



# *Infant Feeding Surveillance System*

## **Focused Report on...**

### **Infant Feeding among Adolescent Mothers**

June 2015

## **Highlights**

- ❖ From 2006 to 2014, 85% of adolescent mothers (age 15-19) in Durham Region initiated breastfeeding as compared to 92% of adult mothers (age 20 and older).
- ❖ Adolescent mothers were less likely to continue to breastfeed or exclusively breastfeed their babies than adult mothers.
- ❖ Only 21% of adolescent mothers breastfed their babies for six months or longer compared to 54% of adult mothers.
- ❖ Formula, baby cereal, water, and fruit/vegetables were commonly introduced to infants before six months of age among both groups.
- ❖ “Milk supply concerns” was the most common reason for discontinuing breastfeeding, introducing formula, and introducing solids among both adult and adolescent mothers.
- ❖ “Latching difficulties” and “medical issues for mothers/babies” were also commonly reported by adult and adolescent mothers as main reasons for discontinuing breastfeeding and introducing formula; however, “latching difficulties” was more common among adolescent mothers.
- ❖ “Milk supply concerns”, “advice of health professional” and “baby ready for solids” were also the most common reasons for introducing solids before six months among adult and adolescent mothers. “Advice of health professional” was more commonly reported by adolescent mothers, while “baby ready for solids” was more commonly reported by adult mothers.

## Durham Region's Infant Feeding Surveillance System (IFSS)

The Durham Region Health Department (DRHD) developed the IFSS to regularly assess infant feeding practices among new mothers.

The target population for the IFSS is mothers who are Durham Region residents and who have delivered live born infants within the past six to seven months. For 2006 to 2008 birth years, IFSS data were collected in two phases. In Phase I, demographic information was extracted from a pre-existing health assessment conducted through the Healthy Babies Healthy Children (HBHC) Program. The HBHC assessment usually occurred within 48 hours of hospital discharge. Phase I was used as the sampling frame for Phase II, a telephone survey developed for the IFSS and conducted by DRHD staff at six to seven months postpartum. In 2009, record level data, including demographic information, became available to the Durham Region Health Department from the Integrated Services for Children Information System (ISCIS). Because ISCIS provides more complete birth data, eligible mothers were selected from the ISCIS database for the 2009 birth year onward.

## Introduction

Breastfeeding is the optimal method of feeding infants. Its benefits for general health, growth and development are well documented<sup>1-4</sup>. However, studies have repeatedly shown that adolescent mothers have poorer knowledge of breastfeeding than adult mothers and they are less likely to breastfeed<sup>5-7</sup>. Adolescents experience tremendous change as they move towards adulthood. In addition to demographic risk factors such as low education and low income levels, adolescents' infant-feeding decisions are often influenced by unique factors and challenges related to this specific stage of life<sup>8</sup>.

### Definition

#### Adolescent Mothers vs. Adult Mothers

Adolescent mothers was defined as those who were between 15-19 years old when they gave birth. Those with the maternal age of 20 years and older were defined as adult mothers.

This report compares infant feeding practices among adolescent mothers aged 15-19 years old with adult mothers aged 20 years and older. Data was collected through the Durham Region Infant Feeding Surveillance System (IFSS). From March 2007 to April 2015, 9,942 new mothers in Durham Region were contacted and 5,739 of them were surveyed at six to seven months postpartum. Of the 1,157 adolescent mothers contacted by DRHD, 423 of them completed the infant feeding survey with a response rate of 37%. The response rate for adult mothers was 61% (5,142/8,494). Birth years (years when mothers gave birth) instead of survey years (years when the survey was completed six to seven months after birth) were presented in the report.

## Breastfeeding Initiation

The breastfeeding initiation rate was 85% among adolescent mothers and 92% among adult mothers for 2006-2014 birth year combined. The difference was statistically significant.

In general, initiation rates were stable over time for adolescent mothers and increased slightly over time for adult mothers. The fluctuation in initiation rates for adolescent mothers was most likely due to the small sample size. Compared to adult mothers, initiation rates among adolescent mothers were statistically significantly lower in 2008, 2009, 2010 and 2014 (Figure 1).

### Definition

#### Breastfeeding Initiation

Breastfeeding initiation was defined as any attempt to breastfeed or provide breastmilk to baby, regardless of how long breastfeeding continued. It was assessed at six to seven months postpartum by a telephone survey with the question "Have you ever tried to provide breastmilk to your baby?"

For 2006-2014 combined, the overall breastfeeding initiation rate was lowest in Oshawa (78%) and highest in North Durham (Scugog, Uxbridge and Brock; 98%) and Clarington (93%). These differences between Oshawa and North Durham were statistically significant (Figure 2).

Figure 1: Breastfeeding Initiation over Time among Adolescent and Adult Mothers in Durham Region, 2006-2014

