

CHAPTER ONE

INTRODUCTION

1.1 RATIONALE FOR ASSESSING THE EFFECTIVENESS OF EARLY INTERVENTION PRACTICES IN STUTTERING THERAPY

Stuttering is a common disorder of childhood that has concerned and challenged many speech-language pathologists working in the paediatric field. Conture (2001) defines stuttering as an abnormal disruption of the forward flow of speech by unnatural repetitions or prolongations of a sound, syllable, articulatory posture or by avoidance and struggle behaviour. Since the beginning of time, countless numbers of speech pathologists, researchers and laymen have attempted to unravel the enigma of stuttering and determine the aetiology of this puzzling riddle. Some of the theories that have been proposed over the years have ranged from attributing stuttering to constitutional, environmental and / or developmental factors to attributing this disorder to psychological and/or hereditary origins (Guitar, 1998; Shapiro, 1999; Starkweather & Givens Ackerman, 1997).

Stuttering may occur at any time during childhood but is most likely to begin between the ages of two and five years. Many, but not all, children who begin to stutter outgrow the disorder with little or no professional treatment. This phenomenon has been called spontaneous recovery. Estimates of remission range from 36% to 79% depending on the age group on which the study has been conducted (Bloodstein, 1995; Yairi & Ambrose, 1999). A substantial proportion of these remissions occur within the first year or two after onset without the assistance of formal treatment (Andrews & Harris, 1964; Yairi & Ambrose, 1992; Yairi, Ambrose & Niermann, 1993). However, the chances of remission decrease the longer the stuttering persists with Andrews (1984) estimating a recovery rate of only 18% for those children who stutter for 5 years or more.

Hence, early intervention is crucial for a child who stutters as there is a growing belief that stuttering is particularly tractable in its incipient stage (Adams, 1984; Bloodstein, 1987; Costello, 1983; Curlee, 1984; Druce, Debney & Byrt, 1997; Ingham, 1984; Onslow, 1992; Onslow, Costa & Rue, 1990; Prins & Ingham, 1983). Furthermore, DeNil and Brutten (1991) suggest that negative speech attitudes may develop as early as seven years; thus an earlier achievement of fluency may mean that negative attitudes become less entrenched.

Such conceptual revisions of early intervention practice represent significant developments, but they are developments that confer on clinicians the responsibility of choosing and justifying a treatment procedure for this group of clients. The selection of an appropriate intervention strategy represents a significant responsibility because if stuttering is at its most tractable with two and three year old children, then in comparison to adult cases, management allows little margin for error. Time wasted with an ill chosen and ineffective treatment probably will not worsen the condition of an adult who stutters. However, such mismanagement may have a significant impact on a preschool-age child and may result in the development of an intractable and debilitating speech disorder in the later years (Onslow, 1992).

1.2 STUTTERING THERAPY AND THE ROLE OF PARENTS

Stuttering therapy for the preschool child has been an area of controversy, confusion and to some degree, intimidation for many speech-language clinicians (Ham, 1992). The role of parents in the onset and development of their child's stuttering has been of great interest to the speech language pathologist and has been investigated for more than fifty years. Research that focused on parents increased after 1942 when Wendell Johnson proposed his "diagnosogenic" theory of stuttering. According to Johnson (1942), parents cause their child to stutter by reacting negatively to normal hesitations and repetitions in their child's speech and by referring to such dysfluencies as stuttering. Johnson (1942) further believed that the application of the stuttering label, accompanied by parental anxiety leads the child to attempt to avoid these normal hesitations and repetitions by producing them with struggle and tension which characterize the stuttered speech.

During the 1970s, Kasprisin-Burrelli, Egolf and Shames (1972) conducted a study that offered some support for the view that parents of children who stutter employ speech behaviours that contribute to their child's stuttering. However, several studies conducted during the 1980s and 1990s (Kloth, Janssen, Kraaimaat & Brutten, 1994; Langlois, Hanrahan & Inouye 1986; Meyers & Freeman, 1985; Stephenson-Opsal, Bernstein & Ratner 1988; Weiss & Zebrowski, 1991;) called into question this viewpoint. Furthermore, in a study conducted by Nippold and Rudzinski (1995) results indicated that there was little convincing evidence to support the notion that parents of children who stutter differ from parents of children who do not stutter in the way they talk with their children. Hence, they concluded that there was little objective support for the argument that parents' speech behaviours contribute to their child's stuttering or that modifying parents' speech behaviours facilitates their child's fluency.

Thus, even with increased knowledge and the advancement of technology, the proposed relationship between parental speech behaviours and children's stuttering remains controversial (Nippold & Rudzinski, 1995). In contrast to the study conducted by Nippold and Rudzinski (1995), results obtained from a study carried out by Kloth, Kraaimatt, Janssen and Brutten (1999) support the assumption that the language complexity of parents makes children more vulnerable to the development of dysfluent speech, as mothers of the children whose stuttering persisted tended to use more complex language than the mothers of those children whose stuttering remitted. Thus, the controversies, dilemmas and different viewpoints continue to characterize research into the area of stuttering.

As a result of the firm belief of the 1970s that parents' speech contributes to children's stuttering, past therapy has traditionally been indirect and taken the form of counselling, whereby parents receive information on early speech and language development, on stuttering and on ways to facilitate fluency (Johnson & Heinze, 1994; Van Riper, 1973). With young children whose non-fluency is judged to be normal but who appear to be at risk of developing abnormal dysfluency, therapy aims to facilitate normal fluency by increasing fluency-enhancing factors in the environment and decreasing fluency disrupters.

This process is completed through detailed and prescriptive parental counselling with some environmental modification (Wright and Sherrard, 1994). Clinical materials in the form of books and journal articles (Adams, 1992; Kelly & Conture, 1991; Peters & Guitar, 1991; Rustin, 1987; Starkweather & Gottwald, 1990; Wall & Mayers, 1995) frequently contain recommendations that parents speak more slowly to the child, avoid interrupting the child's speech and change their speech behaviours when interacting with their dysfluent child.

However, it is important for practicing speech-language pathologists to be aware of the fact that despite decades of research, the evidence that is available to support the proposed cause-effect relationship between parents' speech behaviours and children's stuttering is limited. There is little objective evidence to demonstrate the effectiveness of parental counselling, indirect modeling and environmental modification in enhancing fluency (Nippold & Rudzinski, 1995). This knowledge should lead speech-language pathologists to question the appropriateness of treatment methods for dysfluent children that are based on the effort to modify parental speech behaviours (Nippold & Rudzinski, 1995). Furthermore, it is now recognized that early intervention should focus more directly on the child's speech rather than on environmental factors (Adams, 1984; Cooper, 1987; Costello, 1983; Ingham, 1990; Onslow, 1992; Onslow, Costa & Rue, 1990; Onslow, Andrews & Lincoln, 1994; Prins & Ingham, 1983; Shine, 1984)

1.3 THE LIDCOMBE TREATMENT PROGRAMME FOR CHILDREN WHO STUTTER

In the early 1990s, the Lidcombe Programme which is a direct, parent-conducted, operant intervention for early stuttering, was introduced to therapists. The Lidcombe Programme involves training parents in an operant technique to praise stutter-free speech and correct the child's stuttering in everyday speaking situations (Harris, Onslow, Packman, Harrison & Menzies, 2002; Onslow, 2003). The parent and the child attend the clinic once every week so that the clinician can train and monitor parental implementation of the treatment. The clinician ensures that the parent delivers praise and correction accurately and that the intervention is a positive experience for the child (Onslow, Packman & Harrison, 2002).

