



# LACTATION EDUCATION NEEDS ASSESSMENT SURVEY, 2010

April 2011





## PREFACE

The purpose of this study was to determine whether there is a need for lactation education opportunities in the tri-state area of Minnesota, North Dakota, and South Dakota. The study also looked at attitudes, perceptions, and barriers regarding lactation education. A market analysis, with a focus on further exploration of needs and barriers for lactation education, is also included in this report. Data were collected in December 2010.

This study was made possible by a grant from the Minnesota Department of Health Statewide Health Improvement Program. The study was conducted by the North Dakota State Data Center (NDSDC) on behalf of Otter Tail County Public Health in Minnesota. This report is available on the NDSDC website: [www.ndsu.edu/sdc/publications/research.htm](http://www.ndsu.edu/sdc/publications/research.htm).

Publication date:  
April 2011



### Authors

Ramona Danielson  
Kay Schwarzwalter  
Dr. Richard Rathge, Director

# TABLE OF CONTENTS

PREFACE .....	3
EXECUTIVE SUMMARY .....	5-6
Introduction .....	5
Summary of Survey Results .....	5
Key Findings of Market Analysis .....	6
INTRODUCTION.....	7-8
Study Objectives.....	7
Methodology .....	7
Presentation of Results .....	8
SURVEY RESULTS.....	9-21
Lactation Education (Figures 1 to 9).....	9
Preferences for Delivery of Courses (Figures 10 to 13).....	13
Type of Curriculum and Course Offerings (Figures 14 to 17) .....	15
Comments Regarding Lactation Education (Table 1) .....	18
Demographic Characteristics (Figures 18 to 21).....	20
MARKET ANALYSIS.....	22-32
Purpose of Analysis and Methodology .....	22
Detailed Key Findings.....	22
Characteristics of Nurse Respondents .....	22
Significance by Characteristics of Nurse Respondents .....	23
Significance by Course Offerings.....	27
Significance by Barriers to Lactation Education that Exist for Healthcare Providers .....	30
APPENDICES .....	33-43
Appendix Tables.....	33
Cover Letter for Healthcare Administrator .....	40
Cover Letter for Healthcare Provider.....	41
Survey Instrument .....	42

# EXECUTIVE SUMMARY

## Introduction

The purpose of this study was to determine whether there is a need for lactation education opportunities in the tri-state area of Minnesota, North Dakota, and South Dakota. The study was conducted by the North Dakota State Data Center on behalf of Otter Tail County Public Health in Minnesota. A total of 1,074 surveys were mailed out in early December 2010 to nurses in hospital and public health settings. There were 290 surveys returned for a response rate of 27 percent, which provides an error rate below 5 percent with a confidence interval of 95 percent.

The first section of the report presents the overall survey results. The second section of the report presents the results of a market analysis, with a focus on further exploration of needs and barriers for lactation education.

## Summary of Survey Results

Respondents placed a high level of importance on breastfeeding. They also indicated there is a fairly high level of need for lactation education opportunities. Approximately one in three respondents is currently a certified lactation consultant or is interested in certification.

The majority of respondents have not had lactation education in the past two years. Respondents who are currently obtaining or have had lactation education in the past two years were much more likely to have taken instructor-led courses or seminars than to have taken self-paced training courses. Among those with instructor-led course experience, course lengths were most commonly 1 hour, 1 day, and 5 days. While one-fourth of respondents did not have to travel to their instructor-led courses, the majority did; one-fourth traveled 120 miles or more.

The majority of respondents are interested in improving their lactation skills and knowledge. Among respondents who are interested, face-to-face classes or seminars are the most commonly preferred method, followed by online self-paced training courses. Most respondents who are interested would be willing to travel 60 miles or more to receive lactation education. Their most commonly preferred course length would be 1 day, followed by a series of 1 hour sessions or a 2 day course.

The majority of respondents are not familiar with the World Health Organization/UNICEF Baby-Friendly Hospital Initiative requirements (i.e., nurses working with childbearing families in officially designated sites have 20 hours and MDs and Advanced Practice nurses have at least three hours of lactation education).

The top five courses that respondents identified as being beneficial to healthcare providers in their community are: 1) basic orientation to breastfeeding, 2) a course specific to maternity care/NICU hospital nurses, 3) community-based breastfeeding promotion, 4) a course specific to Public Health Maternal Child Health nurses, and 5) a course specific to OB/GYN clinic nurses.

The top three barriers to lactation education that respondents identified are: 1) courses are not available, 2) distance, and 3) lactation education is not a priority in the workplace.

The most preferred method of communication of courses is email followed by letter/postcard and workplace communication.

Nearly half of respondents work in a hospital, approximately one-third work in community/public health, and one-fifth work in a clinic. Fifteen percent of respondents work with participants in the Women, Infants, and Children (WIC) Program. Approximately half of respondents have been working with women,

children and/or child-bearing families as a health professional for at least 10 years. Nearly half of respondents have a 4-year RN degree. The majority of respondents work full-time.

### Key Findings of Market Analysis

1. Nurses with the following characteristics are most interested in improving their lactation skills and knowledge
  - a. work in Minnesota
  - b. work in Public Health or in the WIC program
  - c. work within 150 miles of the Fargo/Moorhead area
  - d. work in an urban community
  - e. have higher education training
2. Nurses with the following characteristics prefer using technology to improve their lactation skills and knowledge
  - a. prefer 1-hour learning sessions
  - b. prefer receiving notifications via email
3. Nurses with the following characteristics prefer using face-to-face instruction to improve their lactation skills and knowledge
  - a. prefer full-day learning sessions
  - b. prefer not to receive their notifications via email
4. Nurses with the following characteristics rate most highly the importance of breastfeeding
  - a. work in Public Health or WIC programs
  - b. have higher education training
  - c. are willing to travel longer distances for training
  - d. indicated the following courses would be beneficial: community-based breastfeeding promotion, course specific to MDs, preparation for International Board Certified Lactation Consultant, and course specific to dietitians
  - e. indicated the following barriers exist to lactation education: courses not being available, distance, and lack of support from administration
5. Nurses with the following characteristics see the greatest need for lactation education
  - a. work in Minnesota
  - b. work in Public Health or WIC programs
  - c. work in an urban community or large facility
  - d. are willing to travel longer distances for training
  - e. prefer full-day training sessions
  - f. indicated the following courses would be beneficial: course specific to maternity/NICU hospital nurses, community-based breastfeeding promotion, course specific to Public Health Maternal Child Health nurses, course specific to OB/GYN clinic nurses, course specific to MDs, course specific to Peds clinic nurses, preparation for Baby-Friendly Hospital Certification, course specific to Peds/PICU hospital nurses, preparation for International Board Certified Lactation Consultant, and course specific to dietitians
  - g. indicated the following barriers exist to lactation education: course offerings being too expensive

# INTRODUCTION

## Study Objectives

The purpose of this study was to determine whether there is a need for lactation education opportunities in the tri-state area of Minnesota, North Dakota, and South Dakota. The study also looked at attitudes, perceptions, and barriers regarding lactation education.

The study was conducted by the North Dakota State Data Center on behalf of Otter Tail County Public Health in Minnesota. The survey instrument was developed in cooperation with Otter Tail County Public Health staff and their representatives. This report is available on the NDSDC website:

[www.ndsu.edu/sdc/publications/research.htm](http://www.ndsu.edu/sdc/publications/research.htm).

## Methodology

The study was designed as a regional study that encompassed Minnesota and two neighboring states (North Dakota and South Dakota). The greatest challenge was obtaining a random sample of nurses whose responsibilities might require the need for lactation education. We discounted the use of nursing association membership rolls as a sampling frame because we recognized their limitations (i.e., nurses are not required to be members and the membership list is not public information). Instead, we concluded that the best approach would be to use organizational settings (i.e., hospitals and public health offices) as the sampling frame and contact nurses within that framework. Thus, we designed a two tiered approach.

The first tier of the sampling design focused on nurses in hospital settings. First, we focused our attention on developing a random selection of facilities in Minnesota, North Dakota, and South Dakota that had the highest potential of employing nurses who might be interested in lactation education. We decided to use as our sampling frame directories of hospitals which had OB-GYN units. The hospitals were stratified into three groups according to distance to the Fargo/Moorhead (F/M) area, which is the closest metropolitan area to Otter Tail County. The first group included all hospitals within an approximate 150 mile radius of the F/M area. The second group included all hospitals within a radius of approximately 151-280 miles from the F/M area while the third tier centered on hospitals outside a radius of approximately 280 miles, yet remained within the tri-state boundaries. A simple random sampling process was used to select the facilities by state.

Next, we determined the number of beds in each facility in order to allocate the number of surveys we sent to the corresponding facilities based on the latest national average of 1.5 nurses per bed. In those cases where the number of beds was not reported, we used the ratio of physicians to nurses as a proxy. We allocated roughly one-third of the surveys to each state. Using the list of facilities in each state that we developed from our random selection process, we started at the top of the list and determined the number of surveys that would be mailed out to that facility based on our formula noted above. We continued down the list within each state until we exhausted our available surveys. This resulted in the following sampling distribution. In Minnesota we mailed 255 surveys to nurses in 34 hospitals. In North Dakota we mailed 230 surveys to nurses in 13 randomly selected hospitals. Finally, in South Dakota we mailed 230 surveys to nurses in 20 hospitals.

We used the nursing supervisor at each facility as the contact person for each mailing. We provided a cover letter of introduction that stated the purpose of the study, the random selection process, and the Human Research Protection process that we followed. We included individual postage-paid return envelopes for each survey. We asked the nursing supervisor to distribute the surveys to nurses working with women, children, and/or childbearing families. The nurses were asked to return their completed surveys to us in the return envelopes provided.

The second tier of the sampling design focused on public health nurses. In this phase of the survey collection, we sent surveys to each County Public Health unit in the tri-state region. There were 201 counties in the tri-state area; however, not all counties have an independent public health unit. We mailed 2 or 3 surveys to each County Public Health unit in Minnesota, North Dakota, and South Dakota. Once again, we enclosed individual postage-paid return envelopes for each survey and requested the public health nurse to return their completed survey to us.

Overall, after combining the surveys from the two tiers, a total of 1,074 surveys were mailed out in early December 2010. There were 290 surveys returned (128 from Minnesota, 90 from North Dakota, and 72 from South Dakota) for a response rate of 27 percent. The number of completed surveys used in the study resulted in an error rate below 5 percent with a confidence interval of 95 percent.

The questionnaire was developed in cooperation with Otter Tail County Public Health staff and their representatives. This questionnaire was a scannable one-page (front and back) survey that included 20 questions which took, on average, 10 minutes to complete. It consisted of questions that focused on issues in four broad areas: 1) general need for lactation education for their nursing staff, 2) preferences for such services, 3) types of courses and potential barriers that exist, and 4) demographics of the nursing staff who completed the survey.

## **Presentation of Results**

The results of the survey are presented in two sections: Survey Results which presents the overall survey results and Market Analysis which focuses on further exploration of needs and barriers for lactation education.

Survey results are organized by topic area. The frequencies of responses are presented in graphic form with accompanying narrative. Additional comments are also included. The data accompanying the figures and narrative are presented in the Appendix Tables, which include open-ended responses where applicable. The cover letter for the nursing supervisor, the cover letter for the nurses being asked to complete the survey, and the survey instrument are provided as appendices.

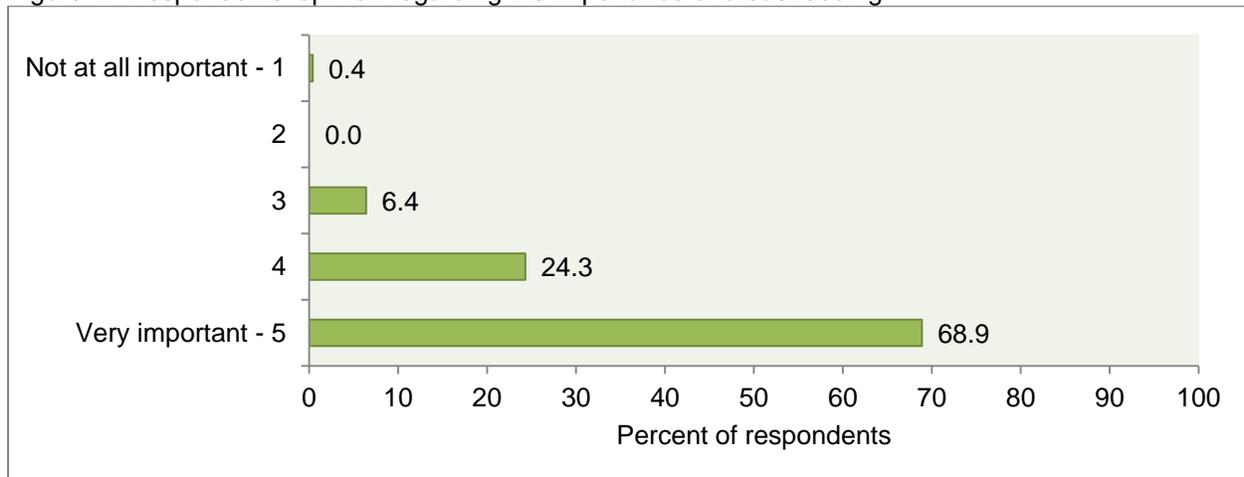
For the market analysis, significance testing was conducted on various characteristics, such as type of facility, rural/urban status, and educational levels. Results showing significant differences at  $p < .05$  (using Chi Square tests, t-tests, and ANOVA as appropriate) are summarized in the Executive Summary, while detailed key findings are presented in their own section.

# SURVEY RESULTS

## Lactation Education

- Using a 1 to 5 scale, with 1 being “not at all important” and 5 being “very important,” respondents were asked to rate the importance of breastfeeding (*Figure 1, Appendix Table 1*).
  - Respondents placed a high level of importance on breastfeeding (mean=4.61); 68.9 percent said it is “very important.”

