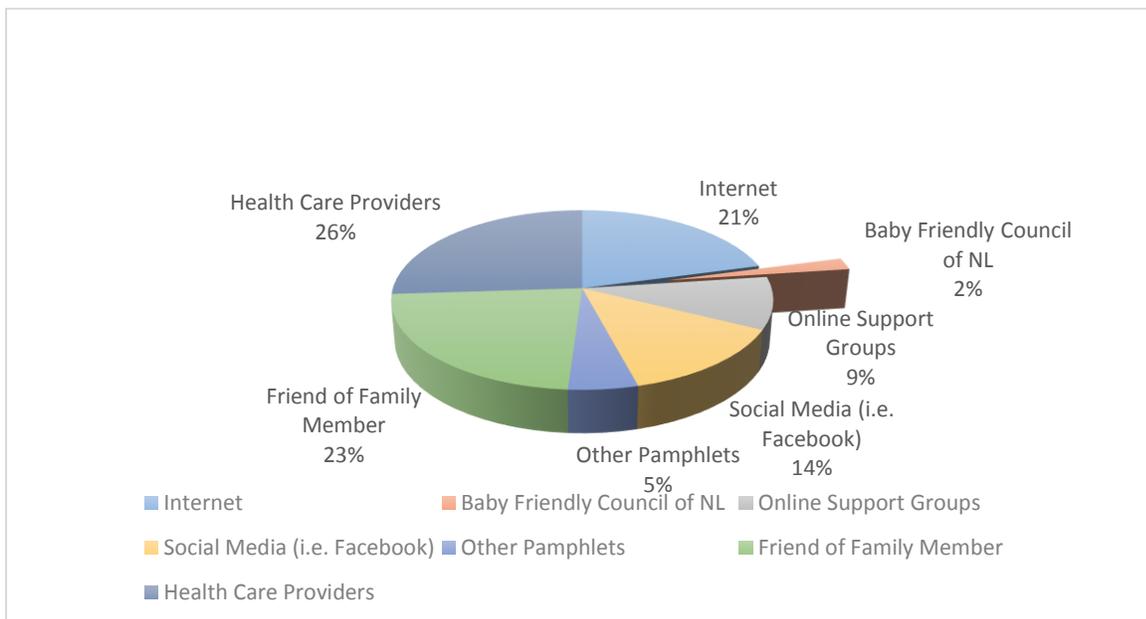
NICU= Neonatal Intensive Care Unit

Usefulness of the Provincial Breastfeeding Handbook and Other Sources

When asked if they found the information they wanted in the Provincial Breastfeeding Handbook, 96.4% said yes and only 3.6% said no. Regarding the helpfulness of the handbook, a Likert scale was utilized. When asked to rate the helpfulness on a scale of one to five, the mean was 4.57 meaning the majority of parents found the handbook very helpful. When asked the question; how important was the Provincial Breastfeeding Handbook in assisting decisions regarding breastfeeding, on a scale of one to five, the mean was 3.70 meaning that the majority of parents thought the handbook was neither important nor unimportant in assisting them with

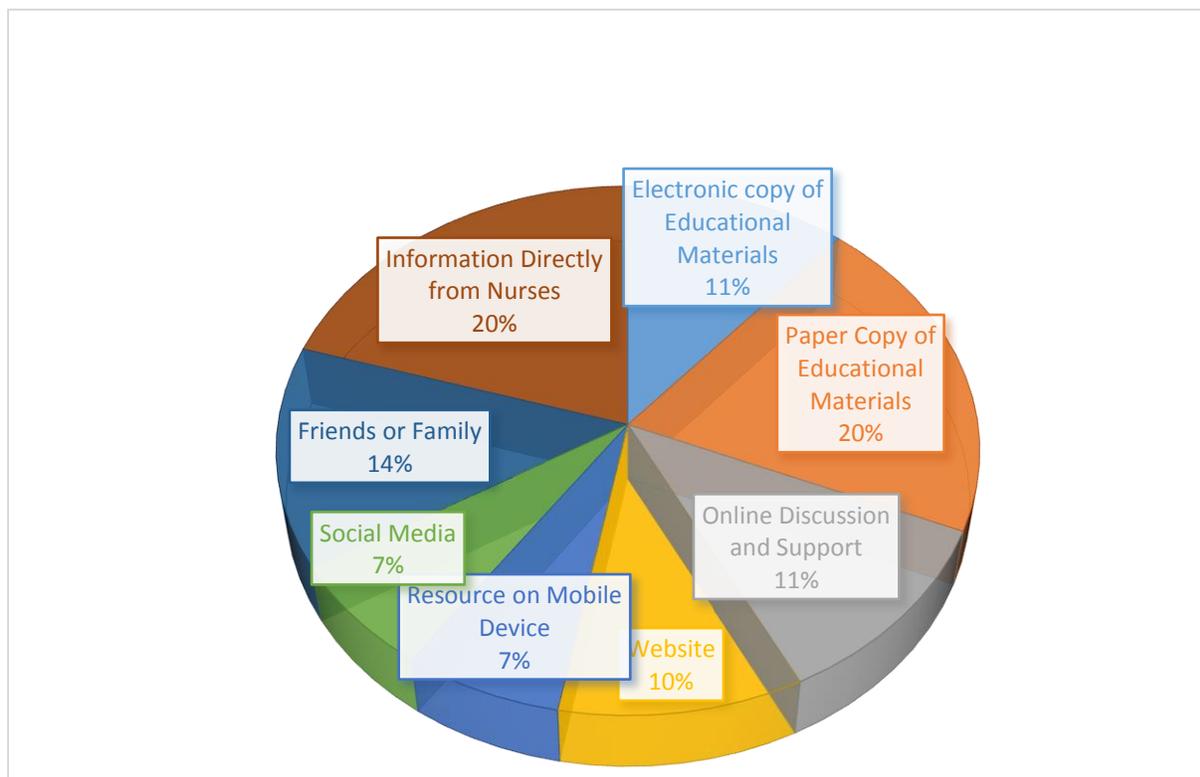
their breastfeeding decisions. When questioned about other sources utilized for breastfeeding information and advice, the majority of parents indicated Health Care Providers at 26% while 20.8% choose the internet. Pie Chart 1 below shows the frequencies of sources that provided information to parents on breastfeeding. Out of the other sources identified, on a scale of one to five, the mean response was 4.57, meaning that the majority of parents found other sources very helpful.

Pie Chart 1: Other Sources That Provided Information on Breastfeeding



How Parents Prefer to Receive Breastfeeding Information

Pie Chart 2: How Parents Prefer to Receive Breastfeeding Information



As shown in Pie Chart 2, when asked about the preferred method of receiving breastfeeding information, 20.2% stated the paper copy of educational materials while 20.2% choose information directly from nurses as their preferred method. As mentioned previously, 83.9% of parents stated they would access the Provincial Breastfeeding Handbook if it was available online only while 16.1% said they would not access it online. Of those who would access the handbook online, 31.3% of parents said they would prefer PDF, while 31.3% said they would prefer an interactive website, and the majority said a mobile device app (37.5%). Table 3 visualizes the frequencies of the preferred methods of electronic educational resources.

Table 3. Format Preferred to Receive Electronic Educational Resources (n=32 *5 participants did not answer this question)

Format	Percentages
PDF	31.3%
Interactive Website	31.3%
Mobile Device (i.e. app)	37.5%

Recommendations

Nurses Should Continue to:

1. Offer the electronic link of the Provincial Breastfeeding Handbook to all parents.
2. Inform parents of the various online support groups for breastfeeding and provide a list of credible online resources for breastfeeding information and support in the post-natal package.
3. Offer the Provincial Breastfeeding Handbook in the prenatal period.
4. Continue to provide paper copies of the breastfeeding handbook combined with direct nurse education and support.

Eastern Health Should:

5. Consider an Eastern Health facilitated mobile application on breastfeeding information and support.
6. Continue to publish the paper copies of the breastfeeding handbook
7. Continue to evaluate the effectiveness and merit of the Provincial Breastfeeding Handbook on a regular basis.

8. Along with the other health boards, complete a provincial wide survey/questionnaire to have more generalizable and accurate results.
9. Continue to keep staff up to date on current breastfeeding information and support through staff education.
10. Following a presentation with Memorial University School of Nursing faculty and students, it was noted that the Provincial Breastfeeding Handbook was not available in other languages and did not consider those who are illiterate. A recommendation noted was to offer the Provincial Breastfeeding Handbook in other languages and ensure that those who are not literate have access to breastfeeding information and support.

Advanced Nursing Practice (ANP) Competencies

The health care system in Canada faces many threats, such as rising costs and an aging population (Canadian Nursing Association, 2008). The need for clinical practitioners to act as leaders has never been more important. Throughout the evaluation of the Provincial Breastfeeding Handbook, many clinical, research, leadership, and consultations and collaboration competencies were accomplished. In completing the evaluation, advance nursing practice was shown.

Expertise in a specialized area of nursing is the foundation of advance nursing practice (CAN, 2008). Clinical competencies are an important aspect of advance nursing practice. During the evaluation of the Provincial Breastfeeding Handbook I was able to engage new parents along with individuals with the Perinatal Program of Eastern Health and Baby Friendly NL to resolve issues. For example, a need was present to determine the resource format of the handbook. The Perinatal Program and the Baby Friendly NL council were in the process of determining the resource format of the handbook and I was able to engage them along with parents to determine

the preferred method to receive breastfeeding information. As well, I was able generate new nursing knowledge through my evaluation that could potentially effect new standards of care and programs offered by Eastern Health. Research competencies involve generating, synthesizing, and utilizing research evidence (CNA, 2008). During the evaluation of the Provincial Breastfeeding Handbook I was able to evaluate the current Breastfeeding Handbook. I collected data using a questionnaire and evaluated the handbook. Following the data analysis and the recommendations gathered, I was able to disseminate my evidence-based findings to the colleagues and faculty of Memorial University School of Nursing, the Perinatal Program, and Baby Friendly NL.

The importance of evidence based practice in the evaluation process was crucial. During the literature review and evaluation process a large volume of literature was retrieved, critiqued, and utilized. Advance practice nurse are leaders in many organizations and communities (CNA, 2008) and can progress evidence based practice. Advance practice nurses are mechanisms of change brought on by continuously seeking effective new ways to practice. Evaluating the Provincial Breastfeeding Handbook it helped to develop an innovative ideas to disseminating breastfeeding information and support. Parents indicated they would access educational material if only available electronically. This finding could influence the future format of the handbook. By completing this evaluation I was able to assist the Perinatal Program and Baby Friendly NL develop a future vision for nursing practice and the way in which the handbook is disseminated.

Appropriate collaboration and communication with the Perinatal Program and Baby Friendly NL showed consultation and collaboration competencies. I initiated timely and appropriate consultations and collaboration with members of the Perinatal Program and Baby Friendly NL. Consultations began in April 2016 and continued throughout the practicum project.

With collaboration with Baby Friendly NL, Perinatal Program, and parents I was able to develop an evaluation that would hopefully improve the quality of the Provincial Breastfeeding Handbook. I was able to advance nursing practice through research that will help meet patient and family needs. As well during each stage of the practicum project, I consulted with my supervisor, Dr. Noseworthy. These collaborative partnerships enabled me to produce the final evaluation report.

Breastfeeding education and support is crucial to breastfeeding initiation and duration. In this final report, the background and rationale for this practicum project was explained. An overview of the methods used has been discussed along with key findings from the evaluation. Recommendations to both Eastern Health and Registered Nurses has been briefed along with the Advance practice nursing competencies utilized during this practicum project. An evaluation of the Provincial Breastfeeding Handbook has been presented.

References

Australian Government (2012). *Evaluation Toolkit for Breastfeeding Programs and Projects*.

Department of Health and Aging. Retrieved from

[http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/\\$File/Evaluation-Toolkit.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/$File/Evaluation-Toolkit.pdf)

Ahmed, A.H., Roumani, A.M., Szucs, K., Zhang, L., & King, D. (2016). The effect of interactive web-based monitoring on breastfeeding exclusivity, intensity, and duration in healthy, term infants after hospital discharge. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 45, 143-154. Retrieved from <http://dx.doi.org/10.1016/j.jogn.2015.12.001>

Ahmed, A.H., & Quizzani, M. (2012). Interactive web-based breastfeeding monitoring:

feasibility, usability, and acceptability. *Journal of Human Lactation*, 28(4), 468-475.

doi:10.1177/0890334412451869

Barnes, M., Pratt, J., Finlayson, K., Courtney, M., Pitt, B., & Knight, C. (2008). Learning about

baby: What new mothers would like to know. *The Journal of Perinatal Education*, 17(3), 33-41. doi:10.1624/105812408X329584

Centers for Disease Control and Prevention. (2013). *Strategies to Prevent Obesity and Other*

Chronic Disease: The CDC Guide to Strategies to Support Breastfeeding Mothers and

Babies. Atlanta: U.S. Department of Health and Human Services. Retrieved from

<http://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>

Chapman, D.J., Damino, G., Young, S., & Esamilla, R. P. (2004). Effectiveness of breastfeeding peer counseling in a low income, predominately Latina population. *Archives Pediatric Medicine, 158*, 897-902.

Craig, H.J., & Dietsch, E. (2010). 'Too scary to think about': first time mothers' perceptions of the usefulness of antenatal breastfeeding education. *Women and Birth, 23*, 160-165.
doi:10.1016/j.wombi.2010.04.004

Canadian Nurses Association (2008). *Advance Nursing Practice: A National Framework*. Retrieved from https://www.cna-aiic.ca/~media/cna/page-content/pdf-en/anp_national_framework_e.pdf

Centers for Disease Control and Prevention. (2013). *Strategies to Prevent Obesity and Other Chronic Disease: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies*. Atlanta: U.S. Department of Health and Human Services. Retrieved from <http://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>

Dennis, C.L., Hodnett, E., Gallop, R., & Chalmers, B. (2002). The effect of peer support on breast-feeding duration among primiparous women: A randomized controlled trial. *CMAJ, 166*(1), 21-8. Retrieved from <http://www.ncbi.nlm.nih.gov.qe2a-proxy.mun.ca/pmc/articles/PMC99222/>

Gallivam, J., Greenberg, R., & Brown, C. (2008). The national diabetes education program

- evaluation framework: How to design an evaluation of a multifaceted public health education program. *Preventing Chronic Disease*, 5(4). Retrieved from http://www.cdc.gov/pcd/issues/2008/oct/07_0181.htm
- Imdad, A., Yakoob, M.Y, & Bhutta, A. (2011). Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries. *BMC Public Health*, 11, 1-8. Retrieved from <http://biomedcentral.com/1471-2458/11/S3/S24>
- Ingram, J., Rosser, J., & Jackson, D. (2004). Breastfeeding peer supporters and a community support group: Evaluating their effectiveness. *Maternal and Child Nutrition*, 1, 111-118.
- Hannula, L., Kaunonen, M., & Tarkka, M.T. (2008). A systematic review of professional support interventions breastfeeding. *Journal of Clinical Nursing*, 17, 1132-1143.
doi:10.1111/j.1365-2702.2007.02239.x
- Haroon, S., Das, J.K., Salam, R.A., Imdad, A., & Bhutta, Z.A. (2013). Breastfeeding promotion interventions and breastfeeding practices: A systematic review. *BioMed Central*, 20, 1-18. Retrieved from <http://www.biomedcentral.com/1471-2458/13/S3/S20>
- Hannula, L., Kaunonen, M., & Tarkka, M.T. (2008). A systematic review of professional support interventions breastfeeding. *Journal of Clinical Nursing*, 17, 1132-1143.
doi:10.1111/j.1365-2702.2007.02239.x
- Haroon, S., Das, J.K., Salam, R.A., Imdad, A., & Bhutta, Z.A. (2013). Breastfeeding promotion interventions and breastfeeding practices: A systematic review. *BioMed Central*, 20, 1-18. Retrieved from <http://www.biomedcentral.com/1471-2458/13/S3/S20>