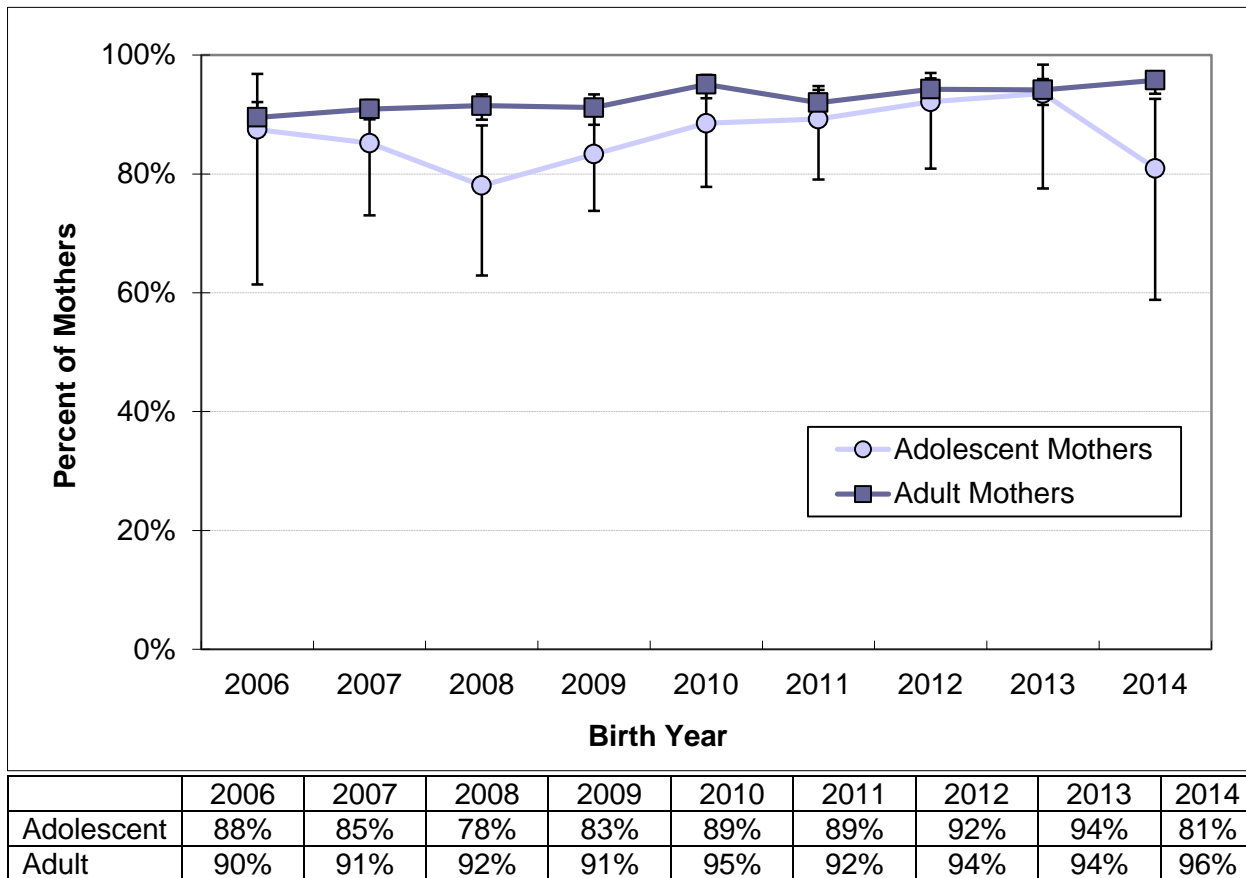
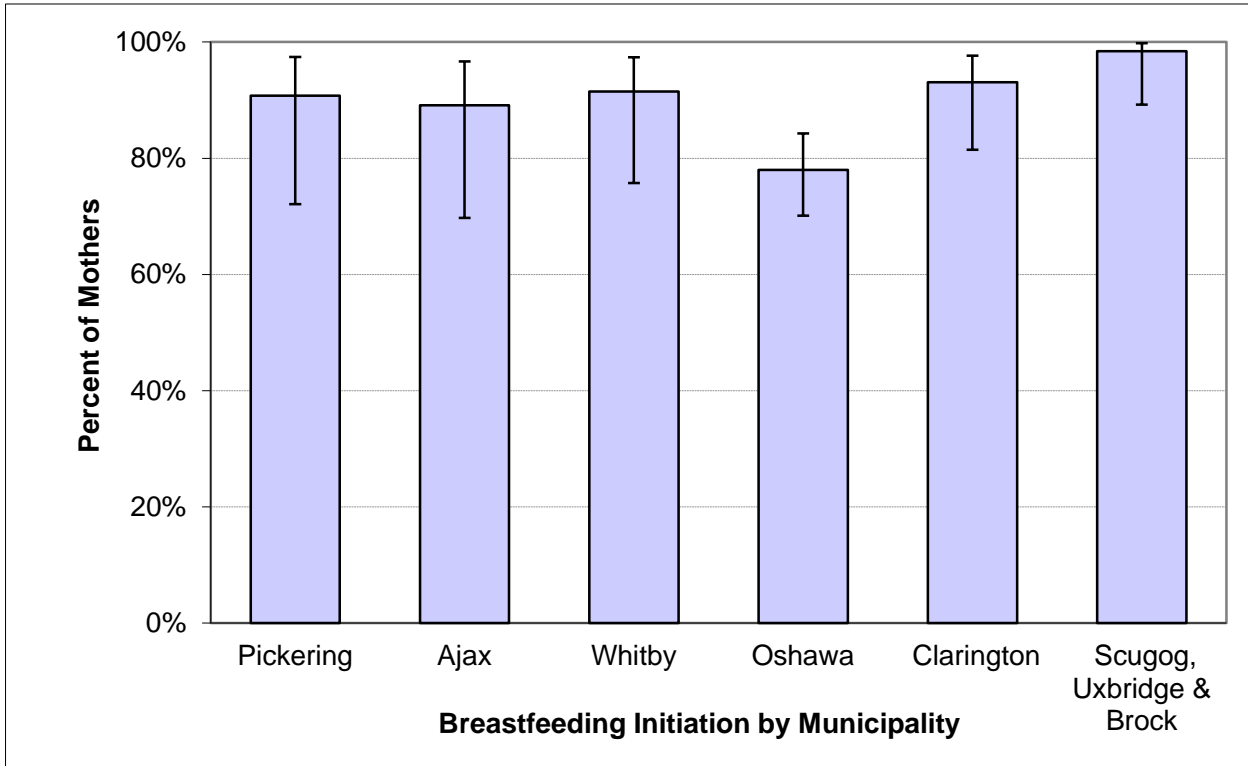


Figure 2: Breastfeeding Initiation by Municipality among Adolescent Mothers in Durham Region, 2006-2014 Combined



	Pickering	Ajax	Whitby	Oshawa	Clarington	Scugog, Uxbridge & Brock
Adolescent	91%	89%	91%	78%	93%	98%