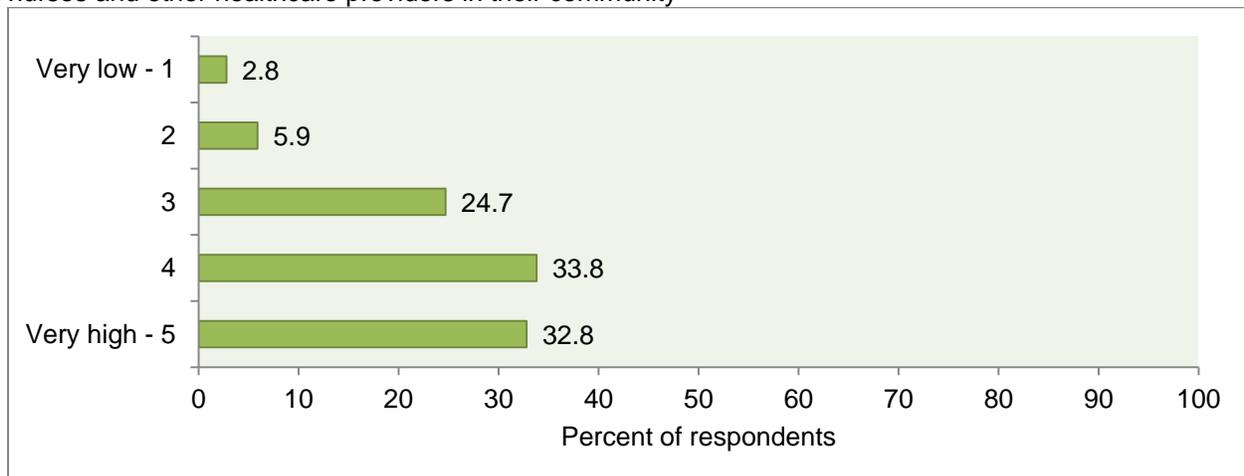
Figure 1. Respondents’ opinion regarding the importance of breastfeeding



N=280; Mean=4.61

- Using a 1 to 5 scale, with 1 being “very low” and 5 being “very high,” respondents were asked to rate the level of need for lactation education opportunities for nurses and other healthcare providers in their community (*Figure 2, Appendix Table 2*).
  - Respondents said there is a fairly high level of need for lactation education opportunities (mean=3.88); 32.8 percent said the level of need is “very high.”

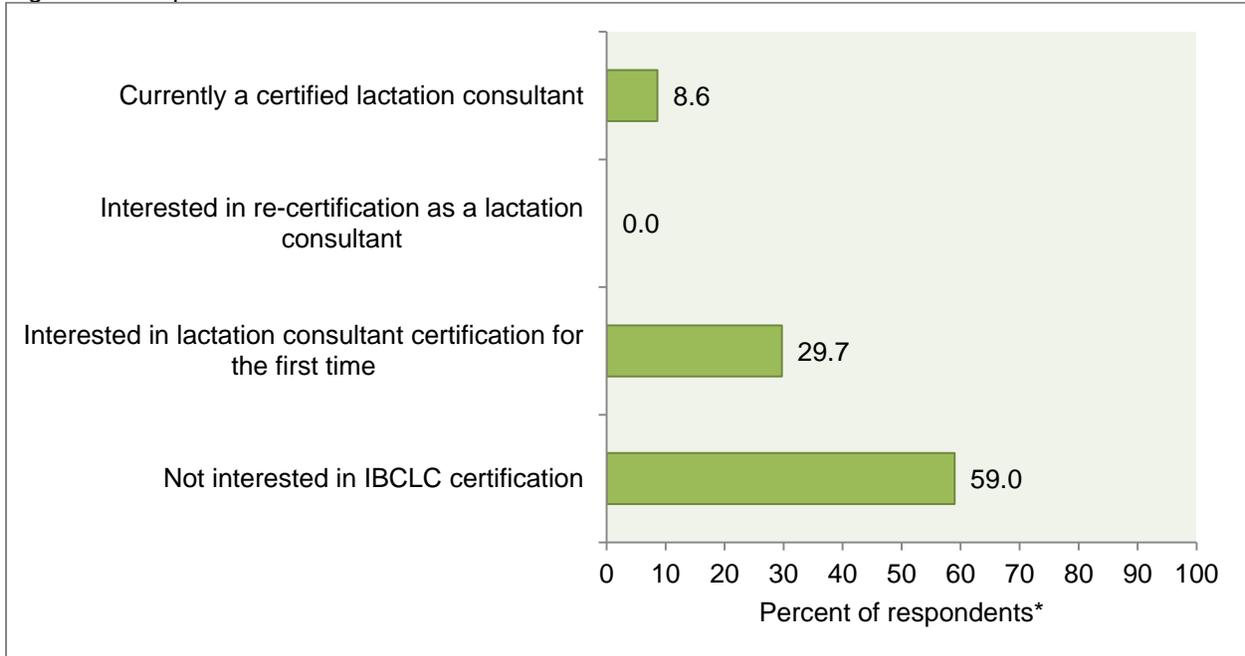
Figure 2. Respondents’ opinion regarding the level of need for lactation education opportunities for nurses and other healthcare providers in their community



N=287; Mean=3.88

- Nearly one-third of respondents are interested in lactation consultant certification for the first time (29.7 percent) and 8.6 percent are currently a certified lactation consultant. Three in five respondents are not interested in International Board Certified Lactation Consultant (IBCLC) certification (59.0 percent) (Figure 3, Appendix Table 3).

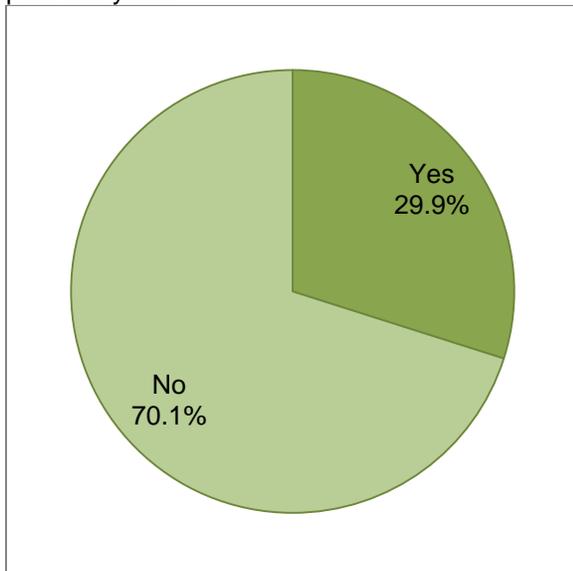
Figure 3. Respondents' status/interest in certification



N=290

\*Percentages may not equal 100.0 due to multiple responses.

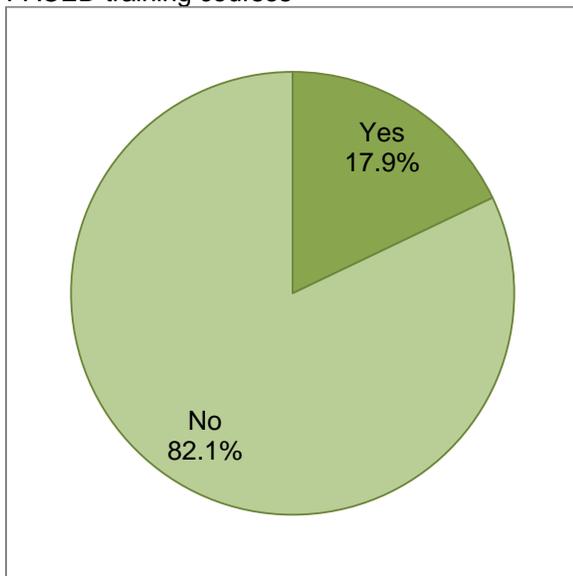
Figure 4. Whether respondents are currently obtaining or have had lactation education in the past two years



N=284

- The majority of respondents are not currently obtaining or have not had lactation education in the past two years (70.1 percent) (Figure 4, Appendix Table 4).

Figure 5. Among respondents who are currently obtaining or have had lactation education in the past two years, whether respondents had SELF-PACED training courses

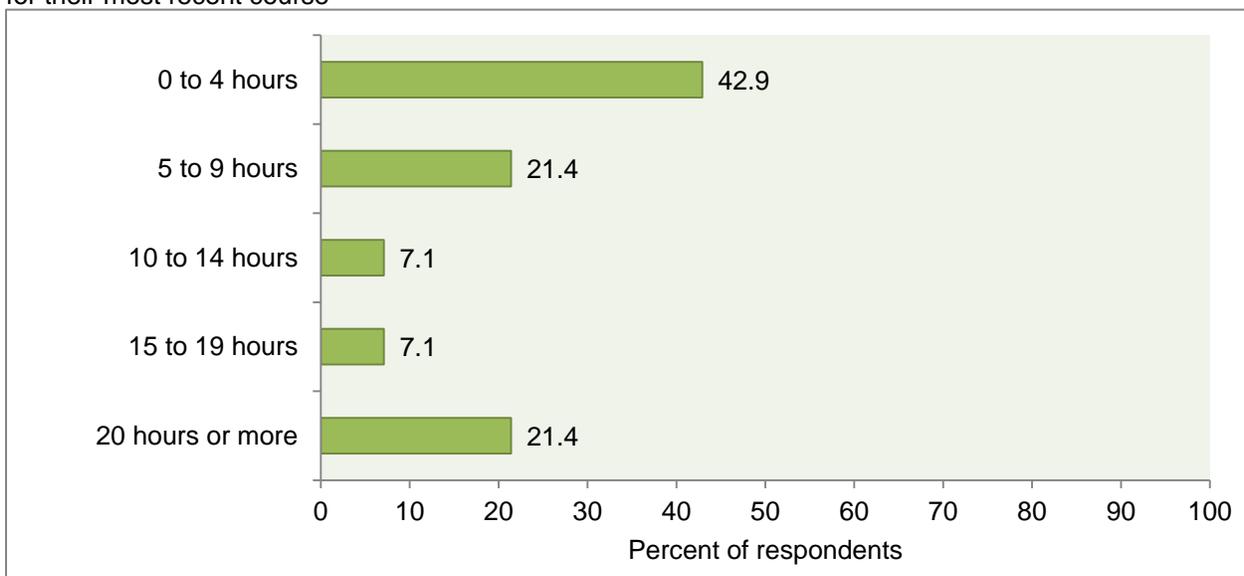


N=78

- Among respondents who are currently obtaining or have had lactation education in the past two years (Figure 5, Appendix Table 5):
  - 17.9 percent had SELF-PACED training courses (e.g., E-learning online, home study modules through the mail).

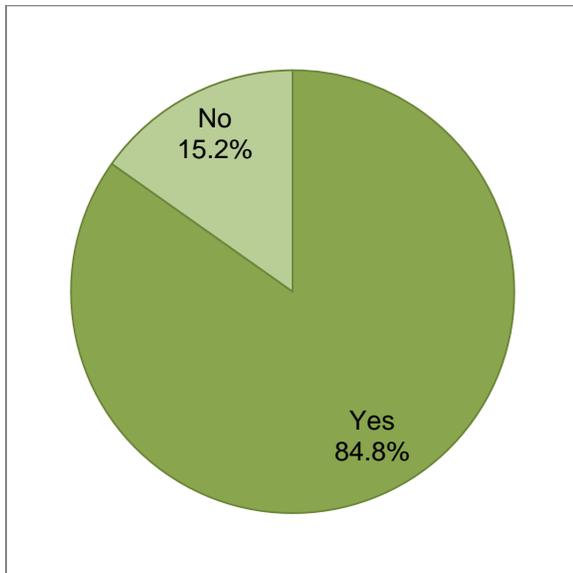
- Among respondents who are currently obtaining or have had lactation education in the past two years AND had SELF-PACED training courses (Figure 6, Appendix Table 6):
  - 42.9 percent received from 0 to 4 contact hours, 21.4 percent received from 5 to 9 contact hours, and 21.4 percent received 20 or more contact hours for their most recent course.

Figure 6. Among respondents who are currently obtaining or have had lactation education in the past two years AND had SELF-PACED training courses, the total number of contact hours respondents received for their most recent course



N=14

Figure 7. Among respondents who are currently obtaining or have had lactation education in the past two years, whether respondents had INSTRUCTOR-LED courses or seminars in a classroom or online format

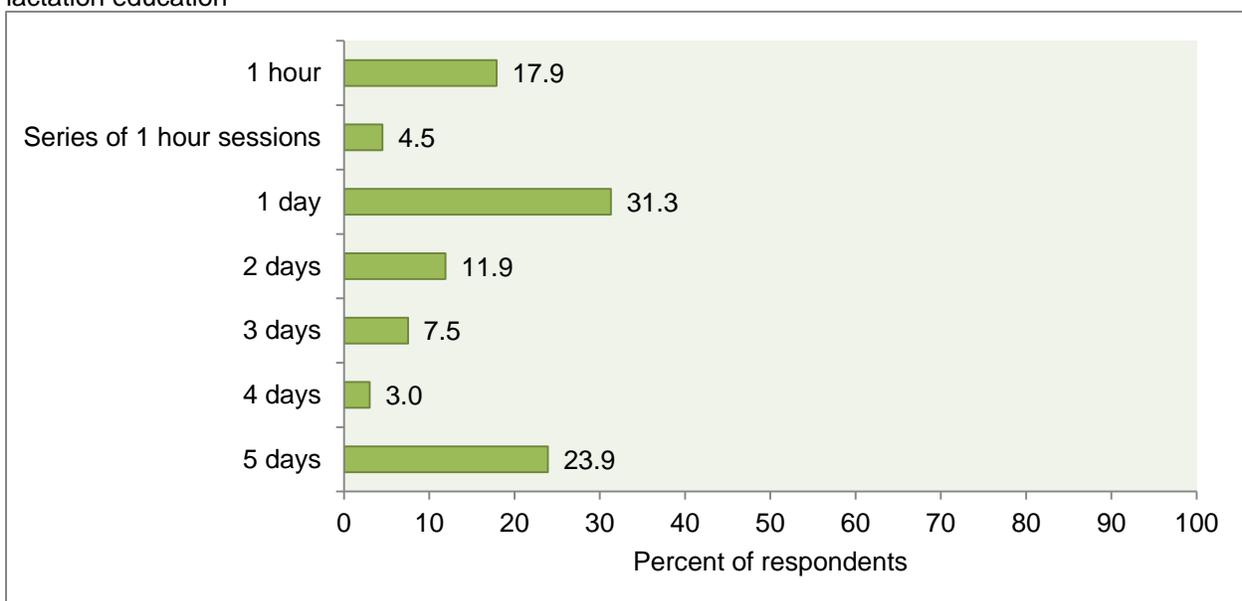


N=79

- Among respondents who are currently obtaining or have had lactation education in the past two years (Figure 7, Appendix Table 7):
  - 84.8 percent had INSTRUCTOR-LED courses or seminars in a classroom or online format (e.g., face-to-face, video conference, scheduled webinar).

- Among respondents who are currently obtaining or have had lactation education in the past two years AND had INSTRUCTOR-LED courses or seminars (Figure 8, Appendix Table 8):
  - 31.3 percent said their most recent course length was 1 day, 23.9 percent said their most recent course length was 5 days, and 17.9 percent said their most recent course length was 1 hour.