Parents are trained to make daily assessments of the severity of the child's stuttering in everyday situations using a ten-point ordinal severity scale. Parents bring these measures or assessments to the clinic at each visit. Additional measures of percentage syllables stuttered (%SS) are made by the clinician at each clinic visit. Together these measures guide the clinician management decisions during this Programme (Harrison, Wilson & Onslow, 1999).

The Lidcombe Programme has been widely used in Australia and has proved to be an effective and groundbreaking treatment for stuttering in preschool age children (Harrison & Onslow, 1998). In a study by Onslow, Andrews and Lincoln (1994) data were presented on the outcome of the treatment of 12 children with early stuttering, with a mean age of 47 months at the start of treatment and with a mean interval of 16 months from reported onset to the start of treatment. The children's stuttering rates in everyday speaking situations declined dramatically at the first post-treatment assessment, remaining low for the entire post-treatment interval. They generally showed stuttering below 1% syllables stuttered up to and at the 12 month post-treatment assessment. Furthermore, there were no signs of any post-treatment relapse which is a common characteristic of the older client who has been for different types of stuttering therapy (Onslow, Costa & Rue, 1990).

As the study conducted by Onslow, Andrews and Lincoln (1994) only focused on a period of 12 months post treatment, a longer term outcome study was conducted by Lincoln and Onslow in 1997. These researchers followed up 43 children who underwent the Lidcombe Programme collecting %SS scores each year in various beyond-clinic speaking situations. Data from this study showed that for a period of up to seven years post-treatment, the children's stuttering rates remained generally below 1% syllables stuttered. Furthermore, not one case of relapse, nor any case of clinically significant post-treatment stuttering was detected in the 43 cases (Lincoln & Onslow, 1997).

In view of their awareness of the limitations of measures of stuttering severity based on syllable and stuttering counts and on parental reports, Lincoln, Onslow and Reed (1997) reported a study of the social validity of the outcome data from the Lidcombe Programme. Social validity involves the consumer and society in scientific research and therefore establishes the social relevance of the treatment being validated (Wolf, 1978). The results showed that 60% of unsophisticated listeners judged pretreatment speech samples of the children to be stuttering but that only 3% judged post-treatment samples to be stuttering and that the treated children in fact were judged to be not stuttering significantly more frequently than children in the control group (Onslow, Menzies & Packman, 2001).

1.4 A CRITIQUE OF THE LIDCOMBE TREATMENT PROGRAMME

However, evidence for the effectiveness of the Lidcombe Programme is weakened somewhat because researchers do not have a water tight case that it is the treatment and not some other agent that produced the reported effects. The major threat to interpretation of the results is “spontaneous recovery” which refers to the fact that some children will recover without formal treatment (Onslow et al., 2001). Consequently, it is conceivable that, for some of the children in the Onslow et al. (1994) study and the Lincoln and Onslow (1997) study, spontaneous recovery may have produced the observed effects. However, for a number of reasons, there is a compelling case that it was the treatment that normalized speech in these studies.

Reasons include the fact that data trends in the Onslow et al (1994) and Lincoln and Onslow (1997) reports generally show an abrupt discontinuity between pretreatment and post treatment stuttering rates, which suggest the presence of a treatment effect. Secondly, there have been estimates that most spontaneous recovery occurs 12 to 15 months after onset (Andrews, 1984; Yairi, Ambrose, Paden & Thorneburg, 1996) and in the study conducted by Onslow et al. (1994) the 12 children had a mean period of 16 months from reported onset of stuttering to the start of the treatment (range 7 to 24 months).

Thirdly, a study of the effects of the Lidcombe Program on school aged children (Lincoln, Onslow, Wilson & Lewis, 1996) used similar outcome methodology to the Onslow et al. (1994) study and produced similar results and the chances of spontaneous recovery in the school age group are virtually zero.

Hence, available data in Australia (Onslow, Menzies & Packman, 2001) suggest that the Lidcombe Programme eliminates stuttered speech in the medium and long term, is able to maintain those effects for up to 7 years post treatment (Jones, Onslow, Harris & Packman 2000; Lincoln & Onslow, 1997; Onslow et al., 1990; Onslow, Andrews & Lincoln, 1994) and the outcome is socially valid (Lincoln, Onslow & Reed, 1997).

Despite the fact that numerous intervention programmes have been formulated to treat stuttering, few have been shown to be successful in achieving medium and long-term fluency, especially in the pre-school age child (Nippold & Rudzinski, 1995). For this age group, the Lidcombe Programme would appear to be the first treatment programme that has been shown to be associated with zero or near zero stuttering at medium and long term follow up. These results suggest that this previously intractable condition can be controlled in childhood using a parent-administered, operant procedure and raises the possibility that for the first time in the history of the systematic study of stuttering, it might be possible to prevent its development into a chronic and debilitating condition in adulthood (Onslow, Menzies & Packman, 2001).

Furthermore, in terms of treatment time, it has been shown that treatment requires a median of eleven clinic visits to achieve near-zero stuttering and the only known predictor of treatment time is pre-treatment severity (Harrison, Wilson & Onslow, 1999; Onslow, Harrison, Jones & Packman, 2003). Hence, in fewer than one tenth of the clinical hours required for other speech treatment e.g. prolonged speech, the Lidcombe Programme appears to normalize speech in children younger than five years of age.

However, as the Lidcombe Programme is a departure from the traditional practices of many clinicians, after the publication of the Programme, several concerns and criticisms were raised. Criticisms included the fact that stuttering is complex but the Lidcombe Programme is simple; the Lidcombe Programme is potentially harmful to children as direct attention to a child's stuttering could convey an overall negative message from the parent to the child; and drawing the attention of a young child to stuttering could worsen the problem (Dobson, 1996; Stewart, 1990).

In response to the criticism that stuttering is complex and the Lidcombe Programme is simple, Onslow, O'Brian and Harrison (1997) argued that there is, as yet, no evidence to refute the notion that stuttering is driven by a unitary, central speech dysfunction. Furthermore, they maintained that complex speech and language disorders can result from unitary causes. Thus, the idea that stuttering is a unitary speech dysfunction is admissible and hence there are grounds to consider the use of the Lidcombe Programme to eliminate stuttered speech.

Onslow et al. (1997) also asserted that although the Lidcombe Programme could be thought of as unifactorial because it is built around the notion of operant control of stuttering where stutter-free speech is praised and stuttered speech is corrected, the Lidcombe Programme is based on a single concept and not a single procedure. Procedures and concepts in stuttering treatment are intrinsically concerned with procedures being generated by concepts. Hence, the Lidcombe Programme has the same underlying concept of operant control which translates into an infinite number of procedures. Thus, the treatment must be adapted to the individual requirements of each child and family. Related to this point, Onslow et al. (1997) claimed that there is the danger that a treatment driven by a fundamental concept will mistakenly be thought of as a simple procedure. However, the Lidcombe Programme is not a simple procedure and requires professional training.

In response to the criticism that drawing the attention of a young child to stuttering will worsen the problem, Onslow et al. (1997) argue that laboratory and clinical data (Nippold & Rudinski, 1995) show that there is no evidence to support this notion. Furthermore, there is much contradictory evidence that attention to stuttering makes it worse (Martin, Kuhl & Haroldson, 1972). The idea that a child's awareness of stuttering will exacerbate the problem originated in the first years of the 20th century and the last formal statement reflecting this idea occurred with the influential 'diagnosogenic' theory more than fifty years ago (Johnson, 1942).

