

**STUTTERING IN THE VISUALLY IMPAIRED:  
AN ATYPICAL GROUP**

Prakash B\*, Dheepa D, Smitha R

**ABSTRACT**

*The study investigated the speech of 10 adult males who were visually normal stutterers and 10 visually impaired stutterers with the intention to compare and contrast the dysfluency profile of the groups. The results revealed comparable type and frequency of blocks in both the groups. The incidence of stuttering in visually impaired persons was found to be more in the sample surveyed. The theoretical and practical issues in the management of visually impaired stutterers are indicated and discussed.*

**INTRODUCTION**

"I'd rather be blind or deaf, or have a huge birth mark on my face, or be bald than stutter..." (1).

Research on stuttering in the past, have at least had three intentions namely (i) defining and explaining the symptomatology of stuttering (1,2, 3, 4, 5, 6). (ii) finding the cause (2,7, 8, 9) (iii) and cure for stuttering (1, 10, 11, 12, 13, ). This has resulted in grouping and sub grouping stuttering (1, 14, 15, 16). The criteria for selection of subgroups were based on cultural influences, gender, severity, psychological adjustment, cognitive ability and neurogenic etiology. Yet another way to view this multidimensional communication disorder is as "atypical forms of stuttering". Among the subgroups that constitute obvious and uncontested minorities are the female stutterers, psychologically maladjusted stutterers and clutterers - the atypical forms of stuttering (17). The indisputable fact is that regardless of the theoretical views of causation and other issues - stuttering is in a sense atypical (17). However stuttering in the blind population had received little attention until Weinberg's research in 1964 (18).

Thyllefors (19) study shows the incidence of blindness in the world as 45 million (total blindness) and 135 million (low vision). WHO - PBD data bank (20) statistics show the incidence of blindness in India as 8.9 million. Prevalence of stuttering in the general population was estimated to be 2% in America (21). Incidence of stuttering in India is speculated to be 1 in 100 people (approximately). Weinberg's (18) research on the prevalence of stuttering among persons who are blind and partially sighted, reveals that the prevalence of stuttering is the

same as that in the general population. However, there are no such controlled statistics available in India. In this regard, the present study aimed to

- i. profile the symptomatology of stuttering in people who are visually impaired,
- ii. find out if differences existed in these profiles when compared with profiles of visually normal stutterers and finally,
- iii. to assess how do the visually impaired view the problem of stuttering.

## **METHOD**

### **Participants**

The participants in this study included twenty adult males in the age range of 22 and 30 years. They were divided into two groups, viz. group A and B comprising ten visually normal stutterers and ten visually impaired stutterers respectively. Participants in group 'A' were identified at the Department of Speech Language and Hearing Sciences of Sri Ramachandra Medical College and Research Institute, Chennai, during the camp conducted to commemorate International Stuttering Awareness Day (ISAD) 2001. Participants in group 'B' were identified at the Regional Centre of the National Institute for Visually Handicapped, Poonamallee, Chennai and Government Higher Secondary School for the Blind, Poonamallee, Chennai. They were selected from the ninety students screened at the school. All of them reported dysfluent speech since childhood. None of the subjects had hearing and cognitive deficits.

### **Procedure**

The subjects were comfortably seated in a noise free environment and involved in the following experimental tasks: (i) conversational speech (revolving around daily routine, work place, time management and family), (ii) counting numbers one to twenty and (iii) narrating an incident or a story. Each speech sample lasted for a duration of four to five minutes, which was recorded on to a high quality audio cassette using a portable audio recording system.

### **Analysis of data**

The recorded speech samples were transcribed verbatim and were analysed for sound syllable repetitions, part word repetitions, whole word repetitions, phrase repetitions, prolongations, filled pause, unfilled pause, false starts, parenthetical remarks and any other atypical dysfluency (if present). In addition, the percentage of dysfluency, number

of iterations and the rate of speech in words per minute (WPM) were also calculated. The data were tabulated and compared descriptively for the types of dysfluencies. The subjects' self perception of the stuttering problem were also analysed.

## RESULTS

The dysfluency profiles of group A and group B are shown in tables 1 and 2 respectively and in figure 1.

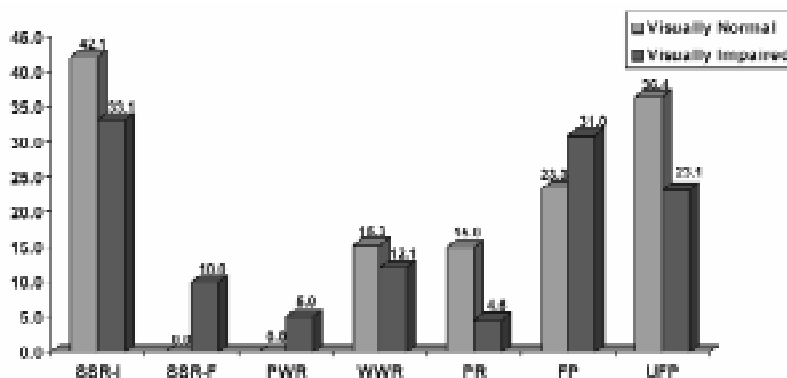
**Table 1 : Dysfluency profile in group A (Visually normal stutterers)**

