# North Coast Infant Feeding Survey 2017: Results

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## Introduction

"Breastfeeding supports lifelong health of children and their mothers and is one of the highest impact interventions providing benefits for children, women and society" (Rollins, N.C., Bhandari, N. et al. Why invest, and what it will take to improve breastfeeding practices? *The Lancet.* 2016; 387: 491–504). From an economic perspective, "if 90% of mothers are supported in following optimal breastfeeding recommendations, the U.S. would save $18.3 billion in health care costs and can prevent 4000 premature deaths per year" (Bartick, M.C. and Reinhold, A. The Burden of Suboptimal Breastfeeding in the United States: A Pediatric Cost Analysis. Pediatrics. 2010; 125: e1048–1056). Breastfeeding is a key strategy to improve public health and save on health care costs.

As a part of their accreditation process, the Clatsop County Public Health Department endeavored to evaluate breastfeeding practices and perceived barriers to breastfeeding among women who had delivered infants on the North Coast of Oregon in the past 3 years. Trina Robinson of the Public Health Department approached the Biostatistics & Design Program at Oregon Health & Science University for assistance in developing a survey of new mothers and in analyzing the results. In this report we present the methods we used and the results of the survey.

## Methods

*Development of the survey.*

The primary goal of the survey was to outline the interventions needed on the North Coast of Oregon to support breastfeeding. The authors had a series of in-person meetings, first to review a draft survey developed by Trina Robinson and the North Coast Breastfeeding Coalition and to review and further develop the aims of the project, and subsequently to revise the draft survey to address those goals. We went through a number of iterations of revising the survey and discussing it in person, by telephone, and by email.

In formulating the survey questions we considered the many situations a survey respondent could find herself in and attempted to allow for all of the possibilities. We strove to refrain from making assumptions as much as possible, and instead to give respondents freedom to tell us their stories. To this end we used a free-form text format to assess respondents' reasons for stopping breastfeeding early, and invited the respondents to clarify checkbox answers and add information in various points in the survey. Our hope was that using this strategy would allow us to learn about the complications that arose in the respondents' lives and health situations. To contain respondent burden and to aid analysis of the survey data, we included multiple choice questions (of both the choose-one and check-all-that-apply variety) where that approach was suitable, but provided options such as 'undecided', 'not sure', and 'not applicable' for one reason or another, and provided space for explanation if desired.

*Administration of the survey.*

The original intention was to administer the survey in two formats, online via SurveyMonkey and on paper, in an attempt to reach the largest possible number of potential respondents in the time available. However, since we were concerned that the electronic and paper surveys could not be treated the same due to the difference in administration technique and that the electronic surveys would reach respondents who did not deliver an infant on the North Coast, we decided to administer the survey by paper only. Administering the survey by paper only partially alleviated our concerns about the expected small response rate for the electronic surveys and the biases introduced when those with strong feelings about a topic are more likely to participate.

The survey, created in Microsoft Word, was converted to a .pdf file once it was finalized. Trina Robinson printed copies of the survey for each of the sites on the North Coast who had agreed to participate and hand-delivered them to the sites. Participating sites included the Public Health Department WIC clinic; Columbia Memorial Hospital (Women's Clinic, Pediatric Clinic, and Lactation Clinic); Providence Seaside – North Coast; Northwest Regional Educational Service Office; La Leche League; Department of Human Services – Child Protection Services; Educational Services District; Seaside School District; and a private practice midwife.

The survey was translated into Spanish by a fluent Spanish speaker, Norma Hernandez. The surveys were printed on various colors of paper specific to each clinic as an aid to distinguishing them, and the Spanish versions were printed on the same color paper for all sites. Printed copies of the survey, in both English and Spanish, were made available in the waiting rooms of participating clinics. Stand-up cards, in both English and Spanish, encouraging eligible women to participate in the anonymous survey were placed next to the surveys, and pens were available. Surveys were returned to the front desk and completed surveys were kept in a box at each site.

Trina Robinson explained the purpose of the survey to staff at each site and sent reminders to encourage patients to participate. She sent the .pdf versions of the survey to a private practice midwife, a member of the Coalition who requested it and wished to administer it to specific eligible women by email. Trina Robinson communicated periodically with the Clinic Coordinators regarding the survey to inquire about the number of completed surveys and to encourage them to recruit eligible women to participate. She collected the completed surveys from each site several times, and hand-delivered the accumulated completed surveys to Amy Laird on the OHSU campus in four batches.

Surveys done in Spanish were reviewed by Norma Hernandez, who translated the free-form text responses into English directly on the paper survey. The survey was administered at each site until mid-November of 2017.

*Data entry.*

To store the survey data, Amy Laird built a database in the statistical software program Epi Info™ (version 3.1) with instruction and oversight from Katrina Ramsey. Amy Laird entered data from all surveys received by OHSU into the database. Each survey that had been partially or fully completed was automatically assigned a unique identification number in Epi Info. This number was written on the paper survey so that the electronic and paper versions were linked. The electronic version of each survey was date-stamped in Epi Info and this date was also written on the paper survey.

Data from multiple choice and free-form text questions were entered into the database, and each page was checked once entered to confirm fidelity. Responses that were impossible or inconsistent were noted. In these cases, the survey responses were considered as a whole, a conservative guess was made regarding the respondent's intent, and this guess was entered into the database and marked on the survey with highlighter and was initialed. An exception to this

practice was the set of questions regarding employment: responses to these questions seemed inconsistent in many cases, but were entered in the database faithfully as the questions were answered, as employment situations can be complicated and difficult to convey through multiple choice questions. Every effort was made to transcribe faithfully the intent of the survey respondent.

Once all the surveys had been entered into the database, the dataset was exported to the statistical software program Stata (version 15) for analysis.

## Results

The survey is included with this report for reference.

We received 196 surveys that were partially or fully completed. We received an additional 7 surveys that were completely blank; these were discarded and not assigned an identification number. An eight survey we received was blank except that the respondent identified herself as a foster mom and indicated that she had not had a baby during the period in question; this survey was discarded from analysis. 62% of the surveys (122) came from the Public Health Department, and 14% (28) came from Columbia Memorial Hospital. The numbers of partially or fully completed surveys we received from each site are given in the table below.