By the early 1980s, there was extensive dissatisfaction with this approach and Johnson's own research clearly refuted this theory (Bloodstein, 1986). In fact his experiments showed that directly calling attention to early stuttering ameliorates, rather than increases the stutter (Martin, Kuhl & Haroldson, 1972; Shaw & Shrum, 1972). This discontent reached a climax when all the prominent clinicians of the time, led by Prins and Ingham (1983) disseminated a landmark publication that disavowed Johnson's premise and encouraged clinicians to directly approach early stuttering in children.

Related to the issue that drawing the attention of a young child to stuttering will worsen the problem is the issue of whether the Lidcombe Programme is harmful to children and whether direct attention to a child's stuttering could convey an overall negative message from the parent to the child (Cook, 1996; Dobson, 1996; Fry, 1996; Martell, 1996; Stewart, 1990). In response to these concerns, Onslow et al. (1997) discuss the issue of honesty and openness in clinical relationships in the sense of parents being 'up front' in helping a child to deal with a speech problem. Such openness is essential in the clinical process and to this extent there is some agreement among the speech-language pathologists in the United Kingdom who state that "developing an open dialogue between therapist, parents and children is fundamental to their clinical practices in the treatment of stuttering" (Rustin, Botterill & Kelman, 1996 pg 117). Furthermore, Rustin, Botterill and Kelman (1996) underscore the harm that can be caused to children if stuttering is not discussed openly with them and they come to believe that their speech behaviour is so unacceptable that it cannot even be mentioned.

Hence, the Lidcombe Programme would possibly be endorsed by some speech-language therapists, for the reason that its underlying principles draw on parental intuition, honesty and directness in dealing with children's problems. Yet, some may think that the Lidcombe programme conveys negative messages to children. Hence, Onslow et al. (1997) explain that intrinsically the Lidcombe Programme is positive for the reasons already mentioned. However, the Lidcombe Programme may be turned into a negative experience if it is incorrectly administered e.g. if children are subjected to negative value judgements such as being told that their stuttering is 'bad', 'wrong' or 'unacceptable'. This situation may occur if the Lidcombe Programme is incorrectly administered. Thus, Onslow et al. (1997) are mindful of the distinction between an intrinsically negative treatment and a treatment that is negative because of incorrect administration and hence emphasise the importance of proper training in administering the Lidcombe Programme.

To date, in Australia, the Lidcombe Programme is widely used by therapists who have had proper training in its administration with subsequent research confirming the success of this type of intervention (Lincoln & Onslow, 1997; Onslow, Andrews & Lincoln, 1994). However, despite the abundance of research in Australia, no South African studies appear to have previously been conducted to establish long-term results and effectiveness of Lidcombe therapy with this client group. Hence, the present study endeavoured to establish long-term results and effectiveness of therapy using the Lidcombe Programme with pre-school children who stutter.

1.5 POTENTIAL SIGNIFICANCE OF ASSESSING THE EFFICACY OF THE LIDCOMBE TREATMENT PROGRAMME

As there appears to be a paucity of information related to treatment efficacy especially in the field of stuttering, and recent concerns have been expressed about the absence of rigorous documentation regarding the efficacy of particular interventions (Ansel, 1993; Conture, 1996; Cordes & Ingham, 1998; Guitar, 1998; Starkweather, 1990; Thomas & Howell, 2001) it was envisaged that this study would add to the current data.

Schlosser (2003) believes that evidence-based practice, which he defines as the integration of the best and current research evidence with expertise and relevant stakeholder perspectives is vital in today's age.

Curlee (1993b) notes that systematic assessments of the efficacy of treatments utilized by a profession are essential to the maintenance of the clinical integrity of any profession. Hence, it is vital that systematic studies be initiated to identify the specific therapy procedures that contribute the most to successful treatment outcomes and the variables that are largely responsible for treatment failures in order to ensure that best treatment is given (Curlee, 1993b). Logemann (2000) further emphasizes that the profession's future depends on the effectiveness of clinicians' treatment and not on the impressions of their effectiveness.

Few disorders pose greater challenges to the assessment of treatment efficacy than does stuttering (Curlee, 1993b; Thomas & Howell, 2001). Thus, a standard set of procedures should be adopted for evaluating the treatment outcomes of a child who stutters so that significant variations in such outcomes, from one procedure or clinic to another, can be reliably identified (Curlee, 1993a). This approach is of critical importance as the maintenance of fluent speech is still a puzzling phenomenon to speech-language pathologists. Hence, it was hoped that the study might yield further insight into this critical process thereby filling part of the gap in the research literature.

The implications of this study are important particularly in the South African context in which there are limited resources e.g. limited therapists and limited transport available for the communicatively impaired population (Marks-Wahlhaus, 1994; Vally, 2002). The Health Professions Council of South Africa (HPCSA, 2005) estimates that there are approximately 1446 speech-therapists and audiologists who have to deal with all types of communication problems including stuttering which is estimated to affect approximately 400 000 people in South Africa (Marks-Wahlhaus, 1994).

Consequently, it was envisaged that if the Lidcombe Programme was found to be as successful in South Africa as it is in Australia, the inclusion of the Lidcombe Programme would be justified and more seminars and workshops could then be run for the speech-language pathologists in the outlying regions of the country. As Lincoln and Onslow (1997) have argued, not only is the Lidcombe Programme likely to be more economical but also may prevent the distress, anxiety, social maladjustment and career frustration that may be experienced by a person who stutters during adolescence and adulthood.

If, however, the Lidcombe Programme was found not to be successful in South Africa, it was anticipated that there would be implications for further research as it would be advisable to ascertain why the Lidcombe Programme is not as successful here as it is in Australia i.e. whether it could be attributed to different cultural and/or socio-economic background or lack of proper training and therefore lack of proper administration or, just a different mind-set of the population.

1.6 SUMMARY OF CHAPTER

This introductory chapter endeavored to contextualise the study by highlighting the rationale for assessing the effectiveness of early intervention practice in stuttering therapy; focusing on stuttering therapy and the role of parents; summarizing key aspects of the Lidcombe Programme for children who stutter; providing a critique of the Lidcombe Treatment Programme, and describing the potential significance of assessing the efficacy of the Lidcombe Treatment Programme.

CHAPTER TWO

METHODOLOGY

2.1 AIMS

2.1.1 Primary Aims:

The present study endeavoured to establish long-term results and maintenance of fluency following the Lidcombe Treatment Programme with a sample of South African pre-school children and to establish patterns and trends in long-term results.

2.1.2 Hypotheses:

Hypothesis in respect of percentage syllables stuttered (%SS)

The null hypothesis was that there would be no significant difference between measures of %SS between termination of therapy and measures taken at the time of the study.

H₀: The median change in %SS from termination of therapy to the time of the study is zero.

The alternative hypothesis was that there would be a significant increase in dysfluency as measured by %SS from termination of therapy to measures taken at the time of the study.

H₁: The median change in %SS from termination of therapy to the time of the study is positive (i.e. %SS has increased).

Hypothesis in respect of severity rating (SR)

The null hypothesis was that there would be no significant difference between measures of SR between termination of therapy and measures taken at the time of the study.

H₀: The median change in SR from termination of therapy to the time of the study is zero.

The alternative hypothesis was that there would be a significant increase in dysfluency as measured by SR from termination of therapy to measures taken at the time of the study.

H₁: The median change in SR from termination of therapy to the time of the study is positive (i.e. SR has increased / fluency has deteriorated).

