PRE-POST COMPARISON OF STUTTERING AWARENESS PROGRAM AMONG PROSPECTIVE TEACHERS: A PRELIMINARY STUDY

[1]Geetha M. P., [2]Shwetha C., [3]Sangeetha M. & [4]Sheela S.

Abstract

As stuttering exists worldwide, among different culture/people, it is essential in identifying attitudes, concern, nature of problem in different cultural groups. The main objectives of the study are to identify effectiveness of sensitization program on stuttering immediately after program and also to determine the gender difference in attitude towards stuttering. A questionnaire was modified and adapted, and administered prior and after the sensitization program. The seven domains included in the questionnaire were myths/facts, attitude, causes, treatment, awareness, characteristics and occurrence of stuttering. Results indicated improved scores on few domains such as attitude, characteristics and treatment. Remaining domains such as myths/facts causes and occurrence of stuttering showed no significant difference prior and after the sensitization program on stuttering. Male participant's perception on stuttering was better compared to female participants on all domains except characteristics domain. Improved scores on few domains after awareness program suggested that awareness about stuttering was better after the sensitization program.

Key Words: *Sensitization program, Questionnaire, Teachers, Attitude.*

The successful communication takes place only when the information is exchanged smoothly between the speaker and the listener without any interruptions. Fluent speech has three dimensions or components - (i) continuous or smooth flow of speech, (ii) rate of information flow, & (iii) the effort of the speaker. Dysfluency means the disruption of smooth forward flow of the speech. Bloodstein (1987) defines stuttering as a disorder in which the fluency or "rhythm" of speech is disrupted by blockages or interruptions.

Stuttered speech is characterized by syllable prolongations and repetitions. In addition to their speech, stuttering individuals also deal with secondary behaviors such as head jerks, arm jerks, finger tapping, excessive eye-blinks, wrinkling of the forehead, lip bites, clavicular breathing, and involuntary arm, torso, and leg movements and emotions (Williams, 2006). The persons with stuttering experiences shame, guilt, embarrassment due to their inability to express their thoughts which in turn impacts their social life (Van Riper, 1971; Ginsberg, 2000; Kalinowski & Saltuklaroglu, 2006). Additionally, moderate–severe stuttering may induce negative emotional responses in listeners may alters the communication between the person who stutters and their listeners (Bloodstein, 1995; Guntupalli et al., 2006). If the listeners are strangers then persons who stutter often report negative emotional responses such as impatience, giggling, embarrassment, surprise, pity or laughter. These negative emotional responses may lead to developing the compensatory strategies such as avoidance of sounds, words, people and places.

When unnatural break (such as stuttering) is introduced in the natural flow of speech, the listener might show a startle reaction in response to the sudden aberrant stuttering behaviors. When listener observes an unexpected behavior, there may be a surprise or an illusionary threat response to the stimulus, but when this illusion disappears with the realization of no imminent threat, there is an emotional incongruity (Ramachandran 1998). Rosenberg and Curtiss (1954) noticed that when person who stutters exhibits stuttering behaviors, listeners became much less mobile, lost eye contact, and reduced their speech output. Several studies have shown that the attitude towards the individuals affected may be influenced by the awareness and knowledge of a given communication disorder.

Stereotyping is a misclassification scheme that is applied to individuals. These include quiet, secured, avoiding, fearful, unpleasant, nervous, and shy among others (Leahy, 1994; McGee, Kalinowsky, & Stuart, 1996). A variety of stakeholders have been found to report such stereotypes, including parents (Crowe & Cooper, 1977), teachers (Crowe & Cooper, 1977), employers (Hurst & Cooper, 1983), speech-language pathologists and speech- language pathology students (Cooper & Rustin, 1985; Leahy, 1994), the general public (Kalinowski,

[1]Speech Language Pathologist Grade 1, All India Institute of Speech and Hearing (AIISH), Mysore-06, Email: geethaslp@gmail.com, , [2]Clinical Supervisor, AIISH, Mysore-06, Email: cshwtha3@gmail.com, [3]Clinical Lecturer, AIISH, Mysore-06, Email: sangmahesh9@yahoo.co.in & [4]Research officer, AIISH, Mysore-06, Email: sheela.mslp@gmail.com

Armson, Stuart, & Lerman, 1993), as well as people who stutter themselves (Kalinowski, Lerman, & Watt, 1987). Negative stereotypes are extremely resistant to change, and have many harmful implications in the lives of people who stutter (Synder, 2001).

