

Evaluating Treatment Outcomes for Intensive Stuttering Therapy: A Mixed-Method Approach

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ABSTRACT

The purpose of this study is to use a mixed-method approach to evaluate treatment outcomes for an intensive stuttering clinic. Qualitative interviews from seven participants are used to document perceptions of treatment effectiveness. Objective clinical measures are used to determine short-term gains and long-term maintenance of outcomes for each participant.

BACKGROUND

The purpose of this study is to evaluate treatment outcomes for Bowling Green State University’s (BGSU) Intensive Stuttering Clinic for Adults and Adolescents Who Stutter. The Clinic’s therapy program takes an eclectic approach to stuttering therapy, utilizing both fluency shaping and stuttering modification approaches. Therapy is offered in an intensive (residential) format over a three-week period and clients are provided with various options for follow-up therapy. Follow-up therapy options include weekly follow-up sessions in person or via telepractice using SKYPE® and intensive weekend follow-up workshops. Evidence-based practice (EBP) is important to the growth of our field and necessitates provision of the highest-quality services to clients whilst taking into account barriers to effective implementation of the EBP by practicing clinicians (Brackenbury, Burroughs, & Hewitt, 2008). It is, therefore, important to evaluate treatment paradigms such as stuttering modification and eclectic stuttering therapy approaches and to provide evidence either for or against these approaches. For the evaluation of these approaches, which are highly recommended by experts in the field but have minimal treatment outcome studies to back their effectiveness (Bothe, Davidow, Bramlett, & Ingham 2006), it is important to realize the importance of maintaining ecological validity (Kovarsky, 2008) and obtaining rich clinical data from both the clinician and the client’s perspective. Thus, it is important for a well-rounded treatment effectiveness study to obtain clients’ perspectives about the effectiveness of the treatment and what aspects of therapy they found to be most helpful.

Research Questions:

1. What factors do clients report as contributing to treatment effectiveness?
2. What therapeutic procedures do clients report as helpful in the long-term maintenance of treatment benefits?
3. What changes in objective measures of stuttering are noted after therapy?
4. What is the relationship between clients’ self-reports of treatment effectiveness and objective clinical measures of treatment outcomes?

METHODS

Participants:

Maximum variation sampling (Miles & Huberman, 1994) was used to recruit seven adult participants who had attended the Intensive Stuttering clinic for Adults and Adolescents at BGSU. Their ages at the time of the interview ranged from 20 – 43 years and included five male participants and two female participants. Six of the seven participants pursued follow-up services at BGSU or elsewhere closer to their hometown. Stuttering severity as measured for each participant before the intensive program ranged from Mild to Very severe, with an average rating of moderate across all seven participants. Table 1 provides demographic information.

Description of the Program:

15-day intensive clinic (9-day in 2009) divided in 4 overlapping phases: (1) Increase awareness of stuttering behaviors; (2) Guiding the participants through a process of reducing the severity of their stuttering; (3) Teaching participants techniques to modify stuttering and improve fluency; (4) Developing a personalized maintenance program for each participant.

Research Design:

A mixed-methods design was used. Morse (2003, p. 190) described mixed methods research as “the incorporation of various qualitative or quantitative strategies within a single project that may have either a qualitative or quantitative theoretical drive. The imported strategies are supplemental to the major or core method and serve to enlighten or provide clues that are followed up within the core method.” The procedures associated with qualitative phenomenological research formed the core method for this study. Quantitative data, including archival and current objective clinical measurements of overt stuttering behaviors and attitude scales, were used to supplement the qualitative results and to answer RQ’s 3 & 4.

Procedures:

Qualitative. 30 – 60 minute semi-structured interviews conducted online using Webconferencing via Cisco Webex. All interviews were video- and audio-recorded. Interviews were transcribed verbatim and reviewed in full by the PI. Themes were determined on observed commonalities across the participants’ therapy experience and coping skills/strategies used during and after therapy. These themes were then further grouped in categories.

Reliability and Credibility. All data were re-coded by two independent judges to determine inter-rater reliability of the codes. The PI re-coded all themes two weeks after the initial coding to establish intra-rater reliability. Credibility was established by using the qualitative procedures of bracketing and member checks / respondent validation.

