Prevention of Pediatric Obesity: A Focus on the First Two Years

Kate Arner

Kimberly C. Brown MD
Lehigh Valley Health Network, Kimberly.Brown@lvhn.org

Clare Lenhart PhD
East Stroudsburg University of Pennsylvania

Colleen Dempsey-Rex RD
Lehigh Valley Health Network, Colleen.Dempsey-Rex@lvhn.org

Published In/Presented At

Arner, K., Brown, K., Lenhart, C., Dempsey-Rex, C., (2018, 3, August) *Prevention of Pediatric Obesity: A Focus on the First Two Years.* Poster presented at LVHN Research Scholar Program Poster Session, Lehigh Valley Health Network, Allentown, PA.

Prevention of Pediatric Obesity: A Focus on the First Two Years

Kate Arner, Kimberly Brown MD, Clare Lenhart PhD MPH, Colleen Dempsey-Rex RD LDN

Lehigh Valley Health Network, Allentown, Pennsylvania

INTRODUCTION

- Overweight and obesity rates among children have tripled in the last 20 years and overweight is increasingly recognized as a problem during infancy.[3]
- Rapid infancy weight gain is a known risk factor for overweight/obesity.[6]
- Pediatric obesity is linked to: hyperlipidemia, hypertension, type 2 diabetes, sleep apnea, fatty liver disease, and mental health problems.[2]
- There has been evidence that shows behaviors present in high-risk obesity groups start at a young age, suggesting that the need for intervention should be focused on the very early phases in a child's life.[5]
- Pediatric obesity rates are highest among Black and Hispanic populations, as well as families living in poverty.[4]
- Breastfeeding enhances and nurtures the infant's ability to self-regulate the sense of hunger and satiety.[1]

OBJECTIVE/AIMS

- This IRB-approved ongoing research study will investigate whether the introduction of a new clinical model, involving a dietician providing nutrition counseling at each well visit from birth to 2 years of age, will affect rates of obesity at the age of two between intervention infants and matched peers. Specifically, this study will:
  - Assess BMI and rates of overweight and obesity at age 2 years

