



Parent Report Versus Direct Assessment of Infant Receptive and Expressive Language Skills



Ines Juhee Sohn, Bonnie K. Lau

Department of Speech and Hearing Sciences

INTRODUCTION

- Starting intervention earlier is associated with better communication outcomes^{1, 2, 3, 4}.
- Improving how we identify children with speech and language delays could result in starting intervention earlier.
- Utilizing parent report to screen and identify children who need a full assessment at the clinic could increase access to evaluations.
- We will investigate two aspect of language development:
 - Expressive = ability to use language
 - Receptive = ability to understand language

QUESTION

- Can expressive language scores obtained via direct testing by the Mullen predict expressive language scores from parent report by the Vineland?
- Can receptive language scores obtained via direct testing by the Mullen predict receptive language scores from parent report by the Vineland?

SUBJECTS

- 35 infants tested longitudinally at 3, 6, & 11 months.
- Infants were all born full-term, passed newborn hearing screening, and showed no risk factors for hearing loss

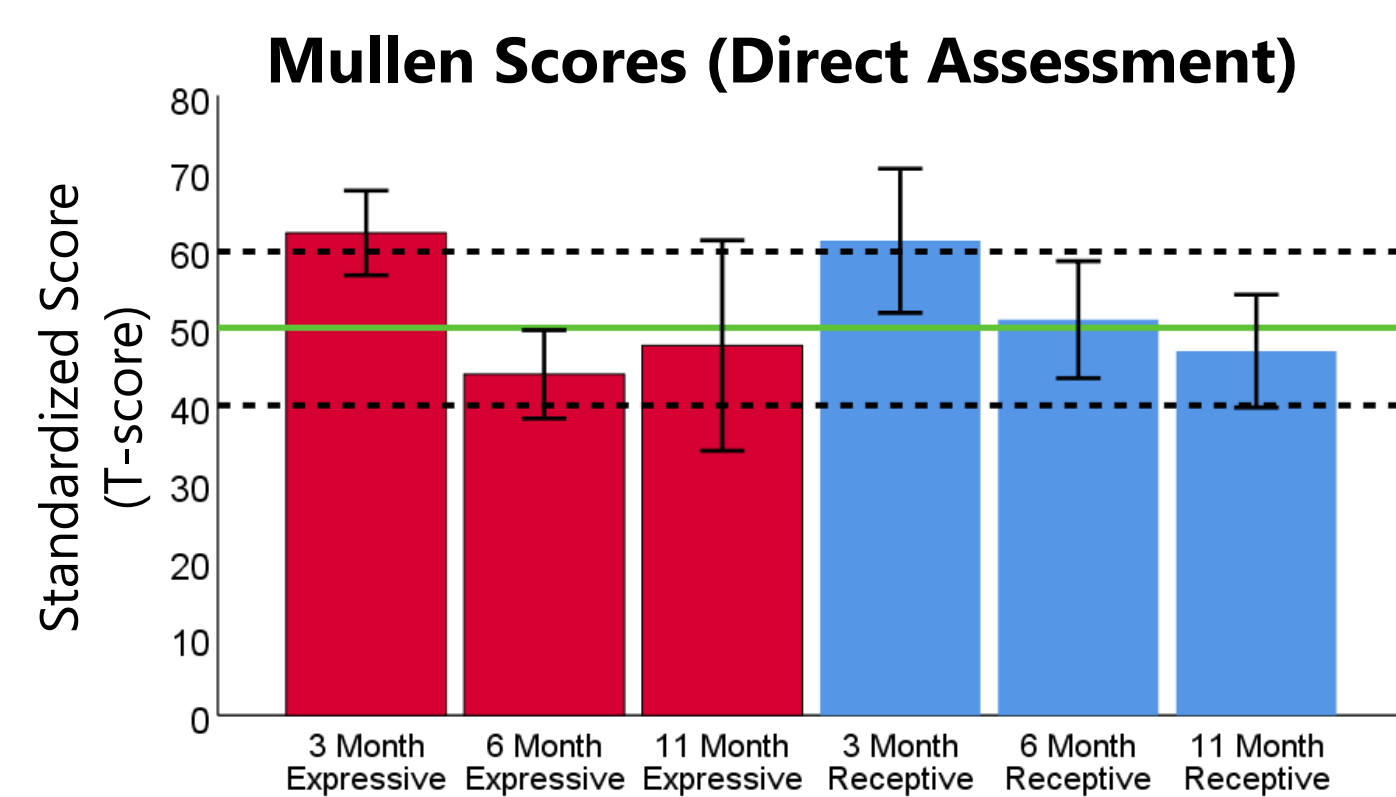


Fig. 1. Mullen Expressive and Receptive Language scale standardized t-scores at 3, 6, & 11 months. (M = 50, SD = 10).

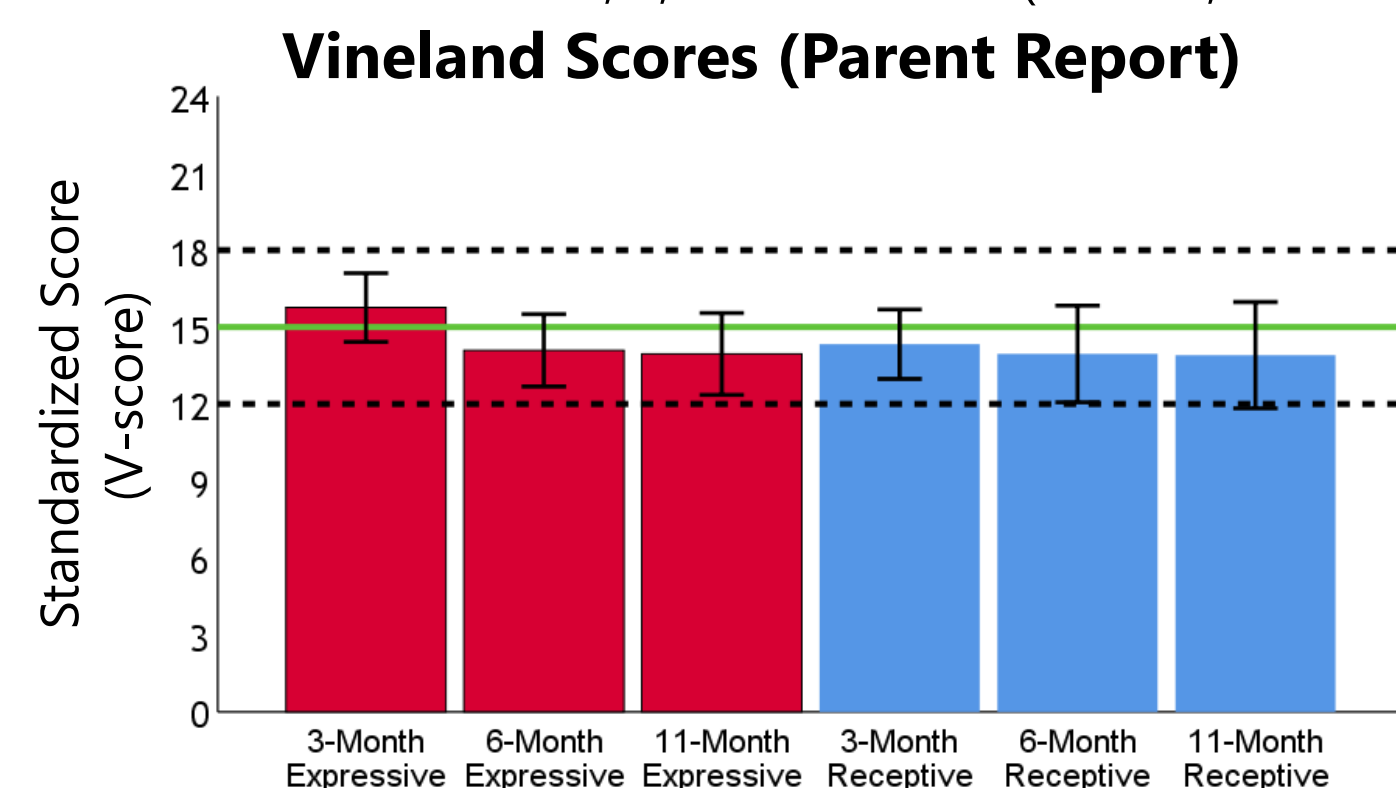


Fig. 2. Vineland Talking (Expressive) and Listening & Understanding (Receptive) subdomain standardized v-scores at 3, 6, & 11 months. (M = 15, SD = 3).

