AWARENESS AND ATTITUDE TOWARDS STUTTERING AMONG NORMAL SCHOOL GOING CHILDREN

Registration No. L0480007

A Dissertation Submitted in part fulfillment of
Master's Degree (Speech Language Pathology)
University of Mysore,
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ALL INDIA INSTITUTE OF SPEECH AND HEARING
MANASAGANGOTHRI
MYSORE – 570 006

MAY – 2006

Dedicated to

My Christ

My Dad, Mom, Akka, Anna, Joan, Nisy

&

My guide Savithri ma'm

Certificate

This is to certify that this Dissertation entitled **"Awareness and attitude towards stuttering among normal school going children"** is a bonaflde work in part fulfillment for the degree of master of (Speech Language Pathology) of the student (Registration No. L0480007). This has been carried out under the guidance of a faculty of this institute and has not been submitted earlier to any other University for the award of any other Diploma or Degree.

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Declaration

This Dissertation entitled "**Awareness and attitude towards stuttering among normal school going children"** is the result of my own study under the guidance of Prof. S. R. Savithri, Professor and Head, Department of Speech-Language Sciences, All India Institute of Speech and Hearing, Mysore, and has not been submitted earlier in any other University for the award of any Diploma or Degree.

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"I can do all things through christ who strengthens me"

- Phil 4:13

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CHAPTER 1

Introduction

Communication is an act by which one person gives to or receives from person information about that person's needs, desires, perception, knowledge or affective states. An inability to effectively communicate ones views may arise because of speech and language disorders. Speech disorders include stuttering, voice disorders and articulation problems. 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.

According to Van Riper (1963), awareness of stuttering is lacking during the first stage of the disorder. Some brief moments of awareness might be experienced in the

second stage, with full awareness might be experienced in the third stage that take place in school children. The four- track system developed by Van Riper (1971) also reflected differences in the factor of awareness of stuttering progressing from slowly developing awareness in track I and II to the immediate presence of awareness in tracks III and IV. For many years the concept of self-awareness of stuttering has greatly influenced clinical decision on opting for direct or indirect therapy procedures.

The assumption regarding lack of overt awareness of stuttering during initial stages of the disorder, has contributed to the notion that clinical management of early childhood stuttering should not employ direct treatment of the child to avoid calling further attention to the stuttering. However, there are few evidences to suggest the presence of awareness in preschool children. In 1983, Yairi reported that the parents of 18% of children in his sample observed their children being aware of their speaking difficulties at or close to the time of stuttering onset. Ambrose and Yairi, (1994) also reported the presence of awareness of stuttering in preschool.

Awareness of stuttering or fluency in normally fluent children is dependent upon the development of a certain level of sophistication in metalinguistic abilities or the ability to describe language. Metalinguistic ability emerges during early years and more fully developed in five year old. Stuttering children may be aware of different ways of speaking before their non- stuttering peers. And fluent children may develop awareness of their fluency later than some stutterers develop awareness of their disfluency (Ambrose &Yairi, 1994)

It is essential to study fluent children's awareness of stuttering. It gives developmental baseline information of normal children's awareness on which stuttering children's awareness can be compared. Such comparison would highlight the special features that awareness takes on in children who stutter. Thus, awareness could be considered in understanding the development of the disorder, evaluating theories of stuttering and in clinical practice, both in parent counseling and direct treatment.

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 & Harari (1974), every attitude includes these 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 stutterers, reported that stutterers 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 a 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, interjection 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 stuttering children 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, 2-5years did not allow for evaluation of the full development of awareness in both fluent and dysfluent children. Also only one dysfluent type, repetition, was employed.

In another study, Ezrati- Vinacour, Platzky & 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 subtasks 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 age 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 in to 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). Specifically 180 children from 5 – 14 years (1^{st} to 9^{th} grade) participated in the study. Video speech samples of a child with stuttering and a fluent child were used to study awareness and attitude.

CHAPTER 2

Review of literature

"It is difficult for those who have not possessed or been possessed by the disorder to appreciate its impact on the stutterers self-concept, his roles, his way of living" (Van Riper, 1982).

