Review

Stuttering prevalence among Kurdish-Farsi students; Effects of the two languages similarities

Hiwa Mohamadi; Reza Nilipour,PhD.; Fariba Yadegari
University of social welfare and rehabilitation sciences, Tehran, Iran

Objective: It has been noted that stuttering is more prevalent in bilinguals than in monolinguals. The similarities of the languages involved have been mentioned to justify the difference between stuttering prevalence among bilingual and monolingual speakers. The aim of this study is to investigate the effect of language similarities on prevalence of stuttering among Kurdish-Farsi bilingual students.

Method: In this cross- sectional descriptive analytic study, we examined all of Javanroud's schools' bilingual students. We used teacher referral method for the primary screening of speech disorders. Essential information about speech disorders, specifically stuttering, had been given to teachers before this primary step. The bilingual researcher then diagnosed stuttering students based on DSM-IV criteria through personal interview, text reading, and spontaneous speech in Kurdish and Farsi.

Results: Among 11425 bilingual students of Javanroud's schools, 129 students were identified as stutterers. These findings indicated that overall prevalence of stuttering in this population is %1.13. Among elementary, guidance and high school students the prevalence of stuttering was %2.06, %0.87 and %0.5 respectively. Prevalence of stuttering among boys was %1.35 and %0.88 among girls. An overall male/female ratio was 1.5/1. Prevalence of stuttering in elementary, guidance and high school differed significantly (p=0.000).Prevalence of stuttering in males was significantly higher than females (p=0.034).

Conclusion: Prevalence of stuttering among Javanroud's bilingual students was higher than the universal accepted prevalence in monolinguals (1%) but lower than other studies in bilingual population. The similarities of Kurdish and Farsi languages play an important role in this and are discussed in the paper.

Keywords:stuttering; Kurdish; language similarities

1. Introduction:

The effect of bilingualism on stuttering has been established by many authors (Bloodstein & Bernstein Ratner, 2008, Howell et al, 2003, Battle, 2002, Van Borsel et al, 2001, Jankelowitez & Bortz, 1996, Karniol, 1992, Seeman, 1974). It has been confirmed by some authors that stuttering is more prevalent in bilinguals than in monolinguals (Bloodstein & Bernstein Ratner, 2008, Howell et al, 2003, Battle, 2002, Van Borsel et al, 2001, Jankelowitez & Bortz, 1996, Bloodstein, 1995, Karniol, 1992, Stern, 1984, Travis et al, 1937).

The prevalence of stuttering is approximately %1 and appears to be marginally higher in Europe than in the U.S.A (Bloodstein & Bernstein Ratner, 2008). Stuttering is more prevalent among males than females. The male/female ratio usually re-

1.correspondence Email: hiwa.mohamadi@gmail.com

ported is 3/1. It has been reported that this ratio increases with age. Travis, Johnson and Shover (1937) studied 4827 children (2405 boys and 2422 girls) ages between 4-7 years, about half of them were bilingual. Their results indicated that stuttering prevalence in bilinguals was %2.8 but %1.8 in monolinguals. In a study of 1861 children in Johannesburg's schools, Stern (1984) reported similar findings; prevalence of stuttering in monolingual children was %1.66, however in children who were bilingual prior to age 6, stuttering prevalence was %2.16. Au-yeung et al (2000) reported no obvious differences in stuttering prevalence between monolingual and bilingual participants that participated in a web-based self-reporting stuttering study. Except for the result reported by Au-Yeung et al (2000) the available data reveal that stuttering is more prevalent among bilingual than monolingual speakers.

Although it is now somewhat accepted that bilingualism and stuttering are related and prevalence of stuttering is higher in bilinguals than monolinguals, very little is known about the nature of this relation and the demand for more study in this field is obvious. Some factors such as the age of second language acquisition, language proficiency in L1 and L2, type of linguistic inputs, type of bilingualism and the similarities of the languages involved have been mentioned to justify the difference between stuttering prevalence among bilingual and monolingual speakers (Van Borsel et al, 2001). Among these factors the similarities of the paired languages involved have not been attended to yet and we have no answer to important questions on this issue. It is unclear whether language similarities between L1 and L2 affect the stuttering prevalence. Is stuttering prevalence higher in individuals speaking two linguistically related languages than in those who speak two totally different languages? It is possible that linguistically similar language may produce more confusion and therefore more disfluencies than more different pairs (Van Borsel et al, 2001). However it could also be that nonrelated pairs of languages make more disfluencies due to more mental activities in learning two different lexical and syntactic systems, while two similar languages demand less resources in learning two similar phonological, lexical and syntactic systems and therefore cause less disfluencies.

