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Multifaceted Effects of Stuttering and Anxiety on Students in Tertiary Education

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Abstract:
Introduction: Overt perception of stereotypical threats by stutterers is reflected in their elevated levels of anxiety and reduced ability to establish and maintain effective communicative relationships across contexts and ages.
Methods: A quantitative and descriptive approach was used, including standardized stuttering and anxiety assessment tools; also, a questionnaire for the perception of threats.
Results: State anxiety was highly correlated with stuttering measures as well as speech related anxiety (r>.6); self-reported fluency was strongly correlated with traditional fluency measures (r>.6); state anxiety was found to be a stronger predictor of quality of life, self-efficacy and overall negative impact ratings than stuttering severity (R^2=.658, .473 and .779 respectively).
Discussion: Perception of negative stereotypes was high among participants, which negatively impacted their lives through personal and social aspects.
Limitations: A larger sample size would increase the generalization of the study.
Conclusions: Stutterers in tertiary education need professional and institutional support to maintain overall well-being and effective academic relationships.

Key words: stuttering, anxiety, quality-of-life, self-efficacy, tertiary education.

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Introduction

Stuttering as a multifaceted neurodevelopmental disorder has been historically characterized by perceptible atypical disruptions in delivering speech (Smith & Kelly, 1997; Ambrose & Yairi, 1994). It is not considered a uniform condition where its' manifestation and development involve genetic predisposition (Frigerio-Domingues et al., 2019), adverse emotional and cognitive consequences (Ambrose & Yairi, 1994) along with primary dysfunctional control of speech motor varying across a range of severity, context, duration, social interaction as well as satisfaction with performance (Connery et al., 2021; Karimi et al., 2018). Stuttering in adulthood is frequently linked with escalated difficulties in social life and psychological aspects involving adverse stereotypes, professional and academic disadvantages, avoidance behaviours, fear and anticipation of being harmed, decreased quality of life, as well as worsened anxiety levels (Blumgart et al., 2010; Cream et al., 2003). The impact of stuttering has also been observed on educational attainment. Specially, the severity of stuttering has been found to be related to educational attainment (O' Brian et al., 2011). Consequently, in a study conducted by MacKinnon et al. (2007), a male with stuttering was labelled by university students as anxious, shy, nervous, tense, passive, avoiding, self-distasteful and hesitant, among others. Adverse affective experiences of persons with stuttering (PWS) could be possibly linked to avoidance of social reactions or penalties caused by stuttering or futile attempts to communicate (Iverach et al., 2017; Tran et al., 2011). University students with dysfunctional attitudes and self-esteem were found to be more depressed and stressed (Asici, E., & Sari, 2022). Public stigmatization of PWS and their receiving of prejudiced or intentional emotional reactions, directed discriminatory behaviours, as well as negative stereotypes are demonstrated in previously conducted research (Tellis & St. Louis, 2015). Constant and widespread negative perceptions, which could be self-confirmed by receivers, are defined as stereotypical threat (Steele & Aronson, 1995). The common stereotype of PWS is characterized as being less confident, more nervous, and inherently less intelligent, compared to those who do not. Stereotype threats are documented to adversely impact PWS's comprehensive quality of life pervasively, making them prone to experiencing bullying, futile in forming relationships or facing difficulties to do so, being isolated and left with limited career options (Erickson & Block, 2013; Bricker-Katz et al., 2009). As a result, PWS's increased vulnerability to stereotype threats, self-esteem and associated issues may be contributed to and propagated by their misperception of their effective communication abilities (Werle, 2020). Showcasing acute awareness and internalising public stigma leads to debilitating PWS' mental and physical well-being (Boyle & Fearon, 2018). To minimize adverse and negative feedback often received from the public, PWS uses coping behaviours defined as safety behaviours in the form of reducing speech output and showing avoidance