From these lines of Van Riper, it is clear that stuttering is a complex disorder that has a strong impact on the lives of individuals who has it. Wingate (1964) defined stuttering as disruption in the fluency of verbal expression, which is characterized by involuntary, audible or silent, repetitions or prolongations in the utterances of short speech elements and words of one syllable.

Stuttering interrupts the forward flow of speech causing communication breakdown. The act of communication happens in the social context involving one or more listener. Any breakdown in the communication calls for the attention of the listener. Communication disorders are always entangled with the attitudes of listener towards the disorder and the person who possess the disorder. Stuttering being a communication disorder elicits negative reaction from the listeners. And this attitude of listeners towards stutterer and stuttering can be a primary factor in precipitating maintenance of stuttering behavior (Van Riper, 1982). The listener's negative attitude remains a threat to client and their problems.

For most of the individuals with stuttering, the onset of the problem is in childhood. In the past literature, self-awareness of children who stutter was considered as

a crucial factor for the onset and development of the disorder. This concept had great influence on both theoretical and clinical issues. There are few studies that had focused on normal children's awareness of stuttering. Such studies help in understanding normal children's attitude towards stuttering.

Triandis (1971) described attitudes as an idea charged with emotion that predisposes a class of action to a particular class of situation. Triandis (1967) supports a tripartite attitudinal model that describes three classes of evaluative responses to specific stimuli or attitudinal objects. They are (a) affect is associated with sympathetic nervous response or verbal statements of affect or emotion (the feeling component), (b) behavior deals with overt action or verbal elements concerning behavior (the action component), and (c) cognition is associated with perceptual responses or verbal statement of belief (the idea component).

Each attitude has a number of dimensions. It varies in direction (whether positive or negative in feeling), on magnitude or intensity (its degree of favorable or unfavorable feeling) and in the importance or salience of the attitude object to the person.

Research studies that investigated attitudes of listener towards stuttering had indicated that most often stutterers were perceived as being shy, withdrawn, tense, anxious and self-conscious by teachers, speech clinicians, students and general public. Patterson & Pring (1991) studied listener's attitudes towards stuttering speakers. Two groups of ten males and ten females listened to reading sample. One group listened to stuttered sample and the other to normal speech sample. Listeners were then asked to judge the sample using 14 bipolar characteristics in a 7-point scale. Results indicated that

stutterers were perceived more negatively than nonstutterers and there were no significant gender differences.

In another study, nurse's attitudes towards physicians who stutter was investigated by Silverman & Bongey (1996). A questionnaire consisting of 20 scales semantic differential were completed by 20 nurses. Ten of the questions contained a phrase " a physician". The other ten had a phrase "a physician who stutters". The scale included afraid - unafraid, mature - immature, intelligent - unintelligent, secure - insecure, sociable - unsociable, dominant - submissive, boring - not boring, relaxed - tense, emotional - non emotional, competent - incompetent, nervous - calm, confident - not confident, uneducated- educated, soothing - aggravating, contended - discontented, speech pleasant-speech unpleasant, naive - sophisticated, cowardly - brave, reputable - disreputable and superior - inferior. The results indicated that physician who stutter was judged to be more afraid, tense, nervous and aggravating and to be less mature, intelligent, secure, competent, confident, educated and reputable than one who does not stutter.

Dorsey & Guenther (2000) investigated the attitudes of professors and students towards college students who stutter. College professors and students filled out a questionnaire containing 20 personality items and judged on a seven-point scale. On these items, participants rated either a hypothetical college student who stutters or a hypothetical average college student. Two hundred questionnaires were mailed, one hundred to college professors and one hundred to the students. Thirty-four professors and fifty-seven students returned the completed questionnaires. The results indicated that both professors and students rated the hypothetical student more negatively on personality

traits than hypothetical average college students. Among the participants, professors rated the hypothetical student who stutters more negatively than the students.

The aforementioned three studies on attitudes of listener (Patterson & Pring, 1991), nurses (Silverman & Bongey, 1996) and professors and college students (Dorsey & Guenther, 2000) revealed the existence of general stereotypic or negative attitude towards person with stuttering.

There are also few studies concerning the attitudes towards child with stuttering. With respect to children, the major communication partners are their parents, peers and teachers. Their awareness and reactions towards the problem plays an important role in the development of the disorder.