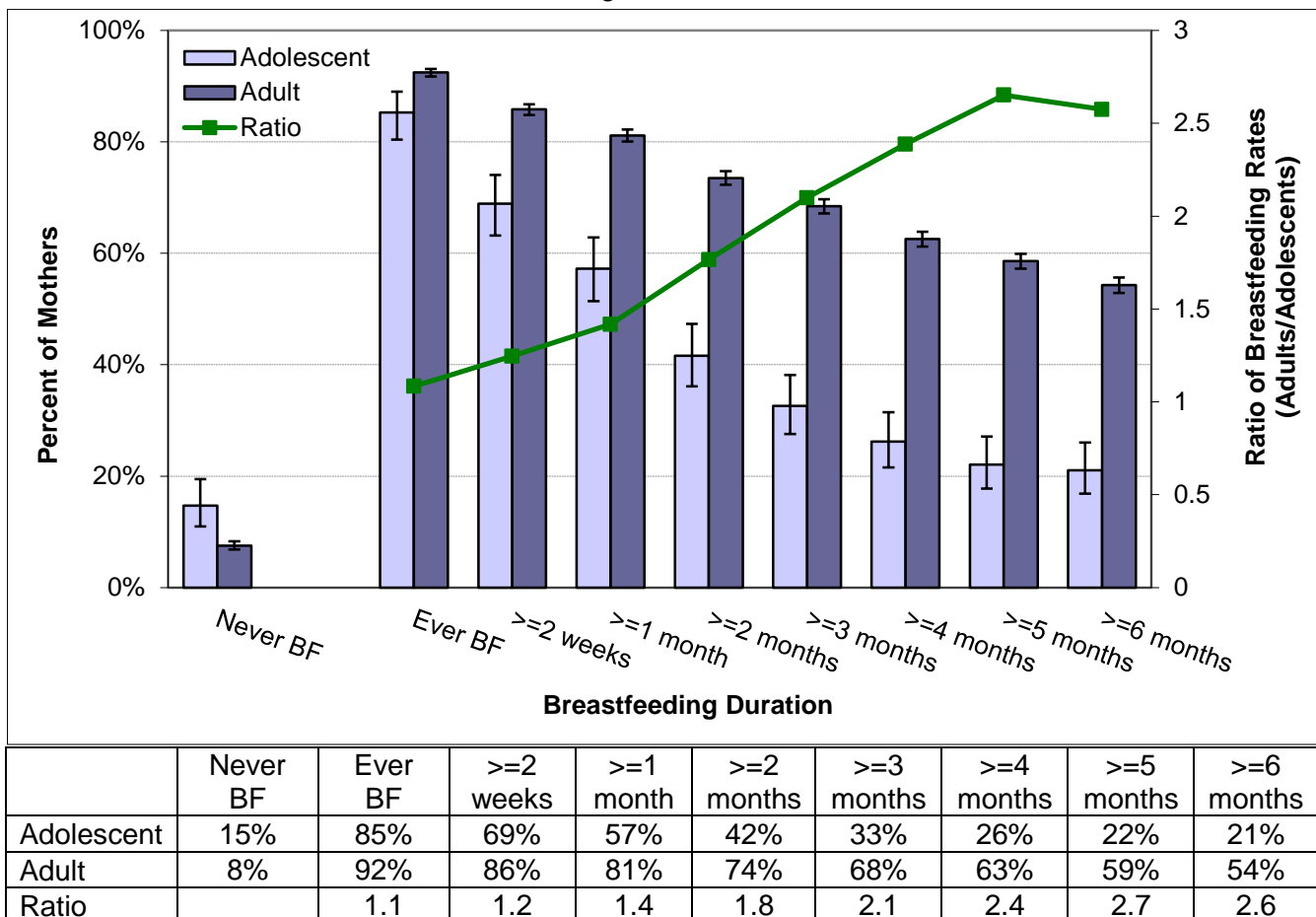
## Breastfeeding Duration

Adolescent mothers were significantly less likely to continue breastfeeding than adult mothers. Breastfeeding rates were significantly lower among adolescent mothers at all time points and the gap in rates increased with infant age. Two weeks after the birth of their babies, only two-thirds (69%) of adolescent mothers continued breastfeeding. This dropped further to only 42% still breastfeeding at two months and 21% at six months. In comparison, more than one half of the adult mothers (54%) breastfed for six months or more (Figure 3).

The ratio of breastfeeding rates between adult and adolescent mothers increased significantly over time. The ratio was only 1:1 at birth (92%/85%). It increased to 1:8 (74%/42%) at two months postpartum, 2:4 (63%/26%) at four months and then 2:6 (54%/21%) at six months (Figure 3). This means that the gap between adolescent and adult breastfeeding rates increased over time.

Although breastfeeding initiation rates between adolescent and adult mothers were only slightly different, the increased gap in breastfeeding rates with infant age highlights the importance of providing support to adolescent mothers for breastfeeding to continue.

Figure 3: Breastfeeding Duration among Adolescent and Adult Mothers in Durham Region, 2006-2014 Combined

