INTRODUCTION
Clinical Research. Single subject case studies can be an effective way to demonstrate client-based improvements in the areas of feeding safety and speech clarity by following the principles of Evidence-Based Practice. When multiple muscle systems are impaired (omental deglution, velar grading, jaw grading, lip grading, cheek grading and tongue grading), there are many treatment interventions that are needed to achieve improvement, it is challenging to conduct a research study beyond the initial phase. The difficulties arise in:

- Isolating and studying only one treatment strategy when multiples are needed to address all of the identified muscle-based deficits affecting speech clarity and feeding safety.
- Finding a matched subject when multiple systems are impaired.
- Getting consent from enough subjects to participate in the study due to the length of the treatment required.
- And, from the practicing clinician’s viewpoint where “quality of life” must be considered in the therapeutic process.

The Oral Placement Therapy (OPT) model is a sensory-motor based tactile teaching intervention that can be effective within a given time frame. Although his cognitive skills were intact, at the start of this study, his primary diagnosis was speech-impaired. The OPT program (Rosenfeld-Johnson, 2001) was incorporated using a hierarchy of strategies to improve feeding and speech clarity by following the principles of Evidence-Based Practice.

METHOD
Three adults were seen for diagnostic testing after they were discharged from their present speech therapy program, as having reached their maximum potential in all speech therapy and feeding skills. However, there remained a significant gap between what the clients were saying and what the listener could understand. The discharge summary, in each case, indicated that augmentation in alternative non-verbal communication systems should be encouraged, as no improvements in speech clarity could be expected with continued emphasis on verbal communication.

An OPT approach was implemented for these adults with the diagnosis of multiple articulation disorder, secondary to flaccid dysarthria and/or a motor planning deficit (AOS: Acquired Apraxia of Speech). Each client displayed imprecise lingual movements, jaw instability, inadequate breath support, limited lip mobility and poor manual control, resulting in reduced speech intelligibility. The clients were seen for one 45 minute individual session per week, with homework assignments given to them by their treating Speech Language Pathologist. The homework included the use of the client-specific alternative non-verbal communication systems and the home program was individually tailored to each client's maximum level of success in each OPT activity, as noted in that week's therapy session. Homework was practiced a minimum of two additional times per week for 10-20 minutes per practice session.

CASE STUDY
The first case study involves a 73-year-old male with the diagnoses of Flaccid Dysarthria and Oral Proratory Ophaghy, who had sustained a CVA in 1989. Since that time he has needed in an extended care facility. He is non-ambulatory. Although his cognitive skills were intact, at the start of this study, his primary mode of communication was writing on a pad of paper. He used a soft voice to speak and had numerical deficiencies in all speech sounds. During the initial evaluation, The Goldman Frieden Test of Articulation (GFTA-II) was administered and a video speech sample was made. An Independent judge rated his speech sample as 20% intelligibility and at 40% intelligibility in following three months of OPT intervention. This case study demonstrates how, after more than 45 years, clients can improve; thereby questioning the idea that progress can only be expected within a given timeframe.

An OPT program (Rosenfeld-Johnson, 2001) was incorporated using a hierarchy of bite blocks, horns, straws, feeding techniques and speech-language activities.

The final case study involves a 20-year-old male with the diagnoses of both Acquired Apraxia of Speech (AOS) and Dysarthria, who had sustained a Traumatic Brain Injury (TBI) at 17 years of age. After three years of traditional speech therapy he was discharged as “non-verbal” with the suggestion that he would never speak again and should continue to use his augmentative device for communication. His expressive language skills were considered to be within normal limits. An independent judge rated his speech sample as 80% intelligibility prior to OPT intervention and at 90% intelligibility following five years of OPT intervention.

REFERENCES


Dr. Paul Rao (prior ASHA president) said, “EBP is not about identifying the one best answer. It is about deciding on the best answer.” It is likely to work best for a particular individual. With this in mind, it is never too late to try to improve feeding and speech clarity for adults with the diagnosis of multiple articulation disorders. Each client displayed speech-impaired. The OPT program (Rosenfeld-Johnson, 2001) was incorporated using a hierarchy of strategies to improve feeding and speech clarity by following the principles of Evidence-Based Practice.

HYPOTHESES
The following hypotheses were made and evaluated:

1. Improvements in feeding skills and speech clarity can be made for adults Post-CVA (Dysarthria and Post-TBI Dysarthria and Apraxia) using the Oral Placement Therapy (OPT), despite numerous years post incident, when all other research-based options have been exhausted.

2. Adults with the diagnosis of Down syndrome can improve feeding safety and speech clarity when work on their muscle-based deficits is addressed directly.

3. There is a direct correlation between working on muscle-based skills in the abdominal, jaw, lip, cheeks and tongue (OPT) and improved speech clarity and feeding skill levels.

4. Complex oral and tongue placement strategies can improve feeding safety and speech clarity when work on their muscle-based deficits is addressed directly.

The second case study features a 27-year-old male, with the diagnosis of Down syndrome, who progressed from poor speech clarity to intelligibility on the conversational level in one month. He presented with Flaccid Dysarthria and Attributable Ataxia that required him to be on a midsted diet. During the initial evaluation, The Goldman Frieden Test of Articulation (GFTA-II) was administered, and a video speech sample was made. An independent judge rated his speech sample as 80% intelligibility prior to OPT intervention and at 90% intelligibility following one month of OPT intervention.

CONCLUSION
The results were consistent with the aforementioned hypotheses regarding:

1. Improvements in feeding safety and speech clarity can be made for adults Post-CVA (Dysarthria and Post-TBI Dysarthria and Apraxia) using the Oral Placement Therapy (OPT), despite numerous years post incident, when all other research-based options have been exhausted.

2. Adults with the diagnosis of Down syndrome can improve feeding safety and speech clarity when work on their muscle-based deficits is addressed directly.

3. There is a direct correlation between working on muscle-based skills in the abdominal, jaw, lip, cheeks and tongue (OPT) and improved speech clarity and feeding skill levels.

In all three cases, OPT used in conjunction with direct work on speech sound production and feeding successfully improvements in both speech and feeding skill levels for clients who had previously been discharged as having reached their maximum potential. Therefore, the results of this study indicate that:

1. Language pathologists should consider using OPT, in conjunction with traditional speech therapy, to address the muscle-based deficits demonstrated by their clients who have diagnoses of Flaccid Dysarthria and/or Acquired Apraxia of Speech (AOS).

2. Single subject case studies can be an effective way to demonstrate client-based improvements in the areas of feeding safety and speech clarity by following the principles of Evidence-Based Practice.

3. Future studies should be conducted to determine if OPT, immediately upon diagnosis would reduce the length and increase the effectiveness of speech therapy for clients with muscle-based speech clarity disorders.

In summary, ASHA opens us through Evidence Based Practice, that “high-quality research evidence is integrated with practitioner expertise and client preferences and values; with the process of making clinical decisions” (ASHA, 2005). In June 2011, Dr. Paul Rao (prior ASHA president) said, “EBP is not about identifying the one best answer. It is about deciding on the best answer.” It is likely to work best for a particular individual. With this in mind, it is never too late to try to improve feeding and speech clarity for adults with the diagnosis of multiple articulation disorders. Each client displayed speech-impaired. The OPT program (Rosenfeld-Johnson, 2001) was incorporated using a hierarchy of strategies to improve feeding and speech clarity by following the principles of Evidence-Based Practice.

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