

Association between stuttering and psychosocial complications in Saudi Arabian individuals: A pilot study

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ABSTRACT

Background: Stuttering is a multifaceted speech disorder that affects the interpersonal communication. It has a significant psychosocial impact on individuals who stutter and on their families. Stuttering is associated with substantial psychosocial morbidity, including social or generalized anxiety, stigmatization or discrimination, impaired self-image, and poor quality of life. Psychosocial morbidity, such as the one reported among stuttering individuals, may provoke suicidal ideation that varies with gender, age, geographic region, and psychosocial reality. The present research aimed to determine the association between stuttering and psychosocial complications in Saudi Arabian individuals. **Materials and Methods:** This study targeted a total of 107 male patients with stuttering. Only 59 of them fulfilled both inclusion and exclusion criteria. The researchers formulated a valid questionnaire to obtain quantifiable data for analysis. The questionnaire consisted of 76 questions spanning various domains. Following the data collection, a quantitative analysis was carried out. **Results:** A total of 79.5% of the participants were adolescents or young adults between the ages of 16 and 26. Among them, 17.8% had a later onset of stuttering. The age of onset tended to be higher than 5 years, with over 80% of respondents reporting an age of onset in the last 5 years of their age. Among the participants, 57.6% reported a positive family history of stuttering. **Conclusions:** The present study reports that patients who stutter (PWS) are at a higher risk of developing negative thoughts leading to suicidal attempts due to social anxiety and depression. Therefore, future studies should be designed to establish the relationship between stuttering and suicidal thoughts in order to establish policies that may improve the quality of life of those who stutter.

Keywords: Stuttering, patients who stutter, PWS, Saudi Arabia

Background

Stuttering is a multifaceted speech disorder. It has a significant psychosocial impact on individuals who stutter and their families.

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It is associated with substantial psychosocial morbidity, including social or generalized anxiety, stigmatization or discrimination, impaired self-image, and poor quality of life.^[1-3] Children who stutter maintain a more negative attitude toward speech than their same-aged peers, and this negative attitude worsens with age.^[4]

Stuttering strongly involves social anxiety disorder.^[5] It has been observed that 60% of adults with stuttering suffer from social anxiety disorder. Because they stutter, they are thought to be of lower intelligence than the average individual, which adds to

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their anxiety. Among sufferers, these perspectives lead to low self-image and negative attitudes. Consequently, people who stutter avoid social interaction.^[6]

Stuttering may provoke suicidal ideation, which itself may vary with gender, age, geographic region, and psychosocial reality.^[7] Studies have reported that anxiety disorders are significantly associated with suicidal ideation.^[8] However, anxiety is a weak risk factor for suicidal attempts. Such patients are prone to develop suicidal thoughts due to anxiety and depression. However, various studies have reported a robust relationship between anxiety/depression and suicidal ideation.^[9]

Studies have shown that patients who stutter (PWS) receive poor cognitive test scores and are often bullied. In addition to the problems that patients experience, the caregivers or close relatives of the stuttering individual are affected in terms of the time and care they give to sufferers, along with the costs arising from the provision of mental health care.^[10]

Herein, the association between stuttering and psychosocial complications in Saudi Arabian individuals was studied. This is an important topic in family medicine as family physicians play an important role in the assessment of PWS. They are often the first to address the condition with parents or patients.

Materials and Methods

The search was carried out in August 2018, a comprehensive search was carried out in the PubMed, OVID Medline, OVID Embase, and Cochrane databases. The search terms included “stuttering,” “personality,” and “Saudi Arabia.” No articles with a primary focus on stuttering and its effect on personality were identified. The primary objective of this research was to determine the association between stuttering and psychosocial complications. This was mediated through a patient-directed questionnaire that the researchers designed.

We sought access to PWS and achieved a modest sample size of 107 patients in the social media as in a group. The researchers created inclusion and exclusion criteria to ensure that the participants selected for data collation were credible and appropriate. The inclusion criteria were as follows: living in Saudi Arabia, a history of stuttering for at least 1 year, individuals of any age, and both male and female genders. The exclusion criteria were as follows: formally diagnosed mental illness or personality disorder, current hospitalization for another primary disorder, drug-induced stuttering, prisoners, and minors who failed to provide consent from a legal guardian. To obtain quantifiable data for analysis, the researchers created a questionnaire. They deemed this form of data collation to be appropriate for a cross-sectional study because it facilitated convenience sampling. Because the research was conducted in Saudi Arabia, the questionnaire was delivered in Arabic through electronic media. The reasons for disseminating this questionnaire electronically were twofold. Firstly, the researchers wanted the respondents to be as honest

as possible when answering the questions and felt that the privacy accorded to them by means of electronic dissemination facilitated this honesty. Secondly, electronic dissemination allowed respondents in remote areas to gain access to the questionnaire and did not impose the inconvenience of traveling upon them. Informed consent was taken before administration of the questionnaire. The respondents' privacy was respected, and all respondents were granted anonymity with respect to the data analysis.

