Awareness and Attitude towards Stuttering Among Normal School Going Children

Powlin A C & S R Savithri*

Abstract

Information on onset and development of awareness and attitudes towards stuttering in normally fluent children is an important step in understanding the development of stuttering. The present study investigated awareness and attitudes of Tamil speaking normal children towards stuttering. Specifically 180 children from 5-14 years (1st to 9th grade) participated in the study. Video speech samples of a child with stuttering and a fluent child were used to study awareness and attitude. The samples were played to the children and a set of 13 questions were asked individually to examine children's ability to identify, discriminate, self-identify, label, knowledge of cause and treatment of stuttering and their attitude towards stuttering. Analyses of the data revealed that awareness of stuttering is present in children as early as 5-6 years and accuracy in awareness develops as age increases. Overall children's attitude was negative towards dysfluent speaker. That is they preferred fluent speaker compared to a dysfluent speaker. These negative reactions of normal children may aggravate the speech problem in children with stuttering. Speech-language pathologist should educate normal children to develop healthy attitude towards children with stuttering.

Introduction

Van Riper (1978) said that stuttering occurs when the forward flow of speech is interrupted abnormally by repetitions of a sound, syllable or articulatory posture or by avoidance and struggle behavior. In the great majority of cases stuttering occurs in childhood before age 4 (Yairi & Ambrose, 1999). It is reported that stuttering is present in about 1% of the school population with male to female ratio of 2.2:1 to 5.3:1 (Bloodstein, 1995).

Traditionally self-awareness of stuttering has been viewed as an important feature in the onset and development of the disorder and this concept has been central in both the theoretical and clinical thinking about the disorder. According to Bleumel (1932) awareness is absent during the early stage or primary stuttering and present in secondary stuttering when physical tension is associated with speech interruption. During secondary stuttering awareness of speaking difficulties and secondary characteristics emerges prompting the development of negative emotional reactions to stuttering.

Awareness of stuttering or fluency in normally fluent children is dependent upon the development of a certain level of sophistication in meta-linguistic abilities or the ability to describe language. Meta-linguistic ability emerges during early years and more fully developed

* Professor of Speech Science, All India Institute of Speech and Hearing, Mysore, India
e-mail: savithri_2k@yahoo.com

in five years old. Children with stuttering may be aware of different ways of speaking before their non-stuttering peers. Fluent children may develop awareness of their fluency later than some children with stuttering who develop awareness of disfluency (Ambrose &Yairi, 1994)

Awareness study in normal children also provides relevant information concerning critical elements in the formative processes underlying children's attitude towards stuttering. Attitude is defined as relatively stable system of organization of ones behavior and experience related to a particular object or event. According to McDavid and Harari (1974) every attitude includes three components: a cognitive component (idea), an affective component (feeling and emotions) and a behavioral component (judgment or action).

Studies in the past concerning the attitudes of normal speakers towards persons with stuttering (PWS) reported that they were perceived as being shy, withdrawn, tense, anxious and self-conscious by teachers, speech clinicians, students and general public. Listeners' stereotypes can affect the way individual who stutter see themselves and this may further aggravate the speech problem. In this view it is essential to study the attitudes of fluent children towards stuttering.

Till date there are only few studies that had focused on awareness and attitudes of stuttering by children who do and do not stutter. Giolas & Williams (1958) studied 120 kindergarten and second grade normally fluent children. The task consisted of answering a questionnaire pertaining to speech samples of three adults with three different speech patterns identified as fluent, interjections and repetitions. On listening to the speech samples children had to identify a prospective teacher among the three subjects. Results indicated that speech pattern was a determining factor in the selection of a person as a prospective teacher. Children placed fluent pattern first, the interjection pattern next and repetition pattern last. Ambrose & Yairi (1994) conducted a study on development of awareness of stuttering in preschool children. They used a pair of identical puppets, one with fluent and other with dysfluent speech. Twenty normally fluent and twenty children with stuttering (CWS) ranging in age from 2 to 5 years were asked to identify the puppet whose speech resembled their own. Children with dysfluent and fluent speech were able to identify their speech with dysfluent and fluent puppet respectively. In this study a narrow range of age group (2-5 years) did not allow for evaluation of the full development of awareness in both fluent and dysfluent children. Also only one dysfluent type, i.e., repetition was employed. In another study Ezrati-Vinacour, Platzky and Yairi (2001) employed similar method as that of Ambrose & Yairi (1994) on 79 normal school children ranging in age from 3 to 7 years. They checked the awareness under different sub-tasks namely discrimination, self-identification, labeling and evaluation. Experimental stimuli were videotapes of two identical seal puppets positioned side by side on the television screen. One puppet spoke completely fluently and the other spoke with dysfluent speech. The fluent and dysfluent puppet presented a series of six pairs of sentence stimuli in Hebrew. Children viewed the video samples individually and a set of six questions was asked to them. Results indicated that as age increased the ability to discriminate, self-identify and label increased reaching maximum level at 7 years. In the evaluation task it was found that as age increased negative evaluation of dysfluency increased and children were able to give speech as reason for the preference of fluent puppet. The three above mentioned studies concerning normal children's awareness of stuttering were carried out in western context where the culture, socioeconomic status and tolerance level that play a major role in awareness are different from Indian context. In Indian context Catherine,

