



Does a Greater Diversity in Feeding Diet Relate to Communicative Development at 18-months?

Alaina Martens, M.S., CCC-SLP, Emily Zimmerman, Ph.D., CCC-SLP
 Department of Communication Sciences & Disorders, Northeastern University, Boston, MA



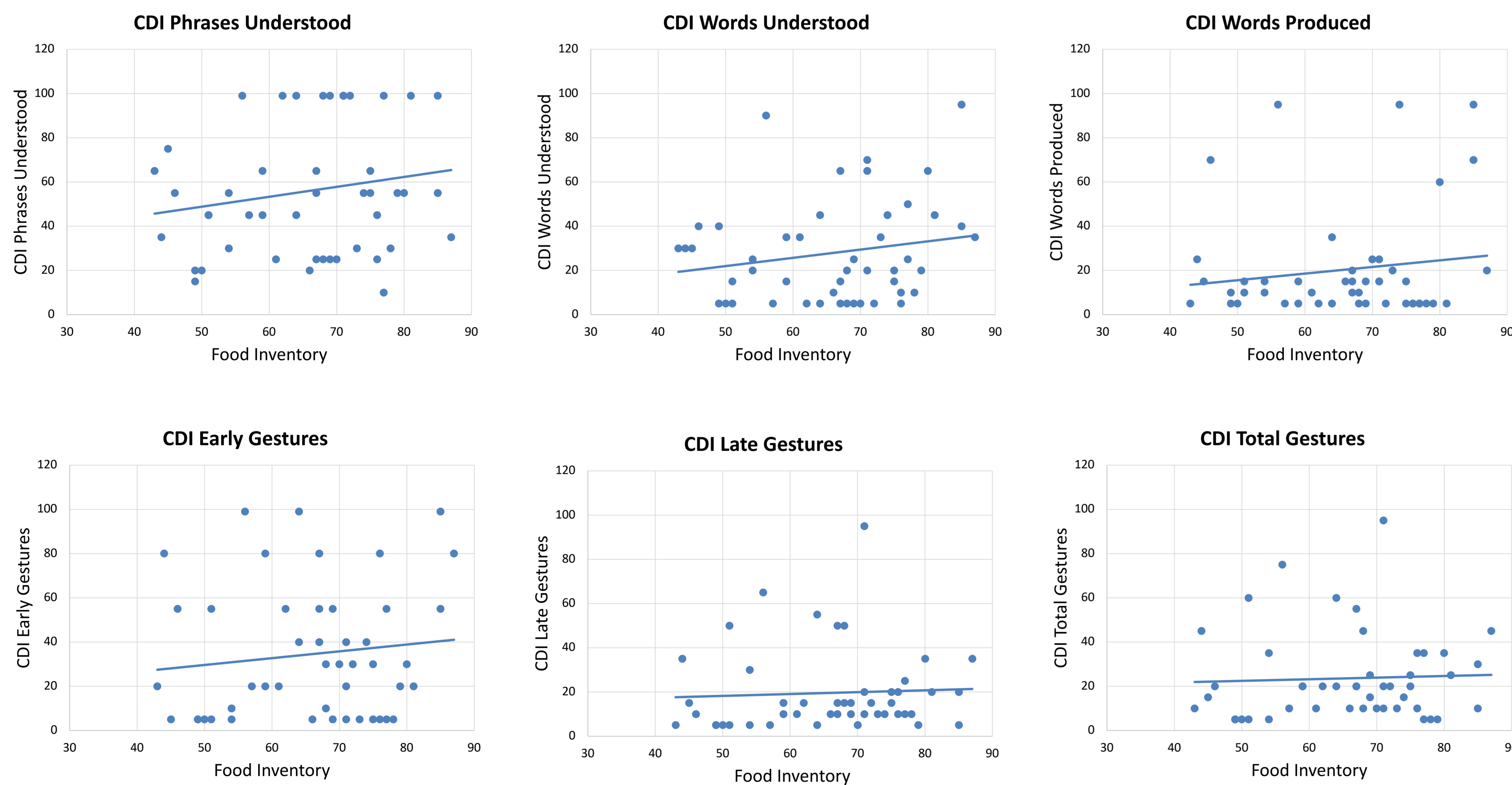
BACKGROUND

- Feeding is a vital activity that occurs multiple times a day and provides a unique opportunity for children and their caregivers to interact.
- Previous studies have explored lexical diversity in the mealtime context and found that mealtime conversations elicit greater lexical diversity (Beals & Tabors, 1995; Weizman & Snow, 2001).
- Prior research has shown that caregivers use rarer vocabulary words during mealtime and that greater use of rare vocabulary words is positively associated with a child's later vocabulary knowledge (Beals & Tabors, 1995; Pan, Perlmann, & Snow, 2000; Weizman & Snow, 2001).
- A recent study by Zimmerman and colleagues found that solid feeding can provide an opportunity for focused language input, similar to play, that can be utilized by parents to further develop their child's speech and language skills through the use of attention-directing statements (Zimmerman, Connaghan, Hoover, Alu & Peters, 2019).
 - Certain features of language, like type-token ratio (a measure of lexical variation), are more robust during feeding compared to play.
- Given the importance of mealtime for speech and language exposure and the opportunity for rare and diverse lexical input, more research is warranted to explore the relationship between communicative development and feeding
- The **goal of this study** was to determine if a more diverse feeding diet is associated with increased communicative skills at 18 months.
 - We **hypothesized** that infants with a more diverse feeding diet at 18 months would have more communicative development as characterized by increased phrases and words understood, more words produced, and gestures demonstrated

METHODS

- These data are from a larger ongoing study examining the interplay between sucking, feeding, and vocal development.
- Caregivers completed a Qualtrics survey to examine communication and feeding development when their infants were 18-months of age (+/- 2 weeks).
- Participants were compensated with a \$10 Amazon gift card.
- Forty-six participants (52% male), full-term, majority of caregivers have a college degree or higher (parent 1: 93%, parent 2: 90%), and are primarily English speaking (parent 1: 87%, parent 2: 91%).
- Communicative Development:** caregivers completed the MacArthur-Bates Communication Development Inventory (CDI) to characterize communicative development as phrases and words understood, words produced, and gestures demonstrated.
