



## Learning needs of family physicians, pediatricians and obstetricians to support breastfeeding and inform physician education

## Les besoins d'apprentissage des médecins de famille et des médecins spécialistes en pédiatrie et en obstétrique pour les outiller à soutenir l'allaitement et pour mieux orienter leur formation

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Résumé de l'article

**Contexte :** Les médecins ont besoin d'une formation sur l'allaitement adaptée à leur rôle. L'objectif de cette enquête était de contribuer à l'élaboration d'une telle formation en déterminant les besoins d'apprentissage des médecins dans ce domaine.

**Méthodes :** Une enquête transversale a été réalisée auprès des médecins de famille, des pédiatres et des obstétriciens dans un établissement tertiaire. L'importance des connaissances pour la pratique et de la confiance envers la prise en charge a été évaluée pour 18 sujets d'apprentissage proposés par un groupe de travail de médecins de diverses spécialités. On a effectué des statistiques descriptives, une analyse de la variance et des tests de l'égalité des variances. Les valeurs moyennes de l'importance pour la pratique et de la confiance dans la prise en charge pour chaque sujet indiquent les priorités d'apprentissage.

**Résultats :** Le groupe d'étude comprenait 75 médecins. Les sujets les plus importants étaient « le choix éclairé concernant l'alimentation du nouveau-né », « la prise d'analgésiques, d'antidépresseurs et d'autres médicaments pendant l'allaitement » et « les ressources communautaires de soutien à l'allaitement ». La confiance dans la prise en charge était la plus faible en ce qui concerne « l'évaluation de la prise du sein », « ce que la mère peut faire pendant la grossesse pour favoriser la production de lait » et « les facteurs de risque associés au retard de la lactogénèse ». Les formats d'apprentissage préférés étaient les modules en ligne de 15 minutes et les séances plénières.

**Conclusions :** Les médecins reconnaissent l'importance de tous les sujets mais ils se disent moins confiants dans leur capacité d'évaluer la prise du sein, de faire les interventions prénatales pour favoriser la lactogénèse et de prendre en charge la lactogénèse retardée. Les participants ont accordé relativement peu d'importance à l'apprentissage de l'évaluation de la prise du sein, malgré l'importance de cette compétence pour soutenir le démarrage précoce de l'allaitement.

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## Abstract

**Background:** Physicians require breastfeeding education appropriate to their roles. The aim of this survey was to determine physician learning needs and to inform development of breastfeeding education for physicians.

**Methods:** A cross sectional survey was distributed to family physicians, pediatricians and obstetricians in a tertiary institution. Importance of knowledge to practice and confidence to manage was assessed for 18 learning topics proposed by a multi-specialty physician working group. Descriptive statistics, ANOVA and tests for equality of variances were calculated. Mean values of importance to practice and confidence to manage for each topic suggested learning priorities.

**Results:** The study group included 75 physicians. The most important topics were "informed choice when supporting newborn feeding," "analgesics, antidepressants and other medications while breastfeeding" and "community resources for breastfeeding support." Confidence to manage was lowest for "latch assessment," "what mom can do during pregnancy to promote milk production," and "risk factors for delayed lactogenesis." Preferred learning formats were 15-minute online modules and grand rounds.

**Conclusions:** Physicians acknowledged the importance of all topics but report lowest confidence to manage latch assessment, prenatal interventions to support lactogenesis and management of delayed lactogenesis. Participants placed relatively low importance on learning about latch assessment despite the central nature of this skill in supporting early breastfeeding.

## Résumé

**Contexte :** Les médecins ont besoin d'une formation sur l'allaitement adaptée à leur rôle. L'objectif de cette enquête était de contribuer à l'élaboration d'une telle formation en déterminant les besoins d'apprentissage des médecins dans ce domaine.

**Méthodes :** Une enquête transversale a été réalisée auprès des médecins de famille, des pédiatres et des obstétriciens dans un établissement tertiaire. L'importance des connaissances pour la pratique et de la confiance envers la prise en charge a été évaluée pour 18 sujets d'apprentissage proposés par un groupe de travail de médecins de diverses spécialités. On a effectué des statistiques descriptives, une analyse de la variance et des tests de l'égalité des variances. Les valeurs moyennes de l'importance pour la pratique et de la confiance dans la prise en charge pour chaque sujet indiquent les priorités d'apprentissage.