Clinical Data. Archival data from client charts used to obtain objective measures of %SS in various speech contexts, Stuttering Severity (SSI-3), and results from the S-24 scale of communication attitudes, LCB, and OASES. Same measures were repeated at the time of the semi-structured interviews to obtain current status. Descriptive statistics are presented for the clinical data.

Table 1. Demographic information for participants

| Name | Age | Gender | Occupation | Year(s) Attended | Follow-up Received | Type of Follow-up |
|---------|-----|--------|------------------------|--------------------|--------------------|--------------------------------------|
| Daniel | 38 | Male | Student | 2004 | Yes | Two weekend Intensive Sessions |
| Cody | 22 | Male | Student | 2005, 2006, & 2008 | Yes | Telepractice |
| Teddy | 23 | Male | Student | 2008 & 2009 | Yes | Telepractice |
| Mike | 43 | Male | Residential Specialist | 2004 | No | N/A |
| Nicole | 25 | Female | Teacher | 2003 | Yes | Regular non-intensive |
| Rick | 20 | Male | Student | 2006 & 2009 | Yes | Regular non-intensive & telepractice |
| Yolanda | 39 | Female | SLP | 2006 | No | N/A |

RESULTS

Qualitative Data: Thematic analysis of the interview transcripts revealed six themes that were relevant across participants. These themes were further categorized as “Direct Effects” and “Indirect Effects”. The themes are listed in Table 2.

The four themes categorized as “Direct Effects” include:

- (1) Duration and Nature of Program: Statements indicating the positive impact of the nature of the intensive clinic were coded using this theme. This includes statements about the overall structure and execution of the intensive clinic, including the duration of the clinic.
- (2) Speech Techniques Learned: Statements indicating that learning various strategies to manage or modify stuttering moments such as easy onsets, slow prolonged speech, pull-outs, etc. were helpful to participants as part of therapy were coded with this theme. This theme highlights the importance of using an eclectic approach and providing participants with multiple strategies from fluency shaping and stuttering modification approaches to manage the behavioral component of stuttering.
- (3) Attitude Change and Counseling: This theme reflects statements that describe the positive impact of counseling strategies used in therapy. It also reflects statements about the positive effect of changing attitudes toward self and stuttering have on participants’ ability to manage stuttering and approach feared situations.
- (4) Desensitization and Transfer of Skills: This theme was used to code statements that indicate the positive impact of completing activities that require participants to go outside their comfort zone and talk in feared situations. These include activities completed outside the clinic and help with transferring speech strategies learned during therapy in the clinic.

The two themes categorized as “Indirect Effects” include:

- (1) Motivation and Readiness: Statements coded with this theme reflect the impact participants’ personal motivation to attend the program and readiness to commit to the program had on the overall effectiveness of the program. These statements also include those comments suggesting the negative impact a lack of motivation and/or readiness can have. From a few participant reports, it appears that the nature of the therapy program and clinicians’ attitudes could possibly have an influence on motivation and readiness for making changes in therapy.
- (2) Clinician Attributes: This theme codes statements from the transcripts where the participants indicate how the clinicians’ responses and demeanor can have a positive or negative impact on the therapy experiences and perceived benefits from therapy. The statements can also be interpreted as the advantage of a good client-clinician relationship where the client can trust the clinician when entering difficult situations.

Additional Theme:

Follow-up: A large majority of the participants who received follow-up therapy after the intensive clinic indicated that it was beneficial. Additionally, the participants who did not receive follow-up services after the intensive clinic recommended that follow-up be offered in the future to make the program stronger.

RESULTS

Objective Clinical Data:

Figure 1 presents average scores for all seven participants on clinical measures of stuttering severity (SSI-3), communication attitudes (S-24 and LCB), and percent disfluencies recorded in a variety of tasks (conversation, reading, and phone calls). The data presented in the figures is an average across all participants in this study (n = 7) and presents overall trends across participants attending the intensive clinic.

