Research Article

SCORES OF LOCUS OF CONTROL BEHAVIOR SCALE (LCB) AND STUTTERING SEVERITY INSTRUMENT (SSI) IN INDIVIDUALS WITH STUTTERING - A CORRELATION STUDY

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ABSTRACT

Background: The present study aims at investigating the response of individuals with stuttering to the locus of control behaviour scale and on severity of stuttering behavior (SSI). The specific objective is to see the co-relation between scores of Locus of Control Behavior (LCB) scale and severity of stuttering behaviour (SSI).

Methods: The present study examines the co-relation between the response of individuals with stuttering on LCB scale and SSI questionnaire.

Results: Pearson-correlation coefficient was done to analyze the intra-judge and inter-judge reliability and it was found to be very good. Additionally, there is low relation between Degree of Severity of Stuttering and the LCB scale score. Sig. 2 tailed value was 0.345.

Discussion: A high correlation observed between intra-judge shows that reliable results could be obtained for the present study. In this study we found a low relation between SSI and LCB scores. Since these scores are not in relation to each other. So, the scores need to be evaluated for all behavioral, cognition and affective domain to have a better idea about the problem.

INTRODUCTION

Stuttering is a disorder which can be described to have an intense effect on a speaker's ability to communicate effectively in routine situations of daily life. The most common feelings like avoidances, anxieties, struggle, fear to cope up with the disfluencies, or experiences shared by the stutterer are often presented with wide range. Thus stuttering explanation involves much more than just disfluencies. So, it is better defined by various researchers on a broad array of psychological terms like shame, self consciousness and locus of control in predicting the maintenance and outcome of the problem involved with the person. The effect of their adjoining social network and their peer interaction within daily life has more influence on the associated anxiety and further on the maintenance of this vicious circle of stuttering. More unfriendly the environment the person with stuttering is exposed to, the greater the problem of adjusting to the society.

Behavioral

Surface elements include aspects of the core behaviors of stuttering- the repeated articulatory movements, the fixed articulatory postures, and non verbal or verbal associated stuttering behaviors such as facial grimaces, interjections, and circumlocutions.

Cognitive

Cognitive aspects of stuttering include belief systems and emotions associated with speaking and stuttering. Therefore it would be more appropriate to consider Locus of control as a cognitive aspect.

Hence, researchers felt that stuttering needs to be treated with a flexible approach like focus needs to be done on behavioral, cognitive and affective aspects of the subject with stuttering (Yaruss, 2004 & Cooper, 1999). To manage the later 2 aspects of the problem, a number of questionnaires are in use as part of assessment protocol across clinics. Guitar (2006) suggested the following scales to be used- 1.Stutterers self-rating of reactions to speech situations (SSRSS) (Johnson, Darley and Spriersbach, 1952), 2. Perception of Stuttering inventory (PSI) (Woolf, 1967) and 3.Locus of control behavior scale (Craig, Franklin and Andrews 1984). Locus of control Behavior (LCB) has been defined as the degree to which an individual can perceive a causal relationship between his own behavior or actions and ultimate consequences or reward (Rustin, Cook and Spence 1995). A stuttering severity instrument (SSI) measures the severity of stuttering in the form of frequency, duration and

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physical concomitants of stuttering. The researchers felt the need to focus on affective and cognitive aspects of the problem along with behavioral aspect in recent time to treat the patients effectively and prevent the relapse of stuttering in long time (Yaruss & Quesal, 2004). To the best of the researcher's knowledge, a study focusing on assessing LCB and SSI, simultaneously in individuals with stuttering is not reported in the Indian scenario. Therefore, the researcher decided to take up the present study. The present study aims at investigating the response of individuals with stuttering to the locus of control behavior scale and on severity of stuttering behavior (SSI). The specific objective is to see the co-relation between scores of Locus of Control Behavior (LCB) scale and severity of stuttering behavior (SSI).

METHODS

The present study examines the co-relation between the response of individuals with stuttering on LCB scale and SSI questionnaire.

