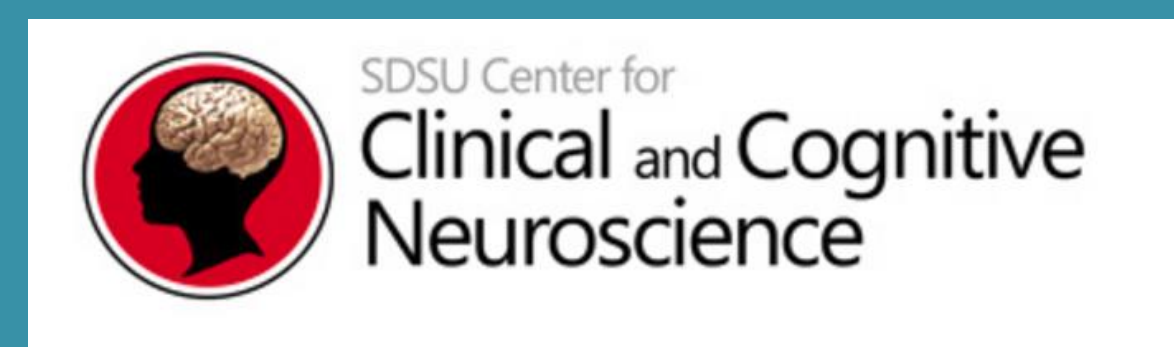


Differential Diagnosis in Bilingual Young Adults who Stutter: Two Case Studies

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Participant 1 Profile (Spanish-English)

Demographics: Participant 1 was a 20 year old female sequential Spanish-English bilingual. She learned English at approximately 5 years of age and self-reported that she began stuttering in both languages. School-based speech language services were described as helpful, and were discontinued in middle school.

Diagnosis: Child Onset Stuttering – Moderate

Stuttering Profile: Participant 1 presented with moderately severe disfluencies in English and mildly severe disfluencies in Spanish characterized by typical disfluencies (phrase repetitions, interjections, revisions) and atypical/stuttering-like disfluencies (part-word repetitions, whole-word repetitions, sound prolongations, blocks)

Secondary Characteristics

Surface features were often accompanied by the secondary characteristics of eye closing, raising her right eyebrow, and foot tapping and swinging

Introduction

This project details the diagnostic process for two bilingual young adults who sought a fluency assessment for self-reported concerns with stuttering in a university communication clinic setting. Graduate students and their supervising clinician completed an in-depth analysis and fluency profile for two adults: a female, sequential bilingual (Spanish/English) speaker and a male, sequential bilingual (Somali/English) speaker. The clients' fluency skills were assessed in both languages using a combination of formal and informal tools. Despite the similarity in assessment procedures, results yielded dramatically different stuttering profiles. These results highlight the need for differential diagnosis in both languages as well as consideration of social and political factors that may influence stuttering in adults.

Participant 2 Profile (Somali-English)

Demographics: Participant 2 was a 23 year old male sequential Somali-English bilingual. He reported that he began stuttering at age 8 in English only when he moved to the US as a refugee from Somalia. He self-reported selective mutism in both languages until age 11. He had a family history of stuttering that resolved, and he never received any speech language services or a formal diagnosis.

Diagnosis: Child Onset Stuttering – Moderate

Stuttering Profile : Participant 2 presented with moderately severe disfluencies in English only, characterized by typical disfluencies, such as the following: whole word repetitions, phrase repetitions, and interjections. In addition, Subject 2 produced stuttering-like disfluencies, which are characteristic of stuttering such as blocks and part word repetitions