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**Conclusions :** Les médecins reconnaissent l'importance de tous les sujets mais ils se disent moins confiants dans leur capacité d'évaluer la prise du sein, de faire les interventions prénatales pour favoriser la lactogénèse et de prendre en charge la lactogénèse retardée. Les participants ont accordé relativement peu d'importance à l'apprentissage de l'évaluation de la prise du sein, malgré l'importance de cette compétence pour soutenir le démarrage précoce de l'allaitement.

## Introduction

Breastfeeding can considerably improve a child's lifelong health, while reducing costs to families and the healthcare system.<sup>1</sup> Family physicians, pediatricians and obstetricians are uniquely positioned to support breastfeeding.<sup>2</sup> However, marketing of breast-milk substitutes, inadequate support for breastfeeding and misperceptions about infant feeding remain significant barriers to breastfeeding initiation and continuation.<sup>1,3</sup> The Baby-Friendly Hospital Initiative (BFHI) is a global strategy to protect, promote, and support breastfeeding;<sup>1,3</sup> a global trend of increased breastfeeding initiation, duration and exclusivity is associated.<sup>10-12</sup> In Canada, the BFHI is called the Baby-Friendly Initiative (BFI), recognizing the continuum of care from hospital to home.<sup>5</sup> BFI designated institutions must adhere to The Ten Steps to Successful Breastfeeding and the WHO Code.<sup>5,9</sup> BFI practices are endorsed by leading health professional organizations;<sup>6-8</sup> however, a Canadian study of family physicians and pediatricians shows breastfeeding knowledge, confidence, beliefs, and attitudes are suboptimal.<sup>4</sup>

All physicians require education appropriate to their role.<sup>5,9</sup> Assessment of current knowledge and identification of gaps is recommended.<sup>14</sup> Previous gap analysis to assess learning needs of practicing family physicians, pediatricians and obstetricians on labor and delivery, pediatric and neonatal units in an American center revealed lack of comfort supporting skin-to-skin holding, breast milk expression and management of common breastfeeding challenges.<sup>13</sup> However, little is known about specialist differences in knowledge and confidence to manage breastfeeding issues or specific learning needs of Canadian family physicians, pediatricians and obstetricians for breastfeeding education. In order to inform physician education on breastfeeding, we designed a survey to assess importance of 18 potential learning topics to medical practice, physician confidence to manage the related child and maternal presentations, and preferred education delivery modes.

## Methods

### Study design

A BFI Physician Working Group (PWG) comprised of physician representatives from family medicine, pediatrics and obstetrics, supported by a BFI coordinator and lactation consultant, considered the BFI Ten Steps to Successful Breastfeeding and the WHO Code, Canadian BFI Outcome Indicators for Hospitals and Community Health

Services, and common child and maternal health presentations in their practices.<sup>5</sup> The PWG considered practice opportunities to support breastfeeding mothers and babies during the prenatal, intrapartum and perinatal periods up to the first 6 months. Using a multi-specialty physician lens, 18 potential physician learning topics to address common breastfeeding concerns that arise in medical practice were identified. A cross sectional survey study design was used for this 11-item survey. Participation was voluntary and anonymous.

### Setting

The tertiary care center in Saskatoon, Canada has a birth rate of approximately 5,700 per year, serves a population in excess of 300,000 and is a referral center for high-risk pregnancies and newborns. In our geographic catchment area, exclusive breastfeeding rates are less than 50% at two months.<sup>15</sup> In our center, lactation consultants and speech language pathologists support breastfeeding in inpatient, ambulatory and community follow-up program settings.

### Sampling method

We distributed the electronic survey to all family physicians, pediatricians and obstetricians who admit mothers or babies to the maternal care center, pediatrics unit and neonatal and pediatric intensive care units in our tertiary center. This included 143 physicians: 67 family physicians, 57 pediatricians (general pediatricians, pediatric subspecialists, and neonatologists), and 19 obstetricians.

### Study protocol

The survey was open from January 5 to 30, 2018 with one reminder to participate emailed two weeks after the first invitation to participate. The survey data was collected for program development and/or evaluation in the ordinary course of organizational operation and deemed exempt from research ethics board approval (Beh. ID 2400).