Prakash, Shekinah & Anusha (2004) conducted a study among Tamil speaking normally fluent children to check awareness of stuttering using audio samples of fluent and dysfluent speech. A total of 140 children between 3 and 10 years participated in the study. The children were divided into eight groups from kindergarten to fifth grade. They were made to listen to Popeye story narrated by fluent and stuttering male children. After listening to the samples they were asked a set of seven questions to check the awareness. The results of the study indicated that children's ability to identify, discriminate and label increased as age increased and between the ages of 8-10 years, 85% of the children was able to label stuttering correctly. In the task to find the attitude towards children with stuttering it was found that preference to fluent speaker increased as age increased from 3 to 9 years (35% to 65%) and 9 to 10 years old subjects demonstrated a positive attitude towards dysfluent speaker. This study used audio samples of stuttering. Audio sample may not provide a complete picture of stuttering as it also has physical concomitants, movements or secondaries.

Of these studies on awareness of normal children one study (Giolas et al, 1958) is on preference of fluent or dysfluent patterns. Another (Ambrose et al, 1994) is on identification of dysfluencies. Two studies (Ezrati -Vinacour et al, 2001, Catherine et al, 2004) are on awareness. These studies have used children in different age groups. Further, the dysfluencies included were repetition, prolongation and interjection. Other dysfluencies such as pauses are also important. In addition these studies have used audio samples. In an audio sample the physiological or secondaries or any other struggle behavior will not be perceived and hence audio sample may not give a complete picture of the awareness. Moreover these studies have not clearly explored into the attitudes of normal school going children towards stuttering. In this context the present study investigated awareness and attitudes of Tamil speaking normal children towards stuttering. Tamil is a Dravidian language spoken by 62 millions of people in the state of Tamil Nadu (Rajaram, 1972, www.mp.nic.in/des/census 2001/STATS).

Method

Participants: A survey research was used in which nine groups of Tamil speaking normal children between 5 and 14 years (first to ninth grade) of a regular school of Tamil Nadu participated in the study. From each age group twenty children (ten boys and ten girls) were randomly selected. The children were from middle and low socioeconomic status. All the children underwent a speech language and hearing screening prior to the data collection. Only those children who had normal speech and hearing were selected.

Experimental stimuli: Two speech samples in Tamil were video recorded. Sample 1 was a speech sample of a fluent boy aged 4 years and sample 2 was a speech sample of a 4-year-old boy with stuttering. The child with stuttering was diagnosed to have severe stuttering (SSI Score: 18) during speech and language evaluation at AIISH and was enrolled for speech therapy. The video sample was collected prior to the initiation of therapy. Also the video recorded sample was viewed by two Speech pathologists and identified as stuttering. The speech sample was collected during general conversation and picture description of a story from both the children individually. Video recording was done using a high quality video recorder. Each sample lasted for 2 minutes. Fluent and dysfluent children were hypothetically named as Raja and Sheker respectively. The dysfluencies exhibited by Sheker were found to be thirteen sound syllable

repetitions, five prolongations, two filled pauses and articulatory fixation. Over all percentage of dysfluency was 38%.