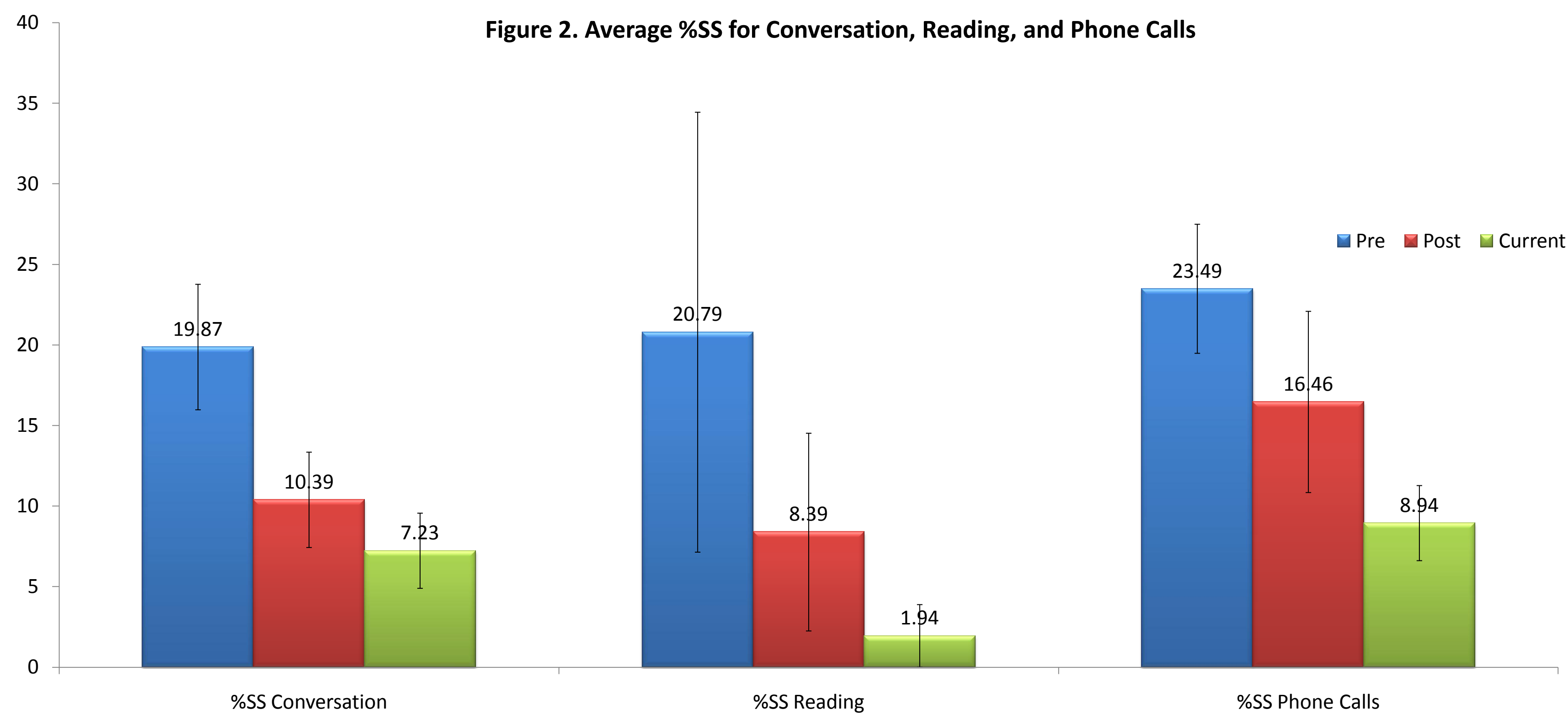
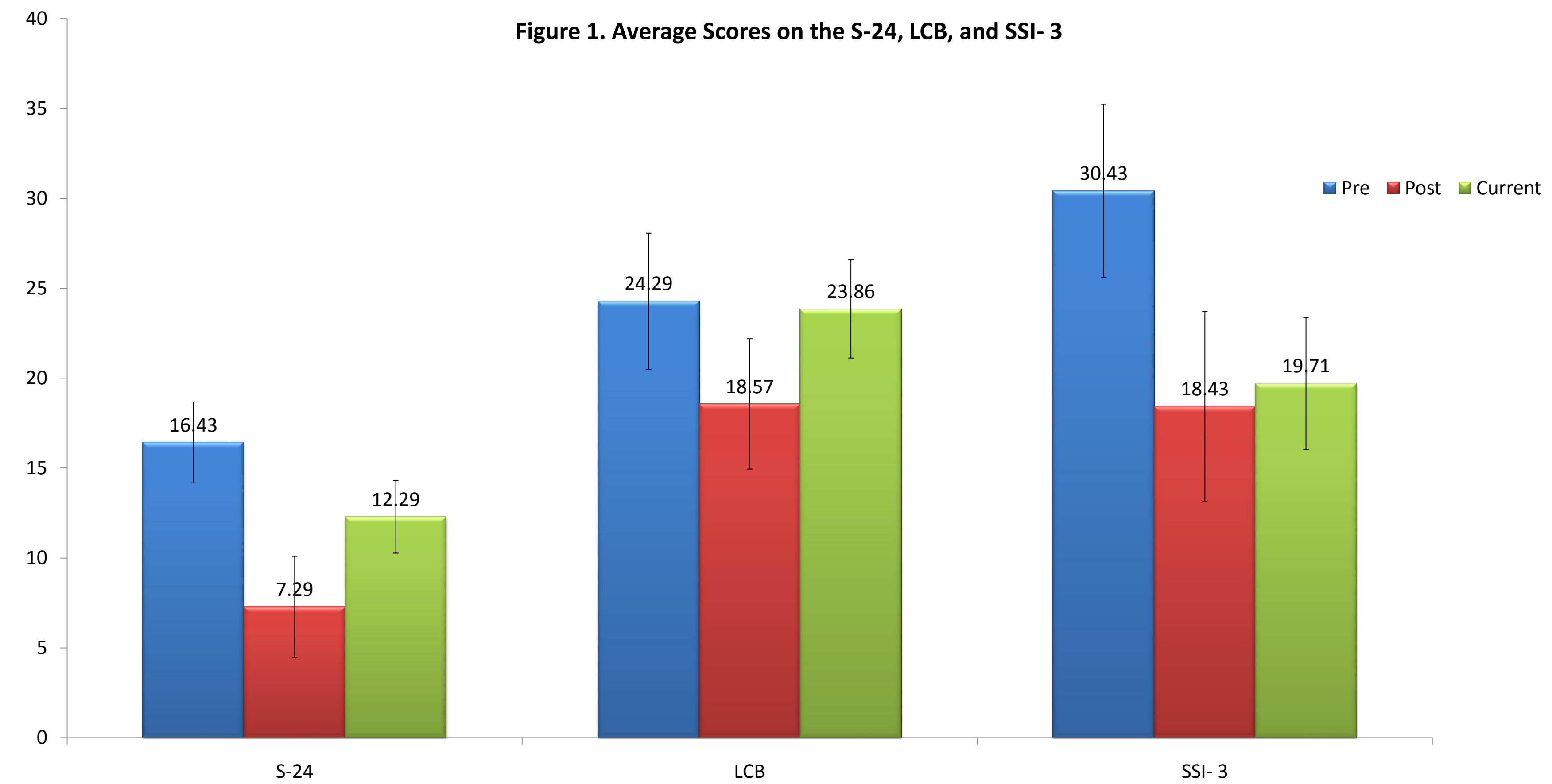
The objective clinical data for stuttering severity (SSI – 3; Fig. 1) indicates that participants demonstrated measurable clinical gains as a result of attending the intensive clinic and maintained these gains following conclusion of the intensive clinic. Objective data of participants' attitudes toward communication and stuttering as measured on the S-24 (Fig. 1) indicate that clients reported measurable clinical change at the end of the intensive clinic but this change was not maintained post-therapy. The scores for the S-24 gathered at the time of the interview, however, were lower than scores reported at baseline. The objective data on the LCB (Fig. 1) indicates positive clinical change at the conclusion of the intensive clinic; however, current data indicates the scores similar to baseline score. This measure indicates that participants were not able to maintain changes related to locus of control over a period of time as seen with measures of stuttering severity and communication attitudes. Objective data for four participants who completed the OASES (Table 3) also reflects a similar theme of measurable gains made as a result of attending the intensive clinic. Lastly, clinical data indicating %SS gathered for three different speaking situations (Fig. 2) indicates that on an average participants demonstrated clinically measurable gains in this measure during the intensive clinic. Current data indicates that participants continued to make positive changes on this measure. The objective data thus appear to corroborate well with participants' reports of treatment effectiveness. One of the main themes that all seven participants reported was that of the nature and duration of the intensive program. The objective clinical data for stuttering severity and attitude change indicate that participants demonstrated clinically measurable change at the end of the intensive clinic. Participants' were able to maintain these positive changes on most clinical measures between one- to seven years after the intensive clinic and showed mild positive changes on measures of %SS.