- Food Inventory:** caregivers also completed a food inventory which consisted of a list of potential foods the infant had been exposed to, which were separated into six categories (protein, carbs/grains, fruits/vegetables, dairy/eggs, legumes/nuts, finger foods). Additional space was provided for caregivers to add foods not previously mentioned.

RESULTS:, N=46



CLINICAL IMPLICATIONS

- While none of the comparisons between the CDI and Food Inventory were significant, early trends are emerging:
 - All correlations were positive trending between Food Inventory and the CDI scales.
 - Phrases understood and words understood had the strongest correlations, indicating that children who understood more phrases and words were exposed to wider variety of foods.
- Findings from this work could have broad implications for advancing the field of speech-language pathology and highlight mealtime and feeding therapies as a crucial context to encourage not only speech and language development but also feeding diversity.
 - Target communication and feeding goals concurrently and encourage caregivers to use mealtime as an opportunity to develop their infant's communication.

Next Steps:

- We will continue to collect these data over the next year to explore these early trends in more detail and across patient populations (preterm and full-term).
- Additionally, we plan to look further at food inventory categories to determine if certain types of food are associated with communicative development more so than others.

REFERENCES

Beals, D. E., & Tabors, P. O. (1995). Arboretum, bureaucratic and carbohydrates: Preschoolers' exposure to rare vocabulary at home. *First Language*, 14, 57-76.

Pan, B., Perlmann, R., & Snow, C. (2000). Food for thought: Dinner table as a context for observing parent-child discourse. Mahwah, NJ: Lawrence Erlbaum Associates.

Weizman, Z. O., & Snow, C. E. (2001). Lexical input as related to children's vocabulary acquisition: Effects of sophisticated exposure and support for meaning. *Developmental Psychology*, 37, 265-279.

Zimmerman, E., Connaghan, K., Hoover, J., Alu, D., & Peters, J. (2019). Is feeding the new play? Examination of the maternal language and prosody used during infant feeding. *Infant Behavior and Development*, 54, 120-132.

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Table 1. Spearman Correlation coefficients of CDI subscales and Food Inventory

N=46	MacArthur-Bates Communication Development Inventory (CDI)					
	Phrases Understood	Words Understood	Words Produced	Early Gestures	Late Gestures	Total Gestures
Food Inventory	.181	.192	.148	.123	.054	.044

