PRESCHOOL TEACHERS' KNOWLEDGE OF IDENTIFICATION AND MANAGEMENT OF STUTTERING IN PRESCHOOL-AGED CHILDREN

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TABLE OF CONTENTS

Chapter Page

I. INTRODUCTION....1

II. METHOD....14

Subjects....14
Data Collection....16
Procedure....18
Data Analysis....19

III. RESULTS....21

Subjects' Current and Learned Knowledge....22
Results Based on Educational Background....29
Results Based on Years of Experience Teaching in a Preschool Setting....34
Preschool Teachers' Views Regarding the Study....40
Preschool Teachers' Views of Their Role in the Identification and Management of Stuttering in Preschool Children....40

IV. DISCUSSION....42

Main Findings....42
Implications....48
Limitations and Future Research....49

IV. SUMMARY....50

BIBLIOGRAPHY....55

APPENDICES....59

Appendix A – PRE-VIDEO SURVEY....60

Appendix B – POST-VIDEO SURVEY....64

Appendix C – INSTITUTIONAL REVIEW BOARD APPROVAL....67

LIST OF TABLES

Table Page

I. Demographic Information of Subjects.....15

II. Preschool Teachers Current Knowledge of Stuttering in Children.....23

III. Preschool Teachers Learned Knowledge of Stuttering in Children.....27

IV. Preschool Teachers' Opinions By Educational Background (Pre-Video Survey)...30

V. Preschool Teachers' Opinions By Educational Background (Post-Video Survey)..32

VI. Preschool Teachers' Opinions By Educational Background

(Pre-Video Survey).....35

VII. Preschool Teachers' Opinions By Educational Background

(Post-Video Survey).....38

CHAPTER I

INTRODUCTION

Early intervention is the aim for educational disciplines, particularly since the amendment of Public Law 94-142 in 1986, the Individuals with Disabilities Education Act. The amendment, Public Law 99-457 (Education of the Handicapped Act Amendments), "required all states to provide services for all 3- to 5-year-old children with disabilities" (McLoughlin & Lewis, 2000, p.524). Government and education professionals recognized the need and have seen the positive results of intervening early in a child's life to alleviate or decrease areas of risk to the child's overall developmental progress.

One particular speech disorder that benefits from the early intervention law is stuttering. Gottwald and Starkweather (1995) cite research by Yairi and Ambrose in 1992a which reveals that "75% of the risk for stuttering onset begins before the age 3.5" (p.117), and "improvement and recovery predominate during the early stages of early childhood stuttering" (Yairi and Ambrose, 1999, p. 1109). Early intervention services provide children aged three and older who stutter the opportunity to receive treatment from a speech-language pathologist in the public schools.

The term "stutter", synonymous with "disfluent" or "disfluency", is characterized by the repetitious, prolonged, or tension-filled speech demonstrated by a speaker. Many children between the ages of two and six experience a period of disfluency during speech and language development. Månnson (2000) notes that there is a 4.99% incidence rate of

children with disfluencies in the preschool population aged two to five years. This "provides a general indication that stuttering is not an infrequent disorder among preschoolers" (p.53).

Some preschool children who stutter may repeat whole words or phrases (e.g. "I…I want that" or "I want…I want that"), include interjections (e.g. "um"), or revise mid-sentence what they had initially begun to say (e.g. "I lost my…Where's Mommy going?") (Guitar, 1998, p. 105). This period for most children is considered to be "normal disfluency". Eventually, as these children continue to develop speech and language skills, they will spontaneously regain fluent speech, an occurrence termed "spontaneous recovery" (Guitar, 1998, p.98). Research findings claim that 74% (Yairi & Ambrose, 1999) to 80% (Månnson, 2000) of children who stutter spontaneously regain fluency without formal treatment.

However, the remaining 20-26% of disfluent children that are at potential risk of continued stuttering often experience disfluencies that are more involved. The aforementioned characteristics of "normal disfluency" may occur with a higher frequency, or with the inclusion of different types of stuttering, namely sound prolongations (e.g. "Mmmy mmmmom"), vowel prolongations with pitch rises (e.g. "IIIII like…"), and muscle tension during speech, as evidenced in the lips, face or other body parts (Guitar, 1998, p. 111). When the child's stuttering does become more involved, caregivers should be concerned that these disfluent behaviors have the potential to persist into school age and possibly adulthood if appropriate intervention is not sought. Caregivers with knowledge of the identification and management of stuttering may be able to refer children with potential risk factors to a speech-language pathologist. (More

extensive distinguishing factors and warning signs of possible persistent stuttering will be discussed later in this chapter).

These general distinctions of stuttering behaviors offer reliable predictions to determine which children may regain fluency spontaneously or which children may persist with stuttering. However, the types and severity of disfluencies each speaker presents are highly variable among individuals who stutter. For example, occasionally, a child who shows severe characteristics of stuttering may spontaneously recover. Thus, researchers in the field of fluency disorders debate over the topic of formal, direct early intervention for preschool-aged children who stutter.

The main question among researchers regarding early intervention for preschool-aged children who stutter is concerned with whether or not all children who stutter need therapy from a speech-language pathologist at the initial stages of stuttering. Onslow (1992) cites research by Adams, 1984; Costello, 1983; Bloodstein, 1987; Curlee, 1984; Ingham, 1984; and Prins, 1983; which he states has demonstrated that "stuttering is particularly tractable in its incipient stages" (p. 983). Therefore, children have demonstrated improved fluency following early intervention. However, other researchers argue that recovery is unpredictable, depending on whether the child recovered as a result of intervention or whether he/she would have recovered spontaneously anyway. Further, Ingham and Cordes (1998) note "there is an absence of credible [empirical] data to support many of the procedures that are recommended as treatments for children who stutter" (p.16). Månnson (2000) refers readers to articles by Ratner, 1997; Curlee & Yairi, 1997, 1998; Ingham & Cordes, 1998; Packman & Onslow, 1998; Yairi & Curlee, 1997; Zebrowski, 1997, as examples of the ongoing debate regarding treatment for early

stuttering in children. Needless to say, researchers remain in debate considering that the development, use, and empirical testing of one specific treatment program applicable for the heterogeneous group of all children who stutter would be difficult.

While researchers disagree over which children who stutter require formal treatment, most agree that a supportive environment that promotes fluency can be beneficial to all children who stutter, including those demonstrating signs of "normal disfluencies" as well as those at-risk for persistent stuttering. Curlee (1999) notes that "an analysis of the literature on early intervention indicates a trend toward the increased use of ... fluency- enhancing procedures with preschool children who have fluency problems" (p. 32). Such a supportive environment should be the goal of parents and teachers as the basis of an early intervention program. For children with signs of persistent stuttering, a speech-language pathologist may assist in the development of an early intervention program individualized for a particular child's needs as well as act as a consultant to the parents and preschool teachers.

Promoting fluency may be achieved by the use of "fluency enhancing procedures". The premise of these procedures is that "It is much easier to show young children how to talk easily than it is to accomplish that for children who have stuttered for a year or longer" (Hamre, 1992, p.17). Fluency-enhancing strategies are indirect and are concerned with manipulating the environment. Conture (1990) describes indirect intervention as "any approach that does not explicitly, overtly, or directly try to modify or change the child's speech fluency in specific, and oral communication skills in general. With an indirect type of therapy, the focus is on ... the child's environment" (p. 93). Gottwald and Starkweather (1995) promote the use of indirect intervention by caregivers

claiming that the modification of environmental factors, including preschool teachers' and parents' interaction behaviors, influences a child's fluency. Informal, indirect management strategies delivered in a preschool classroom by a preschool teacher may provide disfluent children with scaffolding to fluent speech, and possibly prevent future complications.

Informal management strategies include the manipulation of environmental factors, such as the way in which one interacts with a child who stutters. Conture (2000) describes environmental factors in a Stuttering Foundation of America video as time-pressure to speak, stresses in the child's life (e.g. birth of a new sibling, major change of routine), acceptance of the listener, and characteristics (e.g. slow/fast rate, use of interruptions) of the child's conversational partner. Ambrose, Cox, and Yairi (1997) state, "environmental factors play important roles in recovery" (p.568). Thus, if favorable environmental conditions exist, the child who stutters may experience fluency more consistently, and eventually may learn to speak more easily. Preschool teachers can influence a child's stuttering either positively or negatively, depending on their behavior and interaction, and can promote or inhibit fluent speech.

Preschool and child care teachers are licensed to serve 127,194 children in the state of Oklahoma ("Oklahoma Department," 2001). A significant amount of children are being cared for by this influential group of professionals. If the statistics of stuttering incidence were applied to the number of children in child care/preschools in Oklahoma, then 6360 children (5% of all children) would experience normal disfluencies and 1590 children (25% of all disfluent children) would be at risk for persistent stuttering later in life if not identified and treated at an early age. Thus, preschool teachers empowered

with strategies to promote fluency and to identify children who present with warning signs of persistent stuttering may play an active role in assisting the disfluent child early on. Children with more severe stuttering behaviors, as well as children with "normal disfluencies", may reap the benefits of a classroom that incorporates fluency shaping strategies.

If a child's disfluent speech is not attended to, the disfluencies that characterize continual stuttering generally persist and/or worsen. These children may then be at risk for educational delays (Gottwald and Starkweather, 1995). Conture (1996) cites Bloodstein's (1995) findings, that "there is fairly consistent evidence that stutterers, on the whole, are poorer in educational adjustment than normal speakers" (p. 253). Children who persist in stuttering are found to suffer in school not because of a depressed IQ, as stuttering exists at all IQ levels, but rather suffer from the experience of social strain and frustration due to the inability to efficaciously express themselves and experiment with language use. They have a more limited ability to "learn through oral interchange" (Gottwald & Starkweather, 1995, p. 118) and this strain can eventually affect academic areas.

