Intensive non-avoidance group therapy with adults stutterers: follow up data

Dobrinka Georgieva

Department of Logopedics, South-West University “Neofit Rilski”, 2700 Blagoevgrad, Bulgaria

Method: The outcomes measurement of an intensive non-avoidance group therapy for adult clients with stuttering was presented. The adults who stutter (AWS) in this study included 15 persons (average age 25.2 years) who were enrolled in the First, Second and Third Stage of the study. The male female ratio was 4:1. According to the initial SSI score (percentile) six of the clients were diagnosed as moderate stutterers, four with severe stuttering, and five with very severe stuttering (Riley, 1994). Inclusion criteria for the intensive therapy were: (i) adults older than age 21; (ii) having participated previously in therapy, and (iii) exhibiting a range of stuttering severities to ensure a representative sample.

The follow up study includes measurement of: changes in speech fluency in follow up period (1, 2, and 3 years after the intensive therapy); mean duration of three longest disfluencies in seconds (DDs); and, Index of disfluencies (ID) – the number of stuttering events by the number of syllables was divided. Each speaking sample contained at least between 300 - 400 syllables. The Stuttering Severity Instrument for Adults, Third Edition [SSI–3] (Riley, 1994) was used to determine stuttering severity. The data were analysed using (i) the Wilcoxon signed rank test for hypotheses testing, and (ii) the Mann-Whitney rank-sum test. For the statistical analysis, the 15 subjects were divided into two main groups: severe (very severe and severe), and moderate.

Data collection: A review of the client’s files (assessment reports and progress reports). Three types of files were recorded during the initial diagnostic evaluation, at the onset of treatment, and at the end of the 5-day intensive program. The follow up study (after the 9-month complete stabilization period) includes results evaluation after one, two and three years post treatment period.

Therapy approach: Van Riper’s (1973) stuttering modification therapy approach, a non-avoidance approach.

Conclusions: The changes in speech fluency before and after the intensive therapy and in the follow up period (one, two and three years after the intensive therapy) were obtained regarding the duration of disfluencies and the index of disfluency. The improvement in stuttering duration was observed immediately upon completing the intensive therapy. This was reflected in a statistically significant reduction in the number of stuttered utterances per minute. These positive changes were maintained for the period of the nine months stabilization phase, then one year, two years and three years after the therapy.

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* Corresponding author. Tel.: +359899890471; fax: +35973885 516
E-mail address: doby_logo@abv.bg

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1. Introduction

Several publications relating to stuttering treatment effectiveness have been accepted as a model and positive practice by the Bulgarian Stuttering Research Centre researchers (Conture, 1996; Cordes, 1998; Yaruss & Quesal 2006). One excellent study on stuttering treatment effectiveness was presented by St. Louis and Westbrook (1987) and a further one by Cordes & Ingham (1998) in their book, “Treatment Efficacy for Stuttering,” trying to identify the most effective procedures that were reported to be associated with positive outcomes.

The 5th Comite Permanent de Liaison des Orthophonistes/Logopedes de L’Union Europeenne (CPLOL) congress held in Edinburgh, the Royal College of Speech Language Therapists convention in 2012, and the Bulgarian Society of Logopedists national conference in 2013 put a special focus on evidence-based assessment and treatment of communication disorders. The NetQues Project: Network for Tuning Standards & Quality of Educational Program for Speech Language Therapists in Europe (2010-2013) funded by ERASMUSENWA Life Long Learning Programme paid special attention to the Evidence-based practice (EBP) paradigm.

The Bulgarian health system does not offer any kind of logopedics treatment for adults who stutter (Fibiger, Peters, Euler, & Neumann, 2008; Fibiger, Peters, Touzet, & Neumann, 2006; Georgieva & Goranova, 2005; Georgieva, 2006; Georgieva, 2014; ).

2. Method

The outcomes measurement of an intensive non-avoidance group therapy for adult clients with stuttering was presented. As a general framework the present research study incorporated the International Classification of Functioning, Disability and Health (ICF) - a part of some countries’ scope of practice documents in the Speech Language Pathology field: USA, Canada, UK, and Australia. Bulgaria does not implement officially the ICF model in SLP – only one research project was founded by the National Science Fund for the period 2009-2013: Evidence-Based Practice in Fluency and Voice Disorders. There is a strong need to conduct research projects consistent with The Horizon European Union Program (Georgieva, 2010).

The follow up study included measurement of:

2.1 Duration of disfluencies in seconds (DDs)

The duration, in seconds, of the three longest stuttering events was measured.

2.2 Index of disfluencies (ID) – the number of stuttering events was divided by the number of syllables.

Each speaking sample contained at least between 300 - 400 syllables for more reliable results. In the present study, we assessed treatment results using stuttering frequency and scores by applying the Stuttering Severity Instrument for Adults, Third Edition [SSI–3] (Riley, 1994). The adults who stutter (AWS) in this study included 15 persons (average age 25.2 years) who were enrolled in the First, Second and Third Stage of the study. The male female ratio was 4:1. According to the initial SSI score (percentile) sixth of the clients were diagnosed as moderate stutterers, four with severe stuttering, and five with very severe stuttering (Riley, 1994).

Inclusion criteria for the intensive therapy were: (i) adults older than age 21; (ii) having participated previously in therapy, and (iii) exhibiting a range of stuttering severities to ensure a representative sample.

The data collection: a review of the client’s files (assessment reports and progress reports). Three types of files were recorded during the initial diagnostic evaluation, at the onset of treatment, and at the end of the 5-day intensive program. The follow up study (after the 9-month complete stabilization period) included results evaluation after 1, 2 and 3 years post treatment period.