(Lowe et al., 2017; Iverach & Rapee, 2014). One of the prominent emotional adaptive responses comorbid with stuttering to cope with challenges or threats to physiological, behavioural and cognitive aspects is defined as 'Anxiety' (Tovote et al., 2015). Social situationspecific aggravated state anxiety is defined as communication apprehension (McCroskey, 1984). Despite anxiety and stuttering being widely associated, convincing and transparent evidence has not always been reported regarding this relationship (Iverach et al., 2011). The role of anxiety as both a causal and aggravating factor has been suggested by studies in stuttering (Tomisato et al., 2022; Siegel & Haugen, 1964). Highly elevated levels of social anxiety caused by diverse and maladaptive coping strategies of adult stutterers have been reported in recent studies (Tomisato et al., 2022). Task-related subjective measures of stuttering and anxiety indicated a strong relationship between their level of severity (Ezrati-Vinacour & Levin, 2004). Moreover, compared to fluent speakers, PWS performed worse on attentional tasks by about half a standard deviation (Doneva, 2020). Refraining from participating in communication would negatively impact PWS' satisfaction and ability to play efficient social roles (Yorkston et al., 2014). Lower and reduced self-efficacy levels caused by social and situation-specific avoidance have been reported to be associated with severe social anxiety and related impairment (Iverach & Rapee, 2014). In adults with stuttering, reporting of this reduced self-efficacy level is greater than that of those reporting elevated levels of self-esteem and personal control (Boyle, 2016). Self-efficacy has further been identified as a potential predictor of adult stutterers' quality of life, which further demands re-examination and understanding of the interaction of stuttering and self-efficacy. Quality of life is defined by individuals' understanding of his/her life status regarding expectations and standards according to his/her culture and values. The negative impact of stuttering has also been found on adult stutterers' overall vitality and quality of life (Yaruss, 2010). Given the misperception of stuttering due to incompetence caused by reduced self-efficacy and anxiety as observed in the literature, the risk of being discriminated against in academia is plausible. Stereotypical threats and related active awareness have serious implications for the academic performance of stutterers and can be the same in tertiary education. Evidence of the inverse relationship of self-reported severity of stuttering to educational achievement is also available (O'Brian et al., 2011). Therefore, multifactorial relationships and multidimensional overlapping impacts are evident regarding stuttering severity, level of anxiety, efficacy, quality of life, as well as related negative stereotypes in stutterers' lives. However, sufficient studies are not available regarding the situation and severity of these relationships in tertiary education.

1 Aim

This study aimed to explore multifactorial relationships in terms of different stuttering and anxiety measures and their multidimensional impacts on aspects such as overall negative impact, overall quality of life and self-efficacy based on self-reported outcomes of students in tertiary education. In such a process, negative stereotypes and adverse affective issues related to tertiary academia were also explored.

2 Methods

2.1 Participants

This study aimed to explore the relationship of stuttering with other stuttering measures and anxiety, as well as their influence on both quality of life and self-efficacy based on self-reported measures. Furthermore, the stereotypes and associated factors related to stuttering in tertiary education were also explored. The relationship of stuttering with anxiety and their influence on both quality of life and self-efficacy based on self-reported measures was also explored. A total of 66 participants responded to the questionnaires regarding this study. Of them, 34 were male and 32 were female. Purposive sampling was incorporated for this study. The age range of the participants was between 20 and 24. Participants were recruited from 4 different universities (University of Dhaka, Noakhali Science and Technology University, University of Barisal, University of Rajshahi, Bangladesh). Participants ranged from 1st year students to postgraduate level students. The primary recruitment criteria were active students of tertiary education level and residents of the dormitory. Written consent was obtained from participants by direct contact. Out of 72 contacts, 66 responded. Participants reported not having any significant medical complications other than fluency issues.

2.2 Instrumentation

2.2.1 Measures of stuttering severity

2.2.1.1 Percent Syllable Stuttered (PSS)

Percent Syllable Stuttered is defined by the percentage of stuttered syllables in a speech sample. On a severity scale, stuttering severity is specified as mild (below 5%), mild to moderate (5-10%), moderate (10-15%), moderate to severe (15-20%) and severe (above 20%).

2.2.1.2 Self-reported stuttering severity measures

Stuttering Generalization Self-Measure (SGSM) self-reported questionnaire measures stuttering severity in 9 different speech situations on a 9-point rating scale. Severity range is specified as no stuttering (Score: 1) to severe stuttering (Score: 9) (Alameer et al., 2017).