Procedure: Each participant between 5 and 10 years (first to fifth grade) viewed the samples individually on a computer monitor. From 10 to 11 years (sixth to ninth grade) three children were allowed to view the video sample at a time. The samples were played in the computer monitor in the computer room of the school. Before starting the experiment the investigator explained each child that he/she would see two children Raja and Sheker speaking one after another. Following this children were allowed to watch the samples. After each child completed viewing the samples a questionnaire was administered and questions were asked orally. The investigator recorded the responses of the children.

Questionnaire: The investigator developed a 2-part 13-item questionnaire. There were 6 tasks under awareness (part-I) including identification, discrimination, self-identification, labeling and knowledge of cause and knowledge of treatment. Attitude (part-II) included 6 questions in which 3 questions focused on self-attitude of children and 3 on perception of their friend's attitude towards CWS. The questionnaire is given in Appendix I.

Data Analysis: Children's responses were recorded on a scoring sheet by the investigator. For identification, discrimination, self- identification and naming task a score of one was given for correct answer and zero for incorrect answer. In the identification task two questions were asked (How did Raja speak and how did Sheker speak?). If the response given was good and bad speech, a score of one and zero was given respectively. In the similar way for discrimination task (who spoke well?) a score of one was given if the answer was Raja and zero if the answer was Sheker. In self-identification task (who among them spoke like you?), responses were scored one if the child identified him/herself with fluent speaker and zero otherwise. To identify whether children are aware of the cause and treatment of stuttering two questions were asked (why is Sheker stuttering? and what can be done to make Sheker speak fluently?). The responses were categorized as congenital, anatomical/medical, psychological, speech related and no responses. Answers for question regarding treatment were categorized as 'can treat' and 'cannot treat'. The responses of who gave "can treat" answers were further classified specifically as referred to physician, speech training or given other physiological explanation.

Attitudes towards stuttering were probed in two ways by obtaining information about children's self reaction and his/her friends' reaction towards stuttering. The children's preferences to play, speak and to be a friend of fluent or CWS was enquired and reasons for their preferences were categorized under speech and non-speech reasons.

Statistical Analysis: The responses of both boys and girls of each age group were cumulated and percentage was calculated. Chi-square test was used to find the age and gender effect across the tasks.

Results and Discussion

Part I – Awareness

1. Identification task: The results indicated that children's ability to identify stuttered speech as bad speech and fluent speech as good speech increased as age increased. At 11-12 years (boys)

and 12- 13 years (girls) 100% of subjects were able to identify Sheker's speech as bad speech. And as early as 5-6 years all the boys and girls (100%) were able to identify Raja's speech as good speech. Chi-square test revealed a significant effect of age on identification of stuttering (χ^2 (8) =79.74; p< 0.05). Children's ability to identify stuttering increased as age increased. Results did not show a significant effect (χ^2 (1) = 0.0073; p> 0.05) of gender. Table 1 shows percent identification by nine groups of children.

Table 1: Percent identification scores on identification task

Age groups (years)	Fluent speaker (Raja)		Dysfluent speaker (Sheker)	
	Boys	Girls	Boys	Girls
5-6	100	100	0	0
6-7	100	100	40	60
7-8	100	100	10	30
8-9	100	100	40	40
9-10	100	100	50	50
10-11	100	100	80	60
11-12	100	100	100	90
12-13	100	100	100	100
13-14	100	100	100	100

2. Discrimination task: Results of chi-square test (χ^2 (8) = 40.656; P<0.05) revealed significant association between discrimination ability and age. 100% of girls at 6-7 years and 100% of boys at 9-10 years discriminated fluent and dysfluent speaker. No significant effect of gender on discrimination ability (χ^2 (1) = 0.68; p>0.05) was noticed. Table 2 shows percent discrimination score across age groups.

3. Self-identification task: Chi-square test did not reveal any age (χ^2 (8) = 12.89; p>0.05) and gender (χ^2 (1) = 0; p>0.05) effect. 100% of boys at 9-10 years and 100% of girls at 8-9 years self-identified with fluent speaker. Table 2 shows percent self-identification with fluent speaker.

