

## Background

- Prolonged bottle use is associated with dental caries and iron-deficiency anemia, yet the recommendation of bottle feeding varies.<sup>1-4</sup>
- The United States Department of Agriculture's (USDA) Food and Nutrition Service (FNS) recommends that caregivers wean a child off the bottle by age 18-months.<sup>5</sup>
- The American Academy of Pediatrician (AAP) recommends bottle weaning by age 12 months.<sup>6</sup>
- The American Academy of Pediatrics Dentistry (AAPD) recommends bottle weaning between 12-15 months.<sup>7</sup>
- Research conducted on bottle feeding reported bottle weaning ranging from 12-24 months.<sup>8</sup>
- Bottle feeding recommendation varies among health care providers.

## Methods

### Sample

- The WIC Infant and Toddler Feeding Practices Study-2 (WIC ITFPS-2).The children were enrolled while the mother was pregnant, or after birth until the child was age 2.5 months and remain in the study until turning 9 years old.
- During a 20-week window between July 1, 2013 and November 18, 2013 4,367 women were recruited.<sup>9</sup>
- To collect longitudinal data, follow-up telephone interviews with the participants are conducted every 2 to 6 months starting from the prenatal period.
- Final sample for this study was 1,194

### Outcome measure:

- The primary outcome was age of bottle cessation
- The secondary outcome was children's BMI-for-age percentile at 36-months

### Independent measure:

- Covariates found in the literatures including maternal age, race/ethnicity, marital status, education, household poverty level, employment status, mother's BMI status, parity, breastfeeding duration, childbirth weight, sex of child, the child born >3 weeks prior due date.

### Statistical Analysis:

- Descriptive analyses
- The Cox proportional hazards model
- Simple and multivariate linear regression determined the relationship between age of bottle cessation and children's BMI-for-age percentile at 36 months of age.
- For both analyses, statistical significance was determined at p <0.05

## Results

- About 34% used bottle longer than 12 months
- About 13% used longer than 18 months.
- Factors associated with age of bottle cessation were Hispanic ethnicity, multiparity, low-income, low education, higher caregiver weight status, and not initiating breastfeeding.
- After adjustment, children's BMI-for-age percentile at age 36 months increased by 0.47 for each additional month of delayed bottle cessation