2.1.3 Secondary Objectives:

- i. To obtain quantitative data on the %SS and severity rating scores for the children on initial assessment and termination of the Lidcombe treatment programme
- ii. To compare these scores with ratings at the time of the study and thereby test the null hypothesis
- iii. To supplement quantitative information with qualitative data from the parents regarding their children's previous stuttering behaviour, their stuttering at the time of the study and their views on the Lidcombe Programme.
- iv. To explore possible trends arising from the quantitative and qualitative data

2.2 RESEARCH DESIGN:

Evaluation research incorporating a post hoc, multiple case study was employed in order to investigate the aims of the study (Rosnow & Rosenthal, 1996). Evaluation research involves the collection and analysis of information related to the effects of a programme, policy or procedure (Hedge, 1994; Polit & Hungler, 1991). Four types of evaluation research have been described in the literature namely: impact evaluation, process evaluation, cost-benefit analysis and comprehensive evaluation. Of these four types of research, the researcher used 'impact evaluation' and 'process evaluation'.

Polit and Hungler (1991) explain that 'impact evaluation' is concerned with the effectiveness of a programme and its purpose is to determine whether a programme should be discontinued, replaced, modified, continued or replicated. Such an evaluation documents the extent to which the goals of a programme are achieved and the extent to which the programme results in positive outcomes. This type of evaluation is sometimes referred to as 'summative evaluation'.

In contrast to impact evaluation, process evaluation is designed to answer questions about the function of a programme or policy and may focus on improving a new or ongoing programme (Polit & Hungler, 1991). Such an evaluation is sometimes referred to as a 'formative evaluation'. Typically, this type of research involves intensive examination of a programme and often involves collection of both qualitative and quantitative data

gathered through interviews with clients and staff, observation of the programme in operation and analysis of records related to the programme (Pannbacker, & Middleton, 1994).

The Lidcombe Programme was investigated via a post hoc, multiple case design focusing on stuttering behaviour of a small number of children who had received this type of intervention. The research employed both quantitative and qualitative approaches in a process called triangulation. ‘Triangulation’ is defined by Rosnow and Rosenthal (1996) as the process of using multiple methods i.e. qualitative and quantitative research to zero in on the effect of interest. The reason for multiple methods is that all methods for research are limited in some ways and therefore the best one can do in any given case is to try to “zero in” on the area of interest.

Furthermore, the convergence of triangulation of the findings of methodologically varying studies lends credence to the effect of this process as qualitative and quantitative research complement each other (Cox & West, 1986). As Plante, Kiernan and Betts (1994) state (p. 52) ‘qualitative and quantitative methods are both capable of providing scientifically important and clinically relevant information’. In many research cases, it is advisable to use quantitative and qualitative methods to enrich one’s understanding of the problem studied as research is enhanced by the collection and integration of both qualitative and quantitative data. Qualitative research is non-numerical and provides systematic, context based descriptive data (Plante, Kiernan & Betts, 1994) while quantitative analysis involves manipulation of numerical data through statistical procedures to describe phenomena or assess the magnitude and reliability of relationships among them (Polit & Hungler, 1991).

It is important to be aware of the advantages and disadvantages of using the integration of both types of data. Advantages include complementary strengths and weaknesses, enhanced theoretical insights, multiple feedback loops which add to the incremental gains in knowledge, enhanced validity and further study when there are inconsistent findings. Disadvantages include epistemological biases and high costs (Polit & Hungler, 1991).

However, it needs to be acknowledged that a limitation of this research design is that there was no control group. Although it would have been desirable to have had a control group that received an additional type of therapy plus a second control group that received no therapy, this approach was not feasible because of the difficulties in obtaining a matched sample. Furthermore, it would have been unethical to withhold treatment from pre-school children who stutter. Nevertheless, it should be noted that the research design allowed the sample to serve as its own control group.

2.3 RESEARCH PARTICIPANTS:

2.3.1 Participant Recruitment

Nine participants were recruited from the clientele of speech therapists who had been trained in the administration of the Lidcombe Programme, which targets pre-school children who stutter. Names of therapists were accessed from a speech-language pathologist who initially went to Australia to be trained in the administration of the Lidcombe Programme and who subsequently ran workshops to train South African speech therapists on how to use this programme. As the Lidcombe Programme is fairly new in the field of speech therapy, few speech therapists in South Africa were known to use this Programme, thus the sample size was small.

Seven participants were recruited from one speech-therapist and two participants from another speech-therapist. The researcher acknowledges that the use of two different therapists may have introduced confounding variables. Participants ranged in age from 6 to 11 years, as they received treatment when they were in the pre-school stage of the life cycle.

2.3.2 Participant Inclusion Criteria

Participants were selected according to the following criteria:

- **Diagnosis** – Participants’ speech needed to have been diagnosed as stuttering by a speech language pathologist. For a child to be diagnosed as presenting with stuttering:
 - It was essential for one or both parents to believe the child was stuttering. This criterion is a commonly used diagnostic sign (Conture & Caruso, 1987; Costello, 1983; Curlee, 1993a; Starkweather, Gottwald & Halfond, 1990; Yairi & Ambrose, 1992; Onslow, Menzies & Packman, 2001).
 - Stuttering had to be distinguished from “normal” non-fluencies (Zsilavec, 2004). Stuttering was assessed based on the guidelines suggested by Dalton and Hardcastle (1977) to distinguish between normal and abnormal non-fluencies (Ramig, 1993). Abnormal non-fluencies (stuttering) was determined by the presence of the following criteria:
 - too many abnormally long pauses or pauses used inappropriately
 - use of repetition of sound and syllables, prolongations, revisions and/or interjections
 - inappropriate variation of normal intonation and stress
 - inappropriate speech rhythm and a slower than normal speaking rate or sudden surge of fast rate.
- **Treatment** – Participants needed to have been treated by a clinician who had been trained in the administration of the Lidcombe Programme and who used all aspects of the Programme. As the Lidcombe Programme is fairly new in South Africa, all clinicians who used this Programme at the time of the study had been trained by the same therapist, thus further enhancing the reliability of the study.
- **Time Factor** - All participants needed to have been treated with the Lidcombe Programme 2 to 6 years prior to the study so that long-term outcomes of this treatment could be determined.
- **%SS and severity rating score attained** – Participants were required to have attained a %SS of greater than 3% and a severity rating score of greater than 3. These ratings were chosen as they allow for a degree of normal dysfluency.

2.3.3 Participant Exclusion Criterion

- *Post Lidcombe Programme therapy* – The participants were required to have not received any additional therapy for stuttering following the termination of the Lidcombe Programme so as to reduce the confounding effect of additional interventions on the maintenance of fluency.

2.3.4 Participant Sampling Criteria

A non-probability sampling strategy was used. Leedy and Ormrod (2001) note that non-probability samples are not selected according to the principle of statistical randomness but are rather chosen according to other principles such as convenience or accessibility which are advantages of using this type of selection strategy. Babbie and Mouton (2001) also note that this type of sampling is advantageous when research resources are limited and in preliminary investigations as was the case in the present study.

However, there are two disadvantages inherent in non-probability sampling. Firstly, it precludes the generalization of results to other situations, events and settings as it does not subscribe to statistical theories of probability. Hence, non-probability sampling methods may not claim representativeness of the population as a whole (Sarantakos, 1998). Secondly, since the researcher assumes an active role in deciding who should and should not be allowed in the sample, researcher bias may be introduced (Van Vuuren & Maree, 1999).

2.3.5 Demographic Profile of Participants

A total of 9 participants who were diagnosed as presenting with stuttering by speech language pathologists and who began therapy using the Lidcombe Programme between the ages of 2 and 5 years, participated in the study. The children began treatment between the period of July 1998 and May 2002. The researcher acknowledges that the sample size was small thus affecting the validity of the study and preventing the drawing of any definitive conclusions and generalisation of the results to the broader population of pre-school children who stutter. However as the Lidcombe Programme was only introduced in South Africa approximately ten years ago, few clinicians were known to use

this Programme. Furthermore, when the researcher spoke to different clinicians about the Lidcombe Programme, many clinicians maintained that they used only part of the Lidcombe Programme and one of the criteria of this study was that clinicians needed to use all aspects of the Lidcombe Programme with their clients.