To look into these issues with more detail, the current study was designed to investigate the effect of language similarities between Kurdish and Farsi on the prevalence of stuttering among Kurdish-Farsi bilingual students in Javanroud, a city in western Iran that located in Kurdistan Region. Except for a very small number of military officials who have immigrated to this county, all of Javanroud's 60,000 citizens are natives of this region and speak the Sorani dialect of the Kurdish language as a mother tongue. The exclusive language used in family, street and also partly in administrative verbal dialogues is Kurdish, but the language of education, media and interoffice communications in this region is solely Farsi, like other regions of Iran. Reception of Kurdish media such as Kurdish satellite T.V is impossible due to legal limitations. All Iranian students, even those of minority languages and cultures are educated in Farsi only and begin learning it as a second language via TV and from the age of 5 or 6 in kindergarten and school.

Language similarities of Kurdish and Farsi:

Both Kurdish and Farsi languages belong to Iranian linguistic family of the Indo-Iranian branch of Indo-European languages. Therefore these two languages have proximate relations historically. Both languages have been affected by the Arabic linguistic system over many years and many identical Arabic lexical roots are found in both Farsi and Kurdish. The Farsi language and culture has also been the dominant and formal language in Iran from many years and therefore many lexical elements of this language have transferred to other languages, including Kurdish. Thus it is expected that these two languages have similar linguistic structures due to sharing linguistic ancestors and social, cultural and linguistic contiguity between these two societies. The linguistic categories selected for comparison are phonetics, and syntax.

All of the sounds in these two languages are aggressive except for a click sound articulated by oral ingressive air existing in both languages. This click sound is used instead of ‘’no’’ and to illustrate apologetically and exclamatory informal communication and has no function in language structure and word making processes. Farsi has 23 consonants that are represented by 33 graphemes in writing. Some consonants in this language are represented by several graphemes such as /s/, /t/, /h/, /q/ ,Kurdish has 27 consonants and 27 graphemes used for their representation. All of Farsi’s consonants also exist in Kurdish. In addition to Farsi consonants, Kurdish has 4 consonants including /w/, /ã/, /* / and /? /. Plosive consonants are momentary in both languages. Kurdish has 9 vowels including /i/, /e/, /æ/, /u/, /o/, /a/ that also exist in Farsi and /œ/, /^/ and /ə/ that solely exist in Kurdish.

Prolongation of vowels does not function as distinctive feature. Syllabic structure in Farsi has three types include CV, CVC, and CVCC. In addition to these three types, Kurdish also has three other types of syllables including CCV (xwa, dwa), CCVC (cwar, xwar) and CCVCC (mrisk, bnest). Therefore all Farsi’s phonetic structures including consonants; vowels and syllables also exist in Kurdish. Stress is very similar in Kurdish and Farsi. Both languages have two types of stress: primary stress and secondary stress. In both languages, stress can change meaning, For example:

Kurdish: /paræ’kæ/. The money
/’paræ kæ/. Last year
Farsi:/’væli/.But
/væ’li/. Parent

The negative prefix is the same and has primary stress in two languages:

Kurdish	Farsi	translation
/’næywet/	/’nægoft/	Didn’t say
/’næcu/	/’næræft/	Didn’t go
/’nær^/	/’næro/	Don’t go

Kurdish	Farsi
/na-/+/rek/	/na-/+/pak/
/næ-/+/bun/	/næ-/+/budæn/
/be-/+/tam/	/bi-/+/mæze/

Both languages use very similar derivative af fixes. For example:

affixes	Kurdish	Farsi	
/-gar/	/rožgar/	/ruzgar/	N+ suffixes
/-baz/	/felbaz/	/hoqebaz/	N+ suffixes
/-ar/	/g^tar/	/goftar/	V+ suffixes
/-endæ/ /-ænde/	/baləndæ/	/pærænde/	V+ suffuxes
/-gær/	/aseŋgær/	/ahængar/	N+ suffixes
/-an/	/gæLar-ezan/	/bærgrizan/	N+ V+ suffixes

The comparative suffixes are two and the same in both languages:
/-tar/, /-tər/

suffixes	Kurdish	Farsi
/tər/, /-tær/	/baštər/	/behtær/
/tərin/, /tærin/	/baštərin/	/behtærin/

There is no symbol for gender in both languages. The plural symbol in Kurdish is /an/ that is also used in Farsi; however Farsi has additional plural morphemes such as /ha/ and /jat/.
The structure of noun phrase is similar in the two languages. The word order in sentences is SOV in both languages although SVO order is sometimes used in informal Kurdish. Constructing passive and question forms have the same process in both Kurdish and Farsi.

2. Materials and methods:

The present study was a descriptive-analytic study which was carried out in 2007 on Javanroud’s schools’ normal student population. Among 11425 participants 3937 students (35%) aged between 6-11 (mean of 9.10 years) were in elementary schools, 3235 students (28%) aged between 11-14 (mean of 13 years) were in

guidance schools and 4235 students (37%) aged between 14-19 (mean of 16.21 years) were in high schools. The overall age mean between participants was 12.85 years. These 11425 students included 6288 males (55%) and 5137 females (45%).