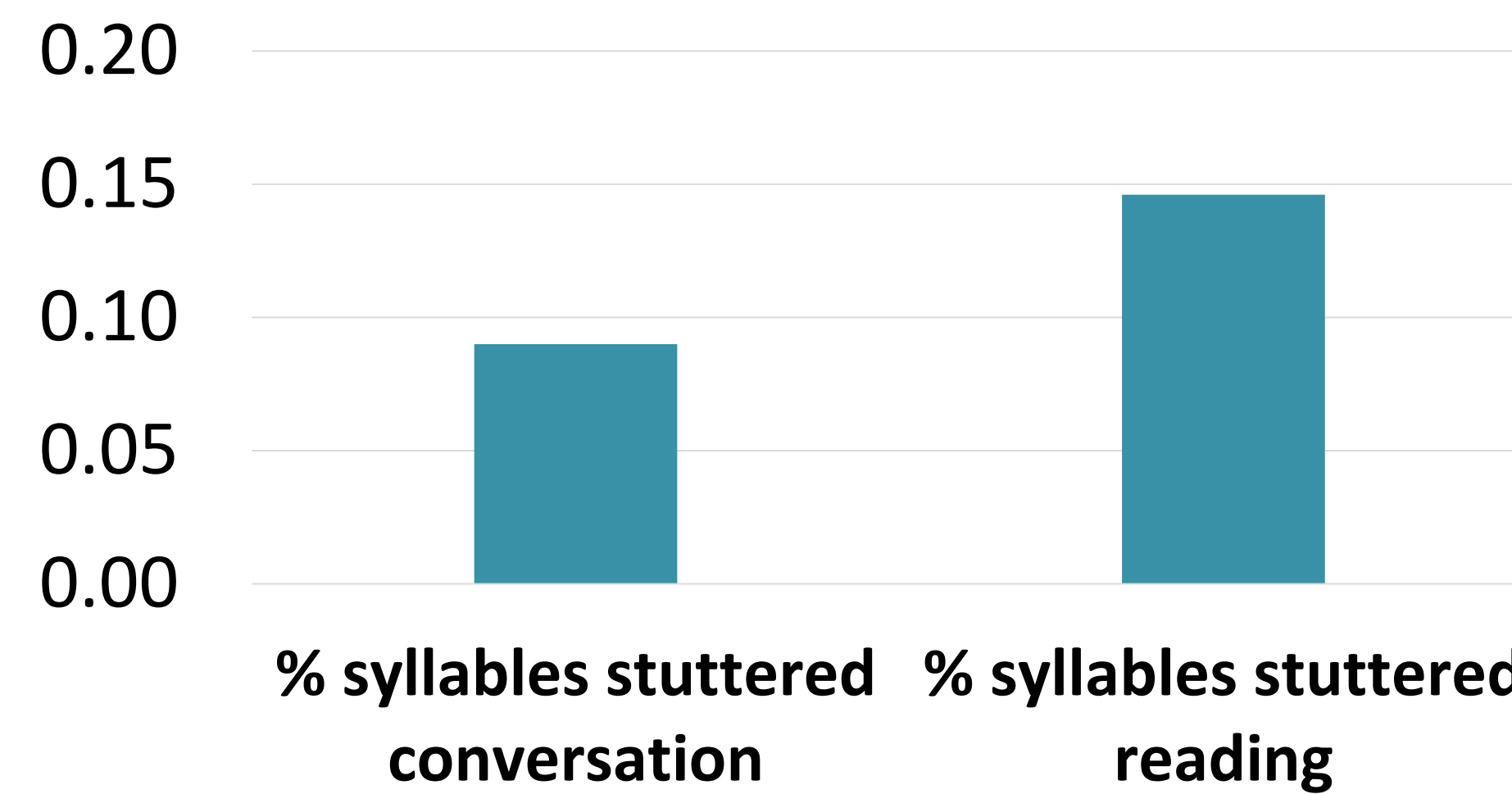
Secondary Characteristics: Secondary behaviors included laryngeal tightening, eye closing, eyelid tightening, hand closing, and foot-tapping

Participant 1 Reading Sample vs. Speaking

Conversation-English - Participant 1 exhibited multiple stuttering-like disfluencies (71.5% of total disfluencies) during two, three-minute conversation samples. These stuttering-like disfluencies included part-word repetitions (e.g. “no a d-different nephew”), whole-word repetitions (e.g. “so when I I stutter”), sound prolongations (e.g. “useful” with a 2 second prolongation on /ju/), and blocks (e.g. “and that they weren’t like [1 second block] like I don’t know”). *Across both speaking samples, Participant 1 produced 9% syllables stuttered (%SS).*