Bloodstein (1995) reported that the attitudes of parents are significant with the onset and development of stuttering. A study on parental attitude toward and knowledge of stuttering was carried out by Crowe & Cooper, (1977). Participants were 50 parents of stutterers and 50 parents of nonstutterers. Investigators used two instruments, Parental attitudes towards stuttering inventory and Alabama stuttering knowledge test (ASK). The results indicated that parents of nonstutterers displayed more desirable attitude toward stuttering and had more accurate knowledge of stuttering than did the parents of stutterers.

In another study by Crowe & Walton (1981) teachers attitudes toward stuttering was investigated using Teachers attitudes towards stuttering (TATS) and ASK test. Subjects included 100 elementary school teachers. The teachers were asked to complete

both the tests. Results revealed that a significant positive correlation existed between the TATS inventory and ASK test scores. It was found that teachers with higher knowledge of stuttering demonstrated more desirable attitudes towards stuttering and also teachers who displayed the more desirable attitudes on TATS inventory were less likely to have a stuttering student in the class room. Both the study indicated that knowledge of stuttering is associated with positive behavior.

Borsel, Verniers & Bouvry (1999) investigated public awareness of stuttering. Authors used questionnaire to find the awareness of stuttering of laypersons in parts of Belgium. One thousand three hundred sixty two subjects were interviewed. Questions pertaining to various aspects of stuttering including prevalence, onset, gender distribution and occurrence in different cultures, cause, treatment, intelligence and hereditariness were asked. The results indicated that most of the respondents were to some extent familiar with stuttering but their overall knowledge of the disorder was greatly limited.

Till date, there are only a 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, interjection 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.

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normal school going children towards stuttering. Therefore, the present study investigated awareness and attitudes of Tamil speaking normal children on stuttering.

CHAPTER 3

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 repetition, five prolongations, two filled pauses and articulatory fixation. Over all percentage of dysfluency was 38%. Verbatim transcription of the child's speech is provided in the appendix I.

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 one time. The samples were played in the computer monitor in the computer room of the school. Before beginning the investigator explained each child that he/she would see two children Raja and sheker, speaking. One would speak first followed by the other and then they are allowed to watch the samples. After each child completed viewing the samples, the questionnaire was administered and questions were asked orally. The investigater recorded the responses of the children.

Questionnaire: The investigator developed a 2-part 13-item questionnaire. There were 6 tasks under awareness (part-I), which included 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 stutterer. The questionnaire is as follows:

Questionnaire

Part I - Awareness

I. Identification task

How did Raja speak?

How did Sheker speak?

II. Discrimination task

Who spoke well? Is it Raja or Sheker?

III. Self- identification

Who spoke like you?

IV. Labeling task

What do we call or name this kind of talking?

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) To whom you will like to be a friend of and why?

2) To whom you will like to play with and why?

3) To whom you will like to speak with and why?

II. Friend's attitude

4) To whom your friend will like to be a friend of and why?

5) To whom your friend will like to play with and why?

6) To whom your friend will like to speak with and why?

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 a score of zero was given for incorrect answer. In the identification task, two questions were asked (How did Raja speak and how did Sheker speak?). If the response was good and bad speech, a score of one and zero is given respectively. In the similar way, for discrimination task (who spoke well?), a score of one is given if the answer is Raja and zero is given if the answer is Sheker. In self-identification task (who among them spoke like you?), responses are scored one if the child has identified him/herself with fluent speaker, and scored 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 was categorized as "can treat" and "cannot treat". The responses of the children who gave "can treat" answers were further classified specifically as referred to physician, speech training or given other physiological explanation.

Attitudes towards stuttering was 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 stuttering child 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.

CHAPTER 4

Results and Discussion

Part I – Awareness

I. Identification task

The results indicated that as age increased, children's ability to identify stuttered speech as bad speech and fluent speech as good speech 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 didn't show a significant effect (χ^2 (1) = 0.0073; $p > 0.05$) of gender. Table 1 shows percent identification by nine groups of children.

Age groups (yrs)	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

Table 1: Percent identification scores on identification task.