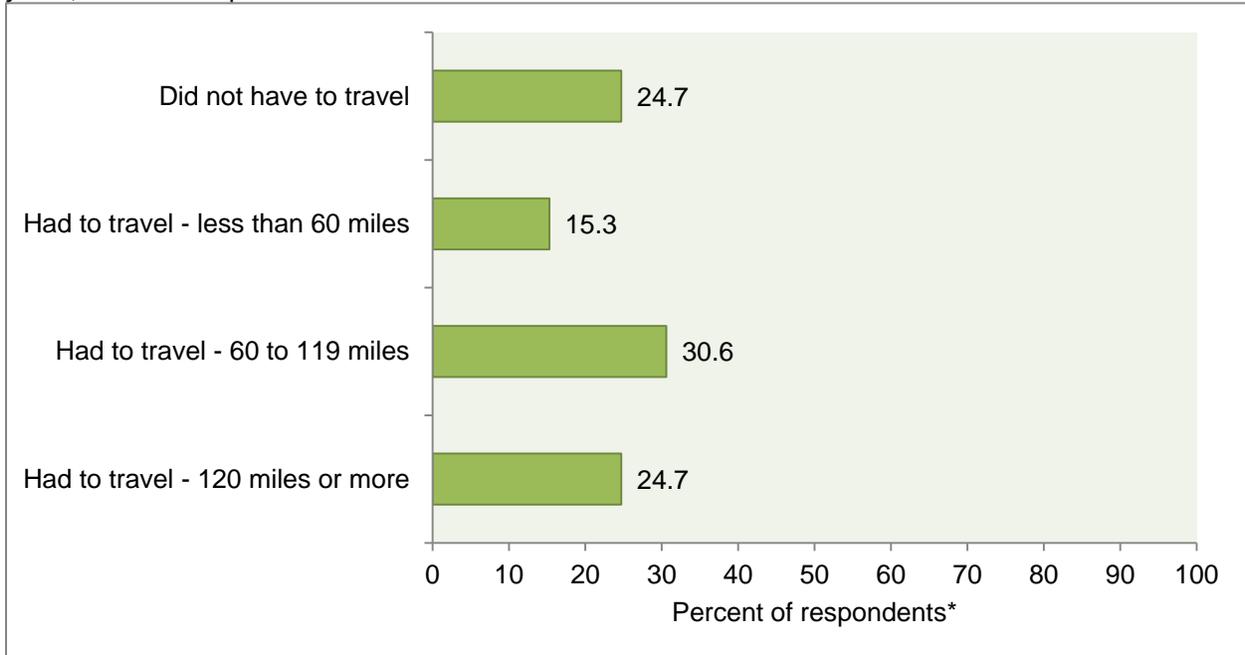
Figure 8. Among respondents who are currently obtaining or have had lactation education in the past two years AND had INSTRUCTOR-LED courses or seminars, the course length of respondents' most recent lactation education



N=67

- Among respondents who are currently obtaining or have had lactation education in the past two years (Figure 9, Appendix Table 9):
  - 30.6 percent had to travel 60 to 119 miles to take their lactation education courses and 24.7 percent had to travel 120 miles or more; 24.7 percent did not have to travel.

Figure 9. Among respondents who are currently obtaining or have had lactation education in the past two years, distance respondents had to travel to take their lactation education courses

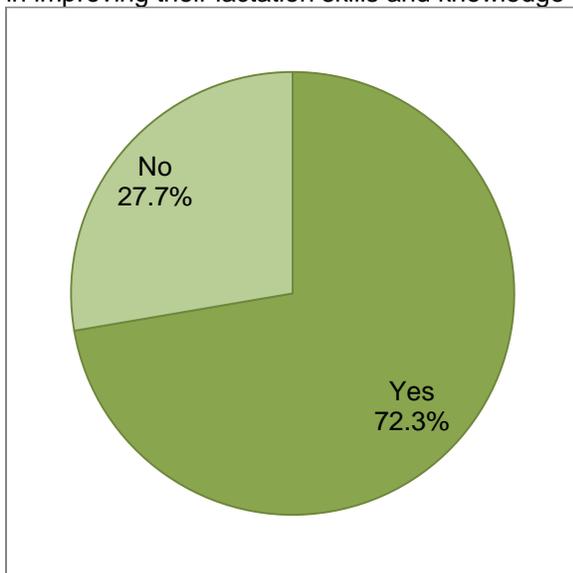


N=85

\*Percentages may not equal 100.0 due to multiple responses.

### Preferences for Delivery of Courses

Figure 10. Whether respondents are interested in improving their lactation skills and knowledge

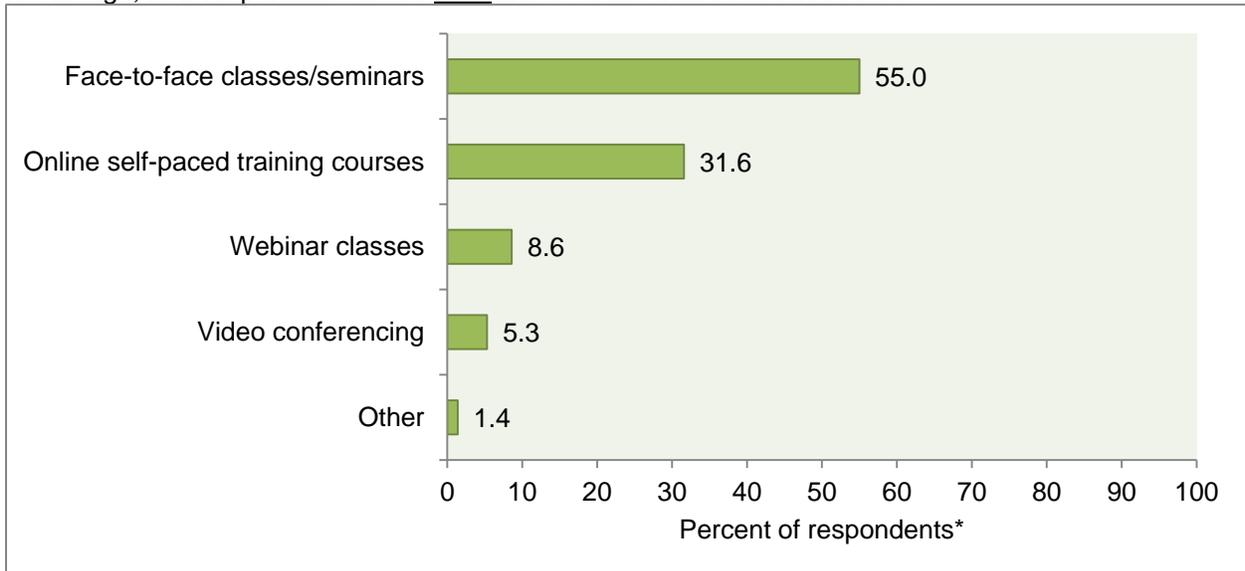


N=289

- Nearly three in four respondents said they are interested in improving their lactation skills and knowledge (72.3 percent) (Figure 10, Appendix Table 10).

- Among respondents who are interested in improving their lactation education skills and knowledge (Figure 11, Appendix Table 11):
  - The majority would most like to obtain their lactation education by face-to-face classes/seminars (55.0 percent); 31.6 percent said they would like online self-paced courses (e.g., E-learning).

Figure 11. Among respondents who are interested in improving their lactation education skills and knowledge, how respondents would most like to obtain their lactation education

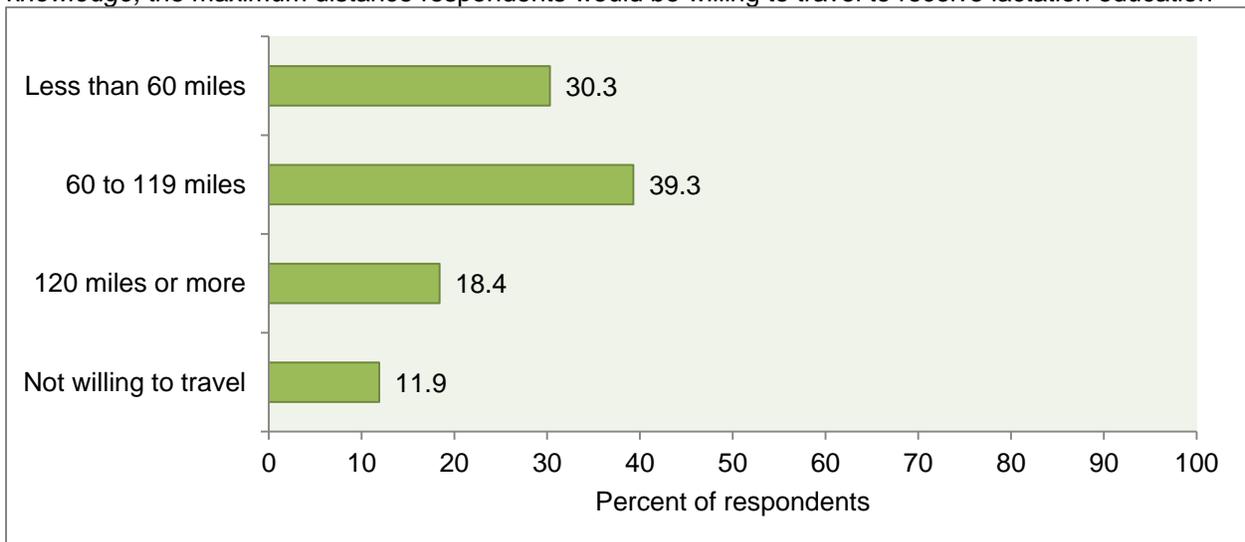


N=209

\*Percentages may not equal 100.0 due to multiple responses.

- Among respondents who are interested in improving their lactation education skills and knowledge (Figure 12, Appendix Table 12):
  - Most would be willing to travel 60 miles or more to receive lactation education (57.7 percent); 11.9 percent were not willing to travel at all.

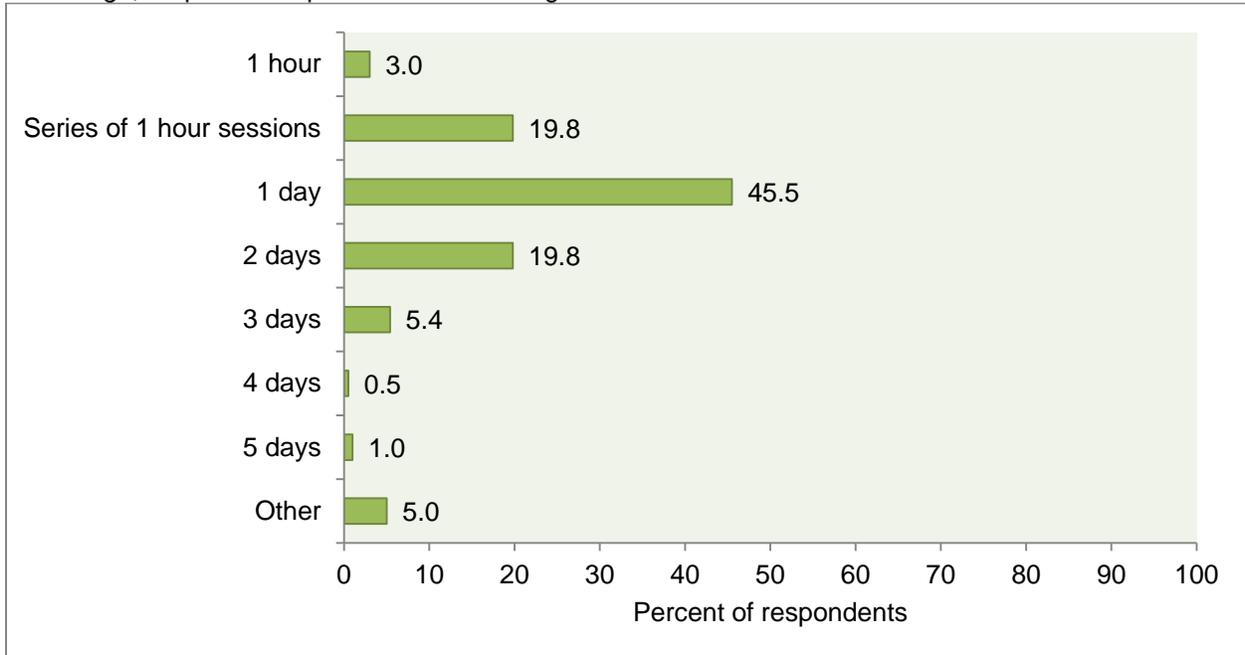
Figure 12. Among respondents who are interested in improving their lactation education skills and knowledge, the maximum distance respondents would be willing to travel to receive lactation education



N=201

- Among respondents who are interested in improving their lactation education skills and knowledge (Figure 13, Appendix Table 13):
  - Most said their preferred course length is 1 day (45.5 percent); 19.8 percent prefer a series of 1 hour sessions and 19.8 percent prefer a course length of 2 days.