- Huang, M.Z., Kuo, S.C., Avery, M.D., Chen, W., Lin, K.C., & Gau, M.L. (2007). Evaluating the effects of a prenatal web-based breastfeeding education programme in Taiwan. *Journal of Clinical Nursing, 16*, 1571-1579. doi:10.1111/j.1365-2702.2006.01843.x
- Kaunonen, M., Hannula, L., & Tarkka, M.T. (2012). A systematic review of peer support interventions for breastfeeding. *Journal of Clinical Nursing, 21*, 1943-1954. doi:10.1111/j.1365-2702.2012.0407.x
- Mai, C.T., Correa, A., Kirby, R.S., Rosenberg, D., Petros, M., & Fagen, M.C. (2015). Assessing the practices of population-based birth defects surveillance programs using the CDC framework, 2012. *Public Health Reports, 130*(6), 722-30.
- McInnes, R.J. & Chambers, J.A. (2008). Supporting breastfeeding mothers: Qualitative synthesis. *Journal of Advanced Nursing, 62*(4), 407-427. doi:10.1111/j.1365.2648.2008.04618.x
- Logan, S., Boutotte, J., Wilce, M., Etkind, S. (2003). Using the CDC framework for program evaluation in public health to assess tuberculosis contact investigation programs. *The International Journal of Tuberculosis and Lung Disease, 7*(12), 375-383.
- McInnes, R.J., Love, J.G., & Stone, D.H. (2000). Evaluation of a community-based intervention to increase breastfeeding prevalence. *Journal of Public Health Medicine, 22*, 138-145.
- CPolit, D.F., & Beck, C.T. (2012). *Nursing research. Generating and assessing evidence for nursing practice*. Philadelphia: Lippincott Williams & Wilkins

- Scott, J.A., Binns, C.W., Oddy, W.H., & Graham, K.I. (2006). Predictors of breastfeeding duration: Evidence from a cohort study. *Pediatrics*, *117*(4), 646-655.
doi:10.1542/peds.2005-1991
- Odom, E.C., Scanlon, K.S., Perrine, C.G. & Grummer-Strawn, L. Reasons for earlier than desired cessation of breastfeeding. *Pediatrics*, *131*(3), 726-32. doi:10.1542/peds.2012-1295
- Ahluwalia, I.B., Morrow, B., & Hsia, J. (2005). Why do women stop breastfeeding? Findings from the pregnancy risk assessment and monitoring system. *Pediatrics*, *116*(6), 1408-1412. doi:10.1542/peds.2005.0013
- Hauck, Y.L. & Dimmock, J.E. (1994). Evaluation of an information booklet on breastfeeding duration: a clinical trial. *Journal of Advanced Nursing*, *20*, 836-843
- Khanal, V., Lee, A.H., Karkee, R., & Binns, C.W. (2015). Postpartum breastfeeding promotion and duration of exclusive breastfeeding in Western Nepal. *Birth*, *42*(4), 329-336.
doi:10.1111/birth.12184
- Kronborg, H., Vaeth, M., Olsen, J., Iversen, L., & Harder, I. (2007). Effect of early postnatal breastfeeding support: A cluster-randomized community based trial. *Acta Paediatrica*, *96*, 1064-1070. doi: 10.1111/j.1651-2227.2007.00341.x
- Labarere, J., Gelbert-Baudino, N., Ayrat, A.S., Duc, C., Berchotteau, M., Bouchon, N., ... Pons, F. (2005). Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventative visit: A prospective, randomized, open trial of 226 mother-

- infant pairs. *Pediatrics*, *115*(2), 139-146. Retrieved from <http://www.pediatrics.org/cgi/doi/10.1542/peds.2004-1362>
- McKenzie, J.F., Neiger, B.L., & Thackeray, R. (2013). *Planning, Implementing, and Evaluating Health Promotion Programs: A Primer*. (6th e). Toronto: Pearson Benjamin Cummings.
- Pannu, P.K., Giglia, R.C., Binns, C.W., Scott, J.A., & Oddy, W.H. (2011). The effectiveness of health promotion materials and activities on breastfeeding outcomes. *Acta Paediatrica*, *100*, 534-537. doi:10.1111/j.1651-2227.2010.02105.x
- Porteous, R., Kaufman, K., Rush, J. (2000). The effect of individualized professional support on duration of breastfeeding: a randomized controlled trial. *Journal of Human Lactation*, *16*(4), 303-308. doi:10.1177/089033440001600406
- Thomas, J.R., & Skaikh, U. (2007). Electronic communication with patients for breastfeeding support. *Journal of Human Lactation*, *23*(3), 275-279. doi: 10.1177/0890334407303903

Appendices

Appendix A: Literature Review

The benefits of breastfeeding for both baby and mother are well known, yet Newfoundland and Labrador (NL) has the lowest breastfeeding rates in all of Canada (Baby Friendly NL, 2014). While seventy percent of mothers in NL initiate breastfeeding in the hospital, only fifteen percent of NL women exclusively breastfeed for the first six months (Baby Friendly NL, 2014). Please see Appendix A for a glossary of breastfeeding categories. According to Statistics Canada (2016), the Atlantic Provinces rate of exclusive breastfeeding in 2012 was twenty three percent and British Columbia sat at forty one percent. Twenty six percent of Canadian women exclusively breastfed for the first six months, while only fifteen percent of NL women exclusively breastfeed. The literature is saturated with evidence of the benefits of breastfeeding and the World Health Organization (2016) strongly recommends breastfeeding exclusively for the first six months of life with continued breastfeeding along with other foods until the age of two years and beyond. Eastern Health currently offer multiple support services, programs, and personal resources about breastfeeding. One such resource, the “Breastfeeding Handbook” (Go Healthy, Baby Friendly NL, and Government of Newfoundland and Labrador, 2013) distributed to new parents, highlights how to initiate breastfeeding, how to keep breastfeeding going, and attempts to answer questions and guide new mothers in the breastfeeding experience. The Breastfeeding Handbook has yet to be evaluated, and so it remains unknown if the handbook is the most effective way to educate and support new mothers in their breastfeeding journey. This practicum project is evaluating the Breastfeeding Handbook, therefore it is important to look at the various avenues of breastfeeding support and education to determine a need to evaluate breastfeeding resources. It is important to review evaluation frameworks so that an appropriate framework can be used during the evaluation process. For the purposes of this literature review, recent literature pertaining to barriers to breastfeeding and the effectiveness of various breastfeeding interventions on breastfeeding

initiation and duration will be reviewed. The effectiveness of peer support, professional education/support, written information, and media/electronic communication on breastfeeding will be discussed. A review of health promotion evaluation frameworks and breastfeeding program evaluations will also be briefed along with key gaps in the literature and implications for Advance Practice Nurses.

Search Methods Utilized

Literature for this review was gathered from CINAHL, PubMed, and the Cochrane Library. To ensure the most up-to-date literature was obtained, limits were set to find articles from 2000 till present. Older research was utilized in some areas due to lack of current research. The search was also limited to articles in the English language. Keywords utilized in the search strategy included “breastfeeding” AND “interventions” AND “patient education” AND “peer support” AND “health care professional support” AND “social media” OR “electronic communication” AND “CDC Framework” OR “Framework for Program Evaluation in Public Health”. Various themes emerged from the search such as barriers to breastfeeding, peer support, electronic communication, health professional support, and evaluations of current breastfeeding programs.

Barriers to Breastfeeding

Successful breastfeeding is dependent on a variety of factors including whether a woman is having breastfeeding difficulties, her knowledge about breastfeeding, life style choices, and her attitude toward breastfeeding. (Scott, Binns, Oddy, & Graham, 2006; Odom, Scalon, Perrine, and Grummer-Strawn, 2013; Ahluwalia, Morrow, & Hsia, 2005). The findings of these studies also highlight the importance of continued breastfeeding interventions as a means to enhance breastfeeding success. Scott et al. (2006) completed a cohort study to examine predictors of breastfeeding duration. In this study, 587 women were recruited and asked to complete a baseline

questionnaire. Women were followed up by a telephone interview at various weeks post-partum to collect information regarding breastfeeding initiation and duration. The researchers concluded that barriers to breastfeeding included maternal infant feeding attitudes, breastfeeding difficulties, maternal smoking, introduction of a pacifier, and early return to work. The study emphasised the importance of anticipatory guidance, professional support, and education on breastfeeding duration. Odom et al. (2013) also studied reasons for early cessation of breastfeeding. Data was analysed from 1177 surveys showing that barriers to breastfeeding included difficulties with lactation, concern regarding infant nutrition and weight, maternal illness, and the effort associated with pumping milk. Similar to Scott and colleagues (2006), Odom et al. (2013) also stressed the importance of continued professional support in addressing breastfeeding challenges and providing education and support to new mothers. Ahluwalia, Morrow, and Hsia (2005) also studied why women stop breastfeeding. Findings from their study suggest that barriers to breastfeeding included sore nipples, perceived inadequate milk supply, infant having difficulties with latch, and the idea that the infant was not being satisfied by breastmilk alone. These findings also indicate the need for extensive breastfeeding support and education.

Various other barriers to breastfeeding are supported by the literature and include maternal attitudes such as ideas of milk insufficiency and feeling the baby was 'too old' for breast milk. According to Camurdan, Iihan, Beyazova, Sahin, and Eminoglu (2008) and Li, Fein, Chen, and Grummer-Strawn (2008), it becomes easy to see how various factors influence breastfeeding decisions, such as maternal attitudes towards breastfeeding. The researchers concluded that many barriers exist towards breastfeeding and often include reasons such as baby biting, lactation issues, and milk insufficiency concerns. In a descriptive, cross-sectional study, Camurdan et al. (2008) found that not having a plan about breastfeeding duration, mother's

concerns regarding breastmilk insufficiency, baby's unwillingness to eat solid foods, and the mother's idea that the baby was too old all contributed to barriers to successful breastfeeding. Li et al. (2008) also examined why mothers stop breastfeeding. Li et al. (2008) analyzed self-reported data from 1323 mothers and determined that mothers stop breastfeeding because of concerns regarding breast milk sufficiency, lactation and nutrition issues, baby biting, baby losing interest in breastfeeding, and feeling breastmilk was not satisfying. Both of these studies bring to light the importance of breastfeeding education and support and how it becomes a barrier if not present for new mothers who are breastfeeding. It becomes evident how successful breastfeeding is dependent on multiple factors. A review of the barriers to breastfeeding highlights the need to ensure that proper breastfeeding education and support is given to new parents. It is important to determine the most effective way to educate and support new parents so that barriers can be lifted.

Effectiveness of Professional Education and Support

Nurses are present in the pre-natal, intra-partum, and post-partum continuum of care and are in the prime position to offer breastfeeding education and support. Health Care Providers, in particular nurses, play a key role in educating new mothers on breastfeeding and supporting them in their breastfeeding success. Artieta-Pinedo et al. (2012) and Wong et al. (2014) suggest that antenatal education alone does not increase the duration of breastfeeding. Artieta-Pinedo et al. (2012) investigated the association between attendance of an ante-natal education class and breastfeeding. In this prospective cohort study, it was found that ante-natal education was associated with higher breastfeeding rates in the first month but no difference in the following months. Artieta-Pinedo et al. (2012) concluded that ante-natal education had only a short term influence on breastfeeding duration and further support is needed after birth. Likewise, Wong et

al. (2014) evaluated the effectiveness of antenatal education on breastfeeding rates. In this study it was also determined that antenatal breastfeeding support and education did not significantly increase the exclusivity or duration of breastfeeding. In contrast, Pannu, Giglia, Binns, Scott, and Oddy (2011) found a positive association between receiving breastfeeding information in the antenatal period and positive breastfeeding outcomes. The results showed that mothers who received an individual consultation were 55% less like to cease breastfeeding fully before 6 months.

Health system factors, such as professional support have also been found to influence breastfeeding success when women plan to breastfeed. Kuan, Britto, Decolongon, Schoettker, Atherton, and Kotagal (2000) used a prospective eight week cohort study of 522 women to determine health system factors contributing to breastfeeding success. Data was collected using chart reviews, surveys, and in-person interviews. The researchers determined that successful breastfeeding was linked to a mother's initial plan of breastfeeding duration. Kuan and colleagues concluded that successful breastfeeding was more likely if a nurse watched them breastfeed and if the mother felt supported by family and friends. Factors associated with breastfeeding success included maternal graduate education, appraisal of breastfeeding while at the hospital, and continued breastfeeding support via the home nurse visit (Kuan et al., 2000). The study revealed the importance of health system support on breastfeeding and how it is an important factor in breastfeeding success and a barrier to breastfeeding if absent.

Breastfeeding support and education offered during the intra-partum and post-partum care period has been shown to be more effective in increasing breastfeeding rates and duration, according to both Khanal, Lee, Karkee, and Binns (2015) and Kronborg, Vaeth, Olsen, and Harder (2015). The researchers highlighted the importance of breastfeeding instruction and

education during the hospital stay and in the early post-partum time period. Khanal et al. (2015) completed a community-based prospective cohort study on the effect of postpartum breastfeeding promotion on rates of exclusive breastfeeding. The researchers investigated the association between breastfeeding promotion and breastfeeding using the multivariable cox regression analysis. It was found that postpartum education regarding not using a pacifier and breastfeeding on demand were significantly associated with a lower risk of breastfeeding cessation (Khanal et al., 2015). When the new parents were educated on breastfeeding they were less likely to stop breastfeeding. Khanal and colleagues provides strong evidence that breastfeeding education and support in the postpartum period increases breastfeeding duration. For example, the researchers found that if new parents were instructed on how to breastfeed, seventy percent were successful while those who were not instructed had a frequency of thirty percent breastfed. Kronborg et al. (2007) also explored the effect of postnatal breastfeeding support in a cluster-randomized community based trial, specifically the effect of home-visits in the postnatal period. Mothers in the intervention group received an eighteen hour course on breastfeeding and home visits during the first five weeks postpartum while the control group received routine care. Kronborg and colleagues determined that the intervention group had a 14% lower breastfeeding cessation rate. It was also noted in the study completed by Kronborg and colleagues that babies in the intervention group used pacifiers less (had less nipple confusion) and mothers reported more breastfeeding confidence. The studies completed by Kronborg et al. (2007) and Khanal et al. (2015) showed the strong correlation between postpartum professional support and increased breastfeeding rates.

Several other randomized controlled trials have been completed to determine the efficacy of breastfeeding support provided by trained Health Care Providers, such as the research studies

by Labarere et al. (2015) and Porteous, Kaufman, and Rush (2000). Once again, the importance of professional breastfeeding education and support was highlighted. Labarere et al. (2005) completed a study to determine if breastfeeding support during the early postpartum period would improve breastfeeding outcomes. Mothers in the intervention group received usual care along with an individual, outpatient visit at two weeks postpartum. Labarere and colleagues discovered that at four weeks postpartum, 83.9% of mothers in the intervention group were still breastfeeding compared with 71.9% in the control group. Porteous et al. (2000) also completed a randomized controlled trial on the effect of individualized professional support on the duration of breastfeeding. At four weeks postpartum, 100% of the women in the intervention group were breastfeeding compared with 68% in the control group. Both studies highlighted the effectiveness of professional support breastfeeding duration and the positive influence it has on breastfeeding mothers.

Research studies by Barnes, Pratt, Finlayson, Courtney, Pitt, and Knight (2008) and Craig and Dietsch (2010) revealed mothers perceptions of and needs for breastfeeding education and support. The researchers discovered that new parents appreciated information resources on breastfeeding but still require support and instruction to feel comfortable with breastfeeding. Barnes et al. (2008) completed a study to determine what new mothers would like to know when learning about their new baby. Barnes and colleagues determined that participants found information from a variety of sources during pregnancy and women reported needing information on essential maternal and child health issues, such as breastfeeding, explained along with common problems they may face in the early months. The participants in the study revealed that they felt both overwhelmed and unprepared despite promotion of antenatal education and readily available information on breastfeeding. Craig and Dietsch (2010) completed a

descriptive pilot study to better understand first time mothers perceptions of antenatal breastfeeding education. Craig and Dietsch (2010) found that first time mothers perceived antenatal education to be beneficial and helped them to initiate breastfeeding. The researchers also discovered that antenatal education alone was not enough to reduce anxiety or instill confidence in the new mothers. Ongoing professional support that continues throughout the antenatal, intra-natal, and post-partum period is needed to improve breastfeeding initiation and duration.

