Identifying a Mechanism of Action for Early Stuttering Intervention

A thesis submitted in the fulfilment of the requirements for the degree of Master of Speech and Language Sciences (Research)

by

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Certificate of Original Authorship

I, Monique Amato Maguire, declare that this conventional thesis, is submitted in fulfilment of the requirements for the award of Master of Speech and Language Sciences (Research), at the Australian Stuttering Research Centre at the University of Technology Sydney. This thesis is wholly my own work unless otherwise referenced or acknowledged. In addition, I certify that all information sources and literature used are indicated in the thesis. This document has not been submitted for qualifications at any other academic institution. This research is supported by the Australian Government Research Training Program.

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Abstract

Stuttering is a speech disorder that affects approximately 1 in 10 pre-school children by the age of 4. While some children recover naturally from stuttering, early intervention is recommended because: [1] stuttering is most tractable in the pre-school years, and [2] the adverse effects of stuttering begin from the onset of stuttering and increase by the time stuttering persists into adulthood.

A number of treatments exist that reduce stuttering in pre-school children. The Lidcombe Program has the most comprehensive research evidence of any early stuttering treatment program. Although the Lidcombe Program has been found to be an efficacious treatment when conducted individually, in groups, or via telehealth, the precise mechanisms of action underpinning the program are unknown.

The Lidcombe Program was developed in response to evidence that response contingent stimulation could reduce stuttering in young children. However, research that has focussed on the function of parent verbal contingencies in the Lidcombe Program has failed to confirm they are the mechanism of action. Therefore, it is worth exploring other variables which may be underpinning outcomes, in order to continue to optimise the Lidcombe Program.

One such variable identified in experimental research suggests that when adults model increased inter-turn speaker latency, they can reduce stuttering in young children. This feature is a suggested clinical component of RESTART-DCM, which is another evidence-based early stuttering intervention.

RESTART-DCM has been directly compared to the Lidcombe Program with a randomised controlled trial. The treatment outcomes for the two programs were similar. This indicates that either [1] the two treatments could be underpinned by different mechanisms of action that reduce stuttering, or [2] there could be mechanisms of action that are common to both treatments. Given the fact that increased inter-turn speaker latency is a procedure used in RESTART DCM, this variable warrants further investigation as a mechanism of action for the Lidcombe Program.

The specific research question of this thesis is: during Lidcombe Program clinic visits, do speech pathologists increase their inter-turn speaker latency when speaking to children compared with speaking to parents? This study utilised retrospective clinical

trial data for the Lidcombe Program. These data were obtained from audio recordings of Stage 1 Lidcombe Program clinic visits. A portion of these audio recordings was randomly selected and the inter-turn speaker latency of speech pathologists was measured using acoustic analysis software. This resulted in the analysis of 53 audio recordings pertaining to 20 unique participants who received Lidcombe Program treatment.

A comparison of the inter-turn speaker latency of speech pathologists with parents and with children showed statistically significant differences. This shows that these speech pathologists increased their inter-turn speaker latencies when speaking to children compared with speaking to parents during clinic visits. This suggests that inter-turn speaker latency may be a possible Lidcombe Program mechanism of action. Further experimental research is required to determine the clinical importance of this research.

Table of Contents

List of Tables