Table 2.1 shows the participants' ages, genders, family history, grades, ages at onset of stuttering and ages when they participated in the Lidcombe Programme.

Table 2.1 – Demographic information about participants (N=9)

Parti- cipants	Age at time of study	Gender	Family history of stuttering	Grade at time of study	Age at onset of stuttering	Age when child started L.P.	Post treat- ment time
1	8 y 5 m	M	No	2	2 y	2 y 5 m	6 y
2	8 y 7 m	F	No	2	2 y 5 m	3 y	5 y 7 m
3	6 y 4 m	M	No	3	2 y 5 m	2 y 11m	3 y 5 m
4	8 y 4 m	M	Yes (Father)	2	3 y 5m	4 y 3 m	4 y 1 m
5	7 y 2 m	M	No	1	2 y	3 y	4 y 2 m
6	5 y 11m	M	Yes (Mother)	0	3 y	3 y 5 m	2 y 6 m
7	10 y 2 m	M	No	4	3 y 5 m	4 y 6 m	5 y 8 m
8	10 y3 m	M	Yes (Father)	4	2 y	3 y 11 m	6 y 4 m
9	8 y 8 m	F	No	2	4 y	4 y 11 m	3 y 9 m

Key: y = years
m = months

Age at the time of the study

As depicted in Table 2.1, the ages of the participants at the time of the study ranged from 5 years 11 months to 10 years 3 months with a mean of 8 years 2 months. There were 7 male participants with a mean age of 8 years 1 month and 2 female participants with a mean age of 8 years 8 months.

Age at the start of the Lidcombe Programme

As the Lidcombe Programme primarily targets younger children and was initially developed for children younger than 5 years (Onslow, Andrews & Lincoln; 1994), the age range of the participants when they first received therapy using the Lidcombe Programme was between 2 years 5 months and 4 years 11 months with a mean age of 7 years 1 month at first treatment.

Time post-treatment

The median time post-treatment of all participants was 4 years 2 months (range: 2 years 6 months to 6 years 4 months) with a mean of 4 years 7 months. Thus, at least 2 years 6 months had elapsed since each child had received therapy, which was sufficient time to conduct a first evaluation regarding the long-term effects of the Lidcombe Programme in South Africa.

Age at onset of stuttering

Five mothers reported that their children began stuttering at age 2 years or 2 years 5 months, three mothers reported that their children started stuttering at age 3 years or 3 years 5 months and one mother reported that her child began stuttering at age 4. Hence, the approximate mean (and median) time that elapsed between reported onset and the start of the therapy was 10 months (range 5 months to 1 year 11 months) respectively.

Gender

As depicted in Table 2.1, the female to male ratio of attendees was 2 (females) to 7 (males), which resembles the incidence ratio of stuttering in the general population reported by Van Riper and Emerick (1992) to be 1 female to 3 males. It is interesting to note that in very young children who stutter the male-to-female ratio is almost equal (Kloth, et al., 1999; Yairi & Ambrose, 1992). However, there is a substantial increase in the ratio with age, with a male to female sex ratio of about 3:1 in the first grade and 5:1 in the fifth grade (Kloth et al., 1999), a fact that is supported by findings in the present study.

Family history of stuttering

It is evident from Table 2.1 that 6 out of the 9 children did not have a family history of stuttering. Of the 3 who displayed a family history, 2 of the children had fathers who stuttered and one had a mother who stuttered. Mannson (2000) reports that having a relative who stutters is a high risk factor for persistent stuttering while in Yairi and Ambrose's (1992) study 46.6% of pre-school children who stuttered had at least one first-degree relative (parent or sibling) who was reported to have stuttered, a finding similar to the present study where 33% of the participants had a parent who stuttered.

Previous Therapy

Three out of the 9 children (participants 2, 7 and 8) had attended previous speech therapy for a time period ranging from one to three months. It would seem that the therapy that these children received was an indirective approach where considerable time was spent working with parents to reduce communication pressures and life stresses and to make changes in the child's environment (Guitar, 2003). After attending a number of sessions (2 to 4 sessions), the children's stuttering speech reportedly remediated and therapy was discontinued. However, the participants' mothers reported that when their children's stuttering behaviour re-surfaced, a more directive and 'hands on' therapy approach was sought and thus they began therapy using the Lidcombe Programme.

Race and Socio-economic background

The fact that all participants were white and originated from a middle-class socio-economic background (based on educational, occupational and residential information obtained from the previous therapists) represents a limitation of the study and reduces the generalizability of the findings.

2.4 RESEARCH INSTRUMENTATION

2.4.1 Quantitative analysis

2.4.1.1 *Speech measures*

As the measure of stuttering rate used in the Lidcombe Programme is percentage of syllables stuttered (%SS), the primary dependent variable in this study was %SS. In order to obtain %SS, a clinician takes every syllable that is judged to be free of stuttering and every syllable that is judged to be stuttered. The total syllables spoken is the sum of the two and the %SS is calculated from the total number of syllables spoken (Lincoln & Packman, 2003).

A limitation that is acknowledged is that it would have been preferable to have obtained two or three ratings of the participants' speech on various occasions in different settings. However when probed, the parents indicated their reluctance to have the researcher engage in multiple observations of their children.

As stuttering is notoriously different across situations, changing with variables such as status of speaking partner, audience size and time pressure to communicate (Onslow, Andrews & Costa, 1990; Onslow, Menzies & Packman, 2001; Van Riper, 1982; Yaruss, 1997) each child's speech was assessed in two different speaking situations. The first situation involved the child speaking to the clinician (a stranger) within the home. The second situation involved the child speaking to the parent.

Although the researcher initially planned to also observe the children in a school setting, this idea was decided against in view of the fact that some of these children no longer stuttered and it was assumed that their parents might not want the teacher to know that the child used to stutter as such knowledge might cause the child to be labelled as a 'stutterer'. Furthermore, if the researcher observed the child in a classroom situation, it was felt that the child might feel embarrassed and his/her classmates would want to know who was being observed and the reasons for the observation. Thus, for ethical reasons of non-maleficence, it was decided not to include this situation in the study.

As the %SS measure relies on perceptual judgements of stuttering because the listener makes a judgement about whether each syllable is or is not stuttered, the reliability of the measure needed to be established, hence the child's speech was tape recorded (with the parent's consent and the child's assent) and was used for inter-judge and intra-judge reliability analysis.

As stuttering has a visual component as well as an auditory component a person who stutters may present with secondary behaviours. Hence, the researcher used a check-list of potential visual secondary behaviours which could be marked off unobtrusively if these occurred while the participant was speaking (Refer Appendix A). Shames and Ramig (1994) define secondary behaviours as behaviours associated with instances of stuttering such as eye blinking, head shaking and facial grimaces. People who stutter tend to use these behaviours in an effort to release them from stuttering blocks. The researcher initially considered using a video-recorder instead of a tape recorder.