### Outcome measures

Demographic data gathered included age, gender, specialty, practice pattern, and location. Participants rated importance of knowledge and confidence to manage the 18 topics. In response to the question, "To better understand your personal learning needs, please rank the importance of knowledge on the following topics to your practice," physicians were asked to rate each topic on a scale of 4 (Very Important), 3 (Important), 2 (Not Important) or 1 (Not Applicable). In response to the question, "Please rank your confidence in management of the following," physicians were asked to rate each topic on

a scale of 4 (Can Manage Very Well), 3 (Manageable), 2 (Not Able to Manage Well) or 1 (Not Applicable). Participants identified other learning needs by open text. Participants were surveyed for preferred modes of learning: workshop, online modules, and grand rounds.

### Data analysis

Descriptive statistics were compiled and subgroup analysis undertaken by discipline: family practice, pediatrics and obstetrics. The mean values of importance and confidence to manage were calculated. Not applicable responses were not included in the calculation of mean scores. To analyze statistically significant differences between specialties at the 95% level, ANOVA was completed for both importance and confidence to manage scores. Given the sample size, we assume normal distribution by the Central Limit Theorem.<sup>16</sup> Equality of variance tests were conducted with ANOVA and satisfied in all nearly all cases; where there was no equality of variance, Welch test was utilized. P-values less than .05 show there is a significant difference in mean scores between disciplines.

## Results

There were 75 completed surveys for a response rate of 52%. By specialty, the response rates were family physicians (63%; 42/67), pediatricians (39%; 22/57), and obstetricians (47%; 9/19). Participant characteristics and preferred modes of learning are presented in Table 1.

### Breastfeeding knowledge and confidence

All topics ranked at least a mean of three for importance of knowledge to their practice. "Informed choice when supporting newborn feeding" (mean=3.68, S.D.=0.47), "analgesics, antidepressants and other medications while breastfeeding" (mean=3.63, S.D.=0.52) and "community resources for breastfeeding support" (mean=3.60, S.D.=0.52) ranked most important to medical practice. "Latch assessment" (mean=3.31, S.D.=0.75), "tongue tie/ankyloglossia" (mean=3.28, S.D.=0.74) and "hand massage and expression" (mean=3.07, S.D.=0.72) ranked lowest importance, but were still assessed as important. Importance of knowledge to practice is summarized in in Table 2.

Table 1. Descriptive statistics of physicians participating in survey

	N (75)	Percent of total
<b>Age</b>		
20-39	31	41.2
40-49	19	25.7
50+	24	32.4
Missing	1	
<b>Gender</b>		
Female	60	82.2
Male	13	17.8
Missing	2	
<b>Type of Physician</b>		
Family physician	42	57.5
Pediatrician	22	30.1
Obstetrician	9	12.3
Missing	2	
<b>Practice Patterns*</b>		
Cares for mothers in pregnancy to postpartum	45	
Cares for newborns only in hospital	19	
Cares for mothers and babies in hospital	34	
Re-admits babies when concerns arise	18	
Outpatient or concurrent care only for babies	26	
<b>Practice Location*</b>		
Clinic	63	
Hospital	51	
<b>Learning Method*</b>		
Grand Rounds	37	
15 minute online modules	42	
1 hour online modules	14	
½ day workshop	25	
Full day workshop	11	

\*Respondents could choose more than one answer

Overall, confidence to manage was highest for "informed choice when supporting newborn feeding" (mean=3.53, S.D.=0.60), "benefits of breastfeeding in premature, late premature and term infants" (mean=3.44, S.D.=0.60) and "common problems that arise for breastfeeding mothers" (mean=3.35, S.D.=0.62). The confidence to manage was lowest for "latch assessment" (mean=2.66, S.D.=0.72), "what mom can do during pregnancy to promote milk production" (mean=2.66, S.D.=0.66), and "risk factors for delayed lactogenesis" (mean=2.79, S.D.=0.75). See Table 3.

### Differences between specialties

Differences in importance of knowledge to practice and confidence to manage are shown in Table 2 and 3, respectively (see bold p-values).