METHODS

Mullen Scales of Early Learning (MSEL)

- Standardized measure that assesses language, motor, and perceptual abilities for ages 0 to 68 months.

RESULTS

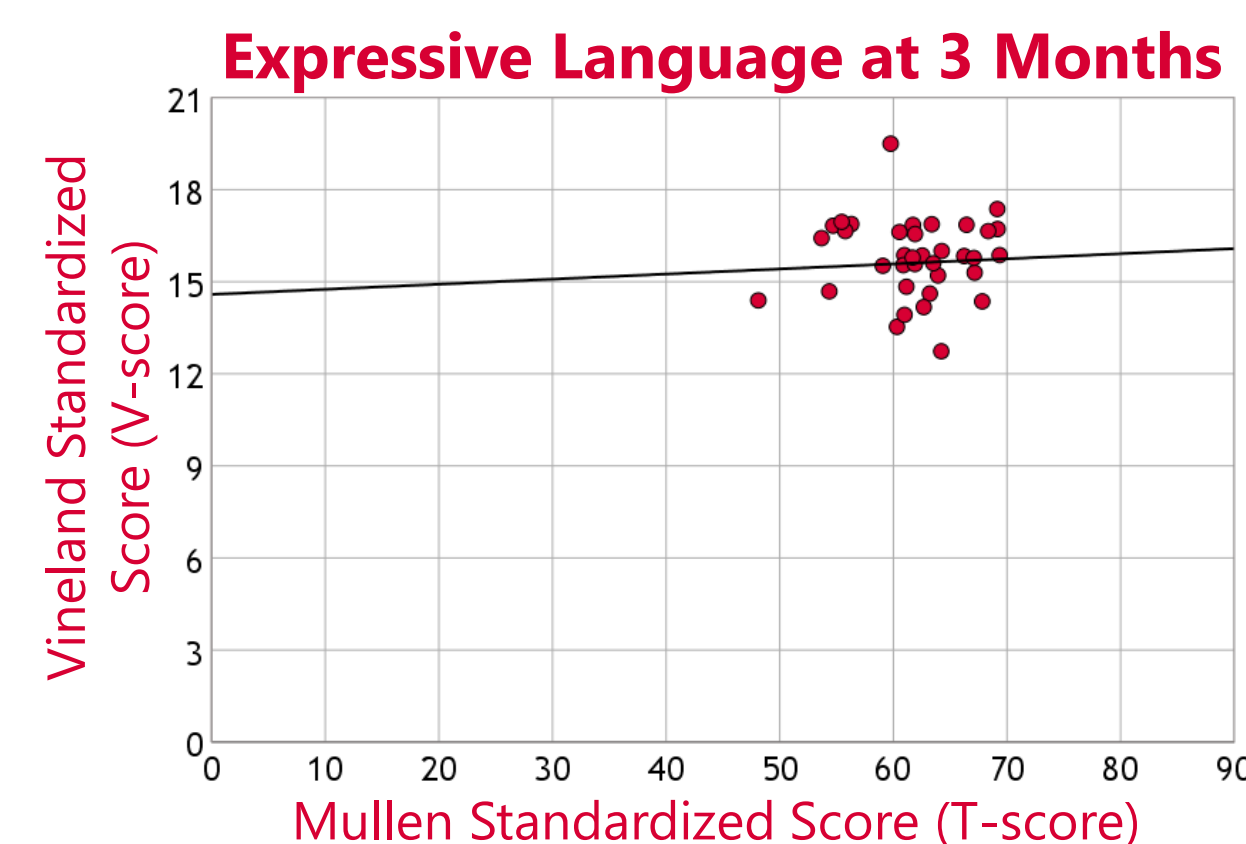


Fig. 3. 3-month Mullen Expressive Language standardized t-scores did not predict Vineland Talking standardized v-scores (n = 35; linear regression, $t(34) = .339$, $p = .692$; $R^2 = .005$).