To diagnose stuttering in student, we used teacher referral method concomitant with speech-language pathologist (SLP) diagnosis. A multiphase program was designed to do this. First, we had a justifying session about speech disorders like dysarthria, speech apraxia, articulation disorders, learning disabilities, voice disorders and specially stuttering for all of the teachers, headmaster and assistants of each school. Then they were asked to refer all students with questionable speech and suspicion of having speech disorders to our Kurdish-Farsi bilingual SLP. The referred students were then evaluated through interview, reading text and spontaneous speech on Kurdish and Farsi, and stuttering students were diagnosed based on DSM-IV diagnostic criteria. The students diagnosed with stuttering have the primary and secondary symptoms of stuttering in both Kurdish and Farsi. Following this, all normal and stuttering students were provided with a demographic questionnaire collecting data on age, gender and grade. The parents of stuttering students were then provided with another questionnaire that contained questions about family history of stuttering, the history of bilingualism of the stuttering child, the age of stuttering onset and socioeconomic status of family. Informed consent was obtained from all stuttering students, their families, headmasters and teachers.

The data were analyzed using SPSS 13.5 and the prevalence of stuttering was obtained by percent for each course and sex. The statistical procedures used to compare the stuttering prevalence between course and genders were Mann-Whitney and Logistic Regression. P-value 0.01 was considered indicative of a statistically significant difference.

3. Results:

Among 11425 participants, 129 students were diagnosed as stuttering; therefore the overall prevalence of stuttering in this population was %1.3. The prevalence of stuttering among elementary school students aged between 6-11 years was %2.06, among guidance schools student aged between 11-14 years was %0.87 and among high school students aged between 14-19 years was %0.5. The overall stuttering prevalence among male students was %1.35 and among female students was %0.8. The prevalence of stuttering in elementary school students was %2.32 in males and %1.8 in females, in guidance school students it was %1.3 in males and %0.4 in females and in high school students it was %0.6 in males and %0.34 in females. The overall sex (male/female) ratio was 1.5/1. This ratio was 1.28/1 in elementary schools, 3.25/1 in guidance school and 1.76/1 in high school. Table 1 illustrates the difference of Odds Ratio (...risk) between males and females, and also between primary, guidance and high school students. As it can be seen, the OR of males is (1.48) higher than females (1). Comparison was significance at the 0.05 level (P-value= 0.034). Also OR in elementary schools is (4.446) higher than guidance (1.848) and high schools (1) at the 0.001 significant level (p –value=0.000).

4. Discussion:

The purpose of the present study was to investigate the effect of language similarities between Kurdish and Farsi on stuttering prevalence among Kurdish-Farsi bilingual students. According to results of the study prevalence of stuttering in the population (1.3 %) is higher than the universally accepted stuttering prevalence (1 %). Therefore this result is in agreement with previous studies. The possible explanation for these differences is that population of the present study was bilingual. Our results were only compatible with Au-Yeung et al (2000). One possible explanation of this discrepancy is that the methodology of these two studies was different and they reported their methodology had non-preventable biases.

On the other hand the stuttering prevalence among participants of this study is lower than results of previous studies such as Travis et al (1937) and

Stern (1984). One possible explanation of this discrepancy is that the two languages involved in the present study have very similar linguistic structures. As mentioned previously, the two languages have the same linguistic ancestor and social, cultural and linguistic contiguity, so they have similar linguistic structures, and many lexical units in the two languages have the same origin. Therefore stuttering prevalence in individuals speaking two linguistically and historically related languages is lower than individuals speaking two different languages. This result confirms the Van Borsel et, al.'s (2001) assumption that prevalence of stuttering in bilinguals is affected by the similarities of the languages involved. According to this result, closely related pairs of languages (e.g. Kurdish and Farsi) demand less resources and mental processing because of learning two similar phonological, lexical and syntactic systems which may cause less disfluencies. Then this explanation does not agree with the Van Borsel et, al.'s (2001) assumption about more disfluencies in bilinguals speaking two similar languages due to more confusions in learning similar linguistic structures of the languages.

The decrease in stuttering prevalence with age is in agreement with other previous results (Bloodstein & Bernstein Ratner, 2008, Craig et al, 2005, Lees et al, 2005). The main reason of which may be spontaneous recovery from developmental stuttering).

The results of sex ratio in the present study do not support previous reports (Bloodstein & Bernstein Ratner, 2008, Craig et al, 2005, Packman et al, 2004). The 3/1 ratio has been reported as a male/female ratio by some authors (Bloodstein & Bernstein Ratner, 2008, Craig et al, 2005, Au-Yeung et al, 2000). According to these authors the male/female ratio increased by age. However overall male/female ratio in the present study was 1.5/1. Our results also indicate that male/female ratio increased in guidance school in contrast to elementary school but decreased in high school again. One possible explanation for these differences is that the society of the present study has cultural characteristics and patriarchy system that implement many psychological pressures and social limitations to females and prevent their educational and social development.

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