Attitudes, Anxiety and Coping Strategies in Persons with Stuttering

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Abstract

People who stutter (PWS) tend to have increased levels of anxiety compared to people who do not stutter (PWNS), particularly in social situations. Coping behaviors in the developing or chronic stuttering problem can take many forms and change with experience. The present study has the following objectives as to how: (a) attitudes and coping strategies differ with respect to severity of stuttering, (b) attitudes and coping strategies differ with respect to chronicity of stuttering, (c) attitudes and coping strategies differ with respect to relapses, and to study (d) the relationship between attitude, anxiety and coping in PWS. This was carried out in two phases: in phase I a questionnaire containing thirty-five questions was prepared in English pertaining to attitudes, anxiety and coping strategies seen in PWS which was administered to all the participants individually. The participants included were thirty individuals in the age range of 10-40 years, diagnosed as having stuttering by qualified speech language pathologists. These included 10 new PWS who had not taken therapy earlier, 10 PWS who had undergone therapy and had improved and 10 PWS who had undergone therapy and have had relapses. It was seen that the scores of attitudes in PWS in the new and relapse groups were much higher than the post therapy group where there was increased anxiety about speaking situation when meeting new people/superiors and hence avoided speaking. Regarding the coping strategies in PWS it was found that there was no significant difference ($p>0.05$). The participants included in one month follow up after therapy and relapse group had changes in attitudes, anxiety and coping strategies. It was also seen that most of the PWS had negative feelings such as fluent periods may not last long. PWS differed in attitudes, anxiety and coping strategies in mild and moderate severity groups. Therefore it can be pointed out that PWS do have attitudes, anxiety problem and adopt various coping strategies. This can also be seen at various severity levels. Therefore it may be concluded that PWS do suffer from negative feelings, inferiority complexes, anxiety related to stuttering and personality changes which could be changed with treatment. All these above mentioned factors cause fear of stuttering and this in turn leads to avoidance of speaking situations.

Key words: anxiety, attitudes, coping strategies

Stuttering is an involuntary, intermittent and debilitating speech disorder that afflicts approximately 1% of the population. Its primary manifestations include aberrant sound prolongations and syllabic repetitions that are interspersed with otherwise perceptually normal speech patterns (Bloodstein, 1995). In other words, a person who stutters may begin oral communication normally without disruption and then suddenly and uncontrollably, begins to produce unexpected rapid oscillatory syllabic repetitions (Kalinowski, Saltuklaroglu, Guntupalli & Stuart, 2004). Stuttering is described as unusually frequent disruptions in the flow of speech (Guitar, 2006). These disruptions include phoneme, syllable or word repetitions, phoneme prolongations, and airflow or voicing blocks. Additional symptoms include facial grimacing, fixed articulatory postures, and obvious fear during speech attempts, or anticipation of speech failure prior to speech attempts (Sheehan, 1975). Nevertheless, these overt symptoms of stuttering are only a small part of the disorder, resulting in the analogy of stuttering as an iceberg (Sheehan, 1975). The audible and visible signs of stuttering are likened to the tip of an iceberg that rises above the water level. Yet, far greater and more detrimental is its submerged portion, which when likened to stuttering, comprises feelings of fear, shame, guilt, anxiety, hopelessness, isolation, and denial.

People who stutter (PWS) tend to have increased levels of anxiety compared to people who do not stutter (PWNS), particularly in social situations (Messenger, Onslow, Packman & Menzies, 2004).

Of particular interest to the present study is the role of anxiety in stuttering. There are several well-known theories that have been developed which focus on anxiety and stuttering. For example, the **Two-Factor Theory of stuttering** (Brutten & Shoemaker, 1967) suggests that the listeners' negative reaction to the speech of PWS conditions a link between speech and anxiety. An individual's consequent avoidance of phonemes and words they perceive as difficult, or even avoidance of speech situations due to apprehension of stuttering, results in stuttering, and thus reinforces the link between speech and anxiety. A similar theory, known as the **Anticipatory struggle hypothesis** (Bloodstein, 1987), suggests that some children simply consider speech a demanding task. This is primarily due to experiencing difficulty and frustration. On the other hand, the **Approach-Avoidance Conflict Theory**, proposed by Sheehan (1953), is based on the notion of internal conflict. Although PWS desire to speak in social situations, they are also afraid of speaking for

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fear of stuttering. The Approach Avoidance Conflict theory was further developed by Sheehan (1975), based on earlier work by Miller (1944), and described as the **Double Approach-Avoidance Conflict Theory** (Miller, 1944; Sheehan, 1975). In this there are approach and avoidance tendencies for both speaking and remaining silent. Firstly, when PWS desire to approach speaking to fulfill their social obligations, they are simultaneously faced with a fear of stuttering during their speaking attempts (Johnson & Knott, 1936). The alternative to speaking is silence, which appears an appealing approach tendency, since it bypasses the potential risk of stuttering that is associated with speaking. However, silence is also a threat to social standing. Struggling between the possibilities of speaking and remaining silent, together with an inability to resolve this inherent conflict, consequently results in stuttering. An additional facet of the Double Approach-Avoidance Conflict Theory is the association of negative emotions to either speaking or remaining silent. In the event of speaking, the trade-off is shame and guilt, whereas in remaining silent, feelings of frustration and guilt are experienced. Because both choices result in guilt, a choice must be made between experiencing either shame or frustration.