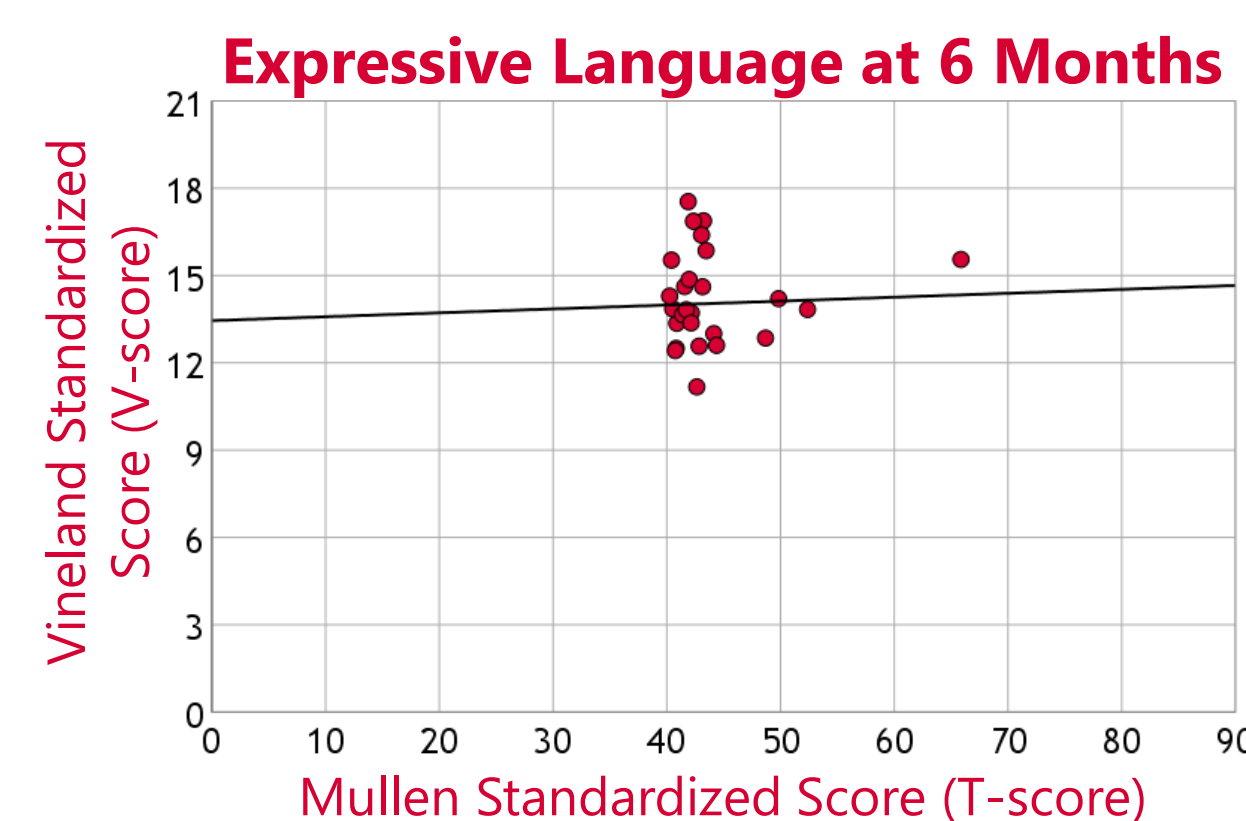


Fig. 4. 6-month Mullen Expressive Language standardized t-scores did not predict Vineland Talking standardized v-scores (n = 25; linear regression, $t(24) = .251$, $p = .804$; $R^2 = .003$).