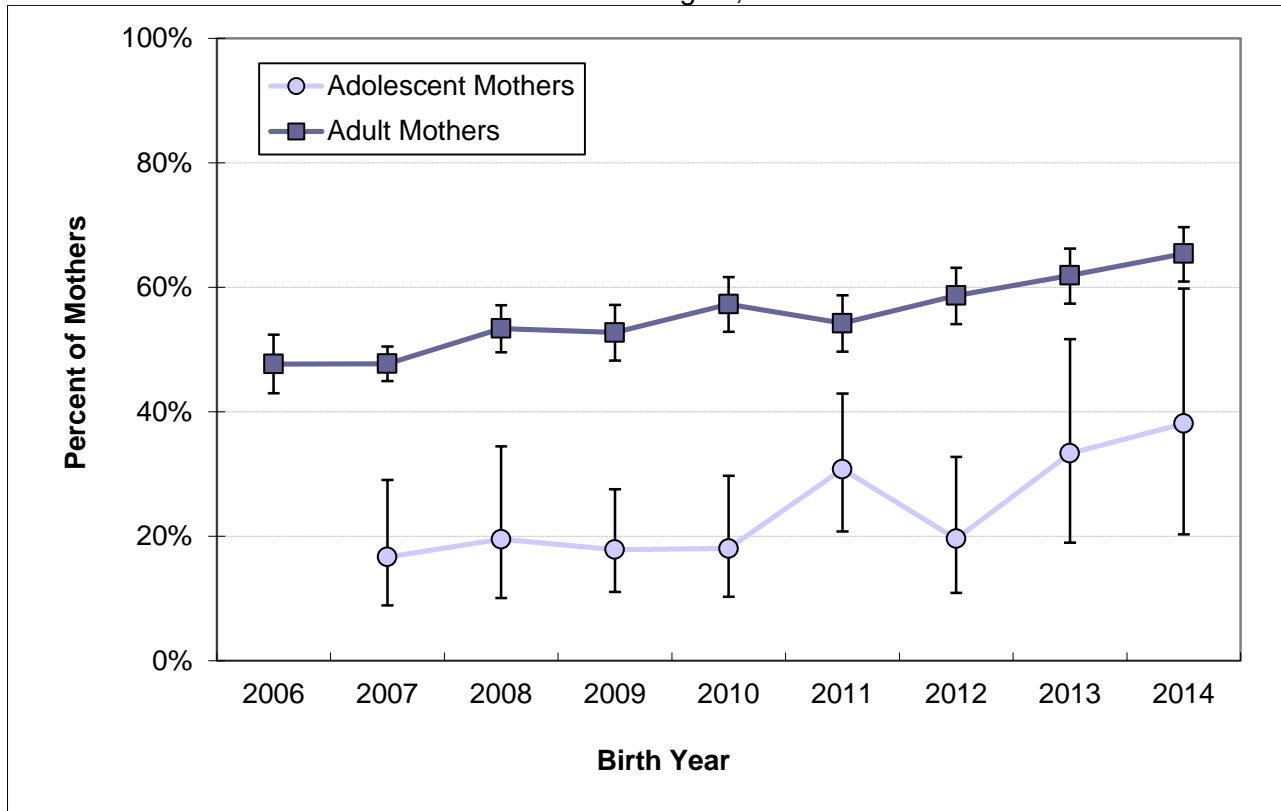


BF: breastfeeding

Rates of breastfeeding duration for six months or more remained stable among adolescent mothers (17 - 20%) from 2007 to 2010, and increased to 38% in 2014; however, this increase was not statistically significant. The variation was possibly due to the small sample size.

Breastfeeding duration rates among adult mothers increased steadily over time from 48% in 2007 to 65% in 2014. Compared to adult mothers, six-month duration rates among adolescent mothers were statistically significantly lower in all years (Figure 4).

Figure 4: Breastfeeding for Six Months or More over Time among Adolescent and Adult Mothers in Durham Region, 2006-2014

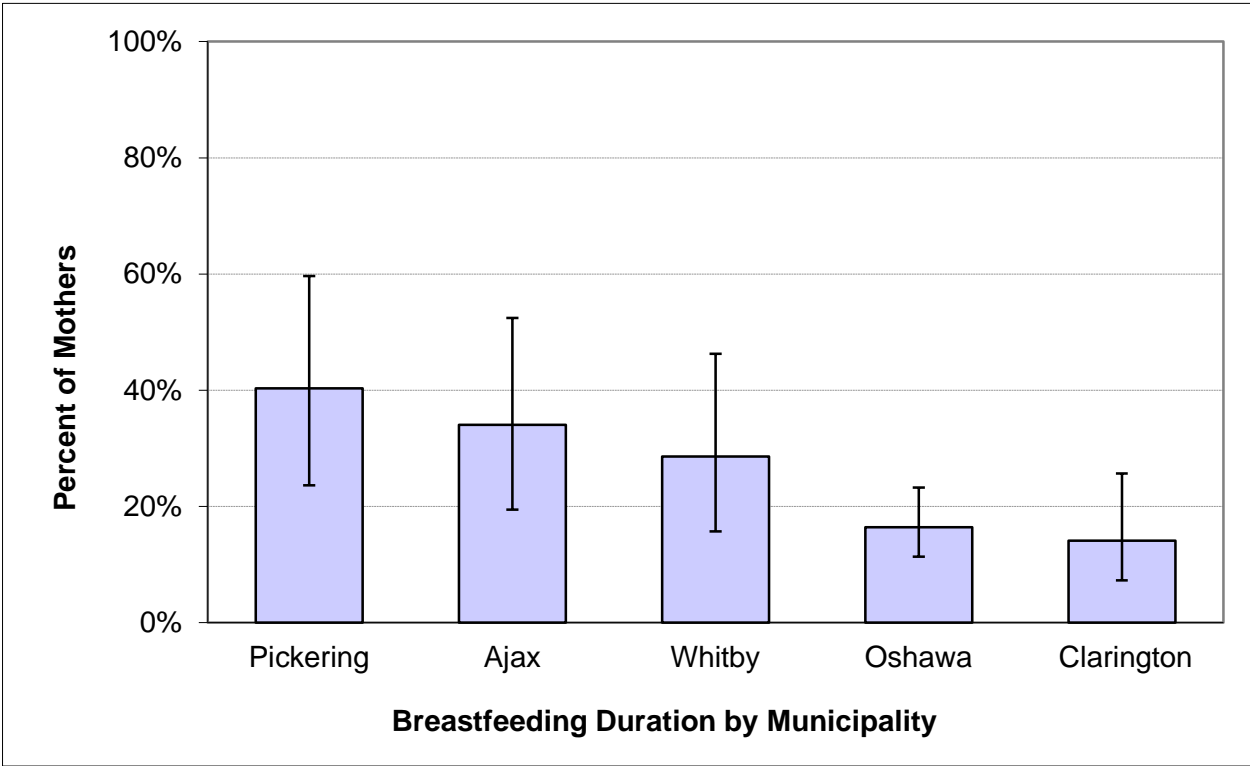


	2006	2007	2008	2009	2010	2011	2012	2013	2014
Adolescent	Not reportable	17%	20%	18%	18%	31%	20%	33%	38%
Adult	48%	48%	53%	53%	57%	54%	59%	62%	65%

**Note:** data are not reportable for adolescent mothers due to large variability in the estimated rate (the coefficient of variation was greater than 33.3%).

For 2006-2014 combined, rates of breastfeeding duration for six months or more among adolescent mothers was lowest in Oshawa (16%) and Clarington (14%), and highest in Pickering (40%). The difference between Oshawa and Pickering was statistically significant (Figure 5).

Figure 5: Breastfeeding for Six Months or More by Municipality among Adolescent Mothers in Durham Region, 2006-2014 Combined



	Pickering	Ajax	Whitby	Oshawa	Clarington
<b>Adolescent</b>	40%	34%	29%	16%	14%

**Note:** Rate for North Durham (Scugog, Uxbridge and Brock) was not reportable for adolescent mothers due to large variability in the estimated rates (the coefficient of variation was greater than 33.3%).

## Exclusive Breastfeeding

Similar to breastfeeding duration, adolescent mothers were less likely to exclusively breastfeed than adult mothers.

