Prevalence of Stuttering in Bilingual and Monolingual Primary Schools

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ABSTRACT: The research purpose is to carry out an investigation into the prevalence of stuttering in bilingual and monolingual primary schools. The study population consisted of all the male and female students studying in the primary schools of Tehran and Ardebil. The monolingual students in Tehran and bilingual students in Ardebil comprised the population, out of which a sample of the 550 bilinguals (275 females and 275 males) and 550 monolinguals (275 females and 275 males) were selected using multistage cluster sampling. Methods: This fundamental research employed analytical-descriptive method and Chi-square and Logistic regression were used to analyze the data. The results revealed that there exists a statically significant difference between bilinguals and monolinguals with regard to the incidence of stuttering (level=0.001). Moreover, the ratio of the risk for speaking with stutter between girls and boys is 1 to 1.59, which supports the between-group difference between boys and girls (level=0.02).

Keywords: Stuttering, Bilingual, Monolingual, Primary School.

INTRODUCTION
There have always been intense, ongoing and long-standing debates revolving around the effects of bilingualism on children between the educational researchers and experts. Some believe that learning two languages might exert negative effects on the development of language, educational purposes and cognitive development. Whereas, others believe that bilingualism has a positive effect, and bilingual children not only show academic improvement but also demonstrate ingenuity and high cognitive ability (Dinarvand, 2005). So far, no research has aimed to explore the linguistic ability of bilingual students who stutter in the first and second language. What's more, the results of the research regarding the monolinguals seem to be paradoxical. Therefore, the present research has been carried out to shed light on this subject matter. In order to achieve the objectives of the study, we attempt to answer the following questions:
1- Is there any between-group difference between monolinguals and bilinguals in the incidence of stuttering?
2- What is the ratio of stuttering amongst boys to girls as compared to one another?
3- Is there any difference between boys and girls who speak with stutter?

Theoretical Basis
Bilingualism and multilingualism is now a global phenomenon and we barely know any countries that at least a small part of the population does not speak two or more languages (Park and Park, 2000).
In many countries there are a variety of accents and dialects beside the native language or the official language of education, which asserts great influence upon the issue of learning and education of that specific society. The words, Bilingualism or multilingualism are used about individuals or societies that speak more than one language in their communications. It is hard to understand who is bilingual. There are four language skills that include speaking, listening, reading and writing. One might have the ability of speaking a language while unable to read and write or able to read and comprehend and unable to speak and write.
According to Ratner and Silverman (2002) a bilingual person is someone who uses more than one language and has mastered four language skills, namely speaking, hearing or understanding, reading and writing. Baker (2008) asserts that a bilingual person is someone who can use two languages for specific purposes, in different situations and for different people. Baraheni (1992) knows bilingualism as understanding two different languages in a way which lets him use them according to the situation to fulfill his/her...
communicative needs. On the other hand, stuttering is a multifaceted disorder which refers to the difficulty or delay in the free flow of speech (Battle, 2002).

This is a commonly held belief that bilinguals stammer more often as compared to monolinguals (Battle, 2002; Van Borsel, 2003; Jankelowitz & Bortz, 2002). According to the researchers, starting to learn the second language at the age of language development overloads the spelling function which itself causes difficulty in the mental structure of language learning and smoothness might be put at risk (Karniol, 1999). Researchers have reported that the incidence of stuttering and learning a second language might be linked to one another in bilingual children (Karniol, 1999; Jankelowitz & Bortz). The relationship between learning a second language and the risk of being affected by stuttering is brought to the light (Van Borsel, 2003).

Conventional assumptions about the cognitive theories were based on the belief that bilinguals have two balloons in their brain that act against one another. This belief led to the formation of the independent fundamental performance in bilinguals asserting that the expansion of a balloon contracts another balloon, that is to say that learning a language may hinder and district the development of another language. Thompson (1952) believes that bilingualism is a major obstacle in the path of mental development and young children who are bilingual experience less mental growth and language proficiency.

Another model which has been proposed and developed by Baker (2008) is the joined fundamental performance of bilingualism. This model asserts that the mental balloons in bilinguals are not separated but are joined like two icebergs which have their bottoms under the surface of water but have two tips above the surface. In other words, bilinguals might have two different outputs but the central processing unit is the same and therefore, these two can be powered by the stimulating engine of one another.