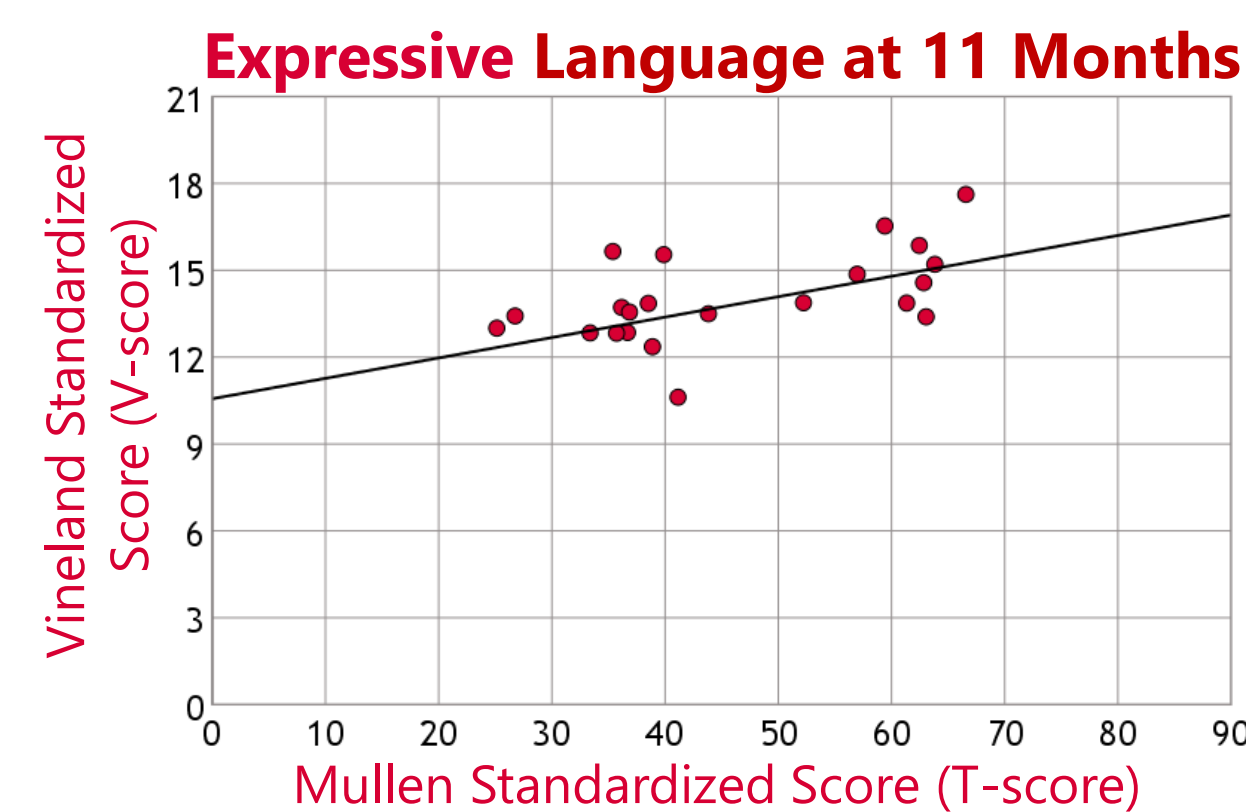


Fig. 5: 11-month Mullen Expressive Language standardized t-scores significantly predicted Vineland Talking standardized v-scores (n = 21; linear regression, $t(20) = 3.293$, $p = 0.004$; $R^2 = 0.352$).

Vineland Adaptive Behavior Scales – Third Edition (Vineland-3)

- Standardized “Comprehensive Parent/Caregiver Report” survey measures adaptive behavior from ages 0 to 90.