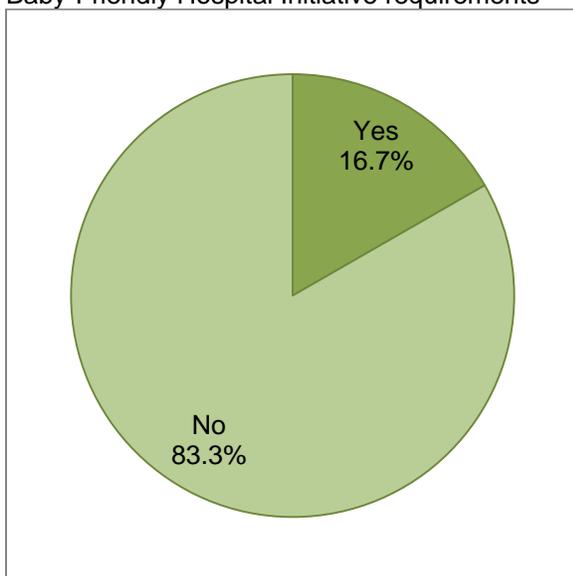
Figure 13. Among respondents who are interested in improving their lactation education skills and knowledge, respondents' preferred course length for lactation education



N=202

### Type of Curriculum and Course Offerings

Figure 14. Whether respondents are familiar with the World Health Organization/UNICEF Baby-Friendly Hospital Initiative requirements

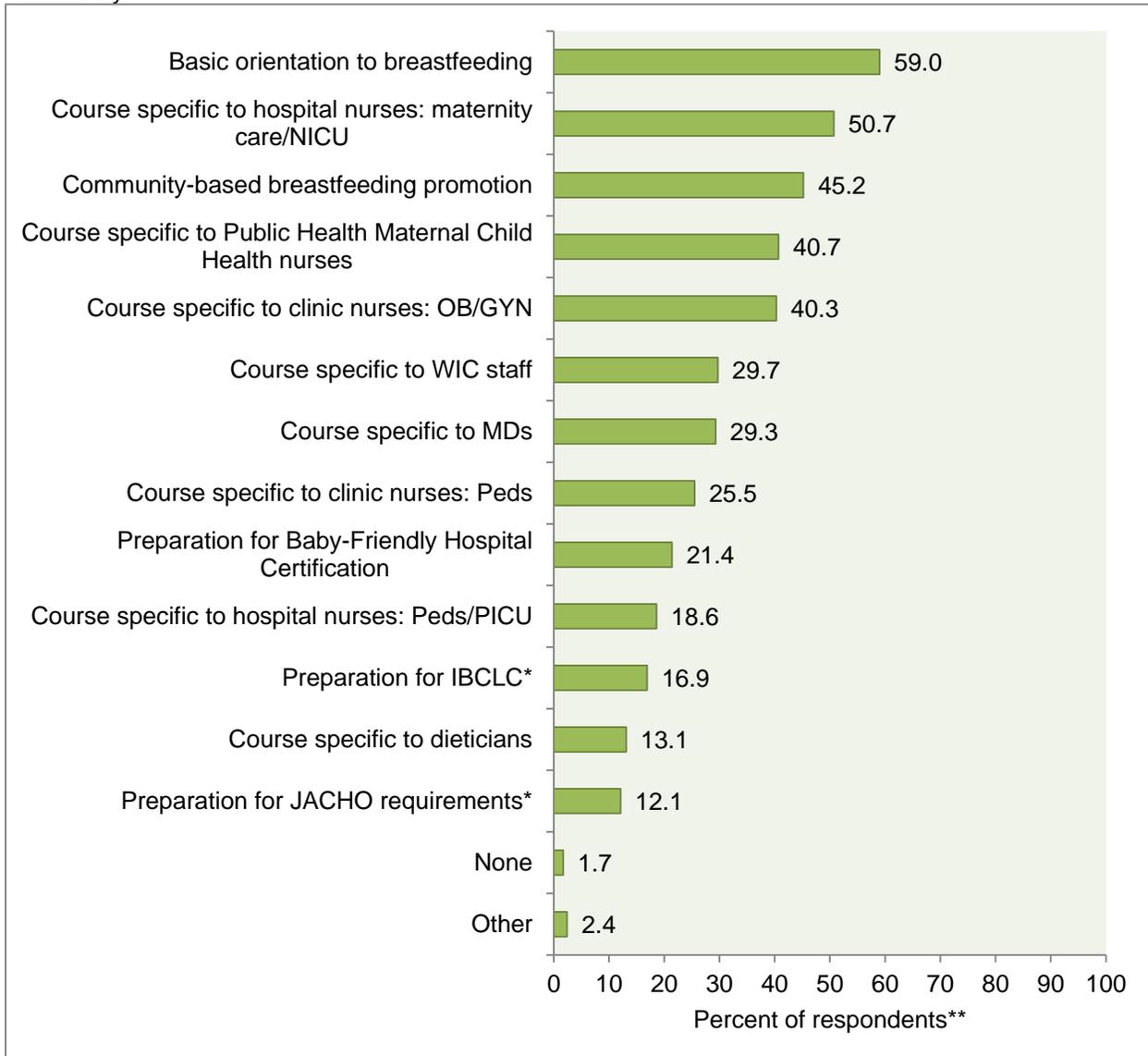


N=287

- Respondents were asked if they were familiar with the World Health Organization/UNICEF Baby-Friendly Hospital Initiative requirements. This initiative requires that nurses working with childbearing families in officially designated sites have 20 hours and MDs and Advanced Practice nurses have at least three hours of lactation education. The majority of respondents are not familiar with the initiative requirements (83.3 percent) (Figure 14, Appendix Table 14).

- Respondents were asked to identify lactation courses that would be beneficial to healthcare providers in their community. The top five courses that respondents identified as being beneficial to healthcare providers in their community are (Figure 15, Appendix Table 15):
  - Basic orientation to breastfeeding (59.0 percent)
  - Course specific to hospital nurses: maternity care/NICU (50.7 percent)
  - Community-based breastfeeding promotion (45.2 percent)
  - Course specific to Public Health Maternal Child Health nurses (40.7 percent)
  - Course specific to clinic nurses: OB/GYN (40.3 percent)

Figure 15. Lactation courses that are/would be beneficial to healthcare providers in respondents' community



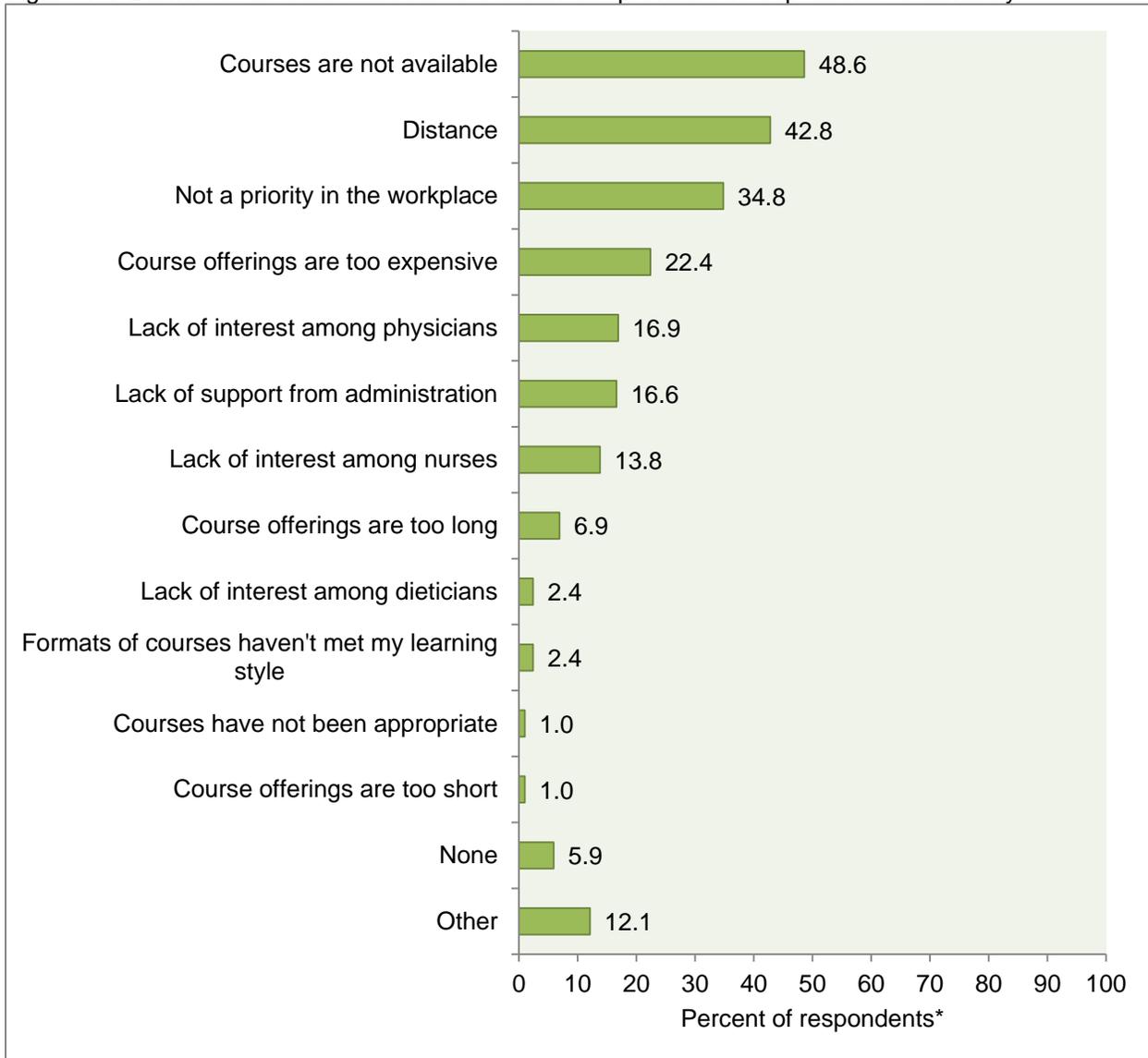
N=290

\*International Board Certified Lactation Consultant (IBCLC); Joint Commission on Accreditation of Healthcare Organizations (JACHO)

\*\*Percentages may not equal 100.0 due to multiple responses.

- Respondents were asked to identify barriers to lactation education that exist for healthcare providers in their community. The top three barriers to lactation education that respondents identified are (Figure 16, Appendix Table 16):
  - Courses are not available (48.6 percent)
  - Distance (42.8 percent)
  - Lactation education is not a priority in the workplace (34.8 percent)

Figure 16. Barriers to lactation education for healthcare providers in respondents' community

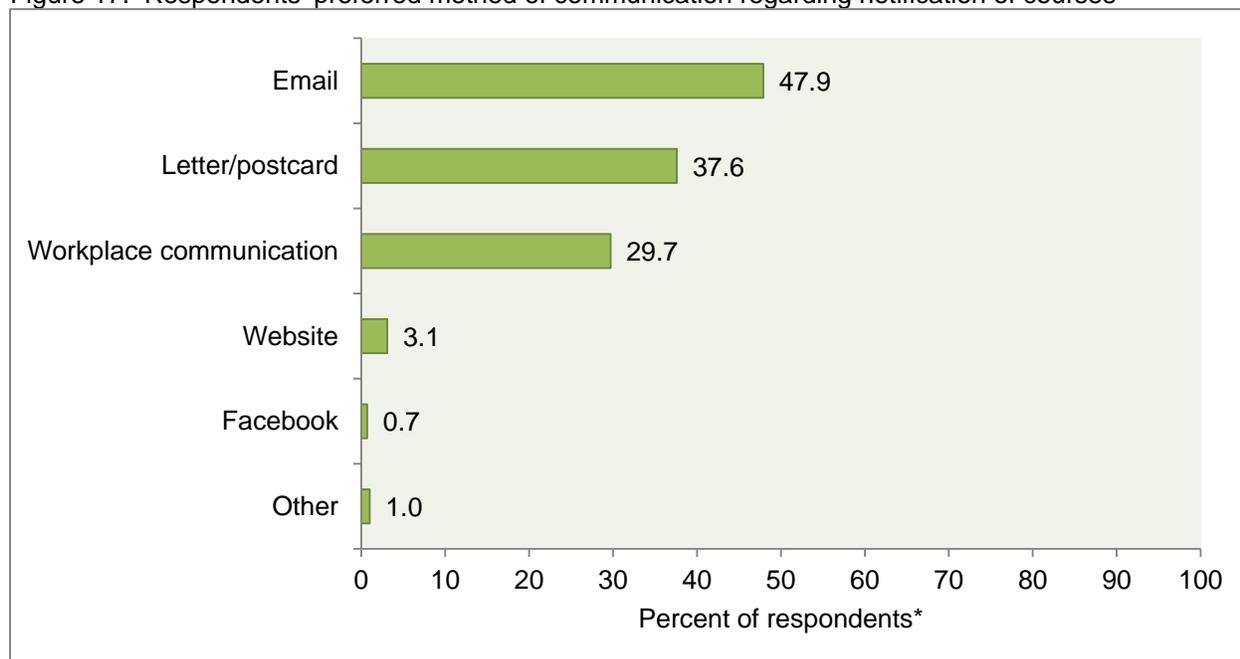


N=290

\*Percentages may not equal 100.0 due to multiple responses.

- Nearly half of respondents said their preferred method of communication regarding notification of courses is email (47.9 percent), followed by letter/postcard (37.6 percent) and workplace communication (29.7 percent) (Figure 17, Appendix Table 17).

Figure 17. Respondents' preferred method of communication regarding notification of courses



N=290

\*Percentages may not equal 100.0 due to multiple responses.

### Comments Regarding Lactation Education

- Respondents were asked if they had comments regarding lactation education for practicing healthcare professionals. Their responses are presented in Table 1.

Table 1. Respondents' comments regarding lactation education for healthcare professionals

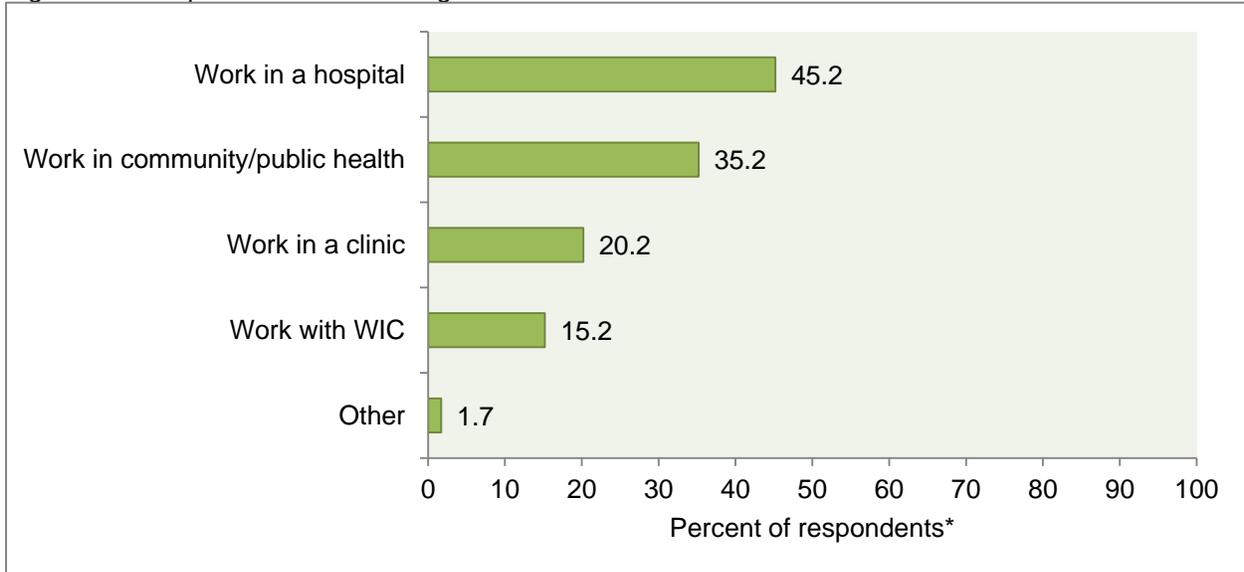
Comments
The classes I have previously taken were very beneficial, however, coming back to the facility when MDs aren't on board with you makes educating other staff and new families <u>very</u> difficult, if not impossible. This of course is a small town hospital.
We have a lactation consultant who makes the nurses and patients feel terrible if either 1) they want to breast and bottle feed 2) they choose to quit breastfeeding 3) and if breastfeeding is not going well it seems she tries to make it as difficult as possible for them to continue, but if they quit – they feel bad. New research I have seen says there really is no such thing as nipple confusion...let the truth out!
Patients come to the hospital wanting to nurse, but they come unprepared – they take no classes or read books, etc.
I don't feel that the successful or unsuccessful has as much to do with staff as with individual patients. I think many feel they <u>should</u> breastfeed or their partners think they should, but they really don't want to take the time or the effort to succeed.
Important – Important – Important!!
Need to have this started in the clinic with the very first prenatal visit and continue until delivery.
Not enough support available for when women, HCP do not have enough information/correct information to give clients.
I have had just inservices for lactation in the hospital I work in. Have had a lot of experiences with lactation (mom and babies).