METHODS

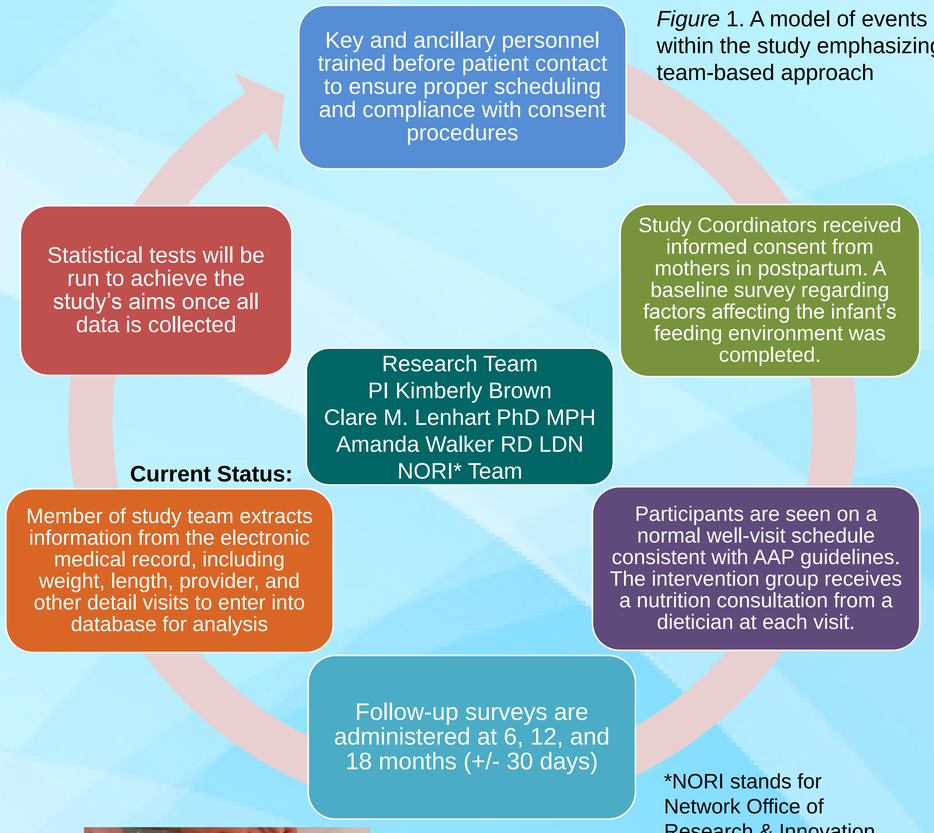

Figure 1. A model of events within the study emphasizing a team-based approach

*NORI stands for Network Office of Research & Innovation

Figure 2. Infant showing symptoms of obesity, by E. Fudge, D. von Allmen, K. Volmar, and A. Calikoglu, 2009, *International Journal of Pediatric Endocrinology*, p.1-4.

OUTCOMES

- Over **270** total participant records entered into REDcap database
- Almost all of the participants have received their 12 month visit, a few are up to 18 months
- Existing records will produce preliminary data while the team continues to update after each well visit

RESULTS

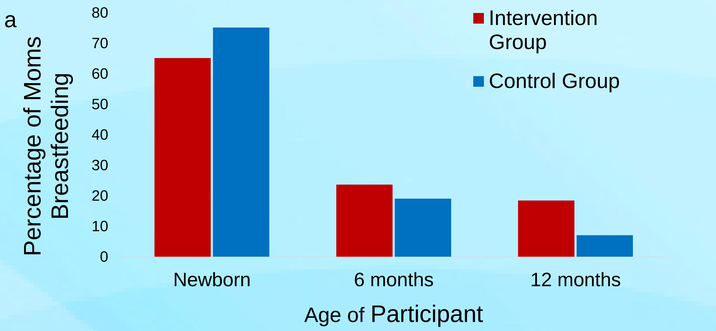

Figure 3. Graph reflecting the percentages of moms breastfeeding at each time point. These responses came directly from the surveys. The intervention group has less of a decline of breastfeeding.

DISCUSSION

- Benefits:
  - The intervention provides a dietician onsite instead of having the patient travel elsewhere
  - Residents establish continuity by serving as background primary care providers
- Limitations:
  - Patient no-shows
  - External factors affecting scheduling
- Future Steps:
  - Continue with data extraction until all participants reach 2 years of age

References

1. Agostoni, C., Mazzocchi, A., Leone, L., Ciappolino, V., Delvecchio, G., Altamura, C. A., & Brambilla, P. (2017). The first model of keeping energy balance and optimal psycho affective development: Breastfed infants. DOI: 10.1016/j.jad.2017.01.001
2. Dietz, W.H. (1998). Health consequences of obesity in youth: childhood predictors of adult disease. *Pediatrics*, 525:101-518.
3. Obesity and overweight. (2018, February 16). Retrieved July 23, 2018, from http://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight
4. Ogden CL, Carroll MD, Kit BK, Flegal KM. Prevalence of Childhood and Adult Obesity in the United States, 2011-2012. *JAMA*. 2014;311(8):806–814. doi:10.1001/jama.2014.732
5. Skinner, A. C., Perrin, E. M. and Skelton, J. A. (2016), Prevalence of obesity and severe obesity in US children, 1999-2014. Obesity, 24: 1116-1123. doi:10.1002/oby.21497
6. Whitaker, R. C., Wright, J. A., Pepe, M. S., Seidel, K. D., & Dietz, W. H. (1997). Predicting Obesity in Young Adulthood from Childhood and Parental Obesity. *New England Journal of Medicine, 337*(13), 869-873. doi:10.1056/nejm199709253371301

Lehigh Valley Health Network

LVHN.org