AAC Strategies to Increase Expressive Communication: Childhood Apraxia of Speech

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PURPOSE

The general purpose of this study was to examine the impact of AAC strategies on the communication effectiveness of children with Childhood Apraxia of Speech (CAS) in the context of a preschool group involving 4 activities. AAC strategies included sign language (Signing Exact English) and dynamic display speech generating devices (SGD). Three children with CAS participated in a multiple baseline across behaviors project designed to examine the influences of 2 treatment strategies on expressive communication.

BACKGROUND

Severe sound production errors in children may result from either motor control impairments or errors in applying common linguistic rules. Children with large numbers of speech sound production errors often have difficulty with other aspects of speech production, thus impacting the way they are understood by others. In particular, children with CAS experience some level of difficulty in a variety of communication contexts (e.g., language, intelligibility, social behavioral communication, academic communication). Clinical intervention based on managing co-existing communication, academic, and social concerns has been proposed (Strand, 1998; Shriberg et al., 1997; Vellman and Strand, 1994; Cray, 1993; Hall et al., 1993). Because of the nature of previous research targeting primarily etiological factors, little research has been completed examining intervention strategies and their effectiveness with children exhibiting CAS. Successful AAC use by children with CAS has been documented in only a few studies (Culp, 1989; Culp, Ambrosi, Berninger, & Mitchell, Harris, Doyle, & Haaf, 1996; Cusim, 1997).

Little is known about the influence of AAC strategies on the expressive communication patterns of children with CAS. The purpose of this study is to evaluate the influences of a group intervention designed to increase the overall level of complexity of children with CAS utterances. Specifically, the goals of this study are to increase the number of: a) intelligible utterances, b) vocabulary diversity, c) communicative utterances, and e) communicative initiatives.

PARTICIPANTS

• Three participants, 2 males & 1 female, with ages ranging from 4-3 to 6-4 years.
• Diagnosed with CAS
• CAS diagnoses were based on presence of:
  • variability in errors
  • severely limited phonemic repertoire
  • no improvement in accuracy on repetition
  • benefit in accuracy with gestural/visual cues
  • vowel errors
• Participants presented with severely impaired expressive communication.
• Participants had < 5 verbal words or approximations & had been using AAC strategies (sign & SGD) prior to enrollment in the program.

METHOD

All 3 children participated in 11 1-hour treatment sessions three times weekly for 2 months.
• Four contexts were employed:
  • Music
  • Book
  • Snack
  • Play

The project used the following ABAB format:

Baseline1 → Treatment A → Baseline2 → Treatment B → Post Test

• Baseline = presented activities with speech only.
• Treatment = presented activities with speech + gestural + visual cues + sign language (SEE)
• Return to Baseline
• Treatment = presented activities with speech + gestural + visual cues + SGD (speech generating device)
• Follow-up probes were completed as post test to document ongoing expressive output.
• The children were videotaped during participation and videotapes were analyzed for the type of communication during all interactions.
• Communication was coded by type: non specific phoneme or gesture, speech, sign language, or SGD as well as the number of words in the utterance.

RESULTS

Communicative Initiations

Different Vocabulary

Communicative to Non-Communicative

Vocabulary Diversity

Nonspecific Vocalizations & Gestures

Utterance Complexity

CONCLUSIONS

1. Non-communicative attempts (grunts, gesture, unspecific vocalization) were highest during baseline and lowest during SGD use.
2. Specific communicative attempts (true words) were highest when SGDs were used in treatment.
3. Number of different words used was lowest during baseline, and increased with each subsequent treatment approach.
5. Communicative utterances demonstrated the highest increase with SGDs, with the greatest communicative initiations.
6. Multiple word utterances occurred most with SGDs.