It is commonly believed that anxiety is related to stuttering, despite conflicting evidence in the literature with regard to the precise nature of this relationship (Craig, 1990; Weber & Smith, 1990; Miller & Watson, 1992; Blood, Blood, Bennett, Simpson & Susman, 1994; Poulton & Andrews, 1994; Ezrati-Vinacour & Levin, 2004). PWS often report anxiety related to producing particular sounds or words, or participating in certain communicative situations (Blood et al., 1994). In addition, stuttering severity appears to be dependent on factors such as communication partner status or the number of addressees, novelty, formality, and familiarity with the speaking situation, and feelings of conspicuousness (Porter, 1939; Siegel & Haugen, 1964; Buss, 1980). Because stuttering severity is associated with emotions such as embarrassment, frustration and apprehension of negative social evaluation, greater anxiety levels in PWS compared to PWNS are to be expected (Craig, Hancock, Tran & Craig, 2003). Nevertheless, it remains unclear at present, whether PWS are more anxious in general than PWNS.

The act of communication happens always in the social context, involving one or more listeners. Hence, communication disorders are always entangled with the attitudes of the listeners towards that disorder and the person who possess the disorder. Such attitudes are influenced by the level of adequacy of communication. People with communication disabilities, especially stuttering, develop a negative personality stereotypes maintained by different groups of people.

When stuttering, PWS will often use coping strategies such as nonsense syllables or less-appropriate (but easier to say) words to ease into the flow of speech. They also may use various personal tricks to overcome stuttering or blocks at the beginning of a sentence, after which their fluency can resume. Finger-tapping or head-scratching are two common examples of tricks, which are usually idiosyncratic and may look unusual to the listener. Hence, it is very important to assess the attitudes, anxiety and coping strategies in PWS and to intervene if required. Stuttering is a heterogeneous group of disorders, and hence it is necessary to study it in different cultural and linguistic perspective.

There is a need to study the attitudes, anxiety and coping strategies in PWS with regard to various groups of PWS such as: new PWS, PWS after a month of therapy and in relapse cases. This is in view of the general observation that; because of the negative attitudes PWS are resistant to changes in their fluency even after fluency therapy.

According to Personal Construct Theory (Kelly, 1955), "A person's unique psychological processes are channeled by the way s/he anticipates events". There are relapses seen in at least 50% of PWS, Assessing the attitudes and coping strategies in PWS will be helpful in overall management of PWS.

Hence, the present study was planned by taking into account all these factors. It was also desirable to study if the attitudes, anxiety and coping strategies in PWS vary with respect to severity, chronicity and family history which might later help in intervention of PWS. The present study was hence planned with the following objectives as to how (1) attitudes and coping strategies differ with respect to severity of stuttering, (2) attitudes and coping strategies differ with respect to chronicity of stuttering and (3) attitudes and coping strategies differ with respect to relapses and to study the relationship between attitude, anxiety and coping in PWS.

Method

The present study was conducted to find out attitudes, anxiety and coping strategies in PWS. This was carried out in two phases.

Phase I: A questionnaire was prepared in English through literature survey, consisting of statements to gather information related to attitudes, anxiety and coping strategies seen in PWS. It contained thirty-five questions pertaining to attitudes, anxiety and coping strategies seen in PWS (See Appendix).

Phase II: The questionnaire was administered to all the participants individually.

Participants: Thirty individuals in the age range of 10-40 years, diagnosed as having stuttering by qualified speech-language pathologists, were considered as participants of the study. These included 10 new PWS who had not taken therapy earlier, 10 PWS who had undergone therapy and had improved and 10 PWS who had undergone therapy and have had relapses. The participants were chosen regardless of language, gender and severity.

Exclusion criteria: PWS were excluded from the study if they had any associated central neurological problems, language problems, psychiatric problems, any sensory-motor deficits.

Materials: The Anxiety, Attitudes and Coping questionnaire developed as part of the study consisted of 2 parts; Part I included demographic data, questions regarding the participants' age, background, family history, stuttering, and therapy experiences. Part II of the questionnaire included 10 questions to investigate the attitudes, 10 questions to investigate anxiety behaviors and 15 questions to investigate coping strategies in PWS.