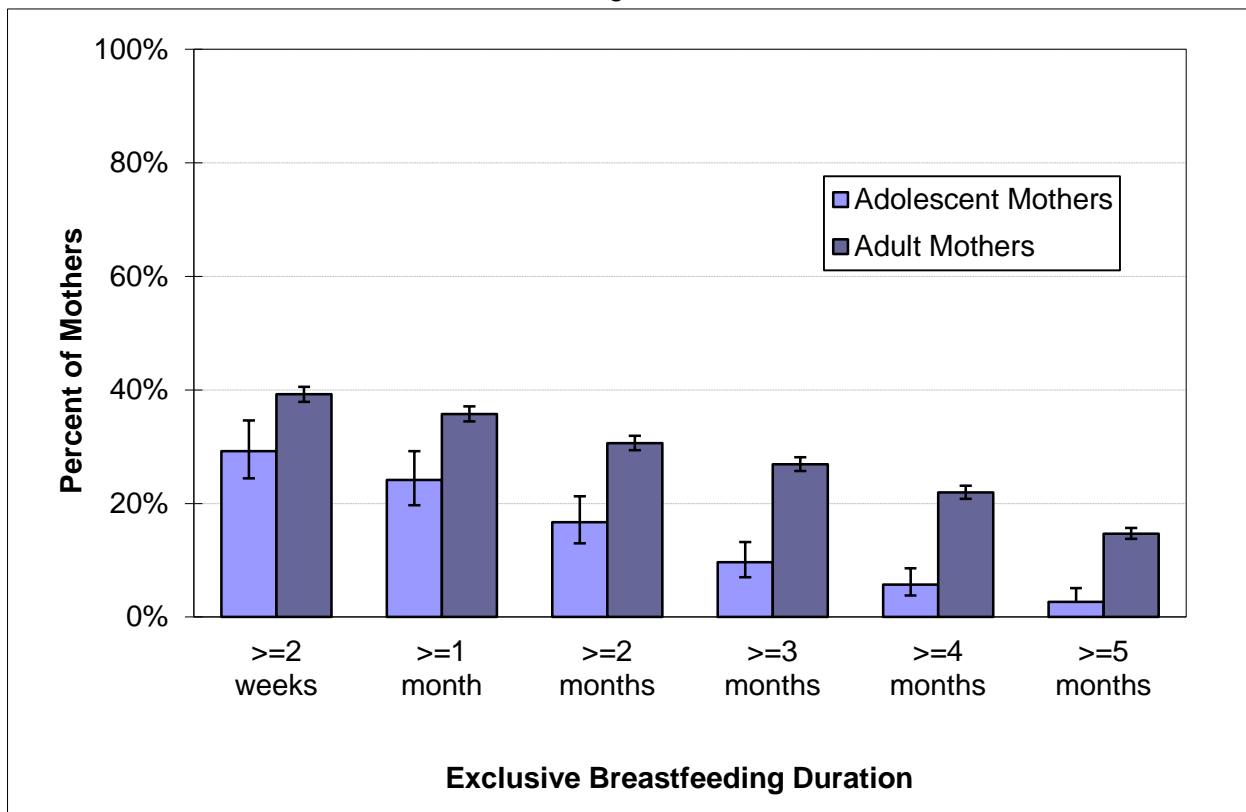
Figure 6 shows the proportion of mothers who exclusively breastfed by infant age. Only 29% of the adolescent mothers were exclusively breastfeeding their babies at two weeks postpartum; this rate decreased to 3% at five months. The rate of exclusive breastfeeding at six months postpartum was not reportable for adolescent mothers, due to the small sample size and large variability in the estimated rate.

### Definition

#### Exclusive Breastfeeding

Exclusive breastfeeding was defined as providing only breastmilk to infants, that is, the infant received only breastmilk without any additional liquids or solids, including water. Undiluted drops or syrups consisting of vitamins, mineral supplements or medicine were allowed within the definition<sup>2,3</sup>.

Figure 6: Exclusive Breastfeeding among Adolescent and Adult Mothers in Durham Region, 2006-2014 Combined



	>=2 weeks	>=1 month	>=2 months	>=3 months	>=4 months	>=5 months
Adolescent	29%	24%	17%	10%	6%	3%
Adult	39%	36%	36%	27%	22%	15%

**Note:** Exclusive breastfeeding rate at six months postpartum was not reportable for adolescent mothers due to large variability in the estimated rates (the coefficient of variation was greater than 33.3%); rates at four and five months for adolescent mothers need to be interpreted with caution as the coefficients of variation were between 16.6% and 33.3%.

