STUDENTS' CORNER
PILOT STUDY

A cross-sectional analysis of the effects of everyday life situations on stuttering and associated physical features

Mirza Zeeshan Sikandar[1], Muhammad Waqar Naeem[2], Sabiha Iqbal[3], Haleema Nawaz[4], Abeer Ifthikar[5], Syed Imran Ali Shah[6]

Abstract

Objectives: To explore the effects that everyday situations of varying stress/anxiety have on stammering.

Method: The cross-sectional study was conducted in the first six months of 2018 at Central Park Medical College Lahore, and comprised people with stammer. The subjects were categorised into two groups on the basis of severity of symptoms assessed using the fluency severity rating scale. Group A had subjects with mild to moderate stammer, while Group B had those with moderate to severe stammer. An 8-point Likert scale was employed to evaluate responses towards 33 questions of which 30 were situation-based while 3 focussed on physical fitness, blinking and body jerks. SPSS 23 was used for data analysis.

Results: Of the 56 subjects, there were 26(46.4%) in Group A, and 30(53.5%) in Group B. Higher degree of blinking and body jerks were found in Group B ($p<0.05$ each).

Conclusions: Subjects with severe stammer had more body jerks and blinking compared to those with mild to moderate condition.

Keywords: Stuttering, Stammering, Anxiety, Blinking, Physical fitness, Body jerks.

(JPMA 70: 946; 2020). **https://doi.org/10.5455/JPMA.16800**

Introduction

Stuttering / stammering is a speech handicap characterised by involuntary lingual blocks, prolongations and repetitions which make enunciation difficult for the affected individual, thereby hindering communication.[1] Stammering negatively impacts the affected person's quality of life and is usually followed by emotional distress.[2] Severity of stammering may fluctuate from situation to situation depending upon the person's nervousness.[3,4]

Social anxiety plays a key role in determining stammering severity, and has been observed to exacerbate it in particular situations.[5] Anxiety may even cause stuttering in individuals who are not stutterers, depending upon their personality and situational background.[6,7] Stammering may present not only with psychological symptoms, but also with physical symptoms such as frequent blinking and fidgeting.[8] These symptoms have equally been observed in individuals who suffer from generalised anxiety and panic disorders. Excessive blinking is also indicative of the presence of stress and over-thinking.[9] Thus, these factors may be held accountable for the presence of the afore-mentioned symptoms in stutterers, too.

Physical fitness may also affect the degree of stammering. Physically unfit individuals tend to be generally less confident and more anxious about their appearance. Therefore, poor physical health may also contribute to worsening stutterers' anxiety. Furthermore, stuttering has been seen to intensify when individuals become more aware of their surroundings; awareness leads to anticipation of the stutter and ultimately its onset.[10] The current study was planned to investigate the relationship between stammering and various daily life situations encountered by the affected individuals.

Subjects and Methods

The cross-sectional observational study was conducted

[1,4]Student 3rd Year, Central Park Medical College, Lahore, Pakistan; [2,5]Services Institute of Medical Sciences Lahore, Pakistan; [3,6]Central Park Medical College, Lahore-Pakistan.

Correspondence: Mirza Zeeshan Sikandar. e-mail: m.zee.shan@hotmail.com

in the first six months of 2018 after approval from the research committee of the Central Park Medical College, Lahore, Pakistan. The sample for the pilot exploratory study was raised using non-random convenience sampling, and comprised those with stammer aged 17-35 years. Since the local incidence of the condition was not known, no formal sample size calculation was done. Volunteers were briefed about the study prior to data collection, and informed consent was procured. The Fluency Severity Rating Scale (FSRS)[11] was used to categorise stutterers into two groups. The subjects were asked to read out a paragraph in the native Urdu language. The baseline requirement is at least 200 words, and we used a paragraph with 241 words. The speech samples were recorded to measure the impaired rhythm and the rate of stutter. The participants were categorised on the basis of the frequency of their blocks.[12] Group A comprised mild to moderate stutterers, whereas Group B included moderate to severe stutterers. Additionally, the participants were asked to answer 33 questions based on daily life situations to assess the occurrence of stuttering, and to determine the frequency of blinking, body jerks and effects on physical fitness. The questionnaire was concise and comprehensive covering routine of everyday life for the assessment of stammering severity. It was administered in English as the participants were well-versed in the language. An 8-point Likert scale was used to record the subjective personal responses from the participants. Relevant demographic data, including age and gender, was also recorded. Responses were collected anonymously.

The collected data was analysed using SPSS 23. Qualitative variables were expressed as frequencies and percentages. Median±interquartile range (IQR) was calculated for quantitative variables based on the Likert-scale values of the responses. Mann Whitney U-test was used to compute differences between the groups. P<0.05 was considered statistically significant.