Table 2. Importance of knowledge to practice by discipline

Issue	Mean	Family Physicians	Pediatricians	Obstetricians	p-value
Informed choice when supporting newborn feeding	3.68	3.74	3.63	3.56	0.484
Analgesics, antidepressants and other medications while breastfeeding	3.63	3.67	3.53	3.78	0.483*
Community resources for breastfeeding support	3.60	3.68	3.48	3.67	0.321
Benefits of breastfeeding in premature, late premature and term infants	3.59	3.71	3.33	3.67	0.088*
Maintenance of lactation during illness or maternal separation	3.58	3.60	3.58	3.56	0.978
Common problems that arise for breastfeeding mothers (e.g. mastitis)	3.56	3.62	3.38	3.63	0.278
What health professionals can do in the first hour of life to promote milk production	3.54	3.64	3.29	3.44	0.150
Medical contraindications to breastfeeding	3.53	3.47	3.57	3.78	0.277*
Medical indications for supplements	3.53	3.64	3.45	3.33	0.173
Role of skin-to-skin and contraindications	3.50	3.59	3.33	3.44	0.304
What mom can do in pregnancy to promote milk production	3.49	3.57	3.21	3.56	0.137
Management of babies with neonatal abstinence syndrome	3.44	3.39	3.63	3.17	0.190
Risk factors for delayed lactogenesis	3.43	3.55	3.16	3.44	0.078
Food allergies in newborn feeding	3.37	3.45	3.45	2.88	0.316*
How to promote a breastfeeding/baby friendly office (WHO Code)	3.32	3.37	3.25	3.38	0.823
Latch assessment	3.31	3.50	3.11	2.87	<b>0.033</b>
Tongue tie/ankyloglossia	3.28	<b>3.48</b>	3.15	<b>2.71</b>	<b>0.019</b>
Hand massage and expression	3.07	3.22	2.81	2.89	0.118

\* P-value according to Welch test utilized as unequal variances in these questions. Bold indicates statistically significant differences.

Table 3. Confidence to manage by discipline

Issue	Mean	Family Physicians	Pediatricians	Obstetricians	p-value
Informed choice when supporting newborn feeding	3.53	3.69	3.3	3.25	0.061*
Benefits of breastfeeding in premature, late premature and term infants	3.44	3.48	3.32	3.63	0.409
Common problems that arise for breastfeeding mothers (e.g. mastitis)	3.35	<b>3.55</b>	<b>2.93</b>	<b>3.00</b>	<b>0.001</b>
Medical contraindications to breastfeeding	3.34	3.38	3.15	3.56	0.196
Role of skin-to-skin and contraindications	3.31	<b>3.49</b>	<b>3.00</b>	3.22	<b>0.041</b>
What health professionals can do in the first hour of life to promote milk production	3.15	<b>3.29</b>	<b>2.79</b>	3.22	<b>0.013*</b>
Medical indications for supplements	3.11	3.24	3.00	2.78	0.187*
Analgesics, antidepressants, and other medications while breastfeeding	3.07	<b>3.17</b>	<b>2.67</b>	<b>3.33</b>	<b>0.010</b>
Tongue tie/ankyloglossia	3.03	3.21	2.74	2.4	<b>0.016</b>
Community resources for breastfeeding support	2.99	<b>3.17</b>	<b>2.7</b>	2.78	<b>0.014</b>
Maintenance of lactation during illness or maternal separation	2.96	3.12	2.72	2.78	0.092
How to promote a breastfeeding/baby friendly office (WHO Code)	2.90	<b>3.15</b>	<b>2.47</b>	2.75	<b>0.004</b>
Hand massage and expression	2.87	2.93	2.69	2.88	0.561
Food allergies in newborn feeding	2.87	2.95	2.85	2.50	0.303
Management of babies with neonatal abstinence syndrome	2.80	<b>2.68</b>	<b>3.17</b>	2.50	<b>0.035</b>
Risk factors for delayed lactogenesis	2.79	<b>2.93</b>	<b>2.37</b>	<b>3.11</b>	<b>0.009</b>
What mom can do in pregnancy to promote milk production	2.66	2.78	2.38	2.67	0.116
Latch assessment	2.66	2.76	2.31	2.80	0.087

\* P-value according to Welch test utilized as unequal variances in these questions. Bold indicates statistically significant differences. Based on one-way ANOVA with 2 degrees freedom.

## Discussion

All physicians who care for women and babies require breastfeeding education appropriate to their role.<sup>5</sup> Continuing education for practicing physicians has focused on breastfeeding technique and latch assessment, clinical

management and problem solving skills, medication use, knowledge of common maternal concerns (e.g. mastitis), addressing maternal perception of not enough milk, referral resources, and importance of avoiding of breast milk substitutes and marketing materials in the office.<sup>14</sup> Participants in this study reported low confidence in many

related areas (e.g. latch assessment, community resources, and strategies to promote a breastfeeding friendly office) and some complex learning needs (e.g. delayed lactogenesis, strategies to maintain lactation during illness and separation, neonatal abstinence syndrome, allergies). Participating pediatricians were generally less confident to manage breastfeeding and lactation compared to family physicians and obstetricians. Specific aspects of maternal care relevant to pediatric practice include the role of skin-to-skin and contraindications, medication use during lactation, common maternal breastfeeding concerns, and risk assessment for delayed lactogenesis.