According to the followers of this approach bilingualism exerts positive effects on the cognitive ability of children and their educational growth. While children acquire and enhance their ability in two languages in primary schools, they also obtain in-depth understanding about language and its effective language usage. Children practice language processing specifically when acquiring the related literacy and knowledge of two languages. They demonstrate their ability in the way of classification and organizing method of two languages (Koumines, 2000).

From the viewpoint of threshold theory, bilingualism has three levels, in the first level the bilingual person is weak in both languages and therefore will experience negative cognitive consequences. In the second level the individual is competent in the first language and weak in the second language and will probably experience neither a positive or negative outcome. But on the third level, the individual displays competence in both language and will experience positive effects. This is exactly consistent with equilibrium theory, which asserts that only bilinguals who have equal and balanced status in two languages are successful. Bilingualism has a relative nature and many factors affect it. Therefore, the researchers have categorized it into different types. In natural bilingualism the individual acquires the language in the absence of formal education and through maintaining constant contact with two languages, however in the educational bilingualism, the individual acquires the second language for cultural and educational reasons (Nili Pour, 2002). Some researchers have called this bilingualism as forced bilingualism (Lawrence, 1998). With regard to the age of learning bilingualism is classified into early or middle childhood bilingualism and adulthood or late bilingualism (Nili Pour, 2002; Au-Yeung et al, 2000).

Simultaneous bilingualism as compared to non-simultaneous bilingualism is amongst the existing categories. In simultaneous bilingualism the individuals acquire both languages from the moment of birth but in non-simultaneous bilingualism, acquisition of the second language happens subsequent to having developed the required skills in the native language. Several reports have been presented regarding the complex syntax and difficulty in speaking. Some researchers also believe that the usage of syntax at around age 2 causes stuttering or at least helps it happen (Bloodstein & Ratner and Ratner, 2007; Bloodstein, 2005, Silverman and Ratner, 2002). Moreover, monolingualism has been defined as the ability to use one language, and bilingualism is defined as the ability to use two languages in various situations (Ward Hough, 1990).

Scholars have expressed different views on bilingualism. Some define bilingualism as mastering the second language in the same proficient level as the native language. That is to say that the individual should completely master both languages to use them in different situations and with high proficiency, however, others define bilingualism as the ability to say one sentence in the newly-acquired language (Johnson and Johnson, 1998).

The first type is an extremely rare case for bilingualism. The second type is interesting in itself, but the ability to say only one sentence in the second language is doubtful and of much controversy (Hernandez, Ding & Brian, 2005). In a study on 200 bilingual and monolingual students, their reading comprehension and vocabulary repertoire was examined and results support no significant between-group difference between them.
METHOD

This fundamental research employed analytical-descriptive method.

Statistical Population, Sampling and Data Collection

The study population consisted of all the male students studying in the primary schools of Tehran and Ardebil. The monolingual students in Tehran and bilingual students in Ardebil comprised the population out of which a sample of the 550 bilinguals (275 females and 275 males) and 550 monolinguals (275 females and 275 males) were selected using multistage cluster sampling. A thirty-minute session was held for all the teachers and staff members of the school on stuttering and they were asked to report the suspected cases from among all the 550 students. Next, for definitive diagnosis of stuttering and segregation of the suspected stammerers from those suffering from other kinds of speech disorders, the nominated students were interviewed and assessed by speech therapists for at least 15 minutes. In the present research, the definite diagnosis of stuttering was based on the judgement of speech therapists and the diagnostic criteria in the DSM-IV-TR. These criteria included psychiatric disorder in speech and its timing as follows:

1 - Frequency of the repetition of the part and the whole words and repetition of the monosyllabic words.
2 - Stretching the vowel sounds or pauses (stuck or lock). It should be noted that any of these symptoms or a combination of them should be observed in a speech to diagnose stuttering.

finally, the data were analyzed using SPSS and the statistical methods included Chi-square and Logistic regression which were used to analyze the data.

Findings

Is there any between-group difference between monolinguals and bilinguals in the incidence of stuttering?

In order to answer this question, Chi-square was used. The obtained data revealed that form among 550 of the bilinguals, 13(2.37) individuals suffered from stuttering. This ratio was only 4 individuals (0.76) amongst monolinguals. Results demonstrate statically significant between-group difference. That is to say that the incidence of stuttering is more prevalent amongst bilinguals.

