Assessment of Severity of Stuttering in Native Versus Foreign Language in Secondary (Late) Bilingual Children

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Abstract The present study was conducted to investigate the severity of stuttering in native versus foreign language in secondary (late) bilingual children. The speech sample of 31 children with stuttering (age ranges 10 years, 1 month to 11 years, 8 months old) speaking in their first Arabic as a (native) language and acquired second English (foreign) language in the KG1 Class of school around the age of 4 years as secondary (late) bilinguals. The speech samples were recorded using Sony MHC-E60X mini Hi Fi component cassette with a fixed distance 15 cm between the speaker and the recorder. The severity of stuttering is assessed using Arabic version of stuttering severity index (A-SSI). The results indicate that there is a significant correlation between stuttering severity in both languages, being more severe in English (foreign) language than in Arabic (native) language.

Keywords Stuttering · Bilinguals · Fluency disorders

Introduction

Although stuttering in bilinguals is an area of interest to both clinicians and researchers, data on bilingualism and stuttering are scanty [1].

That is rather remarkable in light of estimate that over 50 % of the world population is bilingual [2], and that

about 1 % of the world population stutters. In spite of this, the overlarge majority of studies on stuttering and fluency disorders contribute to have monolingual speakers as participants or do not take into account that the participants masters more than one language [3].

While the primary bilingualism is defined as the simultaneous acquisition of more than one language during the first 5 years of life, those who exposed to secondary language after school entry are called later bilingualism [4].

Nwokah suggested that in bilingual speakers the stuttering may theoretically manifest itself in three different ways. An individual may stutter in one language and not in the other. He/She may stutter in both languages showing similar patterns of dysfluency in each language, or stuttering may occur in both languages, but with stuttering behavior that varies from one language to another [5].

The aim of this study was to examine the severity of stuttering in native (Arabic) versus (English) language in secondary (late) bilingual children.

Patients and Methods

The study was approved by The Research Ethics Committee of the Faculty of Medicine, Minia University. Informed consent was taken from the parents of the students.

The study sample was 31 children (23 males and 8 females), they were recruited from four international schools in El-Minia Governorate, Egypt. The children were at 5th and 6th years primary School. Their age ranged from 10 years and 1 month to 11 years and 8 months with a mean age of 10 years and 10 months. Arabic was the native language of the participants and they learned English in the school from KG1 class around the age of 4 years as secondary (late) bilinguals.

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Table 1 It reveals the stuttering severity in Arabic and English language

Variables	Mean stuttering score	SD	P value
Severity of stuttering, in Arabic	23.2	6.3	0.001
Severity of stuttering in English	27.4	6.4	0.001

The students were subjected to the following protocol

- (1) Detailed history that taken from parents of the children.
- (2) Otorhinolaryngological examination to exclude any organic disease that can influence the speech of child.
- (3) Basic audiological evaluation (in the form of pure tone audiometry, tympanometry, speech discrimination score).
- (4) General medical examination.

Participants had no hearing, neurological, developmental, intellectual or emotional problems based on parental report and examination. Besides stuttering, none of the participants exhibited any other speech and/or language problems and none of them were receiving speech therapy at the time of participating in the study.

Speech samples were collected that included automatic speech, reading aloud, picture description and conversation in both Arabic and English languages.

The speech samples were recorded using Sony MHC-E60X mini Hi Fi component cassette with a fixed distance 15 cm between the speaker and the recorder.

Severity of stuttering is assessed using Arabic version of stuttering severity index (A-SSI) Rifaie that was standardized before from the stuttering severity instrument (SSI) on Arabic speaking stutterers to assess the stuttering severity and proved to have high validity and reliability measures [6].

Stuttering severity score of 0–19 was considered very mild, from 20 to 22 was considered mild, from 23 to 30 was considered moderate, from 31 to 33 was considered severe and from 34 to 45 was considered very severe. Test purpose was to measure stuttering severity in children in four areas of speech behavior: frequency, duration, physical concomitants and naturalness of individual's speech.

Testing time was 15–20 min for each language.

The Statistical Program SPSS for Windows version 19 was used for data entry and analysis. Student *t* test was used to compare between two means.

Results

According to the initial evaluation, the entire participants stuttered in both languages. We compared severity of stuttering between two languages and found that severity of

stuttering in English (foreign) language was significantly higher than Arabic (native) language (Table 1)

Discussion

Stuttering in bilinguals is still largely under researched [7]. Although stuttering is a unique problem that has been observed across cultures and languages [4], yet, there is a little empirical evidence and few guidance for accurate identification of stuttering severity in unfamiliar language versus familiar one in secondary (late) bilinguals.

According to the results of the current study, there is significant difference between severity of stuttering in both languages being more severe in English (foreign) language than in Arabic (native) language.

Our findings are similar to those of Lim, Jankelowi, and Scott [8–10]. Also, this findings are in agreement with Hiwa in their study on Kurdish-Persian bilingual children who stutter, they found a significant correlation between stuttering severity in both languages being more severe in 2nd (foreign) language [11]. The children in our study were more proficient in Arabic, their native language than in English (foreign). The difference in severity of stuttering may be a result of the difference in language proficiency. In literature usually more stuttering is observed in the less proficient language [5, 9, 10].

Apart from language proficiency, Watt [12] reported that age of acquisition of language has been mentioned as a factor to explain differences in stuttering severity in bilinguals. He found that the later the language was learned, the more severe the stuttering. Participants in our study learned English later than Arabic and this may explain the increased severity of stuttering in English language than in Arabic language.

We conclude that that severity of stuttering in English (foreign) language was significantly higher than Arabic (native) language.

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