*Table.* Number of partially or fully completed surveys received from each site.

| **Site** | **Number (%)** |
|---|---|
| Public Health Department | 122 (62.2%) |
| Columbia Memorial Hospital – Women's Clinic | 14 (7.1%) |
| Columbia Memorial Hospital – Pediatric Clinic | 12 (6.1%) |
| Columbia Memorial Hospital – Lactation Clinic | 2 (1.0%) |
| Seaside School District | 11 (5.6%) |
| La Leche League | 9 (4.6%) |
| Providence Seaside – North Coast | 8 (4.1%) |
| Department of Human Services – Child Protection Services | 7 (3.6%) |
| Educational Services District | 5 (2.6%) |
| Northwest Regional Educational Service Office | 3 (1.5%) |
| Private practice midwife | 3 (1.5%) |
| **Total** | **196 (100.0%)** |

*Plans and influences during pregnancy.*

During pregnancy, most respondents (71%, 140) planned to feed their baby with breastmilk only. Another 21% (42) planned to feed their baby with a combination of breastmilk and formula.

*Question 2.* While you were pregnant, how did you plan to feed your baby?

| **Plan for feeding baby** | **Number (%)** |
|---|---|
| Breastmilk only | 140 (71.4%) |
| Breastmilk and formula | 42 (21.4%) |
| Formula only | 8 (4.1%) |
| Undecided | 4 (2.0%) |
| No answer | 2 (1.0%) |
| **Total** | **196 (100.0%)** |

During pregnancy, nearly half of the respondents (46%, 90) planned to feed their baby for a year or longer, and another 21% (42) wanted to breastfeed or pump as long as they possibly could.

*Question 3.* While you were pregnant, did you plan to **breastfeed or pump** for a certain amount of time?

| **Planned length of time for breastfeeding/pumping** | **Number (%)** |
|---|---|
| 1–6 weeks | 7 (3.6%) |
| 7–11 weeks | 1 (0.5%) |
| 3–5 months | 11 (5.6%) |
| 6–11 months | 15 (7.7%) |
| 1 year | 56 (28.6%) |
| Longer than a year | 34 (17.4%) |
| As long as I could | 42 (21.4%) |
| Did not have a goal in mind | 25 (12.8%) |
| Did not intend to breastfeed | 4 (2.0%) |
| No answer | 1 (0.5%) |
| **Total** | **196 (100.0%)** |

Respondents' decisions about whether to breastfeed were influenced by a wide variety of people and considerations, strongly in many cases. Among the choices given in the survey, the strongest positive influences on the decision to breastfeed were wanting to bond with the baby (72% very positive, 13% positive); health benefits for the baby (71% very positive, 14% positive); partner (54% very positive, 20% positive); nurses (50% very positive, 19% positive); pediatrician (41% very positive, 24% positive); mother or other women in family (41% very positive, 26% positive); and OB/GYN (41% very positive, 23% positive). Healthcare professionals such as midwives, lactation consultants, and doulas had a nearly universally positive impact on the decision to breastfeed among respondents who reported any influence, but it seems that a large proportion of respondents did not have contact with one or more of those professionals. Similarly, respondents were very positively influenced by La Leche League and WIC, but many respondents reported no experience with these services. Among the 120 respondents from the Public Health Department, 68% (81) reported a positive or very positive influence from WIC, and no one at any site reported a negative influence from this service.

Respondents were instructed to circle all responses that applied for each influence item, and they circled both a positive and negative option in some cases; these responses were coded as "Mixed" influence. Respondents' decisions about whether to breastfeed had a mixed influence by their employers (24% positive or very positive, 5% negative), desire to lose weight (57% positive or very positive, 4% negative), and experience with an older child (38% positive or very positive, 5% negative). Modesty and reactions from the public had a considerable influence: 41% of respondents reported that modesty had some impact on their decision to breastfeed, and 60% reported that perceived reactions from people about breastfeeding in public had an influence. Since these items, which presumably have a mostly negative impact on women's decision to breastfeed, were presented in a table among other potentially supportive influence candidates, we will refrain from interpreting the positive or negative direction of the influence; for these two items, we feel that we can safely make inference only about whether they were influential. For this reason these two items are starred (*) in the plot and table that follow.

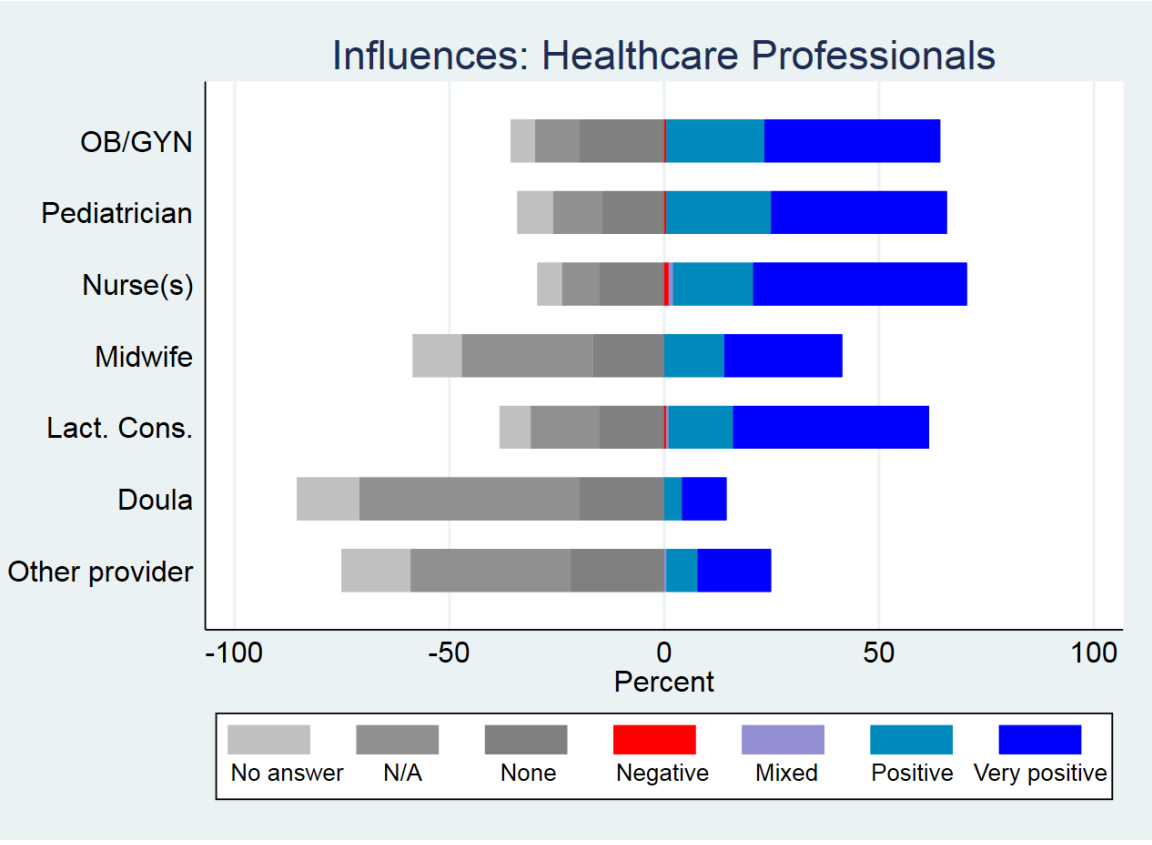
Prenatal/childbirth and parenting classes were not very influential on respondents' decisions to breastfeed, and roughly half of respondents reported no experience with each of these items. Websites and social media were also not influential for most: 79% of respondents reported either no influence or no experience, or did not make a selection. Among those who were influenced by online sources, the influence was almost universally positive, and several respondents listed particular websites that had positive influences. These included Facebook groups (Kellymom, Scary