Therefore, due to the significant incidence of stuttering in preschool children, the role of the environment in the assistance or deterioration of fluency, the number of children who attend preschools, and the future educational risks of persistent stuttering, it is crucial that preschool teachers have information available to them to assist the preschool child who stutters, and/or provide consultation to parents of children who stutter. The teachers' knowledge would benefit children prone for persistent stuttering as well as those experiencing "normal disfluency". Furthermore, the specific characteristics

of "normal disfluency" and of potentially persistent stuttering may be used as general guidelines by preschool teachers or parents to help determine if a child may need further attention from a speech-language pathologist.

Strategies and Modifications To Assist Fluency in a Child Who Stutters

Adults may incorporate some general communication strategies and interaction styles when communicating with a child who stutters to help improve the child's fluency. First, it is important that adults demonstrate "an accepting and relaxed attitude when listening to and conversing with a child who stutters" (Gottwald and Starkweather, 1995, p.120). Children may perceive the worry or frustration on adults' faces and become anxious, exacerbating disfluent speech. Gottwald and Starkweather (1995) further discuss the environmental components of "time pressure, performance and language demands, and socio-emotional factors that may …maintain stuttering…" (p. 120). These environmental factors can be maneuvered to work in favor of fluent speech by incorporating fluency shaping techniques. Many of the techniques fit easily into the preschool teacher's regular plan, while a few others may require initial cognitive awareness on the part of the teacher to adjust his/her manner of speech. Teachers may also observe children's more severe episodes of disfluency and what activities accompany the stuttering episodes to add further assistance during these times. Gottwald and Starkweather (1995, pp.120-121) suggest the following fluency-enhancing strategies for preschool teachers to incorporate in the preschool classroom:

1. Use a slow rate of speech. This may be accomplished by pausing more frequently. Using a slow rate of speech while reading a story is an effective way

to practice this technique. This provides a model for the child of an easier way to produce speech without having to tell the child to "Slow down".

2. Use a reduced rate of conversational turn-taking. Pausing before responding to a child and giving the child ample time to respond to a question or comment makes this technique easy to apply. This technique reduces demands of time-pressure. When a child feels hurried or unable to fit a comment in a conversation, he and his speech mechanism become more tense. Making rules so that only one person, child or teacher, can talk at a time is effective and reduces interruptions.

3. Use few interruptions. When children feel they will be cut-off from their speech, they feel rushed and more pressured to get out what they want to say. This technique should likewise be used to promote positive social skills among peers.

4. Ask questions that require a yes/no or single-word response from the child while in group situations. These shorter responses are less demanding to the child. Ask children who stutter questions at the beginning of group time so they do not build up performance anxiety.

5. Have quiet times throughout the day. During this time, the teacher may be able to have some special interaction time with the child alone or with one or two other peers. During these quiet times, which can consist of silent "reading" or playing with "Play-Dough", the teacher can incorporate a slow rate, and slow conversational turn-taking in a relaxed situation with no time pressures. The child may be encouraged to self-talk during parallel play, another instance which promotes fluency. It is all right to provide the disfluent child with more

opportunities for quiet time during the day, especially on a day when he/she is exceptionally disfluent. However, the child should never be left out of group activities or be made to feel different or inadequate for his speech differences.

6. Include a routine schedule and transition times. This predictability reduces anxiety in children, allowing them to be more relaxed in their speech as well.

7. Provide words for the child to describe his feelings about his speech difficulties. When the child acknowledges his difficulty, the teacher may confirm his difficulty, such as, "That was difficult for you to say", and add acceptance, "I have difficult speech sometimes, too." Then, allow the child time to continue his speech.

8. Give the child full attention during one-on-one conversation. For instance, while it is easy and efficient to complete class materials while conversing with a child, the child feels pressure to grasp the teacher's attention and may try harder to get his message across. This pressure results in increased disfluency.

Characteristics of Persistent Stutterers

It is crucial that children at-risk for persistent stuttering are identified and referred to a certified speech-language pathologist who specializes in stuttering. Preschool teachers provided with the information to identify children who demonstrate behaviors characteristic of persistent stuttering would allow more children to receive services from a speech-language pathologist, if necessary. In addition, the preschool teacher would serve as a valuable consultative resource to parents. The following are specific

characteristics of disfluency outlined by Ramig (2000) which signal that a child is more likely to persist in stuttering:

> "1. **Multiple part-word repetitions** - Repeating the first letter or syllable of a word, such as t-t-t-table or ta-ta-ta-table.
> 2. **Prolongation** - Stretching out a sound, such as r------abbit.
> 3. **"Schwa vowel"** - Use of the weak vowel, "uh". For example, instead of saying "bay-bay-bay-baby", the child substitutes "buh-buh-buh-baby".
> 4. **Struggle and tension** - The child struggles and forces in his attempt to say a word. For example, the child may exhibit eye blinks or facial grimaces when having difficulty speaking.
> 5. **Pitch and loudness rise** - As the child repeats and prolongs, the pitch and loudness of his voice increase.
> 6. **Tremors** - Uncontrolled quivering of the lips or tongue may occur as the child repeats or prolongs sounds or syllables.
> 7. **Avoidance** - An unusual number of pauses; substitutions of words; interjection of extraneous sounds, words, or phrases; avoidance of talking.
> 8. **Fear** - As the child approaches a word that gives him/her trouble, he/she may display an expression of fear.
> 9. **Difficulty in starting and/or sustaining airflow or voicing for speech** - This is heard most often when the child begins sentences or phrases. Breathing may be irregular and speech may occur in spurts as the child struggles to keep his/her airflow and voice flowing" (p.1).

Should these characteristics be observed, the preschool teacher should refer the child for assessment by a speech-language pathologist. However, it is important that fluency-enhancing strategies continue to be used in the classroom.

Minimal research and literature pertaining to stuttering in preschool-aged children target preschool teachers. Rather, the research and literature available on children who stutter largely addresses pediatricians, teachers of school-aged children, and parents. See articles by Ramig (1995), and Nippold (1995).

Literature aimed at teachers of school-aged children who stutter is not as applicable to the younger group of preschool children. The stuttering behaviors of older

children who have stuttered longer are different than the children with "normal disfluencies" or beginning stuttering. The literature aimed at parents is more applicable to preschool teachers, but does not include guidance for classroom settings.

Thus, the group of professionals arguably in the best position to identify children who may be at risk for stuttering, to refer children to a speech language pathologist, and to modify children's environments to promote fluency, is left out of the literature. The preschool teacher presents a substantial influence on the child's developmental progress and serves as an accurate resource for parents by recognizing areas of developmental concern and referring the child for special services when necessary (U.S. Department of Labor, 2000). Preschool teachers have a great opportunity to intervene with a child who stutters because they are able to see the child in natural environments for significant periods of time, as well as in a variety of situations. Particular situations commonly experienced in the preschool environment, such as an increased demand to speak under time pressure when competing in a group, and answering questions in a forced speaking situation, may serve to increase a child's disfluency (Yaruss, 1997). Hence, the preschool teacher's role in intervention is further necessitated.

The information preschool teachers have regarding stuttering in preschool-aged children is unknown. Different preschools vary regarding their topics of informational resources/training sessions. The educational backgrounds of preschool teachers also vary. Some preschool teachers have a high school diploma as their highest level of education, others have completed a few semesters of college, and some have university degrees in Early Childhood Education. None of these backgrounds ensure education on fluency disorders. The bachelor's degree requirements at the accredited universities for Early

Childhood Education in Oklahoma, namely Oklahoma State University ("Oklahoma State," 2001), the University of Central Oklahoma ("University of Central," 2001), the University of Oklahoma ("Requirements for," 2001), Tulsa University ("The University of Tulsa," 2001), and Northeastern State University ("Northeastern State University," 2001), do not mandate that the students complete a course in communication disorders. The universities may offer an elective course covering an introduction to communication disorders that includes stuttering along with all other communication disorders.

The lack of scholastic education on stuttering in preschool children leads one to believe that the information preschool teachers possess is obtained voluntarily through independent research, continuing education courses, or elective university courses. Thus, the type and extent of information preschool teachers overall possess regarding normal and at-risk fluency in preschool children is unpredictable and unknown.

The purpose of this study was to gather information to determine preschool teachers' current and learned knowledge of the identification and management of children at-risk for persistent stuttering. Preschool teachers, for the purposes of this study, were defined as outlined by the Oklahoma Department of Human Resources Center for Child Care (S. Case, personal communication, June 8, 2001). Preschool teachers/child care workers are individuals employed in a public (e.g. Head Start), private for profit (e.g. commercial child care centers), private for non-private (e.g. church) or home site child care center, who provide learning activities to children two to five years of age. The preschool teachers' level of education may vary from a high school diploma to a Masters degree. The data will determine what preschool teachers know in terms of identifying normal and non-normal stuttering, as well as what they know about using

intervention strategies to help the disfluent child experience fluency. Questions to be answered from the data obtained in this study include: (1) What is the knowledge base of preschool teachers from various preschool settings, e.g. public or private, regarding stuttering in preschool-aged children? (2) Does educational background influence knowledge of stuttering in children? (3) Does number of years of experience influence knowledge of stuttering in children? (4) Do teachers feel an informational video is an effective means of presenting information on stuttering that is applicable to their classroom or to a particular child? (5) Do preschool teachers feel they play a valuable role concerning the identification and intervention of children who stutter, and what remaining questions do they still have?

Data from this study may be further used to develop appropriate educational training for preschool teachers. The data also assists future research by providing baseline information on preschool teachers' current knowledge and beliefs about stuttering in pre-school-aged children, and by highlighting the need to target preschool teachers as valuable resources for appropriately handling the speech of children who stutter.

CHAPTER II

METHOD

Subjects

A total of thirteen preschool sites agreed to participate in the study. Sites were either identified through phone contact or were selected from professional contacts made by an Oklahoma State University Department of Communication Sciences and Disorders faculty member. Those sites contacted by phone were randomly selected from the phone book. Ten of the preschools randomly contacted (approximately one-fourth of total contacted) agreed to participate. Of those who agreed to participate, approximately three-fourths (n=7) completed all components of the study. Five preschools were selected via professional contact. The remaining site was the monthly Head Start regional meeting, which consisted of preschool teachers from numerous Head Start facilities located in seven counties in Oklahoma.