Another mode of breastfeeding education and support that nurses can offer is health promotion materials. Various booklets, handbooks, and pamphlets have been distributed in the past that are meant to increase breastfeeding knowledge and ultimately increase breastfeeding rates. Pannu, Giglia, Binns, Scott, and Oddy (2011) and Hauck and Dimmock (1994) studied the effectiveness of health promotion materials on breastfeeding outcomes. The researchers revealed that the use of health promotion materials is an effective mechanism of breastfeeding education and support, health promotion materials are not enough alone to support and educate new parents. In a 12-month longitudinal study, Pannu et al. (2011) noted that receiving pamphlets, group education, and demonstrations on breastfeeding increased breastfeeding rates. However it was noted that mothers who received individual consultation and instruction on breastfeeding were less likely to cease breastfeeding. The use of health promotion material alone was not sufficient to increase overall breastfeeding rates (Pannu et al., 2011). Likewise, Hauck and Dimmock (1994) evaluated an information booklet to determine if it was effective in improving breastfeeding duration. The intervention group received the information booklet while the control group did not. Hauck and Dimmock (1994) determined that although 97% of the

intervention group that received the information booklet found it useful, no difference was noted between the two groups in breastfeeding rates.

A randomised controlled trial was completed by Curro, Lanno, Scipione, Grimaldi, and Mastroiacovo (1997) to test the efficacy of a breastfeeding information booklet on increasing breastfeeding rates. The researchers discovered that no statistically significant difference was found between the intervention and control group. Curro and colleagues also concluded that the information booklet alone was not sufficient enough to increase breastfeeding rates. Furthermore Curro et al. (1997) found that individualized support is needed to increase breastfeeding rates. It was also noted in a review of antenatal breastfeeding education by Lumbiganon, Martis, Laopaiboon, Festin, Ho, and Hakimi (2012) that pairing different combinations of breastfeeding support with an educational breastfeeding booklet was most effective compared to booklets alone. A review of health care professional support revealed the importance of health care professionals on breastfeeding rates and duration. A review of the literature determined the need to evaluate paper materials on breastfeeding education and support due to the lack of support for paper materials on significantly improving breastfeeding rates and duration. The effectiveness of media and electronic support was also probed during the literature review along with the effectiveness of peer support.

Effectiveness of Peer Support

Peer support is often provided by a mother from the same area and who is currently breastfeeding or has breastfed in the past (Center for Disease Control and Prevention, 2013). The overall goal of peer support is to support and encourage breastfeeding women. According to Chapman, Damino, Young, and Perez-Escamilla (2004) and Ingram, Rosser, and Jackson (2004), peer support has been known to improve breastfeeding rates and remove barriers to breastfeeding

that often exist. Peer support enables a mother to have a support person and a person to turn to with questions and concerns. Chapman et al. (2004) completed a randomized, prospective, controlled trial where women were placed into either a routine breastfeeding education group or a routine breastfeeding education group plus peer counselling. Breastfeeding peer counselling included peer contact prenatally, daily perinatal visits, three postpartum home visits, and telephone contact as necessary. A significant link between peer counselling and breastfeeding initiation was observed in this study. Chapman et al. (2004) found that participants in the intervention group had a 61% lower risk of not initiating breastfeeding. Chapman and colleagues concluded that they positively demonstrated the importance of peer counselling on breastfeeding outcomes. Ingram et al. (2004) also evaluated the effectiveness of breastfeeding peer supporters on breastfeeding success. The study evaluated the effectiveness of a breastfeeding initiative which trained peer supporters who then went on to set up a support group. The researchers used focus groups and questionnaires to send to all the mothers following the intervention. Ingram et al. (2004) also found that peer supporters are an effective way to increase breastfeeding rates. Mothers who attended the peer support program reported they were able to talk about breastfeeding and were able to get consistent breastfeeding advice from their peers. The researchers also noted in their study that breastfeeding rates in the area of the study increased by 7% in only eight weeks due to the peer support initiative. Both of these studies suggest that peer supporters are an effective mechanism of increasing breastfeeding prevalence.

Dennis, Hodnett, Gallop, and Chalmers (2002) and Kaunonen, Hannula, and Tarkka (2011) determined that peer support has also been found to be effective in increasing breastfeeding duration and increasing breastfeeding satisfaction among women. Dennis et al. (2002) investigated the effect of peer support on breastfeeding duration. Dennis et al. (2004)

completed a randomized controlled trial in which 256 mothers were randomly assigned to a control group or a peer support intervention group. The researchers discovered that at three months post-partum, 81.1% of the intervention group were breastfeeding while 66.9% of the control group were breastfeeding. Dennis and colleagues also highlighted the fact that women in the peer support intervention group reported greater satisfaction with breastfeeding. The peer support intervention was effective in increasing breastfeeding rates and increasing mother satisfaction with the breastfeeding experience. Kaunonen et al. (2011) completed a systematic review of peer support interventions for breastfeeding. Kaunonen et al. (2011) reviewed 43 articles and found that one on one support and education were more frequently used during the pregnancy, hospitalization, and post-partum period. The systematic review revealed that peer support is most critical in the post-partum period and was effective in breastfeeding success. Peer support is capable of removing breastfeeding barriers and supporting new mothers to continue to breastfeed. Peer support enables mothers to feel supported and gives them the confidence they need to continue breastfeeding. The effectiveness of media and electronic support of breastfeeding has also come to light in recent years.

Effectiveness of Media/Electronic Education and Support

When patients seek information to expand their knowledge of health issues, they often turn to the internet. The internet has quickly become a vital tool for patients when it comes to their knowledge regarding health issues (Thomas & Shaikh, 2007). Electronic communication provides health care professionals with the opportunity to inform, reassure, encourage, and ultimately support breastfeeding. Web and mobile interventions are quickly becoming an integral component of health care interventions. The web provides ready access to information and support when a face to face interaction is not present and can be a cost effective strategy in

improving breastfeeding rates. Haung, Kuo, Avery, Chen, Lin, and Gau (2007) and Thomas and Shaikh (2007) researched the effects of web-based breastfeeding education and support on breastfeeding rates. The researchers found that the World Wide Web increased breastfeeding knowledge. Haung et al. (2007) evaluated the effects of a prenatal web-based breastfeeding education program in Taiwan. A quasi-experimental design was used with 120 prim gravida women to determine if a web-based breastfeeding education program increased breastfeeding knowledge and improved breastfeeding skills. Women were divided up and put into the intervention group or the control group. Women in the intervention group who participated in the web-based education program had a higher breastfeeding knowledge score and an overall more positive outlook on breastfeeding when compared to the control group (Huang et al., 2007). The control group received routine care without the use of a web-based education program. It was also noted in this research study that there was a significant effect on exclusive breastfeeding rates for the experimental group. Following the web-based education program, 48.3% of the experimental group were still exclusively breastfeeding at six months post-partum while only 38.3% of the control group were still exclusively breastfeeding. Results from this study suggest the effectiveness of web-based breastfeeding education on promoting and supporting breastfeeding. Thomas and Shaikh (2007) also found that women valued health information obtained on the internet because it empowered them to feel reassured and confident in their knowledge.

The effectiveness of online breastfeeding support has surfaced in the literature. Online breastfeeding support allows for breastfeeding support and education when a face to face interaction is not possible. Ahmed, Roumani, Szucs, Zhang, and King (2015) and Ahmed and Quzzani (2012) noted higher rates of breastfeeding have been identified due to online

breastfeeding support. Online breastfeeding support allows new parents to feel connected at all times to a support group. Ahmed et al. (2015) studied the effect of an interactive web-based program on breastfeeding rates and duration. The interactive web-based program allowed mothers to enter data, such as newborns wet diapers and any issues. The web-based program automatically sent feedback to the mother with tailored interventions. The researchers carried out a randomized controlled trial that was used to study mothers and the effect of an interactive web-based breastfeeding program on breastfeeding rates and duration. It was noted following the intervention, that members of the intervention group had higher rates of exclusive breastfeeding (Ahmed et al., 2015). In fact, by the end of the third month, 84% of the mothers in the intervention group were breastfeeding while 66% of the control group were breastfeeding (Ahmed et al., 2015). Ahmed and colleagues demonstrated the effectiveness of an interactive web-based breastfeeding intervention on maintaining communication and improving breastfeeding exclusivity and intensity. Ahmed and Quzzani (2012) also reviewed an interactive web-based breastfeeding program and looked at the feasibility, usability, and acceptability. The researchers used a prospective, descriptive, mixed-methods study to determine the merits of an interactive web-based breastfeeding monitoring program. During this study, the breastfeeding web-based monitoring was shown to be feasible, usable, and easy to use for mothers (Ahmed & Quzzani, 2012). The web-based monitoring system helped mothers recognize breastfeeding problems and allowed them to be interactive with other mothers and health care professionals. It became clear in the literature the effectiveness of the use of the internet in improving breastfeeding outcomes.

Imdad, Yakoob, and Bhutta (2011), Hannula, Kaunonen, and Tarkka (2008), and Haroon, Das, Salam, Imdad, and Bhutta (2013) determined in their systematic reviews the positive

influence of breastfeeding promotion on breastfeeding. Imdad et al. (2011) completed a systematic review on the effect of breastfeeding promotion interventions on breastfeeding rates. 268 studies were selected for this systematic review and 968 abstracts. Imdad and colleagues concluded that breastfeeding promotion interventions positively influenced breastfeeding exclusivity. Hannula et al. (2008) also completed a systematic review of professional support interventions for breastfeeding. The researchers analyzed 36 articles and found that intervention packages using various methods of education and support were most successful at increasing breastfeeding rates. Haroon et al. (2013) also found in their systematic review on breastfeeding promotion interventions that combined methods of education and support provided optimal results. Through the literature review it became easy to see how the media and electronic education is quickly becoming a popular mode of breastfeeding education and support.

Health Promotion Evaluation Framework

Completing evaluations is critical for any program. An evaluation ultimately assesses and improves program quality and determines the helpfulness of the program (McKenzie, Neiger, & Thackeray, 2013). In 1999, the Centers for Disease Control and Prevention (CDC) published an evaluation framework to assist people in evaluating public health programs (McKenzie et al., 2013). The framework was developed by a group of experts including evaluation experts and public health managers (CDC, 1999). The framework for program evaluation in public health is comprised of six steps: engaging stakeholders, describing the program, focusing the evaluation design, gathering credible evidence, justifying conclusions, and ensuring the sharing of the lessons learned during the evaluation (CDC, 1999). The purpose of a standardized program evaluation in public health is to improve evaluations and to overall improve the effectiveness of

evaluations. The evaluation framework serves as a beginning point in evaluations and can be tailored to suit a variety of evaluations (Mckenzie et al., 2013).

The CDC framework has been used to evaluate several programs and is popular among evaluators. For example, evaluations completed by Logan, Boutotte, Wilce, and Etkind (2003), Gallivan, Greenberg, and Brown (2008), and Mai, Correa, Kirby, Rosenberg, Oetros, and Fagen (2015) used the CDC framework. The CDC framework was used in all three evaluations and proved to be an effective guide for evaluation. For example, the CDC framework for program evaluation in public health was used to assess a tuberculosis contact investigation programs. Logan et al. (2003) developed a contact investigation self-evaluation tool using the CDC's framework program evaluation in public health as a guide. Logan and colleagues utilized three steps of the CDC's framework to develop the self-evaluation tool. The researchers concluded that the CDC's framework proved to be an effective methodology for beginning the assessment portion for evaluating the tuberculosis investigation programs. One of the key findings in this endeavor was that the authors found that using the stakeholders to help with planning the evaluation, as outlined in the CDC's framework, enabled them to develop evaluation questions that were based on their particular evaluation system. Logan and colleagues found the CDC framework to produce an evaluation instrument that was a product of collaboration with the stakeholders and was tailored to their specific needs. Gallivan et al. (2008) used the CDC's program evaluation framework to design an evaluation tool for a multifaceted public health education program on diabetes. Gallivan and colleagues used all six steps of the framework to design their program evaluation. Overall, Gallivan et al. (2008) found the CDC's framework for program evaluation to be an effective tool for structuring an evaluation that led to producing findings that enabled them to improve their program. The researchers found the framework

empowered them to develop a roadmap for asking key evaluation questions, engage key stakeholders, develop a logic model, and make a sound link between data and action. Mai et al. (2015) used the CDC framework to assess the practices of population-based birth defects surveillance programs. Mai et al. (2015) also concluded that the CDC's framework provided a useful tool in the evaluation of the program. The effectiveness and the usefulness of the CDC's framework was visible in the literature, however, the CDC framework has not been used to evaluate a specific breastfeeding program in the literature review findings.

Breastfeeding Evaluations

Various breastfeeding interventions and programs have been evaluated using other frameworks. Both McInnes, Love, and Stone (2000) and Huang, Kuo, Avery, Chen, Lin, and Gau (2006) completed breastfeeding program evaluations. A common evaluation method is the use of questionnaires. McInnes et al. (2000) completed an evaluation of a peer counselling intervention to increase breastfeeding. McInnes et al. (2000) completed a quasi-experimental evaluation. Data was completed using four self-completion surveys. Love et al. (2000) determined through their evaluation that the impact of a peer counselling intervention was short-lived and needed to be longer in duration. Huang et al. (2006) evaluated a prenatal web-based breastfeeding education program using a quasi-experimental design as well. A questionnaire was utilized as well to determine if the program was effective. Questionnaire questions were developed using the breastfeeding knowledge tool developed by the investigators, the breastfeeding attitude scale, breastfeeding rates, and demographic characteristics. Huang et al. (2006) determined that the web-based breastfeeding education was effective in increasing breastfeeding knowledge and attitudes. The authors do not use a specific evaluation framework

but rather used a questionnaire to measure the effects of the web-based breastfeeding education program.

Hartley and O'Connor (1996) and Merten, Dratvam, and Ackermann-Liebrich (2005) also completed breastfeeding program evaluations. Hartley and O'Connor (1996) completed an evaluation of the 'Best Start' breastfeeding education program. Hartley and colleagues completed a pre-intervention-post intervention study to determine the effectiveness of the breastfeeding education program. The outcome measures of the study included sociodemographic data and breastfeeding rates. Hartley and O'Connor (1996) concluded that the breastfeeding education program was successful in improving breastfeeding rates. Merten et al. (2005) evaluated a baby friendly hospital. Merten et al. (2005) completed a combined cross-sectional study and a retrospective cohort study to determine the effect of a baby friendly hospital on breastfeeding duration. A 24-hour dietary recall questionnaire was used along with a questionnaire. It was determined by Merten and colleagues that baby friendly hospitals increases breastfeeding duration. Again, it was shown the usefulness of a questionnaire on evaluating breastfeeding programs.

An evaluation toolkit for breastfeeding programs and projects was reviewed during the literature review. The "Evaluation Toolkit for Breastfeeding Programs and Projects" (Department of Health and Ageing, 2012) was developed by the Australian Government as part of their national breastfeeding strategy. The tool kit is specifically designed for breastfeeding programs and projects and acts as a guide for developing and completing evaluations. The evaluation toolkit provides a guide for developing evaluation questions, indicators, and data sources. The evaluation tool kit also provides a questionnaire template to guide survey questions. By reviewing various evaluations on breastfeeding programs it became clear that a common

method of evaluation was survey questionnaires. Mothers who received the breastfeeding education or support are used as primary sources of data in order to evaluate the effectiveness of that program. Therefore, a survey will be utilized for my practicum project in order to evaluate the current Breastfeeding Handbook. The evaluation toolkit will be used to develop my specific survey questions and help guide the evaluation process. I believe the evaluation tool kit will be appropriate for my evaluation of the Breastfeeding Handbook. The CDC framework will be used for the total evaluation. The CDC framework has not been frequently used in the past for evaluating breastfeeding programs, but due to the usefulness and nature of the framework, I will use it to guide my evaluation of the Breastfeeding Handbook. The CDC framework will guide the evaluation process as it involves the stakeholders in the process.