Comments
We have to do all we can to keep promoting BF so it feels like the “norm” (because it is!)
Lactation is provided by lactation counselors (6) in our rural facility. There is no lactation consultant.
It would be nice to see education cross-over for Public Health as well as clinic/hospital personnel.
I am a supervisor so did answer some questions as I would like to see things done for staff.
I think courses for troubleshooting and support in early weeks would be a good topic for our area – clinics, hospitals, WIC, and Public Health. I don’t think it’s really a lack of interest or low priority as much as lack of time.
IBCLC courses split into manageable time chunks over a period of time that would allow for adequate self-study.
Huge barriers in our area are businesses. My clients are unable to pump at work because it is a “hardship” for the business. We need to change the wording in the law.
Q7 – you should have included CLC (Lactation Counselor Certif.) as many nurses have completed this 40 hour course.
In my twenty years of nursing, I have always supported breastfeeding. I think OB/GYN doctors and pediatric docs and nurses have to support more for it to be successful.
It would be nice if the health care professionals were helpful to each other to promote breastfeeding.
Small rural area. Primary care, hospitals, and Public Health are generalists. While breastfeeding is really important, just stretched too thin with everything needed to know.
It seems a difficult balance between educating it as a natural instinct led response to the huge benefit and many obstacles that can interfere with breastfeeding.
Local courses to keep updated in new knowledge and techniques are helpful for those who have been trained instead of basics. Face-to-face is wonderful and most helpful but webinars or video may be most practical – maybe a yearly update course would be nice.
So happy to have had the opportunity to fill this out. I hope the results will be helpful to move the importance of breastfeeding to the forefront so healthcare professionals are more comfortable.
I believe people in medical field (i.e., doctors and nurses) who work with pregnant moms and babies need more education and learn how to support our mothers who are breastfeeding!
We have WIC staff that is trained in lactation education. We can have our own basic orientation. I, personally, do not see mothers very often regarding breastfeeding issues. Maybe once every 2 years. We refer to our consultants.
Feel there is a need for promotion. We are a small CAH and do not do planned deliveries. Appropriate for our Public Health.
I have 30 years of OB experience and have nursed 3 children – I don’t feel I need much – but am willing to certify.
Sanford Hospital has lactation consultants on staff.
I also work as a CNP and would love to have clinic education on breastfeeding over internet opportunities. Thank you.
It would be nice to have a basic information class provided to help patients that call or come in and have questions.
Our hospital does not provide OB services – thus patients should receive this instruction where they have their babies.
Truly I think you have to have done it yourself to be able to help others. Mothers that have nurses who breastfed their babies are a huge help to new moms.
I feel that it is very important. I would recommend and would love to work with [name omitted] – she is spectacular. One of the best that is around.
In our rural area with declining population, the hospital nurses contact with lactating women is almost non-existent. I feel healthcare providers or public health nurses are the best resource for the mothers in this community.
We do offer education to our nurses, but they need more! This is important (breastfeeding).

## Demographic Characteristics

- The largest proportion of respondents said they work in a hospital (45.2 percent), while 35.2 percent work in community/public health (Figure 18, Appendix Table 18).

Figure 18. Respondents' work setting

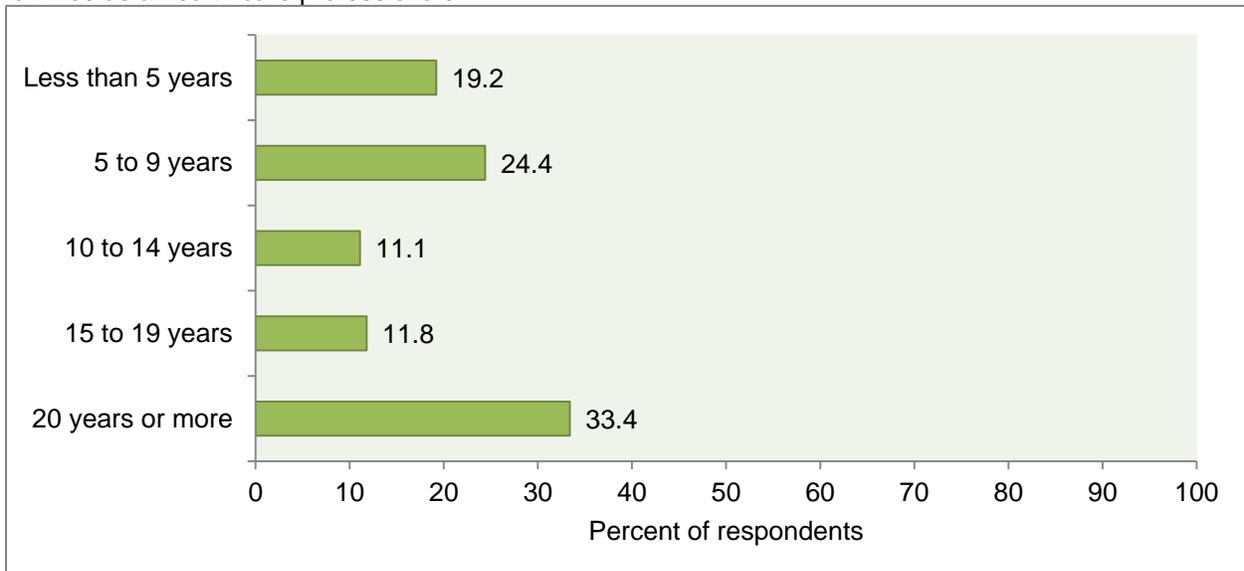


N=290

\*Percentages may not equal 100.0 due to multiple responses.

- One-third of respondents have worked with women, children, and child-bearing families as a health professional for 20 years or more (33.4 percent); 19.2 percent have worked in this area for less than 5 years (Figure 19, Appendix Table 19).

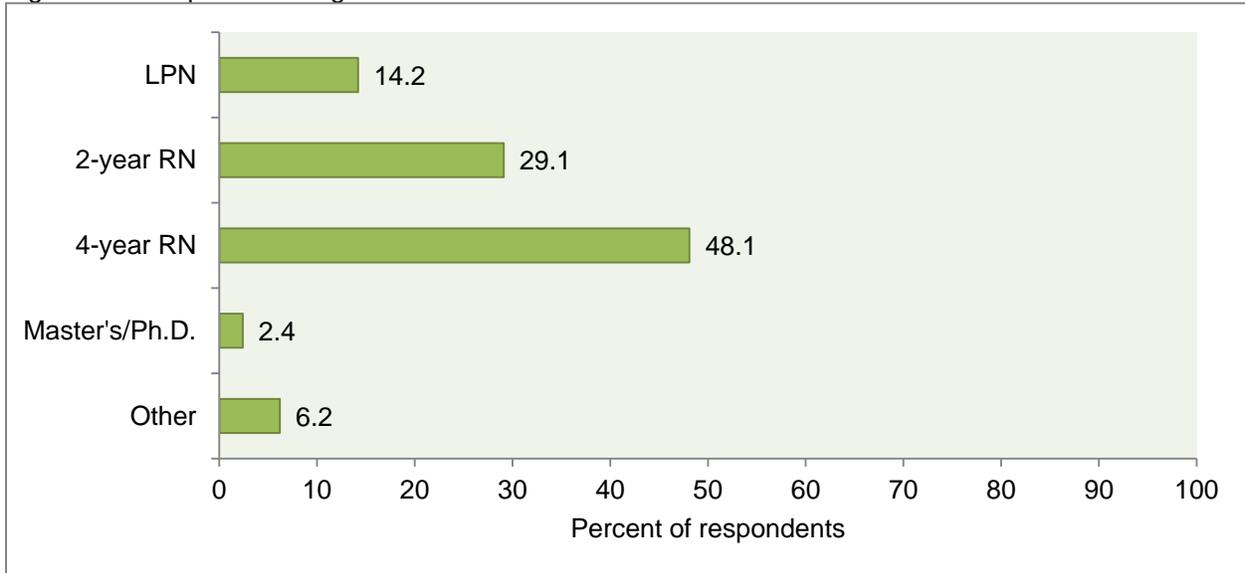
Figure 19. Number of years respondents have been working with women, children, and/or child-bearing families as a health care professionals



N=287

- Nearly half of respondents have a 4-year RN degree (48.1 percent) (Figure 20, Appendix Table 20).

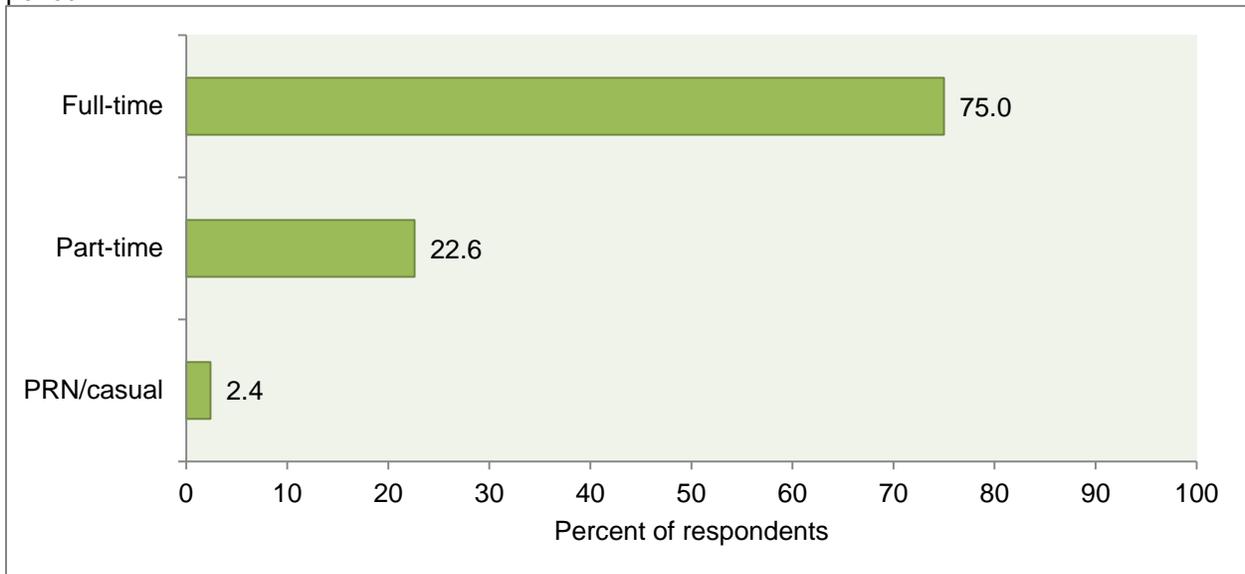
Figure 20. Respondents' highest level of education



N=289

- Three-fourths of respondents work full-time (75.0 percent) (Figure 21, Appendix Table 21).

Figure 21. Respondents' full-time equivalent (FTE) status for their primary role during a two-week pay period



N=288

# MARKET ANALYSIS

## Purpose of Analysis and Methodology

The purpose of this study was to determine whether there is a need for lactation education opportunities in the tri-state area of Minnesota, North Dakota, and South Dakota. The first section of the report presents the overall survey results. This section of the report presents the results of a market analysis, with a focus on further exploration of needs and barriers for lactation education.

For the market analysis, significance testing was conducted on various characteristics, such as type of facility, rural/urban status, and educational levels. Results showing significant differences at  $p < .05$  (using Chi Square tests, t-tests, and ANOVA as appropriate) are summarized in the Executive Summary. Detailed key findings are presented here.