II. 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 scores.

Age groups (yrs)	Boys	Girls
5-6	90	80
6-7	90	100
7-8	90	100
8-9	90	100
9-10	100	100
10-11	100	100
11-12	100	100
12-13	100	100
13-14	100	100

Table 2: Percent discrimination scores.

III. 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 3 shows percent self-identification with fluent speaker.

Age groups (yrs)	Boys	Girls
5-6	90	80
6-7	100	90
7-8	90	90
8-9	80	100
9-10	100	100
10-11	100	100
11-12	100	100
12-13	100	100
13-14	100	100

Table 3: Percent self-identification scores.

IV. 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 4 shows percent labeling by all 9 groups of subjects.

Age group (yrs)	Boys	Girls
5-6	10	10
6-7	70	40
7-8	50	50
8-9	40	80
9-10	70	80
10-11	100	90
11-12	90	100
12-13	100	90
13-14	80	100

Table 4: Percent labeling scores

V. Knowledge of cause

Twenty percent of boys and 22% of girls gave causes of stuttering .Of this 1.60% was congenital, 7.8% was medial or anatomical, 2.77% was psychological, and 4.44% each was physiological and speech related. Tables 5 and 6 show percent response on knowledge of causes and categorization of causes.

Age groups (yrs)	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

Table 5: Percentages of children given causes of stuttering

Age group (Yrs)	Congenital		Medical /anatomical		Psychological		Physiological		Speech related		No response	
	B	G	B	G	B	G	B	G	B	G	B	G
5-6	-	-	-	-	-	-	-	-	-	-	-	-
6-7	-	-	20	20	-	10	-	10	10	10	70	50
7-8	-	10	20	10	-	-	-	10	-	-	80	70
8-9	-	-	-	10	-	-	-	-	10	20	90	70
9-10	-	-	10	-	-	-	10	10	-	-	80	90
10-11	-	-	-	-	-	10	-	10	20	-	80	80
11-12	-	-	10	-	-	-	-	-	10	-	80	100
12-13	-	-	10	10	10	-	20	-	-	-	60	90
13-14	-	-	-	20	10	10	10	-	-	-	80	50
Average	0	3.33	7.77	7.77	2.22	3.33	44.4	4.44	5.55	3.33	60.88	66.66
Average	1.66		7.77		2.77		4.44		4.44		63.72	

Table 6: Causes of stuttering classified under various categories (in %). (B= boys, G=girls)

II. Knowledge of treatment

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 7 and 8 show percent response on knowledge of stuttering and treatment options.

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 7: Percent response on knowledge of stuttering.

Age group (yrs)	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	-	1-	4-	-	-	-	-
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

Table 8: Treatment options for stuttering (in%).

Part II – Attitudes

I. 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% & 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). Tables 9 and 10 show speaker preferences with gender and tasks, respectively.

Age groups (yrs)	Friend				Play				Speak			
	Boys		Girls		Boys		Girls		Boys		Girls	
	F	D	F	D	F	D	F	D	F	D	F	D
5-6	90	10	60	20	70	20	90	10	80	20	80	10
6-7	90	10	100	10	90	10	100	0	90	10	100	0
7-8	90	10	90	10	60	10	90	10	60	10	90	10
8-9	60	30	70	40	40	40	60	30	50	30	70	20
9-10	70	10	60	10	70	10	50	10	70	10	60	10
10-11	50	20	30	30	50	30	30	60	50	30	30	60
11-12	30	50	20	40	30	40	20	60	30	50	20	60
12-13	40	50	30	50	40	50	40	40	40	50	30	50
13-14	40	50	40	50	40	50	30	50	40	56.6	40	40
Average	62.2	26.6	55.5	28.8	62.2	28.8	56.6	30	56.6	28.8	57.7	28.8

Table 9: Preference of speaker (F = Fluent, D = Dysfluent) on three tasks (in %).

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

Table 10: Preferences for fluent and dysfluent speakers (in%)

The 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 11 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.

Age group (Yrs)	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

Table 11: Speech reasons for speaker choice (in%).