Therapy approach: Van Riper’s (1973) stuttering modification therapy approach, which constitutes a non-avoidance approach.

Statistics: The data obtained were calculated using (i) the Wilcoxon signed rank test for hypotheses testing, and (ii) the Mann-Witney rank-sum test. For the statistics the 15 subjects were divided in 2 main groups: severe (very severe and severe), and moderate.
**Measurement reliability:** All of participants in the study were re-measured by two trained logopedists concerning ID and DDs before and after IT, after 9 months, as well as after 1, 2, and 3 years post treatment. Both of them reported “measurement agreement” – 95 % agreement index.

The preliminary results after 9- months’ stabilization phase were published by Georgieva (2014).

3. **Results and analyses**

3.1 **Duration of Disfluencies in seconds (DDs) - Figure 1 and Figure 2.**

![Figure 1. Duration of disfluencies (in seconds)](image)

Duration of disfluencies in seconds at the beginning versus end of the intensive therapy, and nine months, one, two and three years after the intensive therapy for all participants (n=15).
Figure 2. Duration of disfluencies (in seconds)

Duration of disfluencies in seconds at the beginning versus end of the intensive therapy, and one, two and three years after the intensive therapy for all participants (n=15).

The Wilcoxon signed ranks test confirmed that there was a reduction of DDs before and after intensive therapy ($Z = 3.408; p < 0.001$):
- Before IT and 1 year after IT: ($Z = 3.408; p < 0.001$)
- Before IT and 2 years after IT: ($Z = 3.409; p < 0.001$)
- Before IT and 3 years after IT: ($Z = 3.408; p < 0.001$)

Sustained reduction in DDs was achieved ($p < 0.001$). There was a significant reduction in the average duration of fluency disruptions. There was a statistically significant reduction of DDs with respect to:
- After IT and 1 year after IT: ($Z = .692; p < .489$)
- After IT and 2 years after IT: ($Z = .684; p < .494$)
- After IT and 3 years after IT: ($Z = 1.329; p < .184$)

The Mann-Witney rank-sum test – DDs showed that in the group of adults with moderate stuttering there had been a significant reduction of DDs after intensive therapy ($Z = 2.201; p < 0.028$) and 1, 2, 3 years after IT ($Z = 2.201; p < 0.028$). There was a significant reduction of DDs after the intensive therapy and 1 year ($Z = 2.666; p < 0.008$), 2 years ($Z = 2.670; p < 0.008$), (Z = 2.668; p <0.008), in severe stutterers.

The results postulated that DDs were not influenced by the severity of stuttering in both groups. This gave us grounds to assume that the stuttering modification approach is suitable for individuals with both moderate and severely stuttering.

3.2 Disfluency Index (DI)

Figures 3 and 4 show changes in Disfluency Index over time.
Figure 3. Disfluency Index

Figure 4 shows changes in the Disfluency Index at the beginning versus end of the intensive therapy and after nine months, one, two and three years after the intensive therapy for all participants (n=15).

Disfluency Index at the beginning versus end of the intensive therapy and one, two and three years after the intensive therapy for all participants (n=15).

Significant changes regarding reduction of disfluency index were found before and after intensive therapy (Z = 3.408; p < 0.001). DI before and after the IT show the next results:
- Before and after the 1st year (Z = 3.411; p < 0.001)
- Before and after the 2nd year (Z = 3.408; p < 0.001)
- Before and after the 3rd year month (Z = 3.408; p < 0.001)

DI after the IT and after 1, 2, 3 years post treatment show:
- After IT and after the 1st year (Z = 3.068; p < 0.002)
- After IT and after the 2nd year (Z = 3.408; p < 0.001)
- After IT and after the 3rd year month (Z = 3.202; p < 0.001)
We assumed again that the severity of stuttering did not affect the reduction of the impaired fluency index. For both groups, the index of impaired fluency decreased significantly — this indicated that both groups responded equally well to therapy.

The Mann-Witney rank-sum test – DI showed that in the group of individuals with moderate stuttering, the response before first, second and third years after IT was significant:

- \((Z = -2.214; p < 0.027)\), \((Z = -2.207; p < 0.027)\), \((Z = -2.201; p < 0.028)\). The same tendency was observed in persons with severe stuttering: \((Z = -2.668; p < 0.008)\), \((Z = -2.666; p < 0.008)\), \((Z = -2.666; p < 0.008)\).

Figure 5 shows the average values of the DI and DDS in seconds before and after the intensive therapy, as well as nine months, one, two and 3 years after the intensive therapy.

![Figure 5](image)

**Figure 5.** Average values of the disfluency index (DI) and duration of disfluencies (DDS)

### 4. Conclusions

The final results of this study represented an initial experience in evaluating the outcomes of a non-avoidance approach intensive group therapy for adults in Bulgaria (Georgieva & Fibiger, 2010; Georgieva, 2014).

The changes in speech fluency before and after the intensive therapy and in the follow up period (one, two and three years after the intensive therapy) were obtained regarding the duration of disfluencies and index of disfluency.

The improvement in stuttering duration was observed immediately upon completing the intensive therapy. This was reflected in a statistically significant reduction in DDs. In the period of the first, second and third years post treatment period, these positive changes were maintained.

Significant changes in the index of disfluencies were found in comparisons from before and after intensive therapy as well as in the stabilization phase, and one, two and three years after the treatment.

We assumed from the above mentioned follow up data that the Van Riper’s stuttering non-avoidance modification approach is suitable for adults with both moderate and severely stuttering.

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References


