Infant Breastfeeding Exclusivity and Mode Differs by Family Socio-economic Environment

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Introduction: Breastfeeding is associated with decreased risk of childhood obesity and its downstream sequelae, possibly due to the differential effects that feeding at the breast and via bottle have on self-regulation of intake. Further, obesity rates and patterns of infant feeding are known to vary by maternal socioeconomic position (SEP). While studies have examined the effect of breastfeeding exclusivity on infant adiposity, few have included feeding mode in the analysis. This two-part project aims to clarify infant feeding patterns (breastfeeding exclusivity and mode by SEP), and to better understand the relationship between feeding mode and infant adiposity.

Hypotheses: We hypothesize that differences in infant feeding patterns will be found by SEP and that infants fed predominantly at the breast will have lower rates of adiposity at 6 and 12 months.

Methods: Data on breastfeeding status and infant normative weight-for-length (BMI*z*) was obtained from the PREVAIL Cohort, a CDC-sponsored 2-year birth cohort of 245 mother-infant dyads in Cincinnati, OH. Subject addresses were geocoded and assigned a Deprivation Index quartile (DIQ), a US Census-derived measure of neighborhood SEP. Breastfeeding status by DIQ and family socio-demographics was compared using Fisher's Exact Test. BMI*z* by breastfeeding status was compared using ANOVA and linear regression models.

Results: Breastfeeding exclusivity and mode significantly differed by DIQ at all time-points with lower levels of exclusivity and higher levels of partial breastfeeding by bottle and exclusive formula feeding in infants with increasing deprivation (all $p<0.05$). Breastfeeding exclusivity did not significantly predict BMI*z* at 6 or 12-months of age. However, partial breastfeeding at the breast positively predicted (1.06, $p=0.02$) and non-white race negatively predicted 12-month BMIz (-0.43, $p=0.01$).

Discussion: In the PREVAIL Cohort, residence in higher deprivation neighborhoods was associated with earlier bottle and exclusive formula feeding. Efforts to improve breastfeeding exclusivity should focus on outreach in low-SEP neighborhoods and identify barriers to early exclusivity. Analysis to identify predictors of early exclusive formula feeding is ongoing. Limitations of this study included small sample size by feeding group and lack of BMIz data after 12 months of age. Future studies should increase sample size and include later time-points in the analysis.

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