According to Williams (2006), many people who stutter feel that their speech often has a negative impact on performance evaluations, and leads to inaccurate judgements of their abilities. These negative stereotypes affect children as well. Children who stutters are often kept from being placed in leadership positions in the classroom, are viewed negatively by their teachers, and are prohibited to speak as often as their peers within the classroom. This may in turn affect academic progress and result in teasing within the school environment. Some even reported that they were told it was the reason they were not hired for a job. Hurst and Cooper (1983) confirm this speculation by stating that many employers agree that job opportunities are limited for those who stutter. In addition, negative stereotypes increase self-consciousness and worry within social situations, and cause people who stutter to avoid situations in which society expects them to fail (MacKinnon, Hall, & MacIntyre, 2007). Evidence also reveals that individuals who stutter often experience feelings of inadequacy, powerlessness, helplessness, hopelessness, and failure. Although these feelings may be a result of their inability to speak fluently, there is reason to believe that these feelings may be related to being placed in a category that is viewed as undesirable (Leahy, 1994). In addition, people who stutter often report that the reactions and attitudes of their listeners influence the severity of their stuttering (Klassen, 2001).

A 25-item, yes/no questionnaire was used by McDonald and Frick (1954), on the store clerks to assess their attitude towards persons with stuttering when they had conversation with them. The results revealed that listeners expressed sympathy, embarrassment, curiosity and surprise when talking to a person who stutters. Together these findings suggest that listeners generally appear to possess unfavorable perceptions towards individuals who stutter. Emerick (1960) assessed the knowledge and attitudes toward stuttering in 203 subjects based on the factors such as age, gender, years of education, knowledge about stuttering, number of people who stutter personally known, number of stuttering courses completed and possession of the Certificate of Clinical Competence in speech-language pathology towards the prediction of attitudes toward people who stutter, their parents, and the efficacy of therapy using the stuttering inventory. They found that individuals who possessed the Certificate of Clinical Competence were the most reliable predictor of attitude scores.

Crowe and Cooper (1977) developed the Parental Attitudes Toward Stuttering (PATS) Inventory and the Alabama Stuttering Knowledge (ASK) and administered on 50 parents of children with stuttering and 50 parents of children with no stuttering to investigate the parental attitudes and knowledge of stuttering. The test results indicated that the parents of children with no stuttering displayed more desirable attitudes toward stuttering and more accurate knowledge of stuttering than did the parents of children with stuttering. Crowe and Walton (1981) reported significant positive correlations between knowledge of stuttering and teacher attitudes in 100 elementary school teachers using the Teacher Attitudes Toward Stuttering (TAT) Inventory (Crowe & Walton, 1978) and there was also significant negative correlations between teacher attitudes/knowledge of stuttering and the presence of a stuttering child in the classroom. Similarly, Yeakle and Cooper (1986) used the Teachers' Perceptions of Stuttering Inventory (TPSI) to assess the attitudes of 521 teachers in the Tuscaloosa, Alabama City School (82% of the teacher population) toward stuttering. The TPSI consists of five teacher identification questions and 10 attitudinal statements where the teachers were asked to indicate their strength of agreement. They found that significant number of teachers had unsupported beliefs regarding the etiology of stuttering and the personality characteristics of stutterers. Therefore, they concluded that the teachers who had course work in speech disorders and experience with stutterers had more realistic and demanding attitudes toward stutterers in the classroom situation.

A study by Lass, Ruscello, Schmitt, Pannbaker et al. (1992,1994) considered 42 school administrators in Alabama, Louisiana, Texas, and West Virginia, provided a questionnaire asking respondents to describe four hypothetical stutterers (a female child, male child, female adult, and male adult). The majority of reported adjectives (related to personality, physical appearance, intelligence, speech behavior and others) were negative stereotypical personality traits, indicating perceptions of people who stutter similar to perceptions of teachers, special educators, and speech-language pathologists. A total of 197 adjectives were obtained by school administrators describing 72.6% were negative in nature, 19.8% were positive and 7.6% were neutral towards PWS.

Similarly, 287 adjectives were obtained by elementary and secondary school teachers to describe PWS of which 66.9% were negative in nature, 20.2% were positive and 12.9% were neutral.