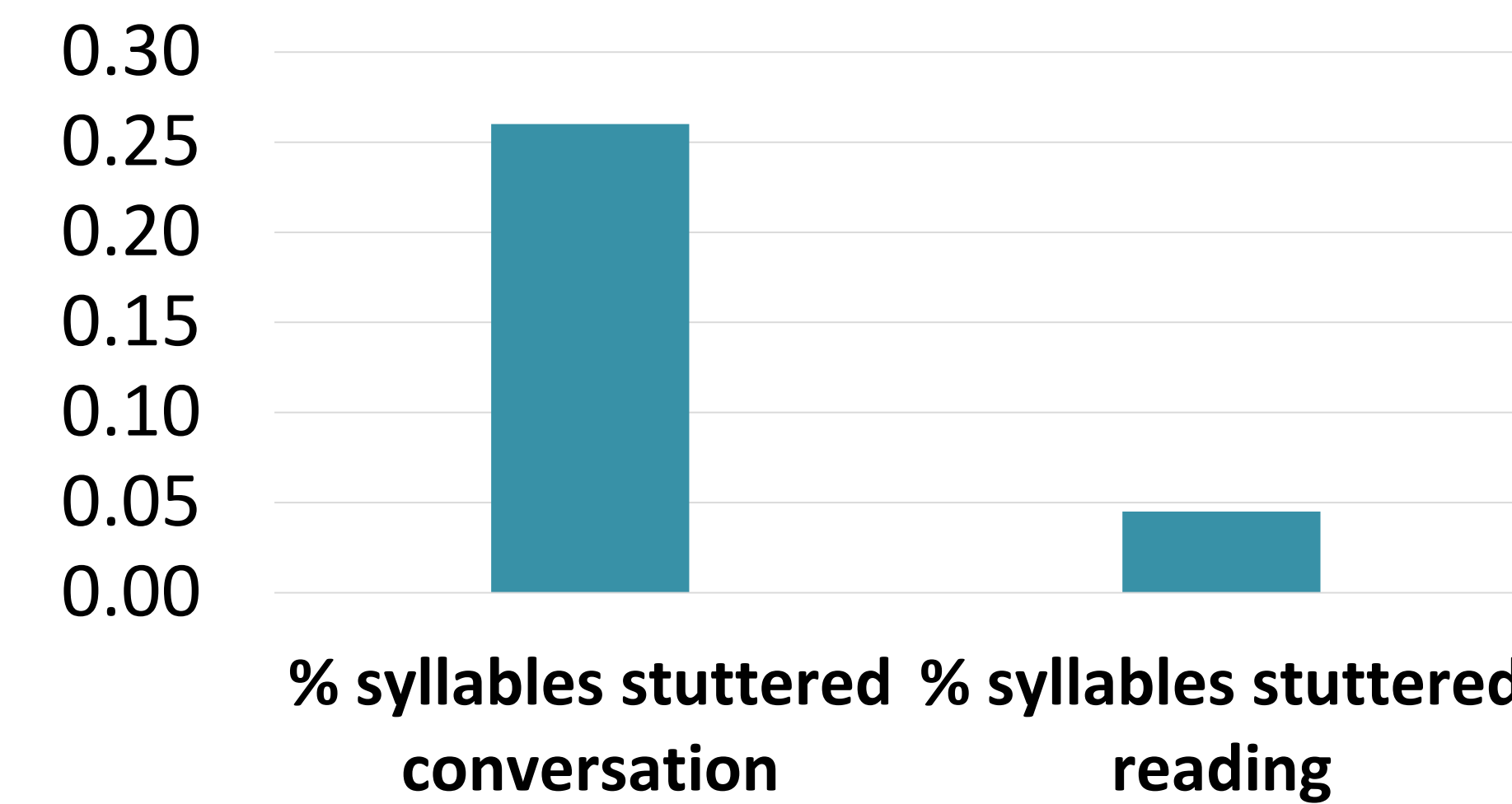
Reading-English - During the reading samples, the percentage of stuttering-like disfluencies increased significantly (87.5% of total disfluencies). This discrepancy may be attributed to an inability to use circumlocution. *In the reading sample, Participant 1 produced 14.6% syllables stuttered (%SS).*

Conversation vs. Reading (%SS)