Table 2: Percent discrimination, self-identification and labeling scores

Age groups (years)	Discrimination		Self- identification		Labeling	
	Boys	Girls	Boys	Girls	Boys	Girls
5-6	90	80	90	80	10	10
6-7	90	100	100	90	70	40
7-8	90	100	90	90	50	50
8-9	90	100	80	100	40	80
9-10	100	100	100	100	70	80
10-11	100	100	100	100	100	90
11-12	100	100	100	100	90	100
12-13	100	100	100	100	100	90
13-14	100	100	100	100	80	100

4. Labeling task: Chi-square test revealed a significant effect of age on labeling (χ^2 (8) = 71.89; p>0.05). That is the ability to label increased with increase in age. No significant difference (χ^2

(1) = 0.23; P>0.05) between gender was noticed. Table 2 shows percent labeling by all 9 groups of subjects.

5. Knowledge of cause of stuttering: Twenty percent of boys and 22% of girls gave causes of stuttering. Of this 1.60% was congenital, 7.8% was medical or anatomical, 2.77% was psychological and 4.44% each was physiological and speech related. Tables 3 show percent responses on knowledge of causes.

Table 3: Percentages of children given causes of stuttering

Age groups (years)	Boys	Girls
5-6	0	0
6-7	30	50
7-8	20	30
8-9	10	30
9-10	20	10
10-11	20	20
11-12	20	0
12-13	40	10
13-14	20	50
Average	20	22.21

6. Knowledge of treatment of stuttering: About 50% of boys and 52.2% of girls answered that stuttering can be treated. Among 50% of boys 21.11% suggested that a physician should be consulted. 17.77% said that they should be given speech practices/training and other 4.44% gave physiological explanations. 52.2% of girls responded that stuttering could be treated and among them 27.77% said that children who stutter should be referred to a physician and 20% suggested speech training. (One girl suggested consultation of a speech therapist). Tables 4 and 5 show percent responses on knowledge of stuttering and treatment options.

Table 4: Percent response on knowledge of stuttering

Age group (yrs)	Can treat		Cannot treat		No response	
	Boys	Girls	Boys	Girls	Boys	Girls
5-6	-	-	-	-	10	10
6-7	30	50	30	30	40	20
7-8	30	40	-	-	60	60
8-9	40	40	30	30	40	30
9-10	30	30	20	20	70	50
10-11	60	70	10	10	40	20
11-12	90	90	-	-	-	10
12-13	90	90	-	-	-	10
13-14	80	60	30	30	20	10
Average	50	52.22	5.88	13.33	30	23.33

Table 5: Treatment options for stuttering (in %)

Age group (years)	Physiological explanation		Physician referral		Speech Practices/ training		No response	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
5-6	-	-	-	-	-	-	-	-
6-7	-	-	30	40	0	0	0	10
7-8	-	-	30	40	-	-	-	-
8-9	30	-	10	40	-	-	-	-
9-10	-	-	10	20	20	10	-	-
10-11	-	-	30	50	30	20	-	-
11-12	-	-	30	-	50	30	20	-
12-13	10	-	20	50	30	50	30	-
13-14	-	-	30	10	30	30	20	20
Average	4.44		21.11	27.77	17.77	20	6.66	5.55

Part II – Attitudes

1. Self-attitude: The results revealed that both boys and girls preferred fluent speaker (boys: 60.3% and girls: 56.6%) for all the three activities compared to dysfluent speaker (boys: 28% and girls: 30.3%). Chi-square test revealed no significant effect of preference of speaker and gender on all the three activities, i.e. to be a friend (χ^2 (1) = 0.079; p>0.05), to play (χ^2 (1) = 0.36; p>0.05) and to speak (χ^2 (1) =0.49; P>0.05). A significant age effect was noticed with increase in preference with age for dysfluent speaker to be friend of (χ^2 (8) =36.49; p<0.05), to play with (χ^2 (8) = 34.38; p<0.05) and to speak (χ^2 (8) =36.87; p<0.05). Table 6 shows speaker preferences with gender.

Table 6: Preferences for fluent and dysfluent speakers (in %)

Gender group	Fluent speaker (Raja)	Dysfluent speaker (Sheker)
Boys	60.3	28.0
Girls	56.6	30.3

Children were also asked to give reasons for their choice of speaker and their responses were characterized as speech and non-speech reasons. The percentage scores show a non-linear response across the age for all the three activities. Chi-square test revealed no significant effect of age on providing speech reason across all the three tasks (i.e. to be a friend of (χ^2 (8) = 6.68; p>0.05), to play with (χ^2 (8) = 10.78; p>0.05) and speak with (χ^2 (8) = 6.84; p>0.05) and no significant effect of gender on giving speech reason for tasks i.e. to be a friend (χ^2 (1) = 0; p>0.05), to play (χ^2 (1) = 0.39; p>0.05) and to speak (χ^2 (1) = 0; P>0.05). Table 7 shows percentage of speech reasons for speaker choice and figures 1 and 2 show percentage of speaker preferences in 3 tasks in boys and girls.

