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The Relationship between Stress and Reading Comprehension Performance of Iranian Stuttering Individuals

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ABSTRACT

Introduction: Mental disorders in people who stutter are controversial among researchers. The 3 types of stuttering are developmental stuttering, neurogenic stuttering, and psychogenic stuttering. The exact cause of stuttering is unknown. This study aimed at investigating the relationship between Stress and Reading Comprehension Performance of Iranian Stuttering Individuals.

Materials and Methods: The current research was descriptive quantitative research with a correlational approach. The research tools included Zong's Self-Rating Anxiety Scale (S.A.S) questionnaire. The face validity, reliability and internal consistency of the questionnaire were examined. Five patients (5 adult men aged 14 and 19 with symptoms of stuttering and stress) were selected voluntarily among those who referred to the speech therapy clinic in Ilam.

Results: To test the normality and abnormality of the research data, the Kolmogorov Smirnov statistics for stuttering and stress were 0.176 and 0.198, respectively, and the significance levels for both variables were greater than 0.05, none of which were statistically significant. In other words, the normality of the data was confirmed, which showed that Pearson's parametric tests can be used. The results indicated a relationship between stress and vulnerability ($P < 0.05$).

Conclusion: It has been concluding that there is a significant relation between stress and stuttering, indicating that stress and social phobia are common among people who stutter.

Keywords: Stress, Stuttering, Reading comprehension performance, Iranian stuttering individuals

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Introduction

Stuttering is a systemic problem. It involves the speech, thoughts, and feelings of the speaker, but it may also affect communication with partners, other respondents, unknowing and knowing

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audiences, and bystanders (1, 2) According to Shapiro, stuttering is defined as the "individualized and involuntary interruptions in the forward flow of speech and learned reactions there to interacting with and generating associated thoughts and feelings about one's speech, oneself as a communicator and the communicative world, in which one lives" (3). In adults, it is a social communication disturbance, which is chronic. One of its major components is the individual's response to the "loss of control" during the stuttering event.

As such, individuals who stutter often require assistance on fluency-increasing strategies and techniques, as well as attitudes and feelings about living with a chronic communication disability (3, 4). Stuttering can be identified as both a speech event and a disorder (5). Stuttering is a developmental speech disorder (6) and often begins during the preschool years when child's speech and language skills are developed (7).

Recent studies show that different factors have a role in stuttering such as genetics, inheritance, language skills of the child and the child's ability to move his mouth when talking, the child's mood and the reaction of people who are around the child(8).

The result of a study conducted by Anderson showed that there is a potential association between the child's nature and stuttering that can be adjusted by parental behaviors (9). When parents are talking with a stuttering child, they may indicate a feeling of fear, anxiety, and shame, restlessness and pity with their gesture or body movements. Their negative feeling and attitude have an effect on the child at risk for stuttering. The child feels the way he speaks is bad so tries not to stutter which will lead the child to struggle with words more. When a child is more aware about the problem in speech, he may experience a feeling of guilt, hopelessness, low self-esteem, and expect social disapproval (9). Stuttering is a disorder in the normal fluency and time patterning of speech(10). Craig A showed that the prevalence of stuttering was about 1%, and its rate of incidence was 4-5% across the entire life span in the state of New South Wales, Australia (11-13). According to the results, the prevalence of stuttering was 0.72% across the whole population, with the highest and lowest prevalence rates having been in younger children (1.4–1.44) and in adolescents (0.53), respectively. In addition, the male-to-female ratio ranged from 2.3:1 in younger children to 4:1 in adolescents, with the ratio of 2.3:1 registered across all ages. Household members were also interviewed by asking whether anyone in the household had ever stuttered. If the answer was 'yes', the same corroborative questions would be asked. These data along with the prevalence data provided an estimate of the incidence or risk of stuttering, which ranged from 2.1% in adults (21–50 years old) to 2.8% in younger children (2–5 years old), and to 3.4% in older children (6–10 years old). In addition, the prevalence of total speech disorders was 14.8% in the Iranian community, among whom 13.8% had a speech sound disorder, 1.2% had the stuttering disorder, and 0.47% had a voice disorder (14). Negative consequences of stuttering start from age 4-5 and continues throughout the life (15, 16). These problems become more complex in adolescence, which include anxiety, social communication, and educational problems (16, 17). People with stuttering, due to the listeners' negative reactions and negative attitude to their speeches, demonstrate avoidance behaviors, anxiety, aggression, with conflicts existing in most of them (18, 19). These negative experiences lead to the feelings of embarrassment, shame, and lack of academic achievement. The probability of having psychological, behavioral, and emotional disorders, especially anxiety, is higher among people who stutter (20, 21).

Kefalianos and Reilly found out that stutterers' temperament would not lead to anxiety (22). Some stuttering preschool children experience negative peer

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responses and difficulties in social interactions with their peers as a consequence of their stuttering (23), Although results of research on adaptability are not the same, new research using observations rather than parent assessment questionnaires suggests that CWS have lower adaptability and a lower capacity for regulating their attention than CWNS (24). Iverach, O'Brian, Kefalianos, and Rreilly reviewed several studies to determine the scope of research on the timing of anxiety onset in stuttering. Researchers claim that anxiety in stuttering people might increase over time until exceeding normal limits in adolescents and adults (25).

