



### Introduction

- National organizations recommend mothers exclusively breastfeed for six months
- Prenatal breastfeeding education should be initiated during pregnancy, though no standard of care currently exists
- The Breastfeeding Attrition Prediction Tool (BAPT) is a 27-item questionnaire that measures variables that may impact successful breastfeeding: Confidence, social/professional support, and knowledge

### Background/Significance

- Less than half of infants born in 2015 breastfed exclusively for the first three months of life, and a quarter through six months (U.S. Department of Health and Human Services, 2018)
- Unquestionable health benefits

### Methods

#### Design

- Quasi-experimental design
- Knowledge to Action framework (Graham et al., 2006)

#### Sample

- 16 participants-  $\geq 36$  weeks pregnant, English speaking, ability to read and write,  $\geq 18$  years old, normal singleton intrauterine pregnancy, with plans to or undecided about breastfeeding
- 4 midwifery providers

#### Setting

- Large midwifery practice in a suburb in central New Jersey
- Primarily white/non-Hispanic
- No standard of care for antepartum breastfeeding education

### Post-Implementation Provider Feedback Survey Participant Educational Needs

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
Q1 The BAPT Tool is easy to use.	1	0	0	1	2
Q2 The BAPT Tool helped to identify women at risk of not meeting personal breastfeeding goals.	0	0	0	0	4
Q3 This project helped increase breastfeeding conversation and support during the antepartum period.	0	0	1	1	2
Q4 My patients responded positively to the BAPT questionnaire and education provided	0	0	0	0	4
Q5 I would recommend continuing to use the BAPT tool in routine clinical practice.	0	0	1	1	2
Q6 Comments	0	0	0	0	0

	Positive BF Sent	Neg BF Sent	Support	Confidence	Total	Intervention
P1	11	3	8	7	29	Knowledge Educati
P2	11	3	8	12	34	Knowledge Educati
P3	11	6	8	9	34	No Flags
P4	5	3	1	3	12	Knowledge, Social Confidence Educati Services Info
P5	11	5	4	9	29	Social Support Edu
P6	11	7	8	12	38	No Flags
P7	3	1	0	7	11	Knowledge, Social Confidence Educati Services Info
P8	11	1	6.5	9	27.5	Knowledge Educati
P9	11	4	8	12	35	No Flags
P10	11	3	8	12	34	Knowledge Educati
P11	11	3	8	10	32	Knowledge Educati
P12	8	2	8	7	25	Knowledge Educati
P13	9	3	4	7	23	Knowledge and Soc Education
P14	11	5	8	12	36	No Flags
P15	9	2	5.5	4	20.5	Knowledge/Confide Education Knowledge and Soc Education, Lactatio Info
P16	5	1	0	7	13	

## Results

### Results

- ✓ 12 of 16 participants required breastfeeding education
- ✓ 81.3% agreed that breastfeeding makes returning to work more difficult
- ✓ 81.3% agreed that mothers who formula feed get more rest
- ✓ Nearly 57% responded that breastfeeding is more time consuming than formula feeding
- ✓ 44% responded that breastfeeding ties you down
- ✓ 100 percent provider compliance
- ✓ All four midwifery providers strongly agreed: The BAPT Tool helped to identify women at risk of not meeting personal breastfeeding goals AND My patients responded positively to the BAPT questionnaire and education provided

### Measures

- Provider and staff education
- Implementation of the BAPT tool over a two-month period
- Chart review to assess provider education compliance
- Post-intervention provider feedback survey

### Analysis

- Descriptive statistics on all BAPT tool questionnaire data
- Narrative of results from chart review and post-implementation provider feedback survey
- SPSS used for data analyses

### Discussion

### Conclusions

- Data supports the importance of promoting optimal breastfeeding duration, because of the benefits attributed to breastfeeding
- Clinicians can utilize this data to help support working mothers in the difficult transition from home to work, providing them with their rights as lactating women, and involve partners in the care of the newborn
- Documentation of breastfeeding education and anticipatory guidance, supporting evidence-based practice recommendations

