

(high versus low) affected the retention and transfer of speech motor learning, during DTTC therapy, in children with CAS. Following a two-phase alternating design, feedback was manipulated in the context of DTTC to treat four children (age 5 to 8 years) diagnosed with CAS. The children participated in two four-week phases of DTTC intervention, followed by a two-week maintenance period to assess their retention and transfer. Speech targets were individually selected for each child based on their error profile, comparable difficulty, and independence of targets, but each child underwent both a low-frequency feedback treatment (60% of all trials) and a high-frequency feedback treatment (100% of trials). Data was analyzed for pretreatment, baseline, treatment, and posttreatment sessions. A percentage of correct productions was calculated for each set of probes administered in each treatment condition by dividing the number of correct productions by the total number of attempts. The data was tracked for each session and plotted to show progress from session to session. Each child's data was analyzed by one primary analyst who was blind to the treatment targets, and all the sessions were analyzed in random order to prevent familiarity with a child'

approach is applied. These studies have a weak level of evidence due to their single sample size, but the results of case studies can be taken and implemented into larger studies to help further develop the findings.

conducted a single case design of a 5-year-old female with motor planning difficulties. It is presumed she had CAS though it is not stated within the paper aside from the title. A modified treatment based on integral stimulation was used. A combination of mass and distributed practice was implemented with 30-minute sessions, 4 times a week. A multiple baseline design was implemented across behaviours. Five stimuli were selected and results show that treatment was effective. The authors indicated frequency of intervention and motivation to participate were very important to the success of the treatment. Additionally, they stated that the combination of mass and distributed practice across 5 stimuli was effective because it allowed for maximal

sustainability and the efficacy of therapy on older children. This study provides suggestive evidence for the efficacy of DTTC in older children as the individual included presented with CAS among other comorbidities which could not be controlled and may have provided variations in the results.

The studies included in this critical review suggest that DTTC is an effective treatment approach for CAS. Each of the studies provided appropriate descriptions of participant eligibility, assessments, stimuli selection, variables, treatment procedures, outcome measures and timings. Studies with higher external validity contained greater detail on the participants and procedures of the study, making replication easier in the future (Dollaghan, 2007). External validity can also be used to decide if a study's results can be generalized to other participants outside of the study (Dollaghan, 2007). All six studies reviewed used small sample sizes of one to four participants, limiting the representativeness of participants of their population. Although all children had a confirmed CAS diagnosis, they still differed in other characteristics such as age, severity, and comorbid diagnoses. Therefore, clinicians should

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