A study conducted by Irani and Gabel (2008), assessed the attitudes toward people who stutter (PWS) of 178 school teachers' (kindergarten to 12th grade; all 50 states of USA) based on level of experience with PWS and their previous coursework on stuttering. A 14-item semantic differential scale was used to measure their attitudes towards PWS as compared to fluent speakers. The results indicated that the teachers had positive attitudes towards both PWS and fluent speakers. The semantic differential scale scores indicated that for three items, PWS were judged more positively. But educational and experiential factors were found to have no significant effect on the teachers' attitudes toward PWS.

An Indian study by Chandrabose, Louis, Pushpavathi and Raoof (2010) made an attempt to explore the awareness and attitude of prospective teachers towards stuttering in Mysore city, conducted as a part of International Stuttering Awareness Day. The attitudes of 64 educators towards stuttering were studied using the questionnaire developed with few statements adapted from Public Opinion Survey of Human Attributes (POSHA -E) consisting of eight domains such as nature, concern, attitude, causes, treatment, awareness, characteristics and occurrence of stuttering. The results indicated that their awareness on stuttering was less on some domains but also reflected positive attitude on some other domains.

Purpose of the study: Even though, the majority of the population has knowledge about stuttering, the awareness appears to be limited on certain aspects. Depending on the factors such as gender, age, educational level and occupation, the knowledge differs among participants. Several studies have focused mainly on the attitude towards stuttering but not on the effectiveness of the sensitization program. Hence this present study is aimed to compare the effectiveness of sensitization program with respect to pre- and post among prospective teachers and also to find out the difference in opinion among the male and female participants.

Method

The current study has been carried out in 4 steps:
Step 1: Preparation of questionnaire

Step 2: Administration of the developed questionnaire before sensitization program (Pre)
Step 3: Lecture on 'Sensitization program on stuttering'
Step 4: Re-administration of questionnaire soon after the sensitization program (Post)

Step 1: A questionnaire was prepared by qualified Speech Language Pathologist having experience in assessment and management in dealing with fluency disorders. The Public Opinion Survey of Human Attributes (POSHA-E) questionnaire of St.Louis (2005) adapted by Chandrabose, Louis, Pushpavathi and Raoof (2010) was modified and used. POSHA-E is the first prototype of questionnaire was developed by St. Louis, Andrade, Georgieva, and Troudt, (2005) to measure the attitude towards stuttering. It has been translated in several languages and used worldwide. Like most other measures of attitudes, the POSHA-E samples a variety of beliefs, reactions, behaviors, and emotions that would identify societal ignorance, stigma, and/or discrimination (e.g., Hulit & Wertz, 1994; Blood et al., 2003; Gabel, Blood, Tellis & Althouse, 2004; Klein & Hood, 2004). In this study, the modified POSHA-E is intends to elicit the attitudes and other human attributes towards stuttering.

The adapted questionnaire by Chandrabose et al (2010) consisted of 8 domains (nature, concern, attitude, causes, treatment, awareness, characteristics and occurrence of stuttering) in Kannada language. However, in the present study the questionnaire was condensed to 7 domains, where statements related to nature and concerns of the previous questionnaire were considered under the domain of myths/facts.

Step 2 and 4: Administration of questionnaire prior to and after the sensitization program on stuttering (Pre and Post):

Participants: A total of 103 trainee teachers (69 males and 34 females), who were native Kannada speakers, from BS.Ed, and D.Ed, colleges from Mysore city, participated in the present study. The participants were in the age range of 19-22 years. None of the teachers had a history of stuttering or hearing loss or neurological disorders. And none of the participants had attended sensitization program on stuttering before.

Procedure

The questionnaire was administered twice i.e. before and after sensitization program. Before the commencement of sensitization program, all

participants were asked to complete the pre-test questionnaire for each statement using 'Yes', and 'No' to check the awareness level of the teachers about stuttering and were collected back. Once it was collected, the sensitization program was conducted for half a day. The same questionnaire was administered as post test after half an hour of the conclusion of the program, to evaluate the participant's ability.

Step 3: Lecture on the sensitization program

The program consisted of five consecutive sessions, each lasting for 45 minutes; wherein half an hour refreshment break was arranged. The participants were oriented on the following topics- Introduction to fluency, Fluency disorders: an overview, Myths/facts about stuttering, Role of teachers in identification of stuttering, Protecting and promoting for persons with stuttering.