Table 7: Speech reasons for speaker choice (in %)

Age group (years)	Friend		Play		Speak	
	Boys	Girls	Boys	Girls	Boys	Girls
5-6	90	60	80	60	90	60
6-7	70	100	80	90	80	100
7-8	70	100	70	100	70	100
8-9	70	90	50	80	60	80
9-10	80	50	70	40	80	50
10-11	70	60	70	80	70	70
11-12	70	80	70	80	80	80
12-13	80	60	90	70	90	70
13-14	60	60	60	60	60	70

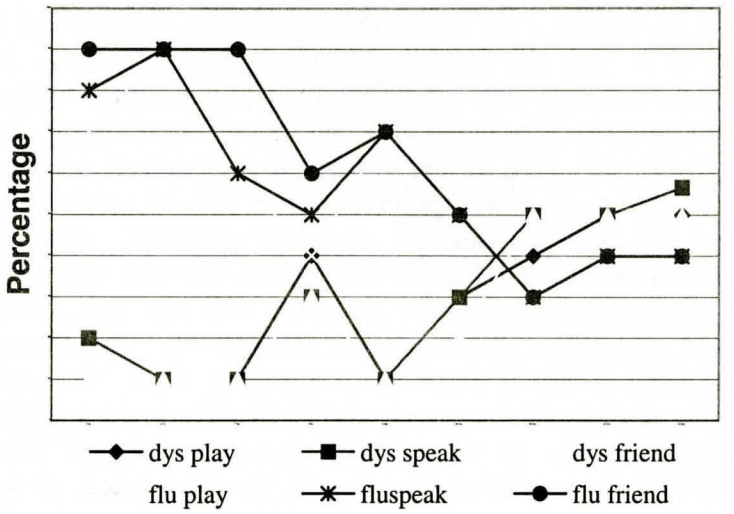

Figure 1: Percentage scores of preferences in boys on three tasks

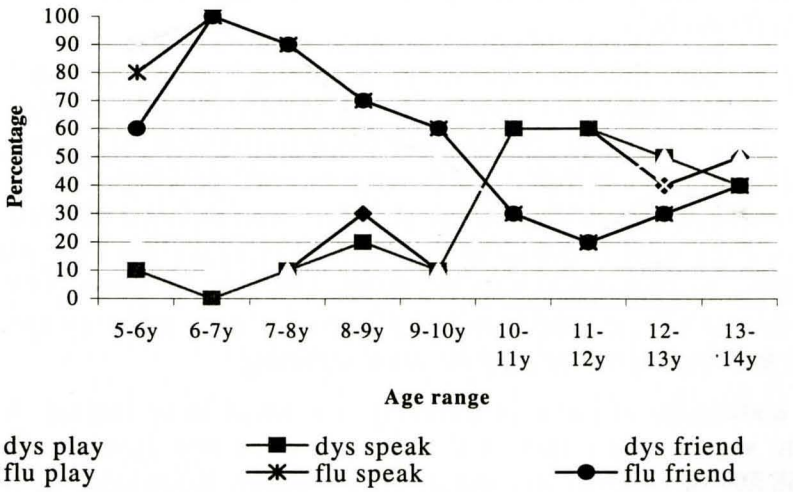

Figure 2: Percentage scores of preferences in girls on three tasks

2. Friend's attitude: As in self-attitude task children perceived their friend's preferences also to be more towards fluent speaker (boys: 67.3% and girl: 58.46%) compared to dysfluent speaker (Sheker) (boys: 18.83% & girls: 24.76%). Chi-square test did not indicate significant difference between gender in predicting friend's preferences for tasks i.e. to be a friend (χ^2 (1) = 0.86; p>0.05), to play (χ^2 (1) = 0.87; p>0.05) and to speak (χ^2 (1) = 2.26; P>0.05). Also chi-square test did not show any significant effect of age on predicted friends preferences of speaker across tasks (i.e. to be friend of (χ^2 (8) = 13.66; p>0.05) to play with (χ^2 (8) = 12.86; p>0.05) and speak with (χ^2 (8) = 13.51; p>0.05).