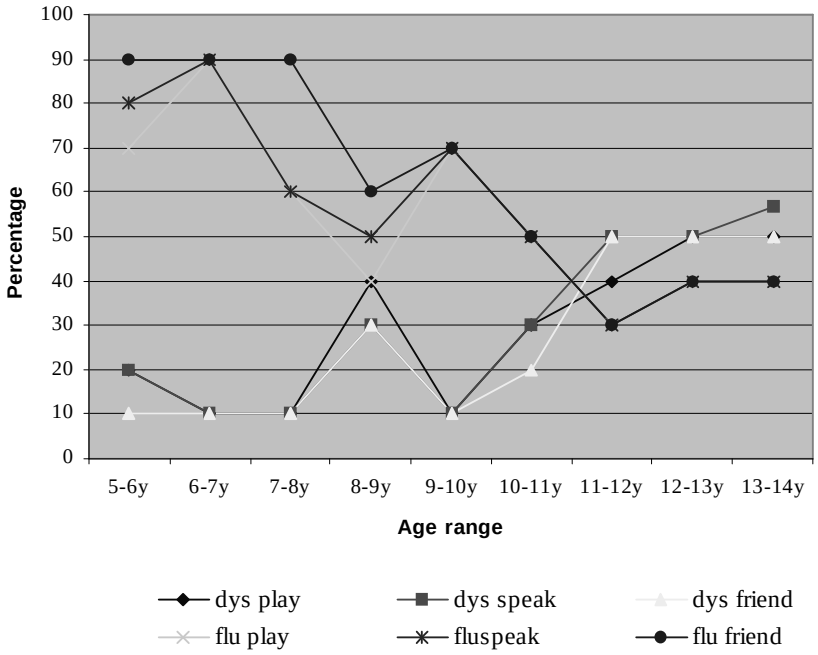

Figure 1: Percentage scores of preferences in boys on three tasks.

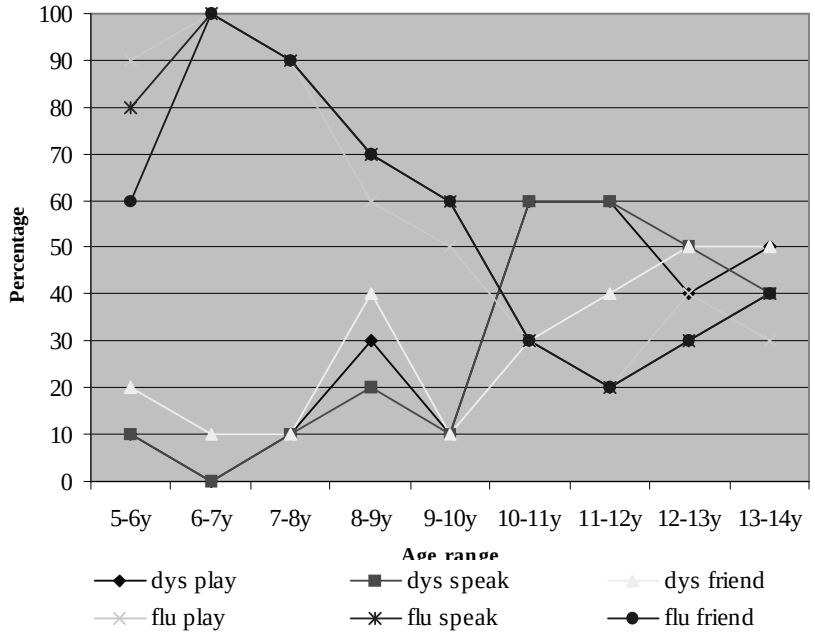

Figure 2: Percentage scores of preferences in girls on three tasks.

II 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% and 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 didn't show any significant effect of age on predicted friends preferences of speaker across tasks (i.e. to be a 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). Table 12 shows percent response on friend's attitude.

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. Table 13 shows speech reasons on friend's choice of speaker.