## Detailed Key Findings

### Characteristics of Nurse Respondents

- State: 44% work in Minnesota, 31% work in North Dakota, 25% work in South Dakota
- Type of facility: 63% work in clinics/hospitals, 37% work in public health
- Clinic setting: 20% indicated they work in a clinic setting
- Hospital setting: 45% indicated they work in a hospital setting
- Work with WIC: 15% indicated they work with the Women, Infants, and Children (WIC) program
- Size of clinic/hospital facility: 37% work at a smaller facility (i.e., 10 or fewer doctors or 20 or fewer beds), 64% work at a larger facility (i.e., more than 10 doctors or more than 20 beds)
- Distance from F/M: 42% work within 150 miles of the Fargo/Moorhead (F/M) area, 58% work more than 150 miles from F/M (51% work 151-180 miles from F/M, 6% work more than 180 miles from F/M)
- Rural/urban: 28% work at a facility in a rural community (i.e., less than 2,500 people), 72% work in an urban community (i.e., 2,500 people or more)
- BFHI awareness: 17% are familiar with World Health Organization/UNICEF Baby-Friendly Hospital Initiative requirements
- Employment status: 75% work full-time, 25% work part-time (23% part-time, 2% PRN/casual)
- Years working with target group: 44% have been working less than 10 years with women, infants, and/or child-bearing families, 56% have been working 10 years or more
- Education: 14% LPN, 29% 2-year RN, 48% 4-year RN, 2% Master's/Ph.D., 6% other
- Personal interest: 72% are interested in improving their lactation skills and knowledge
  - Among those with personal interest, preferred method for obtaining lactation education: 46% prefer technology (32% online, 9% webinar, 5% video conferencing), 55% face-to-face
  - Among those with personal interest, willingness to travel: 58% willing to travel 60 or more miles (39% 60-119 miles, 18% 120 or more miles), 42% willing to travel less than 60 miles or not at all (30% less than 60 miles, 12% not willing to travel)
  - Among those with personal interest, preferred course length: 24% prefer 1 hour or series of 1 hour sessions, 48% 1 day, 21% 2 days, 7% 3-5 days
- Notification of courses: 48% prefer communication regarding notification of courses via email, 38% letter/postcard, 30% workplace communication, 3% website, 1% Facebook

## →Significance by Characteristics of Nurse Respondents

Likelihood of working **within 150 miles of the Fargo/Moorhead (F/M) area** (42% overall):

- **State**: Nurses from North Dakota and Minnesota are more likely than those in South Dakota (61% and 47% vs. 11%)
- **Education**: Nurses with LPNs (who comprise only 14% of the nurses surveyed overall) are more likely than those with higher levels of education (61% LPN vs. 33% 2-year RN, 46% 4-year RN, and 43% Master's/Ph.D.)
- **Employment status**: Nurses who work full-time are more likely than those who work part-time or PRN casual (47% vs. 31%)
- **Willingness to travel**: Nurses who are willing to travel longer distances are more likely than those who are willing to travel shorter distances (53% 60 miles or more vs. 38% less than 60 miles or not at all)

Likelihood of working **at a facility in an urban community** (72% overall):

- **State**: Nurses from Minnesota are more likely than those in South Dakota and North Dakota (84% vs. 67% and 59%)
- **Type of facility**: Nurses who work in clinics/hospitals are more likely than respondents in public health (76% vs. 65%)
- **Size of clinic/hospital facility**: Nurses who work at a larger facility are more likely to be in an urban community than respondents at a smaller facility (81% vs. 67%)
- **Distance from F/M**: Nurses who work within 150 miles of F/M are more likely to be in an urban community than respondents who work more than 150 miles from F/M (85% vs. 62%)

Likelihood of **expressing interest in improving their lactation skills and knowledge** (72% overall):

- **State**: Nurses from Minnesota are more likely than those in South Dakota and North Dakota (87% vs. 63% and 60%)
- **Type of facility**: Nurses who work in public health are more likely than respondents in clinics/hospitals (87% vs. 64%)
- **Distance from F/M**: Nurses who work within 150 miles of F/M are more likely than respondents who work more than 150 miles from F/M (80% vs. 67%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (77% vs. 60%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (91% vs. 69%)
- **Education**: Nurses with higher levels of education are more likely than LPNs (86% Master's/Ph.D., 77% 4-year RN, and 72% 2-year RN vs. 51% LPN)

*Among nurses with personal interest in lactation education:*

Likelihood of preferring to obtain **lactation education using technology** (46% overall):

- **Course length**: Nurses who prefer 1 hour or series of 1 hour sessions are more likely than those who prefer full day courses (76% 1 hour or series of 1 hour sessions vs. 42% 1 day, 28% 2 day, and 21% 3-5 days)
- **Notification of courses – email**: Nurses who prefer notification of courses via email are more likely than those who do not (53% vs. 38%)
- **Notification of courses – workplace communication**: Nurses who do not prefer notification of courses via workplace communication are more likely than those who do (52% vs. 29%)

Likelihood of preferring to obtain **lactation education in a face-to-face format** (56% overall):

- **Course length**: Nurses who prefer full day courses are more likely than those who prefer 1 hour or series of 1 hour sessions (60% 1 day, 73% 2 day, and 79% 3-5 days vs. 26% 1 hour or series of 1 hour sessions)
- **Notification of courses – email**: Nurses who do not prefer notification of courses via email are more likely than those who do (63% vs. 47%)

- Notification of courses – workplace communication: Nurses who prefer notification of courses via workplace communication are more likely than those who do not (70% vs. 50%)

Likelihood of being **willing to travel 60 or more miles** (58% overall):

- Work with WIC: Nurses who work with the WIC program are more likely than those who do not (82% vs. 52%)
- Course length: Nurses who prefer full day courses are more likely than those who prefer 1 hour or series of 1 hour sessions (63% 1 day, 77% 2 day, and 86% 3-5 days vs. 26% 1 hour or series of 1 hour sessions)

Likelihood of being **not willing to travel at all** (12% overall):

- State: Nurses in South Dakota are more likely than those in North Dakota or Minnesota (23% vs. 14% and 7%)
- Work with WIC: Nurses who do not work with the WIC program are more likely than those who do (15% vs. 0%)
- Employment status: Nurses who work full-time are more likely than those who work part-time or PRN casual (15% vs. 5%)
- Obtain lactation education – using technology: Nurses who prefer to obtain lactation education using technology are more likely than those who do not (20% vs. 6%)
- Obtain lactation education – face-to-face: Nurses who do not prefer to obtain lactation education face-to-face are more likely than those who do (19% vs. 6%)
- Course length: Nurses who prefer 1 hour or series of 1 hour sessions are more likely than those who prefer full day courses (39% 1 hour or series of 1 hour sessions vs. 4% 1 day, 0% 2 day, and 7% 3-5 days)

Likelihood of preferring **course lengths of 1 day or less** (72% overall):

- Size of clinic/hospital facility: Nurses who work in a smaller facility are more likely than those who work in a larger facility (87% vs. 61%)
- Employment status: Nurses who work part-time or PRN casual are more likely than those who work full-time (80% vs. 69%)

Likelihood of preferring to receive communication regarding notification of courses via **letter/postcard** (38% overall):

- Type of facility: Nurses who work in clinics/hospitals are more likely than respondents in public health (42% vs. 30%)
- Work with WIC: Nurses who do not work with the WIC program are more likely than those who do (41% vs. 21%)

Likelihood of preferring to receive communication regarding notification of courses via **email** (48% overall):

- Rural/urban: Nurses who work at a facility in a rural community are more likely than those who work in an urban community (59% vs. 44%)
- Public health setting: Nurses who work in community public health are more likely than those who do not (67% vs. 38%)
- Work with WIC: Nurses who work with the WIC program are more likely than those who do not (71% vs. 44%)
- Education: Nurses with higher levels of education are more likely than LPNs (43% Master's/Ph.D., 56% 4-year RN, and 41% 2-year RN vs. 29% LPN)
- Years working with target group: Nurses who have been working less than 10 years with women, infants, and/or child-bearing families are more likely than those working 10 years or more (56% vs. 41%)
- Personal interest: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (52% vs. 39%)

Likelihood of preferring to receive communication regarding notification of courses via **workplace communication** (30% overall):

- **Type of facility**: Nurses who work in clinics/hospitals are more likely than respondents in public health (39% vs. 14%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (34% vs. 20%)
- **Work with WIC**: Nurses who do not work with the WIC program are more likely than those who do (32% vs. 16%)
- **Hospital setting**: Nurses who work at a hospital are more likely than those who do not (42% vs. 20%)

Likelihood of **seeing breastfeeding as very important** (69% overall said it is *very important*; mean=4.61, with 1 being “not at all important” and 5 being “very important”):

- **Type of facility**: Nurses who work in public health see breastfeeding as more important, on average, than those who work in clinics/hospitals (mean=4.78 vs. mean=4.51)
- **Work with WIC**: Nurses who work with the WIC program see breastfeeding as more important, on average, than those who do not (mean=4.88 vs. mean=4.57)
- **Education**: Nurses with higher levels of education are more likely to say breastfeeding is *very important* than those with less education (71% Master’s/Ph.D. and 74% 4-year RN vs. 65% 2-year RN and 64% LPN)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge see breastfeeding as more important, on average, than those who do not (mean=4.71 vs. mean=4.35)
- **Willingness to travel**: Nurses who are willing to travel longer distances see breastfeeding as more important, on average, than those who are willing to travel shorter distances (mean=4.80 vs. mean=4.60)
- **Community-based breastfeeding promotion course**: Nurses who indicated this course would be beneficial see breastfeeding as more important, on average, than those who did not select this course (mean=4.74 vs. mean=4.50)
- **Course specific to MDs**: Nurses who indicated this course would be beneficial see breastfeeding as more important, on average, than those who did not select this course (mean=4.73 vs. mean=4.56)
- **Preparation for International Board Certified Lactation Consultant (IBCLC) course**: Nurses who indicated this course would be beneficial see breastfeeding as more important, on average, than those who did not select this course (mean=4.81 vs. mean=4.57)
- **Course specific to dietitians**: Nurses who indicated this course would be beneficial see breastfeeding as more important, on average, than those who did not select this course (mean=4.79 vs. mean=4.59)
- **“Courses are not available” is a barrier to lactation education**: Nurses who selected this barrier saw breastfeeding as more important, on average, than those who did not select this barrier (mean=4.71 vs. mean=4.52).
- **“Distance” is a barrier to lactation education**: Nurses who selected this barrier saw breastfeeding as more important, on average, than those who did not select this barrier (mean=4.78 vs. mean=4.49).
- **“Lack of support from administration” is a barrier to lactation education**: Nurses who selected this barrier saw breastfeeding as more important, on average, than those who did not select this barrier (mean=4.83 vs. mean=4.57).

Likelihood of **seeing a high level of need for lactation education** (33% said a *very high* level of need; mean=3.88, with 1 being “very low” and 5 being “very high”):

- **State**: Nurses in Minnesota are more likely to say there is a *very high* level of need than those in South Dakota or North Dakota (41% vs. 31% and 24%)
- **Type of facility**: Nurses who work in public health see a higher level of need for lactation education, on average, than those who work in clinics/hospitals (mean=4.07 vs. mean=3.76)

- Rural/urban: Nurses who work at a facility in an urban community see a higher level of need for lactation education, on average, than those who work in a rural community (mean=3.97 vs. mean=3.64)
- Size of clinic/hospital facility: Nurses who work in a larger facility see a higher level of need for lactation education, on average, than those who work in a smaller facility (mean=3.91 vs. mean=3.50)
- WIC: Nurses who work with the WIC program see a higher level of need for lactation education, on average, than those who do not (mean=4.30 vs. mean=3.80)
- Personal interest: Nurses who expressed personal interest in improving lactation skills/knowledge see a higher level of need for lactation education, on average, than those who do not (mean=4.11 vs. mean=3.28)
- Willingness to travel: Nurses who are willing to travel longer distances see a higher level of need for lactation education, on average, than those who are willing to travel shorter distances (mean=4.27 vs. mean=3.88)
- Course length: Nurses who prefer full day courses are more likely to say there is a *very high* level of need for lactation education than those who prefer 1 hour or series of 1 hour sessions (40% 1 day, 42% 2 day, and 50% 3-5 days vs. 28% 1 hour or series of 1 hour sessions)
- Course specific to hospital nurses: maternity care/NICU: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.07 vs. mean=3.67)
- Community-based breastfeeding promotion course: Nurses who indicated this course would be beneficial to healthcare providers in their community see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.08 vs. mean=3.71)
- Course specific to Public Health Maternal Child Health nurses: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.15 vs. mean=3.69)
- Course specific to clinic nurses: OB/GYN: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.13 vs. mean=3.71)
- Course specific to MDs: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.25 vs. mean=3.72)
- Course specific to clinic nurses: Peds: Nurses who indicated this course would be beneficial to healthcare providers in their community see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.08 vs. mean=3.81)
- Preparation for Baby-Friendly Hospital Certification course: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.11 vs. mean=3.81)
- Course specific to hospital nurses: Peds/PICU: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.22 vs. mean=3.80)
- Preparation for International Board Certified Lactation Consultant (IBCLC) course: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.33 vs. mean=3.79)
- Course specific to dietitians: Nurses who indicated this course would be beneficial see a higher level of need for lactation education, on average, than those who did not select this course (mean=4.37 vs. mean=3.80)
- “Course offerings are too expensive” is a barrier to lactation education: Nurses who selected this barrier saw a higher level of need for lactation education, on average, than those who did not select this barrier (mean=4.18 vs. mean=3.79)

### →Significance by Course Offerings

Likelihood of indicating a **basic orientation to breastfeeding** course would be beneficial (59% overall):

- **Type of facility**: Nurses who work in clinics/hospitals are more likely than those who work in public health (64% vs. 50%)
- **Hospital setting**: Nurses who work at a hospital are more likely than those who do not (67% vs. 52%)
- **Years working with target group**: Nurses who have been working less than 10 years with women, infants, and/or child-bearing families are more likely than those working 10 years or more (70% vs. 51%)

Likelihood of indicating a **course specific to hospital nurses: maternity care/NICU** would be beneficial (51%):

- **State**: Nurses who work in Minnesota and South Dakota are more likely than those who work in North Dakota (63% and 49% vs. 34%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (63% vs. 20%)
- **Size of clinic/hospital facility**: Nurses who work at a larger facility are more likely than those who work at a smaller one (60% vs. 43%)
- **Hospital setting**: Nurses who work in a hospital are more likely than those who do not (66% vs. 38%)
- **Clinic setting**: Nurses who do not work in a clinic are more likely than those who do (56% vs. 31%)
- **Education**: Nurses with a Master's/Ph.D. and RNs are more likely than LPNs (71% Master's/Ph.D., 53% 4-year RN, and 58% 2-year RN vs. 27% LPN)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (59% vs. 29%)

Likelihood of indicating a **community-based breastfeeding promotion** course would be beneficial (45% overall):

- **Type of facility**: Nurses who work in public health are more likely than those who work in clinics/hospitals (58% vs. 37%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (64% vs. 42%)
- **Clinic setting**: Nurses who do not work in a clinic are more likely than those who do (49% vs. 31%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills and knowledge are more likely than those who did not express personal interest (52% vs. 28%)
- **BFHI awareness**: Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (71% vs. 40%)

Likelihood of indicating a **course specific to Public Health Maternal Child Health nurses** would be beneficial (41%):

- **State**: Nurses who work in North Dakota and Minnesota are more likely than those who work in South Dakota (47% and 46% vs. 24%)
- **Type of facility**: Nurses who work in public health are more likely than those who work in clinics/hospitals (72% vs. 22%)
- **Distance from F/M**: Nurses who work within 150 miles of F/M are more likely than those who work more than 150 miles from F/M (50% vs. 34%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (66% vs. 36%)
- **Education**: Nurses with a Master's/Ph.D. and 4-year RNs are more likely than 2-year RNs and LPNs (43% and 56% vs. 24% and 27%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (47% vs. 25%)

Likelihood of indicating a **course specific to clinic nurses: OB/GYN** would be beneficial (40% overall):

- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (50% vs. 17%)
- **Clinic setting**: Nurses who work in a clinic are more likely than those who do not (57% vs. 36%)
- **Employment status**: Nurses who work full-time are more likely than those who work part-time or PRN casual (44% vs. 29%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (45% vs. 30%)

Likelihood of indicating a **course specific to WIC staff** would be beneficial (30% overall):

- **Type of facility**: Nurses who work in public health are more likely than those who work in clinics/hospitals (48% vs. 19%)
- **Rural/urban**: Nurses who work at a facility in a rural community are more likely than those who work in an urban community (39% vs. 26%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (61% vs. 24%)