Key Gaps in the Literature

While completing the literature review, several gaps were identified in the literature. In many of the research articles reviewed, marginalized women were excluded from the study, such as teenage mothers and mothers of high risk babies. For example, in the study completed by Haung, Kuo, Avery, Chen, Lin, and Gau (2007) on evaluating the effects of a prenatal web-based breastfeeding education program, women of high-risk babies and women of babies in the Intensive Care Unit were excluded from the study. Likewise, the study completed by Ahmed, Roumani, Szucs, Zhang, and King (2016) on the effect of an interactive web-based monitoring system on breastfeeding excluded mothers eighteen years or younger and those with serious medical conditions. Similarly, Barnes, Pratt, Finlayson, Courtney, Pitt, and Knight (2008) excluded women with mental illness and substance abuse from their study about learning what new mothers would like to know. A key gap in the literature was the lack of marginalized women in the sample. Further research is needed including marginalized women to make the

results of the studies more generalizable. Perhaps a research study that studies marginalized women would be effective. It was also found that several of the studies were conducted in a single setting, which also decreases the generalizability of the results. Although these exclusions are necessary at times, studies involving these marginalized women would add valuable knowledge about the specific support and learning needs of these group of women.

Another key gap in the literature is the lack of long-term follow up. For example, in the study by Porteous, Kaufman, and Rush (2000) on the effect of individualized professional support, the follow up period was four weeks in duration. Correspondingly, Kronborg, Vaeth, Olsen, Iversen, and Harder (2007) completed a cluster-randomized community based trial on the effect of breastfeeding support. Olsen et al. (2007) had a six month follow-up period. Current breastfeeding recommendations, according to the World Health Organization (2016) are until the age of two and beyond. Further research is needed with longer follow up periods to better understand the impact of various breastfeeding interventions on breastfeeding duration. A longer follow-up period would ascertain how long the benefits from the various interventions are maintained.

Another crucial gap in the literature is the lack of consistent outcome measures. In the study completed by Artieta-Pinedo et al. (2012), on the effect of ante-natal education on breastfeeding outcomes, any amount of breastfeeding was considered an outcome measure. When mother's supplemented with formula along with breastfeeding it was considered a positive outcome measure. Similarly, Huang et al. (2007) considered successful breastfeeding to be both exclusive breastfeeding and mixed breastfeeding and infant formula. The inconsistent outcome measures also make the results less generalizable and less accurate. Exclusive breastfeeding according to the World Health Organization (2016), exclusive breastfeeding is when a baby gets

only breastmilk. The WHO (2016) recommends that exclusive breastfeeding continues until six months of age. Moreover, the results of Huang et al. (2007)'s study on the effects of a prenatal web-based breastfeeding education program may be skewed due to including both exclusive breastfeeding and mixed feeding as being successful.

While a wealth of literature is present on the effectiveness of various breastfeeding interventions, confusion remains on the superior choice for increasing breastfeeding exclusivity and duration. A key gap identified in the literature is lack of consensus regarding the best option for increasing breastfeeding rates and supporting new mothers. The question remains, how do new parents prefer to receive information and support on feeding their baby?

Summary of the Literature

The literature is full of research on barriers to breastfeeding and why some mother's choose not to breastfeed or discontinue breastfeeding prematurely. Reasons such as poor breastfeeding attitudes, breastfeeding difficulties, feelings of inadequate breastmilk, and feeling baby was 'too old' were frequently cited in the literature. These barriers identified show the importance of peer support, professional education/support, electronic communication, and booklets/pamphlets in removing barriers and enabling new mother's to continue in their breastfeeding experience. Peer support has been a proven source of breastfeeding assistance. Women report a positive experience when seeking support and education from peers and an increase in breastfeeding rates. Professional education and support has also been shown to increase breastfeeding awareness, education, and support for new mothers. Professional education and support has the ability to instill confidence in new mothers and empower them to breastfeed their child. While electronic education and support is relatively new on the radar compared to the other mechanisms of breastfeeding support, it is quickly becoming a popular

modality for new mothers seeking support and education. As Huang et al. (2007) mentioned, the internet as being a common method used for people acquiring health information. The World Wide Web is enabling new mother's to maintain communication with supportive and qualified people and allowing them to continue breastfeeding.

As evidenced by this detailed literature review, there is a wide selection of literature on breastfeeding interventions. Various research studies were present on barriers to breastfeeding and the effectiveness of peer support, professional support/education, and electronic communication for breastfeeding. While the effectiveness of various breastfeeding interventions were shown to be proven in the literature, confusion remains on the best option for breastfeeding support and education. In a systematic review completed by Harron, Das, Salam, Imdad, and Bhutta (2013) on breastfeeding promotion interventions, it was concluded that combined individual and group counselling was the superior mode of breastfeeding support and education. A synthesis of literature completed by McInnes and Chambers (2008) revealed that peer support was superior in breastfeeding interventions and mother's preferred social support over health service support. On the other hand, in a systematic review completed by Hannula, Kaunonen, and Tarkka (2008), interventions combining various methods of education and support were the most effective means to increase breastfeeding rates. It remains unknown the preferred method of new parents to receive breastfeeding support and education and the most effective means to increase overall breastfeeding rates. The effectiveness of printed material was questioned in the literature. Printed material alone is often not sufficient to improve breastfeeding initiation and duration. Hands-on instruction and support is also needed to improve breastfeeding rates and duration. Hence the need for the current Breastfeeding Handbook to be evaluated.

Implications for Advance Practice Nurses

Despite the vast amount of breastfeeding literature available and the current breastfeeding initiatives in place, NL continues to be the province with the lowest breastfeeding rates. This is an implication for Advance Practice Nurses (ANP) because ANP's are in the prime position to develop breastfeeding policies, educate the public on breastfeeding, and support new mothers in their breastfeeding experience. For example, Ahmed, Roumani, Szucs, Zhang, and King (2016) concluded in their research study that an interactive web-based breastfeeding intervention was a strategic intervention to increase breastfeeding exclusivity, intensity, and duration. An ANP could be involved in designing this interactive web-based breastfeeding intervention and developing policies surrounding the nursing role in this intervention. Craig and Dietsch (2010) recommended in their research study that nurses need to build confidence in breastfeeding women and allow them to successfully breastfeed. The literature supports the importance of continued professional support in increasing breastfeeding rates. ANP's, bedside nurses, and community nurses are often present in the ante-natal, intra-natal, and post-partum period and are in prime position to educate, support, and instill confidence in new mothers.

Some of the key gaps outlined previously can be considered implications for ANP's. Further research is needed that focuses on marginalized women, longer follow up periods, and more concise outcome measures. For example, in the research study completed by Porteous, Kaufman, and Rush (2000) on the effects of professional support on breastfeeding, they suggested further research be completed with increased follow-up time. ANP's could continue to complete research to assist in closing key gaps in the literature and continue to provide evidenced based care to new mothers who are breastfeeding. One of the key gaps in the literature identified is the lack of consensus regarding the superior choice of intervention in breastfeeding promotion and support. While a lot of breastfeeding interventions have been proven to be

effective, it remains unknown the preferred method of accessing breastfeeding information and support among new mothers. There remains confusion regarding the superior intervention to effectively transmit breastfeeding information and support to new mothers. As Hannula, Kaunonen, and Tarkka (2008) concluded, “The best way to support breastfeeding is difficult to define, as many methods can be useful” (p. 1141). For ANP’s, this opens up a window of opportunity to continue to research barriers to breastfeeding and the effectiveness of various interventions on breastfeeding rates. To continue to provide breastfeeding resources and support services of new mother’s, ANP’s must continue to complete research on effective modes of breastfeeding education and support. ANP’s must evaluate current breastfeeding education and support strategies to continue to improve the way breastfeeding information is disseminated and how breastfeeding mothers are supported.

Conclusion

An integrative literature summary of breastfeeding barriers and breastfeeding interventions has been presented. Recent literature pertaining to barriers to breastfeeding and the effectiveness of various breastfeeding interventions on breastfeeding rates have been discussed in great detail. The Australian Government tool entitled, “Framework for Program Evaluation in Public Health” was also briefed along with the key gaps discovered in the literature and the implications for ANP’s. The CDC framework for program evaluation was also discussed and how fitting it was for evaluating breastfeeding programs. It was concluded that many of the education and support services available to new mothers was effective in increasing breastfeeding rates. Through the identified gaps in the literature, it became evident the need for a practicum project that investigated the most effective way to transmit breastfeeding information and support. With an abundance of current literature on the effectiveness of various

breastfeeding interventions and numerous breastfeeding resources and programs currently available, it became apparent the need to evaluate the current Breastfeeding Handbook and determine if this mode of breastfeeding promotion and support is indeed pertinent and being used by new mothers. Being central to the healthcare system, nurses, along with ANP's, are in the prime position to assist with increasing breastfeeding rates through education, support, research, evaluation, and policy making.

References

- Ahluwalia, I.B., Morrow, B., & Hsia, J. (2005). Why do women stop breastfeeding? Findings from the pregnancy risk assessment and monitoring system. *Pediatrics, 116*(6), 1408-1412. doi:10.1542/peds.2005.0013
- Ahmed, A.H., Roumani, A.M., Szucs, K., Zhang, L., & King, D. (2016). The effect of interactive web-based monitoring on breastfeeding exclusivity, intensity, and duration in healthy, term infants after hospital discharge. *Journal of Obstetric, Gynecologic and Neonatal Nursing, 45*, 143-154. Retrieved from <http://dx.doi.org/10.1016/j.jogn.2015.12.001>
- Ahmed, A.H., & Quizzani, M. (2012). Interactive web-based breastfeeding monitoring: feasibility, usability, and acceptability. *Journal of Human Lactation, 28*(4), 468-475. doi:10.1177/0890334412451869
- Arora, S., McJunkin, C., Wehrer, J. & Kuhn, P. (2000). Major factors influencing breastfeeding rates: Mothers perception of father's attitude and milk supply. *Pediatrics, 104*(3). Retrieved from <http://pediatrics.aappublications.org/content/106/5/e67.full.html>
- Artieta-Pinedo, I., Paz-Pascual, P., Grandes, G., Bacigalupe, A., Payo, J., & Montoya, I. (2012). Antenatal education and breastfeeding in a cohort of primiparas. *Journal of Advanced Nursing, 69*(7), 1607-1617. doi:10.1111/jan.12022
- Australian Government (2012). *Evaluation Toolkit for Breastfeeding Programs and Projects*.

- Department of Health and Aging. Retrieved from
[http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/\\$File/Evaluation-Toolkit.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/$File/Evaluation-Toolkit.pdf)
- Baby Friendly Newfoundland & Labrador. (2014). Fast facts. Did you know?. Retrieved from
<http://www.babyfriendlynl.ca/breastfeeding-information/fast-facts/>
- Barnes, M., Pratt, J., Finlayson, K., Courtney, M., Pitt, B., & Knight, C. (2008). Learning about baby: What new mothers would like to know. *The Journal of Perinatal Education*, 17(3), 33-41. doi:10.1624/105812408X329584
- Camurdan, A.D., Ihan, M.N., Beyazova, U., Sagin, F., Vatandas, N., & Eminoglu, S. (2008). How to achieve long term breastfeeding: factors associated with early discontinuation. *Public Health Nutrition*, 11(11), 1173-1179. doi:10.1017/S1368980008001742
- Centers for Disease Control and Prevention. (2013). *Strategies to Prevent Obesity and Other Chronic Disease: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies*. Atlanta: U.S. Department of Health and Human Services. Retrieved from
<http://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>
- Chapman, D.J., Damino, G., Young, S., & Esamilla, R. P. (2004). Effectiveness of breastfeeding peer counseling in a low income, predominately Latina population. *Archives Pediatric Medicine*, 158, 897-902.
- Craig, H.J., & Dietsch, E. (2010). 'Too scary to think about': first time mothers' perceptions of

- the usefulness of antenatal breastfeeding education. *Women and Birth*, 23, 160-165.
doi:10.1016/j.wombi.2010.04.004
- Curro, V., Lanni, R., Scipione, F., Grimaldi, V., & Mastroiacovo, P. (1997). Randomised controlled trial assessing the effectiveness of a booklet on the duration of breast feeding. *Archives of Disease in Childhood*, 76, 500-504
- Dennis, C.L., Hodnett, E., Gallop, R., & Chalmers, B. (2002). The effect of peer support on breast-feeding duration among primiparous women: A randomized controlled trial. *CMAJ*, 166(1), 21-8. Retrieved from <http://www.ncbi.nlm.nih.gov.qe2a-proxy.mun.ca/pmc/articles/PMC99222/>
- Gallivam, J., Greenberg, R., & Brown, C. (2008). The national diabetes education program evaluation framework: How to design an evaluation of a multifaceted public health education program. *Preventing Chronic Disease*, 5(4). Retrieved from http://www.cdc.gov/pcd/issues/2008/oct/07_0181.htm
- Hannula, L., Kaunonen, M., & Tarkka, M.T. (2008). A systematic review of professional support interventions breastfeeding. *Journal of Clinical Nursing*, 17, 1132-1143.
doi:10.1111/j.1365-2702.2007.02239.x
- Hauck, Y.L. & Dimmock, J.E. (1994). Evaluation of an information booklet on breastfeeding duration: a clinical trial. *Journal of Advanced Nursing*, 20, 836-843
- Haroon, S., Das, J.K., Salam, R.A., Imdad, A., & Bhutta, Z.A. (2013). Breastfeeding promotion

- interventions and breastfeeding practices: A systematic review. *BioMed Central*, 20, 1-18. Retrieved from <http://www.biomedcentral.com/1471-2458/13/S3/S20>
- Huang, M.Z., Kuo, S.C., Avery, M.D., Chen, W., Lin, K.C., & Gau, M.L. (2007). Evaluating the effects of a prenatal web-based breastfeeding education programme in Taiwan. *Journal of Clinical Nursing*, 16, 1571-1579. doi:10.1111/j.1365-2702.2006.01843.x
- Imdad, A., Yakoob, M.Y., & Bhutta, A. (2011). Effect of breastfeeding promotion interventions on breastfeeding rates, with special focus on developing countries. *BMC Public Health*, 11, 1-8. Retrieved from <http://biomedcentral.com/1471-2458/11/S3/S24>
- Ingram, J., Rosser, J., & Jackson, D. (2004). Breastfeeding peer supporters and a community support group: Evaluating their effectiveness. *Maternal and Child Nutrition*, 1, 111-118.
- Kaunonen, M., Hannula, L., & Tarkka, M.T. (2012). A systematic review of peer support interventions for breastfeeding. *Journal of Clinical Nursing*, 21, 1943-1954. doi:10.1111/j.1365-2702.2012.0407.x
- Khanal, V., Lee, A.H., Karkee, R., & Binns, C.W. (2015). Postpartum breastfeeding promotion and duration of exclusive breastfeeding in Western Nepal. *Birth*, 42(4), 329-336. doi:10.1111/birth.12184
- Kronborg, H., Vaeth, M., Olsen, J., Iversen, L., & Harder, I. (2007). Effect of early postnatal breastfeeding support: A cluster-randomized community based trial. *Acta Paediatrica*, 96, 1064-1070. doi: 10.1111/j.1651-2227.2007.00341.x
- Labarere, J., Gelbert-Baudino, N., Ayrat, A.S., Duc, C., Berchotteau, M., Bouchon, N., ... Pons,

- F. (2005). Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventative visit: A prospective, randomized, open trial of 226 mother-infant pairs. *Pediatrics*, *115*(2), 139-146. Retrieved from <http://www.pediatrics.org/cgi/doi/10.1542/peds.2004-1362>
- Li, R., Fein, S.B., Chen, J., & Grummer-Strawn. (2008). Why mothers stop breastfeeding: Mothers' self-reported reasons for stopping during the first year. *Pediatrics*, *122*, 69-75. doi:10.1542/peds.2008-1315i
- Logan, S., Boutotte, J., Wilce, M., Etkind, S. (2003). Using the CDC framework for program evaluation in public health to assess tuberculosis contact investigation programs. *The International Journal of Tuberculosis and Lung Disease*, *7*(12), 375-383.
- Labarere, J., Gelbert-Baudino, N., Ayrat, A.S., Duc, C., Berchotteau, M., Bouchon, N., ... Pons, F. (2005). Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventative visit: A prospective, randomized, open trial of 226 mother-infant pairs. *Pediatrics*, *115*(2), 139-146. Retrieved from <http://www.pediatrics.org/cgi/doi/10.1542/peds.2004-1362>
- Mai, C.T., Correa, A., Kirby, R.S., Rosenberg, D., Petros, M., & Fagen. M.C. (2015). Assessing the practices of population-based birth defects surveillance programs using the CDC framework, 2012. *Public Health Reports*, *130*(6), 722-30.
- Merten, S., Dratva, J., & Ackermann-Liebrich, U. (2005). Do baby friendly hospitals influence breastfeeding duration on a national level? *Pediatrics*, *116*. doi:10.1542/peds.2005-0537