At each of the preschools, the site program director served as the contact person, and asked staff members at the site for their voluntary participation in the survey and video presentation. The number of subjects per site ranged from one to seven, with the exception of the 84 Head Start subjects.

Female preschool teachers (n=125) from the various preschool settings in seven counties in Oklahoma served as subjects. Subject representation included 25 from commercial preschools, 16 from church-based preschools, and 84 subjects from Head Start facilities. Demographic information was gathered to describe the subjects' educational experience, the number of years of the subjects' work experience in the

preschool setting, and any information the subjects had previously learned on stuttering. Optional information on age and race was also gathered. All of the subjects answered the optional questions. Table I summarizes the demographic information.

Table I
Demographic Information of Subjects

	SUBJECTS(n=125)
Preschool Site	
Commercial	25
Church	16
Head Start	84
Years of Experience	
0-5 years	72
5-10 years	28
10-20 years	21
20+ years	4
Education Background	
High School Diploma/G.E.D.	43
Some College	44
Associate's Degree	14
Bachelor's Degree	14
Some Graduate School	4
Master's Degree	6
Previous Information on Stuttering (Inservice, College Course, Independent reading, etc.)	21
Experience Working With Children who Stutter (# of Children)	71
Age	
18-24 years	26
25-34 years	44
35-44 years	40
45-54 years	12
55+ years	3
Race	
American Indian or Alaska Native	7
African American	20
Asian	0
Hispanic	2
Native Hawaiian or Other Pacific Islander	0
White	96

The distribution of the subjects' number of years experience working in a preschool setting was 72 with 1-5 years of experience, 28 with 5-10 years of experience, 21 with 10-20 years of experience, and 4 with 20+ years of experience. The educational background of the subjects included 43 with a high school diploma (or equivalent), 44 with some college, 14 with a two-year Associate's degree, 14 with a Bachelor's degree, 4 with post-graduate experience, and 6 with a Master's degree.

Seventy-one of the subjects reported having taught at least one child who stuttered at some point in their preschool teaching experience. Eleven subjects reported having completed previous training (e.g. in-service, college course, etc.) on stuttering, and ten subjects reported having independently researched information (e.g. reading pamphlets, magazine articles, internet articles, etc.) on stuttering.

Data Collection

The pre-video survey consisted of two parts. The first part contained statements that the subject responded to by choosing her opinion based on a Likert scale ranging from 1-5. The number 1 denoted "Strongly Disagree" and the number 5 signified "Strongly Agree". The opinion rankings moved along a continuum with "Disagree" as number 2, "I Don't Know" as number 3, and "Agree" as number 4. The statements in the first portion of the pre-video survey presented basic information that concerned the identification of characteristics of at-risk stuttering, and the modification and management strategies used to decrease stuttering.

The second section consisted of multiple-choice and fill-in-the-blank type questions requesting demographic information on the individual subjects. None of the

demographic questions requested information that would reveal personal identity. A copy of the "pre-video survey" is included in Appendix A.

The surveys were tested prior to their distribution to the subjects. Testing consisted of the completion and critique of the surveys by a test group of five peers, three university professors, and three current preschool teachers. The test group was asked to make comments on each survey item regarding the clarity of wording and the comprehended meaning of the statements. Following the input from the test group, the surveys were altered to remove professional jargon, reduce sentence length, and to simplify words or phrases.

The video used in this study was produced in 2000 by the Stuttering Foundation of America (SFA). SFA is a non-profit organization that educates and informs various professionals and family/friends of individuals who stutter on stuttering disorders. The organization produces videotapes based on information from leading specialists and researchers in the field of stuttering. The videos are made available for public use and aim to make stuttering less mysterious while providing a sense of manageable control over the condition. The video used in this project, titled "Stuttering and Your Child: A Videotape for Parents", addressed any caregiver involved with a pre-school-aged child who presents stuttering behaviors (Conture, 2000). The content includes information to identify characteristics of stuttering that may represent chronic stuttering, ways to adapt one's speech and modify the child's environment to decrease his/her stuttering, and advice on how to respond to a child's emotional needs if he/she is aware of his/her speech difficulty. The video was used as the instructional tool for this study to ensure consistency in delivering an equal amount and content of information to each subject.

The post-video survey consisted of two parts. The first part was the same as described for the first survey. The second portion contained open-ended questions on the subjects' opinions about the video. Questions to be answered included how well the video's suggestions were applicable to the subjects' particular classrooms, whether subjects felt their population of preschool teachers should play an active role in stuttering identification and management in preschool-aged children, and what other remaining questions existed. A copy of the "post-video survey" is included in Appendix B.

The subjects were asked to provide the last four digits of their Social Security Number on spaces provided on each of the pre- and post-video surveys. The digits provided a confidential way in which to compare a subject's pre- and post-video responses, as well as to better ensure the study's validity by guaranteeing that the same subjects participated in both the pre- and post-video surveys.

Procedure

Subjects completed a pre-video survey, observed an instructional video, and completed a post-video survey. When confirmation of subject participation was made, the investigator distributed the pre-video survey and consent forms to the site within one week of the scheduled video presentation. The subjects were allowed to complete the surveys at their convenience at any time prior to the video. On the day of the video presentation, the investigator briefly discussed the study and the content of the thirty-minute video, presented the video, dispensed the post-video survey, and answered any remaining questions the subjects posed regarding stuttering in preschool-aged children.

The video was presented during "nap time" for the subjects from six of the preschool sites. These subjects watched the video while the children in their class napped. Mild to moderate distractions (i.e. behavior modification of children) were observed by the examiner for a majority of these sites. Subjects from the other six of the preschool sites watched the video and completed the post-video survey either in a room separate from their class or after their classes were over for the day. The subjects from Head Start participated in the study as part of the monthly in-service training.

Once the subjects agreed to participate in all three aspects of the study, the pre-video surveys were dispersed to the individuals at each preschool site by personal visit of the investigator. The investigator confirmed with the site representative the appointment time during the following week for viewing the video and completing the post-video survey.

The video and post-video survey were brought to the subjects by the investigator. The video was viewed first, followed by the completion of the post-video survey. The investigator answered any additional questions on stuttering from the subjects once the final surveys were completed and turned in.

Data Analysis

Descriptive statistics were used to analyze the pre- and post-video survey responses, and portions of the demographic information obtained. Additional analyses included comparison of various demographic groups to determine statistically significant differences based on educational background, and number of years experience working with preschool-aged children.

Areas of interest for analysis included differences in responses on the pre- and post-video survey statements, differences between the subjects' responses from various demographic groups, and preschool teachers' beliefs and feelings toward their role in managing preschool-aged children who stutter.

CHAPTER III

RESULTS

The purpose of this study was to obtain information on preschool teachers' current and learned knowledge of issues concerning stuttering in preschool aged children. The aim was to determine what types of knowledge preschool teachers currently possess on this topic and which areas require additional information prior to and following a "Stuttering Foundation of America" video presentation. Further analyses would be made to determine whether statistically significant differences existed between subjects within the demographic categories of educational background, and years of experience teaching in a preschool setting. Additionally, subjects' written opinions pertaining to their views on the study as well as their role in identifying and managing children who stutter were reported. One hundred twenty-five preschool teachers from a variety of preschool settings (i.e. commercial, church, Head Start) were surveyed, presented an informational video, and then surveyed again. The subjects provided their opinions to statements on the survey by choosing their opinion from a Likert scale, ranging from one to five. The opinions corresponding to the numbers ranged from "Strongly Disagree" (number one) to "Strongly Agree" (number five). The number three represented the opinion, "Don't Know".

The data was analyzed in three ways. First, descriptive statistics were used to analyze the pre- and post-video survey responses to determine the frequencies of occurrence of the subjects' opinions. The frequencies were presented as percentages of

subjects who responded in each of the opinion categories for each statement on the pre- and post-video survey statements. Next, Pearson Chi-Square Tests were used to determine significant differences in subject opinion based on demographic data. The subjects' opinions were compared within groups pertaining to the two demographic factors of educational background and years of experience teaching in the preschool setting. Finally, descriptive statistics and qualitative analyses were used to represent the subjects' written comments to yes/no and open-ended opinion questions presented at the completion of the post-video survey.

Subjects' Current and Learned Knowledge

The first question to be answered from the data was the subjects' current and learned knowledge of stuttering in preschool aged children. The preschool teachers' responses to the statements on the pre- and post-video surveys provided the results to answer this question.

Pre-Video Survey Results

The subjects' responses on the pre-video survey represented the current knowledge of the preschool teachers regarding stuttering in preschool children. Table 2 presents the percentages of the subjects' pre-video opinions for each statement. The opinion categories were condensed into three categories for clarity in the table. The categories "Strongly Disagree" and "Disagree" were combined, as were the categories "Strongly Agree" and "Agree". The statements in the table appear as they did on the survey provided to the subjects. However, for descriptive purposes, the examiner

organized these statements into four categories: identification of genetic factors, identification of specific stuttering characteristics, management of general interaction strategies, and management of specific fluency enhancing strategies.

Table 2

Preschool Teachers' Current Knowledge of Stuttering in Preschool Children

Survey Statement	Pre-Video Opinion		
	D*	DK	A
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	19.1**	47.6	32.6
Many children who stutter have sensitive personalities.	19.1	23	57.1
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	46	25.4	27.8
There are ways of predicting which preschool children who stutter may also stutter later in life.	23.8	50.8	24.6
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	4.8	24.6	69
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIII want…"), they are more likely to stutter later in life.	16.7	69	13.5
Some preschool children who stutter are aware of and sensitive to their speech differences.	15.9	13.5	69.9
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	29.4	48.4	21.4
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	24.6	34.9	39.7
Reading slowly to children who stutter may help improve their stuttering.	15.1	43.7	40.5
Adults should say difficult words for children who stutter to help decrease stuttering.	61.1	32.5	5.6
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	26.2	32.5	40.5
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	33.4	46	19.9
Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	6.4	23	69.8
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	27	24.6	47.6
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	8.7	45.2	45.3
Adults should not discipline children who stutter as strictly as other children.	61.9	16.7	20.6
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	10.3	69	19.9
Being patient while listening to children who stutter greatly helps to decrease stuttering.	8	22.2	69.1
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	10.3	33.3	55.5

*Note. D= Disagree; DK=Don't Know; A=Agree.

