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Research Paper

Prevalence of Social Anxiety in Indian Adults Who Stutter: A Comprehensive Analysis

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ABSTRACT

Background: Stuttering is a speech disorder with a complex, multifactorial origin that frequently intersects with social anxiety, significantly affecting the quality of life of an individual. Unfortunately, little research has explored the prevalence of social anxiety in Indian Adults Who Stutter. **Aim:** To assess the prevalence rate and levels of social anxiety among Indian adults who stutter. **Method:** A study was conducted on 65 individuals with stuttering and 65 controls without stuttering. To measure social anxiety, the Liebowitz Social Anxiety Scale (LSAS) was used. Statistical analysis included z-tests and percentage analysis to compare social anxiety between the groups. **Results:** The results indicated that Adults with stuttering exhibited significantly higher levels of social anxiety compared to controls. Notably, female participants with stuttering demonstrated a 100% prevalence rate of social anxiety. **Conclusion:** This study highlights the elevated risk of social anxiety among Indian Adults Who Stutter, particularly among female populations. The results highlighted the significance of customised therapies aimed at addressing social anxiety in adult Indians who stutter to improve their overall quality of life.

Keywords: *Stuttering, Social Anxiety, Indian, Adults Who Stutter (AWS), Females Who Stutter, Liebowitz Social Anxiety Scale (LSAS)*

Speech is the foundation of our ability to communicate ideas, feelings, and messages, making it an essential component of human connection. To build societal ties, voice opinions, and form relationships, vocal engagement is necessary. On the other hand, 1% of people experience difficulties with verbal communication due to stuttering. Stuttering is a disorder that affects the rhythm and fluency of speech by causing interruptions in speech flow, repetition, or prolongations of sounds or syllables[1].

Stuttering is a dominant condition with a lifetime incidence of about 5%[2]. When speech and language abilities develop in preschool, usually between the ages of two and five, developmental stuttering normally starts[3.] without any brain damage or other identifiable cause. Nearly 4% of the population recover either naturally or with the help of speech-

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language pathologists but around 1% of the adults lead to persistent developmental stuttering[4]. Females generally exhibit a higher recovery rate from stuttering compared to males. The adult gender ratio shifts to 4:1, where four males to one female [5]. The recovery prediction in affected children remains challenging, as there is currently no available method or test for such forecasting [6]. The probable reason for the onset and sustenance of stuttering is genetic[7]. Gene analysis has discovered mutations in four distinct genes (AP4E1, GNPTG, GNTAB, and NAGPA) [8, 9,10] to date. These mutations might collectively explain 20% of stuttering cases in individuals.

Stuttering adds a layer of complexity to the act of communication. It can contribute to developing the risk of many psychological issues [11] e.g. feelings of frustration, self-consciousness, and social anxiety. Many studies have shown that stuttering and social anxiety are comorbid [12 - 22]. Social anxiety disorder is a severe and ongoing dread of embarrassment and unfavourable social or performance-based circumstances [7]. Physical and motor symptoms including blushing, shaking, sweating, and stumbling over words are linked to it[7]

At the time of evolution, human beings lived in groups where they fulfilled their basic needs for survival and reproduction [23]. It provided them security as they were afraid to live alone. So evolutionary theories indicate the experience of social anxiety is the evolved mechanism to avoid exclusion or rejection from the group. Being vigilant in social interaction acts as a warning system that alerts individuals to potential threats from others and motivates them to behave in a way that may increase their acceptance against rejection in group[24]. Social approval and a good reputation can give access to many vital resources and support from society [25]. Competing for resources and positions within a group heightens an individual's sensitivity to other's opinions and critical judgments, potentially triggering social anxiety. The person who Stutter observe and assess their social surroundings for cues relevant to themselves as they think negatively about their speech and think that others will negatively evaluate it, the anxiety they may feel causes them to avoid most social environments[26].

The way social anxiety manifests among individuals who stutter in India may be influenced by cultural factors, such as societal attitudes towards speech impediments, communication styles, and expectations placed on individuals in social settings.