<table>
<thead>
<tr>
<th>Language Status</th>
<th>Index</th>
<th>Diagnosis Status</th>
<th>Total</th>
<th>Level Of Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilingual</td>
<td></td>
<td>Healthy Stutterer</td>
<td>537</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stutter</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>550</td>
<td>0.001</td>
</tr>
<tr>
<td>Monolingual</td>
<td></td>
<td>Healthy Stutterer</td>
<td>546</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Stutter</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>550</td>
<td></td>
</tr>
</tbody>
</table>

What is the ratio of stuttering amongst boys to girls as compared to one another?

As presented in table 2, prevalence of stuttering in male and female individuals is as assessed in the sample, around 16 male students and 10 female students suffered from stuttering which indicates the ratio of 1.59 to 1 in male students as compared to female students.

<table>
<thead>
<tr>
<th>Grade</th>
<th>Gender</th>
<th>Index</th>
<th>Diagnosis Status</th>
<th>Total</th>
<th>Ratio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary School</td>
<td>Male</td>
<td>Frequency</td>
<td>534</td>
<td>16</td>
<td>1 To 1.59</td>
</tr>
<tr>
<td></td>
<td>female</td>
<td>Frequency</td>
<td>540</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

Is there any difference between boys and girls who speak with stutter?

The obtained results using logistic regression demonstrated that there is between-group difference regarding the risk of speaking with stammer in the level of 0.02.

<table>
<thead>
<tr>
<th>Variable</th>
<th>No of diagnosis</th>
<th>Percentage</th>
<th>ratio</th>
<th>Level of sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td>Male</td>
<td>16</td>
<td>2.90</td>
<td>1.59</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>10</td>
<td>1.82</td>
<td>1</td>
</tr>
</tbody>
</table>

DISCUSSION AND CONCLUSION

Due to inconsistencies in the theories and their findings related to the impact of bilingualism on stuttering disorder, this study aimed to assess the prevalence of stuttering in bilingual and monolingual students studying in the
primary school. In general, we sought to answer whether or not the prevalence of stuttering in bilinguals and monolinguals differ from one another. Results revealed that there exists a statically significant difference between bilinguals and monolinguals with regard to the incidence of stuttering (level=0.001). Moreover, the ratio of the risk for stuttering between girls and boys is 1 to 1.59, which supports the between-group difference between boys and girls (level=0.02). The findings of this study are in line with the results obtained by Ratner Silverman (2002), Baker (2008), Baraheni (1992), Battle (2002), Kent (2000), Van Borsel (2003), Jankelowitz and Bortz (2002), Ratner (1999), Baker (2008), Kominus (2000), Nili Pour (2002), Au-Yeung (2000), Bloodstein and Ratner (2007); Bloodstein (2005), Silverman and Ratner (2002), Hernandez, Ding and Brian (2005), and Dinarvand (2005) on the impact of bilingualism on language disorders such as stuttering. As noted in the introduction, despite the obvious differences in the results of the previous studies, most show that prevalence of stuttering is of higher degree among the bilinguals as compared to the monolinguals. It can be mentioned that bilinguals have not been capable of acquiring cognitive dominance as compared to bilinguals in order to speak with mental and verbal concentration to link the different sentences to one another and act more efficiently. Regarding the cultural condition of our country, the higher prevalence of stuttering among bilinguals can be explained.

The study also showed that the prevalence of stuttering is of higher degree in boys than girls. According to a number of researchers, a ratio of 1 to 3 has been announced for men as compared to women. The ability to detect stuttering disorder by teachers, staff and specialists as well as the cultural differences between the students' speech in Tehran and Ardebil can considered as the limitations of this study.

The results of the present study are consistent with the findings of the previous studies and partially corroborate the fact that the prevalence of stuttering in bilingual people is of higher degree as compared to monolinguals. Therefore, it is essential that:

- professionals in education, language teachers and learners avoid prejudice about the ability of bilinguals and monolinguals in learning a new language.

- Bilingual school teachers must cooperate with speech therapist to attend to the conversational and verbal features of students.

It is suggested to hold workshops in different educational grades in order to acquaint parents and school teacher with verbal and conversational features in schools and educational offices.

REFERENCES


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