- McInnes, R.J. & Chambers, J.A. (2008). Supporting breastfeeding mothers: Qualitative synthesis. *Journal of Advanced Nursing*, 62(4), 407-427.
doi:10.1111/j.1365.2648.2008.04618.x
- McKenzie, J.F., Neiger, B.L., & Thackeray, R. (2013). *Planning, Implementing, and Evaluating Health Promotion Programs: A Primer*. (6th e). Toronto: Pearson Benjamin Cummings.
- McInnes, R.J., Love, J.G., & Stone, D.H. (2000). Evaluation of a community-based intervention to increase breastfeeding prevalence. *Journal of Public Health Medicine*, 22, 138-145.
- Odom, E.C., Scanlon, K.S., Perrine, C.G. & Grummer-Strawn, L. Reasons for earlier than desired cessation of breastfeeding. *Pediatrics*, 131(3), 726-32. doi:10.1542/peds.2012-1295
- Pannu, P.K., Giglia, R.C., Binns, C.W., Scott, J.A., & Oddy, W.H. (2011). The effectiveness of health promotion materials and activities on breastfeeding outcomes. *Acta Paediatrica*, 100, 534-537. doi:10.1111/j.1651-2227.2010.02105.x
- Porteous, R., Kaufman, K., Rush, J. (2000). The effect of individualized professional support on duration of breastfeeding: a randomized controlled trial. *Journal of Human Lactation*, 16(4), 303-308. doi:10.1177/089033440001600406
- Scott, J.A., Binns, C.W., Oddy, W.H., & Graham, K.I. (2006). Predictors of breastfeeding duration: Evidence from a cohort study. *Pediatrics*, 117(4), 646-655.
doi:10.1542/peds.2005-1991
- Statistics Canada (2016). Breastfeeding trends in Canada. Retrieved from

<http://www.statcan.gc.ca/pub/82-624-x/2013001/article/11879-eng.htm>

Thomas, J.R., & Skaikh, U. (2007). Electronic communication with patients for breastfeeding

support. *Journal of Human Lactation*, 23(3), 275-279. doi: 10.1177/0890334407303903

Wong, K.L., Fong, D.Y.T., Yin, I.L.Y., Chu, S., and Tarrant, M. (2014). Antenatal education to

increase exclusive breastfeeding. *Obstetrics & Gynecology*, 124(5), 961-8. doi:

10.1097/AOG.0000000000000481

World Health Organization (2016). Exclusive breastfeeding. Retrieved from

http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/

Glossary

Category	Definition
Exclusive Breastfeeding	Receiving only breastmilk for the first six months of life. No other food or drink is introduced in the first six months of life.
Expressing Breastmilk	Using an artificial means (breast pump or manually expressing) to remove and store milk.
Mixed Feeding	The use of both breast milk and infant formula.
Tandem Breastfeeding	Feeding two babies at the same time. Can be the feeding of twins or a baby with an older sibling.
Extended Breastfeeding	Breastfeeding that exceeds the two year mark.
Shared Breastfeeding	A breastfeeding mother breastfeeds another mother's child.
Weaning	Reducing the feeding of breastmilk to the baby.

Lobizone. (2015). Types of Breastfeeding. Retrieved from <http://lobizone.com/medical-science/nursing-science/types-of-breastfeeding>

Appendix B: Literature Summary Tables

Studies Examining Electronic/Social Media Interventions on Breastfeeding Initiation and Duration

<u>Author/Date</u>	<u>Study Design/Sampling /Setting Characteristics</u>	<u>Variables and Measures/Reliability/ Validity</u>	<u>Relevant Outcomes</u>	<u>Limitations</u>
Ahmed, Roumani, Szucs, Zhang, and King (2016)	<p>Objective: To determine if a web-based interactive breastfeeding monitoring system improved breastfeeding rates.</p> <ul style="list-style-type: none"> -Two-arm, randomized controlled trial. -Three hospitals -141 mother-newborn dyads -Control n= 57 -Intervention= 49 	<p>Follow-up online survey was used at 1, 2, and 3 months to assess outcomes (12 questions)</p> <p>Reliability: Survey questions were based on an evidence-based literature review.</p> <p>Validity: Validity was assessed by a panel of four lactation specialist using the content validity index.</p>	<p>-The interactive web-based breastfeeding monitoring intervention had a positive effect on breastfeeding</p> <p>-At 1, 2 and 3 months, the percentage of those in the intervention group exclusive breastfeeding were 63%, 63%, and 55% respectively compared with 40%, 19%, and 19% respectively in the control group.</p>	<p>-Hispanic and Asian populations were not well represented, limiting the generalizability of the study.</p> <ul style="list-style-type: none"> -Study had a high drop-out rate. -Short-follow up period -Self reporting

<p>Huang et al. (2007)</p>	<p>Objective: To evaluate a web-based breastfeeding education program.</p> <ul style="list-style-type: none"> -A quasi-experimental design -Large urban hospital -120 primigravida women -Control n= 60 -Intervention n= 60 	<p>-Questionnaires utilized</p> <p>Reliability: pilot testing was conducted to determine the clarity of the instruments</p> <p>Validity: Tools utilized were developed from reviewing the literature and in consultation with breastfeeding experts (The Breastfeeding Knowledge Tool and Breastfeeding Attitude Scale)</p>	<p>-Women in the experimental group had higher breastfeeding knowledge and more positive breastfeeding attitudes</p> <p>-Effective in increasing breastfeeding exclusivity</p>	<p>-Overall sample was small and from a single hospital setting</p> <p>-Exclusion of different races</p> <p>-Effects were only measured in a single, convenience sample.</p>
<p>Ahmed and Ouzzani (2012)</p>	<p>Objective: to understand the feasibility, usability, and acceptability of an interactive web-based monitoring system.</p> <ul style="list-style-type: none"> -Prospective, descriptive, mixed-methods study was conducted. -Conducted in 2 hospitals in the United States. 	<p>Validity: instruments used included a breastfeeding diary, system usability scale, and a perception survey.</p> <p>Reliability: the instruments used were not tested.</p>	<p>-The interactive web-based monitoring system was proven to be feasible, usable, and acceptable.</p> <p>-Mothers expressed their appreciation of the system.</p>	<p>-Attrition rate and missing data (14 mothers did not access the system).</p> <p>-Mothers who completed the survey were highly educated which lowers the generalizability of the results.</p>

	-Convenience sample of 50 mothers used.			
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Studies Examining the Effect of Peer Support on Breastfeeding Initiation and Duration

<u>Author/Date</u>	<u>Study Design/Sampling/Setting Characteristics</u>	<u>Variable and Measures/Reliability/Validity</u>	<u>Relevant Outcomes</u>	<u>Limitations</u>
Chapman, Damio, Young, and Perez-Escamilla (2004)	Objective: To evaluate the effectiveness of a breastfeeding peer counseling program -Randomized, prospective, controlled trial. -An urban hospital for a large population of low-income Latinas. -165 sample size -Participants were interviewed	-Interviewed monthly via telephone. Reliability: interview questions not tested. Validity: statistical analysis was completed by SPSS. Analysis was completed using an intention to treat basis.	- Significant relationship between peer support and breastfeeding was found. - Intervention group had 28% and 22% lower chance of not breastfeeding at 1 and 3 months compared to the control group.	-Study was not a double blind study. - Researchers could not rule out Hawthorne effect. - Understaffing
Ingram, Rosser, Jackson (2004)	Objective: To evaluate the effectiveness of a peer support intervention on breastfeeding.	-Questionnaires and focus groups used to determine the effectiveness of the intervention.	-Following the intervention, the area noted a 7% increase in	-No validity noted. -Small sample size.

	<p>-35 women completed questionnaires and attended focus groups follow a peer support group.</p> <p>-Questionnaires were sent to all 35 mothers who attended the support group.</p>	<p>Reliability: questionnaire was based on one used in a similar study.</p> <p>Validity: the questions or focus group questions were not tested.</p>	<p>breastfeeding rates.</p> <p>-Mothers enjoyed being able to talk about breastfeeding and having consistent breastfeeding advice available.</p>	
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Studies Examining the Effect of Professional Support and Education on Breastfeeding Initiation and Duration

<u>Author/Date</u>	<u>Study Design/Sampling/Setting Characteristics</u>	<u>Variable and Measures/Reliability/Validity</u>	<u>Relevant Outcomes</u>	<u>Limitations</u>
Artieta-Pinedo et al. (2012)	<p>Objective: To evaluate the effect of antenatal education sessions on breastfeeding rates.</p> <p>-A prospective cohort study.</p> <p>-Study was conducted in Bizkaia in a primary care center.</p> <p>-614 primiparas women</p>	<p>-Telephone interviews were used at 1, 3, 6, and 12 months to determine the effects of antenatal education.</p> <p>Reliability: the questionnaire used to measure has been validated for this population.</p>	<p>-Initially there was no difference between breastfeeding rates between the two groups.</p> <p>-In the first month, the risk of cessation if breastfeeding</p>	<p>-An outcome measure was “any breastfeeding” which meant combining exclusive and partial breastfeeding.</p> <p>-Observational nature of this study is a limitation</p>

	-Telephone interviews used for follow-up.	Validity: Cox proportional hazards regression models used	g was three times as high among people who did not attend the education session. -The risk of cessation of breastfeeding was similar between the two groups from one month onwards. -Antenatal education can be effective but longer term support and education is important.	-Large differences between the groups in terms of age, socioeconomic status, and education.
Kronborg, Vaeth, Iversen, and Harder (2007)	Objective: To evaluate the impact of a supportive intervention on breastfeeding duration. -A community based cluster randomized trial -Study was conducted in Western Denmark.	-Two questionnaires disturbed. One at 3 weeks after birth and another 5 months after birth. Reliability: Likert scale was used to determine the extent to which mothers agreed or disagreed with the statements.	-Mothers in the intervention group had 14% lower cessation rate. -Babies in the intervention group were breastfed more often, used fewer	-No standardized tool used. -The results of the study could be skewed due to a lack of standardized tool. -This weakens the validity of the study.

	<p>-Study included both urban and agricultural areas.</p> <p>-781 mothers in the intervention group and 816 mothers in the control group.</p> <p>-2 questionnaires distributed following the intervention.</p>	<p>Validity: Both questionnaires were reviewed by four experts.</p> <p>-pre-tested using 24 mothers.</p> <p>-No standardized tool was used</p>	<p>pacifiers, and their mother reported higher confidence.</p>	
<p>Pannu, Giglia, Binns, Scott, and Oddy (2011)</p>	<p>Objective: To evaluate the effectiveness of health promotion materials and education on breastfeeding outcomes.</p> <p>-12 month longitudinal study</p> <p>-Conducted in two public maternity hospitals in Western Australia.</p> <p>-Baseline questionnaire was used along with another questionnaire at 12 months postpartum.</p>	<p>-Questionnaires distributed at birth and 12 months postpartum.</p> <p>-Health promotion material included pamphlets of booklets, and slide shows.</p> <p>Validity: Univariate logistic regression analysis using APSS was used.</p> <p>Reliability: Questionnaire questions were not tested.</p>	<p>-Receiving pamphlets, group education lectures, and group demonstrations were associated with higher breastfeeding rates.</p> <p>-Mothers who had one to one consultation of a health care professional were 55% less likely to cease breastfeeding.</p>	<p>-The types of health promotion material and education was not defined.</p> <p>-No assessment of the quality of the health promotion materials.</p>
<p>Porteous, Kaufman, and Rush (2000)</p>	<p>Objective: To determine the effect of professional support on breastfeeding duration.</p> <p>-A randomized control trial.</p> <p>-51 women randomly assigned into two groups.</p>	<p>-Mothers and babies were assessed by a semi-structured evaluation form.</p> <p>Reliability: The Systematic Assessment of the Infant at Breast was used which was designed by Shrago and Bocar. (the reliability has not been tested)</p>	<p>-At 4 weeks post-partum 100% of the women in the intervention group were still breastfeeding compared to 68% in</p>	<p>-Small sample size.</p> <p>-Instruments validity and reliability has not been tested.</p> <p>-Short follow-up period.</p>

		Validity: The validity of the instrument has not been tested.	the control group. - Professional support can significantly improve breastfeeding duration.	
Labarere et al. (2004)	Objective: To determine the effectiveness of breastfeeding support from trained clinicians. -Prospective, randomized, parallel-group, open trial -231 mothers -Randomly assigned to either the control group or intervention group.	-Postal questionnaires used at 4 and 26 weeks. Reliability: primary outcome was the prevalence of exclusive breastfeeding (which was well defined in the study) Validity: t test was used and Fishers exact test.	-Mothers in the intervention group had 83.9% still breastfeeding and the control group had 71.9% - Breastfeeding support is effective.	-Only motivated clinicians were used in the study. -Observers were not blinded -Conducted in a single setting and focused on socioeconomically low-risk population. Results may not be generalizable.
Hauck and Dimmock (1994)	Objective: To evaluate an information booklet on breastfeeding duration. -A clinical trial tested the effectiveness of the booklet on breastfeeding duration. -150 participants -The intervention group received the	Reliability: Outcome measures were either breastfeeding or not breastfeeding Validity: Survival analysis was performed to compare the two groups.	-The breastfeeding booklet was found useful by 97% of the experimental group. -No significance difference in breastfeeding	-Sample bias (groups were not comparable for intention to breastfeed)

	booklet while the control group did not receive the booklet.		g duration between the control and experimental groups.	
Curro, Lanni, Scipione, Grimaldi, and Mastroiacovo (1997)	Objective: To test the efficacy of a breastfeeding information booklet on breastfeeding duration. -Randomized design -Intervention =103 -Control group= 97	-103 recruited into intervention group and given booklet and verbal counselling. -Structured interviews and telephone interviews were completed by the researchers who were unaware if they were interviewing the intervention or control group. Validity and Reliability: It does not specify how the interview questions were formulated.	-No statistical difference found between the two groups. -The information booklet alone does not increase the duration of breastfeeding.	-Study participants represented a small sample of women. -No known risk factors for shortening breastfeeding was present (none received commercial formula packages, breastfeeding baby at discharge, etc).
Barnes, Pratt, Finlayson, Courtney, Pitt, and Knight (2008)	Objective: Study aimed to identify the preparation and information needs of new mothers. -Study was completed in Brisbane, Australia. -Data was collected via a telephone survey (N=151) -Focus groups were also held (N=8). -Descriptive study	-Data was collected by telephone using a survey instrument at 3 months after their first visit to the clinic. Reliability: Survey questions were developed from a review of the literature and expert opinion. No specific survey instrument was listed. Validity: SPSS was used for analysis. -content analysis used	-The feeling of being overwhelmed and unprepared was a common theme. -Women felt it difficult to read the written information and gain an understanding	-Findings specific to one location. -No specific survey instrument used.

			ng of the essentials.	
Hartley and O'Connor (1996)	Objective: To compare the frequency of breastfeeding before and after a breastfeeding educational program was implemented. -Preintervention-postintervention trial design was used. -90 mother-infant pairs were used	-Sociodemographic data and breastfeeding rates were collected. -No reliability or validity mentioned.	-The educational intervention improved breastfeeding rates.	-No reliability or validity mentioned.