Stuttering is often stigmatised globally, but the nature and extent of stigma can vary across cultures. In India, individuals who stutter may face discrimination, bullying, and social exclusion due to misunderstandings and negative stereotypes about stuttering. Addressing these issues requires an understanding of the specific cultural context. This study examines the level of social anxiety of an Indian person who stutters and compares it with control and also with people from other countries who have persistent stuttering disorders.

METHODS AND MATERIALS

Research Design

This study used a comparative cross-sectional design to compare the responses of two distinct groups Adults Who Stutter (AWS) and Adults Who Do Not Stutter (AWNS).

Participants

Adults Who Stutter (AWS)

The AWS group consisted of 65 individuals who were selected through purposive sampling. These participants came to speech therapy sessions for stuttering at the Neurology department, KGMU, Lucknow, and self-identified as person who stutter.

Adults Who Do Not Stutter (AWNS)

The AWNS group comprised 65 randomly selected individuals from ERA University, Lucknow. This group was matched with the AWS group based on the inclusion and exclusion criteria, with the sole exception that they did not have a history of stuttering since childhood.

Inclusion criteria

The inclusion criteria for this study were defined as participants must have experienced stuttering since childhood, which applied only AWS; ages ranging from 18 to 50 years; willing to provide informed consent for study participation; inclusion of individuals identifying as male, female, or others; confirmation of physical health status; attainment of a minimum education level equivalent to Class Xth or higher; and Indian nationality. These criteria were established to ensure the inclusion of individuals meeting specific demographic and clinical characteristics deemed relevant to the research objectives while maintaining participant safety and ethical considerations.

Exclusion Criteria

Participants were excluded from the study if they presented with any of the following conditions: identifiable psychiatric and/or neurological disorders that could potentially influence the study outcomes; intellectual disabilities; other speech-related issues such as lisping, mispronunciation, or similar problems; reported history of hearing impairment; and any neurological impairments that might impact speech production or cognitive-linguistic functions. These exclusion criteria were implemented to ensure the homogeneity of the study sample and minimize confounding variables that could affect the validity and reliability of the findings.

Demographic Data sheet

A demographic data sheet was prepared separately to collect the details of participants for name, age, gender, educational qualification, medical history to screen the sample, and information about any person who stutters in the family.

Tools

A 24-item evaluation called the Liebowitz Social Anxiety Scale (LSAS; 1987) is used to diagnose social anxiety disorder. Higher scores indicate more fear and/or avoidance. It assesses fear and avoidance in social and performance circumstances over the last week. Six scores are obtained from the scale: complete fear, complete avoidance, fear of social circumstances, fear of performance situations, avoidance of social settings, and avoidance of performance situations. There are confirmed strong correlations between extreme anxiety and dread of social interaction (.94) and fear of performance (.92) as well as high internal consistency [43.]

Ethical Considerations

The study adhered to ethical standards approved by the Institutional Ethics Committee. Following their explanation of the study's objectives, the methods, and their freedom to

withdraw at any moment without facing any repercussions, all participants gave their informed permission.

Data Collection

Data was collected through structured interviews and standardized questionnaires administered by a clinical psychologist and a speech therapist. The LSAS was specifically used to gather detailed information on participants' levels of social anxiety, concentrating on avoidance and fear behaviours in a range of performance and social contexts.

Statistical analysis

The statistical analysis most pertinent to the research objective was the descriptive statistical analysis percentage and z-test using MS Excel.

RESULTS

The study's results comprehensively analyse the demographic factors and social anxiety levels within the AWS and AWNS. The participants were categorized based on age and gender. The following sections outline the key findings based on the provided table.

The study comprised participants within two groups AWS and AWNS. As Shown in Table No: 1. The AWNS predominantly consisted of individuals aged 18-45, while the AWS predominantly included individuals aged 18-41. A gender breakdown revealed notable differences between the AWNS and AWS. Out of the total no of 65 participants in the control group (AWNS), there were 40 males and 25 females. In contrast, the clinical group (AWS) exhibited a higher proportion of males 55 and a lower proportion of females 10.