Results

Of the 56 subjects, there were 26(46.4%) in Group A, and 30(53.5%) in Group B. The mean age in Group A was 22.88 years compared to 21.73 years in Group B with no significant age difference (p>0.05). All participants were male. Significant disparity in stammering between the groups was found in response 25 of the 30 situations (Table).

Significantly higher degree of blinking and body jerks were found in Group B compared to Group A (p<0.05 each) (Figure 1).

No significant difference in physical fitness was noted between the two groups (Figure 2).

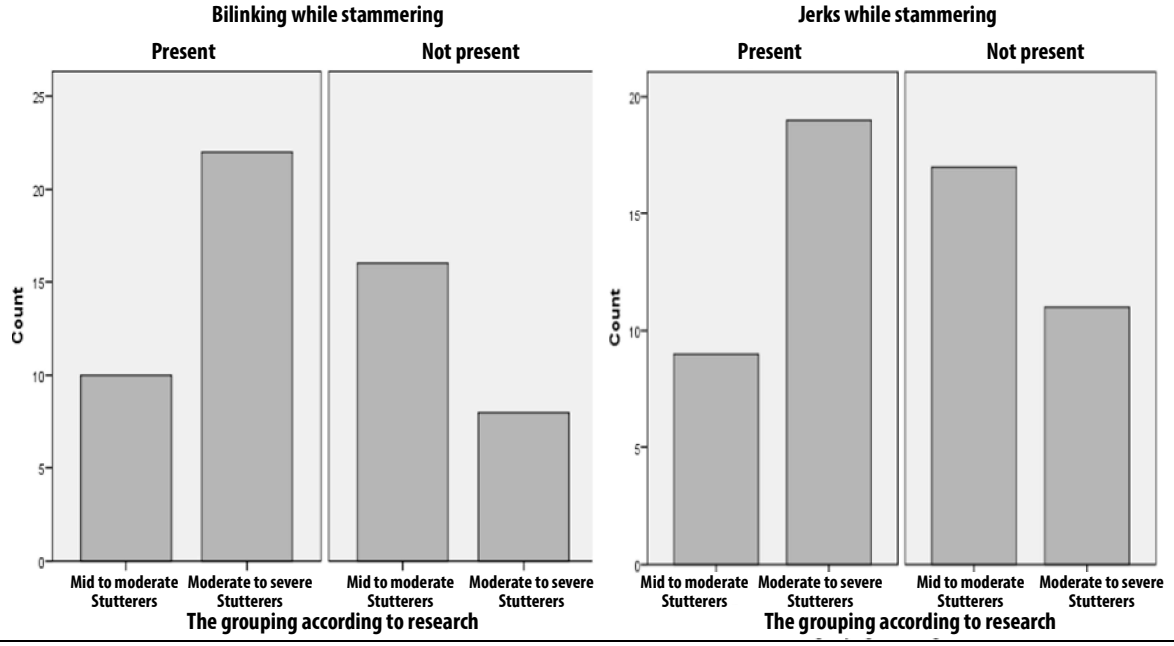

Figure-1: Blinking and jerks in the two groups.

Table: Comparison of the two groups.

Everyday situation	Group A (n=26) Median±IQR.	Group B (n=30) Median±IQR.	*p*-value
While talking to friends	5.00±1.0	5.00±1.0	0.268
While talking to strangers	5.00±1.0	6.00±1.0	0.000*
While talking to parents	5.00±1.0	5.00±1.0	0.004*
During viva/interview	5.00±1.0	7.00±1.0	0.000*
While public speaking	6.00±2.0	7.00±2.0	0.008*
Talking on phone	5.00±1.0	5.00±1.0	0.032*
While singing	5.00±1.0	5.00±2.0	0.332
During recitation	4.00±1.0	5.00±2.0	0.013*
On public occasions	6.00±1.0	6.00±1.0	0.098
In hotels and shops	6.00±1.0	6.00±2.0	0.184
During stress	6.00±2.0	7.00±3.0	0.000*
Introducing yourself to a stranger	5.00±1.0	6.00±1.0	0.016*
Talking to the opposite gender	6.00±1.0	6.00±1.0	0.013*
While questioning	5.00±1.0	6.00±2.0	0.001*
While whispering	5.00±1.0	5.00±1.0	0.012*
While talking loudly	5.00±1.0	6.00±2.0	0.007*
Answering roll call in class	5.00±1.0	5.00±2.0	0.532
Conversing with a friend while walking on a street	5.00±1.0	6.00±1.0	0.000*
Talking when anxious	5.00±1.0	6.00±1.0	0.000*
Talking during fight/angry	5.00±1.0	7.00±2.0	0.000*
Talking after being interrupted	5.00±1.0	7.00±1.0	0.000*
During parties/hangouts	5.00±1.0	6.00±1.0	0.000*
When someone makes fun of you	5.00±1.0	6.50±2.0	0.007*
While talking to yourself	5.00±2.0	6.00±1.0	0.009*
While traveling	5.00±1.0	6.00±1.0	0.012*
While talking to someone you don't like	5.00±1.0	6.00±2.0	0.003*
While expressing your emotions	5.00±1.0	6.00±1.0	0.022*
Representing yourself at some forum	5.00±1.0	6.00±1.0	0.009*
When your stammer is discussed	5.00±1.0	7.00±1.0	0.001*
When confused	6.00±1.0	7.00±2.0	0.004*
Physical fitness	4.00±1.0	3.00±3.0	0.442
Jerks while stammering	2.00±1.0	1.00±1.0	0.034*
Blinking while stammering	2.00±1.0	1.00±1.0	0.009*