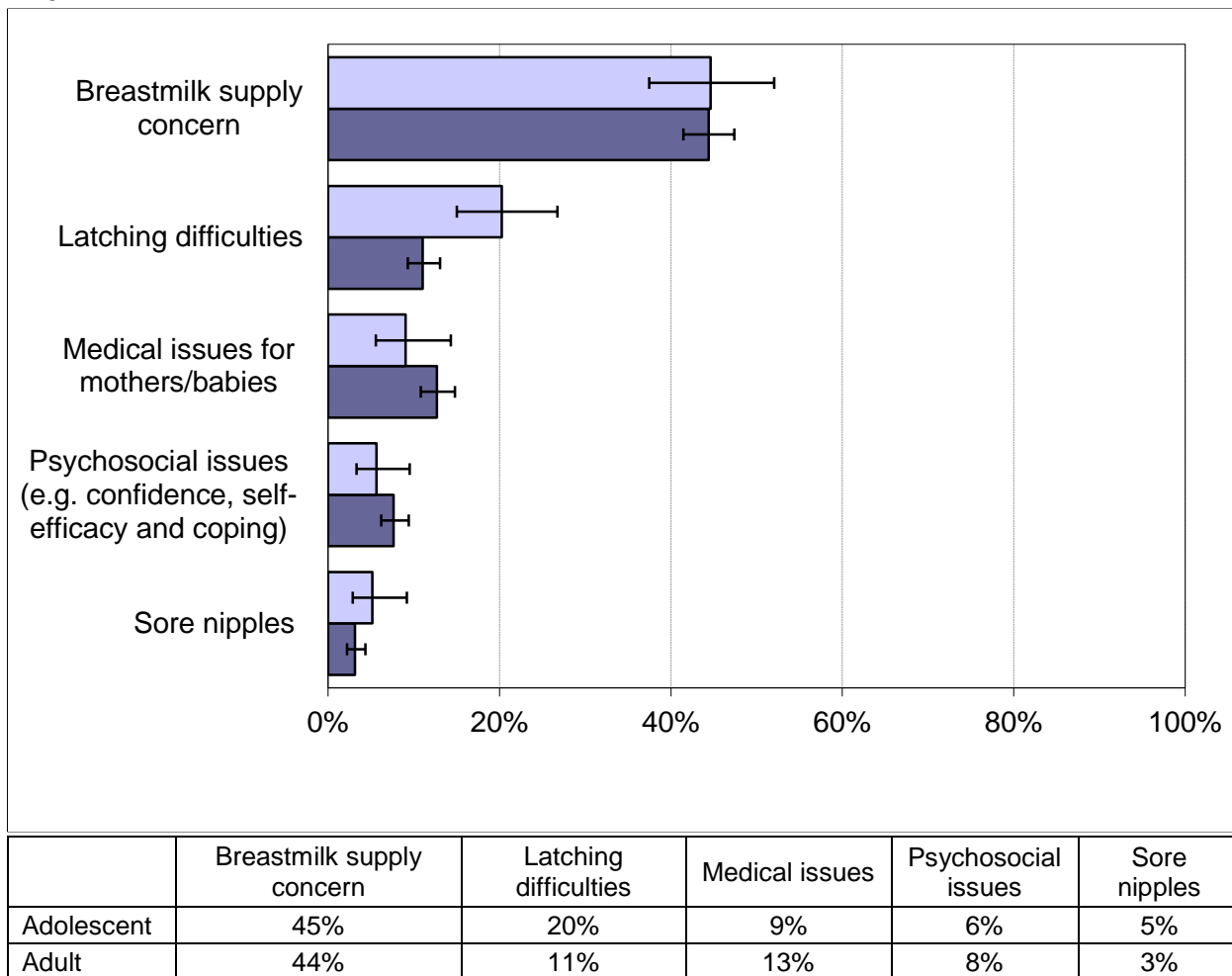


## Main Reasons for Discontinuing Breastfeeding

The top five reasons for discontinuing breastfeeding among adolescent mothers were the same as adult mothers; however, the rating order between the two groups was slightly different. Compared to adult mothers, “latching difficulties” was more common than “medical issues” among adolescent mothers (Figure 7).

Reasons cited for breastfeeding cessation in the current study are consistent with previous studies<sup>9, 10</sup>. The most frequently cited reason for discontinuing breastfeeding was breastmilk supply concerns and the perceived inability to satisfy a hungry baby. Further investigation is warranted regarding the incidence of true low milk supply versus perceived low milk supply and breastfeeding practices that may lead to low milk supply over time. Latching difficulties among adolescent mothers were more commonly reported than among adult mothers. This indicates that more assistance with breastfeeding techniques, especially positioning and latching, may be needed to help the adolescent continue breastfeeding.

Figure 7: Main Reasons for Discontinuing Breastfeeding among Adolescent and Adult Mothers in Durham Region, 2009-2014 Combined



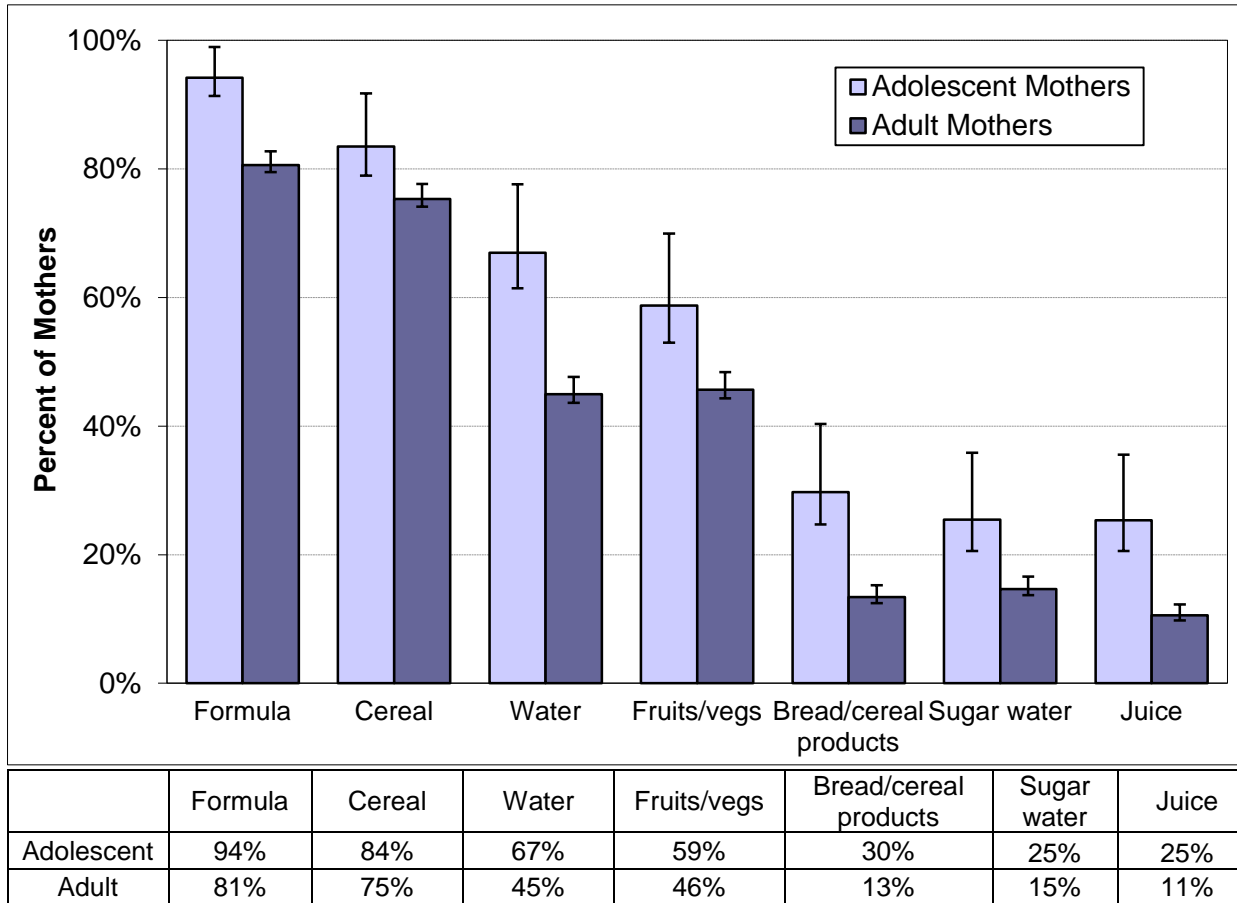
### Notes:

- Significant changes were made in 2009 to the question asking for the main reasons for discontinuing breastfeeding. As a result, data were presented for 2009-2014 combined instead of 2006-2014.
- Rates for adolescent mothers for the reasons “medical issues”, “psychosocial issues” and “sore nipple” need to be interpreted with cause as the coefficient of variation was between 16.6% and 33.3%.