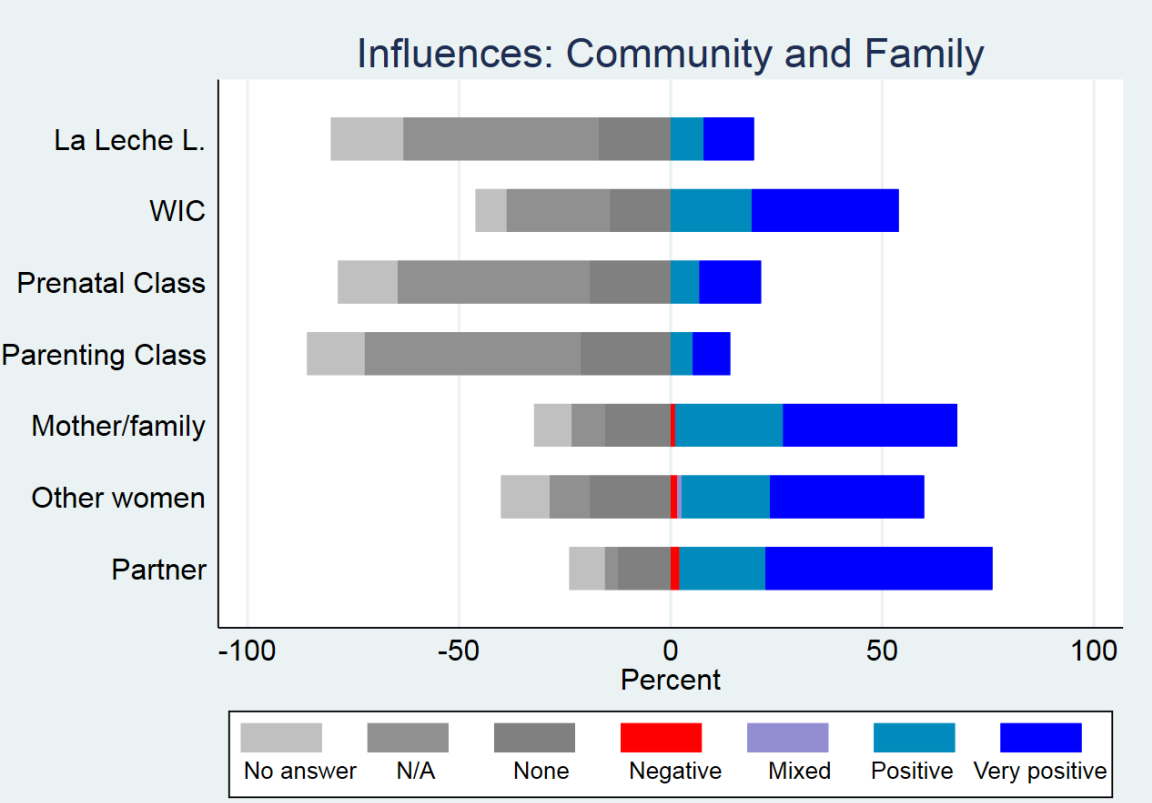
Mommy, Facebook Breastfeeding, Breastfeeding Mama Talk) and social media in general; Baby Center; Kelly Health; the Mayo Clinic website; and Natural Birth & Baby Care.

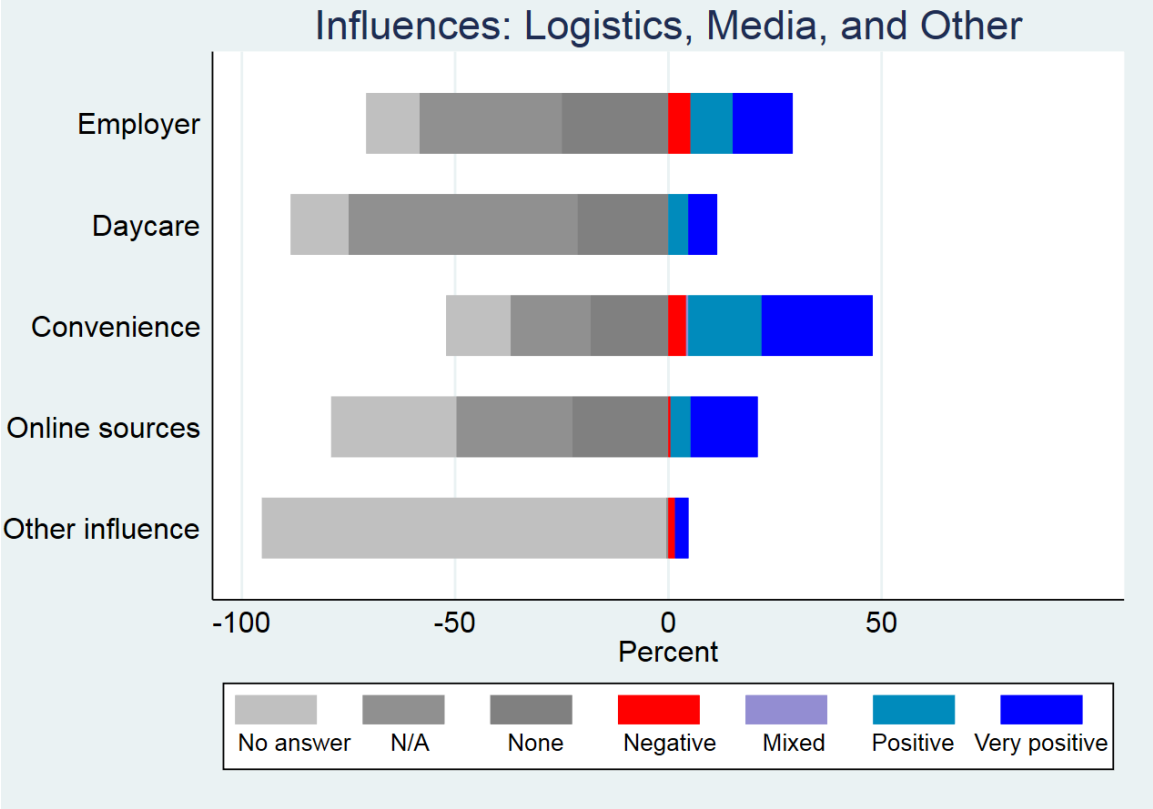
Respondents wrote in "Other" influences on breastfeeding in several cases. Positive influences were: Kodiak Kindness (respondent circled "++" multiple times); LLL "Womanly Art of Breastfeeding; female friends (breastfeeding moms); the book *Breastfeeding Made Simple*; and books in general. Negative influences were: D-MER (dysphoric milk ejection reflex) in 2 cases; fibromyalgia; and history of breast biopsy and duct removal. Under *'Anything you'd like to add?',* two respondents offered that they had already made up their minds to breastfeed, and the influence candidates listed in the question had no further impact on their decision.