Participant 2 Reading Sample vs. Speaking

Conversation vs. Reading (%SS)



Conversation- English - Participant 2 exhibited mostly typical disfluencies such as whole word repetitions, phrase repetitions, and interjections in addition to some disfluencies which are characteristic of stuttering, such as blocks and part word repetitions. His longest repetition lasted 10.2 seconds and occurred when relating an emotional family tragedy to his stuttering “...so, um I think like, um I think, I think, um there I think gets in the way of me stuttering.” *During the speaking sample, Participant 2 produced 26% syllables stuttered (%SS).*

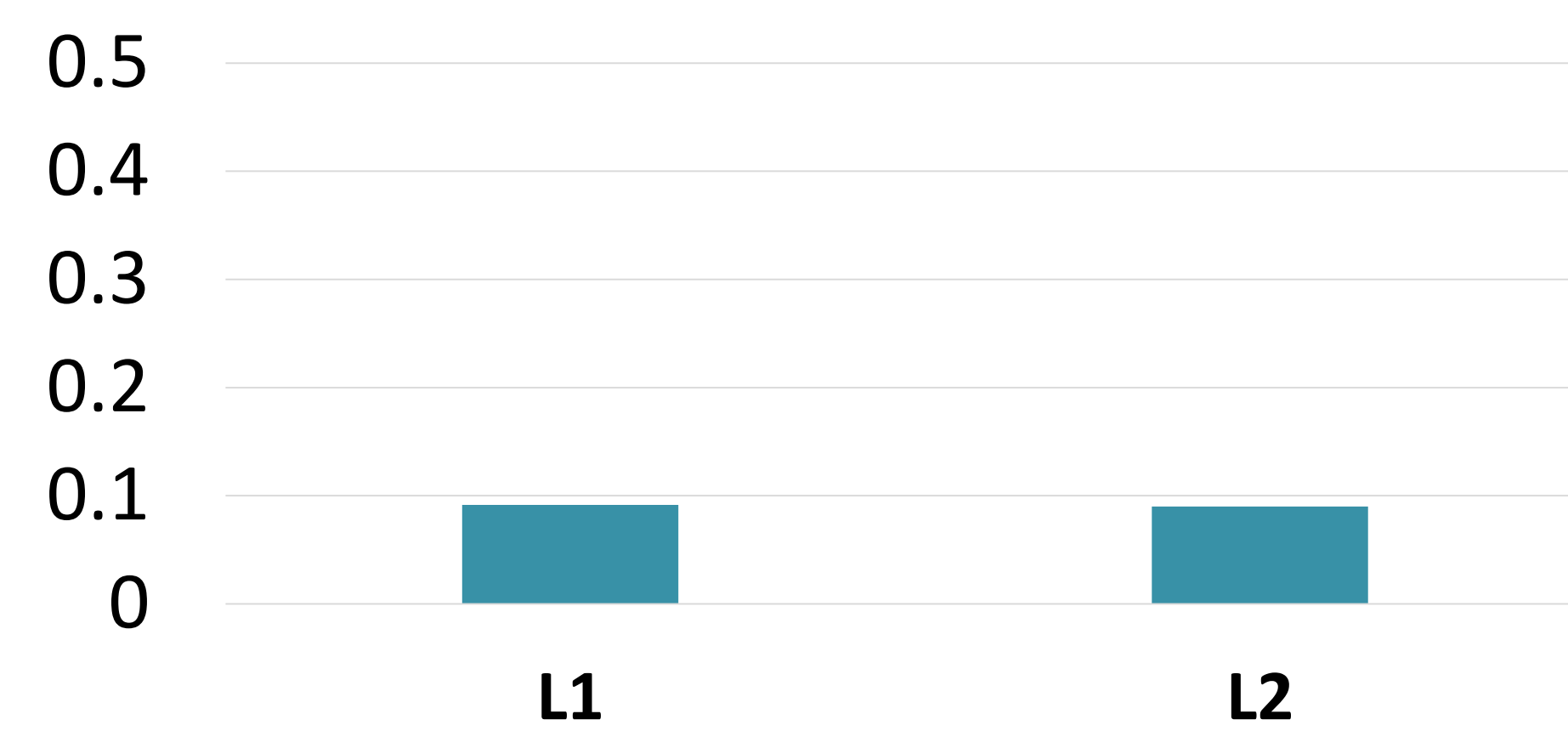
Reading- English - Participant 2 produced 4.5% stuttered syllables on the reading task. The complexity level and topics of the reading samples appeared to create some decoding issues, which may have contributed to the disfluencies seen in this sample. Participant 2’s performance on the reading task indicated that he had typical or near-typical fluency skills during oral reading. *In the reading sample, Subject 2 produced 5% syllables stuttered (%SS).*