Each item in the questionnaire was expressed as a statement. The subjects responded to each statement by putting a tick on the appropriate response options. All the components of the questionnaire are rated on a 5-point rating scale ranging from 0 to 4 by the participants (0- no/never/not at all; 1- sometimes [<25%]; 2- medium/average amount [25-50%]; 3- usually/a good deal/rather often [50-75%]; 4- practically always/entirely [>75%]).

Procedure: Prior to the interview written consent was obtained from the participants and the questionnaire was administered through interviewing each of the participants individually. The data obtained from the participants were tabulated and analyzed using SPSS 16 software to answer the research questions.

Results and Discussion

I. Attitudes in PWS: Figure 1 depicts mean scores of attitudes across groups. The mean scores of relapse group were much higher than the other two groups.

That is, they had increased negative attitudes and poor self-esteem, may be because the participants' confidence level in speaking situations had decreased in spite of attending therapy. Participants belonging to post-therapy had lesser mean scores indicating that they had decreased negative attitudes after attending therapy, may be

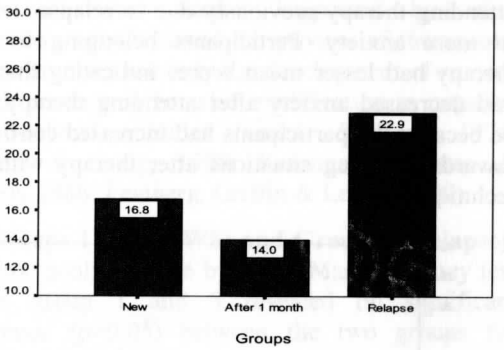

Figure 1. *Mean scores of attitudes and groups.*

because the participants' self-perception of attitudes had improved after therapy. The new PWS exhibited scores in between these two groups which is also as to be expected. MANOVA was done to compare the overall scores of the subtest-attitude across groups which revealed that for F (2, 27) at $p<0.05$, the score of the subtest was 2.622. There was no significant difference in attitudes in the three groups of PWS. This may be because of the fact that stuttering is a heterogeneous group of disorders and also probably due to limited number of participants (ten participants in each of the three groups) with many individual differences as seen in mean and standard deviation values (Table 1). Van Riper (1970), Manning, Dailey and Wallace (1984) and Knott (1935) too came to the same conclusion. The findings are also in consonance with the study conducted by Mulcahy, Hennesey, Beilby and Byrnes (2008) who concluded that PWS do suffer from self-esteem problems and anxiety and psychosocial conflicts.

Since an overall score on the subtests did not reveal a significant difference in the groups, subsequently the scores of individual questions in each subtest were compared across the groups. A Kruskal-Wallis test was done to find out the significant difference for individual scores of questions in all the groups. The results of Kruskal-Wallis test for individual scores of questions for subsets on attitudes revealed no significant difference ($p>0.05$). This may also be probably because of individual differences and the small number of subjects, in addition to the number of sessions and its duration in post therapy group which could not be controlled.

II. Anxiety in PWS: Figure 2 gives mean scores of anxiety across groups. The mean scores of new group and relapse group were much higher than the post therapy group, as expected. The new group, since they had not taken therapy showed more anxiety features because of their speech difficulty.

The relapse group had more anxiety which may be because the participants' confidence level in speaking situations had decreased in spite of

attending therapy previously due to relapse, leading to more anxiety. Participants belonging to post-therapy had lesser mean scores indicating that they had decreased anxiety after attending therapy, may be because the participants had increased confidence towards speaking situations after therapy with new techniques.

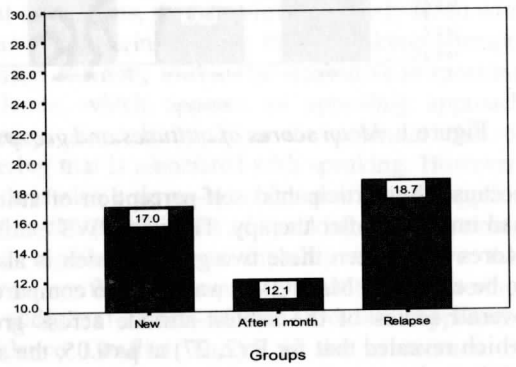

Figure 2. *Mean scores of anxiety and groups.*

MANOVA was done to compare the overall scores of the sub items of anxiety across groups. The results revealed that for F (2, 27) at $p<0.05$, the score of the subtest were 2.055. There was no significant difference in anxiety in PWS among the groups although it appears so from the graph, especially compared to the post therapy group. Since the overall scores on the sub items did not reveal a significant difference in the groups, subsequently the scores for individual items were compared on the groups.