**Note: Numbers in percentages.

The first category pertains to preschool teachers' current knowledge regarding the identification of genetic factors associated with stuttering in preschool children. The results demonstrate that prior to the video presentation, 46% of the subjects inappropriately disagreed with the statement concerning most children's tendencies to outgrow stuttering. Nearly half of the subjects believed that most children who begin to stutter may continue to stutter later in life. This data was surprising to the investigator as many children do "outgrow" stuttering. The investigator presumed that the subjects, perhaps, did not consider children with "normal disfluencies" as being included in the category of "children who stutter".

The statement regarding the combination of genetics and environment as responsible for stuttering in preschool children resulted in nearly half of the subjects (46%) responding that they "didn't know". This knowledge is crucial to preschool teachers embracing their role and influence on the effective management of children who stutter. A majority of the subjects (57.1%) were in appropriate agreement with the statement that many children who stutter have sensitive personalities.

The second category of description included the identification of specific stuttering behaviors. Interestingly, half of the subjects "didn't know" that criteria existed to predict which children will "spontaneously recover" and which children will be at-risk for persistent stuttering. More specifically, 69% of the subjects "didn't know" whether or not a child who raised the pitch of his/her voice while prolonging a sound was at-risk of persistently stuttering. Sixty-nine percent of the subjects also "didn't know" if tension present in the lips, face, or other body parts of a child while he/she stuttered was a concern for possible stuttering later in life. Thus, a majority of the preschool teachers

demonstrated a lack of generally accurate information on these three statements concerning stuttering behaviors, specifically pitch rises and tension. This uncertainty is alarming, as those behaviors are two of the more significant factors in determining persistent stuttering.

Further, a majority of the subjects appropriately agreed on the two statements on the pre-video survey that some children are aware of and sensitive to their speech differences, and that stress in the lives of children increases their stuttering.

The third category of description included management strategies of ways in which adults may interact in general with children who stutter. A majority of the subjects accurately agreed to five of the six statements in this category. Statements included: spending one-on-one time with children who stutter for at least ten minutes a day helps improve fluency; adults should not say words for children when they are having difficulty producing them fluently; adults should discipline the child who stutters the same as other children; adults should listen patiently to children who stutter when they speak to help improve their fluency; and adults should talk openly to preschool-aged children about their stuttering when the child expresses concern.

The statement that pertained to preschool-aged children being allowed to set their own daily routine so that they can talk when they feel ready, was not responded to with a majority opinion by the subjects. Forty-one percent of the subjects responded in agreement with this statement, which is contradictory to the general ideas of some researchers and professionals in the field of fluency disorders.

The fourth category included the statements that addressed specific strategies adults may use to help decrease children's stuttering. Subjects did not respond with a

majority opinion on any of the statements in this category. Forty percent of the teachers agreed and forty-three percent of the teachers "didn't know" that reading slowly to children may help to improve fluency. Similar percentages were present for talking slowly and using pauses when communicating with children who stutter.

Forty-seven percent of the subjects inappropriately agreed that adults should tell children who stutter to "Stop, slow down, and start over". Forty percent of the subjects appropriately agreed that if a child who stutters does not begin to improve their fluency within a month after they begin stuttering, that they should be referred to a speech-language pathologist. Thirty-five percent of the subjects "didn't know" about referring, and one-fourth of the subjects disagreed with referring a child who stutters to a speech-language pathologist.

Post-Video Survey

The post-video survey demonstrated the subjects' learned knowledge of stuttering in preschool children following an informational video. The subjects' new knowledge determined the video's effectiveness at presenting basic knowledge of stuttering. Table 3 presents the percentages of the subjects' post-video opinions. The five opinion categories were again condensed into three categories for clarity of the table, and the descriptive results were again organized into four categories for coherency of data organization.

The first and second categories of identifying genetic factors and stuttering behaviors characteristic of persistent stuttering are combined. Overall, the preschool teachers showed an improvement on the post-video survey for nine out of the ten statements provided for this category. Greater than 85% of the subjects provided appropriate

opinions on five out of those nine statements. The statement that the teachers continued to have mild uncertainty with on the post-video survey was whether or not a child who raises the pitch of his/her voice while prolonging a sound (e.g. "IIIIII want…") is considered to be at-risk for stuttering later in life.

Table 3

Preschool Teachers' Learned Knowledge of Stuttering in Preschool Children

Survey Statement	Post-Video Opinion D	DK	A
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	9.6	4.8	84.9
Many children who stutter have sensitive personalities.	4.8	0	94.5
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	50	11.1	38.1
There are ways of predicting which preschool children who stutter may also stutter later in life.	11.9	20.6	66.6
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	.8	0	98.4
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	11.9	29.4	57.9
Some preschool children who stutter are aware of and sensitive to their speech differences.	6.4	1.6	91.3
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	14.3	23.0	61.9
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	7.1	1.6	90.5
Reading slowly to children who stutter may help improve their stuttering.	.8	1.6	96.9
Adults should say difficult words for children who stutter to help decrease stuttering.	74.6	11.9	12.7
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	44.4	7.1	47.6
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	4.0	8.7	86.5
Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	2.4	.8	96.1
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	37.3	14.3	46.9
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	1.6	4.0	93.6
Adults should not discipline children who stutter as strictly as other children.	84.1	2.4	12.7
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	7.9	15.9	74.6
Being patient while listening to children who stutter greatly helps to decrease stuttering.	.8	4.8	93.7
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	7.2	6.3	85.7

The third category consisted of general interaction strategies to use with children who stutter. For three of the four statements (i.e. talking slowly, reading slowly, and referral to a speech-language pathologist) which addressed this topic, greater than 90% of the subjects provided opinions on the post-video survey that were consistent with current literature regarding management of stuttering in preschool-aged children. A large majority of the subjects appropriately agreed with the statements, demonstrating that the video was an effective means of presenting the information. However, the statement in this category that resulted in an inappropriate majority opinion from the subjects concerned children's tendencies to outgrow stuttering. The investigator hypothesized that the subjects would believe that children "recovered" from disfluent speech as they continued to develop their speech and language skills. The investigator suspects the subjects did not consider children with "normal disfluencies" as belonging in the category, "children who stutter".

The fourth category pertained to specific management strategies to help increase fluency in children who stutter. This category contained a statement that remained a myth for the subjects. The statement that addressed adults' use of the phrase, "Stop, slow down, and start over", with children who stutter resulted in a non-majority opinion among the subjects. The subjects' opinions were distributed in similar percentages for "Disagee", "Don't Know", and "Agree". The video did not explicitly state that telling a child to "Stop, slow down, and start over" was a negative comment, rather it implied that drawing attention to children's speech and inferring that their speech is wrong, is not beneficial to improving fluency. The video encouraged adapting the children's environments by altering the adults' communication style.

Results Based on Educational Background

The second question to be answered from the data included the subjects' opinions based on the demographic category of educational background. For purposes of analysis, the subjects were grouped into one of three types of educational backgrounds, specifically "High School Diploma", "Some College", or "College Degree". The data from the pre- and post-video surveys were each analyzed.

Pre-video Survey Results

Within group analysis was performed to determine whether the subjects' various educational backgrounds contributed to their current knowledge of stuttering in preschool children. Table 4 lists the percentages of the subjects' responses on the pre-video survey according to their grouping based on educational background. The Pearson Chi-Square statistics are also listed. This information is valuable to inform the investigator whether one group has accessible information to stuttering in preschool children. No significant differences were revealed between the educational groups. Thus, despite various educational backgrounds, preschool teachers collectively provided similar opinions for each of the statements.

Results Based on Educational Background (Post-Survey)

The within group analyses of the responses from the post-video survey were performed to note any differences in the subjects' learned knowledge of stuttering in preschool children based on their educational background. Table 5 lists the number of the subjects' responses on the post-video survey according to their educational groups.

This information was valuable to determine if the video training provided was

Table 4
Preschool Teachers' Opinions According to Educational Background (Pre-Video Survey)

Survey Statement	Groups									Chi Square
	High School (n=31)			*Some College (n=44)*			*College Degree (n=38)*			
	D	**DK**	**A**	**D**	**DK**	**A**	**D**	**DK**	**A**	
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	5 16%	19 61%	7 23%	6 14%	16 36%	22 50%	10 26%	19 50%	9 24%	χ^2=18.89(12), p=.09
Many children who stutter have sensitive personalities.	4 13%	6 19%	21 68%	8 18%	13 30%	23 52%	9 24%	9 24%	20 52%	χ^2=10.54(12), p=.57
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	14 45%	9 29%	8 26%	21 48%	10 22%	13 30%	20 53%	10 26%	8 21%	χ^2=12.44(12), p=.41
There are ways of predicting which preschool children who stutter may also stutter later in life.	10 32%	15 49%	6 19%	5 11%	26 59%	13 30%	12 32%	16 42%	10 26%	χ^2=12.96(12), p=.37
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	3 10%	8 26%	20 64%	1 2%	12 27%	30 71%	2 5%	7 18%	29 77%	χ^2=11.93(15), p=.68
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	5 16%	24 77%	2 7%	6 14%	28 63%	10 23%	9 24%	26 68%	3 8%	χ^2=13.12(12), p=.36
Some preschool children who stutter are aware of and sensitive to their speech differences.	7 23%	7 23%	17 54%	8 18%	7 16%	29 66%	3 8%	2 5%	33 87%	χ^2=18.37(12), p=.11
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	10 32%	16 52%	5 16%	7 16%	23 52%	14 32%	18 48%	15 39%	5 13%	χ^2=18.82(12), p=.09
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	5 16%	12 39%	14 45%	11 25%	14 32%	19 43%	11 29%	13 34%	14 37%	χ^2=9.45(12), p=.67

Table 4 (Cont.)
Preschool Teachers' Opinions According to Educational Background (Pre-Video Survey)