Studies that Investigate Predictors to Breastfeeding or Reasons for Breastfeeding Cessation

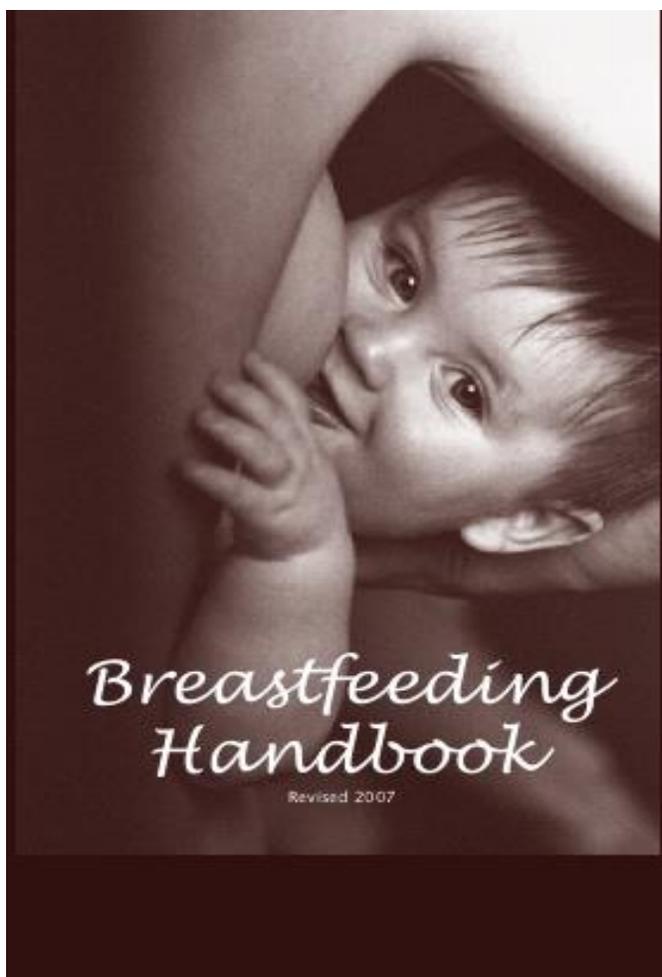
<u>Author/D ate</u>	<u>Study Design/Sampling/Set ting Characteristics</u>	<u>Variables and Measures/Reliability/Val idity</u>	<u>Relevant Outcomes</u>	<u>Limitations</u>
Scott, Binns, Oddy, Graham (2006)	Objective: To identify factors that are associated with breastfeeding duration. -Cohort study -2 maternity hospitals in Perth -587 women -Baseline questionnaire	-Baseline questionnaire completed before or shortly after discharge along with a follow up telephone interview at 4, 10, 16, 22, 32, 40, and 52 weeks postpartum. Reliability: Mother's attitude was measured using the Iowa Feeding Scale.	- Breastfeeding duration was positively associated with maternal attitudes towards breastfeeding.	-Overall good study. Large sample size with high reliability and validity.

	followed by a telephone interview.	<p>-This scale previously shown to be valid and reliable.</p> <p>Validity: Cox's proportional hazards model was used to identify factors that were associated with breastfeeding duration.</p>	<p>- Breastfeeding duration was negatively associated with breastfeeding difficulties, maternal smoking, use of a pacifier, and early return to work.</p>	
Ruowei, Fein, Chen, and Grummer-Strawn (2008)	<p>Objective: To determine reasons why women stop breastfeeding.</p> <p>-An analysis of self-reported data.</p> <p>-1323 mothers completed questionnaires and were asked to rate the importance of 32 various reasons for stopping breastfeeding.</p> <p>-Participants came from the Infant Feeding Practices Study II.</p>	<p>-32 reasons were listed in the questionnaire on a 4-point Likert scale.</p> <p>Reliability: exploratory factorial analysis used to determine factors.</p> <p>-Scree test was used to make a decision on what factors to include.</p> <p>Validity: Analysis was completed using SAS 9.2</p>	<p>-The study found that the main reasons for stopping breastfeeding was the idea that the infant was not satisfied by breastmilk, concerns regarding lactation, baby biting, perception that baby was losing interest, and baby began to wean.</p> <p>-Study highlights the importance of</p>	<p>-Sample size was predominantly white and middle class women making the results less generalizable.</p> <p>-The 32 factors listed may not include every reason for discontinuation.</p> <p>-Close-ended questions did not leave room for exploration of mothers concerns.</p>

			removing existing barriers to breastfeeding.	
Camurdan, Iihan, Beyazova, Sahin, Vatandas, and Eminoglu (2007)	<p>Objective: To determine factors associated with stopping of breastfeeding.</p> <p>-A descriptive cross-sectional study.</p> <p>-1230 mothers who stopped breastfeeding were asked to fill out a questionnaire about the reasons they discontinued breastfeeding.</p> <p>-Study was performed at Gazi University Hospital</p>	<p>-Questionnaires regarding the discontinuation process were given to the women.</p> <p>Validity: T test, ANOVA, the X2 test, and logistic regression analysis were performed to assess the relationship between predictors on breastfeeding.</p> <p>Reliability: It does not say if questionnaire questions were tested.</p>	<p>-Reasons given for discontinuing breastfeeding were not having a plan, concerns regarding the sufficiency of breast milk, baby's refusal to eat solid foods, and the mother's perception that the baby was too old.</p> <p>-Shows the importance of support of education in breastfeeding.</p>	<p>-Only included mothers who attended the clinic who had stopped breastfeeding at least 15 days prior to the appointment.</p> <p>-Survey questions were not tested.</p> <p>-Factors such as family size, smoking, and BMI were not taken into consideration.</p>

Appendix C: Questionnaire

Evaluation of the Breastfeeding Handbook: How do you prefer to Receive Information on
Feeding your Baby?



Are you older than 19?

Are you a parent of a 2 month old, 4 month old, or 6 month old baby?

Were you give the Provincial Breastfeeding Handbook?

I am doing an evaluation of the Provincial Breastfeeding Handbook to improve the effectiveness of the handbook.

Please consider completing a questionnaire about the Provincial Breastfeeding Handbook



Mallory Saunders, BN, RN

Master of Nursing Student

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Tel: (709)-693-4369

Evaluation of the Provincial Breastfeeding Handbook: How do you prefer to receive information on feeding your baby?

1. Did you use the Provincial Breastfeeding Handbook?
 - a. Yes
 - b. No

2. If yes, what were you given?
 - a. A paper copy
 - b. A link to the electronic copy

3. If you have a paper copy of the Provincial Breastfeeding Handbook, when did you receive it? (Please circle which one applies)
 - a. During prenatal class
 - b. At your Doctor's office
 - c. In the hospital when your baby was born
 - d. During a home visit by the Public Health Nurse after your baby was born?
 - e. Other

 - f. I did not receive a paper copy

4. If you were provided with the link to an electronic copy of the Provincial Breastfeeding Handbook, who provided it to you?
 - a. Hospital nurse
 - b. Discharge/Liaison Nurse
 - c. Public health nurse
 - d. Friend or family member
 - e. Doctor
 - f. Found it online myself

- g. I was not given or did not find the link
 - h. Other
-
-
-
5. Did you find the information you wanted in the Provincial Breastfeeding Handbook?
- a. Yes
 - b. No
6. Using the following scale, how helpful was the Provincial Breastfeeding Handbook to you?
- a. Very helpful
 - b. Somewhat helpful
 - c. Neither helpful nor unhelpful
 - d. Not very helpful
 - e. Not helpful at all
 - f. Please comment
-
-
-
7. What other sources provided information or advice to you on breastfeeding? (Please circle as many as you need)
- a. Internet
 - b. Baby Friendly Council of NL
 - c. Online support groups
 - d. Social Media (i.e. Facebook group)
 - e. Other pamphlets from your Health Care Providers
 - f. Friend or Family Member
 - g. Health Care Providers (i.e. Nurses, physicians, Public Health Nurses)
 - h. Other
-
-
-
8. Out of the other sources you have identified, how helpful was the source to you?
- a. Very helpful
 - b. Somewhat helpful
 - c. Neither helpful nor unhelpful

- d. Not very helpful
- e. Not helpful at all
- f. Please comment

9. How important was the Provincial Breastfeeding Handbook in assisting your decisions about breastfeeding?

- a. Very important
- b. Somewhat important
- c. Neither important nor unimportant
- d. Not very important
- e. Not at all important

10. From your experience, if you could suggest one change to improve the way breastfeeding information and advice is provided to parents in NL, what would it be?

11. How do you prefer to receive breastfeeding information? (Please circle all that apply)

- a. Electronic copy of educational materials (i.e. Information on the internet)
- b. Paper copy of educational materials
- c. Online discussion and support (i.e. Interactive support)
- d. Website
- e. Resource on Mobile device
- f. Social media
- g. Friends or family
- h. Information directly from Nurses
- i. Other _____

12. If the Provincial Breastfeeding Handbook was only available online, would you access it?

- a. Yes
- b. No

13. If yes to the above question, what format would you like to access the Provincial Breastfeeding Handbook online?
- PDF
 - Interactive website
 - Mobile device (i.e. app)
14. How is your infant currently being fed? (Please circle all that apply)
- Breastmilk from the breast
 - Expressed breastmilk
 - Infant formula
 - Water
 - Other drinks _____
 - Solid foods
 - Other _____
15. How old is your baby? _____
16. Have you breastfed before? _____
17. What part of the Avalon Peninsula are you from?
- Urban (Living in the city)
 - Rural (Living outside the city)
18. What is your age range?
- 19-25 years
 - 26-30 years
 - 31-35 years
 - 36-40 years
 - 41-45 years
 - 46-50 years

Appendix D: HREA Screening Tool

Health Research Ethics Authority Screening Tool

	Question	Yes	No
1.	Is the project funded by, or being submitted to, a research funding agency for a research grant or award that requires research ethics review	<input type="checkbox"/>	<input checked="" type="checkbox"/>
2.	Are there any local policies which require this project to undergo review by a Research Ethics Board?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
	<p>IF YES to either of the above, the project should be submitted to a Research Ethics Board.</p> <p>IF NO to both questions, continue to complete the checklist.</p>	<input type="checkbox"/>	<input type="checkbox"/>
3.	Is the primary purpose of the project to contribute to the growing body of knowledge regarding health and/or health systems that are generally accessible through academic literature?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
4.	Is the project designed to answer a specific research question or to test an explicit hypothesis?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
5.	Does the project involve a comparison of multiple sites, control sites, and/or control groups?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
6.	Is the project design and methodology adequate to support generalizations that go beyond the particular population the sample is being drawn from?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
7.	Does the project impose any additional burdens on participants beyond what would be expected through a typically expected course of care or role expectations?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
LINE A: SUBTOTAL Questions 3 through 7 = (Count the # of Yes responses)		0	
8.	Are many of the participants in the project also likely to be among those who might potentially benefit from the result of the project as it proceeds?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
9.	Is the project intended to define a best practice within your organization or practice?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
10.	Would the project still be done at your site, even if there were no opportunity to publish the results or if the results might not be applicable anywhere else?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11.	Does the statement of purpose of the project refer explicitly to the features of a particular program,	<input checked="" type="checkbox"/>	<input type="checkbox"/>

	Organization, or region, rather than using more general terminology such as rural vs. urban populations?		
12.	Is the current project part of a continuous process of gathering or monitoring data within an organization?		*
LINE B: SUBTOTAL Questions 8 through 12 = (Count the # of Yes responses)		2	
SUMMARY			
See Interpretation Below: HIGHLIGHT THE APPLICABLE ITEM			

Interpretation:

- If the sum of Line A is greater than Line B, the most probable purpose is **research**. The project should be submitted to an REB.
- If the sum of Line B is greater than Line A, the most probable purpose is **quality/evaluation**. Proceed with locally relevant process for ethics review (may not necessarily involve an REB).
- If the sums are equal, seek a second opinion to further explore whether the project should be classified as Research or as Quality and Evaluation.

These guidelines are used at Memorial University of Newfoundland and were adapted from ALBERTA RESEARCH ETHICS COMMUNITY CONSENSUS INITIATIVE (ARECCI). Further information can be found at: <http://www.hrea.ca/Ethics-Review-Required.aspx>.

Appendix E: HREA Letter

Researcher Portal File #: 20170475

Thank you for your application HREB # 2016.196. You should provide this number on all future correspondence regarding this application. Please be sure to read this email carefully. This application has been screened and this project appears to be program evaluation and as such does not require HREB review. You indicated in the research proposal that you completed the Ethics Application Screening Tool which gave the same advice. I am unsure why this application was submitted for review. Please clarify.

Thank you,

Joan Dalton

Secretary

Health Research Ethics Board, Non-Clinical Trials

95 Bonaventure Avenue, Suite 200

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Office Hours: 8:30 a.m. – 4:30 p.m. (NL TIME) Monday-Friday

Appendix F: Consultation Report

In recent years, an abundance of breastfeeding education materials, support, and education has surfaced. Despite the efforts to improve breastfeeding rates, Newfoundland and Labrador has the lowest rates in Canada (BabyFriendly NL, 2014). Specifically, the provincial “Breastfeeding Handbook” (Go Healthy, Baby Friendly NL, and Government of Newfoundland and Labrador, 2016) was developed to provide mothers with a comprehensive guide to start breastfeeding and information to continue breastfeeding. It remains unknown if the “Breastfeeding Handbook” is the most beneficial method to transmit breastfeeding education to new parents in Newfoundland and Labrador. This practicum project will be determining the effectiveness of the “Breastfeeding Handbook” and determining if it is the best mode of transmitting breastfeeding education. My evaluation of the provincial Breastfeeding Handbook will be guided by the CDC Framework for Program Evaluation in Public Health. In order for Newfoundland and Labrador to continue to provide effective breastfeeding education and support, the current provincial Breastfeeding Handbook needs to be evaluated. Many stakeholders play an important component in the provision of breastfeeding promotion, support, and education. According to the Center for Disease Control and Prevention (1999), the evaluation cycle begins by engaging the stakeholders. By partnering with stakeholders, a sound evaluation plan can be assembled that answers key questions. This consultation plan will include, specific objectives for consultation and evaluation, the setting for the evaluation, participant sample details, a stakeholders report, data collection methods, data management and analysis techniques, and ethical considerations.

Stakeholders

When deciding on a practicum project I knew I wanted to focus on the area of breastfeeding but an exact practicum project was not clear. I wanted to do a project that would

have an impact on breastfeeding in our province. Contact was made with Janet Murphy-Goodridge, a newly retired Provincial Breastfeeding Consultant, via email and a phone call was arranged. A discussion of various options took place and a meeting was scheduled. On April 22, 2016 a meeting was held at Janet Murphy-Goodridge's house. Along with Janet Murphy-Goodridge, Janine Woodrow, a Registered Dietitian and chair member of Baby Friendly NL was also in attendance. At the meeting it was noted that many breastfeeding handbooks, pamphlets, and breastfeeding information was already available to the general public. It was noted that there is a need to evaluate the current provincial Breastfeeding Handbook. The provincial Breastfeeding Handbook is a costly endeavour and it is unknown if the handbook is being utilized by new parents. After this meeting and discovering the need for an evaluation of the provincial Breastfeeding Handbook, I decided to evaluate the handbook for my practicum project. I set out to discover how new parents preferred to receive information on feeding their baby and if the handbook was being used in the Eastern Health Regional Health Authority.

On June 14, 2016 a meeting was held at the Perinatal Offices of Eastern Health between myself, Janine Woodrow (Baby Friendly NL Council) and Lorraine Burrage, RN (Coordinator of Perinatal Program, NL) to discuss possible survey questions. A discussion occurred surrounding the purpose of the provincial Breastfeeding Handbook and what questions would accurately answer our evaluation questions. Other stake holders contacted in the consultation were Janet Murphy-Goodridge and Clare Bessel. Janet Murphy-Goodridge provided a wealth of knowledge on the need for the provincial Breastfeeding Handbook to be evaluated. Clare Bessel, Provincial Educator for obstetrics also played a key role in determining the breastfeeding needs in the province of Newfoundland and Labrador. Lisa Pittman, Regional Lactation Consultant will also be a key stakeholder. Lisa will assist me with contacting Public Health Managers. Other

stakeholders will be Public Health Nurses who will assist me with recruitment for the questionnaire. Janine Woodrow, who is a chair member of the BabyFriendly NL council and Heidi Boyd, Health Promotion Consultant gave me feedback on the questionnaire prior to finalizing it.