## Introduction of Liquids and Solids

The types of liquids and solids introduced before six months were similar between adolescent and adult mothers. Infant formula, baby cereal, water, and fruits/vegetables (fruits/vegs) were the most commonly introduced liquids and solids among both groups. Compared to adult mothers, adolescent mothers were significantly more likely to introduce all the liquids and solids listed in Figure 8 before six months.

Figure 8: Introduction of Liquids and Solids before Six Months among Adolescent and Adult Mothers in Durham Region, 2006-2014 Combined



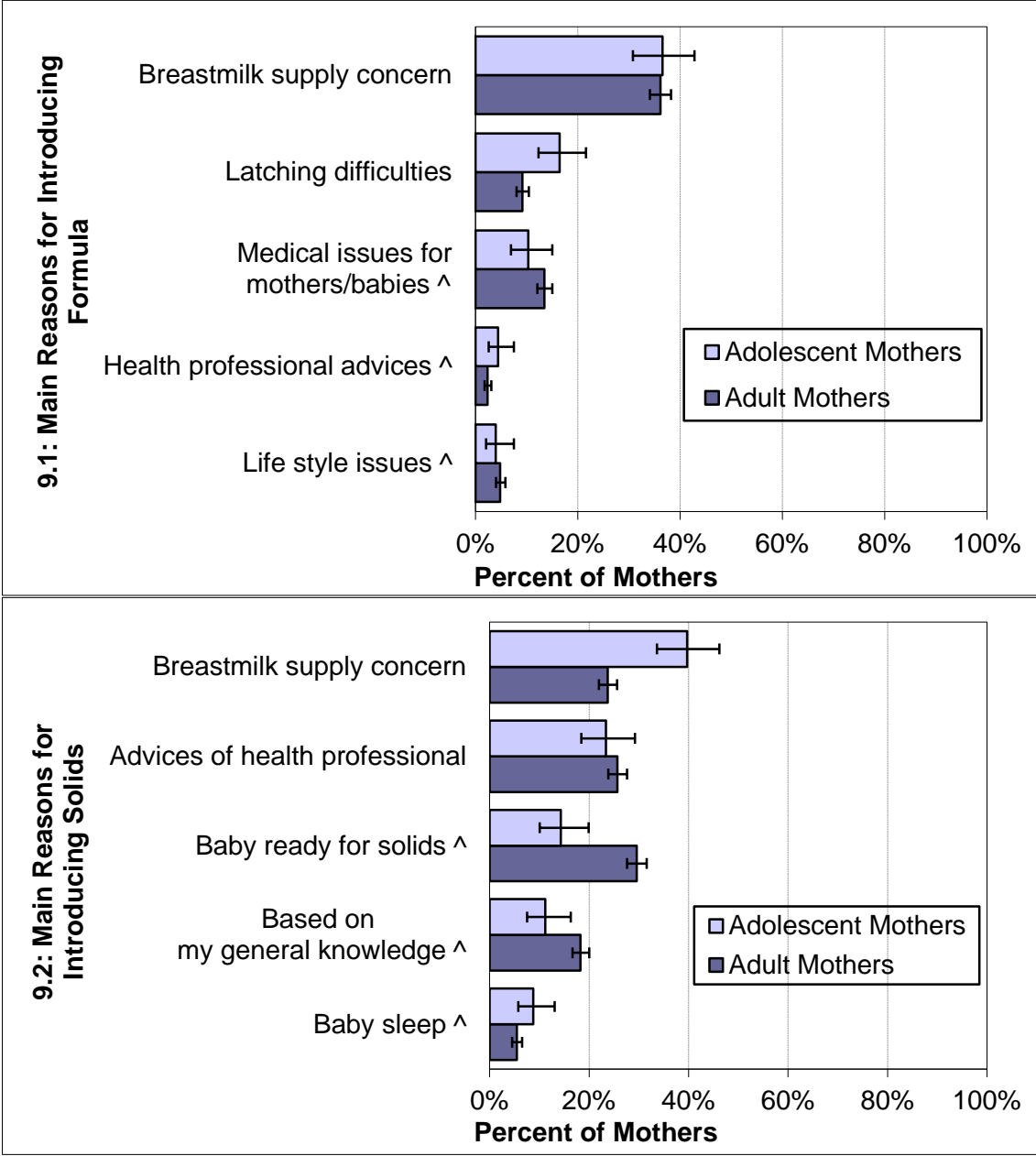
Formula use in the birth hospital was more common among adolescent mothers than adult mothers (66% vs. 53%, 2006-2014 combined). Introducing formula in hospital has been found in many studies to be significantly associated with discontinuing breastfeeding<sup>11-13</sup>, including results from IFSS<sup>14</sup>. In-hospital formula supplementation can impact breastfeeding practices in many ways. Administering bottles to infants, particularly when breastfeeding is first being established, reduces infants' sucking on the breast, promoting a physiologic inhibition of milk secretion<sup>15</sup>. This practice can also undermine breastfeeding and have a negative impact on a mother's confidence in breastfeeding by suggesting that her breastmilk is insufficient to meet the baby's nutritional needs.

The top three reasons for introducing formula were the same as those for discontinuing breastfeeding. Compared to adult mothers, "latching difficulties" was more common than "medical issues for mothers and babies" among adolescent mothers (Figure 9.1).

"Milk supply concern" was also the most common reason for introducing solids before six months (Figure 9.2) for both adolescent and adult mothers. Insufficient milk supply can be a real or perceived problem. It is important to provide first line support to nursing mothers including encouraging skin-to-skin contact, unrestricted frequency and duration of breastfeeding sessions, assisting mother and baby to

achieve an optimal latch, and resolving any underlying breastfeeding issues. Another common reason for introducing solids before six months of age is “advice of health care professional”. The results also indicate that Health Canada’s recommendation to breastfeed exclusively for six months may not been consistently adopted by health professionals. “Advice of health professional” was more commonly reported by adolescent mothers, while “baby ready for solids” was more commonly reported by adult mothers.

Figure 9: Main Reasons for Introducing Formula and Solids before Six Months among Adolescent and Adult Mothers in Durham Region, 2009-2014 Combined



**Notes:**

- Significant changes were made in 2009 to questions about the main reasons for introducing formula and solids. As a result, data were presented for 2009-2014 combined years instead of 2006-2014.
- ^: Rates for adolescent mothers need to be interpreted with cause as the coefficients of variation were between 16.6% and 33.3%.