Scoring: For scoring purpose score of "1" was allotted to answer "yes" and score of "0" was allotted to answer "no". The scores were tabulated depending on the number of correct answers separately for both pre and post test.

Statistical analysis: To check Pre-post and gender difference within each domain SPSS (PASW) statistical analysis software version 18 was employed.

Results and Discussion

The questionnaire was collected prior to and after the sensitization program on stuttering from the 103 trainee teachers (69 males and 34 females) to investigate any changes after the sensitization program by a comparison in seven domains. Out of seven domains, there was significant change in the domains of attitude, treatment and characteristics. The remaining domains such as facts/myths, causes, and occurrence did not show any significant difference. In the last domain i.e., 'awareness', out of 12, 10 analyzed statements showed significant differences at the post test scores.

1) Pre-post score comparison across six domains

Descriptive statistics and Paired t-test has been used to check the mean difference between pre and post test scores. The mean value and standard deviation (SD) of the domains-myths/facts, attitude, causes, treatment, characteristics and occurrence of stuttering is given in the table 1. The results showed there was significant improvement in the mean score at post test in the following domains i.e., attitude, treatment and characteristics respectively. Domains of attitude and treatment showed highly significant

difference between pre and post test scores which is also depicted in the figure 1. This indicates that all participants might require orientation on the attitude, treatment and characteristics of stuttering effectively. In other words, the participants may be much aware of the facts about the stuttering (statements related to intelligence, self-confidence, competence, behavior, anxiety etc), what might cause stuttering (statements related to stuttering causes due to heredity, bacteria/virus, imitation, practice effect, psychological and neurological related issues) and the occurrence of stuttering (statements were related to the age of onset of stuttering and variation across gender), so that there was no significant difference in the pre-post comparison.

Table 1: *Mean and SD of the pre-post test comparison across domains*

Domains	Phases	Mean	S.D	Sig.
Facts/myths	Pre	10.16	2.20	.085
	post	11.63	1.66	
Attitude	Pre	7.84	1.36	.000*
	post	8.22	1.04	
Causes	Pre	4.41	1.58	.107
	post	6.13	1.03	
Treatment	Pre	4.99	1.50	.000*
	post	6.33	1.22	
Characteristics	Pre	5.36	2.10	.006*
	post	7.10	1.65	
Occurrence of	Pre	5.81	2.73	.073
stuttering	post	8.37	2.19	

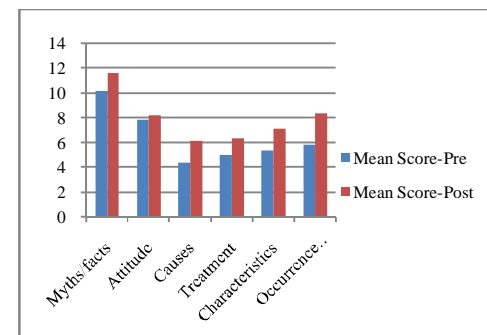*(*indicates significant difference)*

Figure 1: *Mean score of the pre-post test comparison across domains*

In this study, the negative attitudes towards stuttering such as sympathetic or losing patience or making fun etc at the pre test score had changed to positive at the post test score, after the sensitization program. A similar findings investigated by Ramachandran (1998) suggests that after knowing about the stuttering, the listeners perception had changed towards PWS. Hence, to change the listener's reactions or attitude towards stuttering have been considered an important factor from many decades.

In the domain of treatment, statements were mainly focused on whether PWS are treated by

Doctors, Speech language pathologist, Psychologist, Priest, Nurse, Teachers, Family members etc. Before the sensitization program, most of the participants answered that PWS are treated by Doctors and Priest. But after the sensitization program, most of the participant's opinion had changed to that they were treated by SLP's. And their opinion has changed that even teachers and family members are also involved as team members in treating PWS.

2) Pre-post scores comparison of gender across six domains
Independent sample t test has been performed to find gender difference across domains. Mean scores and SD are given in table 2, figures 2 and 3 respectively. During the pre test phase, male participants performed significantly better across all domains. There was statistically significant difference between male and female participants for domains such as attitude, causes, treatment, and occurrence of stuttering. Even though significant difference was not found for domains of facts/myths and characteristics but mean

scores were better for male participants. Hence results revealed better performance by male participants than female participants before sensitization program. This indicates, male participants had better knowledge and good exposure about stuttering than female participants.