Percentage score of speech reason showed a non-linear pattern on all tasks. Chi-square test revealed no significant effect of age on speaker preference (i.e. to be a friend of (χ^2 (8) = 10.81; p>0.05), to play with (χ^2 (8) = 14.91; p>0.05) and speak with (χ^2 (8) = 10.07; P>0.05) and no gender effect.

The results of the present study revealed several points of interest. It provides evidence of awareness of stuttering in normally speaking Tamil children as early as 5-6 years. Results of identification task indicated that 45% of children identified stuttered speech as bad speech between 6-7 years and with increased age (12-13years) 100% of children were able to identify stuttered speech as bad speech. And gender differences were absent. However Cartherine et. al. (2004) study reported that at an early age of 3-4 year 35% of children were able to identify stuttered speech and the ability to identify stuttering increased with increase in age. Also Ambrose & Yairi (1994) and Ezrati-Vinacour et al. (2001) reported the presence of awareness in some 3-year-old children and that awareness increases with age. This lower age group was not probed in the present study. The reason for non-identification of stuttering by 5-6 years old children may be attributed to lack of exposure to stuttering. Eighty five percent of 5-6 year old children were able to discriminate stuttered speech from normal speech and discrimination ability increased with increase in age. Gender difference was not found. This finding reveals that discrimination ability is more fully developed prior to identification in young children. Children were able to self-identify with fluent speaker (90%) as early as 5-6 years and 100% at 9-10 years. Discrimination and self-identification task yielded similar results suggesting that these two indicators of awareness emerge simultaneously. This finding is in consonance with Ezrati-Vinacour et al's (2001) study.

The ability to label dysfluent speech as "stuttering" increased with increase in age. Between the ages of 5-6 years only 10% of the children were able to label but the ability increased to 100% as age increased. Children not aware of the term "stuttering" described it as "interrupted speech", "blocked speech", "he is stopping and speaking" and "blabbering". This result is in agreement with Ezrati-Vinacour et al (2001) who reported that one 6 year old and four 7 year olds used the term stuttering in their study and as the age increased the responses were accurate. It is not in consonance with the results of Culatta & Sloan (1977) who reported that none of their first or second graders used the word stuttering and only approximately one-third of third grade and fourth graders used the word stuttering.

Children's knowledge of cause of stuttering was found to be limited. As in other tasks children's ability to suggest cause increased with increase in age. However in the higher age group also only 38.8% of children had attempted to answer. Knowledge of treatment is also limited. Only half of the children responded that stuttering can be treated. And most of them said

a physician has to be consulted, some said speech practices/training should be given and few gave physiological explanations. Only one girl said that speech pathologist has to be consulted. This limited knowledge regarding cause and treatment of stuttering may reflect reduced exposure to the problem itself or inadequate overall knowledge in the community about stuttering. The children were from low and middle socio economic status. It will be interesting to know whether similar kind of awareness is present in children from upper socio economic status.

Results of attitudes towards stuttering revealed that preferences to a fluent speaker are more than dysfluent speaker to play, speak and to be a friend. This result is in consonance with many other studies in the literature which reported normal speakers having a negative attitude towards individuals with stuttering (Patterson & Pring, 1991; Silverman & Bongey, 1996 and Dorsey & Guenther, 2000). However it was interesting to know that children in high school (10-14 years) had preferred dysfluent speaker compared to fluent speaker. Also, children were able to give speech reasons for their preference. No effect of age and gender in giving speech reasons was noticed. But higher age group girls gave a reason that they wanted to help CWS to speak well. On the other hand boys of higher age group preferred dysfluent speaker as they perceived his speech as a comedian or joker's speech. This may be because of the influence of the way PWS were being portrayed in movies or other programs. Ezrati-Vinacour et. al. (2001) reported that in their study of children between 3 -7 years negative attitude of the children increased with age whereas study by Catherine et. al. (2004) indicated that preference for a fluent speaker increased from 3-9 years and a sharp decline for a fluent speaker was noticed between 9-10 years. However in the present study, choice of a dysfluent speaker increased with age. It will be interesting to know whether similar preference exists in higher age groups also. The children also perceived their friend's attitude as negative towards dysfluent speaker in all the three tasks.