## What is Durham Region Health Department Doing to Promote Breastfeeding among Adolescent Mothers?

DRHD offers a variety of programs and resources to protect, promote and support breastfeeding among adolescent mothers:

- ❖ The Supporting Mothers and Infants Learning Experience (S.M.I.L.E.) program offers prenatal classes that are specifically for pregnant adolescents.
- ❖ Public health nurses provide facilitation support to “Food 4 Thought” programs throughout the Region. This federally-funded Canada Prenatal Nutrition Program is a prenatal and postnatal program that assists young pregnant women with limited incomes by providing free food and vitamin supplements, as well as information and consultation on breastfeeding, nutrition, and food preparation.
- ❖ The Durham Health Connection Line provides telephone support, written information and access to breastfeeding services in the community.
- ❖ HBHC provides telephone contact to “with risk” new mothers within 48 hours of hospital discharge, conducts home visits, and provides referrals to appropriate resources as required.
- ❖ Breastfeeding clinics provide one-to -one support for clients experiencing complex breastfeeding issues. Clinic visits can also occur in the home to support the adolescent mother with her breastfeeding goals. Breastfeeding groups enable new mothers to support and learn from one another and to increase breastfeeding duration through mutual aid.
- ❖ DRHD works with community partners including community agencies that serve youth, local hospitals, and the Durham Region Breastfeeding Coalition to support adolescents in breastfeeding.

### Data Notes

- **95% Confidence Interval (CI):** The error bar ( | ) at the top of each bar/line in graphs represents the 95% confidence interval. If independent samples are taken repeatedly from the same population, and a confidence interval is calculated for each sample, then 95% of the intervals will include the unknown population parameter (the true value). For example, if a survey on breastfeeding is repeated 100 times and the CI is computed each time for the current breastfeeding rate, 95 of the 100 intervals would contain the current breastfeeding rate for the population from which the survey sample is drawn. A wide confidence interval reflects a large amount of variability or imprecision. Usually, the larger the sample size, the narrower the confidence intervals.
- **Coefficient of Variation (CV)** refers to the precision of the estimate. When a CV is between 16.6% and 33.3%, the estimate should be interpreted with caution because of high variability. An estimate with a CV of greater than 33.3% is not releasable.
- **Statistical significance** was based on a Chi-square test with a  $p$ -value less than 0.05 ( $p < 0.05$ ). A statistically significant difference between groups means that the difference is not likely due to chance.

## References

1. World Health Organization. The Optimal Duration of Exclusive Breastfeeding: Report of an Expert Consultation. 2001. [Cited 2015 June. 3]. Available at: [http://www.who.int/nutrition/publications/optimal\\_duration\\_of\\_exc\\_bfeeding\\_report\\_eng.pdf](http://www.who.int/nutrition/publications/optimal_duration_of_exc_bfeeding_report_eng.pdf)
2. Health Canada, Canadian Paediatric Society, Dietitians of Canada, and Breastfeeding Committee for Canada. Nutrition for Healthy Term Infants: Recommendations from Birth to Six Months. A joint statement of Health Canada, Canadian Paediatric Society, Dietitians of Canada, and Breastfeeding Committee for Canada [Cited 2014 June. 3]. Available at: <http://www.hc-sc.gc.ca/fn-an/nutrition/infant-nourisson/recom/index-eng.php#a4>
3. The Breastfeeding Committee for Canada. Breastfeeding Statement of the Breastfeeding Committee for Canada. 2002. [Cited 2015 June. 3]. Available at: <http://breastfeedingcanada.ca/documents/webdoc5.pdf>
4. Gartner LM, Morton J, Lawrence RA et al. Breastfeeding and the use of human milk. *Pediatrics* 2005 February;115(2):496-506. [Cited 2015 June. 3]. Available at: <http://pediatrics.aappublications.org/content/early/2012/02/22/peds.2011-3552>
5. Arora S, McJunkin C, Wehrer J, Kuhn P. Major factors influencing breastfeeding rates: mother's perception of father's attitude and milk supply. *Pediatrics*. 2000;106: E67. [Cited 2015 June. 3]. Available at: <http://pediatrics.aappublications.org/content/106/5/e67.full.ht>
6. Spear HJ. Breastfeeding behaviors and experience of adolescent mothers. *MCN Am J Matern Child Nurs*. 2006;31:106-113.
7. Dewan N, Wood L, Maxwell S et al. Breast-feeding knowledge and attitudes of teenage mothers in Liverpool. *J Hum Nutr Diet*. 2002 Feb;15(1):33-37
8. Wambach KA, Cole C. Breastfeeding and adolescents. *J Obstet Gynecol Neonatal Nurs*. 2000 May-Jun;29(3):282-294.
9. Nadler E. Region of Waterloo Public Health infant feeding study 2006/2007. Waterloo, Ontario: Region of Waterloo Public Health. September, 2007. [Cited 2015 June. 3]. Available at: [http://chd.region.waterloo.on.ca/en/researchResourcesPublications/resources/INFANT\\_FEEDING\\_STUDY.pdf](http://chd.region.waterloo.on.ca/en/researchResourcesPublications/resources/INFANT_FEEDING_STUDY.pdf)
10. Millar MJ, McLean H. Breastfeeding practices. *Health Reports, Statistics Canada catalogue 82-003*, 16(2) 23-31. 2005.
11. Simard I, O'Brien HT, Beaudoin A, Turcotte D, Damant D, et al. Factors influencing the initiation and duration of breastfeeding among low-income women followed by the Canada prenatal nutrition program in 4 regions of Quebec. *J Hum Lact*. 2005 Aug;21(3):327-37.
12. Alikashioglu M, Erginoz E, Gur ET, Baltas Z, Beker B, Arvas A. Factors influencing the duration of exclusive breastfeeding in a group of Turkish women. *J Hum Lact*. 2001 Aug;17(3):220-226.
13. Merten S, Dratva J, Ackermann-Liebrich U. Do baby-friendly hospitals influence breastfeeding duration on a national level? *Pediatrics*. 2005 Nov;116(5):e702-708.
14. Durham Region Health Department. Focused report on socioeconomic factors related to infant feeding surveillance practice in Durham Region. April 2012. [Cited 2015 June. 3]. Available at: [http://www.durham.ca/departments/health/health\\_statistics/focusedReportIFP.pdf](http://www.durham.ca/departments/health/health_statistics/focusedReportIFP.pdf)
15. Winikoff B, Baer EC. The obstetrician's opportunity: translating "breast is best" from theory to practice. *Am J Obstet Gynecol*. 1980;138(1):105-117.



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