However, a video-recorder is invasive and people often become embarrassed and shy when they are being recorded, thus introducing extraneous variables which may affect the reliability of the study. Hence, it was decided to rather use a tape-recorder. In addition to speech measures, the researcher was advised that a 'trend analysis' be conducted to compare and contrast the data obtained from the individual participants. Profiles of typical progress were generated and then related to both the long term outcome measures and the qualitative data concerning the efficacy of the programme

2.4.1.2 Reliability of %SS

Ingham, Cordes and Gow (1993) note that observer identification of stuttering events can be unreliable and thus inter and intra judge differences must be considered. Inter-judge reliability is the extent to which different people's scores agree and is very important to establish the reliability of a study (Onslow 1996). As each participant had already been given a %SS by the clinician who administered the Lidcombe Programme at the time of assessment and termination of therapy, the researcher asked the original rater i.e. the participant's clinician to rate the participants' %SS in both situations so as to obtain reliable and consistent recordings. Another clinician, known to specialize in the area of

stuttering and who was not involved in the original administration or assessment of the Lidcombe Programme, was then presented with 10% of the recordings in random order to obtain inter-judge reliability ratings.

Intra-judge reliability (sometimes referred to as “consistency”) is one of the most fundamental requirements for a useful speech measure based on the fact that if a person does not produce similar scores with the same speech sample on two different occasions then the speech measures collected by the researcher may be of limited value. Hence, to ensure intra-judge reliability; 10 percent of the assessment recordings were selected for intra-judge reliability analysis. Riley (1994) suggests that for research purposes an inter and intra judge reliability score at least 85% should be obtained.

Finn (1997) recommends that intra-judge reliability measures be completed four weeks post-original analysis. However, Riley (1994) does not specify the time lag necessary between ratings in his SSI – 3 manual. Eichstadt (1996) performed her assessment five days after the original analysis due to time constraints. In the present study, the recordings were represented in random order to the original clinician/rater four months after the clinician had rated the data.

2.4.1.3 Speech sampling

Speech samples were based on 10-minute recordings of conversational speech, each from a different speaking situation: with the clinician and with the parent. Guitar (1998) states that typically a 5 minute sample is used because it is easier to interact naturally with a child for 5 minutes, while Riley (1994) suggests that any child below grade one should be asked to describe a set of pictures to provide a sample of 150 words for analysis.

2.4.1.4. Stuttering Severity Measure Scale

One should be aware that a limitation of %SS is that %SS does not always reflect the severity of the stutter since some clients stutter quite infrequently but each stutter involves a long block and hence disrupts communication a great deal, while other clients stutter frequently but each stutter is short and does not disrupt communication (Lincoln & Packman, 2003; Onslow, 1996).

Hence, a 10-point stuttering severity measure scale was used in conjunction with %SS to complement results obtained by %SS where parents were asked to measure the severity of their child's speech using an ordinal scale. A 10-point scale has been developed especially for the Lidcombe Programme, with 1 representing no stuttering and 10 representing severe stuttering, as opposed to using a 5-point scale or 7-point scale to make the scale more user friendly for parents (Onslow, Andrews & Costa, 1990). A very important aspect of the Lidcombe Programme is that while the child participates in therapy, the parent rates the child's stutter daily using this scale.

2.4.1.4.1 Reliability and validity of the Stuttering Severity Measure Scale

As the parents of the participants had previously participated in the Lidcombe Programme and were familiar with the stuttering severity measure scale, the researcher anticipated that the parents would be able to assign a score to their child's speech using this scale. It was felt that this procedure would enhance the reliability and validity of the study, as the original rater who rated the participant's speech at the assessment and termination of therapy would be rating the participant's speech at the time of the study.

However, as most parents had not used the Lidcombe Programme since the termination of therapy, the majority of parents said that they could not remember how to assess their child's speech using the stuttering severity measure scale. Thus, the researcher had to re-explain how to use this scale and only then could each parent rate their child's speech. Originally, the researcher planned to ask each parent to rate their child's speech and then to compare this score with the scores given by the parents when they originally attended therapy, but as the parents had forgotten how to use this scale each parent was asked to rate their child's speech retrospectively at three points in time in order to enhance the reliability and validity of the scores given. Thus, the parents were asked to rate their child's stuttering severity using the scale before their child began therapy, when their child terminated therapy and at the time of the study. One should note that a limitation of this procedure was the reliance on the parents' memory and recall.

It should be noted that the researcher did not ask the parent to rate their child's speech in front of the child as most of the children were over the age of five years and might have wanted to know why their parent were rating their speech, which might have elicited feelings of unease for the participant. Thus, at the termination of the interview once the child went to play, the researcher asked the parent to rate their child's speech using the stuttering severity scale measure.

Using this scale had a number of advantages. Firstly, the scale provided an indication of overall severity, not merely a rate of stuttering as in the case with %SS measured. Secondly, this procedure was easy to use, required little training and was intuitive, in that most people are familiar with the idea of giving something a score out of 10. Thirdly, this procedure required no instruments which might disrupt verbal interaction and was covert in nature thus eliminating reactivity to assessment. Reactivity as defined by Rosnow and Rosenthal (1997) is a reaction that affects who or what is being observed or measured. Hence, this type of rating was considered particularly suitable for obtaining a valid measure of stuttering in naturalistic speaking situations (Lincoln & Packman, 2003).

However, useful as the severity scaling was, it is important to acknowledge that a limitation of using this measure was that it did not provide information about the number of stutters in a child's speech. Nonetheless, because %SS was used in conjunction with the severity scale, this factor was not a shortcoming as these measures complemented each other (Lincoln & Packman, 2003).

2.4.2 Qualitative analysis

2.4.2.1 Parent Interview

In addition to the quantitative measures, face-to-face parent interviews were conducted, which were approximately 20 to 30 minutes in duration. The main aim of these interviews was to assess the parents' views of their children's speech and to ascertain whether the parents had noted any improvement, deterioration or changes in their child's fluency or

attitude towards their speech since the termination of the Lidcombe Programme. Furthermore, the parents' perceptions of the programme were also probed.

An interview format was chosen because interviews are flexible tools which can yield in-depth information (Walliman, 2001). This format was adopted because it generally yields higher response rates and enables interviewers to clarify answers and pursue lines of thought based on the input received (Berg, 1995; Van Vuuren & Maree, 1999).

However, it is acknowledged that disadvantages of face-to-face interviews include the fact that interviews are time consuming, they require the full concentration of the interviewer at all times and researcher bias may occur as the perceived characteristics of the interviewer (e.g. his/her age, gender, ethnic group, social class) may bias the information given by the participants (Hall and Hall, 1996).

2.4.2.1.1 Construction of the interview schedule:

As research has been conducted in Australia concerning the long-term effects of the Lidcombe Programme, the researcher used some of the questions posed to parents in a study conducted by Lincoln and Onslow (1997). However, as not all the areas that the researcher wanted to cover were addressed in the Lincoln and Onslow questionnaire (1997), the researcher added some of her own items. The interview schedule is set out in Appendix B.

Both open-ended questions and close-ended questions were used to enhance the effectiveness of the interview since open-ended questions allow a person to express feelings, thoughts and allow the respondents to show creativity, self expression and initiative (Morris, 1989) while closed-ended questions are easy to administer and answer, facilitate quick and accurate analysis of results and allow comparisons and quantification of data (Babbie, 1995; Doehring, 1996; Kanjee, 1999).

The researcher also attempted to enhance the reliability and validity of the interview data, in terms of controlling for researcher effects (such as age, gender and ethnic group) by adopting Breakwell's (1997) recommendation that the same interviewer conduct all the interviews as this process serves to hold constant the stimulus provided by the interview.

2.4.2.2 Participant Information Sheet:

The objective of an information sheet is to inform potential participants of the purpose of the study and to request their participation (Baker, 1994). For this reason, the information sheet (Refer to Appendix C) included information about the general purpose and significance of the study, implications of the study for the benefit of others, an explanation of the importance of each respondent's participation, the assurance of confidentiality and privacy and a contact number should participants have had queries or required feedback from the study (de Vaus, 1996).