In the present study visual samples were used. Catherine et. al. (2004) reported the findings of awareness using audio samples. In the sub-tasks, identification, discrimination and labeling, the percentage scores were higher in the present study compared to Catherine et. al's. This indicates that a video sample provides a better picture of stuttering and emphasizes the need to use video samples in future studies on awareness of stuttering.

Conclusions and Implications

This study provides information that awareness of stuttering is present as early as 5-6 years and accuracy in awareness develops as age increases. Overall children's attitude was negative towards dysfluent speaker. That is they preferred fluent speaker compared to a dysfluent speaker. These negative reactions of normal children may aggravate the speech problem in children with stuttering. Therefore a speech pathologist needs to educate school children as early as 5-6 years to develop a healthy attitude towards their peers with stuttering. Children with stuttering can be counseled to develop a realistic expectation from their peers. We can also recommend the educational department of the government to include a chapter on speech problems especially stuttering for primary school children which will help in developing healthy attitudes in normal children.

The present study addressed children from 5 to 14 years (first to ninth grade). Future studies can focus on younger children for the presence of awareness of stuttering. The present study included children from low and middle socioeconomic status and the subjects are from one

school in Chennai. Future studies can include children from upper socioeconomic status and subjects can be selected from different schools. Such studies will give a more accurate picture of awareness and attitudes of normal children.

References

Ambrose, N.G. & Yairi, E. (1994). The development of awareness of stuttering in preschool children. *Journal of Fluency Disorders,* 19, 229 - 245.

Bleumel (1932). *Stuttering and other fluency disorders*. Englewood Cliffs, New Jersy: Prentice Hall

Bloodstein, O. (1995). *A handbook of stuttering* (5th Ed). San Diego, CA: Singular.

Catherine, S.P.A., Prakash, B., Shekinah, S.P. & Anusha, R. (2004). Awareness of stuttering among normal school going children. *Presented in 36th Indian speech & Hearing Conference.*

Culata, R. & Sloan, A. (1977). The acquisition of the label 'stuttering' by primary-level school children. *Journal of Fluency Disorders,* 2, 29 - 34.

Dorsey, M. & Guenther, R.k. (2000). Attitudes of professors and students towards college students who stutter. *Journal of Fluency Disorders,* 25, 77 - 83.

Ezrati-Vinacour, Platzky. & Yairi. (2001). The young child's awareness of stuttering-like disfluency. *Journal of Speech, Language and Hearing Research,* 44, 368 - 380.

Giolas,T. & Williams, D. (1958). Children's reaction to nonfluencies in adult speech. *Journal of Speech, Language and Hearing Research,* 1, 86 - 93.

McDavid, J.W. & Harari H. (1974). *Psychology and social behaviors*. Harper & Raw Publishers: New York.

Patterson, J. & Pring, T. (1991). Listeners' attitudes to stuttering speakers. *Journal of Fluency Disorders,* 201-206.

Rajaram, S. (1972). Tamil phonetic reader. Central Institute of Indian Languages: Mysore.

Silverman, F.H. & Bongey, T.A., (1996). Nurses' attitudes towards physicians who stutter. *Journal of Fluency disorders,* 22, 61 - 62.

Van Riper, C. (1978). *Speech correction: Principles and methods*. Englewood Cliffs: NJ: Prentice-Hall.

Yairi, E. & Ambrose, N. (1999). Spontaneous recovery and clinical trials research in early childhood stuttering: A response to Onslow and Packman (1999). *Journal of Speech, Language and Hearing Research, 42*, 402 – 409.

Appendix I: Questionnaire

Part I - Awareness

I. Identification task

How did Raja speak?

How did Sheker speak?

II. Discrimination task

Who spoke well? Raja or Sheker?

III. Self- identification

Who spoke like you?

IV. Labeling task

What is this kind of 'talking' called?

V. Knowledge of cause

Why is Sheker stuttering?

VI. Knowledge of treatment

What can be done to make Sheker speak fluently?

Part II - Attititude

I. Self –attitude

1) You would like to be friends with whom & why?

2) Whom would you like to play with & why?

3) Whom would you like to speak with & why?

II. Friend's attitude

1) Your friend would like to be friends with whom & why?

2) Your friend would like to play with whom & why?

3) Your friend would like to speak with whom & why?