Selection criteria: The individuals in the age range of 18-30 years were selected. 20 Individuals With Stuttering (IWS-Group A) and 20 age matched Typical Individuals (TI-Group B) were selected keeping the following criteria in mind. Each individual in both the groups should have a minimum qualification of having passed the 12th grade In group A – IWS should have had no history of hearing problem and individuals in Group B should not have had any Speech, language and Hearing problems.

Procedure

The 17 item Locus of Control Behaviour (LCB) scale was obtained and translated from English to Hindi by professors in Hindi literature. Reverse translation was done in English by a professor in English literature in the arts college who was also a native language of Hindi. The written informed consent was taken from every individual. The case history includes the Brief History, Description of the problem, number of therapy sessions attended. Both SSI and LCB scales were administered on individuals in group A. Then age matched typical individuals were also given the scale to respond. Most of these were arts or engineering students from the campus studying in various programs of the university.

Scoring

The 17-item test is scored in the same direction as a Rotter I-E scale, that is, high scores indicate externality. Thus, as may be the 10 items which relate to externality and the scores for the seven items relating to the internality (item 1, 5, 7, 8, 13, 15, 16) are transposed so that 5(Strongly agree) is scored as 0(strongly disagree), 4 (Generally agree) becomes 1(generally disagree), etc. After transposing the seven items the test is scored by summing the scores for all 17 items.

The video recording was done for the narrative speech and reading. The narration duration was of about 2-3 minutes speech on any topic of their interest and the paragraph of the 150 words was given to read. The reading passage was selected from a Hindi and English text book used in schools for 10th grade. Reading passages were also selected in the same way for Hindi and English. Out of total 20 Individuals with stuttering, 15 participants were tested for Hindi and 5 for

English based upon their native language. The degree of severity of stuttering was assessed using SSI. The assessment of SSI includes judgment of three tasks; the first task involves calculating total number of percentage disfluencies in narration and reading task. Then calculating the task score and adding up the task score of the reading and the narration task together. For getting the percentage disfluencies in the narration task, the 100 words from the recorded sample were written down in the same language they narrated in. The second task Duration, in which the clinician had estimated the length of three longest blocks was calculated in seconds and finding the appropriate scale score on the form. Third task was to calculate the score for physical concomitants. To assess presence of physical concomitants, 5 point evaluating scale was used, which was based on: 0 which stands for none, 1 stands for not noticeable unless looking for it, 2 stands for barely noticeable for casual observer, 3 stands for distracting , 4 for very distracting, and 5 for severe and painful looking. Then total score was calculated for three tasks (frequency, duration and physical concomitants) to provide a total overall score. The severity rating (mild, moderate, and severe) was based on total overall score on the form. The SSI was administered again on the 5 recordings after a gap of 15 days by the researcher to check the severity rating. This was done to check for the intra judge reliability. The SSI was repeated for the same 5 recordings by a second clinician with 3 years of experience in the field of SLP. This was done with the aim of knowing the inter judge reliability. Descriptive statistics was done to calculate the mean and standard deviation scores for SSI and LCB for IWS for all the 20 subjects. The mean, SD was also calculated for the LCB scores obtained for both the IWS and TI group. The Pearsons coefficient co-relation was used to check the co-relation between the LCB scores of the IWS and with their scores obtained for rating of severity of stuttering.

RESULTS

The present study investigated the response of individuals with and without out stuttering to the Locus of Control Behavior (LCB) scale and on stuttering severity instrument (SSI). Descriptive statistics were done in order to compare the LCB and SSI scores of Individuals with Stuttering (IWS) and Typical Individuals (TI). The study comprised of two groups. Group A- Individual with Stuttering and Group B - Typical Individual. The age range was 18 to 30 years.

Table 1 Mean age and standard deviation of subject in Group A and Group B.

Group	N	Mean Age(Years)	S.D.
A	20	22.55	3.13
B	20	23.41	2.14

The mean and standard deviation for SSI scores done by the Judge 1st at 1st and 2nd trial and judge 2nd is shown in Table 2

Table 2 Showing mean SSI scores and Standard Deviation done by the Judge 1st at 1st and 2nd trial and judge 2nd.

