

3) Combined alphabet and topic supplementation is an aided strategy in which a speaker first provides a listener with semantic information (key word or phrase) and then provides orthographic information (first letter of each word) immediately before or during production of the target words and message.

4) Iconic hand gestures is an unaided strategy in which a speaker produces gestures and movements while speaking, that relate to the verbal message.

Adults with dysarthric speech secondary to CP may require communication strategies to supplement a poor acoustic signal. Research on the use of speaker-implemented speech supplementation strategies in adults with dysarthric speech secondary to CP has been limited. Speaker-implemented speech supplementation strategies have been documented in the literature and the efficacy of these strategies will be reviewed.

Objectives

The primary objective of this paper is to critically evaluate the existing literature regarding the evidence

The subsequent three studies by Hustad et al. (2003a, 2003b)

severe spastic dysarthria. 24 female listeners without disabilities, mean age 20.6 years, transcribed.

Pairwise contrasts (based on listener statistics) revealed that both alphabet cues and iconic hand gestures resulted in significantly higher intelligibility scores than no cues. The difference between alphabet cues and iconic hand gestures was not statistically significant. The study examined differences in speech intelligibility in each cue condition when speakers were given stimulus sentences with either high or low predictive value. It was demonstrated that sentences that were high predictive resulted in significantly higher intelligibility scores than sentences that were low predictive. This result remained consistent regardless of cue condition.

Mean intelligibility in each of the cue conditions with low predictive stimulus sentences were: habitual speech 30.69%, gestures 49.74%, and alphabet cues 57.97%. Mean intelligibility in each of the cue conditions with high predictive stimulus sentences were: habitual speech 56.16%, gestures 72.07%, and alphabet cues 71.20%.

The other study by Hustad and Garcia (2005) was noted to be an extension of the study by Hustad and Garcia (2002). Included in this study were three adult speakers with a medical diagnosis of CP. Speaker 1, female, age 42 years had a speech diagnosis of severe spastic dysarthria. Speaker 2, female, age 33 years had a speech diagnosis of severe mixed spastic-ataxic dysarthria. Speaker 3, male, age 37 years had a speech diagnosis of severe spastic dysarthria. 144 listeners without disabilities, gender not specified, mean age 20-23 years, transcribed.

Pairwise contrasts (based on listener statistics) revealed that for speakers 1 and 2, alphabet cues resulted in significantly higher intelligibility scores in both the audio-only and the audio-visual presentation mode than no cues or gestures. For both speakers in both cue conditions, the audio-visual presentation mode resulted in higher intelligibility scores. In the audio-visual presentation mode, approximate mean intelligibility during habitual speech and while using alphabet cues, respectively, were: speaker 1: 45% and 77%; speaker 2: 35% and 69%.

Pairwise contrasts (based on listener statistics) revealed that for speaker 3, iconic hand gestures resulted in significantly higher intelligibility scores than no cues in the audio-visual presentation mode. In the audio-visual presentation mode, approximate mean intelligibility during habitual speech was 8% and while using iconic hand gestures it was 48%.

Also for speaker 3, alphabet cues resulted in significantly higher intelligibility scores than no cues in the audio-only presentation mode. In the audio-only presentation mode, mean intelligibility during habitual speech was 7% and while using alphabet cues it was 21%.

Additionally, listeners rated the overall helpfulness of each strategy used

controls. This type of design was appropriate as it allowed for individual differences among speakers to be analyzed. A methodological strength that was apparent in all studies was randomization and counterbalancing. For speakers and listeners, to prevent an order effect, each cue condition and passage were presented in randomized order. To prevent a learning effect, the task presentation order was counterbalanced. The procedures in all of the studies were clearly outlined allowing them to be reproduced. A potential nuisance variable that could affect the findings of the studies includes

of the percentage of improvement. The reviewed literature discussed that the documented improvements in intelligibility may not represent a clinically significant change and the use of speech supplementation strategies as sole communication methods may not be adequate to meet all communication needs. Clinicians need to consider the importance of additional modes of communication.

There are a variety of considerations that clinicians need to take into account before adopting speech supplementation strategies. Many factors can impact intelligibility and ultimately functional communication. Hustad et al. (2003a) stated that one needs to consider contextual factors such as the predictability of messages, the familiarity of the communication partner and linguistic cues. In Hustad and Garcia (2002) they showed that a linguistic context provided by alphabet cues and a paralinguistic context provided by iconic

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