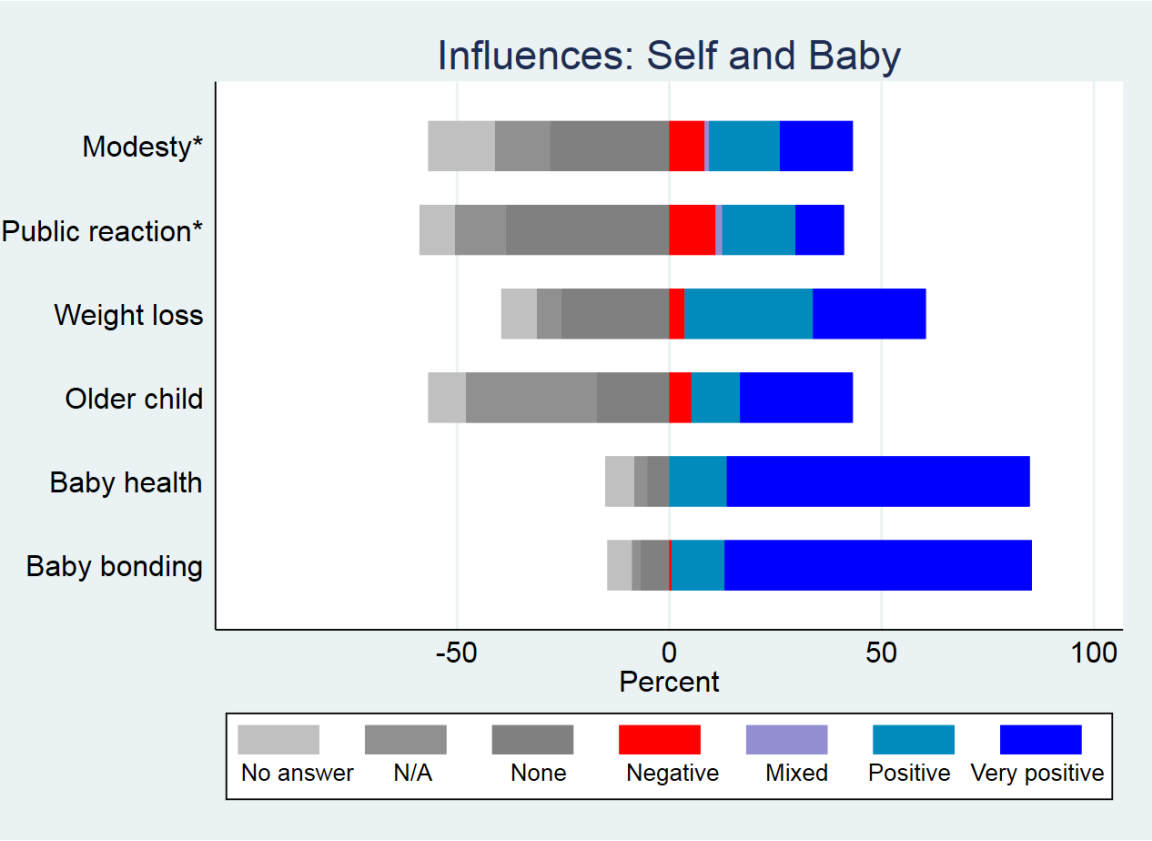
When interpreting the results of the influence question, we feel that it is worth noting that respondents seemed to interpret the question and responses in a variety of ways. Some respondents seemed to answer a different question, one of of support or lack thereof while breastfeeding, rather than influences on the decision itself during pregnancy. Some respondents made a distinction between "No influence" and "No experience", while others used one or the other exclusively. Similarly, some respondents made a distinction between "Very positive" and "Positive", while others used one or the other exclusively. Some respondents seemed to put much care into answering for each item, while others circled a column of responses and may or may not have read each item carefully. Among the 8 respondents who indicated they planned to feed their baby formula only, 5 respondents circled either the "No influence" or "No experience" column for all items listed in the influence question, and a sixth did not respond to the question.

Below are plots showing the reported influence (positive, negative, none, N/A, or no answer) of each item, and a table showing these same results.




Influences: Community and Family
La Leche L.
WIC
Prenatal Class
Parenting Class
Mother/family
Other women
Partner
-100
-50
0
50
100
Percent
No answer
N/A
None
Negative
Mixed
Positive
Very positive


Influences: Logistics, Media, and Other
Employer
Daycare
Convenience
Online sources
Other influence
-100
-50
0
50
Percent
No answer
N/A
None
Negative
Mixed
Positive
Very positive




