INTRODUCTION

- Early studies of twin children suggest varying degrees of delay in twin children's speech development compared to single birth children.
- Differences in speech development between typically developing twins and singletons have been established, but no research to date has examined possible differences in the development of speech sound production in twin and singleton children with diagnosed speech sound delays.
- Understanding any such differences in speech sound development may help to highlight factors that predict long-term normalization and identify speech sound attributes that are unique to speech-delayed twins.

Research Questions:

1. Do preschool twins with a history of speech sound delay differ from singleton-delayed preschoolers in speech sound production skills?
2. Do adolescent twins with a history of speech sound delay differ from singleton speech-delayed preschoolers in speech sound production skills?
3. Do speech-delayed monozygotic twins differ from singleton speech-delayed preschoolers in speech sound production skills?
4. Do speech-delayed monozygotic twins differ from speech-delayed dizygotic twins in rate of speech sound improvement?

METHOD

Participants:

- Five sets of twin children (1 male dizygotic, 1 male monozygotic, 1 female dizygotic, and 2 female dizygotic) were assessed.
- The twin children’s ages ranged from 35 to 60 months during the initial evaluation (M = 50) and from 110 to 181 months at follow-up testing (M = 150).
- Conversational speech samples comprised of a minimum of 100 naturally occurring utterances were collected and transcribed using narrow phonetic transcription methods (Shriberg & Kent, 1995).

METHOD (cont.)

- Speech analyses were conducted on the first 90 unique words using PEPPER software (Shriberg, 1986), which yielded the following articulation competence measurements (Shriberg, Austin, Lewis, McSweeny, & Wilson, 1997):
  - Percentage of Consonants Correct – Revised (PCC-R).
  - Percentage of Consonants in the Inventory – Revised (PC-I-R).
  - Percentage of Phonemes Correct – Revised (PPC-R).
  - Intelligibility Index (II). All initial and follow-up PEPPER measures were converted to z scores to neutralize age and sex differences.
- Comparisons for z-scores were made against age matched singletons and twin children with speech delay (see Table 1).

RESULTS
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- Monozygotic twins scored significantly higher than dizygotic twins on multiple measures of articulation competence (Shriberg, Austin, Lewis, McSweeny, & Wilson, 1997).
- Differences in speech development between typically developing twins and singletons have been established, but no research to date has examined possible differences in the development of speech sound production in twin and singleton children with diagnosed speech sound delays.

RESULTS (cont.)

- The differences observed between mono- and dizygotic twins were significant on several articulation competence measures (Shriberg, 1986), suggesting that speech-delayed twins and singletons may be more similar than mono- and dizygotic twins, and that dizygotic twins are more similar to speech-delayed singletons.
- The differences observed between mono- and dizygotic twins on rate of change (IEI) for PVC-R may have been the result of ceiling effects as the majority of a scores that fell greater than –1.5 SD from the mean were found in the slower developing twins and singletons without speech delays.
- The majority of a scores that fell greater than –1.5 SD were found in follow-up testing. This may represent ceiling effects as many of the reference group speech-delayed singletons had achieved mastery on these measures at follow-up testing.

DISCUSSION

- The significant difference in the distribution of a scores that fell less than –1.5 SD suggests that dizygotic twins are more similar to speech-delayed singletons in speech sound production than monozygotic twins.
- Only one PEPPER measure (PVCR) was found to be significantly different between mono- and dizygotic twins, suggesting more similarities than differences between these groups.
- The differences observed between mono- and dizygotic twins on rate of change (IEI) for PVC-R may have been the result of ceiling effects as the majority of a scores that fell greater than –1.5 SD were found in the slower developing twins and singletons without speech delays.
- The majority of a scores that fell greater than –1.5 SD were found in follow-up testing. This may represent ceiling effects as many of the reference group speech-delayed singletons had achieved mastery on these measures at follow-up testing.

REFERENCES


ACKNOWLEDGMENTS

Thanks to Molly Erickson and Lori Swanson for their assistance with this study. Thanks also to the children and their families who participated. This study was supported in part by the National Institute on Deafness and Other Communication Disorders, National Institutes of Health, Grant DC00496.