### Implications

- Economic-** Reduced long-term neonatal and maternal morbidity and mortality, improved cost efficiency
- Quality and Safety-** Provides a standard of care for prenatal breastfeeding support
- Health Policy-** Expand on the “Break Time for Nursing Mothers” law (U.S. Department of Labor, 2020)- Support women in underserved populations and/or women that work in facilities not covered under the lactation law
- Practice-** Interventions and provider support have a significant impact on breastfeeding intention, self-efficacy, duration, and exclusivity

- American Academy of Pediatrics. (2012). Breastfeeding and the use of human milk. *Pediatrics- Official Journal of the American Academy of Pediatrics*. 129(3), 827-841. <https://doi.org/10.1542/peds.2011-3552>
- American College of Nurse Midwives. (2016). Breastfeeding position statement. *American College of Nurse Midwives*. <https://www.midwife.org/ACNM/files/ACNMLibraryData/UPLOADFILENAME/00000000248/Breastfeeding-statement-Feb-2016.pdf>
- American College of Obstetricians and Gynecologists. (2018). Optimizing support for breastfeeding as part of obstetric practice. *American College of Obstetricians and Gynecologists*. <https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Optimizing-Support-for-Breastfeeding-asPart-of-Obstetric-Practice>
- Bartick, M. C., Schwarz, E. B., Green, B. D., Jegier, B. J., Reinhold, A. G., Colaizy, T. T., Bogen, D. L., Schaefer, A. J., & Stuebe, A. M. (2017). Suboptimal breastfeeding in the United States: Maternal and pediatric health outcomes and costs, *Maternal & Child Nutrition*, (13), e12366. [https://doi: 10.1111/mcn.12366](https://doi:10.1111/mcn.12366).
- Busch, D., Silbert-Flagg, J., & Ryngaert, M. (2019). NAPNAP position statement on breastfeeding. *Journal of Pediatric Health Care*, 33(1). A11-A15. [https://www.jpedhc.org/article/S0891-5245\(18\)30479-6/abstract](https://www.jpedhc.org/article/S0891-5245(18)30479-6/abstract)
- Edmunds, L., Lee, F., Eldridge, J., & Sekhobo, J. (2017). Outcome evaluation of the you can do it initiative to promote exclusive breastfeeding among women enrolled in the New York State WIC program by race/ethnicity. *Journal of Nutrition Education and Behavior*, 49 (7 Suppl 2), S162-S168.el. <https://www.ncbi.nlm.nih.gov/pubmed/28689553>
- Frank, N., Lynch, K., Uusitalo, U., Yang, J., Lonnot, M., Virtanen, S., Hyoty, H., Norris, J., & for the TEDDY Study Group. (2019). The relationship between breastfeeding and reported respiratory and gastrointestinal infection rates in young children. *BMC Pediatrics*, 19, 339. <https://bmcpediatr.biomedcentral.com/articles/10.1186/s12887-019-16932>
- Galipeau, R., Baillot, A., Trottier, A., & Lemire, L. (2018). Effectiveness of interventions on breastfeeding self-efficacy and perceived insufficient milk supply: A systematic review and meta-analysis. *Maternal & Child Nutrition*, 14 (3), e12607. <https://onlinelibrary.wiley.com/doi/full/10.1111/mcn.12607>
- Graham, I., Harrison, M., Strauss, S., Tetroe, J., Caswell, W. & Robinson, N. (2006). Lost in knowledge translation: Time for a map? *Journal of Continuing Education in the Health Professions*. 26(1), 13-24.
- Hauck, Y., Blixt, I., Hildingsson, I., Gallagher, L., Rubertsson, C., Thompson, B., & Lewis, L. (2016). Australian, Irish and Swedish women’s perceptions of what assisted them to breastfeed for six months: Exploratory design using critical incident technique. *BMC Public Health*, 16, 1067. <https://bmcpubhealth.biomedcentral.com/articles/10.1186/s12889-016-3740-3#citeas>