Sub. No	Age in yrs	% dys fluency	No. of dys fluencies	No. of utterances	% Sound Syllable Repetition			No of iterations	% Whole Word Repetition	% Phrase Repetition	% Pauses			Mean duration of pauses in seconds	Rate of Speech in WPM
					Initial	Final	Total				Initial	Final	Total		
VN1	33	36.9	24	065	70.8	-	70.8	1-3	-	-	29.2	-	29.2	2.0	100
VN2	21	45.7	48	105	39.5	-	39.5	1-3	-	-	16.7	20.8	37.5	3.0	081
VN3	17	43.1	22	051	27.2	-	27.2	1-2	-	-	09.1	63.6	72.7	4.0	043
VN4	14	11.2	14	125	28.6	-	28.6	1-2	-	-	35.7	35.7	71.4	3.0	130
VN5	15	22.3	19	085	21.0	-	21.0	1-2	-	-	21.0	51.9	79.0	3.5	076
VN6	24	07.7	05	065	40.0	-	40.0	1-2	-	20.0	-	40.0	40.0	2.0	091
VN7	22	14.6	18	120	22.2	-	22.2	1	-	-	38.9	38.9	77.8	2.0	128
VN8	21	40.0	30	075	40.0	-	40.0	1-3	-	10.0	16.7	33.3	50.0	1.5	088
VN9	29	14.0	14	100	57.1	-	57.1	1-2	-	-	35.7	07.1	42.8	3.0	129
VN10	33	34.7	26	075	76.9	-	76.9	1-3	15.3	-	07.6	-	07.6	1.5	126
Mean	22.9	27.0	22	86.6	42.3	-	42.3	2	15.3	15.0	23.3	36.4	50.7	2.4	099

**Table 2 : Dysfluency profile in group B (Visually impaired stutterers)**

Sub. No	Age in yrs	% dys fluency	No. of dys fluencies	No. of utterances	% Sound Syllable Repetition			No of iterations	% part Word Repetition	% Whole Word Repetition	% Phrase Repetition	% Pauses			Mean duration of pauses in sec.	Rate of Speech in WPM
					Initial	Final	Total					Initial	Final	Total		
V11	19	16.4	21	128	14.3	-	14.3	1--3	-	09.5	-	66.7	09.5	76.2	1.5	091
V12	19	24.5	60	245	33.3	10	43.3	1-5	05	03.3	3.3	38.3	06.7	44.9	2.5	086
V13	21	17.7	25	141	32.0	-	32.0	1--3	-	36.0	-	12.0	20.0	32.0	1.5	109
V14	18	24.0	46	191	17.3	-	17.3	1--3	-	13.0	6.5	41.3	21.7	63.0	3.0	108
V15	20	18.2	53	290	18.9	-	18.9	1--3	-	03.8	-	49.0	28.3	77.3	2.5	089
V16	20	18.5	69	371	27.5	-	27.5	1--3	-	13.0	-	18.8	40.6	59.4	2.0	111
V17	20	14.3	24	167	33.3	-	33.3	1-2	-	12.5	4.1	12.5	37.5	50.0	2.0	099
V18	20	16.9	20	118	35.0	-	35.0	1-3	-	15.0	-	15.0	35.0	50.0	2.0	100
V19	13	08.7	69	191	73.9	-	73.9	1-4	-	05.8	-	11.6	08.7	20.3	2.0	088
V110	33	17.2	22	128	45.5	-	45.5	1-3	-	09.1	-	45.4	-	45.4	3.5	117
Mean	20.3	17.6	40.9	197	33.1	10	34.1	2.5	05	12.1	4.6	31.0	23.1	51.8	2.2	099

**Figure 1: Dysfluency profile in groups A & B**



SSR-I : Sound Syllable Repetition - Initial  
 SSR-F : Sound Syllable Repetition - Final  
 PWR : Part Word Repetition  
 WWR : Whole Word Repetition  
 PR : Phrase Repetition  
 FP : Filled Pause  
 UFP : Unfilled Pause

Analysis of data reveal that both the groups A and B exhibited similar types of dysfluencies. They included:

- i. sound syllable repetitions (mean : 42.3% in group A and mean : 33.1% in group B)
- ii. final syllable repetitions (10%) in one subject in group B whereas no such dysfluencies were identified in group A
- iii. part word repetitions were not found in group A
- iv. whole word repetitions (one subject in group A and all subjects in group B)
- v. phrase repetitions (two subjects in group A and three subjects in group B)
- vi. mean number of iterations (one to three in group A and one to five in group B)
- vii. pauses i.e. both filled and unfilled ( mean:50.8% in group A and 51.9% in group B)
- viii. mean duration of pauses ranged from 1.5 to 4 seconds in group A and 1.5 to 3.5 seconds in group B
- ix. prolongations, parenthetical remarks and false starts were not observed in both the groups.

Rate of speech ranged between 43 WPM and 128 WPM in group A while subjects in group B had their rates of speech between 86 WPM and 117 WPM.