2.2.2 Measures of anxiety

2.2.2.1 The State-Trait Anxiety Inventory (STAI)

STAI is a 40-item self-reported anxiety measurement psychological tool. The initial 20 items capture behaviours related to state anxiety, whereas the last 20 items are designed to capture trait anxiety-related behaviours. Higher scores reflect high levels of anxiety. Common classification of anxiety level based on STAI scores is specified as no or low (20-37), moderate (38-44) and high (45-80) level (Spielberger et al., 1999).

2.2.2.2 Depression, Anxiety and Stress Scale - 21 (DASS 21)

DASS-21 is a 21-item three-dimensional self-reported measure on a 4-point scale. Common classification of anxiety level based on DASS 21 scores is specified as normal (0-7) to extremely severe (20+) (Norton, 2007).

2.2.2.3 Self-reported speech anxiety measures

SGSM questionnaires employ self-reported questions related to speech anxiety in 9 different speech situations on a before/after basis. Responses are captured on a 5-point rating scale, where a score of 1 denotes no anxiety, to a score of 5 denotes severe anxiety in these speaking situations (Alameer et al., 2017).

2.2.3 Self-reported quality of life and overall impact measures

The Overall Assessment of the Speaker's Experience of Stuttering (OASES) is designed in 5 subsections to measure the impact rate of stuttering on four different aspects, including quality of life for stutterers, on a 5-point Likert scale. Impact ratings range from mild (Score: 20.0-29.9) to severe (75.0-100) (Yaruss & Quesal, 2006).

2.2.4 Self-reported self-efficacy measures

The New General Self-Efficacy Scale (NGSE) is an 8-item 5-point Likert scale measuring self-efficacy. Respondents' self-belief in their efficacy is measured by calculating average ratings. A high average rating reflects high efficiency (Chen et al., 2001).

2.3 Data collection

Multidimensional effects of stuttering and anxiety were measured using standardized tools. A stuttering severity measurement was done by taking 5-minute samples of speech for each participant. Alternatively, the SGSM stuttering severity section was also employed to capture the self-reported stuttering severity level. Additionally, STAI Y form and DASS 21 questionnaires were employed to measure their level of anxiety. Subsequently, self-reported speech anxiety level was measured using the SGSM speech anxiety section. The impact of stuttering on their quality of life and self-efficacy was measured by incorporating the OASES section 4 and the NGSE scale, respectively. Furthermore, a self-developed questionnaire regarding negative stereotypes and associated factors was also employed. Following written consent, the data collection procedure was initiated. Participants did not receive any assistance in answering questionnaires.

2.4 Data analysis

IBM SPSS version 20 was used for the quantitative analysis of the data collected. Descriptive statistics were calculated for the mean, standard deviation, number, minimum and maximum values of variables under study. The reliability measures were calculated by means of Cronbach's Alpha for different anxiety scales. Correlation among anxiety measures and different fluency measures was calculated by Pearson's Correlation. Additionally, standard multiple linear regression was incorporated to see the effect of different anxiety and stuttering severity on stutterers' quality of life and self-efficacy level. Furthermore, a descriptive quantitative analysis of perceived negative feelings associated with stuttering, awareness and issues related to availing services, nature of academic relationship of stutterers, difficulties in academic performance, as well as considering stuttering as a barrier to thrive in tertiary education was also done.

3 Results

3.1 Demographic information

The mean age of the participants was 22. The mean state anxiety score according to the STAI scale was 57 (maximum 75, minimum 39), and the mean score of self-reported speech anxiety was 4.1 (maximum 4.9, minimum 3.1). The mean score of per cent syllable stuttered (PSS) was 16.7% (maximum 25.2, minimum 10.2), and the mean score of self-reported fluency (SRF) was 7.1 (maximum 8.7, minimum 4.8). Additionally, the mean score of self-reported quality of life measure using the OASES scale was 74.8 (maximum 94.3, minimum 55.2), the mean score of overall impact was 69.9 (maximum 87.9, minimum 52.1), and the mean score of self-reported self-efficacy measure using the NGSE scale was 3.12 (maximum 3.75, minimum 2.5). Results are summarized in Table 1.

