

**Elusive exclusivity: Comparing cross-sectional and longitudinal data on exclusive breastfeeding**

Magdalena Buczek  
Julia Coit MPH  
Xena Grossman RD MS  
Lori Feldman-Winter MD MPH  
Anne Merewood PhD MPH IBCLC

Boston University School of Medicine, Boston, MA  
Cooper University Hospital, UMDNJ-RWJMS, Camden, NJ

### Presenter Disclosures

Magdalena Buczek

(1) The following personal financial relationships with commercial interests relevant to this presentation existed during the past 12 months:

No relationships to disclose.

### Background

- Many health organizations recommend exclusive breastfeeding as the primary feeding method in first 6 months of life\*
- Health outcomes differ significantly with mixed vs. exclusive feeding
- Exclusive breastfeeding hard to measure accurately

\*WHO, AAP, ADA, APHA

### Background

- Common measuring methods
  - *Retrospective* method: (Mom recalls after already stopped exclusively breastfeeding)
  - *Cross-sectional* method: (Mom reports at one specific point in time)
  - *Longitudinal* method: Keeps track of feeding information over time

## Objective

- To compare reported rates of “exclusive breastfeeding” collected by 2 different methods in the same infants at 4 months
- Compared cross-sectional data with longitudinal data

## Methods

- We enrolled eligible mother-infant dyads within 72 hours of birth from 2008-2010
  - Infants: healthy, term, AGA, singleton
  - Mothers: English or Spanish speaking, eligible to breastfeed
- Urban Boston population
- Nested cohort from a larger study on breastfeeding and obesity

## Methods

- Longitudinal data: Ongoing data collection from birth thru 4 months
- Cross-sectional data: Via a telephone survey question at 4 months
- Exclusive breastfeeding defined as only breast milk (no formula)

## Methods: Longitudinal data collection

- All feeds in week 1 of life—hospital feeding record, maternal feeding log
- Phone call to mother weekly in month 1
- Phone call to mother monthly in months 2, 3, and 4

### Methods: Cross-sectional data collection

- In a phone call at 4 months we asked, “What did you feed your baby in the past 24 hours?”

### Methods: Cohort selection

- Data collected for a cohort of >300 women in a larger study on breastfeeding and obesity
- Only mothers who reported feeding breast milk exclusively at the 4 month phone call selected for this study

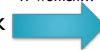
### Results

- 49 mothers reported feeding only breast milk at 4 month call
- Demographics:
  - 6% African American; 73% Hispanic; 16% White
  - 63% ≤High School Education
  - 74% on WIC
  - 16% Cesarean delivery

### Cross-sectional Results

- 49 women reported only giving breast milk at the 4 month phone call

Out of those 49 women...



### Longitudinal Results

- 51% (25/49) had fed formula in the past 4 months
- 49% (24/49) were exclusively breastfeeding based on longitudinal data

## Results

- Of the 25 mothers who fed formula in the past 4 months
- 
- 8 (32%) only gave formula in the 1<sup>st</sup> week of life

## Results

- Cross-sectional and longitudinal data more likely to match if the mother was:
  - US-born (P-value .002)
  - Non-Hispanic (< .001)
  - Not on WIC (.02)
  - Smoked cigarettes (.01)
  - >High school education (.003)
- Insurance, delivery type, infant gender NOT significant predictors of match

## Discussion

- Cross-sectional data reported twice the rate of exclusive breastfeeding when compared to longitudinal data

## Discussion

- Overstating of exclusive breastfeeding has major implications:
  - True exclusives will be misclassified together with mixed fed infants
  - Health outcomes may be biased towards the null

### Limitations

- Not all feeds were recorded; more babies may have received formula before 4 months
- Small sample size limits generalizability of demographic findings
- Our definition of exclusive breastfeeding only looked at breast milk and formula, not other solids or liquids

### Conclusion

- A one-time question at 4 months found double the exclusivity rate of data collected over 4 months
- Cross-sectional questions are likely to exaggerate exclusivity
- Researchers should beware of using cross-sectional questions, and health based outcomes need to be questioned when this method is used

Thank you!