During the post test phase, both male and female participants could perform better across all domains except the domain of characteristics. Surprisingly improved scores were obtained by female participants in characteristic domain at post test scores. Improved scores across all domains for both participants indicate knowledge about stuttering increased after sensitization program. Overall results suggested improved scores for post test compared to pre test in both male and female participants. The improved scores also indicate the short term exposure to stuttering was better across gender group at post test. A check on the long term effects are further required.

Table 2: *Mean and SD of the pre-post test comparison across gender (*indicates significant difference)*

Domains	Phase	Gender	N	Mean	SD	df	Sig. (2-tailed)
Facts/myths	pre	Male	69	10.46	2.10	101	.042
		Female	34	9.53	2.28		
	post	Male	69	11.65	1.70	101	.856
		Female	34	11.59	1.61		
Attitude	pre	Male	69	8.20	1.10	101	.000*
		Female	34	7.12	1.55		
	post	Male	69	8.35	.85	101	.086
		Female	34	7.97	1.33		
Causes	pre	Male	69	4.78	1.49	101	.000*
		Female	34	3.65	1.49		
	post	Male	69	6.06	1.06	101	.343
		Female	34	6.26	.96		
Treatment	pre	Male	69	5.33	1.32	101	.001*
		Female	34	4.29	1.62		
	post	Male	69	6.46	1.19	101	.115
		Female	34	6.06	1.25		
Characteristics	pre	Male	69	5.61	2.00	101	.087
		Female	34	4.85	2.25		
	post	Male	69	6.83	1.79	101	.017*
		Female	34	7.65	1.17		
Occurrence of stuttering	pre	Male	69	6.58	2.34	101	.000*
		Female	34	4.24	2.82		
	post	Male	69	8.49	2.34	101	.417
		Female	34	8.12	1.85		

3) Pre-post scores comparison in the domain of awareness (7th domain)
Overall pre-post scores comparison has been checked for other six domains. In this domain pre-post scores comparison is done across 12 statements. The statements are about self experience, contact with stutterers, family/friends famous personalities, TV/radio, newspaper/ through books, internet, at school, Doctor/nurse, cinema, others and I don't know. To find pre-

post comparison Mcnemars statistical analysis has been performed. Mean scores and SD are given in table 3. It is interesting to know how all participants had gained knowledge about stuttering, whether it is from self experience or history of contact with stutterers or through TV/Radio or from famous personalities etc. It is also interesting to know whether knowledge about stuttering is remained same or changed at post score level i.e., number of participants

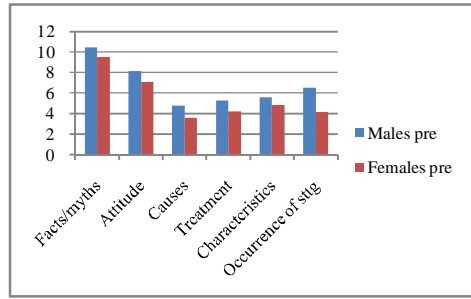saying 'yes' is same or different for both pre-post scores.

Figure 2: *Mean score of the pre test across gender*

Figure 3: *Mean score of the post test across gender*

There was significant difference for the statements such as contact with stutterers, family/friends, TV/ Radio, newspaper/through books, internet, at school, Doctor/Nurse, cinema, others, except for the statements such as self experience and famous personalities. The results suggested number of participants saying 'yes' in the post test phase had changed compared to pre test scores. This indicates during pre test, less number of participants had answered that they know about stuttering.
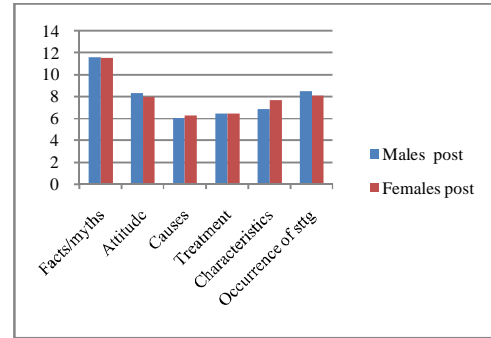
Improved scores among participants in the post test indicate even though they have little knowledge about stuttering, they understood the concept much better after the sensitization program. During the pre test phase most of the participants had answered 'yes' to the statement 12 ('I don't know'). This means if participant's answered the statements other than statement 12, indicate that they had knowledge about stuttering previously. Majority of participants answered 'yes' to this statement also could be because they had not read the statement properly prior to sensitization program.