Specific Goals for Consultations and Evaluations

Consultation Goals:

- (1) To determine a present need in breastfeeding support and promotion (Baby Friendly NL determined the need for the evaluation of the provincial Breastfeeding Handbook)
- (2) To produce expert advice about the provincial Breastfeeding Handbook and how it is distributed and used in the Eastern Health region.
- (3) To assist with developing survey questions that they would like asked to parents who have used the provincial Breastfeeding Handbook.
- (4) To determine original goals and expected outcomes of the provincial Breastfeeding Handbook prior to developing the questionnaire.
- (5) To determine the outcomes for the evaluation, according to the stake holders
- (6) To help focus the evaluation questions so that necessary data is collected

Evaluation Goals

- (1) To determine the effectiveness of the provincial Breastfeeding Handbook in supporting breastfeeding women.
- (2) Develop a questionnaire to evaluate the provincial Breastfeeding Handbook.
- (3) To carry out the questionnaire beginning in July 2016.

- (4) To determine if the provincial Breastfeeding Handbook is the most effective way to transmit breastfeeding information.
- (5) To determine the preferred method of receiving information of new parents when it comes to feeding their baby.

Setting and Participants

The setting will be Eastern Health. The participants will involve parents. In consultation with the Public Health clinics in Eastern Health, the questionnaire will be distributed to parents at the 2 month, 4 month, and 6 month check-up. Inclusion criteria will be: over the age of 19 years and English speaking. Exclusion criteria will be: under the age of 19 years. Convenience sampling will be used to recruit parents to complete the survey. A convenience sample, or volunteer sample, is an easy and efficient way to recruit individuals for various studies (Polit & Beck, 2012). Convenience sampling will be used for approximately one month. Since this project is a quantitative study, a good participant number will be needed. Recruiting for approximately one to two months will be sufficient to obtain an adequate number of participants to enable an understanding the effectiveness of the provincial Breastfeeding Handbook and if it is being utilized by parents. This will allow the illumination of patterns and give an in-depth understanding of the usefulness of the handbook. By recruiting for one to two months, I am hoping common themes will emerge in the data analysis phase. A letter of information sheet can be found in Appendix A. Appendix B is a letter to the parents explaining the survey.

Data Collection

Primary data will be collected using a participant survey in the form of a questionnaire, which can be located in Appendix C. The questionnaire will be offered at the 2 month, 4 month, and 6 month check-up to parents who are above the age of 19 years. The questionnaire will be

given to Public Health Nurses in Eastern Health in both the rural and urban locations. A copy of the letter of information that will be given to the Public Health Nurses can be found in Appendix D. While the parents are waiting for the 15 minutes following immunizations, the questionnaire will be given to the parents to complete. The survey will then be collected by the Public Health Nurse and sent to myself. The Australian Government (2012) developed an “Evaluation Toolkit for Breastfeeding Programs and Projects” which will be used along with expert advice from the Perinatal Program stakeholders to develop the questionnaire. The evaluation toolkit will provide a guide for developing the questionnaire and the stakeholders at the Perinatal Program will ensure the questionnaire asks appropriate questions to answer the research question. A Likert scale will be utilized along with open and closed ended questions.

Data Management and Analysis

The surveys will be kept in a locked cabinet at the Public Health offices and once given to myself, I will keep them stored in a locked cabinet at my home. Data will be managed using a computer. The program called “Statistical Package for the Social Sciences” (SPSS) will be utilized to assist with analysis of the data collected. Data will also be scrutinized using basic summary statistics. The sections where participants are encouraged to make comment will be analysed for relevant themes. Data will also be scrutinized by myself using basic statistics. A final report following the data collection data analysis will be composed. This will be a part of the practicum final report and a copy will be given to Baby Friendly NL.

Ethical Considerations

The “Health Research Ethics Authority Screening Tool” was used to determine if ethical approval was necessary (Appendix D). It was determined using this tool that the project does not

need to be submitted to the HREA, although one was submitted. The Research Proposal Approval Committee (RPAC) was also contacted on June 29th, 2016 and it was confirmed that no ethics approval would not be necessary to do this practicum project. A subsequent letter from HREA reaffirmed that (Appendix E). It was determined that this project was more of a quality assurance project rather than a research project. Ethical concerns will be privacy of patient information and ensuring that the participants responses are keep anonymous. Parents will be asked not to mark their name on the questionnaire.

Conclusion

A brief overview of the practicum consultations and evaluation plan have been briefed. Objectives specific to the evaluation plan were discussed along with the setting, sample, data collection plans, data management, and ethical considerations. The results from my research study will influence the Perinatal Program of NL and how they will continue to distribute breastfeeding information and support. My study will determine if the current hard copy of the “Breastfeeding Handbook” is being utilized and viewed as an effective mode of transmitting breastfeeding information by parents. By consulting with key stakeholders in the Perinatal Program and the Baby Friendly NL team, the aim is to accurately answer the research question and provide them with influential data that will assist them in continuing to provide breastfeeding information and support in the province.

References

Baby Friendly Newfoundland & Labrador. (2014). Fast facts. Did you know?. Retrieved from

<http://www.babyfriendlynl.ca/breastfeeding-information/fast-facts/>

Centers for Disease Control and Prevention. (2013). The CDC Guide to Strategies to Support

Breastfeeding Mothers and Babies. Retrieved from

<http://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>

Go Healthy, Baby Friendly NL, and Government of Newfoundland and Labrador. (2016).

Breastfeeding handbook. Retrieved from http://www.babyfriendlynl.ca/wp-content/uploads/2014/09/BH_Handbook_2016-web.pdf

Polit, D.F., & Beck, C.T. (2012). *Nursing research. Generating and assessing evidence for*

nursing practice. Philadelphia: Lippincott Williams & Wilkins

Australian Government. (2012). Evaluation Toolkit for Breastfeeding Programs and Projects.

Retrieved from

[http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/\\$File/Evaluation-Toolkit.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/$File/Evaluation-Toolkit.pdf)

Appendix G: Evaluation Report

Executive Summary

Many resources currently exist for new parents on infant feeding. New parents are given resources during the pre-natal, intra-natal, and post-natal period that offer them information on infant feeding. One of the vital resources given to new parents in Newfoundland and Labrador is the Provincial “Breastfeeding Handbook” (Go Healthy, Baby Friendly NL, & Government of Newfoundland and Labrador, 2013). This detailed handbook provides information to parents on getting ready to breastfeed, starting to breastfeed, early breastfeeding concerns, being successful in continuing to breastfeed, and caring for yourself during breastfeeding. There has not been an evaluation of the Provincial Breastfeeding Handbook to date. The effectiveness of paper copy educational materials is not supported in the literature (Lumbiganon, Martis, Laopaiboon, Festin, Ho, & Hakimi, 2012), yet the need for breastfeeding education and support has been reiterated for many years (Labarere et al., 2015). The Centers for Disease Control and Prevention Framework for Program Evaluation in Public Health (1999) was used to guide the evaluation of the Provincial Breastfeeding Handbook. In order to evaluate the handbook, an integrative literature review of the various methods of breastfeeding support, education, and evaluations was completed. Following the literature review and consultations with the Perinatal Program of Eastern Health and Baby-Friendly Newfoundland and Labrador, a questionnaire was developed to evaluate the Provincial Breastfeeding Handbook, determine how new parents prefer to receive information on feeding their newborn, and to establish if the handbook was being utilized in the Eastern Health Regional Health Authority. The questionnaire was distributed in the summer of 2016 in both Rural and Urban Eastern Health regions. Questionnaires were completed by parents at the two month, four month, and six month well child check-up with a Public Health Nurse. Questionnaire results indicated that while paper copies of breastfeeding educational material are

still highly valued, the majority of parents would access online educational material if provided a link. The bulk of parents agreed they did use the handbook and found it very helpful. The questionnaire results highlighted the importance of direct education and support from Health Care Providers, such as Public Health Nurses. Based on the questionnaire results, the continued use of the Provincial Breastfeeding Handbook along with the incorporation of electronic breastfeeding education and support is recommended.

Introduction

The benefits of breastfeeding for both baby and mother are well known, yet Newfoundland and Labrador (NL) has the lowest breastfeeding rates in all of Canada (Baby Friendly NL, 2014). While seventy percent of mothers in NL initiate breastfeeding in the hospital, only fifteen percent of NL women exclusively breastfeed for the first six months (Baby Friendly NL, 2014). The literature is saturated with evidence of the benefits of breastfeeding and the World Health Organization (2016) strongly recommends breastfeeding exclusively for the first six months of life with continued breastfeeding along with other foods until the age of two years and beyond. Eastern Health currently offers multiple support services, programs, and personal resources about breastfeeding. One such resource, the Breastfeeding Handbook distributed to new parents, highlights how to initiate breastfeeding, how to keep breastfeeding going, and attempts to answer questions and guide new mothers in the breastfeeding experience. The Provincial Breastfeeding Handbook attempts to provide a paper resource for parents on breastfeeding information. The Breastfeeding Handbook has yet to be evaluated, and so it remains unknown if the handbook is the most effective way to educate and support new mothers in their breastfeeding journey.

The purpose of this evaluation is to determine if the Provincial Breastfeeding Handbook is being used, if the handbook is effective, and to determine the preferred method for parents to receive information on feeding their baby. Public Health Nurses in both Rural and Urban Eastern Health were involved in disseminating a questionnaire (Appendix A) to parents at the two month, four month, and six month well child check-up. Following the completion of the evaluation, the Perinatal Program of Eastern Health, Baby Friendly NL, and Memorial

University School of Nursing will have access to the evaluation results. The results of this evaluation will possibly influence the way breastfeeding information is distributed to parents.

Methods/Procedures

A non-experimental design was used to evaluate the Provincial Breastfeeding Handbook. Using the the Centers for Disease Control and Prevention Framework for Program Evaluation in Public Health (CDC, 1999) as a guide, an evaluation was planned. By engaging stakeholders, describing the program, focusing the evaluation design, gathering credible evidence, justifying conclusions, and ensuring use and lessons learned, an evaluation was planned that would effectively evaluate the Provincial Breastfeeding Handbook resource. The target population for this evaluation was English speaking, 19 years or older, and parents who had been given the handbook. A review of the Health Research Ethics Authority (HREB) check list indicated no ethical approval was required. The instrument used in the evaluation was a questionnaire (Appendix A). Members of Public Health, Baby Friendly NL, and the Perinatal Program were consulted to assist in the development of the questionnaire so that it would appropriately evaluate the handbook. Along with consulting key stakeholders, the Australian Government Department of Health and Aging Evaluation Tool for Breastfeeding Programs and Projects (2012) was used to help guide questionnaire development. The evaluation questions were prioritized to ensure the preferred method of receiving feeding information among new parents was sufficiently determined. Questionnaire questions such as “Did you use the Provincial Breastfeeding Handbook?” and “How do you prefer to receive breastfeeding information” were included in the questionnaire. Public Health Nurses in both Rural and Urban Eastern Health offered the questionnaire to individuals at the two month, four month, and six month well child check-up who met the inclusion criteria. According to Polit and Beck (2012), a threat to external validity is

social desirability, which occurs when individuals circle a certain response in hopes of pleasing the evaluator. To reduce this threat and to ensure anonymity, parents were asked to not put their name on the questionnaire. This was also an important ethical consideration to ensure confidentiality.

Convenience sampling was used to recruit parents to complete the questionnaire as it was an easy and efficient way to recruit individuals for this study (Polit & Beck, 2012). Public Health Nurses in both Rural and Urban Eastern Health offered the questionnaire to parents at the two month, four month, and six month well child check-up in a one month period during the summer of 2016. Recruiting for approximately one month allowed for a sufficient number of participants to enable an understanding of the effectiveness of the Provincial Breastfeeding Handbook and if it is being utilized by parents. This allowed the illumination of patterns and an in-depth understanding of the usefulness of the handbook. Data was managed using a computer at the Nursing Research Laboratory at Memorial University. The program called “Statistical Package for the Social Sciences” (SPSS) was utilized to assist with analysis of the data collected. The sections where participants are encouraged to make comments were analysed for relevant themes.

Results

Participant Demographics

Parental age ranged from 19-40 years, with 45.5% of the parents falling in the age 31-35 year old range (n=37). Table 1 demonstrates the age distribution of parents. While 79.4% of the parents were from the Rural Avalon, only 20.6% were located in the Urban Avalon area. 33.3% of parents reported breastfeeding before, while 66.7% of parents reported it being their first time

breastfeeding. The mean age of the parents' child was 3.94 months, ranging from 2 weeks to 6 months. 46.2% of the parents were breastfeeding while 26.9% of parents were using infant formula the other 26.9% were using a mixture of breastfeeding, infant formula feeding, solids, and other fluids.

Table 1. Frequency and Percentages of Participant Demographics (n=33 *4 participants did not answer this question)

Variables	Frequencies	Percentages
<i>Age</i>		
19-25 years	4	12.1%
26-30 years	10	30.3%
31-35 years	15	45.5%
36-40 years	4	12.1%
<i>Locations (n=34)</i>		
Urban Avalon	7	20.6%
Rural Avalon	27	79.4%

Use of the Provincial Breastfeeding Handbook

When asked if they used the Provincial Breastfeeding Handbook, 75.7% answered yes and 24.3% answered no. 93.1% of parents were given a paper copy of the handbook while 6.9% were given an electronic link to the online version of the handbook. Table 2 depicts the time in which the Provincial Breastfeeding Handbook was received by the parents. The majority of parents, 53.3%, received the handbook during a home visit by the Public Health Nurse after their baby was born. While only 6.9% of parents report receiving the electronic link to the online version of the handbook, 83.9% of parents indicated they would still access the Provincial

Breastfeeding Handbook if it were only available online. Out of the 6.9% that were given the electronic link to the Provincial Breastfeeding Handbook, 42.9% were given it by a Public Health Nurse.

