

Effects of an Intensive Group Therapy for Adolescents Who Stutter: Preliminary Results of a Retrospective Study

Marie-Ève CATY¹, Judith LABONTÉ², Maxime PAQUET³, Isabelle NADEAU⁴, and Marie-Laurence DUBÉ⁵

¹ *Université du Québec à Trois-Rivières, Trois-Rivières, Québec, Canada, marie-eve.caty@uqtr.ca*

² *Université de Montréal, Montréal, Québec, Canada, maxime.paquet.8@umontreal.ca*

³ *Association des Jeunes Bègues, Longueuil, Québec, Canada, judith.labonte1@umontreal.ca*

⁴ *Centre de services scolaire des Chênes, Drummondville, Québec, Canada,
isabelle.nadeau@cssdeschenes.gouv.qc.ca*

⁵ *Centre de services scolaire Marguerite-Bourgeoys, Saint-Laurent, Québec, Canada,
marie.laurence.dube15@csmb.qc.ca*

1. Introduction

Group therapy appears to be a widely-used and effective treatment modality with adolescents who stutter (Fry et al., 2014; Herring et al., 2022; Keilmann et al., 2018; Laiho & Klippi, 2007), and its impact on fluency is comparable to outcomes obtained with individual therapy (Carey et al., 2012; 2014). Adolescents who stutter report that the group allows them to learn from peers of the same age who share common interests and are experiencing similar issues (Hearne et al., 2008). Intensive fluency treatment in groups is also important, in that intensive treatment requires more frequent thinking about fluency techniques and delivering this treatment within a group context is more representative of individual's social reality (Hearne et al., 2008).

The Association des Jeunes Bègues du Québec (AJBQ) is a non-profit organization with the mission "to provide young people who stutter with the hope, knowledge and confidence to achieve their full potential" (AJBQ, 2022). Since 1993, AJBQ has been delivering an intensive group therapy program for adolescents (13-17 years old) who stutter in the form of a summer outdoor camp lasting six days. Adolescents receive an average of 50 hours of stuttering treatment by qualified speech-language pathologists (SLP). Therapy sessions alternate with outdoor activities such as kayaking, swimming and climbing. The treatment is a combination of the Camperdown program (CP) (O'Brian et al., 2018), adapted for use in an intensive group therapy setting, and cognitive-behavioural therapy (CBT) (Becks, 1995; Menzies et al., 2009). CP is part of a speech restructuring approach and is divided into four Stages: (I) teaching treatment components; (II) establishing natural-sounding stutter-free speech with the clinician; (III) generalization; and (IV) maintaining stuttering control (O'Brian et al., 2018). To move from one stage to the next, specific progression criteria must be met for stuttering severity (Stuttering Severity Scale [SEV]: 0 = no stuttering, to 8 = extremely severe stuttering) and speech naturalness (Fluency Technique Scale [FT]: 0 = no speech technique, to 8 = similar to the training model). Progression criteria are as follows: Stage I: SEV = 0 with FT = 7-8 in clinic, Stage II: SEV = 0-1 with FT most acceptable to the client in clinic, Stage III: SEV around 1 in most everyday speaking situations, with no situation avoidance, and FT scores that the client finds acceptable and Stage IV: maintain low stuttering levels in the long-term.

Although this camp has existed for almost 30 years and many positive testimonials about it have been heard by SLPs and AJBQ staff in recent years, there is little data on its effectiveness. Thus, the aim of the present study is to assess the effects of AJBQ's intensive fluency group therapy camp on speech outcomes of francophone adolescents who stutter from the province of Quebec, Canada. The specific research objectives are:

- 1) To determine the effects of AJBQ's intensive fluency group therapy on stuttering frequency and severity in French-speaking adolescents who stutter;
- 2) To document the application of CP in a different clinical setting: a 6-day summer camp format.

2. Method

A retrospective chart study was conducted. Sociodemographic and clinical data were extracted from available records of adolescents who attended the AJBQ intensive group therapy. This study was approved by the human research ethics committee of the Université du Québec à Trois-Rivières (CER-20-272-07.10).

2.1. Participants

A total number of 44 individuals ($n = 12$ females, $n = 32$ males), with a mean age of 14.4 years ($SD = 1.4$), received intensive group therapy from AJBQ between 2011 and 2019. To be included, subjects were required to have participated in all therapeutic activities as part of the approach.

2.2. Outcome Measures

All measurements were made by trained SLPs. Data were extracted from the SLP progress reports.