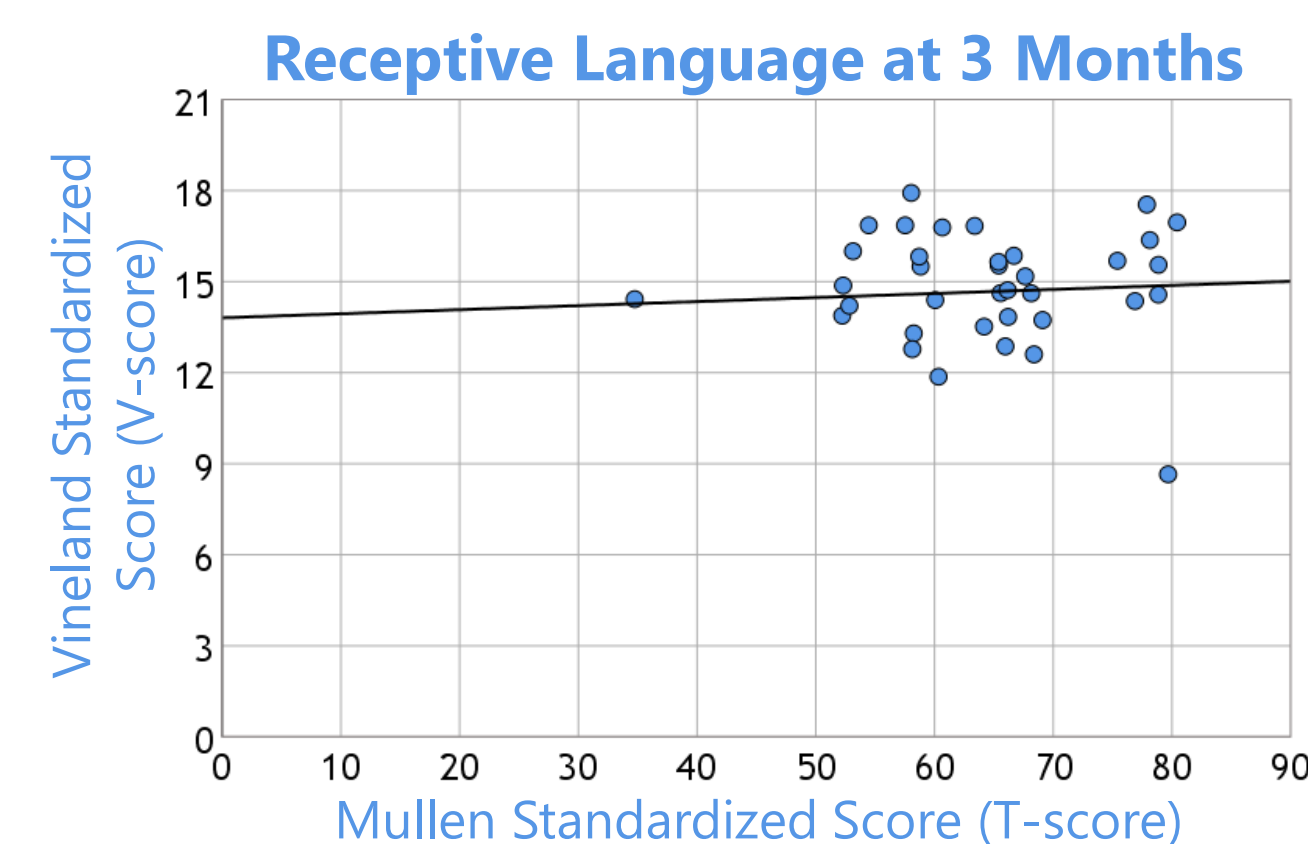


Fig. 6. 3-month Mullen Receptive Language standardized t-scores did not predict Vineland Listening & Understanding standardized v-scores (n = 35; linear regression, $t(34) = .457$, $p = .651$; $R^2 = .006$).

