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A randomized control trial to investigate the impact of the Lidcombe Program on early stuttering in German-speaking preschoolers

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Abstract

In order to investigate whether the Lidcombe Program effects a short-term reduction of stuttered speech beyond natural recovery, 46 German preschool children were randomly assigned to a wait-contrast group or to an experimental group which received the Lidcombe Program for 16 weeks. The children were between 3;0 and 5;11 years old, their and both of their parents' native language was German, stuttering onset had been at least 6 months before, and their stuttering frequency was higher than 3% stuttered syllables. Spontaneous speech samples were recorded at home and in the clinic prior to treatment and after 4 months. Compared to the wait-contrast group, the treatment group showed a significantly higher decrease in stuttered syllables in home-measurements (6.9%SS vs. 1.6%SS) and clinic-measurements (6.8%SS vs. 3.6%SS), and the same increase in articulation rate. The program is considered an enrichment of currently applied early stuttering interventions in Germany.

Educational objectives: Readers will discuss and evaluate: (1) the short-term effects of the Lidcombe Program in comparison to natural recovery on stuttering; (2) the impact of the Lidcombe Program on early stuttering in German-speaking preschool children.

Keywords: Childhood stuttering; Lidcombe Program; Short-term effects; Spontaneous recovery; German-speaking preschoolers

The onset of a fluency disorder is most likely to occur between ages 2 and 5 years (Andrews et al., 1983). While the overall incidence of stuttering appears to be approximately 5%, estimates of the prevalence are 1% in school-aged children and even less in adults (Bloodstein, 1995). The difference between incidence and prevalence suggests that many children recover with or without formal treatment. Longitudinal studies for early childhood stuttering show recovery rates ranging from 65 to 85% (Andrews & Harris, 1964; Ryan, 1990; Yairi, Ambrose, Paden, & Throneburg, 1996) with estimates of the two most recent studies lying in the mid-70% range (Mansson, 2000; Yairi & Ambrose, 1999). Yairi and Ambrose (1999) reported recovery in approximately 74% of the children within the first 4 years of onset. A few more children recovered over the next years resulting in a recovery rate of approximately 75–85%. Mansson (2000) found that 71% of the children who stuttered recovered within 2 years. Whether recovery rates for children who are presented to a clinic are population estimates remains unknown. The following factors

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may be associated with recovery: female gender, recovery of relatives who had stuttered, decrease in stuttering-like disfluencies during the first 12 months after onset, and good language and articulation skills (Andrews et al., 1983; Yairi & Ambrose, 1992; Yairi et al., 1996). The occurrence of natural recovery tends to decrease with age, presumably in association with a decrease in neural plasticity. However, it cannot be predicted whether an individual child will develop persistent stuttering or recover. Because a chronic fluency disorder is likely to impact negatively on the social-emotional, educational, and vocational development of a child, treatment early in the preschool years is recommendable.

Fluency disorders in children are currently treated with a broad variety of indirect and direct treatment methods. The treatment efficacy of many of these approaches, however, has either been evaluated insufficiently or not at all. In Germany, there is a lack of studies analyzing the efficacy of early stuttering intervention. During the last five decades, to the best of our knowledge two studies were published in this area. Randoll (1988) translated Shine's Systematic Fluency Training for Young Children (SFTYC) into German and studied the treatment effect with nine children. However, the author admitted that the study design and in part the implementation was deficient and concluded that only individual elements of this program should be integrated into a multi-factorial approach. The SFTYC has not been established as a treatment method in Germany.

Pape-Neumann, Bosshardt, Natke, and Oertle (2004) published test-phase results of the program for the evaluation of stuttering therapies PEVOS (Programm zur Evaluation von Stottertherapien). Analyses of the questionnaire-based speech data of 42 children showed a significant decrease in the mean percentage of syllables stuttered (%SS) between pre-treatment and post-treatment conditions, an increase in mean speech rate, and an improvement in speech naturalness. No information was provided about the therapy methods, no differentiation was made between pre-school and school-aged children, and no untreated control group was included.

For early stuttering intervention only the Lidcombe Program has been investigated with phase I and phase II clinical trials (Onslow et al., 2003). The Lidcombe Program is an operant, parent conducted method. Its objectives are to increase stutterfree speech through the use of parental verbal contingencies for stutterfree speech and stuttering. The program is implemented in two stages. In the first stage parents are trained to provide the treatment and to monitor and modify the therapy program as the child makes progress. In the second stage treatment is gradually withdrawn. Over the course of approximately 12–18 months the verbal contingencies are faded out and therapy is finally completed. The goal of the second stage is to maintain effects in the long term and to establish independence of the parent from the clinician.

With respect to natural recovery it remains an open question whether children who stutter should be treated as soon as possible after stuttering onset or whether treatment should be delayed for the benefit of a possible natural recovery (Yairi & Ambrose, 1999). It is as yet impossible to identify those who will recover spontaneously. Hence it is not acceptable to delay treatment for an extended period of time. There also remains the question which proportion of the positive outcome has to be attributed to a treatment and which to natural recovery. This issue has received much interest and relates to clinical efficacy research already forcing a debate about the need, usefulness, and cost-effectiveness of early clinical treatment in early childhood stuttering (Andrews, 1984; Curlee & Yairi, 1997; Curlee & Yairi, 1998; Ingham & Cordes, 1998; Packman & Onslow, 1998). The answer to this question may support clinicians in their decisions about timing of intervention. However, this would require the comparison of a treatment group with a no-treatment group for several years. Such a study design cannot be justified for ethical reasons. Consequently, researchers have started to investigate the short-term effects of the Lidcombe Program on the background of expected rates of natural recovery (Harris, Onlsow, Packman, Harrison, & Menzies, 2002).

Two studies have analyzed the short-term fluency effects of the Lidcombe Program. Harris et al. (2002) assigned 23 preschool children randomly to either a no-treatment wait-contrast group or to a group treated with the Lidcombe Program for 12 weeks. After 3 months the increase in fluent speech production was significantly higher in the treatment group than in the wait-contrast group. Children in the wait-contrast group did decrease their stuttering, as expected by spontaneous recovery. However, the reduction in the treatment group was around twice that amount. Jones et al. (2005) evaluated the efficacy of the Lidcombe Program in a randomized controlled trial. Twenty-nine preschool children were assigned to the treatment group and 25 to the wait-contrast group, which received no formal treatment. The mean proportion of syllables stuttered in both groups was compared before randomization and 9 months later. After 9 months the reduction of stuttering in the treatment group was significantly greater than that of natural recovery. Both studies show that treatment with the Lidcombe Program early on is more efficacious than no formal therapy for preschool children who stutter.