In addition, the information sheet also highlighted the voluntary nature of participation and the rights of participants to refuse to answer individual questions. Goodare and Smith (1995) emphasize the rights of participants in research and maintain that an ethical imperative is that results be made available to those who participate in research. In addition, each parent or caregiver in the study was required to sign a consent form while verbal assent was asked from the child participants themselves, copies of which are set out in Appendix D and Appendix E respectively.

2.4.2.3 The interview schedule

The interview schedule was constructed to meet the aims of the study. The three main sections included demographic information, information regarding the child's speech and additional information/questions (Refer to Appendix B). Section A, which was designed to yield biographical information about the participants, was positioned at the beginning of the research instrument in order to start the interview with items that were non-threatening and comparatively easy to answer, thereby preventing participants from becoming discouraged (Singleton, Straits & Straits, 1993).

Table 2.2.1 Rationale for the inclusion of demographic information in the interview schedule – Section A

Items	Rationale for inclusion in the interview schedule
1. Present Age	This information was considered important to ascertain as some research conducted shows that the Lidcombe Programme (L.P.) is more successful with younger children (Onslow, Menzies & Packman, 2001)
2. Gender	Past research has suggested that females tend to have a better chance of recovery than males as stuttering seems to be more persistent in males (Kloth, et al., 1999; Mannson, 2000; Seider, Gladstein & Kidd, 1983; Yairi & Ambrose 1992; Yairi et al., 1996). Thus, there appears to be a strong interrelation between early childhood stuttering, gender and prognosis. It is interesting to note that in very young children who stutter, the male-to-female ratio is almost equal (Kloth, et al., 1999; Yairi & Ambrose, 1992). However, there is a substantial increase in the ratio as a child grows older, with a male to female sex ratio of about 3:1 in the first grade and 5:1 in the fifth grade (Kloth et al., 1999).
3. School	Guitar (1998) notes that in terms of school performance, people who stutter are more likely than their non-stuttering peers to be a grade behind. Therefore, this question was designed to elicit any pertinent information regarding the effect of the participants' stuttering on their academic performance.
4. Social skills and personality	In view of the profound impact which stuttering is believed to have on a person's personality and social life (Louw, 1996), questions regarding social life, including establishing friendships, were incorporated in the interview schedule. Nelson (1992) states that low self-esteem and feelings of worthlessness and hopelessness which result from repeated failure and avoidance of speaking situations may sometimes lead to social withdrawal and isolation (Stewart & Turnbull, 1997). Murphy and Fitzsimons (1960) believe that people who stutter usually withdraw, become shy or serious since they may feel incapable of adjusting to the demands of reality.
5. Family history of stuttering	Research by Kloth et al. (1999) and Zebrowksi and Kelly (2002) has suggested that children with a family history of chronic stuttering have an increased risk that their stuttering will persist. Furthermore, Kloth et al. (1999) found that children who recovered had many more family members who also had recovered from stuttering than those whose stuttering persisted. Mannson (2000) confirms this finding stating that there appear to be strong familial factors in stuttering.

Table 2.2.2 Rationale for the inclusion of information regarding the child’s speech in the interview schedule – Section B

Items	Rationale for inclusion in the interview schedule
1. Age at onset of stuttering	Age at onset appears to be related to stuttering chronicity. Yairi, Ambrose, Paden, and Thorneburg (1996) found that onset was later for those children whose stuttering persisted than for those whose stuttering remitted. Further inspection revealed a five-month difference in mean age at onset between males and females with female subjects exhibiting earlier onset. Yairi and Ambrose (1992) found that boys began stuttering on average five months later than girls (Yairi et al. 1996).
2 Age at the start of the L.P.	This information was considered useful to determine if a particular age might predict better outcome with the L.P. Jones et al. (2000) found a significant correlation between time that elapsed from the onset of parental concern to the start of treatment and the duration of treatment. The idea that the longer the time since onset the more intractable the condition, is also supported by the fact that relative to adults, preschool children show rapid establishment and generalization of treatment effects (Adams, 1984; Bloodstein, 1987; Curlee 1984; Costello, 1983; Jones et al., 2000).
3. Attendance at any other form of speech therapy prior to the L.P.	It was felt that this information was important as attendance at any other speech therapy might influence the long-term results of the L.P.
4. Initial Stuttering Severity	Jones et al. (2000) report that stuttering severity at the first treatment session is a predictor of the time required for treatment as their research revealed that medians of nine and twelve clinic sessions were required for less and more severe stuttering respectively. This finding is in agreement with Starkweather and Gottwald’s (1990) finding that children with more severe stuttering required more treatment time. Hence, there appears to be a positive relationship between severe stuttering and time required for treatment (Yairi & Ambrose, 1992). However, in contrast to these findings Riley (1981) and Van Riper (1971) report that the initial frequency does not seem to be a predictor of chronicity. In fact, they stated that the initial level of severity in the recovered groups was <i>higher</i> than that of the persistent group.

5. Comparisons of parents' descriptions of their children's speech at 3 periods of time	This information was considered necessary in order to ascertain the parents' overall perceptions of their child's speech before they began the L.P., at the termination of the L.P., and at the time of the study.
6. Amount of stuttering noted	The reason for including this item was that a parent's overall perception of his or her child's speech might differ from the number of times that the child was actually stuttering.
7. Use of any Lidcombe techniques since the termination of therapy and others' perceptions of their child's speech	This question was included to determine whether parents' reports in South Africa were similar to those found in Australia. In the study conducted by Lincoln and Onslow (1997), it was found that 44% of parents reported administering verbal feedback about stuttered and stutter-free speech to their child since therapy and 29% of parents reported that they thought their child had begun to stutter again. Parents reported with varying frequency the presence of repetitions, blocks, prolongations and associated behaviours in their child's speech. In contrast to these findings, only 5% reported being told by others that their child was stuttering
8. Child's perception of his/her own speech	This question was felt to be pertinent as past research has shown (Rustin et al., 1996) that it is very important to be open/honest with the child about his/her speech.
9. Parents' perception of the L.P.	The motivation for incorporating this item in the interview schedule was that little, if any research, has previously been conducted in South Africa regarding the parents' feelings about the Lidcombe Programme. In Australia, parents have reported that as a result of the L.P. their children's overall self-confidence has increased and they have become more confident when speaking with other people (Onslow, Attanasio & Harrison, 2003). As one parent said, "I think the L.P has improved my daughter's lifestyle. She will play with all the kids out on the street now as she has no fear. For a while she was a bit frightened that someone would pick on her again but not anymore" (Onslow et al., 2003, pp. 195).

Table 2.2.3 Rationale for the inclusion of ‘additional comments’ in the interview schedule – Section C

Item	Rationale for inclusion in the interview schedule
Additional Comments	This section was designed to elicit information regarding any additional views, comments or concerns about the L.P. The rationale for including this section was to provide participants with the freedom to express any view or feeling that might not have been targeted in the interview, as well as to allow them to express the intensity of their feelings (Singleton, Straits & Straits, 1993). Thus, the “additional comments” section facilitated freedom of response (Stewart, 1990).

The interview schedule appeared to have face validity as it appeared “on the face of it” to measure what it purported to measure. The instrument also appeared to have content validity as it was evaluated by another speech-language therapist and was found to cover a broad range of aspects related to stuttering and the Lidcombe Programme.