A Kruskal-Wallis test was done to find out the significant difference for individual scores of questions in all the groups. The Table 1 gives results of Kruskal-Wallis test for individual scores of questions for anxiety revealed that there was significant difference ($p<0.05$) only in question number A7 which elicited anxiety about speaking situation when meeting new people / superiors and there was no significant difference in any of the other 9 questions. This is one of the commonest problems faced by most PWS as observed in clinical practice by most clinicians.

Table 1. *Result of Kruskal-Wallis test for scores of questions (individual)*

Items	Chi-Square	df	Asymp. Sig.
a1	0.946	2	0.623
a2	3.348	2	0.187
a3	0.272	2	0.873
a4	3.075	2	0.215
a5	1.270	2	0.530
a6	0.750	2	0.687
a7*	**6.012***	**2**	**0.049***
a8	4.003	2	0.135
a9	2.982	2	0.225
a10	1.514	2	0.469

This result is in agreement with the study by Bloodstein (1950) in which he concluded that the less the anxiety about speech difficulties, the less the effort to avoid it, and consequently the less the stuttering. Blumgart, Tran and Craig (2010) too came to the same conclusion that the AWS had significantly raised trait and social anxiety, as well as significantly increased risk of social phobia which led to increased stuttering in PWS comparison to the PWNS.

III. Coping strategies in PWS: Figure 3 depicts mean scores of coping strategies across groups. It is evident from the Figure 3 that mean scores of new PWS and relapse group were much higher than the post therapy group which are as to be expected. That is, the relapse group had increased use of coping strategies which may be because the participants' confidence level in speaking situations had decreased after attending therapy previously due to relapse and hence resorted to the reuse of the same. Similarly for new PWS it is to be expected that the coping strategies are higher as reported by many authors.

A MANOVA was done to compare the overall scores of the subtest-coping across groups. The results revealed that for F (2, 27) at $p<0.05$, the score of the subtest was 1.505.

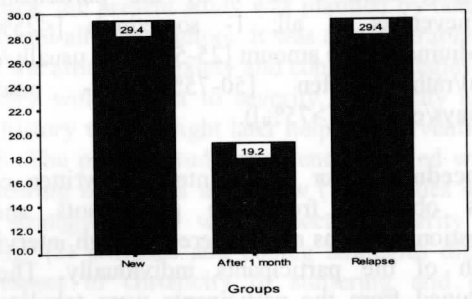

Figure 3. *Mean scores of coping strategies among the three groups.*

There was no significant difference in coping strategies in PWS among the three groups although figure showed differences in the post therapy group compared to the other two groups. The result of the study is in consonance with Carver, Scheier and Weintraub (1989) who developed a multidimensional coping inventory to assess the different ways in which people respond to stress reported correlations between the various coping scales and several theoretically relevant personality measures which emphasize effective use of coping.

The findings of Plexico, Manning and Levitt (2009) are also in agreement with the results obtained in the present study for the post therapy

group. The results revealed that participants moved from emotion-based avoidant patterns of coping that focused on protecting the self and the listener from experiencing discomfort associated with stuttering to cognitive-based approach patterns that focused on the needs of the speaker. As the participants chose to approach rather than avoid or escape stuttering, they experienced many positive social, physical, cognitive, and affective results. Since an overall score on the subtests did not reveal a significant difference in the groups, subsequently the scores of individual questions in subtest on coping were compared on the groups. A Kruskal-Wallis test was done to find out the significant difference for individual scores of questions in all the groups which revealed no significant difference ($p>0.05$). This may be because of small sample size and also probably because of individual differences seen in PWS.

IV. Comparison of scores across groups: The mean and standard deviation scores across groups on attitudes, anxiety and avoidance or coping were in general better than for the other two groups as expected. The standard deviation scores were high for all the groups for all the three variables indicating high variability among the subjects. This is also as expected in the population of PWS in general.

Since an overall score on the subtests did not reveal a significant difference in the groups, a post-hoc analysis using Mann-Whitney test was done across group for question A7 which consisted anxiety and avoidance about speaking situation when meeting new people/superiors since there was no significant difference in any of the other 9 questions.

- Group 1 (new PWS) and Group 2 (Post therapy)
- Groups 1 (new PWS) and Group 3 (Relapse)
- Groups 2 (1 month post therapy) and 3 (relapse)

The results of post-hoc analysis are given below in Table 2.

(i) Group 1 (new) and Group 2 (Post therapy): Post-hoc analysis done by using Mann-Whitney test across group 1 and 2 revealed no significant difference ($p>0.05$) between the two groups for question A7, although the raw scores and the graphs reveal differences. This may be because of limited number of participants and limitations regarding number of sessions and duration of sessions and individual differences. This result is not in consonance with study done by Guitar (1976) who contended that the clinicians may predict therapy outcomes from pre treatment attitudes. Guitar's conclusions were further supported by other researchers who believed the process of therapeutic change involves not only the development of smooth speech production but also modification in negative speech-related attitudes (Guitar & Bass, 1978; Andrew & Craig, 1988; Kraaimaat, Janssen & Brutten, 1988; Feinberg, Griffin & Levey, 2000).