Age groups (yrs)	Friend				Play				Speak			
	Boys		Girls		Boys		Girls		Boys		Girls	
	F	D	F	D				D	F	D	F	D
5-6	80	20	50	20	80	20	50	20	80	20	50	20
6-7	70	30	100	0	70	30	100	0	70	30	90	0
7-8	70	10	90	10	70	10	90	10	70	10	90	10
8-9	50	20	80	10	60	20	70	10	60	10	70	20
9-10	60	10	60	10	60	20	60	10	70	10	50	10
10-11	70	10	40	40	70	10	40	30	70	10	40	40
11-12	60	20	20	70	60	20	20	70	60	20	20	70
12-13	60	30	40	40	60	30	40	40	60	30	40	40
13-14	70	20	60	20	80	20	60	30	80	20	60	20
Average	65.5	18.8	60	24.4	67.7	20	58.8	24.4	68.8	17.7	56.6	25.5

Table 12: Predicted friend's attitude on preference of speaker (F = Fluent, D = Dysfluent) on three tasks (in%)

Age group (Yrs)	Friend		Play		Speak	
	Boys	Girls	Boys	Girls	Boys	Girls
5-6	80	40	80	30	70	40
6-7	70	90	80	90	70	90
7-8	70	100	70	100	70	100
8-9	60	60	60	60	60	70
9-10	70	50	70	50	80	50
10-11	80	50	70	40	80	50
11-12	80	90	80	90	80	40
12-13	90	70	90	70	80	70
13-14	80	80	80	80	80	80

Table 13: Speech reasons - friend's choice of speaker (in%).

Discussion

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 100% of children were able to identify stuttered speech as bad speech between 12 - 13years. 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 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 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 age 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 too, 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 is 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 the stutterer 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 stutterers were being portrayed in movies or other programmes. 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 are used. Catherine et. al (2004) reported the findings of awareness using audio samples. In the subtasks, 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 provide a better picture of stuttering and emphasizes the need to use video samples in future studies on awareness of stuttering.

CHAPTER 5

Summary and Conclusions

The knowledge of awareness and attitudes of normal children towards stuttering is very important, since it plays a major role in the development of the disorder. The present study was designed to explore the awareness and attitudes of normal school going children between 5 and 14 years (first to ninth grade) using video samples.

Video samples of a normal and stuttering male child aged 4 years were recorded. The sample was recorded during conversation and picture description of a story. The child with stuttering was diagnosed to have moderate to severe stuttering (SSI Score: 18) during speech and language evaluation at the All India Institute of Speech & Hearing and was enrolled for speech therapy. The dysfluencies exhibited by the subject with stuttering were found to be thirteen sound syllable repetition, five prolongations, two filled pauses and articulatory fixations. The speech sample was viewed by two speech pathologists and was certified as stuttering. The normal speaker and the child with stuttering were hypothetically named as Raja and Sheker, respectively.

Tamil speaking normal school children between the age of 5 and 14 years of a regular school at Chennai, Tamil Nadu participated in the study. Nine groups of children were considered at each age interval. From each age group 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.

The investigator developed a 2-part 13-question questionnaire. In part-I, awareness of stuttering was studied under 6 different sub tasks such as identification, discrimination, self-identification, labeling, knowledge of cause, and treatment of stuttering. Part-II consisted of six questions to study children's attitudes towards stuttering, in which children's preference of a speaker to play, speak and to be a friend of was explored. It also included 3 questions about their friend's preference of speaker in these activities.

Speech samples were played to children either individually (first to fifth grade) or in groups of three children (sixth to ninth grade). Children viewed the speech samples one after the other on the computer monitor and the questionnaire was administered to them

For the awareness tasks (identification, discrimination, self-identification and labeling) children's correct responses were scored one and incorrect responses were scored as zero. Causes of stuttering were categorized as congenital, anatomical/medical, psychological and speech related and knowledge of treatment was categorized as "can treat" and "cannot treat". "Can treat" responses were further classified specifically as referral to physician, speech training or physiological explanations. The preference of fluent and dysfluent speakers were noted and the reasons were categorized as speech and non-speech reasons.

Percentage scores were calculated for all the tasks and chi-square test was used to find the age and gender effect. Performance increased with increase in age whenever effect of age is reported in table 14. Table 14 shows the age at which 100% scores were obtained on each of the tasks and results of chi-square test.

Tasks	**Boys**	**Girls**	**Effect of age**	**Effect of gender**
Identification	11 - 12	12 - 13	+	–
Discrimination	9 - 10	6 - 7	+	–
Self-identification	6 - 7	8 - 9	–	–
Labeling	10 - 11	11 – 12	+	–
Knowledge of cause	_	_	Not found	Not found
Knowledge of treatment	_	_	Not found	Not found

Table 14: Age at which all children performed the task and effect of age and gender (chi-square test, + indicates presence of effect).