One hundred and seven male patients with stuttering responded and completed the questionnaire. Only 59 of them fulfilled both inclusion and exclusion criteria. The questionnaire consisted of 76 questions spanning various domains. These included basic demographic data, educational background, medical history, baseline fluency, onset and characterization of stuttering, personal and environmental factors, and communication skills. The questionnaire can be found appended to this paper as Annex A – PWS Questionnaire. The researchers collated and analyzed the data from the 59 completed questionnaires to identify relevant factors or parameters which could have significantly contributed to the development of personality traits in PWS. The data were analyzed independently and extracted manually by three of the researchers. The responses were collated in Microsoft Excel. Following this, a quantitative analysis was carried out.

Ethics approval and consent to participate

This study was ethically approved by the Institutional Review Board (IRB) of College of Medicine, Prince Sattam bin Abdulaziz University. All study participants gave informed written consent before participation. For minors, the written consent of their legal guardian was obtained.

Results

Demographic data and characterization of stuttering

All 59 respondents who completed the questionnaire were male PWS. A majority (79.5%) of them were adolescents or young adults between the ages of 16 and 26. Table 1 contains a break-up of respondents by age. A majority of the respondents (17.8%) had a later onset of stuttering, past the age of 11. When referencing Figure 1 below, a general trend can be observed. The age of onset of stuttering tended to be higher than 5, with over 80% of respondents reporting an age of onset of 5 years. Family history of stuttering was also explored in the patient-directed questionnaire, with over half (57.6%) of the respondents indicating the presence of it. The strength of the hereditary elements of PWS was also assessed by asking respondents with a positive family history about the relatedness of their relatives with the PWS. Unsurprisingly, 86.4% of respondents with a positive family history of stuttering had a first-degree relative with stuttering.

Impact of stuttering on learning

The patient-directed questionnaire assessed the impact of stuttering on learning and revealed that 88.1% of respondents

Table 1: Demographic break-up of data

	Frequency	Percent
Age category		
0-10	0	0
11-15	3	5.084
16-21	27	45.762
22-26	20	33.898
>26	9	15.254
Stuttering and suicide attempts		
Yes	20	33.898
No	39	66.101
Stuttering and participation in social events		
Not at all	10	16.949
Sometimes	41	69.491
Always	8	13.559
Family history of stuttering		
Yes	34	57.627
No	25	42.372
The degree of relatives		
First degree	51	86.440
Second degree	8	13.559
Leaving job or school because of stuttering		
Yes	15	25.423
No	44	74.576
Impact of stuttering on learning process		
Difficult	15	25.423
Easy	7	11.864
Middle	37	62.711
Encouragement of stuttering students by teachers		
Yes	9	15.254
No	50	84.745
Behavior of other students toward a stuttering student (teasing or bullying)		
Yes	52	88.135
No	7	11.864

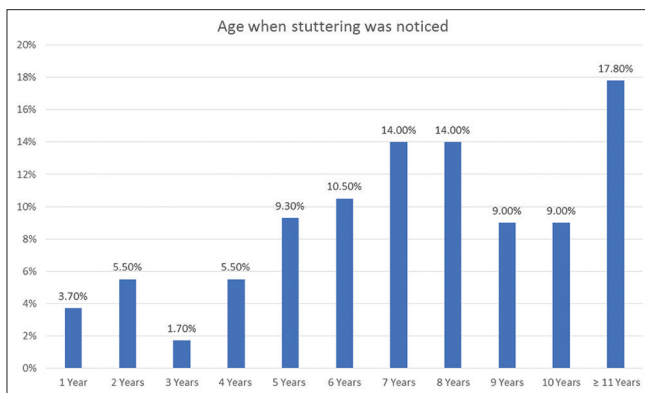


Figure 1: Age when stuttering was noticed

experienced average or significant difficulties with learning, which they had attributed to their stuttering. The study also explored the financial and academic implications of stuttering; 25.4% of respondents had to leave their academic institutions or places of employment because of their stuttering.