	High School (n=31)			*Some College (n=44)*			*College Degree (n=38)*			
Reading slowly to children who stutter may help improve their stuttering.	6 19%	13 42%	12 39%	5 11%	26 59%	13 30%	6 16%	12 32%	20 52%	χ^2=15.50(12), p=.22
Adults should say difficult words for children who stutter to help decrease stuttering.	16 52%	14 45%	1 3%	28 63%	13 30%	3 7%	24 63%	11 29 %	3 8%	χ^2=6.86(12), p=.87
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	6 19%	9 29%	16 52%	14 32%	18 41%	12 27%	7 18%	11 29%	20 52%	χ^2=15.27(12), p-.23
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	13 42%	15 48%	3 10%	12 27%	21 48%	11 25%	13 34%	17 45%	8 21%	χ^2=5.66(12), p=.93
Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	5 16%	11 35%	15 49%	1 2%	11 25%	32 73%	2 5%	5 13%	31 82%	χ^2=18.10(12), p=.11
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	12 39%	8 26%	11 35%	9 20%	11 25%	24 55%	10 26%	10 26%	18 48%	χ^2=6.26(12), p=.90
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	3 10%	14 45%	14 45%	3 7%	23 52%	18 41%	4 11%	18 48%	16 41%	χ^2=9.48(12), p=.66
Adults should not discipline children who stutter as strictly as other children.	14 45%	6 19%	11 36%	31 71%	8 18%	5 11%	26 69%	5 13%	7 18%	χ^2=11.12(12), p=.52
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	2 7%	20 64%	9 29%	3 7%	34 77%	7 16%	6 16%	26 68%	6 16%	χ^2=9.93(12), p=.62
Being patient while listening to children who stutter greatly helps to decrease stuttering.	0 0%	11 36%	20 64%	6 14%	8 18%	30 68%	3 8%	7 18%	28 74%	χ^2=18.77(12), p=.09
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	3 10%	11 36%	17 54%	5 11%	16 36%	23 52%	5 13%	11 29%	22 58%	χ^2=5.24(12), p=.95

Table 5
Preschool Teachers' Opinions According to Educational Background (Post-Video Survey)

Survey Statement	Groups									Chi Square
	High School (n=31)			*Some College (n=44)*			*College Degree (n=38)*			
	D	**DK**	**A**	**D**	**DK**	**A**	**D**	**DK**	**A**	
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	2 7%	2 7%	27 86%	5 11%	1 2%	38 87%	4 11%	1 3%	33 86%	χ^2=17.76(12), p=.12
Many children who stutter have sensitive personalities.	1 3%	0 0%	30 97%	1 2%	0 0%	43 98%	4 11%	0 0%	34 89%	χ^2=13.17(9), p=.16
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	17 55%	4 13%	10 32 %	22 50%	5 11%	17 39%	20 52%	3 8%	15 40%	χ^2=5.4(12), p=.94
There are ways of predicting which preschool children who stutter may also stutter later in life.	5 16%	9 29%	17 55%	4 9%	8 18%	32 73%	5 13%	7 18%	26 68%	χ^2=10.71(12), p=.55
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	0 0%	0 0%	31 100%	0 0%	0 0%	44 100%	1 3%	0 0%	37 97%	χ^2=6.18(6), p=.40
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	5 16%	10 32%	16 52%	2 5%	13 30%	29 65%	7 18%	9 24%	22 58%	χ^2=8.28(12), p=.76
Some preschool children who stutter are aware of and sensitive to their speech differences.	5 16%	1 3%	25 81%	2 5%	1 2%	41 93%	1 3%	0 0%	37 97%	χ^2=18.59(12), p=.099
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	4 13%	8 26%	19 61%	3 7%	10 23%	31 70%	9 24%	7 18%	22 58%	χ^2=9.24(12), p=.68
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	3 10%	1 3%	25 87%	1 2%	1 2%	42 96%	3 8%	0 0%	35 92%	χ^2=13.78(12), p=.32

Table 5 (Cont.)
Preschool Teachers' Opinions According to Educational Background (Post-Video Survey)

	High School (n=31)			*Some College (n=44)*			*College Degree (n=38)*			
Reading slowly to children who stutter may help improve their stuttering.	0 0%	1 3%	30 97%	0 0%	0 0%	44 100%	1 3%	0 0%	37 97%	χ^2=14.08(9), p=.12
Adults should say difficult words for children who stutter to help decrease stuttering.	20 64%	3 10%	8 26%	34 78%	5 11%	5 11%	33 86%	4 11%	1 3%	χ^2=14.92(12), p=.25
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	13 42%	2 7%	16 51%	21 48%	5 11%	18 41%	14 37%	2 5%	22 58%	χ^2=11.62(12), p=.48
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	0 0%	5 16%	26 84%	3 7%	4 9%	37 84%	2 5%	1 3%	35 92%	χ^2=12.01(9), p=.21
Stress in the lives of children who stutter. such as a new sibling or a hectic home schedule, may increase their stuttering.	1 3%	1 3%	29 94%	0 0%	0 0%	44 100%	1 3%	0 0%	37 97%	χ^2=17.81(12), p=.12
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	11 36%	3 10%	17 54%	17 39%	8 18%	19 43%	15 40%	5 14%	17 46%	χ^2=10.17(15), p=.81
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	0 0%	2 7%	29 93%	0 0%	2 5%	42 95%	2 5%	0 0%	36 95%	χ^2=10.19(12), p=.60
Adults should not discipline children who stutter as strictly as other children.	24 78%	1 3%	6 19%	37 84%	2 5%	5 11%	35 92%	0 0%	3 8%	χ^2=15.59(12), p=.21
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	3 10%	5 16%	23 74%	2 5%	11 25%	30 70%	4 11%	2 5%	32 84%	χ^2=13.04(15), p=.60
Being patient while listening to children who stutter greatly helps to decrease stuttering.	0 0%	3 10%	28 90%	1 2%	1 2%	42 96%	0 0%	1 3%	37 97%	χ^2=12.31(9), p=.20
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them.	3 10%	0 0%	28 90%	4 9%	4 9%	36 82%	2 5%	4 11%	32 84%	χ^2=17.13(12), p=.15

beneficial to a variety of learning styles. No significant differences existed between the educational groups on the post-video survey. The similar opinions between the groups suggest that the video training effectively presented the information on stuttering for all subjects.

Results Based on Years of Experience Teaching in a Preschool Setting

The third question to be answered from the data included the subjects' opinions based on the demographic category of years of experience teaching in a preschool setting. The subjects belonged to one of two groups of years of experience, specifically "0-5 years" and "5+ years". The data from both the pre- and post-video surveys were analyzed.

Pre-video Survey Results

The subjects' opinions from the pre-video survey were compared according to their years of experience teaching in a preschool setting. This within group comparison would determine whether any differences existed. Table 6 lists the actual number and percentage of the subjects in each group who responded with each of the opinions. The Pearson Chi-Square Statistics are also listed. These results are helpful to determine whether the preschool teachers' years of experience make a significance difference in their opinions of the identification and management of stuttering in preschool children.

Statistically significant differences were noted between subjects with one to five years of experience and subjects with five or more years of experience on two statements from the pre-video survey. Statements included: 1) boys are more likely than girls to

Table 6
Preschool Teachers' Opinions According to Years of Experience in a Preschool Setting (Pre-Video Survey)

Survey Statement	Groups						Chi Square
	1 - 5 Years (n=72)			*5+ Years (n=53)*			
	D	**DK**	**A**	**D**	**DK**	**A**	
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	16* 22%	38 53%	18 25%	8 15%	22 42%	23 43%	χ^2= 13.6(4), p=.009
Many children who stutter have sensitive personalities.	13 18%	17 24%	42 58%	11 21%	12 23%	30 56%	χ^2=2.75(4), p=.60
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	32 44%	20 28%	20 28%	26 49%	12 23%	15 28%	χ^2=.55(4), p=.97
There are ways of predicting which preschool children who stutter may also stutter later in life.	13 18%	41 57%	18 25%	17 32%	23 43%	13 25%	χ^2=5.30(4), p=.26
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	4 6%	17 24%	51 70%	2 4%	15 28%	36 68%	χ^2=2.59(5), p=.76
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	8 11%	55 76%	9 13%	13 25%	32 60%	8 15%	χ^2=5.89(4), p=.21
Some preschool children who stutter are aware of and sensitive to their speech differences.	12 17%	11 15%	49 68%	8 15%	6 11%	39 74%	χ^2=3.34(4), p=.50
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	19 26%	39 54%	14 19%	18 34%	22 42%	13 25%	χ^2=3.63(4), p=.46
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	16 22%	25 35%	31 43%	15 28%	19 36%	19 36%	χ^2=3.26(4), p=.52
Reading slowly to children who stutter may help improve their stuttering.	11 15%	29 41%	32 44%	8 15%	26 49%	19 36%	χ^2=1.47(4), p=.83

Table 6 (Cont.)
Preschool Teachers' Opinions According to Years of Experience in a Preschool Setting (Pre-Video Survey)

	1 - 5 Years (n=72)			*5+ Years (n=53)*			
Adults should say difficult words for children who stutter to help decrease stuttering.	55 76%	9 13%	8 11%	39 74%	6 11%	8 15%	χ^2=3.85(4), p=.43
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	29 40%	6 8%	37 52%	27 51%	3 6%	23 43%	χ^2=2.94(4), p=.57
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	3 4%	8 11%	61 85%	2 4%	3 6%	48 90%	χ^2=1.23(3), p=.75
Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	2 3%	1 1%	69 96%	1 2%	0 0%	52 98%	χ^2=2.30(4), p=.68
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	24 33%	13 18%	35 49%	23 44%	5 10%	24 46%	χ^2=3.85(5), p=.57
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	1 1%	1 1%	70 98%	1 2%	4 8%	48 90%	χ^2=6.98(4), p=.14
Adults should not discipline children who stutter as strictly as other children.	64 33%	2 3%	6 8%	42 79%	1 2%	10 19%	χ^2=4.74(4), p=.32
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	5 7%	15 21%	52 72%	5 10%	5 10%	42 80%	χ^2=5.99(5), p=.31
Being patient while listening to children who stutter greatly helps to decrease stuttering.	1 1%	2 3%	69 96%	0 0%	4 8%	49 92%	χ^2=3.34(3), p=.34
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	5 7%	4 6%	63 87%	4 8%	4 7%	45 85%	χ^2=2.15(4), p=.71

*Note: Indicates actual number of subjects who responded with the opinion described in each cell.

continue stuttering later in life if they do not receive treatment for stuttering early in life (χ^2= 13.6(4), p=.009); and 2) the genetics and speaking environments of children are largely responsible for their stuttering (χ^2=9.6(4), p=.048). For both statements, the group of teachers with five or more years of experience teaching in a preschool setting provided more appropriate responses than the teachers with less experience. Thus, the preschool teachers with more experience appeared to have more insight to the appropriate responses to these two statements, perhaps due to their exposure to a greater number of children and situations.