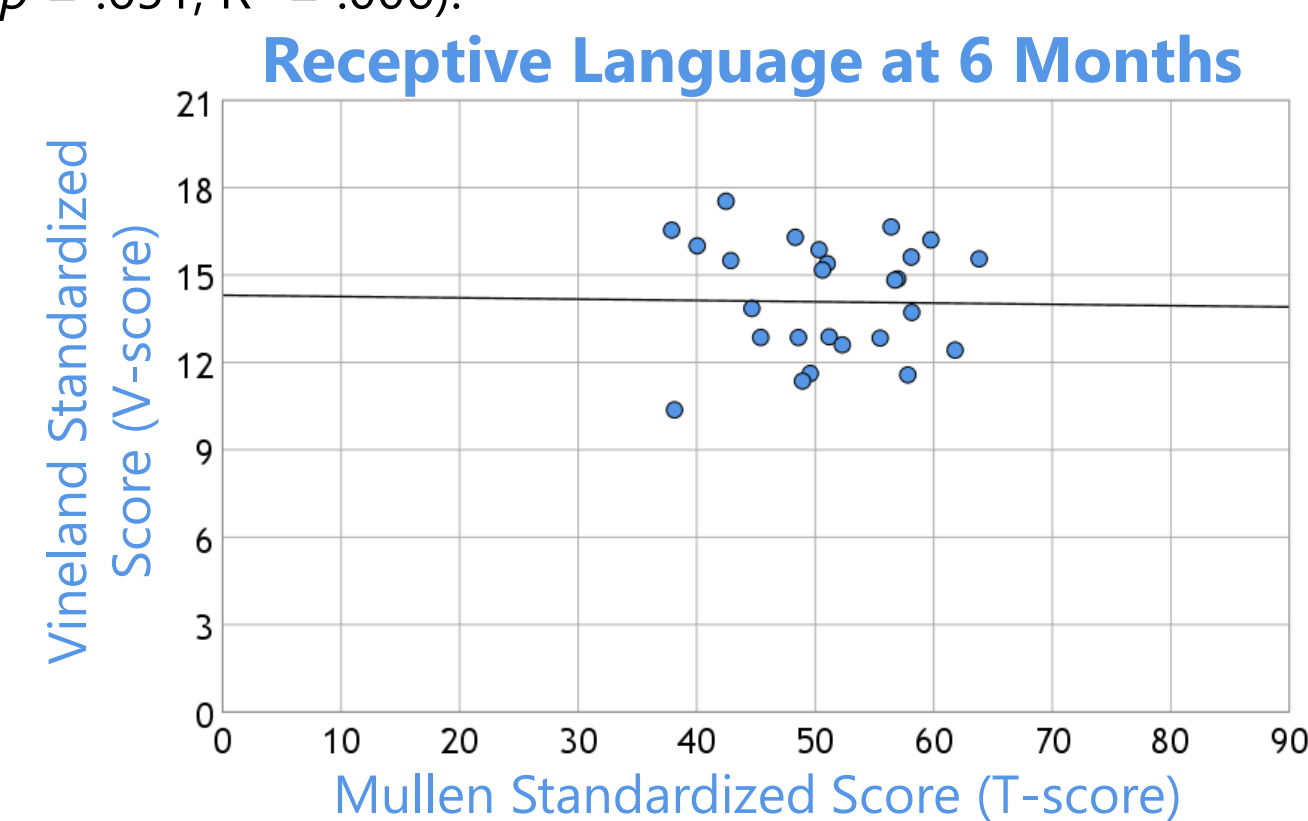


Fig. 7: 6-month Mullen Receptive Language standardized t-scores did not predict Vineland Listening & Understanding standardized v-scores (n = 25; linear regression, $t(24) = -.084$, $p = .934$; $R^2 = .000$).