| Influence | Very positive | Positive | Mixed | Negative | No influence | No experience | No answer |
|---|---|---|---|---|---|---|---|
| OB/GYN | 40.9% | 22.8% | 0.0% | 0.5% | 19.7% | 10.4% | 5.7% |
| Pediatrician | 40.9% | 24.4% | 0.0% | 0.5% | 14.5% | 11.4% | 8.3% |
| Nurse(s) | 49.7% | 18.7% | 1.0% | 1.0% | 15.0% | 8.8% | 5.7% |
| Midwife | 27.5% | 14.0% | 0.0% | 0.0% | 16.6% | 30.6% | 11.4% |
| Lactation consultant | 45.6% | 15.0% | 0.5% | 0.5% | 15.0% | 16.1% | 7.3% |
| Doula | 10.4% | 4.1% | 0.0% | 0.0% | 19.7% | 51.3% | 14.5% |
| Other healthcare professional | 17.1% | 7.3% | 0.5% | 0.0% | 21.8% | 37.3% | 16.1% |
| La Leche League | 11.9% | 7.8% | 0.0% | 0.0% | 17.1% | 46.1% | 17.1% |
| WIC | 34.7% | 19.2% | 0.0% | 0.0% | 14.5% | 24.4% | 7.3% |
| Prenatal or childbirth class | 14.6% | 6.8% | 0.0% | 0.0% | 19.3% | 45.3% | 14.1% |
| Parenting class | 8.9% | 5.2% | 0.0% | 0.0% | 21.4% | 51.0% | 13.5% |
| Mother or other women in family | 41.1% | 25.5% | 0.0% | 1.0% | 15.6% | 7.8% | 8.9% |
| Other women (not in my family) | 36.5% | 20.8% | 1.0% | 1.6% | 19.3% | 9.4% | 11.5% |
| My partner | 53.6% | 20.3% | 0.0% | 2.1% | 12.5% | 3.1% | 8.3% |
| Employer/workplace | 14.1% | 9.9% | 0.0% | 5.2% | 25.0% | 33.3% | 12.5% |
| Daycare | 6.8% | 4.7% | 0.0% | 0.0% | 21.4% | 53.6% | 13.5% |
| Convenience | 26.0% | 17.2% | 0.5% | 4.2% | 18.2% | 18.8% | 15.1% |
| Modesty* | 17.2% | 16.7% | 1.0% | 8.3% | 28.1% | 13.0% | 15.6% |
| Reactions from people about breastfeeding in public* | 11.5% | 17.2% | 1.6% | 10.9% | 38.5% | 12.0% | 8.3% |
| Losing weight | 26.6% | 30.2% | 0.0% | 3.6% | 25.5% | 5.7% | 8.3% |
| Experience with an older child | 26.6% | 11.5% | 0.0% | 5.2% | 17.2% | 30.7% | 8.9% |
| Health benefits for my baby | 71.4% | 13.5% | 0.0% | 0.0% | 5.2% | 3.1% | 6.8% |
| Wanting to bond with baby | 72.4% | 12.5% | 0.0% | 0.5% | 6.8% | 2.1% | 5.7% |
| Websites, social media, online newsletters | 15.7% | 4.7% | 0.0% | 0.5% | 22.5% | 27.2% | 29.3% |
| Other influence | 3.1% | 0.0% | 0.0% | 1.6% | 0.0% | 0.5% | 94.8% |

*Experience feeding baby.*

Among women who breastfed their baby and had stopped, 63% (=60/96) stopped before they wanted to.

*Question 4.* After your baby was born, did you **stop breastfeeding** before you wanted to?

| **Stop breastfeeding early?** | **Number (%)** |
|---|---|
| Yes | 60 (30.6%) |
| No | 36 (18.4%) |
| Still breastfeeding | 94 (48%) |
| Did not want to breastfeed | 5 (2.6%) |
| No answer | 1 (0.5%) |
| **Total** | **196 (100.0%)** |

16% (32) of the babies were a month or less in age, and 29% (56) were 1–4 months in age.

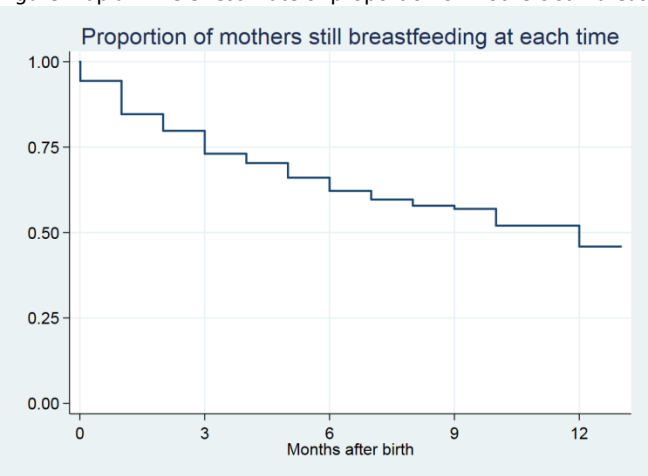
*Question 5.* How old is your baby now?

| **Baby current age** | **Number (%)** |
|---|---|
| 1–4 months | 56 (28.6%) |
| 5–8 months | 32 (16.3%) |
| 9–12 months | 25 (12.8%) |
| 13+ months | 82 (41.8%) |
| No answer | 1 (0.5%) |
| **Total** | **196 (100.0%)** |

Survey respondents were asked to circle which months of the baby's lifetime so far (1–12 and 13+) they had used baby formula; breastfed or pumped their own milk; used donor breastmilk, and used milk sharing. Nearly all respondents seemed to understand this format, and responded appropriately. In just 7 cases, there were months of the baby's lifetime that were unaccounted for and could not be deduced.

Since most respondents were reporting on a baby who was under a year in age, we do not know yet what proportion of respondents will continue breastfeeding to the one-year mark, or even the six-month mark. However, we can estimate these proportions based on the breastfeeding data we have, and using information contributed by even respondents with one-month-old babies. Below is a Kaplan–Meier plot of the proportion of respondents still breastfeeding at 3, 6, 9, and 12 months. As we can see, over half of respondents were still breastfeeding their babies at 12 months.

*Figure.* Kaplan–Meier estimate of proportion of mothers still breastfeeding at each point in time after birth.

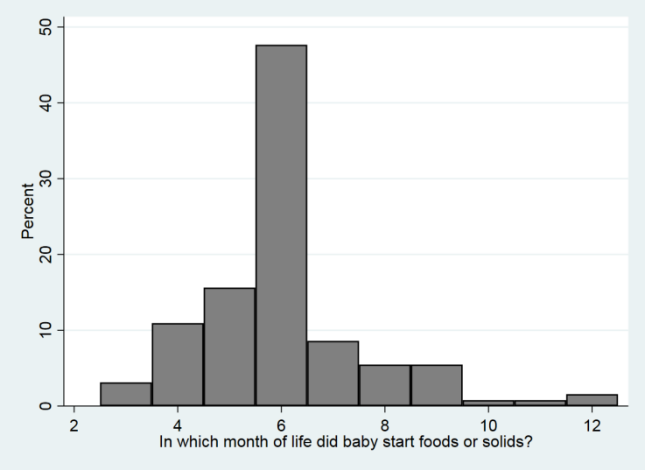


55% (107) of the babies were reported to have received baby formula at some point, as a supplement to breastmilk in nearly all cases. In 7 cases, the baby was exclusively formula fed, either by plan (6) or because breastfeeding was not possible (1).

22 babies (11%) received either donor or shared breastmilk at some point in their first year: 11 received donor milk only, 8 received shared milk only, and 3 received both. One baby received donor breastmilk the day she was born only. Another respondent reported that she had health issues right at the time of delivery and so she never produced milk. Two respondents reported that their babies received donor breastmilk while in the NICU. One respondent reported that her sister gave her a bottle of pumped breastmilk while she was out.