Results Based on Years of Experience Teaching in a Preschool Setting (Post-Video Survey)

Differences in the subjects' opinions to the statements on the post-video survey according to their level of experience working with children in a preschool setting were analyzed for the responses on the post-video survey. Table 7 lists the actual number and percentage of the subjects in each group who responded for each of the opinions. The Pearson Chi-Square statistics are also listed. These results are helpful to determine whether the various years of experience made a significant difference in the teachers' perceptions of the information in the video. For instance, would the teachers with more experience be able to relate and apply the information from the video to the more extensive situations and children they have experienced?

No statistically significant differences were noted for the responses each group provided for any of the statements. Thus, the video presented information in a manner that was understandable to all of the preschool teachers, regardless of their years of experience.

Table 7

Preschool Teachers' Opinions According toYears of Experience in a Preschool Setting (Post-Video Survey)

Survey Statement	Groups						Chi Square
	1 - 5 Years (n=72)			*5+ Years (n=53)*			
	D	**DK**	**A**	**D**	**DK**	**A**	
Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	7* 10%	3 4%	62 86%	5 9%	3 6%	45 85%	χ^2=4.24(4), p=.38
Many children who stutter have sensitive personalities.	2 3%	0 0%	70 97%	4 8%	0 0%	49 92%	χ^2=1.52(3), p=.68
Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	40 56%	9 13%	23 32%	23 43%	5 10%	25 47%	χ^2=3.33(4), p=.50
There are ways of predicting which preschool children who stutter may also stutter later in life.	10 14%	17 24%	45 62%	5 9%	9 17%	39 74%	χ^2=2.04(4), p=.73
Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	1 1%	0 0%	71 99%	0 0%	0 0%	53 100%	χ^2=1.10(2), p=.58
When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	8 11%	24 33%	40 56%	7 13%	13 25%	33 62%	χ^2=2.81(4), p=.59
Some preschool children who stutter are aware of and sensitive to their speech differences.	5 7%	1 1%	66 92%	3 6%	1 2%	49 92%	χ^2=.37(4), p=.99
When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	10 14%	18 25%	44 61%	8 15%	11 21%	34 64%	χ^2=.51(4), p=.97
If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	6 8%	2 3%	64 89%	3 6%	0 0%	50 64%	χ^2=6.10(4), p=.19
Reading slowly to children who stutter may help improve their stuttering.	1 1%	2 3%	69 96%	0 0%	0 0%	53 100%	χ^2=3.14(3), p=.37

Table 7 (Cont.)

Preschool Teachers' Opinions According toYears of Experience in a Preschool Setting (Post-Video Survey)

	1 - 5 Years (n=72)			*5+ Years (n=53)*			
Adults should say difficult words for children who stutter to help decrease stuttering.	55 76%	9 13%	8 11%	39 74%	6 11%	8 15%	χ^2=3.85(4), p=.43
Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	29 40%	6 8%	37 52%	27 51%	3 6%	23 43%	χ^2=2.94(4), p=.57
The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	3 4%	8 11%	61 85%	2 4%	3 6%	48 90%	χ^2=1.23(3), p=.75
Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	2 3%	1 1%	69 96%	1 2%	0 0%	52 98%	χ^2=2.30(4), p=.68
Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	24 33%	13 18%	35 49%	23 44%	5 10%	24 46%	χ^2=3.85(5), p=.57
Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	1 1%	1 1%	70 98%	1 2%	4 8%	48 90%	χ^2=6.98(4), p=.14
Adults should not discipline children who stutter as strictly as other children.	64 33%	2 3%	6 8%	42 79%	1 2%	10 19%	χ^2=4.74(4), p=.32
Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	5 7%	15 21%	52 72%	5 10%	5 10%	42 80%	χ^2=5.99(5), p=.31
Being patient while listening to children who stutter greatly helps to decrease stuttering.	1 1%	2 3%	69 96%	0 0%	4 8%	49 92%	χ^2=3.34(3), p=.34
When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	5 7%	4 6%	63 87%	4 8%	4 7%	45 85%	χ^2=2.15(4), p=.71

*Note: Indicates actual number of subjects who responded with the opinion described in each cell.

Preschool Teachers' Views Regarding the Study

The fourth question to be answered from the data includes the written opinions the subjects provided at the end of the post-video survey concerning their thoughts on the effectiveness of the video training. One hundred twenty-three subjects reported that "yes" the information on the video was helpful. Fifty-two of these subjects simply marked the option "yes". Thirty-five of the subjects marked "yes" as well as provided generic responses to further explain the benefits of the video, such as "It gave me information on how to work with these kids". The remaining thirty-six subjects provided more specific written comments to describe what the video contributed to their views on stuttering in preschool children. Two subjects felt the video was not effective, as one subject commented, "I need more ideas on how to handle stuttering".

Preschool Teachers' Views Of Their Role in the Identification and Management of Stuttering in Preschool Children

The fifth and remaining question to be answered from the data included the written opinions the subjects provided at the end of the post-video survey concerning their role in working with children who stutter. One hundred twenty-three of the subjects also responded "yes" to the question inquiring if the information presented in the video was valuable for a preschool teacher to know when working with children who stutter. Fourteen wrote comments specifically addressing a particular issue concerning teachers' particular benefit and use of the information on stuttering in preschool children.

Additionally, seventeen subjects posed questions that remained following the informational video. The questions targeted more specific, extensive information about

stuttering identification or management, or referred to a particular child known by a subject.

CHAPTER IV

DISCUSSION

Main Findings

The main findings of this study are presented according to the five research questions posed in Chapter One.

Preschool Teachers' Knowledge of the Identification and Management of At-Risk Stuttering Behaviors

Current Knowledge (Pre-Video Survey)

The pre-video survey included statements that addressed basic information on the identification and management of stuttering in preschool children. The subjects' responses to these statements would determine whether the subjects possessed a basic level of knowledge of stuttering. A majority of the subjects responded with appropriate opinions for eight of the twenty statements on the pre-video survey. These statements addressed the issues of the sensitive personalities of children who stutter, the recognition that some children who stutter are aware of and sensitive to their speech differences, and that the stress in the lives of children who stutter decreases fluency. One would expect that caregivers would identify these personality issues in all children as a general part of the relationship they form with the children.

Likewise, the subjects provided appropriate responses for the statements that addressed the use of general interactions when communicating with children who stutter.

The statements included the following issues: spending at least ten minutes of one-on-one time with children daily to help improve fluency (agree); adults should not say difficult words for children experiencing disfluency (agree); adults should not discipline children who stutter as strictly as other children (disagree); being patient while listening to children who stutter helps improve fluency (agree); and when preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech (agree). These statements are generally straightforward issues concerning politeness and active involvement in the child's communication development, both topics prevalent in a majority of preschool classrooms.

The subjects' responses to the remaining twelve statements on the pre-video survey revealed the teachers' limited knowledge of stuttering, as they responded to the statements with "Don't Know", non-majority opinions, or opinions incongruent with accepted professional literature. Three of the statements on the pre-video survey were responded to with the majority opinion of "Don't Know", and four statements did not result with a majority opinion from the subjects. Those statements that did not result in a majority opinion addressed the implementation of more specific stuttering management strategies. These statements discussed adults' reading rates, speaking rates, and instructions when interacting with children who stutter. Thus, the subjects either lacked appropriate knowledge on stuttering in preschool children, or had a variety of different opinions.

The statements that were inappropriately responded to addressed information preschool teachers need to identify characteristics of potentially chronic stuttering. Without this information, the teachers would not know when or if they should refer a

child to a speech-language pathologist. This information is crucial to be documented so that more extensive efforts may be made to ensure that this group of professionals receives information on stuttering in preschool children and can then begin to make a difference in the lives of the children who stutter.

Learned Knowledge (Post-Video Survey)

The post-video survey included statements that addressed basic information on the identification and management of stuttering in preschool children. The subjects' responses to these statements would determine whether the subjects acquired a basic level of knowledge of stuttering. Following the informational video, a majority of the preschool teachers demonstrated appropriate knowledge on eighteen out of the twenty statements on the post-video survey. The results of the post-video survey demonstrate that a majority of the subjects seemed to become aware that different types of disfluencies existed, that some of these disfluencies may predict persistent stuttering, and that there are ways to improve fluency in children who stutter. Therefore, the video training was a successful means of presenting basic, introductory information on stuttering in preschool children to preschool teachers.

However, one statement suggesting that adults should instruct children to "Stop, slow down, and start over," was responded to with a non-majority opinion. This statement was observed by the investigator to be a common "myth" among many of the subjects. The video did not address this issue directly but rather suggested positive ways to promote fluency that did not directly bring attention to the moment of the child's disfluency, such as the comment, "Stop, slow down, start over" does. Criticizing the way

in which a child speaks (as opposed to the content) may cause him/her to feel anxiety when speaking, as if their speech is "wrong". The aim of many early interventionists in stuttering is to make children believe that stuttering is not bad, rather it is a different way of talking. Then, adults must model easy, smooth ways of speech and demonstrate that children may also talk fluently. As this issue was not directly and specifically targeted in the video presentation, the subjects did not respond with a unified opinion. Thus, preschool teachers learned basic information on stuttering when it was presented in a direct and specific statement.