When examining the prevalence of social anxiety across both groups, it was found that the AWS reported a substantially higher level (52.30%) compared to the AWNS (24.60%). The prevalence of social anxiety in males was higher in the AWS (43%) than in the AWNS (25%). Remarkably, all females who stutter reported social anxiety (100%), while in the females who don't stutter, 24% of females experienced social anxiety.

The AWS displayed a higher proportion of individuals experiencing severe anxiety (15.38%) compared to the AWNS (4.62%). Marked anxiety levels were different in AWNS (7.68%) and AWS (16.92%). The AWNS had a higher prevalence of moderate anxiety (12.30%) compared to the AWS (20.00%).

Table No. 1: Comparison between groups based on social anxiety

VARIABLE	**Adults Who Don't Stutter (AWNS) (N=65)**	**Adults Who Stutter (AWS) (N=65)**
Age	18-45	18-41
Mean Age	22.64	25.34
Male	40	55
Female	25	10
Social Anxiety	24.60%	52.30%
Social Anxiety in Male	25%	43%
Social Anxiety in Female	24%	100%
Severe Anxiety	4.62%	15.38%
Marked Anxiety	7.68%	16.92%
Moderate Anxiety	12.30%	20.00%

A statistically significant difference was found in social anxiety between both groups at the 0.05 level, z-value = 3.4047 ($p < 0.0007$).

Table No 2: Distribution based on the severity of social anxiety in Indian women who stutter

Social Anxiety in Indian Women Who Stutters (n=10)	
Severe Anxiety (n=5)	50%
Marked Anxiety (n=3)	30%
Moderate Anxiety (n=2)	20%

As shown in the Table No: 2

The study aimed to assess the levels of social anxiety among Indian women who stutter. The data revealed that 50% of the participants experienced severe anxiety, indicating that half of the sample suffered from the highest level of social anxiety, significantly impacting their daily interactions and quality of life. Additionally, 30% of the participants were identified as having marked anxiety, which, while not as debilitating as severe anxiety, still profoundly affected their social interactions and personal well-being. The remaining 20% of the participants were categorized as having moderate anxiety, experiencing it at a more manageable level compared to those with severe or marked anxiety. The high prevalence of severe and marked anxiety among the participants highlights the substantial psychological burden faced by Indian women who stutter.

Table No 3: Comparison of the countries based on social anxiety in AWS

Country	**N**	**Social Anxiety in Adult who stutter**
Pakistan[27]	80	37.5%
Australia[28]	200	40%
Egypt[29]	120	41%
United States[30]	89	50%
Japan[31]	88	52.27%
India*	65	52.30%
Iran[32]	33	66.4%

** Data of the present study*

From this data, it is evident that social anxiety in adults who stutter is a prevalent issue globally, with notable variation between countries. Iran has the highest prevalence at 66.4%, while Pakistan has the lowest at 37.5%. India and Japan have similar rates, with 52.30% and 52.27% respectively, indicating a significant impact of stuttering in these regions. The United States, Australia, and Egypt exhibit moderate prevalence rates at 50%, 40%, and 41% respectively. This variation underscores the importance of considering cultural, and environmental factors in understanding and addressing social anxiety among AWS across different countries.

DISCUSSION

The purpose of the study was to find out the prevalence and severity of social anxiety between AWNS and AWS with a specific focus on the Indian population. The findings highlight significant disparities between these groups. Additionally, the data revealed striking differences in social anxiety levels in women who stutter. The study provided critical insights into the psychological impact of stuttering in an Indian context.

The group of AWNS and AWS differs in the domain of mean age. These differences are understandable because the AWNS group was randomly selected from Era University, Lucknow where most of the samples were students and the group of AWS was taken from the Neurology Department, KGMU, Lucknow. Samples were mixed age groups some were students and some were Professional and non-working. So, this could explain the age as those in the AWNS group were younger than AWS.

The ratio of male and female participants for the AWS group is approx. 5:1 Whereas for the AWNS group, the ratio is 8:5. Prior studies have revealed that the natural recovery rate of female stutters is high which results in the male-female ratio in adults being 4:1 [5], the result of this study also supports previous research.