Participant 1 Stuttering Frequency in L1 vs. L2

Conversation-Spanish - In the Spanish clinic-speaking sample, typical disfluencies (i.e. interjections [e.g. “um”] and phrase repetitions [e.g. “lo que me gusta hacer es ir es ir”]) accounted for 69% of total disfluencies. Stuttering-like disfluencies (i.e. whole-word repetitions [e.g. “he vivido en San Diego asi asi como”], part-word repetitions [e.g. “t-toda mi vida”], and blocks [e.g. “ir um a [blocking-less than .5 seconds] fiestas”]) accounted for 31% of total disfluencies. *In the Spanish speaking sample, Participant 1 produced 9% syllables stuttered (%SS).*

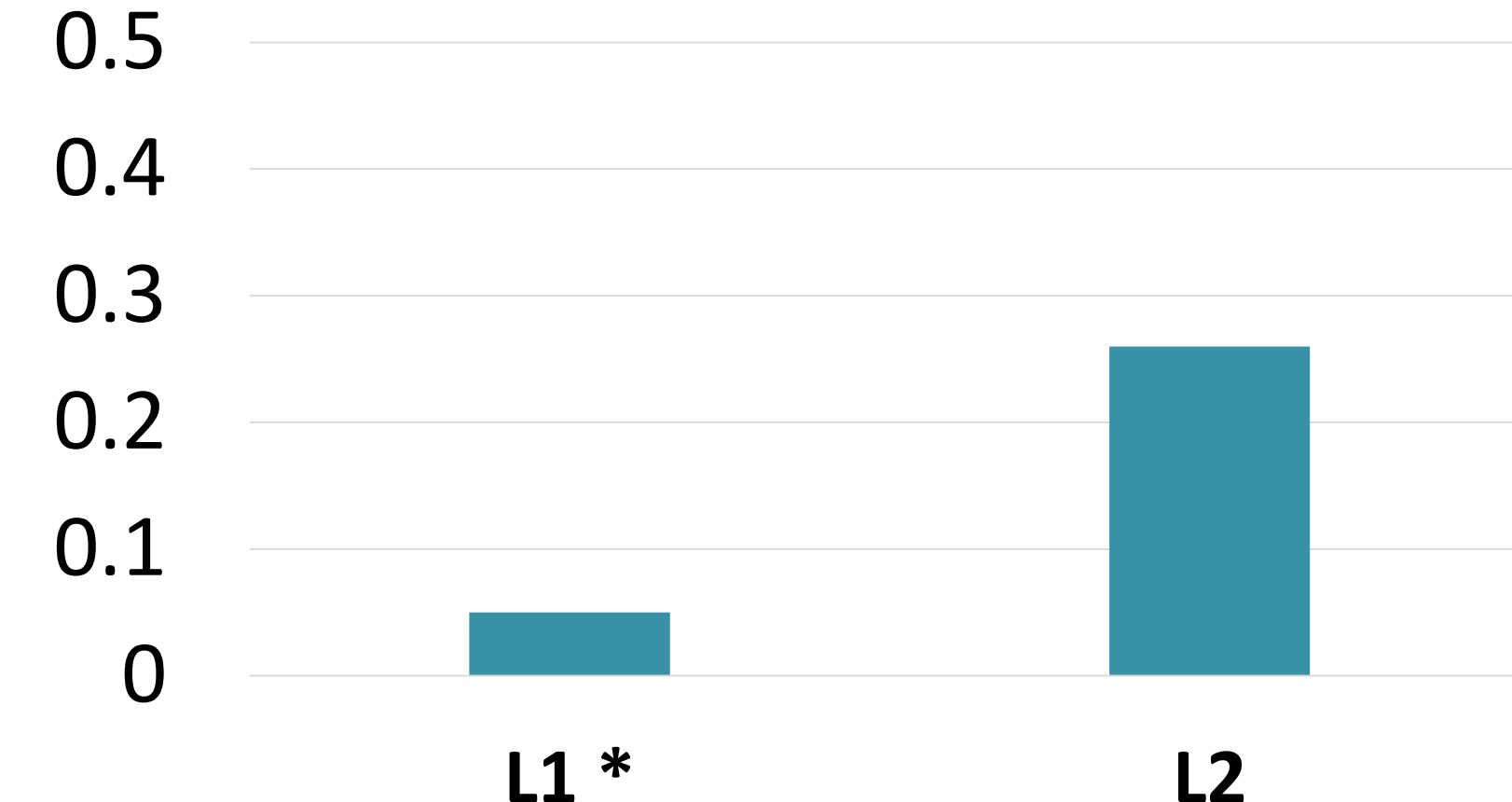
Comparison of Spanish and English Stuttering - Participant 1 presented with similar percentages of stuttered syllables in English and Spanish (9%SS). These results may have been influenced by conversational topic (i.e. more comfortable topic in Spanish as opposed to English).