Table 2. *Mann-Whitney results between groups for question A7*

Groups	A7	
	Z	Asymp. Sig. (2-tailed)
1 & 2	-1.126	0.260
1 &3	-1.094	0.274
2 &3*	-2.551	**0.011***

(ii) Groups 1 (new PWS) and Group 3 (Relapse): Post-hoc analysis done by using Mann-Whitney test across group 1 and 3 revealed no significant difference ($p>0.05$) between the two groups for question A7 (Table 5).

(iii) Groups 2 (Post therapy) and 3 (relapse): The results of post-hoc analysis are given in Table 3. Post-hoc analysis done by using Mann-Whitney test across group 2 & group 3 revealed a significant difference ($p<0.05$) between the two groups for question A7. This may be because after a month of therapy the participant's attitudes and their anxiety levels in speaking situations improved and they also tend to have increased self-esteem and also probably due to changes in participant's self-perceptions, similarly in relapse group.

This is in agreement with the study conducted by Andrews and Cutler (1974) where it was concluded that through therapy the attitudes of PWS can be changed to some extent. Similarly, Guitar (1976) investigated the relationship between pre therapy attitudes of adult PWS and post therapy treatment outcomes.

V. Comparison of scores on severity (very mild, mild and moderate) in groups 1, 2 & 3: The participants were divided into four groups based on severity levels which included (a) very mild, (b) mild, (c) moderate and (d) severe. The mean and standard deviation for various severity groups were higher for subtest C (coping strategies) in relapse group at moderate level of severity. This may be because at moderate severity level the attitudes and anxiety levels may be much lesser than severe level and also probably because the problem is little compared to severe severity level.

A Kruskal-Wallis test was done to compare the overall scores of severity levels across groups. The results revealed no significant difference in severity across groups in PWS at $p>0.05$ which is in agreement with the study conducted by Craig, Hancock, Tran and Craig (2003) showed that PWS had increased anxiety levels regardless of condition.

Since an overall score on the severity level did not reveal a significant difference in the groups, subsequently the scores of individual questions in each severity levels were compared on the groups. The mean scores for different items in different subtests do not indicate differences across various

severity groups may be due to wider individual variations as seen in standard deviation scores and because of lesser number of subjects in each of the severity groups.

A Kruskal-Wallis test was done to find out the significant difference for individual scores of questions in all the subtests. The following table gives results of Kruskal-Wallis test. The results of Kruskal-Wallis test for individual scores regarding questions on attitudes for three severity levels, namely very mild, mild and moderate revealed that there was significant difference ($p<0.05$) in question numbers N3, which included negative feelings such as fluent periods may not last long and may begin to stutter sooner and N9, which involves complexes about the PWS's way of speaking and what others may think about PWS.

Table 3. *Result of Kruskal-Wallis test for scores on questions regarding attitudes*

Questions	Chi-Square	df	Asymp. Sig.
n1	2.538	2	0.281
n2	0.752	2	0.687
n3*	**7.911***	**2***	**0.019***
n4	2.641	2	0.267
n5	2.491	2	0.288
n6	2.060	2	0.357
n7	1.863	2	0.394
n8	2.072	2	0.355
n9*	**8.123***	**2***	**0.017***
n10	0.807	2	0.668

There was no significant difference ($p>0.05$) in any of the other 8 questions. Several studies conducted by Baumgartner and Brutten (1983), Bloodstein (1975) and Vanryckeghem and Brutten (1996) have confirmed the presence of negative communication attitudes in PWS. The results of Kruskal-Wallis test for individual scores regarding anxiety questions for three severity levels, namely very mild, mild and moderate (Table 3) revealed that there was significant difference ($p<0.05$) in question number A6, which includes rigid articulatory postures which makes one unable to move the articulators and there was no significant difference ($p>0.05$) in any of the other 9 questions.

Similar result was obtained in a study conducted by Vinacour and Levin (2004) where there was no difference in anxiety levels in PWS as a function of stuttering severity. However, there was a difference in state anxiety levels specific to social situations. Craig, Hancock and Tran (2003) too came to the conclusion that stuttering severity is associated with the anxiety levels in PWS which is in agreement with the findings of this study. The results of Kruskal-Wallis test for individual scores regarding anxiety questions for three severity levels, namely very mild, mild and moderate revealed that there was significant difference ($p<0.05$) in question number A6, about rigid articulatory postures which makes one unable to move the articulators and there was no significant difference ($p>0.05$) in any of the other 9 questions.