The prevalence of a higher rate of social anxiety among AWS is 52.30% reported, whereas the AWNS's prevalence rate is 24.60%. The result was based on the total score obtained from the Liebowitz Social Anxiety Scale (LSAS) on both scales: fear and avoidance. There is also a difference between the severity of social anxiety in both groups only 4.62% of AWNS experience severe anxiety but 15.58% of AWS experience severe anxiety same with marked and moderate anxiety where AWNS has 7.68% and 12.30% respectively but in AWS this is 16.92% and 20.00% respectively. The difference is due to the total score obtained on both the fear and avoidance scales the person who scores high on both scales experiences severe anxiety which means that he feels fearful and avoidant in almost every situation. Whereas those who have marked and moderate anxiety only experience fear or avoidance in some situations. Most moderate anxious AWS have performance anxiety which means that they perform comfortably when alone but have trouble completing in front of others, e.g. Delivering a speech in front of a group of people or speaking at a meeting.

The result of the present study also revealed the disparity between male and female social anxiety in AWS where 43% of males suffer from social anxiety but 100% of females experience social anxiety. Existing literature also indicated that the level of social anxiety is higher in females compared to males. In the present study, all Indian women who stutter exhibit social anxiety where 50% of women have severe anxiety 30% have marked and 20% have moderate anxiety. This spotlights a unique social pressure on women in Indian Society.

During data collection and personal interviews with participants, several insights emerged about the challenges faced by Indian person who stuttered. Respondents revealed that proving their normalcy in society is difficult, as their fluency issues are beyond their control. In Indian culture, stuttering (stammering) is often wrongly linked to psychological weaknesses such as nervousness, low confidence, or intellectual disability. The public attitude towards stuttering is generally negative, with people frequently perceiving those who stutter as less competent or less deserving, and questioning their intelligence. Consequently, the lives of individuals who stutter can become very challenging due to the lack of societal awareness. Caregivers are often uninformed about the disorder, mistakenly viewing stuttering as a habit that can be overcome/cured with self-control. This misconception leads to the belief that failure to stop stuttering is due to a lack of willpower or intellectual disability. As a result, individuals who stutter often grow up feeling guilty, believing their stutter is their fault, despite the reality that fluency issues are not within their control.

In numerous cultures, speech disorders like stuttering carry a significant social stigma. Comparing data from India with other countries provides a broader understanding of how

social anxiety in person who stutter varies across different cultures, India and Japan have high scores for social anxiety in adults who stutter where Iran ranks the highest and Pakistan ranks lowest. These variations may be attributed to societal pressures, awareness of speech disorders among the public, and the coping mechanisms employed by individuals who stutter in response to negative evaluations. The Public Opinion Survey of Human Attributes-Stuttering (POSHA-S) The research revealed that in Western cultures such as North America, Western Europe, and Australia, the public perceptions of stuttering were typically more favourable, marked by a decrease in stigma and exclusion [33, 34, 35, 36, 37]. However, these findings were not consistent across all studies. In contrast, attitudes in Asian countries such as China and potentially Japan were found to be more negative, with stronger stereotypes and more prejudicial and discriminatory views towards stuttering [38, 39, 40]. Due to the perception that a kid's condition represents the entire family, Asian Indians prefer to keep a disabled child hidden from the public[41]. Similar observations on people's expectations for disabled children's involvement in family events, playtime with neighbourhood kids, and school attendance have been made in Greek, Arab, and Chinese cultures[41]. However, in Pakistan the caregivers were not well-informed about the epidemiology, causes, treatment, and prognosis of childhood stuttering. However, stuttering is no longer a stigma for them; they treat individuals who stutter as normal, offer support, encourage communication, and are keen to collaborate with therapists [42].

CONCLUSION

This study highlighted the significant psychological impact of stuttering on an Indian person, particularly in terms of social anxiety and its level of severity The findings demonstrate the necessity for thorough, culturally aware treatment plans to meet the linguistic and psychological requirements of individuals who stutter. Future research should further investigate the underlying mechanisms of these anxiety issues and develop targeted interventions to support Indian Adults who stutter especially women. It is strongly recommended that stuttering specialists work together to design culturally sensitive educational public awareness programmes to help people who stutter and their families.

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Conflict of Interest

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