- Havens, J. & Wines, M. (2019). Screening for mothers at risk to wean early and referral to a lactation support person for prolonging breastfeeding. *The Journal of Perinatal Education*. 28(1), 51-60. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6491151/>
- Janke, J. R. (1991). *Prediction of breastfeeding attrition: A test of the theory of planned behavior*. ProQuest Dissertations & Theses Global.
- Kotsopoulos, J., Lubinski, J., Salmena, L., Lynch, H., Kim-Sing, C., Foulkes, W., Ghadirian, P., Neuhausen, S., Demsky, R., Tung, N., Ainsworth, P., Senter, L., Eisen, A., Eng, C., Singer, C., Ginsburg, O., Blum, J., Huzarski, T., Poll, A., Sun, P., ...the Hereditary Breast Cancer Clinical Study Group. (2012). Breastfeeding and the risk of breast cancer in *BRCA1* and *BRCA2* mutation carriers. *Breast Cancer Research*, (14), R42. <https://doi.org/10.1186/bcr3138>
- Lawrence, R. & Lawrence, R. (2016). Benefits of breastfeeding for infants/making an informed decision. *Breastfeeding: A guide for the medical profession* (8<sup>th</sup> ed.). Elsevier. <https://www.elsevier.com/books/breastfeeding/lawrence/978-0-323-35776-0>
- Lee, H., Park, H., Ha, E., Hong, Y. C., Ha, M., Park, H., Kim, B., Lee, B., Lee, S., Lee, K., Kim, J., Jeong, K., & Kim, Y. (2016). Effect of breastfeeding duration on cognitive development in infants: 3-year follow-up study. *Journal of Korean Medical Science*, 31(4), 579–584. doi:10.3346/jkms.2016.31.4.579
- Mortazavi, F., Mousavi, S. A., Chaman, R., Khosravi, A., & Janke, J. R. (2015). Cross cultural adaptation, validity, and reliability of the Farsi breastfeeding attrition prediction tools in Iranian pregnant women. *Iranian Red Crescent Medical Journal*, 17(3), e26354. <https://doi.org/10.5812/ircmj.26354>
- Mother and Child Health and Education Trust. (2018). Ten steps to successful breastfeeding baby friendly hospital initiative. *Ten Steps.org*. <http://www.tensteps.org/>
- New Jersey States Department of Health. (2019a). *Complete health indicator report of breastfeeding initiation and continuation*. New Jersey’s Public Health Data Resource. [https://www-doh.state.nj.us/doh-shad/indicator/complete\\_profile/Breastfeeding.html](https://www-doh.state.nj.us/doh-shad/indicator/complete_profile/Breastfeeding.html)
- New Jersey States Department of Health. (2019b). *Central Jersey family health consortium awarded \$114,000 grant to develop statewide breastfeeding strategic plan*. *NJ Health*. <https://www.nj.gov/health/news/2019/approved/20190529a.shtml>
- Office of the Surgeon General, Centers for Disease Control and Prevention, Office on Women's Health. (2011). *Appendix 1 of the surgeon general's call to action to support breastfeeding*. Office of the Surgeon General. <https://www.ncbi.nlm.nih.gov/books/NBK52679/>
- Oliveira, I., Leal, L., Coriolano-Marinus, M., Santos, A., Horta, B., & Pontes, C. (2016). Meta-analysis of the effectiveness of educational interventions for breastfeeding promotion directed to the woman and her social network. *Journal of Advanced Nursing*. 73 (2), 323-335. DOI: 10.1111/jan.13104
- Papastavrou, M., GenitsaridiP, S.M., Komodiki, E., Paliatsou, S., Midw, R., Kontogeorgou, A., & Iacovidou, N. (2015).Breastfeeding in the course of history. *Journal of Pediatric Neonatal Care*, 2(6),00096 <https://pdfs.semanticscholar.org/442d/e57c35fa20a9c4f5a99faacae4d17b1f3283.pdf>
- Permatasari, R., Sartika, R., Achadi, E., Purwono, U., Irawati, A., Ocviyanti, D., & Martha, E. (2018). Exclusive breastfeeding intention among pregnant women. *National Public Health Journal*, 12(13), 134-141. [https://www.researchgate.net/publication/323460362\\_Exclusive\\_Breastfeeding\\_Intention\\_among\\_Pregnant\\_Mothers](https://www.researchgate.net/publication/323460362_Exclusive_Breastfeeding_Intention_among_Pregnant_Mothers)