Table 3: *Mean and SD of the pre-post test comparison for awareness domain (*indicates significant difference)*

Statements	Phase	Response	Post test		P value
			yes	no	
Self experience	pre	yes	53	16	1.000
		no	15	19	
Contact with stutterers	pre	yes	12	22	.004*
		no	6	63	
Family/friends	pre	yes	18	31	.000*
		no	7	47	
Famous personalities	pre	yes	47	18	.265
		no	11	27	
TV/Radio	pre	yes	15	25	.001*
		no	6	57	
News paper/Books	pre	yes	26	31	.000*
		no	6	40	
Internet	pre	yes	54	23	.005*
		no	7	18	
School	pre	yes	10	31	.001*
		no	9	53	
Doctor/Nurse	pre	yes	24	29	.020*
		no	13	37	
Cinema	pre	yes	16	35	.000*
		no	7	45	
Others	pre	yes	19	40	.000*
		no	3	41	
I don't know	pre	yes	69	6	.015*
		No	19	9	

During post test phase number of participants saying 'yes' to the statement 12 (I don't know) drastically reduced compared to pre test phase. In other words, during post test phase most of the participants answered 'no' to statement 12 might be the effect sensitization program.

Community plays a major role in building awareness on various communication disorders. Teachers are one of the important key personnel to work in the community. Hence, such sensitization programs will enable the teachers to understand about each condition and to suggest better health care and rehabilitation services.

Conclusions

The current study aimed to investigate short-term effect of sensitization program among prospective trainee teachers at Mysore city and also estimated the gender difference on all domains. The sensitization program consisted of five consecutive sessions and each lasted for 45 min. The participants were oriented on Introduction to fluency, Fluency disorders: an overview, Myths/facts about stuttering, Role of teachers in identification of stuttering, Protecting and promoting for persons with stuttering. A questionnaire was administered prior and after the sensitization program. The results indicated improved scores on some domains such as attitude, characteristics and treatment. Remaining domains such as myths/facts, causes and occurrence of stuttering showed no significant difference prior and after the sensitization program on stuttering. Male participants performed better compared to female participants on all domains except characteristics domain. This increased percent scores after awareness program suggested that awareness about stuttering was better after the sensitization program. Such programs can decrease the risk of stuttering severity and also relapse. Only a short-term effect has been checked, long-term effects and its practice in daily life needs to be evaluated.

References

Blood, G. W., Blood, I. M., Tellis, G. M., & Gabel, R. M. (2003). A preliminary study of self-esteem, stigma, and disclosure in adolescents who stutter. *Journal of Fluency Disorders, 28,* 143-159.

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

Bloodstein, O. (1995). *A handbook of stuttering.* London: Chapman & Hall.

Chandrabose, J.G., Louis, K.O.S., Pushpavathi, M. & Raoof, S. (2010). Awareness of stuttering among prospective teachers of Mysore. *Journal of All India Institute of Speech Hearing,* Vol.29 (2).

Cooper, E.B. & Rustin, L. (1985). Clinician attitudes toward stuttering in the United States and Great Britain: A cross-cultural study. *Journal of Fluency Disorders, 10,* 1-17.

Crowe, T. A. & Cooper, E. B. (1977). Parental attitudes toward and knowledge of stuttering. *Journal of Communication Disorders, 10,* 434-357.

Crowe, T. A. & Walton, J. H. (1978). *Teacher attitudes toward stuttering inventory.* The University of Mississippi, Department of Communicative Disorders.

Crowe, T. A. & Walton, J. H. (1981). Teacher attitudes toward stuttering. *Journal of Fluency Disorders, 6,* 163–174.

Emerick, L.L. (1960). Extensional definition and attitude toward stuttering. *Journal of Speech and Hearing Research,* 3, 181- 186.

Ginsberg, A. P. (2000). Shame, self-consciousness, and locus of control in people who stutter. *Journal of Genetic Psychology, 161,* 389–399.