*p-value considered significant at <0.05.

Discussion

Stammering has adverse effects on stutterers' mental and emotional health and can be detrimental to their overall well-being. Stammering prompts self-isolation, anxiety, shame, embarrassment and feelings of inadequacy. Emotionally-taxing situations e.g. interviews, speaking to the opposite gender, public-speaking, bullying etc. notoriously trigger stammering.[13,14] The findings o the current study are consistent with this assertion. Moderate to severe stutterers demonstrated greater degrees of stammering when compared with the mild to moderate group, both quantitatively and qualitatively.

Contrarily, the incidence of stammering is greatly reduced when stutterers are less self-aware and more comfortable with their surroundings e.g. when talking to parents and friends or in gatherings where they are provided with good moral and social support.[15] Our findings support this belief, and concur with another study which claims that support groups help mitigate stuttering.[16]

As discussed earlier, stammering engenders the emergence of anxiety with there being a higher prevalence of anxiety disorders among stutterers compared to the general population.[17] The presence of anxiety aggravates symptoms of stuttering; when anxious, higher frequencies of blocks and repetitions are observed.[18]

Stammering also includes physical symptoms like excessive blinking, facial tics, lip tremors and fidgeting.[8] Presumably, the severity of stammering determines the frequency of the mentioned symptoms. In the present study, moderate to severe stutterers showed greater degrees of blinking and body jerks when compared with the mild to moderate group. Stress caused by stammering may be responsible for the emanation of these symptoms.[9]

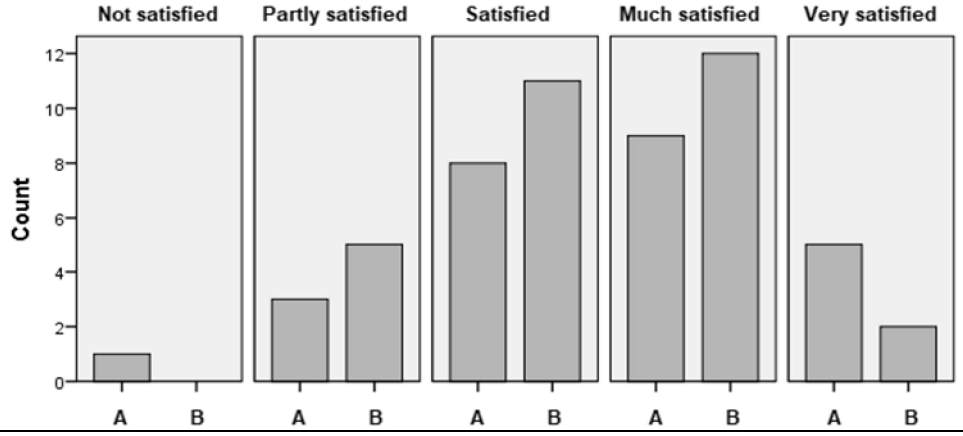

Figure-2: Physical fitness in the two groups.

Our study found no significant link between physical fitness and severity of stammering. This may be because stammering is a developmental/neurogenic disorder rather than a physical one.[19] However, another study reported significant improvement in stammering with aerobic exercise.[20]

The cross-sectional design of the current study did not allow for evaluation of a causal relationship between the studied parameters which is a limitation. Moreover, female stutterers were not included in the study. The researchers had no control over the precision with which the volunteers filled in their responses and is another aspect which demands consideration while designing future studies.

Conclusions

Subjects with severe stammer had more body jerks and blinking compared to those with mild to moderate condition. No significant difference in physical fitness was noted between the two groups.

Disclaimer: None.
Conflict of Interest: None.
Source of Funding: None.

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