Table 1

Descriptives

		Count	*Mean*	*Percentage %*	*Maximum*	*Minimum*
Gender	Male	34		51.51		
	Female	32		49.49		
Age			22		24	20
Trait			47		56	35
State			57		75	39
DASS 21			18		30	11
PSS			16.7		25.2	10.2
SRF			7.1		8.7	4.8
Speech-Anxiety			4.1		4.9	3.1
OASES_QL			74.8		94.3	55.2
OASES-impact			69.9		87.9	52.1
NGSE			3.12		3.75	2.5

3.2 Coherence of anxiety measures

Internal consistency measures of the STAI Y form scores and DASS 21 scores were judged using Cronbach's Alpha measure, and the measurement value of Alpha (.834) suggested good reliability among scores. Inter-item correlation for cumulative scores ranged from .579 to .879, where state anxiety scores were highly correlated with DASS 21 scores than trait anxiety scores. Results are summarized in Table 2.

Table 2

Consistency of anxiety measures

Cronbach's Alpha		*Inter-Item Correlation*			*Corrected Item-Total Correlation*	*Cronbach's Alpha if Item Deleted*
		Trait	*State*	*DASS_21*		
.834	Trait	1.000	.879	.579	.841	.704
	State	.879	1.000	.685	.883	.733
	DASS_21	.579	.685	1.000	.667	.840

3.3 Relationship among anxiety and stuttering severity measures

To examine the quality and direction of the linear relationship of speech anxiety, PSS and SRF scores with state anxiety scores, as well as PSS scores with SRF scores, Pearson's correlation coefficient (r) was measured. The bivariate correlation was positive, strong and significant ($p<.001$) in every case. The measurement value of r (66) while exploring the relationship of state anxiety with speech anxiety, PSS and SRF was .603, .607 and .641, respectively. Additionally, the relationship of PSS with SRF was r (66)=.676. The assumptions of normality,

linearity and homoscedasticity were found to be supported. Results are summarized in Table 3.

Table 3

Bivariate correlations of state anxiety with speech anxiety, PSS and SRF; PSS with SRF; n=66

State Anxiety			*PSS*
Speech Anxiety	.603**		.676**
		SRF	
PSS	.607**		
SRF	.641**		

3.4 Impact of anxiety and stuttering on quality of life, self-efficacy and overall negative impact

Standard multiple regression was used to see the variability in quality of life, self-efficacy and overall negative impact due to state anxiety and PSS. State and PSS accounted for 65.8% variability in perceived quality of life of stutterers regarding the OASES scale, R2=.658, p<.001. While the State anxiety score recorded a higher value (Beta=.683, p<.001), the PSS score recorded a bit less (Beta=.564, p<.001). Thus, an increase in state anxiety scores by one standard deviation would increase the negative impact on quality-of-life ratings by .683 units. State and PSS accounted for 47.3% variability in perceived self-efficacy of stutterers regarding the NGSE scale, R2=.473, p<.001. While the State anxiety score recorded a higher value (Beta=.481, p<.001), the PSS score recorded a bit less (Beta=.359, p<.001). Thus, an increase in state anxiety scores by one standard deviation would decrease self-efficacy scores by .481 units. State and PSS accounted for 77.9% variability in perceived overall negative impact on stutterers' lives regarding the OASES scale, R2=.779, p<.001. While the State anxiety score recorded a higher value (Beta=.774, p<.001), the PSS score recorded a bit less (Beta=.631, p<.001). Thus, an increase in state anxiety scores by one standard deviation would increase the overall negative impact on stutterers' life ratings by .774 units. Results are summarized in Table 4.

Table 4

Standard regression results

Dependent Variable	*Independent Variables*	R^2	*Significance (p)*	*Beta*	*Significance (p)*
OASES_QL	State	.658	.00	.683	.00
	PSS			.564	.00
NGSE (Self-efficacy)	State	.473	.00	-.481	.00
	PSS			-.359	.00
OASES Total Impact	State	.779	.00	.774	.00
	PSS			.631	.00

3.5 Issues perceived by stutterers in tertiary education

3.5.1 Awareness and issues related to receiving services

Table 5 represents issues related to awareness and the reality of service availing. Interestingly, 72.7% of the participants never sought counselling, and 89.1% have never availed speech therapy. 68.8% of them are unaware of initiatives undertaken by respective institutions. Additionally, 34.4% considered that stuttering-induced anxiety hindered seeking help from authority, and 79.3% thought that seeking help would not be received constructively and considerately.

