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#### Testing the effects of an early intervention to promote caregiver-infant interaction



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## Introduction

Aims

- Children's language differs as a function of socio-economic circumstances (SEC) by 18 months of age (McGillion et al., 2017).
- Children's early language ability predicts later educational outcomes (Field, 2010).
- Relevant and timely linguistic caregiver responses have been associated with positive child language outcomes (McGillion et al., 2017).
- Researchers have investigated early interventions promoting caregiver linguistic responses.
- Key challenges include developing interventions that are cost effective and have lasting effects.
- Tiny Happy People is a website run by BBC Education which provides free and accessible advice in the form of videos that can be watched from the home.

- 1. To investigate whether variation in the number of words spoken by a child and type of responses elicited by caregivers was due to the intervention or other factors.
- 2. To assess whether differences between words and responses were influenced by caregiver education.
- It was hypothesised that a statistically significant difference would be found between the number of words produced by infants in the intervention condition than those in the control condition.

### TINY HODO PEOPLE

Your words build their world

#### Method





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154 caregivers of 24 month olds randomly assigned to either control or intervention.



Child: Ball Caregiver: Yes, that's a ball Coded as 'Expansion'

Child: Mummy, help Caregiver: Mmm Coded as 'Minimal response'

Child: This one Caregiver: Do you want this ball? Coded as 'Yes/no question'

*Intervention*: caregiver received videos designed to promote active communication between caregiver and child.

*Control*: caregiver received videos focusing on another aspect of childcare.

- Caregivers sent in short home videos of interactions between themselves and their 24-month-old
- Detailed, moment-by-moment coding of videos was conducted, allowing the caregiver responses to be sorted into different groups, depending on the nature of the response.
- Mean values of word tokens, word types, and response types calculated for each participant.
- Demographic data collected, using caregiver education as a measure for SEC.





**Teaching about teeth cleaning** 

Teddies can make great teeth-cleaning pals.

# Discussion

- This RCT demonstrated that the intervention can be effective.
- The use of remote video intervention has not been widely studied, and this RCT provides valuable insight into the efficacy of this technique.
- The sample was economically diverse, making it more representative of the whole population.
- It is unclear whether the parents who sent in home videos were more likely to partake in the activities suggested than those who did not send in videos. This would cause bias in the data. **Issues surrounding inter-rater** reliability were considered; interrater reliability for coders was high, but it is acknowledged that different coders would have viewed infant and parent responses differently, leading to slight differences in results. Due to the nature of the study's design, we are unable to conclude whether long term effects would be observed.
- Mann Whitney U tests were performed using SPSS because the data was not normally distributed.
- A non-significant difference was found between the number of words spoken by the child in each condition (W = 72.0, 83.6, p = 0.053).
- However, children of caregivers with Undergraduate education level or higher elicited more words than those below Undergraduate level, regardless of the condition they were placed in, and this was statistically significant (W = 60.5, 85.5, p = 0.001).
- Caregivers in the intervention condition elicited more expansions to their children than those in the control condition, suggesting that the intervention could be successful at promoting more appropriate responses (W = 70.0, 85.6, p = 0.029).
- Future research could attempt to replicate the findings to make them more robust.

Reterences

Matthews, D. Infants' intentionally communicative vocalizations elicit responses from caregivers and are the best predictors of the transition to language: A longitudinal investigation of infants' vocalizations, gestures and word production. Dev Sci. 2020; 23:e12843 rbert, J. S., Pine, J., Vihman, M., dePaolis, R., Keren-Portnoy, T., & Matthews, D. (2017). What Paves the Way to Conventional Language? The Predictive Value of Babble, Pointing, and Socioeconomic Status. Child development, 88(1), 156–166 on years; Preventing poor children becoming poor adults. The report of the Independent Review on Poverty and Life Chances