Table 4. *Result of Kruskal-Wallis test for scores of questions regarding anxiety*

Questions	Chi-Square	df	Asymp. Sig.
a1	2.236	2	0.327
a2	0.017	2	0.991
a3	1.321	2	0.517
a4	5.244	2	0.073
a5	1.063	2	0.588
a6*	**6.463***	**2***	**0.039***
a7	1.755	2	0.416
a8	0.964	2	0.617
a9	1.148	2	0.563
a10	5.680	2	0.058

The results of Kruskal-Wallis test for individual scores regarding coping questions for three severity levels, namely very mild, mild and moderate revealed that there was no significant difference ($p>0.05$) in any of the questions.

There are no studies comparing the severity of stuttering to coping strategies and hence no comparison could be made. Post-hoc analysis was done by using Mann-Whitney test across severity levels:(a) very mild and mild (b) very mild and moderate and (c) mild and moderate The results of Post-hoc analysis was done by using Mann-Whitney test is given below in Table 5.

Post-hoc analysis done by using Mann-Whitney test across very mild & mild severity level and very mild & moderate severity level revealed no significant difference between any of the two groups.

Table 5. *Mann-Whitney for different severity levels*

Severity	Very mild & mild			Very mild & moderate			Mild & moderate*		
Sub tests	N3	N9	A6	N3	N9	A6	N3	N9	A6
Z	-1.87	-1.46	-1.41	-.22	-.75	-.18	-2.78	-2.82	-2.58
Asymp. sig	.062	.144	.160	.826	.454	.860	**.005***	**.005***	**.010***

But mild and moderate severity level revealed a significant difference ($p<0.05$). This may be because of limited number of participants in very mild which consisted of only four participants and

mild severity level which consisted of only seven participants when compared with moderate severity level which included of eighteen participants and also because of the individual differences which PWS showed. These findings are in consonance with the study conducted by Miller and Watson (1992) where it was found that PWS with mild and moderate stuttering severity exhibited a significant positive correlation between measures of communication attitudes and both state and trait anxiety. Conversely, PWS with severe stuttering showed no significant correlations between anxiety and communication attitudes. Severe level was not used in analysis because only one subject was available with severe stuttering. Therefore it was excluded from the analysis.

Therefore from analysis it is evident that PWS showed anxiety about speaking situation when meeting new people/superiors, had negative feelings, inferiority complexes and rigid articulatory postures. PWS also had improved results after attending therapy. PWS with mild and moderate severity levels exhibited a significant positive correlation between measures of communication attitudes and both state and trait anxiety.

Conclusions

It can be pointed out that PWS do have attitudes, anxiety problems and adopt various coping strategies. This can also be seen at various severity levels. Therefore it may be concluded that PWS do suffer from negative feelings, inferiority complexes, anxiety related to stuttering, personality changes which could be changed with treatment. All these above mentioned factors cause fear of stuttering and this in turn leads to avoidance of speaking situations.

References

Andrew, G., & Cutler, J. (1974). Stuttering therapy: The relation between the changes in symptom level and attitudes. *Journal of Speech and Hearing Disorders, 39,* 312-319.

Andrews & Craig (1988). Prediction of outcome after treatment for stuttering. *The British Journal of Psychiatry, 153, 236-240.* Retrieved from http://bjp.rcpsych.org/cgi/content/abstract/153/2/236

Baumgartner, J. M., & Brutten, G. J. (1983). Expectancy and heart rate as predictors of the speech performance of stutterers. *Journal of Speech and Hearing Research, 26,* 383-388.

Blood, G. W., Blood, I. M., Bennet, S., Simpson, K. C., & Susman, E. J. (1994). Subjective anxiety measurements and cortical responses in adult who stutter. *Journal of Speech and Hearing Research, 37,* 760-768.

Blood, G. W., Blood, I, M., Maloney, K., Meyer, C., & Qualls, C. D. (2007). Anxiety levels in adolescents who stutter. *Journal of Communication Disorders, 40,* 452-469.

Bloodstein, O. (1950). A rating scale study of conditions under which stuttering is reduced or absent. *Journal of Speech and Hearing Disorders, 15, 29-36.*

Bloodstein, O. (1975). Stuttering as tension and fragmentation. In J. Eisenson (Eds.), *Stuttering: A second symposium.* New York: Harper and Row.

Bloodstein, O. (1987). *A handbook on stuttering.* Chicago: National Easter Seal Society.

Bloodstein, O. (1995). *A handbook on stuttering* (5th Edn.). San Diego, CA: Singular Publishing Group.

Blumgart, E., Tran, Y., & Craig, A. (2010). Social anxiety disorder in adults who stutter. *Depression & Anxiety, 0,* 1-6.