Likelihood of indicating a **course specific to MDs** would be beneficial (29% overall):

- **State**: Nurses who work in Minnesota are more likely than those who work in South Dakota or North Dakota (37% vs. 25% and 22%)
- **Type of facility**: Nurses who work in public health are more likely than clinics/hospitals (43% vs. 21%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (33% vs. 21%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (59% vs. 24%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (36% vs. 13%)
- **BFHI awareness**: Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (52% vs. 25%)

Likelihood of indicating a **course specific to clinic nurses: Peds** would be beneficial (26% overall):

- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (30% vs. 13%)
- **Hospital setting**: Nurses who do not work in a hospital are more likely than those who do (31% vs. 19%)
- **Clinic setting**: Nurses who work in a clinic are more likely than those who do not (36% vs. 23%)
- **Education**: Nurses who have an LPN are more likely than those with more education (46% LPN vs. 19% 2-year RN, 25% 4-year RN, and 14% Master's/Ph.D.)
- **BFHI awareness**: Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (42% vs. 22%)

Likelihood of indicating a **preparation for Baby-Friendly Hospital Certification** course would be beneficial (21% overall):

- **State**: Nurses who work in Minnesota are more likely than those who work in North Dakota or South Dakota (29% vs. 16% and 15%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (25% vs. 12%)
- **Hospital setting**: Nurses who work in a hospital are more likely than those who do not (30% vs. 15%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (27% vs. 8%)

- **BFHI awareness:** Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (35% vs. 18%)

Likelihood of indicating a **course specific to hospital nurses: Peds/PICU** would be beneficial (19%):

- **Rural/urban:** Nurses who work at a facility in an urban community are more likely than those who work in a rural community (22% vs. 10%)
- **Personal interest:** Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (22% vs. 11%)
- **BFHI awareness:** Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (35% vs. 16%)

Likelihood of indicating a **preparation for International Board Certified Lactation Consultant (IBCLC)** course would be beneficial (17%):

- **Type of facility:** Nurses who work in public health are more likely than those who work in clinics/hospitals (23% vs. 13%)
- **Distance from F/M:** Nurses who work more than 180 miles from F/M and work within 150 miles of F/M are more likely than those who work 151 to 180 miles from F/M (33% and 20% vs. 12%)
- **Rural/urban:** Nurses who work at a facility in an urban community are more likely than those who work in a rural community (20% vs. 9%)
- **Work with WIC:** Nurses who work with the WIC program are more likely than those who do not (30% vs. 15%)
- **Personal interest:** Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (21% vs. 8%)
- **Course length:** Nurses who prefer a longer course length are more likely than those who prefer a shorter course length (50% 3-5 days and 33% 2 days vs. 12% 1 day and 17% 1 hour or series of 1 hour sessions)

Likelihood of indicating a **course specific to dietitians** would be beneficial (13% overall):

- **Type of facility:** Nurses who work in public health are more likely than those who work in clinics/hospitals (23% vs. 7%)
- **Work with WIC:** Nurses who work with the WIC program are more likely than those who do not (23% vs. 11%)
- **Hospital setting:** Nurses who do not work in a hospital are more likely than those who do (18% vs. 8%)
- **Education:** Nurses with a Master's/Ph.D. are more likely than those with less education (43% Master's/Ph.D. vs. 18% 4-year RN, 7% 2-year RN, and 7% LPN)
- **Personal interest:** Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (16% vs. 6%)
- **Course length:** Nurses who prefer the longest or shortest course lengths are more likely than those who prefer courses of 1-2 days (29% 3-5 days and 24% 1 hour or series of 1 hour sessions vs. 9% 1 day and 13% 2 days)
- **BFHI awareness:** Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (25% vs. 11%)

Likelihood of indicating a **preparation for Joint Commission on Accreditation of Healthcare Organizations (JACHO)** course would be beneficial (12%):

- **Type of facility:** Nurses who work in clinics/hospitals are more likely than those who work in public health (17% vs. 4%)
- **Distance from F/M:** Nurses who work within 150 miles of F/M are more likely than those who work more than 150 miles from F/M (17% vs. 8%)
- **Rural/urban:** Nurses who work at a facility in an urban community are more likely than those who work in a rural community (16% vs. 1%)
- **Size of clinic/hospital facility:** Nurses who work at a larger facility are more likely than those who work at a smaller facility (22% vs. 9%)

- Hospital setting: Nurses who work in a hospital are more likely than those who do not (20% vs. 6%)
- Personal interest: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (15% vs. 5%)

Likelihood of indicating that **none** of the courses would be beneficial (2%):

- The nurses who responded to the survey almost universally indicated that at least one of the listed courses would be beneficial to healthcare providers in their community. Five respondents selected “no” courses would be beneficial; these respondents would be considered outliers. These five respondents gave low ratings on the importance of breastfeeding and the level of need for lactation education and also did not express interest in improving their own lactation skills and knowledge.

#### →Significance by Barriers to Lactation Education that Exist for Healthcare Providers

Likelihood of indicating that **courses are not available** is a barrier to lactation education (49%):

- State: Nurses who work in North Dakota and South Dakota are more likely than those who work in Minnesota (58% and 54% vs. 39%)
- Clinic setting: Nurses who work in a clinic are more likely than those who do not (64% vs. 45%)
- BFHI awareness: Nurses who are not aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are aware (51% vs. 35%)

Likelihood of indicating that **distance** is a barrier to lactation education (43%):

- Distance from F/M: Nurses who work within 150 miles of F/M are more likely than those who work more than 150 miles from F/M (50% vs. 38%)
- Rural/urban: Nurses who work at a facility in a rural community are more likely than those who work in an urban community (52% vs. 39%)
- Willingness to travel: Nurses who are willing to travel longer distances are more likely than those who are willing to travel shorter distances (55% 60 miles or more vs. 33% less than 60 miles or not at all)
- Course length: Nurses who prefer full day courses are more likely than those who prefer 1 hour or series of 1 hour sessions (49% 1 day, 63% 2 day, and 50% 3-5 days vs. 28% 1 hour or series of 1 hour sessions)

Likelihood of indicating that **not a priority in the workplace** is a barrier to lactation education (35%):

- Rural/urban: Nurses who work at a facility in a rural community are more likely than those who work in an urban community (49% vs. 29%)

Likelihood of indicating that **course offerings are too expensive** is a barrier to lactation education (22%):

- State: Nurses who work in Minnesota are more likely than those who work in North Dakota and South Dakota (34% vs. 17% and 10%)
- Type of facility: Nurses who work in public health are more likely than those who work in clinics/hospitals (39% vs. 13%)
- Distance from F/M: Nurses who work within 150 miles of F/M are more likely than those who work more than 150 miles from F/M (29% vs. 17%)
- Work with WIC: Nurses who work with the WIC program are more likely than those who do not (39% vs. 20%)
- Years working with target group: Nurses who have been working 10 years or more with women, infants, and/or child-bearing families are more likely than those working less than 10 years (27% vs. 17%)
- Personal interest: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (28% vs. 9%)
- BFHI awareness: Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (42% vs. 19%)

Likelihood of indicating that **lack of interest among physicians** is a barrier to lactation education (17%):

- **State**: Nurses who work in Minnesota are more likely than those who work in South Dakota and North Dakota (23% vs. 15% and 10%)
- **Type of facility**: Nurses who work in public health are more likely than those who work in clinics/hospitals (24% vs. 13%)
- **Rural/urban**: Nurses who work at a facility in an urban community are more likely than those who work in a rural community (20% vs. 10%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (39% vs. 13%)
- **Education**: Nurses who have a Master's/Ph.D. are more likely than those with less education (43% Master's/Ph.D. vs. 22% 4-year RN, 13% 2-year RN, and 5% LPN)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (21% vs. 8%)
- **Willingness to travel**: Nurses who are willing to travel longer distances are more likely than those who are willing to travel shorter distances (28% 60 miles or more vs. 12% less than 60 miles or not at all)
- **BFHI awareness**: Nurses who are aware of the Baby-Friendly Hospital Initiative requirements are more likely than those who are not aware (40% vs. 13%)

Likelihood of indicating that **lack of support from administration** is a barrier to lactation education (17%):

- **Years working with target group**: Nurses who have been working less than 10 years with women, infants, and/or child-bearing families are more likely than those working 10 years or more (22% vs. 12%)
- **Personal interest**: Nurses who expressed personal interest in improving lactation skills/knowledge are more likely than those who did not (22% vs. 4%)
- **Course length**: Nurses who prefer 2 day courses are more likely than those who prefer other course lengths (35% 2 day vs. 28% 1 hour or series of 1 hour sessions, 13% 1 day, and 14% 3-5 days)

Likelihood of indicating that **lack of interest among nurses** is a barrier to lactation education (14%):

- **Education**: Nurses who have a Master's/Ph.D. are more likely than those with less education (43% Master's/Ph.D. vs. 13% 4-year RN, 14% 2-year RN, and 5% LPN)

Likelihood of indicating that **course offerings are too long** is a barrier to lactation education (7%):

- **Type of facility**: Nurses who work in public health are more likely than those who work in clinics/hospitals (11% vs. 4%)

Likelihood of indicating that **lack of interest among dieticians** is a barrier to lactation education (2%):

- **Distance from F/M**: Nurses who work more than 180 miles from F/M are more likely than those who work within 180 miles of F/M (11% more than 180 miles from F/M vs. 2% 151-180 miles from F/M and 2% within 150 miles of F/M)
- **Public health setting**: Nurses who work in community/public health are more likely than those who do not (5% vs. 1%)
- **Work with WIC**: Nurses who work with the WIC program are more likely than those who do not (7% vs. 2%)

Likelihood of indicating that **format of courses haven't met my learning style** is a barrier to lactation education (2%):

- **Distance from F/M**: Nurses who work within 150 miles of F/M are more likely than those who work more than 150 miles from F/M (5% vs. 1%)

Likelihood of indicating that **courses have not been appropriate** is a barrier to lactation education (1%) or that **course offerings are too short** is a barrier to lactation education (1%):

- No characteristics showed significance

Likelihood of indicating that **none** of the barriers apply (6%):

- Type of facility: Nurses who work in clinics/hospitals are more likely than those who work in public health (8% vs. 2%)
- Size of clinic/hospital facility: Nurses who work in a larger facility are more likely than those who work in a smaller facility (11% vs. 3%)

## APPENDICES

### Appendix Tables

Appendix Table 1. Respondents' opinion regarding the importance of breastfeeding

Question	Mean	Percent of respondents					Total
		Level of importance (1=not at all important, 5=very important)					
		1	2	3	4	5	
How important is breastfeeding?	4.61	0.4	0.0	6.4	24.3	68.9	100.0

N=280

Appendix Table 2. Respondents' opinion regarding the level of need for lactation education opportunities for nurses and other healthcare providers in their community

Question	Mean	Percent of respondents					Total
		Level of need (1=very low, 5=very high)					
		1	2	3	4	5	
What is the level of need for lactation opportunities for nurses and other healthcare providers?	3.88	2.8	5.9	24.7	33.8	32.8	100.0

N=287

Appendix Table 3. Respondents' status/interest in certification

I am:	Percent of respondents*
Currently a certified lactation consultant.	8.6
Interested in re-certification as a lactation consultant.	0.0
Interested in lactation consultant certification for the first time.	29.7
Not interested in International Board Certified Lactation Consultant (IBCLC) certification.	59.0

N=290

\*Percentages may not equal 100.0 due to multiple responses.

Appendix Table 4. Whether respondents are currently obtaining or have had lactation education in the past two years

Response	Percent of respondents
Yes	29.9
No	70.1
Total	100.0

N=284

Appendix Table 5. Among respondents who are currently obtaining or have had lactation education in the past two years, whether respondents had SELF-PACED training courses (e.g., E-learning online, home study modules through the mail)

Response	Percent of respondents
Yes	17.9
No	82.1
Total	100.0

N=78

Appendix Table 6. *Among respondents who are currently obtaining or have had lactation education in the past two years AND had SELF-PACED training courses, the total number of contact hours received for their most recent course*

<b>Response</b>	<b>Percent of respondents</b>
0 to 4 hours	42.9
5 to 9 hours	21.4
10 to 14 hours	7.1
15 to 19 hours	7.1
20 hours or more	21.4
Other	0.0
Total	99.9

N=14

Appendix Table 7. *Among respondents who are currently obtaining or have had lactation education in the past two years, whether respondents had INSTRUCTOR-LED courses or seminars in a classroom or online format (e.g., face-to-face, video conference, scheduled webinar)*

<b>Response</b>	<b>Percent of respondents</b>
Yes	84.8
No	15.2
Total	100.0

N=79

Appendix Table 8. *Among respondents who are currently obtaining or have had lactation education in the past two years AND had INSTRUCTOR-LED courses or seminars, the course length of respondents' most recent lactation education*

<b>Response</b>	<b>Percent of respondents</b>
1 hour	17.9
Series of 1 hour sessions	4.5
1 day	31.3
2 days	11.9
3 days	7.5
4 days	3.0
5 days	23.9
Other*	0.0
Total	100.0

N=67

\*One respondent did not select "other" as an option but commented "3 hours."

Appendix Table 9. *Among respondents who are currently obtaining or have had lactation education in the past two years, distance respondents had to travel to take their lactation education courses*

<b>Response</b>	<b>Percent of respondents*</b>
I did not have to travel	24.7
Had to travel – less than 60 miles	15.3
Had to travel – 60 to 119	30.6
Had to travel – 120 miles or more	24.7

N=85

\*Percentages do not equal 100.0 due to multiple responses.

Appendix Table 10. Whether respondents are interested in improving their lactation skills and knowledge

Response	Percent of respondents
Yes	72.3
No	27.7
Total	100.0

N=289

Appendix Table 11. Among respondents who are interested in improving their lactation skills and knowledge, how respondents would most like to obtain their lactation education

Response	Percent of respondents*
Face-to-face classes/seminars	55.0
Online self-paced training courses (e.g., E-learning)	31.6
Webinar classes	8.6
Video conferencing	5.3
Other:	1.4
<i>Working with [name omitted] from Mercy Hospital in D.L.</i>	
<i>By mail</i>	

N=209

\*Percentages may not equal 100.0 due to multiple responses.