32% (60) of respondents reported that their baby had not yet started solid foods. Of the babies who had started solids, babies started solids anywhere between the third and twelfth month of life, and the most common month of life to start was 6 months (48%, 61).

*Figure.* Month of life in which baby started foods or solids.




When asked about difficulties encountered while breastfeeding/pumping, 3% (5) of respondents chose 'N/A; I did not breastfeed or pump milk for my baby', and another 33% (61) of respondents chose 'None, I had no difficulties'. Interestingly, many respondents (20) who chose 'None' checked at least one difficulty that they encountered while breastfeeding. It is possible that these respondents saw the items they checked as simply experiences rather than difficulties or barriers to continuing breastfeeding.

Difficulties that the respondents encountered are listed in the table below. Difficulties most commonly encountered were not enough milk supply (28%); pain or problems breastfeeding (27%); baby refused the breast (14%); postpartum depression/anxiety (13%); problems with pumping (10%); baby not gaining weight (12%); mastitis (8%); tobacco use (8%); and tongue tie difficulty (8%). Other issues cited are listed in the second table below.

*Question 12.* Difficulties encountered while breastfeeding.

| **Difficulty encountered** | **Number (%)** |
|---|---|
| Didn't know whom to call | 8 (4.1%) |
| Partner not supportive | 4 (2.0%) |
| Family not supportive | 4 (2.0%) |
| Employer not supportive | 4 (2.0%) |
| Had to go back to work, too difficult to continue | 9 (4.6%) |
| Personal illness | 7 (3.6%) |
| Postpartum depression/anxiety | 25 (12.8%) |
| Other mental health issues | 4 (2.0%) |
| Taking prescription medication not compatible with breastfeeding/pumping | 8 (4.1%) |
| Baby refused the breast | 28 (14.3%) |
| Pain or problems breastfeeding | 53 (27.0%) |
| Problems with pumping | 19 (9.7%) |
| I developed mastitis | 16 (8.2%) |
| Not enough milk supply | 55 (28.1%) |
| Baby had tongue tie difficulty | 15 (7.7%) |
| Baby not gaining weight | 24 (12.2%) |
| Tobacco use | 15 (7.7%) |
| Drug use (other than tobacco) | 2 (1.0%) |
| Other issue | 17 (8.7%) |

*Question 12.* Other difficulties encountered.

| |
|---|
| Psychological difficult (fed/pumped anyway). |
| Baby had medical issues |
| Just general challenges- nipple soreness, exhaustion, etc:) |
| exhausting & emotionally a lot to manage w/ rest of my life |
| D-MER |
| difficulties with latch at birth |
| Medical condition caused inability to produce milk |
| oversupply/engorgement; gassiness/vomiting in baby from oversupply; recommendations to alter diet from naturopath and general friends/family (limit dairy, cabbage family, garlic/onions)—I did not change diet |
| Baby had issues w thick colostrum [sic]. Cleared when milk came in |
| thrush |
| Preemie - problem latching, strength in sucking |
| Afraid of suffocating my baby |
| birth control stopped my breastmilk |
| clogged ducts |
| baby was a preemie - mouth too small |
| Baby allergic to milk |
| problems breastfeeding; insufficient supply due to lack of enough ducts |

Respondents were asked what helped them to keep breastfeeding/pumping when they encountered difficulties. 4% (7) marked 'N/A; I did not breastfeed my baby'; 8% (14) marked 'None – I did not access any of these resources'; and 6% (9) marked 'None – nothing helped'.

Sources of help are listed in the table below. The most common sources of help were: partner (47%), family (43%), lactation consultant (41%), friends (34%), WIC clinic (24%), and nurses (21%). Other sources of help written by respondents included Kodiak Kindness; Nurses: Babies First; books: *Breastfeeding Made Simple*; *The Womanly Art of Breastfeeding*; Guide *to Breastfeeding*; a local breastfeeding support group; a lactation consultant at CMH; a pediatric ER physician; "drinking water"; "My self-determination"; "The will to give my child the best I could"; and "My Son's Future health".

*Question 13.* Who or what **helped** you to keep breastfeeding/pumping when you encountered difficulties?

| **Source of help/support** | **Number (%)** |
|---|---|
| Lactation consultant | 80 (40.8%) |
| Midwife | 23 (11.7%) |
| Doula | 9 (4.6%) |
| Nurse(s) | 42 (21.4%) |
| OB/GYN or obstetrician | 26 (13.3%) |
| Pediatrician or primary care provider | 34 (17.3%) |
| Other healthcare provider | 7 (3.6%) |
| WIC clinic | 47 (24%) |
| Partner | 92 (46.9%) |
| Family | 84 (42.9%) |
| Friends | 67 (34.2%) |
| Employer | 9 (4.6%) |
| La Leche League | 15 (7.7%) |
| Prenatal Class | 4 (2.0%) |
| Online source(s) | 5 (2.6%) |
| Other source of help | 9 (4.6%) |

Respondents were asked what the **main** reason was for stopping breastfeeding, if they stopped before they had intended. Responses were reviewed and categorized. Respondents cited as many as three reasons for stopping breastfeeding before they had intended, but citing one reason was the most common. By far the most commonly cited reason for stopping breastfeeding was breastmilk supply (27). Other issues cited included latching issues; other breastfeeding issues; pain and personal health issues; baby's health issues; pregnancy; medication; issues with work, home life, stress, and pumping; and the baby stopping on his or her own.

*Question 14.* If you stopped breastfeeding before you intended to, what was the main reason? (Reasons categorized)

| **Reason for stopping breastfeeding early** | **Number** |
|---|---|
| Supply | 27 |
| Birth control stopped supply | 1 |
| Latching issues | 7 |
| Extraction issues | 1 |
| Unable to breastfeed | 1 |
| D-MER | 1 |
| Mastitis | 2 |
| Pain | 4 |
| Painful breast infection | 1 |
| Illness / health issues | 3 |
| Medication | 1 |
| Prescription medication due to injury | 1 |

| | |
|---|---|
| Breast augmentation | 1 |
| Pregnancy | 3 |
| Thrush | 2 |
| Baby refused breast | 1 |
| Baby not gaining weight | 2 |
| Baby allergies | 1 |
| Baby stopped on own | 4 |
| Work | 3 |
| Work, too hard to pump | 1 |
| Work stress, pumping was too hard | 1 |
| Trouble with pumping | 2 |
| Stress | 1 |
| Too busy | 1 |
| Issues at home | 1 |
| Bottle was easier | 1 |
| Sitter preferred formula | 1 |

*Employment and demographic information.*

Respondents were asked about their employment and student status right before they had their baby, and were allowed to check all boxes that applied. 37% (73) of respondents were stay-at-home moms and 33% (64) of respondents were employed full-time. 12 respondents checked two boxes (the maximum number checked), and 14 respondents did not respond.

