Grasping Ability at 6 Months Predicts Language Development at 24 and 36 Months

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Background and Aims

- Early motor skills can have cascading effects on language.¹,²
- Manual skills such as grasping provide the foundation for speech, gestures, and language acquisition.³,⁴
- Fine motor skills assessed in infancy have been found to predict later language skill up to 36 months.⁵
- Autism has been linked to weakened fine motor skills and decreased grasping activity.⁵,⁶
- Understanding the connection between motor and language can help detect potential issues in development.
- **Aims**: Assess the effect of grasping ability at 6 months on later language comprehension and expression.

Methods

- **Participants**: Participants were part of a large longitudinal study spanning 6 months to 5 years of age. Outcome data were examined in 51 children (29 male) at 24 months and 30 (15 male) children at 36 months.
- **Touwen’s Infant Neurological Examination**: Neuromotor development was tested at 6-months-old using Group III of Touwen’s neurological assessment.⁷ From these items, infant grasping skill was examined for this project. Grasping skill was rated on a scale of 0 to 5 with 0 indicating no grasping and 5 indicating holding two objects simultaneously in one hand while holding a third in the other hand.
- **Grasping Groups**: Infants scoring 3 or higher were classified as “Skilled Graspers”. Infants scoring less than 3 were categorized as “Unskilled Graspers.” A score of 3 indicated that the infant can grasp and hold one object with one hand.
- **Preschool Language Scale 5th edition**: The PLS-5 was used to assess the language level of the children at 24 and 36 months. The PLS-5 includes 2 subscales measuring language comprehension and production: Auditory Comprehension (PLS-AC) and Expressive Communication (PLS-EC).
- **Analyses**: Independent samples t-tests were conducted to determine differences in language comprehension (**Figure 1**) and production (**Figure 2**) at 24 and 36 months between “Skilled Graspers” and “Unskilled Graspers”.

Results and Discussion

**Take-Home Points:**
- Infants who could grasp successfully at 6 months had higher language comprehension at 24 months.
- Infants who could grasp successfully at 6 months had higher language production at 36 months.
- Results for comprehension at 24 months match with the age children are mastering language comprehension.
- Results for production at 36 months match with the age children are beginning to form words and phrases.

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### References and Acknowledgements

4. Iverson, J.M. (2010), DOI: 10.1017/S0305000909990432
5. LeBarton & Iverson (2013), DOI: 10.1111/desc.12069

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