Table 5

Awareness and receiving services; n=66

	Yes	*No*
Availed counselling ever	27.3%	72.7%
Availed speech therapy ever?	10.9%	89.1%
Any known program undertaken by the institution to address stuttering	31.2%	68.8%
Stuttering-induced anxiety discourages seeking help from authorities	34.5%	65.5%
Seeking help from the authority will be received in constructive and considerate ways	20.7%	79.3%

3.5.2 Reality of academic relationship

The majority of the participants (58.3%) thought they were bullied by peers for only stuttering to some extent, and 37.6% completely blamed stuttering for this. 54.4% thought they did not get positive responses from peers and teachers at all. In fact, 55.4% thought they got somewhat fewer responses in the classroom or related academic matters, followed by 34.4% thought they got fewer responses. Interestingly, 64.5% were completely uncomfortable seeking help from teachers, and 65.3% thought they faced extreme difficulties in establishing and maintaining relationships with peers and teachers. 78% of them were completely uncomfortable or disfluent in expressing them in group work. Significantly, 82.5%

completely thought that they were unable to contribute to group work to their satisfaction. Results are presented in Table 6.

Table 6

Academic relationship; n=66

	Not at all	*Somewhat*	*Completely*
Bullied by peers for stuttering only	4.1%	58.3%	37.6%
Gets positive response from peers and teachers	54.4%	38.1%	17.5%
Gets less response from teachers in the classroom or regarding academic matters	10.2%	55.4%	34.4%
Faces difficulties in establishing or maintaining relationships with peers and teachers	4.0%	30.7%	65.3%
Comfortable in seeking help from teachers regarding academic matters	7.0%	29.5%	64.5%
Able to express myself fluently or with comfort in group work	5.6%	16.4%	78.0%
Able to contribute as per ability in group work	3.3%	14.2%	82.5%

3.5.3 Issues related to academic performance

Table 7 represents issues related to academic performance. The majority (57.6%) thought that they were often discouraged from asking questions about stuttering only, while 29.2% thought that they were always discouraged from doing so. 54.5% often discovered them passive (reticent, silent or hesitant) in the classroom. Significantly, 36.7% always discovered them as such. Moreover, 79.6% thought that fear always arose in oral evaluation, and 76.2% always considered them less efficient in oral evaluation in comparison with written methods. Furthermore, the majority (often = 34.3% and always = 27.8%) thought that stuttering hindered regular class attendance. Also, the majority of them refrained from attending classroom presentations, and 26.9% always did so. They also refrained from answering known answers, and this number was significant (always = 40.7%).

Table 7

Academic performance; n=66

	Never	*Often*	*Always*
Discouraged from asking questions for stuttering only	13.2%	57.6%	29.2%
Discover myself as reticent, silent or hesitant in the classroom	8.8%	54.5%	36.7%
Fear arises during oral evaluation	2%	18.4%	79.6%
Less efficient in oral evaluation than in written evaluation	3.1%	20.7%	76.2%
Stuttering discourages the retention of regular class attendance	37.9%	34.3%	27.8%
Refrain from attending the classroom presentation	31.7%	41.6%	26.9%
Refrain from answering known answers	27.1%	32.2%	40.7%

3.5.4 Negative feelings

81.1% completely considered stuttering as a problem, and 78.4% were not satisfied with this situation at all. The majority (84.9%) felt helpless with this condition, and 24.7% felt complete helplessness. 33.2% felt completely less competent for stuttering, and 64.7% felt so to some extent. Significantly, 23% felt complete self-distaste while 55.8% felt such to some extent. Self-controlling ability in oral expression was also impacted negatively, as 49.2% thought that they were totally unable to control them in oral expression. Results are presented in Table 8.

Table 8

Negative feelings; n=66

	Not at all	*Somewhat*	*Completely*
Stuttering is considered a problem.		18.9%	81.1%
Satisfied with this situation	78.4%	21.6%	
Feel helpless with this situation	15.1%	60.2%	24.7%
Feel less competent due to stuttering	2.1%	64.7%	33.2%
Self-distaste/antipathy due to stuttering	21.2%	55.8%	23.0%
Self-controlling ability in oral expression	49.2%	34.6%	16.2%

3.5.5 Stuttering as a barrier to thrive

75.8% of the participants completely thought that they could do better in the absence of stuttering, and the majority (somewhat = 45.7% and completely = 42) blamed stuttering only for not doing better. Fear of being negatively evaluated was a concern that restrained the majority of the participants from expressing thoughts (somewhat = 54.6% and completely = 29%). Significantly, 49.2% completely thought that maintaining attention was being hindered by anxiety induced by stuttering, while 46.7% thought so to some extent. 69.2% thought that they were being evaluated negatively for stuttering, while this thought was complete in 18.1% participants. Additionally, 67.2% thought stuttering impacted their communicative competency negatively to some extent, while 29.8% thought so completely. Finally, 16.9% had mentally accepted their current condition completely, and 45.5% did so to some extent. Results are presented in Table 9.