Brutten, & Shoemaker. (1967). *The modification of stuttering.* Englewood Cliffs. NJ: Prentice-Hall.

Carver, C. S., Scheier, M. F., & Weintraub, J.K. (1989). Assessing coping strategies: A theoretically based approach. *Journal of Personality and Social Psychology, 56(2),* 267-283.

Craig, A. (1990). An investigation into the relationship between anxiety and stuttering. *Journal of Speech and Hearing Research, 55,* 290-294.

Craig, A., Hancock, K., Tran, Y., & Craig, M. (2003). Anxiety levels in people who stutter: A randomized population study. *Journal of Speech, Language and Hearing, 46,* 1197-1206.

Feinberg, A. Y., Griffin., B, P., & Levey, M., (2000). Psychological aspects of chronic tonic and clonic stuttering: Suggested therapeutic approaches. *American Journal of Orthopsychiatry 70 (4),* 465-473.

Guitar, B. (2006). *Stuttering: An integrated approach to its nature & treatment* (3rd edition). United States of America: Library of congress cataloging-in-publication data.

Guitar, B. (1976). Pretreatment factors associated with the outcomes of stuttering therapy. *Journal of Speech and Hearing Research, 19,* 590-600.

Guitar, B., & Bass, C. (1978). Stuttering therapy: The relation between attitude change & long-term outcome. *Journal of Speech and Hearing Disorders, 43,* 392-400.

Johnson, W., & Knott, J. R., (1936). The moment of stuttering. *Journal of Genetic Psychology, 48, 475-480.*

Kalinowski, J., Saltuklaroglu, T., Guntupalli, V.K., & Stuart, A. (2004). Gestural recovery and the role of forward and reversed syllabic repetitions as stuttering inhibitors in adults. *Neuroscience Letter, 363, 144–149.*

Kelly, G. A. (1955). *The psychology of personal constructs vol. 1.* New York, NY: W. W. Norton and Company.

Kraaimaat, F., Janssen, P., & Brutten, G. J. (1988). The relationship between stutterer's cognitive and autonomic anxiety and therapy outcome. *Journal of Fluency Disorders, 13,* 107-113.

Manning, W. H., Dailey, D., & Wallace, S. (1984). Attitude and personality characteristics of older stutterers. *Journal of Fluency Disorders, 9,* 207-215.

Messenger, M., Onslow, M., Packman, A., & Menzies, R. (2004). Social anxiety in stuttering: Measuring negative social expectancies. *Journal of Fluency Disorders, 29,* 201-212.

Miller, N. E. (1944). Experimental studies of conflict. In J. McV. Hunt (Ed.). *Personality and the behavior disorders.* New York: Ronald Press.

Miller, S., & Watson, B. C. (1992). The relationship between communication attitude, anxiety and

depression in stutterers and non-stutterers. *Journal of Speech and Hearing Research, 55,* 789-798.

Mulcahy, K., Hennessey, N., Beilby, J., & Brynes, M. (2008). Social anxiety and the severity and typography of stuttering in adolescents. *Journal of Fluency Disorders, 33,* 306-319.

Porter, H. (1939). Studies in psychology of stuttering:XIV. Stuttering phenomena in relation to size & personnel of audience. *Journal of Speech Disorders, 4,* 323-333.

Plexico, L., Manning, W. H., & Levitt, H. (2009). Coping responses by adults who stutter: Part II. Approaching the problem and achieving agency. *Journal of Fluency Disorders, 34,* 108-126.

Poulton, R. G., & Andrews, G. (1994). Appraisal of danger & proximity in social phobics. *Behaviour, Research & Therapy,* 32, 639-642.

Siegel, G. M., & Haugen, D. (1964). Audience size and variations in stuttering behavior. *Journal of Speech and Hearing Research, 7,* 381-388.

Sheehan, J. G. (1953). Theory and treatment of stuttering as an approach-avoidance conflict. *Journal of Psychology, 36,* 27-49.

Sheehan, J. G. (1975). Conflict theory and avoidance-reduction therapy. In J. Eisenson (Eds.), *stuttering: A second symposium (pp. 97-198).* New York: Harper and Row.

Van Riper, C. (1970). Stuttering and cluttering. *Folia Phoniatrica, 22,* 347-353.

Vanryckeghem, M., & Brutten, G. J. (1996). The relationship between communication attitude and fluency failure of stuttering and non-stuttering children. *Journal of Fluency Disorders, 21,* 109-118.

Vinacour, R. E., & Levin, I., (2004). The relationship between anxiety and stuttering: a multi-dimensional approach. *Journal of Fluency Disorders, 29,* 135-148.

