Predictors of Breastfeeding Among WIC Participants

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Proposed Agenda

1. Welcome back and thank you!
2. Review of data and variables
3. Goals for today
    a. Discuss Key Findings for Research Question 1

    "Does participation in a responsive feeding intervention predict greater likelihood of any breastfeeding at 11 months?"

    b. Discuss Key Findings for Research Question 2

    "What combination of factors assessed during early infancy (between birth and 6 months postpartum) predict likelihood of any breastfeeding at 11 months for low-income mothers of young infants participating in the LA County WIC program?"

        i. Statistical analysis approach and explanation

4. Summary of Today's Discussion
5. Final Thoughts

Data Review

Data:

- Each observation represents a mother and infant pair in the LA County WIC program with the **infant age of 11 months**
- Data collected include Maternal Socio Demographics, Infant Characteristics, Bottle-Feeding Practices, Other Feeding Practices, and Engagement and Satisfaction with WIC

Generalizability:

- Generalized only to low-income mothers in LA County WIC program

Research Question #1

Primary interest:

- Does participation in a responsive feeding intervention predict greater likelihood of any breastfeeding at 11 months?

Variables

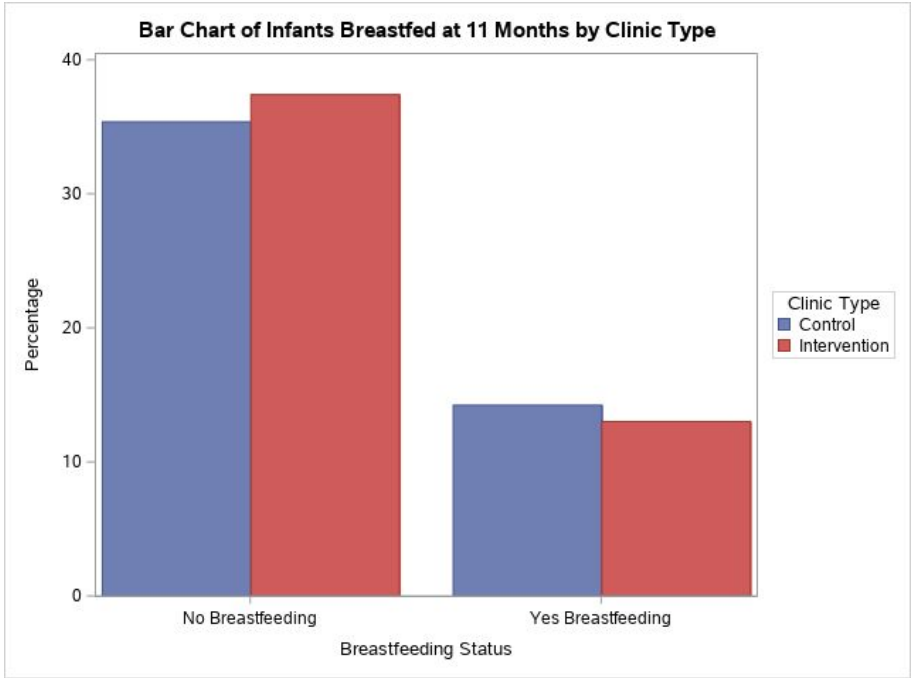
- Treatment: 1 if part of the intervention clinic
  0 if part of the control clinic
- Breastfeed: 1 if not currently breastfeeding
  2 if currently breastfeeding

**currently breastfeeding means that the variable CURRENTFED is either 1 (Breast milk only) or 3 (Breast milk and formula)

**not breastfeeding means the variable CURRENTFEED is either 2 (Formula only) or 4 (No longer receives either)

Population Proportion Summary

1. 35 out of 122 (28.69%) mother and infant pairs that participated in the control clinic were still breastfeeding at 11 months.
2. 32 out of 124 (25.81%) mother and infant pairs that participated in the intervention clinic were still breastfeeding at 11 months.