*Question 15.* Right before you had your baby, what was your employment or student status?

| **Employment/student status** | **Number (%)** |
|---|---|
| Employed full-time | 64 (32.7%) |
| Employed part-time | 36 (18.4%) |
| Self-employed | 9 (4.6%) |
| Stay-at-home mom | 73 (37.2%) |
| Student full-time | 7 (3.6%) |
| Student part-time | 5 (2.6%) |

Respondents were asked how much time they took off before returning to work. 33% (61) chose 'N/A, not employed outside the home', and several chose this option if they were currently on leave but planning to return to work; 16% (30) did not return to work; and 2% (4) did not remember how much time they took before returning to work. Among the 45% (89) respondents who had returned to work (or knew how long they were going to take), 10 took a month or less; 22 took 1–2 months; 25 took 2–3 months; 22 took 3–6 months; and 8 took more than 6 months. See table below.

*Question 16.* After you had your baby, how much time did you take off before returning to work?

| **Length of leave** | **Number (%)** |
|---|---|
| Up to one month | 10 (11.5%) |
| 1–2 months | 22 (25.3%) |
| 2–3 months | 25 (28.7%) |
| 3–6 months | 22 (25.3%) |
| More than 6 months | 8 (9.2%) |

Respondents were asked what their employer offered to support breastfeeding. 61% (112) chose 'N/A; I did not work outside the home while breastfeeding'; some respondents also chose this option if they had not yet returned to work. Among the 70 who did not choose N/A: 64% (45) 'Breaks for breastfeeding/pumping'; 59% (41) checked 'A place to

breastfeed or pump that is private and is not a restroom'; and 60% (42) checked 'Access to a refrigerator where you could store expressed breastmilk'. Several respondents shared details of the challenges of breastfeeding/pumping at work (negative, positive, and neutral), but none wrote additional ways in which their employer offered support for breastfeeding/pumping.

Respondents were asked how positive or supportive their workplace is (or was) for breastfeeding. Among the 81 who chose an option: 67% (54) chose 'Supportive', 26% (21) chose 'Neutral', and 7% (6) chose 'Unsupportive'.

*Questions 15–18: Anything you'd like to add?* Free-form text responses about employer support or lack thereof. Entries that begin "note:" are Amy Laird's notes based on multiple choice and free-form text responses.

| |
|---|
| Stopped [storing expressed milk in work refrigerator] due to staff complaints. |
| [Employer was] supportive but I was only allowed to [pump] 2 times a day and at my lunch break so I did it 3 times [a day]. |
| Breastfed at work, used formula when baby had babysitter |
| #18: Did not need to disclose breastfeeding but I'm positive theywould be supportive if I needed to |
| I didn't go back to work until my baby ate enough solids to go without my milk for 8 hours |
| #16 He was born with a heart condition so my husband & I agreed that for the first year until he had surgery one of us would stay home with him full time, then |
| Started new job [9 weeks after delivering baby] |
| Easy because I work alone so my office is private. Difficult when I am on site visits away from electricity (in the forest/field), esp with male colleagues. |
| #16: wrote "planned return". #17: "not back to work yet; very supportive workplace" |
| had to do pump session on my normal breaks and in a locker room with just a curtain to block me. Never had any relaxing pump session due to stress of someone coming into the room |
| #16: "I was unable to find job while pregnant" |
| Next to #16: "I reduced work but worked through postpartum at home." |
| Employer support of my needs for times and a place to pump has been hugely important. |
| Employer held staff meeting, set tone for bf/pumping to be a wonderful thing.Made it feel more of a safe space, though I thought that before the meeting. |
| next to #16: "When he came home - 3 days later - I HAD to go back to work due to finances." I inferred 1 week off work for #16. "Bathroom" next to #18. |
| wrote "still on leave" next to #16; #17 is N/A because she is still on leave |
| note: chose N/A in #17 and #18 since she stopped breastfeeding before returningto work. |
| [Employer] really went out of their way on many occasions to make it possible for me to pump at work! Had a job involving travel which made pumping tricky! |
| note: presumably she *plans* on taking a 3-month leave; she has not yet returnedto work, so answered N/A in #17 and #18 |
| note: is planning to take leave of 6-8 weeks; has not yet returned to work, so marked N/A for #18. wrote "haven't gone back" next to #17. |
| note: next to #16 wrote "work from home" |
| note: next to #17 wrote "[These things] Never applied to jobs I had." |
| It was difficult to pump during 15 min breaks. By the time I set up and take down the pump I only had 5 minutes of pumping. This caused mastitis. |
| note: wrote "Still off" for #16; answered N/A for #17 possibly because she has not yet returned to work. |
| note: not yet back at work. |
| note: I inferred from #12, #14, #15, #17 that employer was unsupportive |
| note: answered N/A for #16, #17, #18 possibly since has not yet returned to work |
| I felt very unsupported in the workplace when I returned to work. When trying to find a private location to pump, my manager actually told me "it's not rocket science!" Once I filed a complaint with HR & BOLI I felt administration & my employer took situation more seriously. |
| going back to work at the end of this month. |

Respondents were asked for some demographic information (education, age, substance use, race and ethnicity, residence location). Results are given in the tables that follow.

*Question 19.* How many years of school have you completed?

| Education level | Number (%) |
|---|---|
| Up to 11th grade | 14 (7.1%) |
| High school diploma or GED | 55 (28.1%) |
| Some college | 57 (29.1%) |
| College graduate | 47 (24.0%) |
| Graduate school | 15 (7.7%) |
| No answer | 8 (4.1%) |
| **Total** | **196 (100.0%)** |

*Question 20.* What was your age (in years) when you had your baby?

| Age | Number (%) |
|---|---|
| Under 20 | 9 (4.6%) |
| 20–24 | 43 (21.9%) |
| 25–29 | 49 (25%) |
| 30–34 | 54 (27.6%) |
| 35–39 | 28 (14.3%) |
| 40+ | 7 (3.6%) |
| No answer | 6 (3.1%) |
| **Total** | **196 (100.0%)** |

68% (129) of respondents marked that they did not use any substances while breastfeeding. Of the 62 who reported using substances while breastfeeding: 44% (27) reported using alcohol; 42% (26) reported using tobacco; 21% (13) reported using marijuana; 3% (2) reported using oxycodone; 2% (1) reported using methamphetamine; and 3% (2) reported using other substances (which included "norco following ankle surgery" in one case and was left unspecified in the other). No respondents reported using cocaine or heroin. Several respondents noted that they had used the indicated substances minimally or only once while breastfeeding.