Gabel, R.M., Blood, G.W., Tellis, G.M. & Althouse, M.T. (2004). Measuring role entrapment of people who stutter. *Journal of Fluency Disorders, Vol29 (1),* 27–49.

Guntupalli, V. K., Kalinowski, J., Nanjudeswaran, C., Saltuklaroglu, T. & Everhart, D. E. (2006). Psychophysiological responses of adults who do not stutter while listening to stuttering. *International journal of psychophysiology, 62,* 1-8.

Hurst, M.I. & Cooper, E.B. (1983). Employer attitudes toward stuttering. *Journal of Fluency Disorders, 8,* 13-27.

Irani, F. & Gabel, R (2008). Schoolteachers' Attitudes Towards People Who Stutter: Results of a Mail Survey. *Canadian Journal of Speech-Language Pathology and Audiology - Vol. 32, No. 3,* 129-134.

Kalinowski, J. and Saltuklaroglu, T. (2006). Stuttering (San Diego, CA: Plural).

Kalinowski, J.S., Armson, J., Stuart, A. & Lerman, J.W. (1993). Speech clinicians' and the general public's perceptions of self and stutterers. *Journal of Speech-Language Pathology and Audiology, 17,* 79-85.

Kalinowski, J.S., Lerman, J.W. & Watt, J. (1987). A preliminary examination of the perceptions of self and others in stutterers and non-stutterers. *Journal of Fluency Disorders, 12,* 317-331.

Klassen, T.R. (2001). Social distance and the negative stereotype of people who stutter. *Journal of Speech-Language Pathology and Audiology, 26*(2), 90-99.

Klein, J & Hood, S. (2004). The impact of stuttering on employment opportunities and job performance. *Journal of Fluency Disorders*, 29, 255-273.

Lass, N. J., Ruscello, D. M., Pannbacker, M., Schmitt, J. F., Kiser, A. M., Mussa, A. M., et al. (1994). School administrators' perceptions of people who stutter. *Language, Speech, and Hearing Services in Schools, 25,* 90-93.

Lass, N. J., Ruscello, D. M., Schmitt, J. F., Pannbacker, M. D., Orlando, M. B. & Dead, K. A., et al. (1992).Teachers' perceptions of stutterers. *Language, Speech, and Hearing Services in Schools, 23,* 78-81.

Leahy, M.M. (1994). Attempting to ameliorate student therapists' negative stereotype of the stutterer. *European Journal of Disorders of Communication, 29,* 39-49.

MacKinnon, S.P., Hall, S. & MacIntyre, P.D. (2007). Origins of the stuttering stereotype: Stereotype

formation through anchoring adjustment. *Journal of Fluency Disorders, 32*, 297-309.

McDonald, E. T. and Frick, J. V. (1954). Store clerks' reaction to stuttering. *Journal of Speech and Hearing Disorders, 19*, 306–311.

McGee, L., Kalinowsky, J. & Stuart, A. (1996). Effects of a videotape documentary on high school students' perceptions of a high school male who stutters. *Journal of Speech-Language Pathology and Audiology, 20*(4), 240-246.

Ramachandran, V. S. (1998). Phantoms in the Brain: Probing the Mysteries of the Human Mind (New York, NY:William Morrow).

Rosenberg, S. & Curtiss, J. (1954). The effect of stuttering on the behaviour of the listener. *Journal of Abnormal and Social Psychology, 49,* 355–361.

St. Louis. (2005). cited in Chandrabose, J.G., Louis, K.O.S., Pushpavathi, M. & Raoof, S. (2010). Awareness of stuttering among prospective teachers of Mysore. *Journal of All India Institute of Speech Hearing,* Vol.29 (2).

Synder, G.J. (2001). Exploratory research in the measurement and modification of attitudes toward stuttering. *Journal of Fluency Disorders, 26,* 149-160.

Van Riper, C. (1971). The *Nature of Stuttering.* Englewood Cliffs, N. J.: Prentice-Hall.

Williams, D.F. (2006). *Stuttering recovery: Personal and empirical perspectives.* New Jersey: Lawrence Erlbaum Associates, Publishers.

Yeakle, M. K., & Cooper, E. B. (1986). Teacher Perceptions of Stuttering. *Journal of Fluency Disorders, 11,* 345-359.