Impact of stuttering on behavior

The patient-directed questionnaire assessed the impact of stuttering on behavior. Among the respondents, 88.1% stated that they had experienced bullying or teasing from others with regards to their stuttering. This tied in with the fact that only 13.5% of respondents indicated that they always participated in social events. The results suggest that PWS may voluntarily exclude themselves from social participation to avoid the feelings of embarrassment or shame which arise from continued teasing or bullying.

Of note, 33.9% of respondents indicated that they had attempted suicide at least once. This is an alarming statistic. Future questionnaires may be designed to further explore the ties between clinical depression and PWS. PWS may be at higher risk of developing major depressive disorder (MDD). Therefore, future studies may consider incorporating an abbreviated psychiatric assessment within the questionnaire.

Discussion

Although advances in genetic research and clinical studies have linked stuttering and genetic inheritance, to date, no consensus has been reached about this relationship.^[1] The genes identified in stuttering point to a single process, indicating a definite genetic involvement.^[11] It is proposed that intracellular trafficking deficits are involved in neurologic disorders such as stuttering.^[12] Genetic involvement in stuttering and its neuropathology are still unexplained. More genes must be identified before a definite relationship between genetics and stuttering can be established. In the present study, through a patient-oriented questionnaire, 57.6% of responders reported a positive family history of stuttering, with 80% of those histories involving first-degree relatives. Yairi and Ambrose^[13] studied the epidemiology of stuttering by reviewing the available literature and reported that genetics contributed to stuttering in 80% of cases involving males and 85% of cases involving females. They also reported that 30%–60% of stuttering cases had a positive family history compared to only 10% of controls. Additionally, a significant difference in the incidence of stuttering among monozygotic and dizygotic pairs favored the existence of a genetic involvement in stuttering. More studies on DNA sequencing techniques and genetic analyses are necessary to determine the exact role that genes play in the existence of stuttering.

Stuttering has a significant association with the learning disabilities of PWS. Typically, stuttering begins at around age 5, when individuals start school. Children who stutter face unique challenges at school, affecting their learning environment, abilities, and behavior. Stuttering may affect children’s participation in class and other events. Moreover, stuttering children are at risk of being bullied by other children. Among children who stutter, a negative environment at school leads to the development of anxiety and depression later in life. The present study revealed that 88.1% of respondents

experienced average or significant difficulties with learning and this is attributed to their stuttering. Hence, the present study reported a significant effect that stuttering has on the education of PWS. Schools should maintain a friendly environment and employ teachers who have received training in dealing with stuttering or specialized children. Klompas and Ross^[14] reported that stuttering significantly affected the educational careers of PWS, as well as their relationships with classmates and teachers. In turn, these effects on education influenced the professional careers of PWS and, by extension, their socioeconomic statuses. For instance, stuttering decreased the chances of employment, interfered with work performance, and affected job promotions.

Over half of the children who stutter are teased and bullied at school and in the society. Usually, PWS are considered as having low intelligence and are less popular than their same-aged peers. Most often, children who stutter do not answer questions that their teachers ask. These children may not want to learn difficult words because they fear that others will tease or mock them. All these issues negatively affect their education. The most important, but less-studied, aspect of stuttering is the suicidal thoughts that PWS experience. In the present study, 33.9% of respondents indicated that they had attempted suicide at least once. This is an alarming statistic, requiring urgent and appropriate solution. Published reports have discussed the cases of people who stuttered or stammered and who consequently tried to commit suicide.^[15] The factors behind suicidal thoughts require evaluation.

Conclusion

There is a significant association between stuttering and psychosocial complications in Saudi Arabian individuals and their families. Stuttering significantly affects the learning abilities, socioeconomic status, and behavior of PWS. Further research and questionnaires should be designed to further explore the relation between clinical anxiety/depression and PWS. The present study reported that, due to social anxiety and depression, PWS are at a higher risk of developing negative thoughts leading to suicidal attempts. Therefore, future studies should be designed to establish the relationship between stuttering and suicidal thoughts, allowing for the creation of policies that may improve the quality of life of those who stutter.

Ethical consideration

The authors certify that they have obtained all appropriate patient consent forms. In the form, the patients have given their consent for their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published, and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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