Iverach and Rapee reviewed some studies to determine the level of social anxiety in people who stutter and to suggest that research accomplished prior to the turn of the century produced evidence of raised anxiety in people who stutter (26). Because of the proven impact of stuttering on a person's life, psychosocial wellbeing, and the quality of life, studying mental disorders in PWS is of great importance in treating stuttering. Against this background, this study aims to review three common mental disorders, including anxiety, social phobia, and depression among PWS was (27).

Materials and Methods

This research was designed to study the relationship between stress and reading comprehension performance of Iranian stuttering individuals. The present study is a non-experiment quantitative research design using a correlation approach in order to determine whether this relation is positive or negative. Research tools included data collection forms and Self Rating anxiety scale questionnaire (S.A.S) by Zung (28). The formal validity, reliability, and internal consistency of the questionnaire were assessed. The severity of their stuttering was analyzed by the standard questionnaire of Severity Stuttering Instrument by the speech therapist. The population of the present study consisted of people with stuttering disorder who referred to Roshd speech-therapy clinic in Ilam. Among those referred to the clinic, two patients were selected voluntarily. This study was conducted on 5 male adults with 14 and 19 –year- old with stuttering and stress signs. In this study, the researcher asked participants to read from a text during two separate half-hour sessions, then reading comprehension questions were asked by the speech therapist.

Participants received explanations on how to do the test, and they were given enough time to complete the questionnaire. After completing the questionnaire, the necessary information related to each subject, such as age, sex, and education, was also gathered. Speech-Language Pathologists (SLPs) were contacted regarding potential participants.

SLPs communicated with potential participants and their parents, who directly contacted the authors. After an explanation of the study and invitation to participate, the appointments were scheduled. The diagnosis of stuttering was confirmed, using: A. Standardized procedures to evaluate stuttering behaviors, including part-word repetitions, tense pauses, and prolongations. B. The participants' history of stuttering (i.e. onset, duration, familial report, and developmental data). C. 200-word monologues, reading samples, and conversational speech samples. D. The severity of stuttering ratings using the stuttering severity instrument and scales measuring attitudes and feelings toward stuttering. This inventory was used to assess the stuttering disorder.

Results

This study was conducted on 5 adults (four boys and one girl), 1 sever, 3 intense, and 1 moderate (Table 1), with 14- and 19-year-old with stuttering and stress signs.

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Table 1. The relationship between gender and age and scores of the participants' stuttering and stress.

Subjects	Gender	Age	Stuttering Score	Stuttering Severity	Stress Score
First	Boy	14	36	Sever	70
Second	Boy	16	34	Intense	69
Third	Boy	18	31	Intense	67
Fourth	Girl	15	27	Moderate	53
Fifth	Boy	16	24	Intense	60

The results in Table 1 indicate that there is a negative and significant relationship between participants' stress and their stuttering. In other words, having stress results in more stuttering.

To test the normality and non-normality of the research data, the Kolmogorov-Smirnov statistic for stuttering and stress scores are 0.176 and 0.198, respectively, and the significance levels for both variables are greater than 0.05, none of them are statistically significant, in other words, the normality of the data is confirmed, which shows that Pearson's parametric tests can be used (Table 2).

Table 2. Kolmogorov-Smirnov test to check the normality of the sample data.

Variable	Number	Z-Statics	Significance level	Result
Stuttering Score	5	0.176	0.200	Normal
Stress Score	5	0.198	0.200	Normal

The question of the research was to determine the relationship between stress and stuttering in people with stuttering. At the significant level of 0.024 with the correlation coefficient of 0.925 we have the realization of stuttering and stress among the participants. The results showed that F coefficient was significant ($P < 0.001$), so the predictor stress could predict the stuttering. It means the more the learners have stressed the worse they are considering the important issue of stuttering.

Discussion

It is possible to assume that stuttering is a psychological and social phenomenon. Stuttering students also fear and avoid social situations because they consider themselves vulnerable to negative evaluations of others. When people are in a social position, they assume that others are negatively monitoring and evaluating their appearance, behavior, and function. In this study the relationship between stress and stuttering in reading comprehension performance has been investigated. It has been conducted that there is a significant relation between stress and stuttering. In this study, the researcher asked participants to read from a text during two separate half-hour sessions, then reading comprehension questions were asked by the speech therapist. During their reading, the speech therapist considers their physical signs including; disturbing sounds: Noisy breathing, whistling, finning, blowing, clicking sounds, facial emoticons including fast jaw movements, sticking out the tongue, pressing the lips, contraction of the jaw muscles and finally head movements.

The results also indicate that stress and social phobia are common among people who stutter, and in many studies, the average of depression was higher in people who stutter than in the normal population. These findings are in line with Malik and Balda (29) who on ducted a study to investigate if any relationship exists between psychological stress and academic achievement of high IQ adolescents. Academic achievement was found to be negatively and significantly correlated with

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all types of stress except existential stress. In addition, therapists must be encouraged to address mental health issues in this group of people. Besides, it is recommended that people who stutter be referred to relevant experts for the diagnosis and treatment of mental health disorders. The result is somehow in agreement with the findings of Stewart, Lam, Beston, and Wang, Maville & Huerta, Casiano (30-32) came to the conclusion that there is a significant and negative relationship between stress and academic achievement and since speaking is a part of academic achievement, these findings are in line with the results of the present study.

Conclusion

It has been concluding that there is a significant relationship between stress and stuttering, indicating that stress and social phobia are common among people who stutter. The study also found that the average of depression was higher in people who stutter than in the normal population.

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