- Sung, H. K., Ma, S. H., Choi, J. Y., Hwang, Y., Ahn, C., Kim, B. G., Kim, Y.M., Kang, S., Kim, J., Kim, T., Yoo, B., Kang, D., & Park, S. (2016). The effect of breastfeeding duration and parity on the risk of epithelial ovarian cancer: A systematic review and meta analysis. *Journal of Preventive Medicine and Public Health*, 49(6), 349–366. <https://doi.org/10.3961/jpmph.16.066>
- Thompson, J. M. D., Tanabe, K., Moon, R., Mitchell, E. A., McGarvey, C., Tappin, D., Blair, P., & Hauck, F. (2017). Duration of breastfeeding and risk of SIDS: An individual participant data meta-analysis. *Pediatrics*, 140(5). <https://doi.org/10.1542/peds.20171324>.
- Thomas, J., Yu, E., Tirmizi, N., Owais, A., Das, S., Rahman, S., Faruque, A. S. G., Schwartz, B., & Stein, A. (2015). Maternal knowledge, attitudes, and self-efficacy in relation to intention to exclusively breastfeed among pregnant women in rural Bangladesh. *Maternal and Child Health Journal*, 19, 49-57. doi:10.1007/s10995-014-1494-z
- U.S. Department of Health and Human Services. (2018). *Breastfeeding report card*. Centers for Disease Control and Prevention. <https://www.cdc.gov/breastfeeding/data/reportcard.htm>
- U.S. Department of Health and Human Services (2019). *Breastfeeding- Why it matters*. Centers for Disease Control and Prevention. <https://www.cdc.gov/breastfeeding/about-breastfeeding/why-it-matters.html>
- U.S. Department of Health and Human Services. (2020). *Healthy people 2020*. Office of Disease Prevention and Health Promotion. <https://www.healthypeople.gov/2020/topics-objectives/topic/maternal-infant-and-child-health/objectives>
- U.S. Department of Labor. (2020). *Section 7 (r) of the fair labor standards act- Break time for nursing mothers provision*. Wage and Hour Division. [Section 7\(r\) of the Fair Labor Standards Act – Break Time for Nursing Mothers Provision | U.S. Department of Labor \(dol.gov\)](https://www.dol.gov/eis/whd/section7r)
- Walters, D., Phan, L., & Mathisen, R. (2019). The cost of not breastfeeding: Global results from a new tool. *Health Policy and Planning*, 4(6), 407-417. <https://doi.org/10.1093/heapol/czz050>
- Wang, L., Collins, C., Ratliff, M., Wang, Y. (2017). Breastfeeding reduces childhood obesity risks. *Childhood Obesity*, 13(3), 197-204. <https://www.liebertpub.com/doi/abs/10.1089/chi.2016.0210>
- World Health Organization. (2020). *Breastfeeding*. The World Health Organization. [https://www.who.int/health-topics/breastfeeding#tab=tab\\_1](https://www.who.int/health-topics/breastfeeding#tab=tab_1)
- World Health Organization. (2018). *Infant and young child feeding*. The World Health Organization. <https://www.who.int/news-room/fact-sheets/detail/infant-and-youngchild-feeding>
- Zhang, B., Zhang, H., Liu, H., Li, H., & Wang, J. (2015). Breastfeeding and maternal hypertension and diabetes: A population-based cross sectional study. *Breastfeeding Medicine*, 10(3), 163-167. <http://doi.org/10.1089/bfm.2014.0116>
- Zhou, Y., Chen, J., Li, Q., Huang, W., Lan, H. & Jiang, H. (2015). Association between breastfeeding and breast cancer risk: Evidence from a meta-analysis. *Breastfeeding Medicine*, 10(3), 175-182. <https://www.liebertpub.com/doi/full/10.1089/bfm.2014.0141>
- Zielinska, M. A., Hamulka, J., Grabowicz-Chądrzyńska, I., Bryś, J., & Wesolowska, A. (2019).Association between breastmilk LC PUFA, carotenoids and psychomotor development of exclusively breastfed infants. *International Journal of Environmental Research and Public Health*, 16(7), 1144. doi:10.3390/ijerph16071144