Table 2. Categories and Themes across participants

| Category | Theme | Number of Participants |
|------------------|--|------------------------|
| Direct Effects | Duration and nature of Program | 7 |
| | Speech Techniques Learned | 7 |
| | Attitude Change and Counseling | 6 |
| Indirect Effects | Desensitization and Transfer of Skills | 6 |
| | Motivation and Readiness | 5 |
| | Clinician Attributes | 5 |

Table 3. OASES impact ratings for four participants

| Participant | Pre-intensive | Post-Intensive | Current (2010) |
|-------------|-----------------|----------------|----------------|
| Cody | Moderate/Severe | Mild/Moderate | Moderate |
| Teddy | Moderate/Severe | Moderate | Moderate |
| Nicole | Moderate | Mild/Moderate | Mild/Moderate |
| Yolanda | Moderate | Mild/Moderate | Mild/Moderate |



REFERENCES

- Bothe, A. K., Davidow, J. H., Bramlett, R. E., & Ingham, R. J. (2006). Stuttering treatment research 1970-2005: I. systematic review incorporating trial quality assessment of behavioral, cognitive, and related approaches. *American Journal of Speech-Language Pathology / American Speech-Language-Hearing Association*, 15(4), 321-341.
- Brackenbury, T., Burroughs, E., & Hewitt, L. E. (2008). A qualitative examination of current guidelines for evidence-based practice in child language intervention. *Language, Speech, and Hearing Services in Schools*, 39(1), 78-88.
- Kovarsky, D. (2008). Representing voices from the life-world in evidence-based practice. *International Journal of Language & Communication*, 43(1), 47-57.
- Miles, B. M., & Huberman, A. M. (1994). *Qualitative data analysis*. (2nd ed.). Thousand Oaks, CA: Sage.
- Morse, J. M. (2003) Principles of mixed methods and multimethod research designs. In A. Tashakkori, & C. Teddlie. (Eds.), *Handbook of mixed methods in social & behavioral research* (pp. 189-209). Thousand Oaks, CA: Sage.
- St. Louis, K. O., & Westbrook, J. B. (1987). The effectiveness of treatment for stuttering. In L. Rustin, H. Purser, & D. Rowley (Eds), *Progress in the treatment of fluency disorders* (pp. 235-257). London: Whurr.

DISCUSSION

The intensive clinic was found to be effective in gaining early fluency and attitude changes. However, the qualitative and objective clinic data suggest that clients have trouble maintaining gains made during the intensive clinic after returning to their home environments. Most clients returned for follow-up services and the one who did not strongly recommended that a non-intensive follow-up package be offered with the intensive clinic. This finding is similar to reports by St. Louis & Westbrook (1987) that a mix of intensive and non-intensive appears most effective.

The use of telepractice as a means for providing follow-up services needs further exploration to establish feasibility and efficacy. The qualitative results further suggest that factors personal to the clients such as readiness to make changes and motivation impact can impact treatment outcomes. This, however, needs further exploration and corroboration.

Another important fact that appears to have an impact on treatment outcomes is the client-clinician relationship and the clinician's personal qualities.

LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

The primary limitation of this study is its retrospective nature which limits the ability to establish a causal relationship between the therapy provided and treatment outcomes. Another limitation of the study is the small sample size which limits generalization of results. A third limitation of this study is the participants in the study self-identified. It could be argued that clients with positive experiences from the particular therapy program would be more likely to participate in and contribute to a study of this nature.

In the future, it is important to conduct a well designed prospective study, possibly using a time series single-subject design, to evaluate treatment outcomes for this particular program. It is also important to collect sufficient baseline data before the intensive program to establish baseline trends. Lastly, it is important to extend the program to include a non-intensive follow-up package offered either in the clinic or via telepractice and gather long-term treatment outcomes data to evaluate the effectiveness of transfer and maintenance.

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