2.2.1. Percent Syllables Stuttered (%SS)

Percent syllables stuttered was used to measure stuttering frequency. Data were measured in real time by SLPs from face-to-face conversation samples of approximately 300 syllables. The %SS was measured twice on Day 1 (i.e. pre-treatment) and twice on Day 6 (i.e. immediately post-treatment). In addition, the percentage of stuttering frequency reduction was calculated using the following formula, inspired by Craig et al. (1996):

$$\% \text{ reduction} = 100 * ([\%SS \text{ pre} - \%SS \text{ post}] / \%SS \text{ pre})$$

2.2.2. Stuttering Severity (SEV)

According to AJBQ's protocol, SEV was measured by SLPs at pre-treatment on Day 1, and at post-treatment on Day 5 (rather than Day 6, for logistical reasons). The samples used for the SEV measurement were intended to be similar to the adolescent's typical speech during spontaneous conversational exchanges. The percentage of stuttering severity reduction was calculated using the following formula, inspired by Craig et al. (1996):

$$\% \text{ reduction} = 100 * ([\%SEV \text{ pre} - \%SEV \text{ post}] / \%SEV \text{ pre})$$

2.2.3. CP Stage Completed

The CP Stage that was completed by Day 5 was also analyzed. CP stage was determined by identifying each adolescent's FT score in spontaneous speech in daily speaking situations by Day 5.

2.3. Data Analysis

For research objective 1, because of non-normality issues, non-parametric Wilcoxon signed-rank tests were used ($\alpha = 0.05$). Effect sizes were calculated using Rosenthal's (1994) formula $r = Z/\sqrt{N}$. According to Cohen's (1988) criteria, 0.1 represents a small effect size, 0.3 a moderate effect size and an effect of 0.5 or more is considered large. For objective 2, descriptive statistics were used. The IBM SPSS 28 software suite was used to process the data.

3. Results

Descriptive statistics indicate that the group mean for %SS at pre-treatment, was 8.29% ($SD = 7.67$). These percentages ranged from 0 to 34.00% SS. At post-treatment, Day 6, the mean for %SS was 3.30% ($SD = 3.54$). These percentages ranged from 0 to 19.10% SS. The mean % reduction for the group was 51.07% ($SD = 35.59$). The Wilcoxon Signed-Ranks Test indicated that mean post-treatment %SS was statistically significantly lower than mean pre-treatment %SS, $Z = -5.04$, $p < 0.001$, with a large effect size ($r = 0.54$).

Descriptive statistics also show the group mean SEV at pre-treatment, was 3.99 ($SD = 1.83$). This ranged from 1 to 8. At post-treatment, on Day 5, the group mean SEV was 2.01 ($S.D. = 1.27$). It ranged from 0 to 5. The mean % reduction for the group was 44.34% ($SD = 34.62$). The Wilcoxon Signed-Ranks Test indicated that mean post-treatment SEV was statistically significantly lower than mean pre-treatment SEV, $Z = -5.33$, $p < 0.001$, with a large effect size ($r = 0.57$).

In addition, the majority of participants had initiated Stage III of the CP. More specifically, of the youth for whom data were available, 31.00% ($n = 13/42$) completed Stage I, 64.30% ($n = 27/42$) completed Stage II, and 4.80% ($n = 2/42$) completed Stage III. The group mean ($n = 37$) for the FT score in spontaneous speech post-treatment was 2.00 ($SD = 0.91$); the minimum score achieved was 0 and the maximum was 4.

4. Discussion

The purpose of the present study was to assess the effects of an intensive fluency group therapy - provided by the AJBQ - on speech outcomes for francophone adolescents who stutter from the province of Quebec (Canada). For the first objective, preliminary results show a significant reduction of stuttering frequency immediately post-treatment, corresponding to a reduction of more than half of their %SS. These findings are similar to the results of Carey et al. (2014), which showed an average group frequency reduction of 45%, with adolescents following the CP program in a group format. However, it should be noted that the treatment modality offered by Carey's team differed from what offered by the AJBQ in the form and content of the intervention, as well as the timing of measurements.

For the second objective, 64% of the participants reached Stage III of the CP. Thus, the AJBQ intensive group therapy camp appears to be a complement to ongoing speech therapy (in public or private settings), which likely contributed to participants' progress in such a short period of time. It would not have been possible to reach Stage III in the six days of the camp without any contribution of the participants' ongoing speech therapy.

There are a few noteworthy limitations to this study. First, although cognitive-behavioural therapy took place during AJBQ intensive group therapy program, there were no formal measures carried out. Future studies on the effectiveness of the AJBQ intensive group therapy camps should document pre-post affective, cognitive, and behavioural aspects. For example, this could be done by using Yaruss and Quesal's (2006) Overall Assessment of the Speaker's Experience of Stuttering (OASES), which is available in French beginning in 2022 (Stuttering Therapy Resources, 2022). Second, all of the measures were taken by SLPs affiliated with the camp. Future studies should consider measures to mitigate potential listener bias. Finally, adolescents' self-reported stuttering severity ratings should be considered for future studies.