Preschool Teachers' Opinions Based on Educational Background

No statistically significant differences were determined between the responses the subjects from the three different educational backgrounds provided on either the pre- or post-video surveys. This revealed that despite their educational background the subjects responded similarly to the survey statements. The results also suggest that information has not been made readily available for in-service training or college coursework for preschool teachers.

Recent research and findings on early intervention in stuttering have been reported in the field of speech-language pathology. It is time that this information is shared with preschool teachers. At a minimum, preschool teachers should have a basic understanding or know where informational resources are available for the identification of children at-risk for persistent stuttering. One teacher wrote on her survey, "I now know they [children who stutter] can be helped". Basic information on stuttering in

preschool children can easily be presented to preschool teachers, such as by the use of a short informational video.

Preschool Teachers' Opinions Based on Years of Experience Teaching in a Preschool Setting

Statistically significant differences were revealed between the responses of the subjects with one to five years of experience teaching in a preschool setting and the subjects with five or more years of experience for two statements on the pre-video survey. For both of these statements, the group with more experience provided a higher percentage of the appropriate opinions. The results suggest that preschool teachers with more experience working with preschool children had more insight into stuttering in preschool children. However, the group of subjects with five or more years of experience also did not respond with a majority opinion for either of the two statements. The less experienced subjects did respond with the majority opinion, "Don't Know", for both of the statements.

Aside from these two differences, the subjects' opinions from the two groups (i.e. 1-5 years experience and 5+ years experience) were similar for the remainder of the pre-video and post-video survey statements. Therefore, all preschool teachers, regardless of their years of experience may benefit from some basic training on stuttering. It seems necessary that a disorder that affects a significant percentage of preschool children, and that may be prevented during the preschool years should be explained to the teachers since years of experience does not appear to add further knowledge of stuttering.

Preschool Teachers' View of the Study

One hundred twenty-three of the subjects responded that, "yes", the video was effective at presenting basic information on stuttering. Eleven of the subjects provided specific comments to describe the benefits of the informational video. The most significant comments included content that stated that they [preschool teachers] would be able to "identify patterns and problems earlier". The teachers admitted that they previously knew little, if anything, about the identification and/or management of stuttering in children. Two subjects responded that the information in the video was not adequate for them to incorporate into their classroom or interactions with children who stutter.

The positive response from the subjects along with the favorable results on the post-video survey suggests that video training programs to present basic information on stuttering to preschool teachers is effective.

Preschool Teachers' View of Their Role in the Identification and Management of Stuttering

One hundred twenty-three of the subjects responded that, "yes", preschool teachers have a role in the identification and management of stuttering in preschool children. It appeared to the investigator that many subjects were well aware of their impact on the development of preschool children and were open and accepting to new information presented to them. Fourteen subjects provided specific written responses on the significance of the role of the preschool teacher in the child's development, including speech and stuttering. One subject reported, "A great number of children are at day

care/preschool for at least eight hours a day, and preschool teachers can help pick up on delays".

Implications

The study provided baseline data for the specific types of information that preschool teachers know and do not know about stuttering prior to and following an informational video on the topic. Specifically, the subjects' responses on the pre-video survey revealed limited knowledge of stuttering, yet the results of the post-video survey revealed that a majority of the subjects acquired appropriate knowledge about a majority of the statements regarding stuttering in preschool children. The video training was effective in presenting basic information on stuttering. Thus, the study not only gleaned information from the subjects, it provided information for them as well, which, in turn, will hopefully provide guidance to preschool children who stutter and their parents.

The study also discovered that a small portion of subjects (less than one-tenth) had read any information, received in-service training, etc. on stuttering in preschool children prior to the study. Additionally, minimal statistically significant differences were found within the demographic groups of both educational background and years experience, which may imply that information on stuttering is not readily available at any phase in a preschool teacher's career.

Training sessions aimed specifically at preschool teachers would be an effective means to make information on stuttering available to teachers. Short videos such as the one used in the study, or workshops may be viable options for informing teachers on basic identification and management strategies to apply to preschool children who stutter.

Preschool teachers would then be empowered to become actively involved with children who stutter and feel more confident in their involvement due to their knowledge on the topic.

Limitations and Future Research

It should be noted that the subjects participating in the survey were from seven counties in Oklahoma and, therefore, the results may be limited in the sense of the ability to generalize the findings to all preschool teachers. Further, consideration should also be taken as to the environment in which the informational training video was presented. The environments varied and approximately one-sixth (n=20) of the subjects viewed the video in their classrooms while simultaneously monitoring children during naptime. Various degrees and amounts of distractions were present in these classrooms.

Despite these caveats, a general outline of teachers' current and learned knowledge could be developed. This outline may be used in the future to assist in the formation of a training program or video aimed directly at preschool teachers. The program might include further examples of identifying various types of normal disfluencies and at-risk stuttering behaviors, tips and examples of how to incorporate fluency enhancing strategies in the classroom, and tips on how to share or present information to parents' of children who stutter. Just as importantly, the study highlights preschool teachers' important roles in the identification and management of stuttering in preschool children.

CHAPTER V

SUMMARY

Preschool teachers are a prime resource for the identification and indirect management of stuttering in preschool children. A large number of children attend preschool and/or day care and preschool teachers are integral in the development of children, often seeing them for a large portion of each day. However, limited information is presently available targeting this population of professionals. The purpose of this study was to determine what types of information preschool teachers currently know about the identification and management of stuttering in preschool children, and what areas of stuttering require further information. The study also determined the teachers' learned knowledge of stuttering as a result of viewing an informational video on stuttering in preschool children. Further, the study provided information concerning the influence of demographic factors (i.e. educational background, and years of experience) on the subjects' responses to pre- and post-video survey statements. Finally, the study provided qualitative information on the preschool teachers' beliefs of the effectiveness of the video and on their role in managing stuttering in preschool children.

The subjects included 125 female preschool teachers from various preschool settings. Settings included private, commercial, church, and Head Start preschools. The preschools were located in counties in central and northeast Oklahoma. The subjects were asked to (1) complete a survey about stuttering in preschool children (pre-video survey), (2) view an informational video, and (3) complete the same survey following the

video (post-video survey). The investigator then answered any remaining questions the subjects may have had.

The surveys contained twenty statements that addressed basic information in the four areas of identifying genetic risk-factors associated with chronic stuttering, at-risk stuttering behaviors associated with chronic stuttering, general interaction styles to use when communicating with children who stutter, and specific management strategies to use when communicating with children who stutter. The statements on each survey were randomly organized, and the specific areas were not obvious to the subjects.

The first area of analysis concerned the subjects' current knowledge of stuttering based on their responses to the statements on the pre-video survey. One finding from the results of the pre-video survey revealed that the subjects' responses did not form a majority opinion on nine of the twenty pre-video survey statements, implying that preschool teachers hold various ideas regarding the identification of stuttering in children. In addition, a majority of the subjects responded with the opinion, "I Don't Know" to an additional three statements. Therefore, more than half of the statements concerning basic information on stuttering in preschool aged children on the pre-video survey were essentially unknown to preschool teachers. It can be presumed that information on stuttering has not been readily available to these teachers. Only eleven subjects reported having had any in-service training or college courses covering stuttering in children, and ten subjects reported having independently researched/read any literature on stuttering in children.

The second area of analysis concerned the subjects' learned knowledge of stuttering based on their responses to the statements on the post-video survey. Following

an informational video, the subjects appropriately responded to eighteen of the twenty statements, demonstrating that preschool teachers effectively gained basic, introductory knowledge of stuttering from a short training session. The two remaining statements resulted in responses that did not form majority opinions, and included adults telling children to "Stop, slow down, and start over" when they stutter, and that adults should allow preschool-aged children to develop their own daily routines so they can talk when they feel ready. It should be noted that these two statements were not explicitly addressed in the video, but rather could be inferred. Thus, training sessions developed for preschool teachers may consider providing information in straight-forward, concrete statements.

The third area of analysis described the comparison of within group responses based on demographic factors. The two demographic areas analyzed were the subjects' educational backgrounds and their number of years experience teaching in a preschool setting. According to educational background, the subjects' responses from both the pre- and post-video surveys were compared among the three groups of "high school degree", "some college", and "college degree". No statistically significant differences were noted, revealing that despite various educational backgrounds, the subjects, overall, responded similarly to the statements on the survey. This finding indicates that information has not been readily available or recommended to preschool teachers in any form (i.e. college courses, in-service training, etc.), and that all teachers may benefit from basic informational training on stuttering in preschool children. According to years of experience, the subjects' responses from both the pre- and post-video surveys were compared among the two groups of "0-5 years" and "greater than five years".

Statistically significant differences were noted for the subjects' responses on two statements on the pre-video survey. The subjects with more than five years of experience more appropriately responded to the statements, and a majority of the subjects with one to five years of experience responded that they "didn't know". However, the subjects with greater than five years of experience did not provide a majority opinion for either of the two statements where significant differences were noted.

Also revealed in the study were the comments provided by the subjects in an open-ended written opinion portion provided at the end of the post-video survey. One hundred twenty-three of the subjects (n=125) responded to two questions that, "yes", the video was effective at presenting information on stuttering in preschool children, and that, "yes", it is important for preschool teachers to possess this information on stuttering and play a role in its appropriate identification and management. The subjects were prompted to briefly explain their responses to these two issues. In respect to the effectiveness of the video presentation, one subject commented, "The video helped me to identify potential problems and be aware of how the classroom structure and environment may have an effect on the children's speech." This response assured the researcher that the two main premises of the video, identification and management of stuttering, were obtained by at least a portion of the subjects. In respect to the role of the preschool teacher in the identification and management of children who stutter, one subject commented, "Most people do not know a lot about stuttering, so educating teachers is the best thing one can do". This statement demonstrates the subject's awareness of her influence and impact on the children she teaches and their parents.