Table 9

Stuttering as a barrier to thrive; n=66

	Not at all	*Somewhat*	*Completely*
I could do better without stuttering	2.0%	22.2%	75.8%
Consider stuttering only for the inability to do better	12.3%	45.7%	42.0%
Refrain from expressing thoughts in fear of being evaluated negatively	16.4%	54.6%	29.0%
Stuttering-induced anxiety hinders maintaining attention	4.1%	46.7%	49.2%
Being evaluated negatively for stuttering	12.7%	69.2%	18.1%
Stuttering negatively impacts communicative competency	3.0%	67.2%	29.8%
Mentally accepted the current situation	37.6%	45.5%	16.9%

4 Discussion

The focus of this study was to explore the relationship of stuttering measures as well as the relationship of anxiety with stuttering to see their multidimensional effects on students in tertiary education. In doing so, stuttering-associated negative stereotypes and associated factors were also explored. The primary measure of stuttering severity was PSS, which evoked a mean score of 16.7, suggesting that the average participants were moderate to severe stutterers. Participants ranged from being a moderate stutterer to a severe stutterer. Self-reported fluency measure using SGSM fluency rating reported a mean score of 7.1, which supports the PSS measure. Self-reported fluency ratings were strongly correlated with PSS measures incorporated by professionals. This finding was consistent with the previously published report (Horton et al., 2024). The average level of anxiety among participants was reported as “High level of Anxiety” using the STAI Y form for both Trait (47) and State (57) anxiety, where state anxiety scores were high among participants. Anxiety level measured by the DASS-21 scale also suggested that the average participant had “Severe Anxiety”. Furthermore, the average self-reported speech anxiety score (4.1) using the SGSM scale suggested a moderate level of anxiety, with a maximum score suggesting a close to severe level of anxiety. Internal consistency of State and Trait anxiety with anxiety measures of DASS 21 indicated a good and acceptable level of internal consistency. However, inter-item correlation indicated that State anxiety scores were highly correlated with DASS 21 scores than Trait anxiety scores. Evidence of State anxiety being correlated with other measures of anxiety, such as task-related anxiety (TRA), is available (Ezrati-Vinacour & Levin, 2004). As a result, State anxiety scores were further used to explore relationships with speech anxiety, PSS and self-reported fluency rating. Strong and positive bivariate correlations were observed while exploring the relationship of State anxiety with speech anxiety, PSS and self-reported fluency ratings. Surprisingly, State anxiety scores were a little strongly correlated with self-reported fluency ratings than stuttering