%SS in Conversation L1 vs. L2



Participant 2 Stuttering Frequency in L1 vs. L2

%SS in Conversation L1 vs. L2



Participant 2 presented with moderately severe disfluencies in English, characterized by a high frequency of typical disfluencies, such as whole word repetitions, phrase repetitions, and interjections and stuttering-like disfluencies, such as blocks and part word repetitions. Participant 2 reported having no fluency problems in Somali. After Participant 2 produced a brief speech sample in his native language, and no disfluent characteristics or secondary behaviors were identified, his fluency was deemed to be within normal limits.

*The stuttering frequency reported here (5%) is intended to be a representation of typical disfluency based on normative data. Although the examiner was not fluent in Somali, Participant 2 produced a brief speech sample in his native language, and no disfluent characteristics or secondary behaviors were identified. In combination with the client’s report and the perceptual characteristics of his speech, his frequency of disfluencies in Somali was deemed within normal limits.

Self Report vs. Clinician Measurement

The *Overall Assessment of the Speaker’s Experience of Stuttering* (OASES; Yaruss & Quesal, 2006) was used to assess different aspects of a speaker’s experience of stuttering. Points are assigned to different responses and used to calculate the Impact Score and Impact Rating. **Participant 1’s reported Total Impact Score was 57.5 out of a possible 100, yielding a moderate score. Participant 2’s reported Total Impact Score was 55.6 out of a possible 100, yielding a moderate score.**