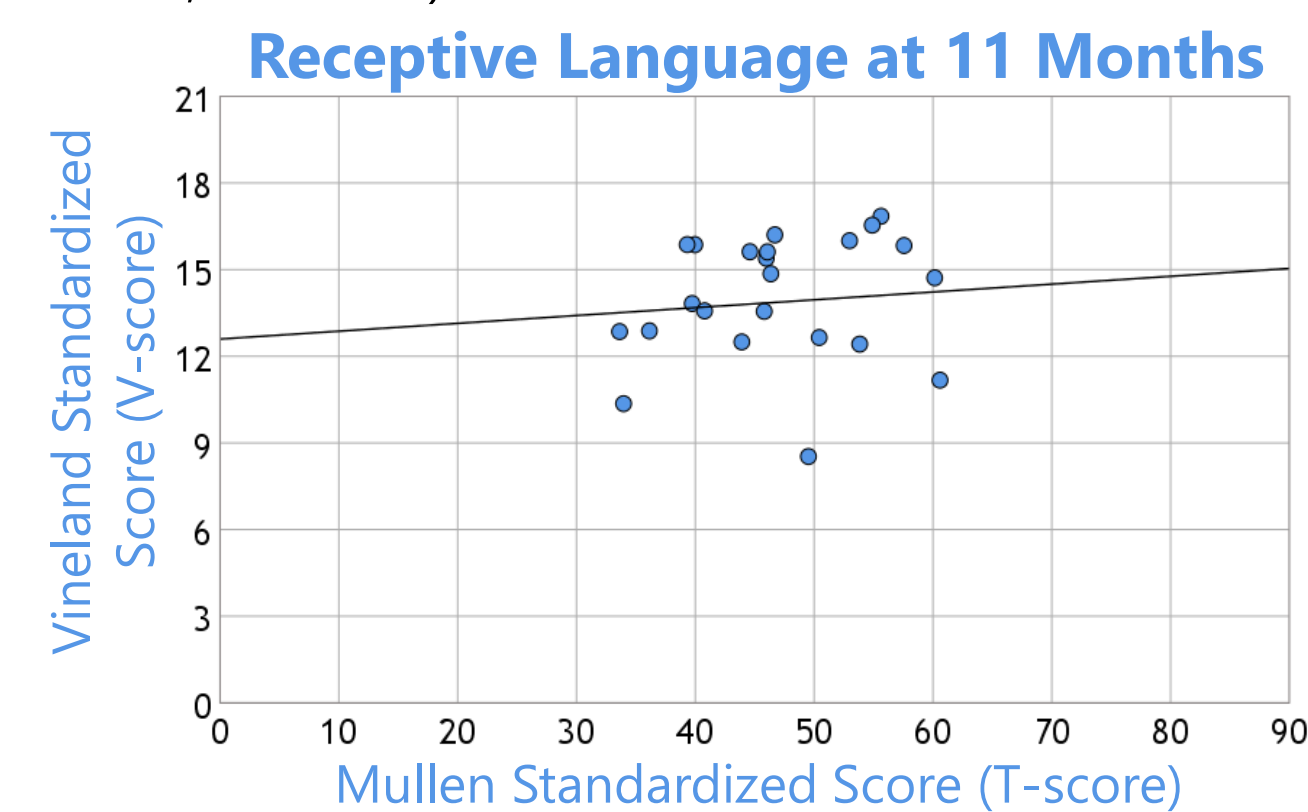


Fig. 8: 11-month Mullen Receptive Language standardized t-scores did not predict Vineland Listening & Understanding v-scores (n=22; linear regression, $t(21) = .474$, $p = .640$; $R^2 = 0.011$).

Example Mullen Expressive Language Items

- Voluntary babbling (such as ‘bu, “bu”, “bu”).
- Says first words (1. 1 word. 2. 2 to 7 words. 3. 8 words.).
- Combines jargon with gestures.

Example Mullen Receptive Language Items

- Coordinates listening and looking.
- Recognizes own name.
- Gives toy on verbal request.

Example Vineland Expressive Language Items

- Makes sounds or gestures to get your attention.
- Makes at least three short speech sounds. Example: “Ma”.
- Says “Dada” or “Mama” or another name for parent.

Example Vineland Receptive Language Items

- Looks for you when he/she hears your voice.
- Understands the meaning of at least three basic gestures.
- Understands “no”.

CONCLUSION & DISCUSSION

- Expressive language scores obtained via direct testing by the Mullen did not significantly predict scores obtained via parent report by the Vineland at 3 and 6 months. At 11 months, the Mullen scores did significantly predict the Vineland scores.
- Receptive language scores obtained via direct testing by the Mullen did not significantly predict scores obtained from parent report by the Vineland at any age.
 - The 11-month expressive language scores may be statistically significant since older infants show more language skills and greater variability.
- Future Directions: (1) Compare a parent-reported vocabulary measure and the Vineland to investigate the relationship between two parent report measures. (2) Compare the additional parent report vocabulary measure to the current direct testing measure. (3) Invite subjects back at 24 months when we expect further developmental heterogeneity and more established language skills.

Acknowledgements

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References

- Fulcher, A., et al. (2012). *International Journal of Pediatric Otorhinolaryngology*, 76(12), 1785-1794.
- Meinzen-Derr, J., et al. (2011). *American Annals of the Deaf*, 155(5), 580-591.
- Webb, S. J., et al. (2014). *International Journal of Speech-Language Pathology*, 16(1), 36-42.
- Estes, A., et al. (2015). *J. of the American Academy of Child & Adolescent Psychiatry*, 54(7), 580-587.