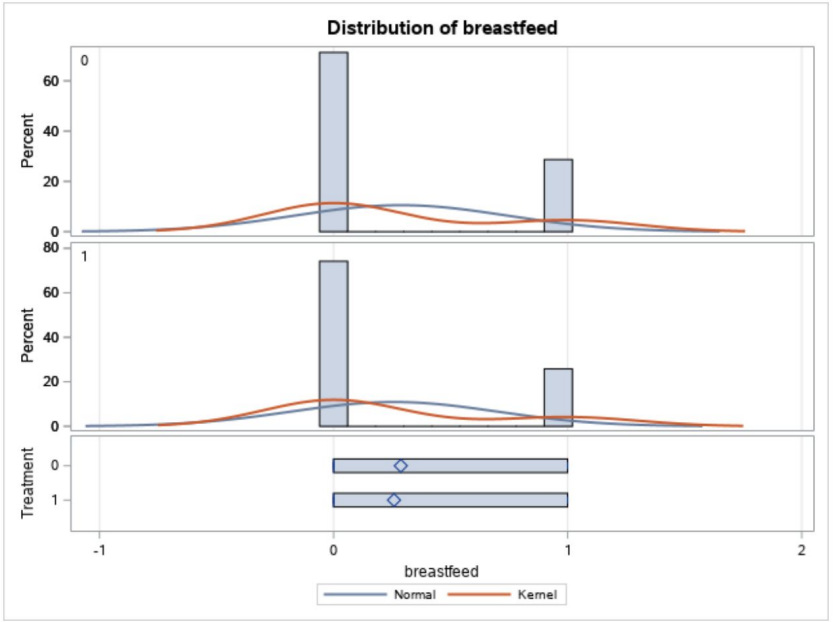
Statistical Approach: Two Proportion z-test

Why a Two Proportion z-test?

- A two-proportion z-test test checks to see if the proportion of two separate populations are equal or not.
- For this study, the two populations of interest are participants in the control vs intervention clinics. The proportion of interest is the likelihood of mothers breastfeeding at 11 months.

Two Proportion z-test Key Findings

- The findings from the Two Proportion z-test did not indicate a significant difference in the proportion of breastfeeding between the intervention clinic group and the control clinic group.
- Therefore, participation in the intervention clinic did not predict greater likelihood of any breastfeeding at 11 months.



Control Clinic

Intervention Clinic

** where 0 = Not breastfed and 1 = Breastfed

Research Question #2

Secondary interest:

- What combination of factors assessed during early infancy (between birth and 6 months postpartum) predict likelihood of any breastfeeding at 11 months for low-income mothers of young infants participating in the LA County WIC program?

Variables

- MOMETHNIC: Mother's ethnicity
- Primiparous: Number of children (1 vs multiple)
- M6sur: Infant temperament → Surgency/Extroversion
- M6neg: Infant temperament → Negative Affectivity
- M6eff: Infant temperament → Orienting/Self-Regulation Capacity
- Responsive: Type of feeding style that is more desirable to baby
- Pressure: Type of feeding style that is less desirable to baby
- NUMFEEDS: Number of feedings per day
- WIC_SATISFIED: Satisfaction with WIC experience

Statistical Approach: Multiple Logistic Regression

Why multiple logistic regression?

- Multiple logistic regression predicts a single **binary** variable (which means it has only two possible values → i.e. breastfeeding vs. not breastfeeding at 11 months) using one or more other variables.
- It also allows us to determine the **odds ratios** for all those explanatory variables, which quantify the strength of the association between each of those explanatory variables and the likelihood of the event of interest occurring (i.e. the likelihood that the infant is still breastfed at 11 months).

Odds Ratios Explained

- Odds = $\dfrac{\text{Probability of successes in a group}}{\text{Probability of failures in a group}}$
- Odds Ratio = $\dfrac{\text{Odds of success in Group 1}}{\text{Odds of success in Group 2}}$
- Interpretation
  - If the odds ratio = 1 → There is no association between the group and a success occurring.
  - If the odds ratio > 1 → The probability of a success occurring is higher comparing Group 1 to Group 2.
  - If the odds ratio < 1 → The probability of a success occurring is lower comparing Group 1 to Group 2.

Multiple Logistic Regression Key Findings

- We found that the responsive feeding style and the number of feedings per day predicted a greater likelihood of any breastfeeding at 11 months

- For every 1 point increase in the score for responsive feeding style subscale, the expected odds of a mother breastfeeding at 11 months decreases by 0.0790, after adjusting for the other variables in the model

- For every additional feeding of breastmilk or formula per day given to an infant, the expected odds of a mother breastfeeding at 11 months decreases by 0.1494, after adjusting for the other variables in the model

Parameter	Estimate	Odds Ratio	P-value
RESPONSIVE	-2.5377	0.0790	0.0293
NUMFEEDS	-1.9012	0.1494	0.0174

Interactions

- Interpretation: The effect of the responsive feeding style on the likelihood of any breastfeeding at 11 months depends on the number of feedings per day.
- When the combination of responsive feeding style and number of feedings per day increases, the expected odds of a mother breastfeeding at 11 months increases by 1.7269, after adjusting for the other variables in the model.

Parameter	Estimate	Odds Ratio	P-value
RESPONSIVE*NUMFEEDS	0.5463	1.7269	0.0038

Summary of Today's Discussion

- Participation in the intervention clinic did not predict greater likelihood of any breastfeeding at 11 months

- The responsive feeding style and the number of feedings per day predicted a greater likelihood of any breastfeeding at 11 months

Thank you!