## Data Visualization

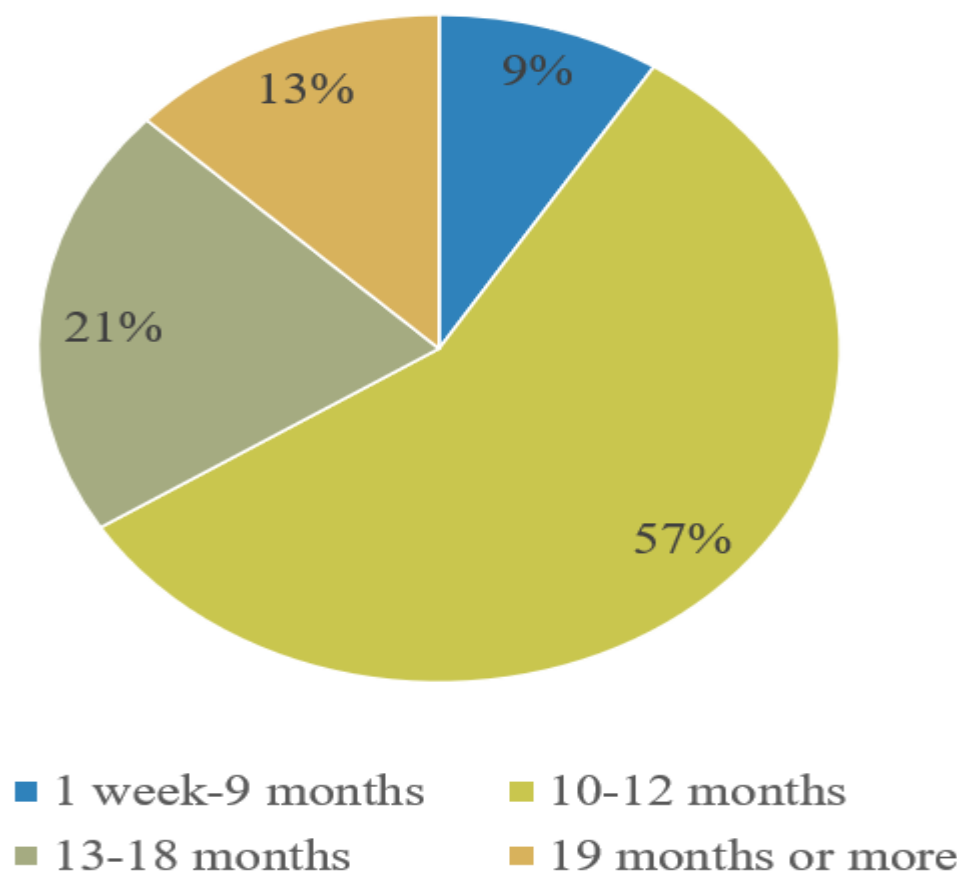


Figure 1: Botte use by months among WIC participants

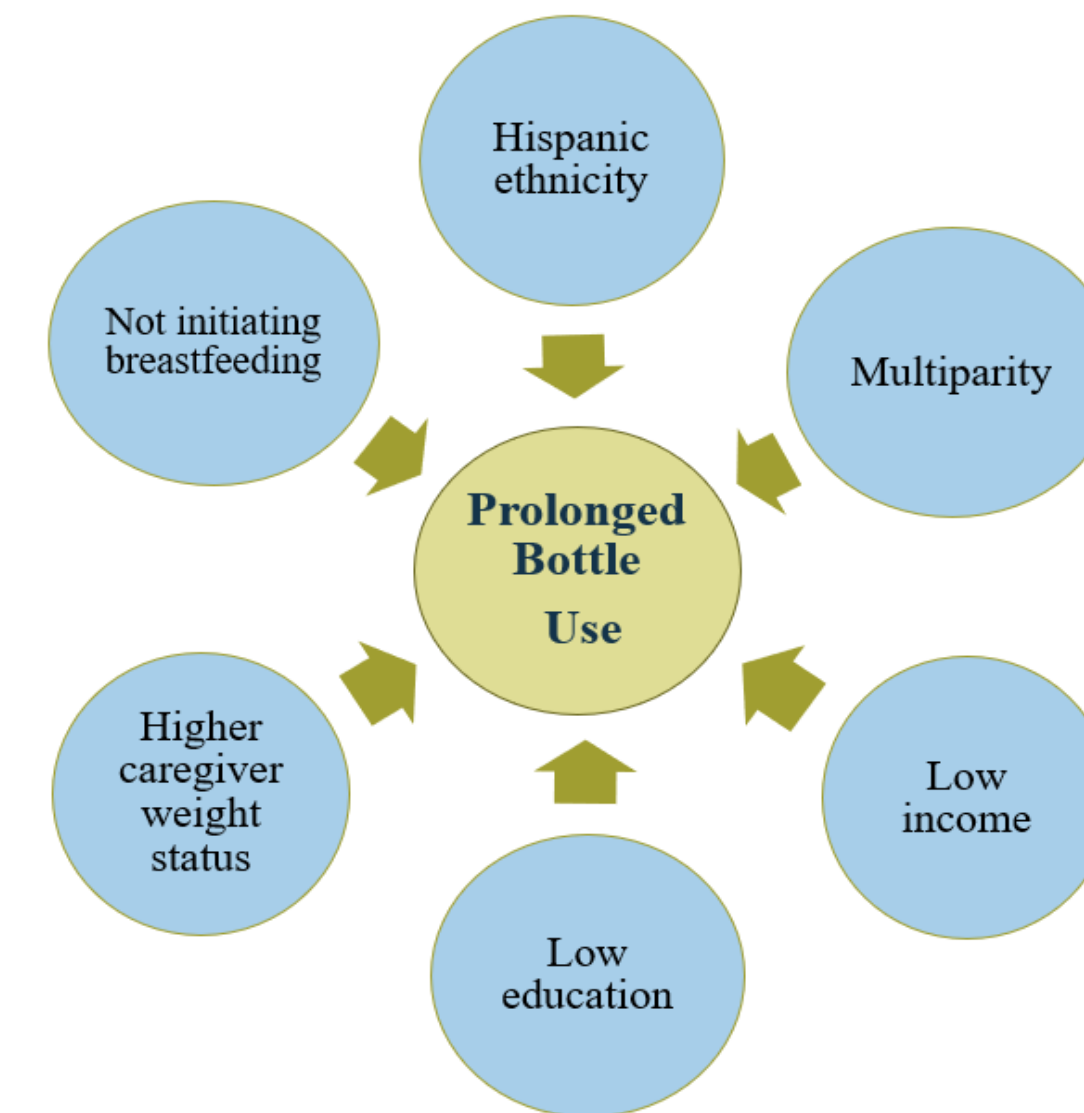


Figure 2: Factors associated with prolonged bottle use

Exposure variable	Child BMI-for-age percentile at 36 months of age	SE	p-value
Age of Bottle cessation	0.49	0.22	0.02

\*Adjusted for race, income and education model because none of the covariates were confounder.

Table 1: Adjusted linear regression model showing the association between age of bottle cessation and child body mass index (BMI) percentile at 36-months of age.

## Implications

- Although not a primary aim of our study, it is useful to note the inconsistent recommendations for age at bottle cessation, which range from 12 to 18 months.
- Healthcare providers (e.g., pediatricians, registered dietitian nutritionists) may provide inconsistent information about recommended age of bottle cessation, which may confuse caregivers.
- Considering the adverse health outcome associated with prolonged bottle feeding, defining consistent guidelines across healthcare provider organizations would be useful. The guidelines could help to inform caregivers about optimal bottle weaning practices.

### Reference

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