Table 2. When the Provincial Breastfeeding Handbook was received by Parents (n=30 *7 participants did not answer this question)

	Frequency	Percentages
During prenatal class	6	20%
In the hospital when your baby was born	4	10.8%
During a home visit by the Public Health Nurse after your baby was born	16	53.3%
I did not receive a paper copy	1	3.3%
In the mail	1	3.3%
Had used previously working in JER and NICU	1	3.3%
From a friend	1	3.3%

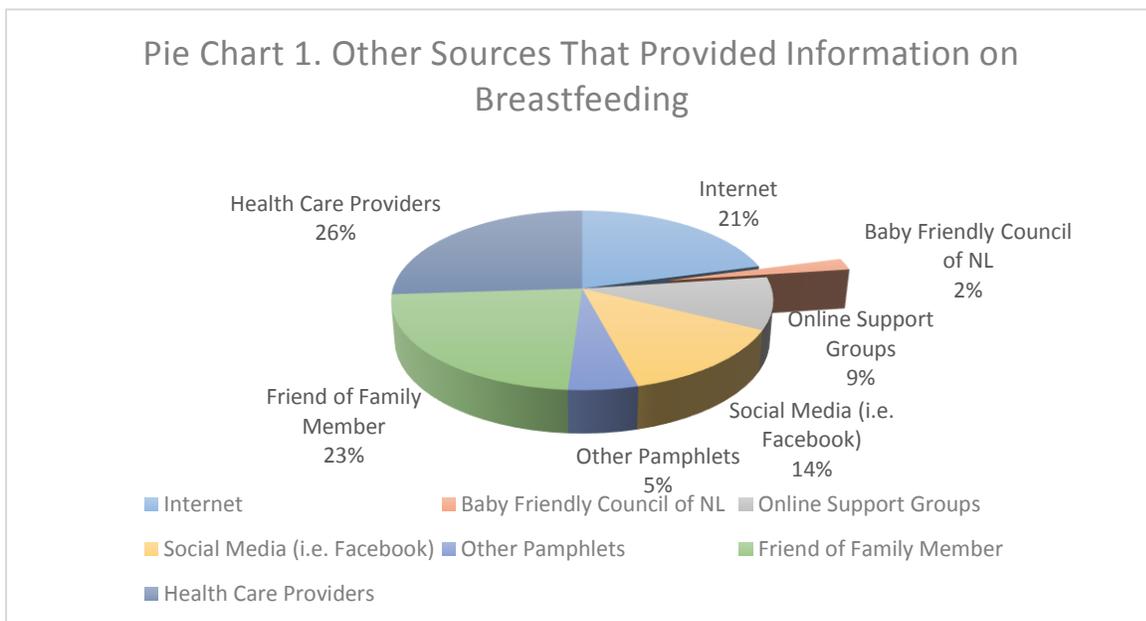
JER= Janeway Emergency Room

NICU= Neonatal Intensive Care Unit

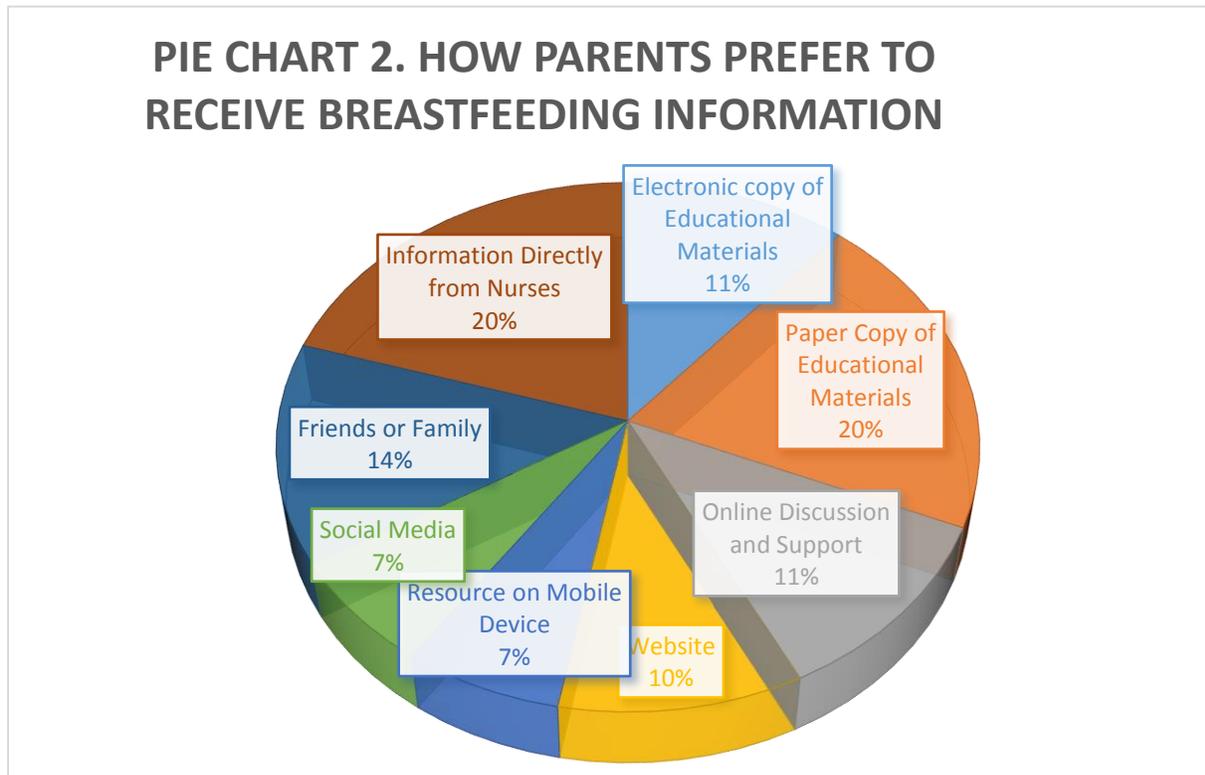
Usefulness of the Provincial Breastfeeding Handbook and Other Sources

When asked if they found the information they wanted in the Provincial Breastfeeding Handbook, 96.4% said yes and only 3.6% said no. Regarding the helpfulness of the handbook, a Likert scale was utilized. When asked to rate the helpfulness on a scale of one to five, the mean was 4.57 meaning the majority of parents found the handbook very helpful. When asked the

question; how important was the Provincial Breastfeeding Handbook in assisting decisions regarding breastfeeding, on a scale of one to five, the mean was 3.70 meaning that the majority of parents thought the handbook was neither important nor unimportant in assisting them with their breastfeeding decisions. When questioned about other sources utilized for breastfeeding information and advice, the majority of parents indicated Health Care Providers at 26% while 20.8% choose the internet. Pie Chart 1 below shows the frequencies of sources that provided information to parents on breastfeeding. Out of the other sources identified, on a scale of one to five, the mean response was 4.57, meaning that the majority of parents found other sources very helpful.



How Parents Prefer to Receive Breastfeeding Information



As shown in Pie Chart 2, when asked about the preferred method of receiving breastfeeding information, 20.2% stated the paper copy of educational materials while 20.2% choose information directly from nurses as their preferred method. As mentioned previously, 83.9% of parents stated they would access the Provincial Breastfeeding Handbook if it was available online only while 16.1% said they would not access it online. If accessed online, 31.3% of parents said they would prefer PDF, while 31.3% said they would prefer an interactive website, and the majority said a mobile device app (37.5%). Table 3 visualizes the frequencies of the preferred methods of electronic educational resources.

Table 3. Format Preferred to Receive Electronic Educational Resources (n=32 *5 participants did not answer this question)

Format	Percentages
PDF	31.3%
Interactive Website	31.3%
Mobile Device (i.e. app)	37.5%

Discussion of Results and Recommendations

With 75.7% of the parents choosing yes for using the Provincial Breastfeeding Handbook, it becomes easy to see how the handbook is an integral breastfeeding resource for parents. Most parents agreed that they found the information they wanted in the handbook and found the handbook very helpful. However, the majority of parents indicated the handbook was neither important nor unimportant in assisting them with their breastfeeding decisions. Pannu, Giglia, Binns, Scott, and Oddy (2011) and Hauck and Dimmock (1994) also studied the effectiveness of health promotion materials on breastfeeding outcomes. The researchers found that the use of health promotion materials is an effective mechanism of breastfeeding education and support but health promotion materials alone are not enough alone to support and educate new parents. It appeared most parents valued the Provincial Breastfeeding Handbook and considered it an important resource but also highly valued the education and support offered directly from Health Care Professionals. While the majority of parents received the handbook during a home visit by the Public Health Nurse, only 6.9% of the parents reported receiving an electronic link to the online version of the handbook. Meanwhile, 83.9% of parents said they would still access the Provincial Breastfeeding Handbook if it was only available online.

Similarly, Ahmed, Roumani, Szucs, Zhang, and King (2015) and Ahmed and Quzzani (2012) noted higher rates of breastfeeding associated with breastfeeding information and support via online programs. Online breastfeeding support may allow new parents to feel connected at all times to a support group. The favouring of online support have implications for the way in which the handbook is disseminated to parents. By offering the electronic version of the handbook, parents can have a choice between the paper copy and electronic version. As reiterated by one parent's comment on ways to improve the way breastfeeding information and advice is provided, "To notify parents about the available online resource groups (Facebook group was phenomenal)". When questioned regarding the preferred format to receive electronic education and support, the majority of parents suggested a mobile device application. An Eastern Health application on breastfeeding education and support would be useful to parents.

While 83.9% of parents said they would still access the Provincial Breastfeeding Handbook if it was only available online, when asked the preferred method of receiving breastfeeding information, the majority of parents, 20.2% stated paper copy of educational materials as being their preferred method. Similarly, 20.2% of parents choose information directly from Health Care Providers such as nurses. While an electronic link to the Provincial Breastfeeding Handbook should be given to parents, the continued updating and disseminating of the paper copy of the handbook should be a priority as well. Nurses must continue to be up to date with their breastfeeding information and support as parents view them as an integral component in their breastfeeding experience.

When questioned about other sources utilized for breastfeeding education, the majority of parent's choose Health Care Providers and the internet. The bulk of the parents stated that the other sources utilized were very helpful in their decisions regarding breastfeeding. These results

demonstrate the continued importance of Health Care Providers involvement in breastfeeding education and support. When questioned regarding ways to improve the way breastfeeding information and advice is provided to parents, one parent stated, “Ensure the public health nurse does as she does today...She was crucial to our success and has been a blessing, she is wonderful”. Another parent stated, “Just see your Public Health Nurse, they are so useful/supportive”. Khanal, Lee, Karkee, and Binns (2015) noted that when new parents were educated on breastfeeding they were less likely to stop breastfeeding. Khanal and colleagues provided strong evidence that breastfeeding education and support in the postpartum period increases breastfeeding duration. The fact that parents also choose the internet as being an important breastfeeding resource highlights the importance of Public Health Nurses giving parents a list of credible breastfeeding websites as part of the postnatal package.

The questionnaire results brought to light some important points on breastfeeding education and support. However, a limitation of the questionnaire is the small participant number (n=37) and the fact that the questionnaire was only offered in the Eastern Health Regional Health Authority due to time constraints. A province wide questionnaire would provide more accurate results that would provide a more detailed and accurate glimpse of how parents prefer to receive breastfeeding information and the usefulness of the paper copy of the Provincial Breastfeeding Handbook. Another limitation was the period of time chosen to disseminate the questionnaires. The questionnaire was in circulation in the summer of 2016, which is a busy time of year when it comes to staff holidays. The low response rate may have been because of the influence of inconsistent nurses during the summer holiday period. Participants answered most questions. A questionnaire administered during a less busy time may have been more successful in numbers. The questionnaire was developed using expertise from key stakeholders and using the Australian

Government Breastfeeding Evaluation Toolkit. This toolkit focuses on evaluation resources designed specifically for breastfeeding programs and projects as well as other general resources and is therefore reliable in evaluating the Provincial Breastfeeding Handbook. During the presentation of the evaluation at Memorial University School of Nursing, it was brought to light the limitation of the handbook being only available in English. This was also included in the recommendation section of this final report.

Overview of Recommendations to Public Health Nursing Leaders

Following the evaluation of the breastfeeding handbook several recommendations have been developed and have been listed below. The recommendations have been divided into recommendations for nursing leaders and Eastern Health.

Recommendations

Nurses Should Continue to:

1. Offer the electronic link of the Provincial Breastfeeding Handbook to all parents.
2. Inform parents of the various online support groups for breastfeeding and provide a list of credible online resources for breastfeeding information and support in the post-natal package.
3. Offer the Provincial Breastfeeding Handbook in the prenatal period.
4. Continue to provide paper copies of the breastfeeding handbook combined with direct nurse education and support.

Eastern Health Should:

5. Consider an Eastern Health facilitated mobile application on breastfeeding information and support.

6. Continue to publish the paper copies of the breastfeeding handbook
7. Continue to evaluate the effectiveness and merit of the Provincial Breastfeeding Handbook on a regular basis.
8. Along with the other health boards, complete a provincial wide survey/questionnaire to have more generalizable and accurate results.
9. Continue to keep staff up to date on current breastfeeding information and support through staff education.
10. Following a presentation with Memorial University School of Nursing faculty and students, it was noted that the Provincial Breastfeeding Handbook was not available in other languages and did not consider those who are illiterate. A recommendation noted was to offer the Provincial Breastfeeding Handbook in other languages and ensure that those who are not literate have access to breastfeeding information and support.

Use, Dissemination, Sharing Plan, and Conclusion

According to Fink (2015), program evaluation is an unbiased exploration of a program's effectiveness, quality, and value. The results of this evaluation will influence the way in which breastfeeding education and support is given. The Provincial Breastfeeding Handbook was evaluated in terms of the effectiveness and value that parents place on the resource. The evaluation of the handbook enables key stakeholders to incorporate the findings and recommendations in the way in which they deliver breastfeeding education and support. The evaluation report will be submitted to Memorial University School of Nursing, Baby Friendly NL council, and the Perinatal Program of Eastern Health. A presentation on November 18, 2016 will also disseminate the findings and recommendations. The evaluation report will also be presented to the Perinatal Program and Baby Friendly NL at a chosen date. It became clear

during the evaluation that the Provincial Breastfeeding Handbook is effective in providing trusted breastfeeding information and valued among parents in the Eastern Health Regional Health Authority. In moving forward with breastfeeding education and support, it is recommended that Eastern Health provide electronic links to the handbook to parents and consider an Eastern Health facilitated mobile application. Since this evaluation resulted in highlighting the importance of paper copies of educational materials as well, it is also recommended to continue to update and disseminate copies of the handbook and continue to provide direct support to parents.

References

- Ahmed, A.H., Roumani, A.M., Szucs, K., Zhang, L., & King, D. (2015). The effect of interactive web-based monitoring on breastfeeding exclusivity, intensity, and duration in healthy, term infants after hospital discharge. *Journal of Obstetric, Gynecologic and Neonatal Nursing*, 45, 143-154. Retrieved from <http://dx.doi.org/10.1016/j.jogn.2015.12.001>
- Ahmed, A.H., & Quizzani, M. (2012). Interactive web-based breastfeeding monitoring: feasibility, usability, and acceptability. *Journal of Human Lactation*, 28(4), 468-475. doi:10.1177/0890334412451869
- Australian Government (2012). *Evaluation Toolkit for Breastfeeding Programs and Projects*. Department of Health and Aging. Retrieved from [http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/\\$File/Evaluation-Toolkit.pdf](http://www.health.gov.au/internet/main/publishing.nsf/Content/7EF85056FC61E388CA257C1A0020B8AA/$File/Evaluation-Toolkit.pdf)
- Baby Friendly Newfoundland & Labrador. (2014). Fast facts. Did you know?. Retrieved from <http://www.babyfriendlynl.ca/breastfeeding-information/fast-facts/>
- Centers for Disease Control and Prevention. (2013). *Strategies to Prevent Obesity and Other Chronic Disease: The CDC Guide to Strategies to Support Breastfeeding Mothers and Babies*. Atlanta: U.S. Department of Health and Human Services. Retrieved from <http://www.cdc.gov/breastfeeding/pdf/BF-Guide-508.PDF>
- Fink (2015). *Evaluation fundamentals. Insights into program effectiveness, quality, and value*. Thousand Oaks, CA: Sage Publications.

Go Healthy, Baby Friendly NL, and Government of Newfoundland and Labrador. (2016).

Breastfeeding handbook. Retrieved from http://www.babyfriendlynl.ca/wp-content/uploads/2014/09/BH_Handbook_2016-web.pdf

Hauck, Y.L. & Dimmock, J.E. (1994). Evaluation of an information booklet on breastfeeding duration: a clinical trial. *Journal of Advanced Nursing*, 20, 836-843

Khanal, V., Lee, A.H., Karkee, R., & Binns, C.W. (2015). Postpartum breastfeeding promotion and duration of exclusive breastfeeding in Western Nepal. *Birth*, 42(4), 329-336.
doi:10.1111/birth.12184

Labarere, J., Gelbert-Baudino, N., Ayril, A.S., Duc, C., BerchotEAU, M., Bouchon, N., ... Pons, F. (2005). Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventative visit: A prospective, randomized, open trial of 226 mother-infant pairs. *Pediatrics*, 115(2), 139-146. Retrieved from <http://www.pediatrics.org/cgi/doi/10.1542/peds.2004-1362>

Labarere, J., Gelbert-Baudino, N., Ayril, A.S., Duc, C., BerchotEAU, M., Bouchon, N., ... Pons, F. (2005). Efficacy of breastfeeding support provided by trained clinicians during an early, routine, preventative visit: A prospective, randomized, open trial of 226 mother-infant pairs. *Pediatrics*, 115(2), 139-146. Retrieved from <http://www.pediatrics.org/cgi/doi/10.1542/peds.2004-1362>

Pannu, P.K., Giglia, R.C., Binns, C.W., Scott, J.A., & Oddy, W.H. (2011). The effectiveness of

health promotion materials and activities on breastfeeding outcomes. *Acta Paediatrica*, 100, 534-537. doi:10.1111/j.1651-2227.2010.02105.x

Polit, D.F., & Beck, C.T. (2012). *Nursing research. Generating and assessing evidence for nursing practice*. Philadelphia: Lippincott Williams & Wilkins

World Health Organization (2016). Exclusive breastfeeding. Retrieved from http://www.who.int/nutrition/topics/exclusive_breastfeeding/en/