Preschool teachers are responsible for knowing many details about normal and abnormal child development. Stuttering is statistically present in 5% of children aged two to six (20% of those children are at-risk for persistent stuttering if not treated at an early age). However, stuttering is usually easily observed, and if teachers possess a basic knowledge of the identification factors of persistent stuttering, or are even aware that certain factors exist that may predict persistent stuttering, then these children may be referred to a speech-language pathologist. In addition, the management strategies suggested for use with children who stutter, such as adults talking slowly, adults listening patiently, and adults spending more one-on-one time with children, are applicable to all preschool-aged children who are rapidly developing language and social skills in today's fast-paced world.

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APPENDICES

PAF VIDEO SURVEY

APPENDIX A

PRE-VIDEO SURVEY

PRE-VIDEO SURVEY OF PRESCHOOL TEACHERS' KNOWLEDGE OF STUTTERING IN PRESCHOOL CHILDREN

This survey is about preschool-aged children who stutter. When the word "children" is used, please consider them to be preschool-aged.
The phrase "children who stutter" is used to describe any children who speak with sound or word repetitions, pauses, the use of "um"s (e.g. "I um-um-um like summer"), tension, or other disfluencies.

Please respond to each statement by circling the number for your opinion:

[1]–Strongly Disagree (SD)
[2]–Disagree (D)
[3]- Do Not Know (DK)
[4]– Agree (A)
[5]– Strongly Agree (SA)

		SD	D	DK	A	SA
1.	Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	1	2	3	4	5
2.	Many children who stutter have sensitive personalities.	1	2	3	4	5
3.	Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	1	2	3	4	5
4.	There are ways of predicting which preschool children who stutter may also stutter later in life.	1	2	3	4	5
5.	Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	1	2	3	4	5
6.	When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIIII want…"), they are more likely to stutter later in life.	1	2	3	4	5
7.	Some preschool children who stutter are aware of and sensitive to their speech differences.	1	2	3	4	5
8.	When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	1	2	3	4	5
9.	If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	1	2	3	4	5
10.	Reading slowly to children who stutter may help improve their stuttering.	1	2	3	4	5
11.	Adults should say difficult words for children who stutter to help decrease stuttering.	1	2	3	4	5
12.	Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	1	2	3	4	5
13.	The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	1	2	3	4	5

14.	Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	1	2	3	4	5
15.	Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	1	2	3	4	5
16.	Talking slowly and using pauses when speaking to children who stutter helps to improve their stuttering.	1	2	3	4	5
17.	Adults should not discipline children who stutter as strictly as other children.	1	2	3	4	5
18.	Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	1	2	3	4	5
19.	Being patient while listening to children who stutter greatly helps to decrease stuttering.	1	2	3	4	5
20.	When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	1	2	3	4	5

SUBJECT INFORMATION

Please respond to the following questions by marking the category choices. Feel free to include any additional information.

Please list the last 4 digits of your Social Security number_____

1. **Are you** male_____ female_____?

2. **What is your age?**_____

3. **What is your ethnic identity?**

_____American Indian or Alaska Native _____African American

_____Asian _____ Hispanic

_____ Native Hawaiian or Other Pacific Islander _____White

4. **What is your educational background?**

High school degree_____ Some college_____

2 year Associate's degree_____ Bachelor's degree_____

Some graduate school_____ Master's degree_____

Other (please describe)_____

APPENDIX B

POST-VIDEO SURVEY

5. How many years of experience have you had working in a preschool setting?

1-5 years_____ 5-10 years_____ 10-20 years_____ 20+ years_____

6. Have you attended any training, continuing education, or academic courses that discussed stuttering in pre-school aged children?

Yes_____ No_____

If yes, please describe your experience (i.e. informational video, guest speaker, conference, etc) _____

_____

_____

7. Have you done any reading on your own about stuttering in children?

Yes_____ No_____

If yes, please describe your reading (i.e. brochure, journal articles, internet sites)_____

_____

_____

8. In which type of preschool are you currently employed?

School_____ Commercial_____ Private_____

Church_____ Head Start_____ Other_____

9. Have you ever worked with a child(ren) who stuttered?

Yes_____ No_____ If yes, how many children?_____

10. Does your preschool have referral contacts for any of the following:

Speech-Language Pathologist_____ Physical Therapist_____

Occupational Therapist_____ None_____

Child Development Specialist_____

Other_____If "yes", please list these available resources

_____

_____

APPENDIX B

POST-VIDEO SURVEY

POST-VIDEO SURVEY OF PRESCHOOL TEACHERS' KNOWLEDGE OF STUTTERING IN PRESCHOOL CHILDREN

This survey is about preschool-aged children who stutter. When the word "children" is used, please consider them to be preschool-aged.
The phrase "children who stutter" is used to describe any children who speak with sound or word repetitions, pauses, the use of "um"s (e.g. "I um-um-um like summer"), tension, or other disfluencies.

Please respond to each statement by circling the number for your opinion:
[1]–Strongly Disagree (SD) **[4]– Agree (A)**
[2]–Disagree (D) **[5]– Strongly Agree (SA)**
[3]- Do Not Know (DK)

		SD	D	DK	A	SA
1.	Boys are more likely than girls to stutter later in life if they do not receive therapy soon after they begin stuttering.	1	2	3	4	5
2.	Many children who stutter have sensitive personalities.	1	2	3	4	5
3.	Most children "outgrow" stuttering, and therefore do not need therapy to stop stuttering.	1	2	3	4	5
4.	There are ways of predicting which children who stutter may also stutter later in life.	1	2	3	4	5
5.	Spending ten minutes a day of one-on-one time with children who stutter during play or reading time may improve the child's stuttering.	1	2	3	4	5
6.	When children who stutter raise the pitch of their voice while "holding onto" a sound (e.g. "IIIIII want…"), they are more likely to stutter later in life.	1	2	3	4	5
7.	Some preschool children who stutter are aware of and sensitive to their speech differences.	1	2	3	4	5
8.	When children who stutter repeat whole words (e.g. "My-my-my mommy") they are more likely to stutter later in life if they do not receive therapy.	1	2	3	4	5
9.	If a child's stuttering behaviors do not begin to decrease within a month after they appear, he/she should be referred to a speech-language pathologist.	1	2	3	4	5
10.	Reading slowly to children who stutter may help improve their stuttering.	1	2	3	4	5
11.	Adults should say difficult words for children who stutter to help decrease stuttering.	1	2	3	4	5
12.	Adults should allow children who stutter to develop their own daily routine so they can speak when they feel ready.	1	2	3	4	5
13.	The genetics *and* speaking environments (e.g. group, slow-paced, etc.) of children are largely responsible for their stuttering.	1	2	3	4	5

14.	Stress in the lives of children who stutter, such as a new sibling or a hectic home schedule, may increase their stuttering.	1	2	3	4	5
15.	Instructing children who stutter to "Stop, start over, and slow down" helps to decrease stuttering.	1	2	3	4	5
16.	Talking slowly and using pauses when speaking to children who stutter helps to decrease their stuttering.	1	2	3	4	5
17.	Adults should not discipline children who stutter as strictly as other children.	1	2	3	4	5
18.	Preschool children who stutter and also have tension in their lips, face or other body parts when they speak may stutter later in life.	1	2	3	4	5
19.	Being patient while listening to children who stutter greatly helps to decrease stuttering	1	2	3	4	5
20.	When preschool children who stutter become frustrated with their speech, an adult should talk openly with them about their difficult speech.	1	2	3	4	5

OPINION

*Please provide the last four digits of your Social Security number in order to compare to the Pre-Video Survey*_____

1. Do you feel the video provided you with information that you were able to use in the classroom?

   Yes_____ No_____ Please briefly explain_____

   _____

2. Do you feel the information presented in the video is valuable for a preschool teacher to know when working with children who stutter?

   Yes_____ No_____ Please briefly explain_____

   _____

3. What remaining questions/comments do you have regarding stuttering in preschool-aged children?

   _____

   _____

   _____

   _____

APPENDIX C

INSTITUTIONAL REVIEW BOARD APPROVAL

Oklahoma State University
Institutional Review Board

Protocol Expires: 12/20/01

Date : Tuesday, January 02, 2001 IRB Application No AS0125

Proposal Title: FREMALE PRESCHOOL TEACHERS' KNOWLEDGE OF IDENTIFICATION AND MANAGEMENT OF STUTTERING IN PRESCHOOL-AGED CHILDREN

Principal Investigator(s) :

Amy L. Short
120 Hanner
Stillwater, OK 74078

Connie Stout
212 Hanner
Stillwater, OK 74078

Reviewed and Processed as: Expedited

Approval Status Recommended by Reviewer(s) : Approved

Signature : Carol Olson

Carol Olson, Director of University Research Compliance

Tuesday, January 02, 2001
Date

Approvals are valid for one calendar year, after which time a request for continuation must be submitted. Any modifications to the research project approved by the IRB must be submitted for approval with the advisor's signature. The IRB office MUST be notified in writing when a project is complete. Approved projects are subject to monitoring by the IRB. Expedited and exempt projects may be reviewed by the full Institutional Review Board.

VITA 2

Amy L. Short

Candidate for the Degree of

Master of Arts

Thesis: PRESCHOOL TEACHERS' KNOWLEDGE OF IDENTIFICATION AND MANAGEMENT OF STUTTERING IN PRESCHOOL-AGED CHILDREN

Major Field: Speech

Biographical:

Education: Graduated from Putnam City High School, Oklahoma City, Oklahoma in May 1992; received Bachelor of Science degree in Special Education-Mental Retardation from University of Central Oklahoma, Edmond, Oklahoma in December 1997. Completed the requirements for the Master of Arts degree with a major in Speech at Oklahoma State University in August, 2001.

Experience: Attended speech therapy during college for a mild fluency disorder, Oklahoma State University Speech-Language-Hearing Clinic, 1992-1995; performed student teaching in public school special education classrooms in Edmond, Oklahoma, and Guthrie, Oklahoma, Fall 1997; clinical practicum experience with child and adult stutterers, as well as with individuals with other communication disorders, Oklahoma State University Speech-Language-Hearing Clinic, 1998 to 2001.

Professional Memberships: Oklahoma Speech, Language and Hearing Association; American Speech, Language and Hearing Association.