2.5 RESEARCH PROTOCOL

2.5.1 Application for Ethics Clearance

Ethics refers to the moral standings by which human conduct is judged. The moral imperative in research is the responsibility not to cause physical or psychological harm to participants and to conduct beneficial research in a way that is likely to produce valid results (Rosnow & Rosenthal, 1997).

In all research, there is a need to balance privacy and confidentiality interests of participants against the need to obtain appropriate information. Any breach of confidentiality could result in social harm and stigmatization, thus precautions were used to protect confidentiality. Confidentiality was assured by not including any identifiers in the writing up of the research results other than by the numbering of each participant (Levine, 1986). As important as the principle of confidentiality, is the principle of non-maleficence. Non-maleficence is defined by the Medical Research Council of South Africa (undated, pp. 26) as ‘absence of harm to the research participant’.

As the children would have received therapy at a young age, it was anticipated that they might not remember or be aware of the fact that they had stuttered. Thus, when interacting with the children, the researcher engaged in some level of deception and told the participants that she was studying how to teach children and not that she was studying the fluency of their speech, as it was felt that to raise the issue of stuttering might bring some degree of harm to the participant i.e. evoke negative psychological consequences. Therefore, the researcher ensured that the principle of non-maleficence was upheld. This principle was further considered when it was decided not to observe the participants in the classroom in order to avoid any unnecessary labeling and to prevent any undue attention being called to the participants' speech by teachers or/and peers which might lead to feelings of inadequacy or self-consciousness.

The researcher also ensured that she obtained 'informed consent' which is a "contractual obligation". In all research, someone who is legally capable of consenting must give consent to participate in research. Where a person, on account of age i.e. under the age of 14 or due to physical or mental condition is incapable of consenting to the proposed research procedure, proxy consent (consent by someone who is legally authorized to act on behalf of the incompetent person) must be procured. Thus, the researcher obtained consent of a parent or legal guardian of each participant as all participants ranged in age from six to eleven years.

Research participants or persons giving proxy consent cannot give consent unless they know and appreciate the factors to which they are giving consent. Thus, the researcher provided persons giving proxy consent with adequate information in accordance with the 'doctrine of informed consent'. The information sheet endeavoured to include comprehensive and detailed information in understandable language about the precise nature, scope, purpose and duration of the proposed research project, the foreseeable risks, dangers, complications and benefits, an explanation of the procedures and an assurance of confidentiality (Levine, 1986; Rosnow & Rosenthal, 1997).

According to research ethics, the ultimate decision to participate (informed consent), to refuse to participate (informed refusal) or to withdraw from an intervention lies with the participant and not with the researcher. The participants were also made aware of the fact that refusal or withdrawal would not adversely affect them in any way, thus emphasizing the principle of autonomy. The principle of autonomy is defined by the Medical Research Council of South Africa (undated, pp. 13) as ‘respect for a person – a notion of human dignity’. A copy of the Information sheet and the Participant Consent Forms are included in Appendices C and D respectively.

Ethical clearance was applied for and granted by the University of the Witwatersrand Human Research Ethics Committee (Medical). As opinions about what is ethically correct differ, judgments need to be made by institutional ethics committees (Goodare & Smith, 1995). Minor adjustments were made and clearance certificate number M040207 was issued (Appendix F).

2.5.2 Pre-testing the Interview Schedule

Berg (1995) maintains that pre-testing an interview schedule is invaluable as it provides an opportunity to identify poorly worded questions, items that contain emotionally-laden words and questions that expose the researcher’s bias. In addition, the pretest may assess the success of the research instrument in terms of the information that is obtained.

Goodare and Smith (1995) maintain that individuals can, by commenting on the format of the research tool, increase the chance that other individuals will be willing to co-operate with and complete the research. Consequently, the interview was pre-tested by asking other researchers familiar with the field to critically examine the interview schedule and thereafter by asking a participant who met the inclusion criteria to comment on the content and format of the interview (Berg, 1995).

2.5.3 Data Collection

As suggested by Robson (1993), the following procedures were adopted during the course of data collection for this study:

- Once permission was obtained from the Human Research Ethics Committee to proceed with the study, two speech therapists who had been trained to use the Lidcombe Programme and who used the Programme in its entirety were approached to ask if they had any participants, who based on the inclusion criteria were eligible for participation in the study.
- Once the therapist had identified possible participants, each participant's mother/caregiver was phoned by the relevant therapist and asked if they would be prepared to participate in a study. If the mothers/care-givers agreed to participate, the therapist then asked permission for their phone numbers to be given to the researcher. Only once this permission had been granted, did the therapist give the participant's phone number to the researcher. In this way, their right to autonomy was protected.
- The researcher then phoned each potential participant and explained in further detail what the study entailed. During the explanation of the study, the researcher asked permission to access each child participant's therapy file including case history information and all scores recorded throughout the duration of therapy. The information from the files was used to corroborate information obtained from the parental interviews.
- Upon participants' agreement to participate in the study, arrangements were made for personal meetings with the parents and the children at places most convenient to the participants in order to complete the interviews, %SS and severity ratings.

2.6 DATA ANALYSIS

Both qualitative and quantitative analyses were conducted.

2.6.1 Quantitative Data Analysis

2.6.1.1 Percentage of syllables stuttered and severity ratings

As part of the protocol of the Lidcombe Programme is to record %SS and a severity rating at every session and each of these participants had previously attended therapy with a clinician who administered the Lidcombe Programme, the researcher accessed the %SS and the severity rating scores obtained at the initial assessment and at the termination of therapy from the respective clinician for each participant who agreed to participate in the study.

The researcher then obtained a %SS and severity rating score in two situations i.e. when the child interacted with his/her mother and when the child talked to the clinician. Thereafter, the scores were averaged and then compared with the results of those recorded at the initial assessment and termination of therapy using the Wilcoxon signed rank test (Neter, Wasserman, Whitmore, 1988).

2.6.2 Qualitative Data Analysis

2.6.2.1 Interview

While descriptive statistics, the purpose of which is to arrange, summarize and represent quantitative information in manageable forms, was used to analyze the closed-ended questions posed during the interview (Babbie, 1995; Howell, 1999), content analysis was used to analyse the open-ended questions. Content analysis is the method by which a set of categories or themes are identified and the researcher then counts the number of instances that fall into each category (Silverman, 2000). Rosenthal and Rosnow (1996) refer to content analysis as comprising the objective, systematic strategy of decomposing messages and then evaluating their contents in order to reveal specific characteristics.

Thus, the content of the answers were carefully studied by the researcher and the themes expressed by each participant were analyzed using an inductive approach. As Berg (1995) explains, an inductive approach is one in which the researchers immerse themselves in the data in order to extract themes or dimensions which appear meaningful to the participants. Content analysis is advantageous because it is expedient and efficient in its use of available materials. However, the disadvantages include the risk of subjectivity and the amount of tedious work involved (Polit & Hungler, 1991). In order to reduce subjectivity and enhance the “trustworthiness” of the analysis, an independent rater was asked to check the categorization of themes (Titscher, Meyer, Wodak & Vettal, 2000). Once agreement was reached between the researcher and the independent rater, themes and sub-themes were quantified.

2.6.3 Trend analysis based on the quantitative and qualitative results

Efforts were made to identify any trends from the findings in respect of %SS, SR scores and data elicited from the interviews with the parents.

2.7 SUMMARY OF CHAPTER

The main intention of this chapter was to describe the research design and methodology. Thus, the aims, research participants, instrumentation, research protocol and methods of data analysis were discussed. Ethical issues as well as validity and reliability aspects of the study were also reviewed. The following chapter presents and discusses the data that were collected through the use of interview schedules, %SS and SR of participants’ stuttering.