All visually impaired stutterers were aware of their speech problem. None of them knew of management options for the same. However, none felt that speech was a major impediment in their life, unlike the visually normal stutterers.

## **DISCUSSION AND CONCLUSION**

The study focused on deriving and comparing the dysfluency profile of visually normal and impaired stutterers speaking Tamil. In consonance with Weinberg's findings (18), the present findings show no variations in the types and percentage of dysfluencies between the groups.

However, of the ninety students surveyed in the two blind schools, ten exhibited considerable percentage of dysfluencies to be labelled as "Stuttering". This is higher than the perceived notion that the prevalence of stuttering among blind persons is the same as that in the general population. One may handle the present finding with caution, owing to the small sample of visually impaired persons surveyed. Lack of scientific data to support incidence and prevalence of stuttering in the general population in India, further complicates the issue.

The finding that visually impaired stutterers view their problem as less interfering in their day-to-day life, unlike visually normal stutterers, has theoretical and practical implications. Stuttering caused and perpetuated due to listeners' adverse reaction to the dysfluent speech may be questioned at least from a remote sense. Managing stuttering in the visually impaired raises a question of whether one should create awareness of the speech problem and then treat or apply other innovative ways to deal with the impediment. Further research should probe a larger sample and find other associated symptoms like fear, anxiety, physical concomitants etc. These would aid in deciding whether different treatment strategies or techniques are to be devised and used with visually impaired stutterers, who in principle could be considered as an atypical group.

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#### **REFERENCES**

1. Van Riper C. *Nature of stuttering*, NJ: Engle Wood Cliffs, Prentice-Hall, 1982.
2. Bloodstein O. *A handbook on stuttering (4th ed.)*, Chicago: National Easter Seal Society, 1987.
3. Perkins W H. *What is stuttering?* In F.H. Silverman. (ed.) *Stuttering and other fluency disorders*, Engle Wood Cliffs, NJ: Prentice-Hall, 1992.
4. Peters T J. *Stuttering: An integrated approach to its nature and treatment, Baltimore:* Williams and Wilkins, 1980.
5. Starkweather C W. *Current trends in therapy for stuttering in children and suggestions for further research - ASHA reports.* In F.H. Silverman. (ed.) *Stuttering and other fluency disorders*, Engle Wood Cliffs, NJ: Prentice-Hall, 1992.
6. Wingate M E. *A standard definition of stuttering.* In Jayaram, M & Savithri, S.R.(ed.). *Fluency disorders: Assessment and management.* ISHA monograph-I, ISHA, 1993.
7. Brutton G J. Shoemaker D J. *The modification of stuttering.* Engle Wood Cliffs, NJ: Prentice-Hall, 1967.

8. Geschwind N. Galaburda A N. ***Cerebral lateralization: Biological mechanisms, associations and pathology: I.A. hypothesis and a program for research.*** In F.H. Silverman (ed.). *Stuttering and other fluency disorders.* Engle Wood Cliffs, NJ: Prentice-Hall, 1992.
9. Johnson W. ***The onset of stuttering: Research findings and implications.*** Minneapolis: University of Minnesota press 1959.
10. Contur E G. ***Stuttering (2nd ed.)*** Engle Wood Cliffs, NJ: Prentice-Hall, 1990.
11. Hegde M N. ***Treatment of fluency disorders: State of art.*** In Jayaram M., Savithri S.R.(ed.). *Fluency disorders: Assessment and management.* ISHA monograph - I, ISHA, 1993.
12. Jayaram M. Savithri S R. ***Fluency disorders: Assessment and management.*** ISHA monograph - I, ISHA, 1993.
13. Schwartz M F. ***Stuttering solved.*** NY McGraw Hill book company, 1976.
14. Sheehan J G. ***Stuttering: Research and therapy.*** New York: Harper & Row, 1970.
15. St.Onge K, Calvert J J. ***Stuttering research.*** In F.H.Silverman (ed.). *Stuttering and other fluency disorders,* Engle Wood Cliffs, NJ: Prentice-Hall, 1992.
- 16 Riley G D, Riley J. ***Oral motor discoordination among children who stutter.*** In F.H. Silverman (ed.). *Stuttering and other fluency disorders,* Engle Wood Cliffs, NJ: Prentice-Hall, 1992.
- 17 St. Louis K O. ***The Atypical stutterer: Principles and practices of rehabilitation*** Orlando, FL: Academic Press, 1986.
18. Weinberg B. ***Stuttering among blind and partially sighted children.*** In F.H. Silverman. (ed.). *Stuttering and other fluency disorders,* NJ: Engle Wood Cliffs, Prentice-Hall, 1992.
- 19 Thyllefors. ***A global initiative for elimination of avoidable blindness.*** Indian Journal of Ophthalmology, 46, 1998.
20. WHO-PBD. ***Global initiative for the elimination of avoidable blindness.*** In C.L. Kundu (ed.) *Status of disability in India-2000.* RCI, New Delhi, 1997.
21. Leske M C. ***Prevalence estimates of communicative disorders in the US: speech disorders.*** In O. Bloodstein (ed.). *A handbook on stuttering (4th ed.),* Chicago: National Easter Seal Society, 1987.