COMMUNICATIVE ACTS AND WORD ACQUISITION IN TODDLERS WITH CLEFT PALATE

Department of Audiology and Speech-Language Pathology, East Tennessee State University, Johnson City, TN

Abstract
This retrospective study examined the rates of nonverbal communicative acts, canonical vocalizations, and word use in children with cleft palate as they transitioned from prelinguistic to linguistic levels. Fifteen children with cleft lip and/or palate were selected from a longitudinal study and their scores from the MacArthur Communicative Development Inventory (CDI) were collected at 18, 24, and 30 months of age.

Ten minutes of the language samples were scored for the number of communicative acts (prosocial declaratives and protodeclaratives) based on Bates, Camaroti, & Volterra (1975), canonical vocalizations, and words. Results showed that the children with cleft lip and/or palate went through a transition from prelinguistic to linguistic levels approximately 12 months of age. However, their use of nonverbal communicative act and canonical vocalization rates were similar to typically developing children when they transitioned from prelinguistic to linguistic levels. Rate of word use was delayed when compared to reports of typically developing peers. Statistical comparisons revealed no significant differences between rates of communicative acts, canonical vocalizations and words at prelinguistic and linguistic levels, although communicative acts and words approached significance.

Introduction
Studies of early communicative development have shown a relationship between rates of communicative acts and canonical vocalizations with the acquisition of words for typically developing children (Yoder & Warren, 1999; Calandrelli & Wilcox, 2000).

Typically developing children are using communicative acts at a rate of 1 act per minute at the prelinguistic level (Wetherby, Cain, Yoncalla, & Walker, 1988). The rate increases to approximately 2 acts per minute when children are using more than 10 words and 5 acts per minute when children reach the multi-word stage (Wetherby, Cain, Yoncalla, & Walker, 1988). Delays in early speech and language have been reported for children with cleft lip and/or palate (Scherner & Drabik, 1997; Chapman, Hardin-Jones, Schulte, & Halter, 2001). It has been suggested that these delays are a direct relationship to the presence of an open palate until after repair at approximately 12 months of age. However, there has been little examination of nonverbal milestones of early communicative development in children with cleft lip and/or palate. If speech and language delays are related to the early unrepaired cleft, one would expect that rates of communicative acts would be similar to rates reported for typically developing peers, while rates of canonical vocalizations and word use may be delayed.

The purpose of this study was to examine children's rates of communicative acts, canonical vocalizations, and words during the transition from prelinguistic to linguistic level.

Method
Participants:
• Retrospective study (previous longitudinal study of non-syndromic children with cleft lip and/or palate).
• 15 participants (nine females and six males) from northeast Tennessee.
• Nine of the participants had cleft lip and palate, and the remaining six participants had cleft palate only.

Procedures:
• The children were evaluated at 18, 24, and 30 months of age, during which time they transitioned from the prelinguistic level (10 or less words on MCDI) to the linguistic level (more than 10 words on MCDI).

Results
• The average rate per minute of communicative acts and canonical vocalizations increased substantially.
• The pattern of acquisition was normal compared to typically developing children; however, the acquisition was at a slower pace.
• Words per minute increased less dramatically.
• The children in this study were delayed chronologically in comparison to typically developing children.
• Statistical comparisons revealed no statistically significant differences between rates of communicative acts, canonical vocalizations and words at prelinguistic and linguistic levels, although communicative acts (p=0.09) approached significance.

Discussion
• Proctor Williams, Dixon, Brown, Ringel, Barber, & Light-Newell (2007) conducted a study using similar methodology with 29 typically developing children at 18, 24, and 30 months of age.
• Children in the current study (shown in Figures 2 & 4) demonstrated higher rates of communicative acts and canonical vocalizations at the prelinguistic and linguistic levels when compared to the children in the Proctor-Williams et al. (2007) study.
• However, the children with cleft lip and/or palate exhibited lower rates per minute of word use. When age was compared, the children with cleft lip and/or palate were approximately 10 months older than the typically developing children.
• Other studies of typically developing children have reported use of communicative acts at a rate of 1 act per minute at the prelinguistic level and 2 acts per minute at the linguistic level (Wetherby, Cain, Yoncalla, & Walker, 1988).
• The children in this study used 1.76 acts per minute at the prelinguistic level and 3.34 acts per minute at the linguistic level, well above the rate reported for prelinguistic and linguistic levels.
• However, the children with cleft lip and/or palate were older than the typically developing children.

Clinical Implications
Assessment of communicative acts at the prelinguistic level may assist clinicians in identifying early communicative milestones that are less dependent on vocal production.

Future Research
Although there was no statistical significance between prelinguistic and linguistic levels of communicative acts, canonical vocalizations, and words, several comparisons approached significance. A prospective study with a larger number of participants is necessary to identify potential predictive relationships.

References