Appendix Table 12. Among respondents who are interested in improving their lactation skills and knowledge, the maximum distance respondents would be willing to travel to receive lactation education

Response	Percent of respondents
Less than 60 miles	30.3
60 to 119	39.3
120 miles or more	18.4
I am not willing to travel	11.9
Total	99.9

N=201

Appendix Table 13. Among respondents who are interested in improving their lactation skills and knowledge, respondents' preferred course length for lactation education

Response	Percent of respondents
1 hour	3.0
Series of 1 hour sessions	19.8
1 day	45.5
2 days	19.8
3 days	5.4
4 days	0.5
5 days	1.0
Other:	5.0
<i>Depends on course type [2]</i>	
<i>Does not matter</i>	
<i>Depends on how far I have to travel</i>	
<i>If multiple days – done over a month or two</i>	
<i>Whatever necessary [2]</i>	
<i>E-learning</i>	
<i>Depends on work and home schedule</i>	
<i>4 hours</i>	
Total	100.0

N=202

Appendix Table 14. Whether respondents are familiar with the World Health Organization/UNICEF Baby-Friendly Hospital Initiative requirements

Response	Percent of respondents
Yes	16.7
No	83.3
Total	100.0

N=287

Appendix Table 15. Lactation courses that are/would be beneficial to healthcare providers in respondents' community

Response	Percent of respondents*
Basic orientation to breastfeeding	59.0
Course specific to hospital nurses: maternity care/NICU	50.7
Community-based breastfeeding promotion	45.2
Course specific to Public Health Maternal Child Health nurses	40.7
Course specific to clinic nurses: OB/GYN	40.3
Course specific to WIC staff	29.7
Course specific to MDs	29.3
Course specific to clinic nurses: Peds	25.5
Preparation for Baby-Friendly Hospital Certification	21.4
Course specific to hospital nurses: Peds/PICU	18.6
Preparation for International Board Certified Lactation Consultant (IBCLC)	16.9
Course specific to dietitians	13.1
Preparation for Joint Commission on Accreditation of Healthcare Organizations (JACHO) requirements	12.1
None	1.7
Other:	2.4
<i>Course for expectant moms</i>	
<i>Workplace breastfeeding promotion</i>	
<i>Follow-up breastfeeding classes once patients are home from hospital and need assistance</i>	
<i>Small hospital nurses for care of nursing moms and babies</i>	
<i>Courses for clinic nurses family practice</i>	

N=290

\*Percentages may not equal 100.0 due to multiple responses.

Appendix Table 16. Barriers to lactation education for healthcare providers in respondents' community

Response	Percent of respondents*
Courses not available	48.6
Distance	42.8
Not a priority in the workplace	34.8
Course offerings are too expensive	22.4
Lack of interest among physicians	16.9
Lack of support from administration	16.6
Lack of interest among nurses	13.8
Course offerings are too long	6.9
Lack of interest among dietitians	2.4
Formats of courses haven't met my learning style	2.4
Courses have not been appropriate	1.0
Course offerings are too short	1.0
None	5.9

<b>Response</b>	<b>Percent of respondents*</b>
Other:	12.1
<i>Rural setting, don't use knowledge/skill on regular basis to justify cost/time.</i>	
<i>Time off from work</i>	
<i>Funding availability</i>	
<i>People not taking advantage of teaching</i>	
<i>Community apathy</i>	
<i>We don't deliver babies here, but do care for them after births in ER/clinic/WIC, etc.</i>	
<i>Very seldom work with lactating mothers, our facility does not deliver babies.</i>	
<i>Community lack of interest in classes</i>	
<i>Changing requirements for moms all the time; changing the rules about cup feeding, finger feeding, bottle feeding, SRS systems. Treating them like crap if they choose to both breast and bottle feed.</i>	
<i>Need lots of community education and promotion.</i>	
<i>I believe if everyone in the community recognized the numerous benefits of breastfeeding (i.e., health, economic, emotional) it would become the norm and the <u>expectation</u> that all parents would choose breastfeeding.</i>	
<i>We have a certified LC on staff</i>	
<i>For Q13 for myself I like [face-to-face] classes, but there would be more people taking and learning about breastfeeding if they were offered online. There would be more breastfeeding education exposure especially here in the rural areas. Distance and \$ are the biggest barriers. Also poor availability in the state of MN. Iowa is way ahead of us.</i>	
<i>We do not do OB – have few Ped appt.</i>	
<i>I'm not familiar with lactation ed. in our community.</i>	
<i>Lack of interest among patients</i>	
<i>We aren't doing deliveries except emergencies.</i>	
<i>Have never been offered a class.</i>	
<i>Rural hospital with decreased births per year; 1-2 per year</i>	
<i>We have lactation consultants; only one per shift</i>	
<i>Nurses interested, but don't show up so [we] quit offering.</i>	
<i>Low birth numbers at hospital – 2 births average per month</i>	
<i>Content did not meet needs</i>	
<i>Cost is horrid. My IBCLC cost \$4,000</i>	
<i>Staff capacity – no time for more training</i>	
<i>Lack of time</i>	
<i>Time to fit it into your schedule</i>	
<i>Availability of courses</i>	
<i>Don't do OB [3]</i>	
<i>No longer deliver babies</i>	
<i>One of our clinic nurses is certified in lactation</i>	
<i>Courses come out after work schedule is made out.</i>	
<i>Not available at all</i>	
<i>We do not have OB or deliver babies at our facility.</i>	
<i>Investing time and money while watching costs for your facility</i>	

N=290

\*Percentages may not equal 100.0 due to multiple responses.

Appendix Table 17. Respondents' preferred method of communication regarding notification of courses

<b>Response</b>	<b>Percent of respondents*</b>
Email	47.9
Letter/postcard	37.6
Workplace communication	29.7
Website	3.1
Facebook	0.7
Other**:	1.0
<i>Multimedia</i>	

N=290

\*Percentages may not equal 100.0 due to multiple responses.

\*\*Three respondents selected the option "other" but only one specified their preference.

Appendix Table 18. Respondents' work setting

<b>Response</b>	<b>Percent of respondents*</b>
Work in a hospital	45.2
Work in community/public health	35.2
Work in a clinic	20.0
Work with WIC	15.2
Other:	1.7
<i>Out-patient consults</i>	
<i>Home visits</i>	
<i>Right Start</i>	
<i>Also part-time with correct care solutions</i>	

N=290

\*Percentages may not equal 100.0 due to multiple responses.

Appendix Table 19. Number of years respondents have been working with women, children, and/or child-bearing families as health professionals

<b>Response</b>	<b>Percent of respondents</b>
Less than 5 years	19.2
5 to 9 years	24.4
10 to 14 years	11.1
15 to 19 years	11.8
20 years or more	33.4
Total	99.9

N=287

Appendix Table 20. Respondents' highest level of education

<b>Response</b>	<b>Percent of respondents</b>
LPN	14.2
2-year RN	29.1
4-year RN	48.1
Master's/Ph.D.	2.4
Other:	6.2
<i>IBCLC [2]</i>	
<i>CMA [2]</i>	
<i>3-year diploma RN [2]</i>	
<i>JD</i>	
<i>BA/RN</i>	
<i>3-year RN/CLC</i>	
<i>Diploma</i>	
<i>Diploma RN [2]</i>	
Total	100.0

N=289

Appendix Table 21. Respondents' full-time equivalent (FTE) status for their primary role during a two-week pay period

<b>Response</b>	<b>Percent of respondents</b>
Full-time	75.0
Part-time	22.6
PRN/casual	2.4
Total	100.0

N=288



# North Dakota State Data Center

At North Dakota State University - PO BOX 6050, Dept. 8000, Fargo, ND 58108-6050

Phone: (701) 231-8621 Fax: (701) 231-9730 URL: <http://www.ndsu.edu/sdc> Dr. Richard Rathge, Director

November 30, 2010

Dear Healthcare Administrator,

We are conducting a survey of nurses who work with women, children, and/or child-bearing families in healthcare settings to determine the need for lactation education opportunities. We are also interested in learning about barriers that may exist for nurses who wish to participate in lactation education.

We are contacting healthcare administrators and asking them to distribute the surveys to the nurses within their organizations who work with women, children, and child-bearing families. Your organization was randomly selected for this survey from a list of healthcare facilities in North Dakota, South Dakota, and Minnesota. **Will you please take a few moments and distribute the enclosed survey packets to nurses in your organization who work with women, children and/or child-bearing families?** We would greatly appreciate your assistance in this effort.

Each survey packet includes a cover letter explaining the project, the survey, and a postage-paid return envelope. This project is sponsored by a grant received from the Minnesota Department of Health and the Golden Start Breastfeeding Initiative (a collaborative of nine counties in Minnesota) through Otter Tail County Public Health in Fergus Falls, Minnesota. Otter Tail County Public Health has contracted with the North Dakota State Data Center (NDSDC) at North Dakota State University to conduct the survey.

The survey is voluntary. Responses will be kept confidential, and results will be reported in aggregate form. Results of the survey will be made available early next year. In order to be included in the results, it is important that we have the surveys returned to us by **Friday, December 17, 2010**.

If you have any questions about this survey, feel free to call Dr. Richard Rathge at (701) 231-8621 or Marion Kershner, Otter Tail County Public Health at (218) 998-8348. If you have questions about the rights of a research participant, or to report a complaint, please contact NDSU's Human Research Protection Program at (701) 231-8908.

Thank you for your willingness to assist us in this important study.

Sincerely,

A handwritten signature in cursive script that reads "Marion R. Kershner".

Marion Kershner, RN, PHN, MS  
Family Health Nursing Supervisor  
Otter Tail County Public Health  
Government Services Center  
560 W. Fir Avenue  
Fergus Falls, Minnesota 56537

A handwritten signature in cursive script that reads "Richard W. Rathge".

Richard W. Rathge, Director  
North Dakota State Data Center  
North Dakota State University  
PO Box 6050, Dept. 8000  
Fargo, North Dakota 58108-6050



# North Dakota State Data Center

At North Dakota State University - PO BOX 6050, Dept. 8000, Fargo, ND 58108-6050

Phone: (701) 231-8621 Fax: (701) 231-9730 URL: <http://www.ndsu.edu/sdc> Dr. Richard Rathge, Director

December 3, 2010

Dear Healthcare Provider,

We are conducting a survey of nurses who work with women, children, and/or child-bearing families in a healthcare setting (e.g., hospitals, clinics, public health offices) in order to gather nurses' opinions about lactation education and the need for lactation education opportunities for healthcare professionals within our communities. We are also interested in learning about barriers that may exist for healthcare professionals who wish to participate in lactation education. The survey is sponsored by a grant received from the Minnesota Department of Health and the Golden Start Breastfeeding Initiative (a collaborative of nine counties in Minnesota) through Otter Tail County Public Health in Fergus Falls, Minnesota. Otter Tail County Public Health has contracted with the North Dakota State Data Center at North Dakota State University to conduct the survey.

You are invited to participate in this research study. Your organization was randomly selected for this survey from a list of healthcare facilities in North Dakota, South Dakota, and Minnesota, and nurses at your organization who work with women, children, and/or child-bearing families are being invited to participate. The survey is voluntary and you may leave blank any question you do not wish to answer or quit the survey at any time. The survey is 20 questions and should take 5-10 minutes to complete. Your responses will be kept confidential, and results will be reported in aggregate form.

Please take a few minutes to complete this important survey. For your convenience, we have enclosed a postage-paid return envelope. In order to be included in the results, it is important that we have your survey returned by **Friday, December 17, 2010**.

If you have any questions about this survey, feel free to call Dr. Richard Rathge at (701) 231-8621 or Marion Kershner, Otter Tail County Public Health at (218) 998-8348. If you have questions about your rights as a research participant, or to report a complaint, please contact NDSU's Human Research Protection Program at (701) 231-8908.

Thank you for your willingness to assist us in this important study.

Sincerely,

A handwritten signature in cursive script that reads "Marion R. Kershner".

Marion Kershner, RN, PHN, MS  
Family Health Nursing Supervisor  
Otter Tail County Public Health  
Government Services Center  
560 W. Fir Avenue  
Fergus Falls, Minnesota 56537

A handwritten signature in cursive script that reads "Richard W. Rathge".

Richard W. Rathge, Director  
North Dakota State Data Center  
North Dakota State University  
PO Box 6050, Dept. 8000  
Fargo, North Dakota 58108-6050



## Preferences for Delivery of Courses

Q12. Are you interested in improving your lactation skills and knowledge?

- Yes       No (*skip to Q16*)

Q13. How would you most like to obtain your lactation education? (choose one)

- Online self-paced training courses (e.g., E-learning)       Face-to-face classes/seminars  
 Webinar classes       Other (specify) \_\_\_\_\_  
 Video conferencing

Q14. What is the maximum distance you would be willing to travel to receive lactation education?

- Less than 60 miles       120 miles or more  
 60 to 119 miles       I am not willing to travel

Q15. What is your preferred course length for lactation education? (choose one)

- 1 hour       1 day       3 days       5 days  
 Series of 1 hour sessions       2 days       4 days       Other (specify) \_\_\_\_\_

## Type of Curriculum and Course Offerings

Q16. The World Health Organization/UNICEF Baby-Friendly Hospital Initiative requires that nurses working with childbearing families in officially designated sites have 20 hours of lactation education; MDs and Advanced Practice nurses must have at least 3 hours of lactation education.

Are you familiar with these requirements?

- Yes       No

Q17. What lactation courses are/would be beneficial to healthcare providers in your community? (choose all that apply)

- Basic orientation to breastfeeding       Course specific to hospital nurses: maternity care/NICU  
 Community-based breastfeeding promotion       Course specific to hospital nurses: Peds/PICU  
 Course specific to WIC staff       Course specific to Public Health Maternal Child Health nurses  
 Course specific to clinic nurses: Peds       Course specific to dietitians  
 Course specific to clinic nurses: OB/GYN       None  
 Course specific to MDs       Other (specify) \_\_\_\_\_  
 Preparation for Baby-Friendly Hospital Certification  
 Preparation for International Board Certified Lactation Consultant (IBCLC)  
 Preparation for Joint Commission on Accreditation of Healthcare Organizations (JACHO) requirements

Q18. What barriers to lactation education exist for healthcare providers in your community? (choose all that apply)

- Distance       Format of courses haven't met my learning style  
 Not a priority in the workplace       Courses have not been appropriate  
 Courses are not available       Course offerings are too long  
 Lack of interest among nurses       Course offerings are too short  
 Lack of interest among physicians       Course offerings are too expensive  
 Lack of interest among dietitians       None  
 Lack of support from administration       Other (specify) \_\_\_\_\_

Q19. What is your preferred method of communication regarding notification of courses? (choose one)

- Letter/postcard       Facebook       Workplace communication  
 Email       Website       Other (specify) \_\_\_\_\_

Q20. Do you have other comments regarding lactation education for practicing healthcare professionals?

Thank you!