Respondents were asked for ethnic and race information. 13% (26) reported having Hispanic ethnicity. 86% (168) reported White or Caucasian race. 9 subjects checked more than one race category; all 9 checked 'White or Caucasian' plus another category. See tables below.

*Question 22.* How do you identify your ethnicity?

| Ethnic category | Number (%) |
|---|---|
| Non-Hispanic | 161 (82.1%) |
| Hispanic | 26 (13.3%) |
| No answer | 9 (4.6%) |
| **Total** | **196 (100.0%)** |

*Question 23.* How do you identify your race?

| Race category | Number (%) |
|---|---|
| American Indian / Alaska Native | 5 (2.6%) |
| Asian | 3 (1.5%) |
| Black or African-American | 1 (0.5%) |
| Native Hawaiian | 2 (1%) |
| Other Pacific Islander | 2 (1%) |
| White or Caucasian | 168 (85.7%) |
| Other race | 8 (4.1%) |

Respondents were asked where they live currently. 65% (127) checked 'Astoria, Warrenton, or Hammond'; 24% (48) checked 'Gearheart, Seaside, or Cannon Beach'; and 7% (14) checked 'Other location'. Respondents specified the following other locations: Knappa, OR (4); Clatskanie, OR (2); Westport, OR; Elsie, OR; Jewell, OR; Nehalem, OR; John Day, OR; Warrenton, OR; Naselle, WA; Chinook, WA; Ocean Park, WA; and Long Beach, WA.

*Question 24.* Where do you live currently?

| Location | Number (%) |
|---|---|
| Astoria, Warrenton, or Hammond | 127 (64.8%) |
| Gearhart, Seaside, or Cannon Beach | 48 (24.5%) |
| Other location | 14 (7.1%) |
| No answer | 7 (3.6%) |
| **Total** | **196 (100.0%)** |

Finally, respondents were asked if they had anything more to share about their breastfeeding experience. These are listed below.

*Is there anything else you would like to share with us about your breastfeeding experience?*

| |
|---|
| Loved the skin to skin after C-section |
| It's hard. |
| The part that's most challenging for work is I will have to start travelling again now that baby is getting old enough to be away from me (12 months). So figuring out how to pump for multiple days, etc. |
| I LOVE La Leche League! Yay for midwives! We want more education & resources about the magic of breastfeeding & breastmilk <3 [heart] |
| Invite/help packets for new moms |
| It's been a great blessing and wonderful experience. I've done it with 2 kids now! |
| Doctor recommended supplementing with formula to help with weight gain. Baby didn't like it. Soon afterward baby had a growth spurt so we haven't used formula again. |
| I *heart* BF! |
| I tried to reach out to a lactation consultant, I had a terrible experience. I would nevr try that again. She was terrible. |
| I breastfed my first 2 and loved it. I was sad to not get that this time. |
| Wasn't expecting the immediate difficulties with getting baby to latch. I hadn't been exposed to many women sharing their difficulties in the hospital. I was expecting breastfeeding to be hard in different ways (milk supply, pain). |
| He was born with a heart condition so my husband & I agreed that for the first year until he had surgery one of us would stay home with him full time, then after return to work. I wish I could have had more success. |
| Everyone should do it "if they want" :) |
| I have breastfed all 5 of my kids. |
| Easy because I work alone so my office is private. Difficult when I am on site visits away from electricity (in the forest/field), esp. with male colleagues. I am still transitioning back to work and often come home for lunch or work from home so I can breastfeed more and pump less. |
| Breastfed all 3 kids. Supplemented w/ formula when needed - usually 1x daily unless working, then 3x. |
| Best decision of my life. Besides issues with work, went smoothe. Had some hard times I wanted to quite but didn't and happy I kept going. |

| |
|---|
| I did not know the colustrum was very thick and could lead to baby not feeding well. Issue resolved itself when my milk came in. Lactation Consultant also helped greatly. |
| <3 [heart] |
| It has been amazing. Difficult at first but well worth it. |
| Co-sleeping has had a tremendous impact on success of our breastfeeding journey, especially in those early months. It is really important for moms to be well rested so they can be best version of themselves. I found that co-sleeping has really helped me get the amount of sleep I need while taking care of my daughter's needs. |
| Having lactation consultants available was great! |
| It was/is very important to me that others' feelings (negative) about breastfeeding in public did not get to me or affect how I fed my baby. If anyone ever did make a comment, I saw it as an opportunity to educate them on the fact that feeding my baby my milk is *more natural* than someone eating a hamburger in front of me / in public. |
| I wish that I was able to breastfeed my baby; however, pumping is the next best thing. I am so grateful for technology that allowed me to do so. (Hospital-grade pump) |
| Best thing I ever did...other than become a mom. :) |
| Better the second time around. |
| I love it! |
| The bonding with my baby and all the health benefits from breastfeeding my baby. |
| My breastfeeding experience was a positive one. I just had 2nd child & plan to breastfeed as long as possible. I felt positive support from the nurses & lactation consultant at CMH. My partner is also very happy with the education provided to us by lactation dept. to ensure our breastfeeding experience goes as smoothly as possible. |
| Previous positive experience with breastfeeding was influential- really wished I hadn't had that duct removal procedure or at least tried to spare ducts instead of a gross blunt dissection of the tissue. |

## Conclusions

Although some women in the survey sample were committed to formula feeding their babies and others were committed to exclusive breastfeeding before receiving any prenatal care, the majority of women in the sample were influenced during pregnancy about whether to breastfeed through a variety of means: by health professionals, by their families and communities, by books and websites, and through considerations of their employment situation, the baby's health, and wanting to bond with the baby. The vast majority of women in the survey sample wanted to breastfeed their baby, either exclusively or with supplementation. However, most women experienced difficulties while breastfeeding, and many women who stopped breastfeeding before they had intended stopped due to issues with breastfeeding such as a lack of supply of breastmilk. A sizable minority of women reported postpartum depression or anxiety or other mental health issues, and these issues may be underreported due to lack of diagnosis and stigma. Among women who worked outside the home while breastfeeding, most felt that their workplace was supportive, but many still faced difficulties with breastfeeding or pumping at work for a variety of reasons.

Efforts to support and promote breastfeeding among women in the Clatsop County area could focus on breastfeeding and pumping issues such as lack of breastmilk supply, and pain; helping women breastfeed or pump at work; and identifying and helping women with postpartum depression/anxiety, other mental health issues, or who are feeling overwhelmed by the experience.