5. Conclusions

The intensive group therapy program offered by AJBQ shows positive effect on speech outcomes such as stuttering frequency and severity. Future research is needed to assess its effects on adolescents' emotions and attitudes.

Disclosures

Financial: M.-E.C., J.L., and M.-L.D. have received honoraria from the AJBQ for their work as speech-language pathologists during the intensive group therapy program at various times between 2011 and 2019.

Nonfinancial: M.-E.C. and J.L. have served on the AJBQ Board of Directors from 2013 to 2020 and 2017 to 2020, respectively.

References

- Beck, J.S. (1995). *Cognitive Therapy: Basics and Beyond*. The Guilford Press.
- Carey, B., O'Brian, S., Lowe, R. & Onslow, M. (2014). Webcam delivery of the Camperdown Program for adolescents who stutter: A Phase II clinical trial. *Language, Speech, and Hearing Services in Schools, 45*, 314-324. https://doi-org/10.1044/2014_LSHSS-13-0067
- Carey, B., O'Brian, S., Onslow, M., Packman, A. & Menzies, R. (2012). Webcam delivery of the Camperdown Program for adolescents who stutter: A Phase I trial. *Language, Speech, and Hearing Services in Schools, 43*(3), 370-380. [https://doi-org/10.1044/0161-1461\(2011/11-0010\)](https://doi-org/10.1044/0161-1461(2011/11-0010))
- Cohen, J. (1988). *Statistical power analysis for the behavioural sciences* (2nd ed.). Routledge.
- Craig, A., Hancock, K., Chang, E., McCready, C., Shepley, A., McCaul, A., Costello, D., Harding, S., Kehren, R., Masel, C. & Reilly, K. (1996). A controlled clinical trial for stuttering in persons aged 9 to 14 years. *Journal of Speech, Language, and Hearing Research, 39*(4), 808-826. <https://doi.org/10.1044/jshr.3904.808>
- Fry, J., Millard, S. & Botterill, W. (2014). Effectiveness of intensive, group therapy for teenagers who stutter. *International Journal of Language and Communication Disorders, 49*(1), 113-126. <https://doi.org/10.1111/1460-6984.12051>

- Hearne, A., Packman, A., Onslow, M. & Quine, S. (2008). Stuttering and its treatment in adolescence: The perceptions of people who stutter. *Journal of Fluency Disorders*, 33, 81-98. <https://doi.org/10.1016/j.jfludis.2008.01.001>
- Herring, C., Millager, R. A. & Yaruss, J. S. (2022). Outcomes following participation in a support-based summer camp for children who stutter. *Language, Speech, and Hearing Services in Schools*, 53(1), 17-29. <https://doi.org/10.1097/TLD.0000000000000272>
- Keilmann, A., Neumann, K., Zöllner, D. & Freude, C. (2018). Clinical trial of the DELPHIN speech treatment for children and adolescents who stutter. *Logopedics Phoniatrics Vocology*, 43(4), 155-168. <https://doi.org/10.1080/14015439.2018.1498917>
- Laiho, A. & Klippi, A. (2007). Long-and short-term results of children's and adolescents' therapy courses for stuttering. *International Journal of Language & Communication Disorders*, 42(3), 367-382. <https://doi.org/10.1080/13682820600939028>
- Menzies, R. G., Onslow, M., Packman, A. & O'Brian, S. (2009). Cognitive behavior therapy for adults who stutter: A tutorial for speech-language pathologists. *Journal of fluency disorders*, 34(3), 187-200. <https://doi.org/10.1016/j.jfludis.2009.09.002>
- O'Brian, S., Carey, B., Lowe, R., Onslow, M., Packman, A. & Cream, A. (2018). The Camperdown program stuttering treatment guide. *Australian Stuttering Research Centre*. <https://www.uts.edu.au/asrc/resources/camperdown-program>
- Rosenthal, R. (1994). Parametric measures of effect size. Dans H. Cooper & L. Hedges (dir.), *The handbook of research synthesis* (p. 231-244). Russell Sage Foundation.
- Stuttering Therapy Resources (2022). *Overall Assessment of the Speaker's Experience of Stuttering - French*. <https://stutteringtherapyresources.com/products/oases-french-francais-non-usa-print-your-own?variant=43022417592558>
- Yaruss, J. S. & Quesal, R. W. (2006). Overall Assessment of the Speaker's Experience of Stuttering (OASES): Documenting multiple outcomes in stuttering treatment. *Journal of Fluency Disorders*, 31(2), 90-115. <https://doi.org/10.1016/j.jfludis.2006.02.002>