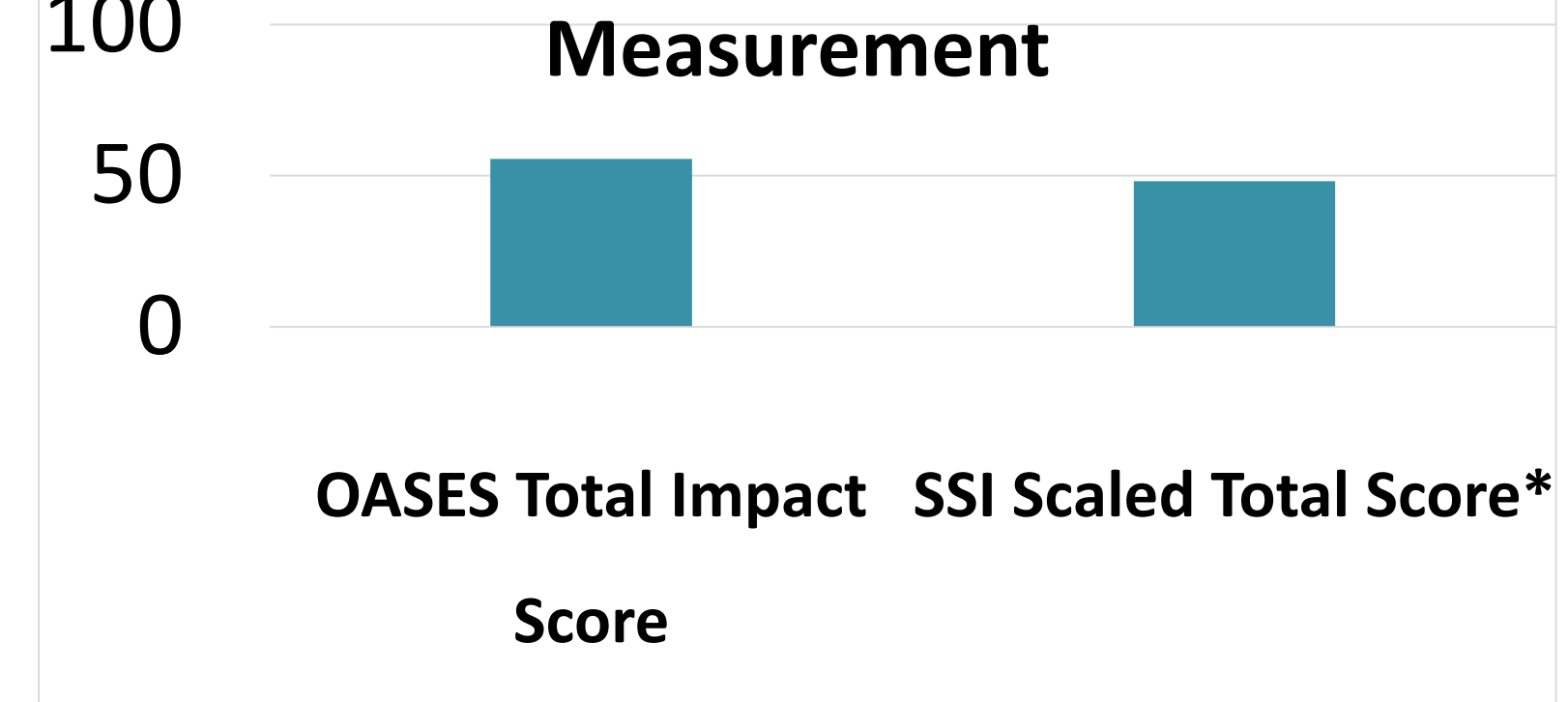
The *Stuttering Severity Instrument-Fourth Edition* (SSI-4; Riley, 2009) was administered as a clinical measurement of stuttering severity. **Participant 1’s SSI-4 Total Score was 28 out of a possible 56, yielding a moderate score. Participant 2’s SSI-4 Total Score was 27 out of a possible 56, yielding a moderate score**

Self Report vs. Clinician Measurement



*The SSI reports a Total Score out of a possible 58. To make the scores numerically and visually comparable, the SSI Total Score was converted to a scaled score out of a possible 100. Participant 1’s actual SSI Total Score was 28. Participant 2’s actual SSI Total Score was 27

Self Report vs. Clinician Measurement



Summary

Both diagnostic clients were of similar age, college students, and sequential bilinguals. They both presented with a moderate severity level of stuttering, and their stuttering and secondary behaviors increased when discussing emotional topics. Both of the clients self-reported a variable pattern of remission and persistence with a recent recurrence within the past year and that cultural issues added to their negative feelings toward stuttering. However, Participant 1 presented with disfluencies in both languages (Spanish and English) while Participant 2’s disfluencies were only present in English and not Somali. Participant 1’s stuttering increased when reading aloud, while the other client showed a decrease in disfluencies during a similar task.

Conclusion and Future Directions

Current research in the field of fluency disorders suggests that being bilingual is not a specific risk factor for stuttering (Manning, 2010). However, a thorough evaluation of fluency in both languages is required in order to make a differential diagnosis of stuttering. The assessment procedures for both clients included informal tools such as an interview, collection of a case history, and a thorough language profile. More research is needed to identify the impact of traumatic events (e.g. refugee status that dramatically and suddenly changes an individual’s linguistic environment) on fluency. Further, diagnostic protocols could be developed to aid assessment in the event of a clinician/client language mismatch (i.e. clinician does not speak the client’s second language).

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