2010

Out of the Mouths of Babes: Prelinguistic Vocalizations in Infants at Risk for Autism Spectrum Disorders

Rhea Paul
Sacred Heart University, paulr4@sacredheart.edu

Katyrzyna Chawarska
Yale Child Study Center

Yael Fuerst

Lauren Berkovits

Ami Klin

Follow this and additional works at: http://digitalcommons.sacredheart.edu/speech_fac

Part of the Communication Sciences and Disorders Commons

Recommended Citation

This Poster is brought to you for free and open access by the Speech-Language Pathology at DigitalCommons@SHU. It has been accepted for inclusion in Speech-Language Pathology Faculty Publications by an authorized administrator of DigitalCommons@SHU. For more information, please contact ferribyp@sacredheart.edu, lysobeyb@sacredheart.edu.
Rationale
- Vocal behavior in typical infants predicts speech development (Oller, 1999; McCune & Vihman, 2001).
- Language is almost always delayed in ASD (Tager-Flusberg et al., 2005).
- Prosody is often unusual in ASD (Shriberg et al., 2001).
- Could some of these differences have roots in early vocal behavior?

Aims
- To examine vocal production in infants at high risk for ASD due to the presence of an older sibling with ASD
- To document changes in vocal behavior over the first year of life
- To compare vocal behavior at 6, 9, and 12 months in children at high and low risk
- To examine the relations between vocal behavior in the first year and outcome at 24 mo.

Participants
- Subject groups:
  - High Risk: Infants with sibling diagnosed with ASD
  - Low Risk: Infants without diagnosed sibling
  - Subject visits:
    - Invited at 6, 9, 12, and 24 mo.
    - Not all subjects made all visits:
      - Six month visit: High-risk n= 28; Low-risk n=20
      - Nine month visit: High-risk n= 37; Low-risk n=20
      - Twelve month visit: High-risk n=38; Low-risk n=23
      - Twenty-four month visit: High-risk n=24; Low-risk n=21

Method
- Participant Characterization:
  - Mullen Scales of Early Learning administered at 6 and 12 mo. visits.
  - Vocalization samples were collected from a timed five-minute parent-child interaction and digitally recorded.
  - Transcription:
    - Speech-like: vocalizations containing consonants and/or vowels that could be represented by phonetic symbols.
    - Non-speech vocalizations without recognizable consonants, vowels or speech-like resonance.
  - First 50 speech-like vocalizations were transcribed; all non-speech vocalizations occurring within the same time period were tallied and coded.

Outcomes at 24 mo.
Follow-up at 24 months:
- Mullen Scales of Early Learning
- Autism Diagnostic Observation Scale-Toddler Module
- Consensus clinical diagnosis: presence of autistic symptoms

Results-Vocalization Findings
- Consonant and Syllable Types at 6, 9, and 12 months
  - HR produces less speech and more non-speech vocalizations than Low Risk participants.

Outcomes at 24 mo.

Clinical Outcomes
HR participants who took part in the 24 month visit (n=25) were subdivided into two groups:
1) Those in whom clinicians observed some autistic symptoms (not all met full criteria for ASD), n=14;
2) Those in whom autistic symptoms were not observed, n=11.

Acknowledgments and References

Summary: Vocalization Findings
- At 6 months: No overall difference on any vocal behavior
- At 9 months: High Risk infants produce significantly fewer consonants and mature syllables than Low Risk
- At 12 months: High Risk group produces less speech and more non-speech than Low Risk.

Results- 24 month Outcomes

Discriminant Function Analysis
Number of consonants produced by HR infants at each visit predicted whether or not children showed symptoms of ASD at 24 mo.: At 6 mo. prediction is correct 74% of the time
At 9 mo. prediction is correct 77% of the time
At 12 mo. prediction is correct 65% of the time

Acknowledgments and References