severity measured by PSS scores. However, due to a more objective procedure of measuring stuttering, PSS scores were being used along with State anxiety scores to explore their predictive values over 3 dimensions: OASES quality of life impact ratings, overall negative impact ratings and NGSE self-reported self-efficacy measures. Notably, average OASES quality of life ratings for participants indicated that them to be moderately to severely impacted by stuttering negatively. Additionally, overall impact ratings were aligned with quality-of-life ratings, while rating values were lower than the latter. Average NGSE self-reported self-efficacy scores could not yield a higher score, as the mean score was 3.12, where a mean score of 3 could be interpreted as being at a neutral state of capability. This state of uncertainty could complement further complications in other domains, as self-efficacy as a construct has been identified to lessen the adverse effect of stuttering through resilience (Craig et al., 2011). Significant differences were observed in the degrees of impact predicted by State anxiety and PSS on the three dimensions examined. In every case, State anxiety was a stronger predictor than stuttering severity (PSS). PSS and State anxiety significantly accounted for the most variability in overall negative impact on life and the least variability in NGSE self-efficiency scores. An increase in State anxiety score by a standard deviation increased the OASES quality-of-life ratings by .683 units, overall impact ratings by .774 units and decreased NGSE self-efficacy scores by .481 units. Although State anxiety is a stronger predictor, students in tertiary education overtly perceived negative feelings associated with stuttering and blamed stuttering to be an active contributor to many negative impacts on their lives inside academia and as a barrier to thriving more than anxiety. Participants' awareness and issues related to the consumption of services, as well as their availability, could provide us with valuable insights regarding their outcomes on different measures. The majority of the participants considered anxiety induced by stuttering as a barrier to seeking help, and the contributing reason behind this was not being received humanely, defined as being constructive and considerate. Following this assumption, only 7% were comfortable in seeking help from teachers regarding academic matters. Interestingly, 68.8% of them were unaware of any initiatives undertaken or run by respective institutions. Reluctance to seek help can complement this state of unawareness, as 31.2% were aware of such programmes. This hypothetical statement has some reasonable ground, as being aware to some extent, services such as counselling and speech therapy were not availed by a significant proportion of them. Only 27.3% received counselling, and a bare 10.9% received speech therapy services ever. Self-disclosure is an important issue here, as many aspects of disclosure being positively regarded enhance positive attitude towards them (Boyle et al., 2017); there are still well-known facts that public disclosure leads to devaluation or negative responses towards stutterers (Boyle, 2018). The reality of their academic relationship reflects their reluctance

to seek help as well as their chosen reason behind not seeking help. Peer-to-peer relationships had been hard, as bullying was identified as a key contributor. A common negative stereotype, which is not getting positive or enough responses from both peers and teachers end was perceived by the majority of the participants. This is aligned with previous evidence as professors not only held negative perceptions toward PWS but also were uncertain about appropriate accommodation and evaluation, particularly in oral modality (Daniels et al., 2011). As a result, only 4% of them did not face any difficulties in establishing and maintaining academic relationships. Their inability to express themselves with comfort in group work further validated the former assumption, as only 3.3% could contribute satisfactorily to such situations. Ineffective relationships and uneasiness of approach were aligned with their responses related to academic performance. Traditionally, academic approaches such as asking questions have been challenging for PWS (Vanryckeghem et al., 2017). These made them deprived of two aspects: seeking feedback and fostering a stronger academic relationship (Werle, 2020). More than 90% of the participants discovered themselves in a passive state in the classroom. The majority of them considered themselves more efficient in written evaluation than oral evaluation, and almost half of them considered themselves unable to self-control in oral expression, as they chose arousal of fear as a contributing factor to this and avoided activities like presentations. This type of avoidance behaviour was also observed in the form of not answering known answers and failure to maintain regular class attendance. Perceived negative feelings associated with stuttering have the potential to impact performance, as 33.2% felt completely less competent for stuttering only. The majority of the participants identified stuttering as a problem and were not satisfied with their situation at all. Significantly, 23% of the participants felt complete self-distaste, and the majority felt helpless with their situation, at least to some extent. Participants clearly identified stuttering as a barrier, as 98% thought that the absence of stuttering would increase their performance. Passive identification was observed in their assumption of being evaluated negatively and communicative competence being impacted adversely. They only agreed on anxiety induced by stuttering as a barrier to maintain attention, and stutterers struggling with every attentional domain have been observed previously (Hennessey et al., 2014). Surprisingly, 16.9% mentally accepted their current state. Such kinds of acceptances are vital for their overall well-being, which could lead to disclosure and seeking help from respective professionals, as the overall situation of the participants regarding all domains was not positive. With respect to the negative perceptions of others, clinicians may support students who stutter by targeting strategies for improving positive listener perceptions. Such professionals/clinicians could be speech and language pathologists and counsellors working on functional deficit reductions to improve their quality of

life. As the findings of this study reflected a special situation of PWS in tertiary education, demanding a need to address this to make their life more efficient, a longitudinal and large-scale study would clarify the situation to a greater extent.

Conclusions

The level and severity of anxiety in students who study in tertiary education were highly elevated and strongly related to each other in a positive manner. They further negatively affected important multidimensional aspects of life considered important for their overall well-being. Negative stereotypes are constantly perceived by participants, affecting their academic relationship and performance as well as complementing their perceived negative feelings of self. Furthermore, stuttering was overtly perceived as a barrier to thriving in life.

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