In this study, importance of learning about latch assessment ranked relatively low despite low confidence to assess latch. Knowledge of community resources ranked as more important. This may represent a lack of insight regarding importance of evaluation of latch in medical practice or an overreliance on referral to other specialists, such as lactation consultants. Establishment of effective latch is central to breastfeeding success and assessment is a fundamental skill required of physicians caring for breastfeeding infants and mothers.<sup>4,5</sup> However, physicians may not routinely observe breastfeeding or believe evaluation of breastfeeding is their responsibility.<sup>4</sup> In Canada, 90% of women initiate breastfeeding and approximately 25% stop in the neonatal period, most commonly due to difficulty with breastfeeding technique and concern about insufficient milk supply.<sup>17</sup> Nearly 20% of women experience delayed lactogenesis.<sup>18,19</sup> Participants also reported low confidence to assess risk factors for delayed lactogenesis and to suggest early interventions for management.

We recommend latch assessment and management of delayed lactogenesis (e.g. risk assessment, role of antenatal breastmilk expression,<sup>20</sup> role of early skin-to-skin, medical indications for supplementation) as priorities for physician education to support breastfeeding. Framing topics in a context that addresses the physician's complex work environment may impact perception of importance to learn.<sup>21,22</sup> We observed that topics such as "what mom can do during pregnancy to promote milk production" (e.g. "hand massage and expression") and "what health professionals can do in the first hour to promote milk production" (e.g. "role of skin-to-skin and contraindications") were assessed as more important than content typically associated with these stages. For skill-based competencies (e.g. latch assessment, skin-to-skin, breast milk expression, and informed feeding choice

discussion) clinical demonstration or simulation improve knowledge and confidence.<sup>23,24</sup>

Competing learning needs, workload, and funding may impact physician engagement in continuing education.<sup>21</sup> Participating physicians preferred shorter modes of learning. Access to accredited learning opportunities may improve physician engagement, support lifelong learning and enable physicians to identify professional practice goals related to breastfeeding medicine.<sup>25</sup>

### Implications for post-graduate training

Alignment of Canadian training objectives with best practice is required to impact physician knowledge and skills to support breastfeeding at entry to practice.<sup>4,5,26</sup> In Canada, training objectives for family medicine have been recently expanded but remain limited for pediatrics and obstetrics.<sup>27-29</sup>

### Limitations

This survey assessed perceived knowledge and confidence among three specialist groups at one Canadian tertiary center. Learning needs may differ in other hospital settings. The survey response rate is comparable to other studies of Canadian physicians.<sup>30</sup> The majority of respondents were female and they tend to have higher survey response rates than males;<sup>30</sup> personal experience with breastfeeding was not assessed. Younger age, female sex, and personal breastfeeding experience are associated with higher breastfeeding knowledge.<sup>4</sup> Physicians with significant knowledge deficits may have been overconfident or may have lacked awareness of importance of knowledge to practice (e.g. latch assessment). Due to sample size, we cannot make any conclusions regarding impact of age, gender, or years of practice on learning needs. Furthermore, we are challenged to comment definitively about obstetricians; a high coefficient of variation is present in counts less than 20.<sup>31</sup>

## Conclusions

This survey assessed perceived importance of knowledge and confidence to support breastfeeding among family physicians, pediatricians and obstetricians practicing within a Canadian tertiary center. Results of our survey suggest all 18 topics are important considerations for physician education in practice. Participants placed relatively low importance on learning about latch assessment despite the central nature of this skill in supporting early breastfeeding. Physician confidence was lowest for latch assessment, implementation of prenatal



interventions to support lactation and risk assessment for delayed lactogenesis. Physicians preferred shorter learning opportunities. We identified latch assessment and management of delayed lactogenesis as two priorities for physician education; a case-based approach that acknowledges medical complexity throughout the continuum of care is recommended.

**Conflicts of Interest:** Krista Baerg, Juliet Smith-Fehr, Amanda Loewy, Jill Blaser Farrukh and Tonia Olson report that they were planning committee members for an MDBriefcase Group Inc. program on breastfeeding. Joshua Marko has no conflicts of interest to declare.

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