Weber, C. M., & Smith, A. (1990). Autonomic correlates of stuttering and speech assessed in a range of experimental tasks. *Journal of Speech and Hearing Research, 33,* 690-706.

APPENDIX

PART I: CHECKLIST FOR PWS

I. General information

a. Case name: **b.** Case number: **c.**Age/gender:

d. Phone number:

e. Address: **f.** Mail:

g. Education: **h.** Occupation:

i. Languages used: At home: Kannada/English/Hindi/Tamil/Malayalam/Telugu

j. Mother tongue: Kannada/English/Hindi/Tamil/Malayalam/Telugu/others

k. Severity of the problem (as per SSI): v. mild/ mild/ moderate/moderately severe/ severe/ v. severe

l. Fluency therapy if taken before: yes/no; If yes, duration (approx):

m. Relapse of the problem: yes/no; If yes, specify reasons if any:

II. Brief history/ onset &development of problem

a. Onset: Sudden/Gradual

b. Age of onset:

c. Duration:

d. Has the dysfluency been consistent or intermittent? Increased/reduced/remain same/fluctuating

e. Associated problems: articulation/language/auditory/motor/cognitive

f. Medical history: nil/affected

III. Stuttering history/reaction

a. Family history: no/yes; If yes: parents/siblings/grandparents/uncle/aunt

b. Reaction towards stuttering: Self: Family members: Friends:

IV. Variation in stuttering

a. Situations

b. Individuals

c. Do you avoid speaking situations- yes/no

d. Coping mechanisms: As reported: As observed:

PART II: Questionnaire for attitudes, anxiety & coping strategies in PWS

Therapy: (if yes) Duration:

Instructions: Please read the following statements and answer with appropriate options as noted below:
0 - No/never/not at all; **1** –Sometimes (<25%); **2** – medium/average amount (>25-50%); **3** – Usually/a good deal/rather often (>50-75%); **4** - Practically always/entirely (> 75%)

Sl.No.	Questions	Ratings				
		0	1	2	3	4
N1.	I feel/anticipate interruptions in speech (e.g..repetitions, prolongations or blocks)					
N2.	I expect certain sounds, letters or words are be particularly "hard" to say					
N3.	I feel fluent periods are unusual, cannot last and that sooner or later I will stutter					
N4.	Even though knowing the right answer, I have often failed to give it because of fear to speak out.					
N5.	Sometimes I feel embarrassed by the way I talk.					
N6.	Sometimes wish that I could say things as clearly as others do					
N7.	Worry if I make a fool of myself, or feel I have been made to look foolish?					
N8.	Feel that other people are better than me?					
N9.	I have complexes about the way I speak & what others think about me.					
N10.	I feel self-conscious about my appearance even when I am well-dressed and groomed.					
A1.	I have general body tension during speech attempts (e.g., shaking. trembling or feeling knotted up inside)					
A2.	I breath noisily or with great effort while trying to speak					
A3.	I feel the face getting warm and red (as if blushing) while struggling to speak					
A4.	I run out of "breath" while speaking					
A5.	I strain to talk without being able to make a sound					
A6.	I hold lips, tongue or jaw in a rigid position before speaking or when getting "stuck" on a word					
A7.	I feel uncomfortable when meeting new people/superiors (teachers, employers, authorities)					
A8.	I often feel nervous while talking.					
A9.	Even the idea of giving a talk in public makes me feel afraid					
A10.	I make sudden jerky or forceful movements with my head, arms or body during speech attempts (e.g., clinching of fist or jerking head to one side)					
C1.	I avoid talking to people in authority (e.g., teacher, employer, or clergyman)					
C2.	I avoid asking for information (e.g., asking for directions or inquiring about a train schedule)					
C3.	I avoid choosing a job or a hobby because speaking would be required					
C4.	I avoid making new acquaintances (e.g., not visiting with friends, not dating, or not joining social, civic, or church groups)					
C5.	I avoid introducing self, giving my name, or making introductions					
C6.	I avoid speaking situations – eg., before an audience, telephone					
C7.	I omit a word, part of a word or a phrase planned to say (e.g., words with certain sounds or letters)					
C8.	Having another person speak for me in a difficult situation (e.g., having someone make a telephone call or order food in a restaurant)					
C9.	I hesitate to volunteer in a discussion or debate with a group of people					
C10.	I reply briefly using the fewest words possible.					
C11.	I act in a manner intended to keep out of a conversation or discussion (e.g., being a good listener, pretending not to hear what was said, acting bored or pretending to be in deep thought)					
C12.	I try to give excuses to avoid talking (e.g., pretending to be tired or pretending lack of interest in a topic)					
C13.	I make my voice louder or softer when stuttering is expected					
C14.	I say words slowly or rapidly preceding the word on which stuttering is expected					
C15.	I try to look away while speaking					