Influence of Language Nutrition on Children’s Language and Cognitive Outcomes: An Integrated Review

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BACKGROUND

Language Nutrition and Brain Development

- Early childhood is a critical period for brain development.
- Brain development is shaped by environmental experiences.
- The single strongest predictor of a child’s vocabulary at age 3 is the quantity and quality of words spoken to the child.
- Vocabulary at age three is a robust predictor of third grade literacy.
- A strategy to promote language learning may be increasing a child’s access to language nutrition.

METHODS

Search Strategy

- Infant OR child OR toddler
- Parent OR caregiver
- Infant-directed speech OR talk OR read OR engage OR interact
- Vocabulary OR language acquisition OR cognition OR language development OR literacy

Inclusion Criteria

- Examine talking, interacting, or reading by caregiver
- Child 0-36 months old at first assessment
- Evaluate language or cognitive outcomes
- Published in a peer-reviewed journal from 1990-2014

RESULTS

- Samples represented children of diverse socioeconomic backgrounds with different risk profiles for delayed development
- <10% considered influence of fathers
- 72% prospective cohort; 11% experimental
- 88% examined language skills; 31% examined cognitive development
- 71% assessed input through observation

Language Nutrition: delivery of language to babies to nourish brain development

Talking

- Quantity and quality of parent talk contribute to language and mediate adverse effects of preterm birth, low parent education and poverty on child outcomes.

Interacting

- Language delivered in the context of responsive adult-child interactions scaffolds a child’s learning and supports use of their existing linguistic knowledge.

Reading

- Shared reading increases language and literacy skills by introducing new vocabulary and encouraging conversational turn taking.

DISCUSSION

Ingredients of Language Nutrition

- Quantity of words enhances phonological awareness and speech processing.
- Lexical diversity exposes children to a variety of words in different contexts or with different descriptions.
- Linguistic complexity exposes children to more semantics and grammatical combinations from which they can learn the structure of language.
- Syntactical diversity helps children predict the meaning of new words.
- Intonation and prosody facilitate word segmentation by providing clues about utterance boundaries.
- Gestures help children attend to the environment.
- Engaging social interactions provide children opportunities to establish references for words, and receive feedback.

IMPLICATIONS

- Families can influence children’s learning simply by making their child their conversational partner, early, and often and need to be a key target for education and skill building.
- We have much to discover about how to translate these discoveries to positively influence children’s developmental and educational trajectories.

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