	Mean SSI scores	S.D.
SSI 1 (1st trial) 1st judge	33.00	5.24
SSI 2 (2nd trial) 1st judge	33.60	5.36
SSI 3 (2nd judge)	34.20	6.57

Intra-judge and inter-judge reliability: Pearson-correlation coefficient was done to analyse the inter-judge and intra-judge reliability. The scores for inter-judge reliability and intra-judge reliability are given in table 3 and 4 respectively.

Table R.3 The results of Pearson's coefficient correlation for inter-judge reliability.

SSI		SSI -1 (1st judge)	SSI -3 (2nd judge)
	Pearson Correlation	1	.981**
	Sig. (2-tailed)		.003**
	N	5	5

Note: Correlation is not significant at 0.05 levels (2-tailed)

Table 4 The results of Pearson's coefficient correlation for intra-judge reliability.

SSI	SSI -1 (1st judge)	SSI -2 (1st judge)
Pearson Correlation	1	0.995**
Sig. (2-tailed)		.000**
N	5	5

Note: Correlation is not significant at 0.05 levels (2-tailed)

Table R.5 Showing the means and standard deviations of the LCB scores of IWS and TI.

	N	Mean	Standard Deviation
Individual with Stuttering	20	33.90	8.12
Typical Individual	20	23.10	4.48

The hypothesis was to see whether there is any relation between degree of severity of stuttering and LCB scale scores. To prove the above mentioned hypothesis Pearson's relation was used on the data obtained and the analysis shown in table 6.

Table 6 Results of Pearson's coefficient co-relation for LCB scores and the degree of severity in IWS.

LCB	Pearson's relation	0.223
	Sig (2 tailed)	0.345
	N	20

Therefore, the null hypothesis is accepted as Pearsons coefficient correlation value is 0.223 which shows low relation between Degree of Severity of Stuttering and the LCB scale score. Sig. 2 tailed value was 0.345.

DISCUSSION

Pearson-correlation coefficient was done to analyze the intra-judge and inter-judge reliability and it was found to be very good. The scores for inter-judge and intra-judge reliability are given in table 2 and 3 respectively. The inter judge and intra judge reliability was done on the 5 out of 20 individuals. As the reliability was observed to be good by the clinician, the remaining 15 individuals SSI scores were not rated again. The mean SSI scores by 1st judge for the 1st and 2nd trial were 33.00 and 33.60 with standard deviation of 5.24 and 5.36 respectively. The mean score of SSI by 2nd judge were 34.20 with standard deviation of 6.57. Thus this suggests that reliable results could be obtained for the subjects in the present study.

The possible reason for this could be that both the clinicians are from the same institute and therefore with similar training backgrounds.

LCB and SSI: There is a low correlation observed between SSI scores and LCB scale scores (Karl Pearson Coefficient) in the present study. The findings can probably be attributed to a number of reasons. The first is that the sample size was small. Second, asymmetrical distribution of degree of severity of stuttering in the overall group. When total scores were evaluated for group A, (IWS) to calculate the degree of severity in stuttering, out of total 20 individuals, 3 presented with mild, 6 with moderate and 11 with severe degree. Third, this also gives an indication that the surface behaviors of an individual do not directly reflect the internality or externality. There can be other aspects of individuals underlying feelings which affect his surface behaviors. Fourth, the statistically low correlation between SSI and LCB among IWS can be explained by the fact that there would be individual differences for attitude and beliefs between the mild, moderate and severe degree of severity. Fifth, for any self-report measure, certain types of bias are believed to be intrinsic. Self- report measures generally tend to give a picture of what a person perceives. These differences could be more prominent for those persons who were having mild degree of severity most probably because they were having fear that their problem could be detected by others while at the same time IWS who were having severe degree of severity of stuttering, their main concern is just to say what is actually deemed to be adequate to complete that communication at that instant of time.

CONCLUSION

There is no significant co-relation between the SSI scores and the LCB scores. This suggests that the degree of stuttering is not directly related to the degree of externality. Since these scores are not in relation to each other. So, the scores need to be evaluated for all behavioral, cognition and affective domain to have a better idea about the problem. Majority of times patients were treated for the behavioral or the overt features henceforth keeping in mind that treatment for only one domain is not effective rather stuttering should be vied in its broader perspective.

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