Results revealed several points of interest. First, results of identification task revealed that 100% identification of stuttering was present only in the age of 11 –12 years and 12 –13 years in boys and girls respectively. 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. Further, results didn't show a significant effect (χ^2 (1) = 0.0073; p> 0.05) of gender.

Second, 100% discrimination ability was present in 9 - 10 years (boys) and 6 - 7 years (girls). Chi-square test (χ^2 (8) = 40.65; P<0.05) revealed a significant association between discrimination ability and age. Discrimination ability increased with increase in age. No significant effect of gender on discrimination ability (χ^2 (1) = 0.68; p>0.05) was noticed.

Third, results revealed that children were able to self –identify with the fluent speaker (100%) at 6 - 7 (boys) and 8 - 9 (girls) years. Chi-square test did not reveal any age (χ^2 (8) = 12.89; p>0.05) or gender (χ^2 (1)= 0; p>0.05) effect.

Fourth, 100 % of boys at 10-11 years and 100 % of girls at 11-12 years labeled dysfluent speech as "stuttering". 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 genders was noticed.

Finally, knowledge of cause and treatment of stuttering was found to be very limited. Only 20% of boys and 22% of girls gave causes of stuttering. Majority of children gave medical/anatomical cause (7.77%), 4.44% gave physiological and speech related cause. Few children provided psychological (2.77%) and congenital causes (1.66%).

About 50% of boys and 52.2% of girls answered that stuttering can be treated. Among these children, 24.4% said that a physician has to be consulted, 18.88% said that speech practices / training has to be given and 2.22% gave physiological explanation.

Results of self-attitude towards stuttering indicated that children had more positive attitude towards fluent speaker compared to dysfluent speaker. Chi-square test revealed no significant effect of preference of speaker and gender on three tasks – 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. Preference for dysfluent speaker

increased with increase in age 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).

Most of the children gave speech reasons for their choice of speaker. The percentage scores show a non-linear response across the age for all three tasks. Chi-square test revealed no significant effect of age on providing speech reason in any 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). Also, no significant effect of gender was noticed. Table 15 shows the effect of age and gender on preferences of speaker and speech reasons for speaker choice across the three tasks both for self-attitude and children's friend's attitude.

Attitude	Tasks	Preference of speaker		Speech reason for preference	
		Effect of age	Effect of gender	Effect of age	Effect of gender
Self-attitude	Play	+	–	–	–
	Speak	+	–	–	–
	Friend	+	–	–	–
Friend's attitude	Play	–	–	–	–
	Speak	–	–	–	–
	Friend	–	–	–	–

Table 15: Effect of age and gender (chi-square test) on preference of speaker on three tasks (+ indicates presence of effect).

Children perceived their friend's preferences also to be more towards fluent speaker compared to dysfluent speaker. No significant effect of age or gender was noticed.

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 subject 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.

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Appendix 1

1. Conversation

Investigator: ka:lela enna sa:pta

Child: mm ro ro ro roti

Investigator: etana sa:pta?

Child: pa patu

Investigator: ja:r ku:da vanda?

Child: mm m a a apa a apa apa apa apa: ku:da

Investigator: eppadi vanda?

Child: m vandijila

Investigator: ippa vi:tuku po:rija, sku:luku po:rija?

Child: m vituku po:rẽ

Investigator: unaku frends iruka:ngala?

Child: engengeng enga

Investigator: sku:la

Child: kadjadu

Investigator: vi:tla?

Child: jaja:jac^{h}i:n, mano:...j, ri...ric^{h}ika a:a:a:i pochu

I. Picture description

e:e:e:duka mudijala i:da e:e:duka mudijala. pa:ti. ka:ka vanduc^{h}u. e:e:e:edueduduka mudija:du. Po:c^{h}u kukukukulanari nari: edo. vavavavadavada. ido ido ido ido adi e:e:e:etutu e:e:etutu po:chu. ka:ka etutu po:chu. Ka:ka kakaka kaka papa:duc^{h}u so̲luc^{h}u. damnu vinduchu vada.etutu potchu. kulanari etutu po:tchu.