

CHAPTER THREE

RESULTS

The main purpose of the study was to establish long-term results and maintenance of fluency using the Lidcombe Programme. Nine participants were recruited, ranging in age from 6 to 11 years, who had undergone therapy using the Lidcombe Programme during the previous 2 to 6 years. The researcher evaluated each participant's speech in two different speaking situations and an interview with the child's parents was conducted to assess the parent's views of their child's speech since the termination of therapy. The findings are presented in accordance with the secondary objectives and in respect of the quantitative and qualitative analyses of the data.

3.1 QUANTITATIVE ANALYSIS

3.1.1 Recordings of speech samples

Conversational speech samples were audiotaped of approximately 40 minutes of interaction between the participants and their mothers and between the participants and the researcher. The general protocol for the speech sample collection when talking to the researcher comprised several standard, open-ended questions which were posed to the child (Appendix G) including questions about school, movies, television, hobbies, pets and cousins, while a picture description task and picture absurdities were used to facilitate speech between mother and child. Speech samples (an example of which is displayed in Appendix H) typically consisted of 200 to 300 syllable samples which according to the literature is sufficient for a representative speech sample (Conture & Kelly, 1991; Harrison & Onslow, 1998; Lincoln & Packman, 2003; Yairi, 1999; Yaruss, 1997).

Table 3.1 – Comparison of %SS in two situations (N=9)

Participant	%SS when talking to the researcher	%SS when talking to participant's mother	Average
1	2	2.5	2.25
2	2	2	2
3	1	1	1
4	0	0	0
5	0	0	0
6	5	4	4.5
7	0	0	0
8	1	1	1
9	0	0	0

The percentage syllables stuttered (%SS) for individual participants in the two speaking situations are displayed in Table 3.1. It is apparent that data trends were similar for both speaking situations which is similar to findings from Lincoln and Onslow's (1997) study which examined maintenance of fluency 2 years post-treatment and onward. The mean and median %SS for all the participants when talking with the researcher were 1.22 and 1.00 respectively (range: 0 to 5) and the mean and median %SS for all the participants when talking with their mothers were 1.17 and 1.00 respectively (range: 0 to 4).

It should be noted that the difference between the mean and median may have been influenced by the results from participant number 6, which were substantially higher than the results for the rest of the participants in the sample as the median is not as sensitive as the mean to extreme values.

Table 3.2 - %SS measures for participants at three points in time (N=9)

Participant	Pre-treatment*	Post-treatment **	At time of the study***
1	%SS = 8	%SS = 1	%SS=2.25
2	%SS = 12	%SS = 1	%SS=2
3	%SS = 11	%SS = 1	%SS=1
4	%SS = 4.5	%SS = 1	%SS=0
5	%SS = 10	%SS = 1	%SS=0
6	%SS = 6.5	%SS = 0.5	%SS=4.5
7	%SS = 10	%SS = 0	%SS=0
8	%SS = 9	%SS = 1/2	%SS=1
9	%SS= 30	%SS = 4	%SS=0

* p = 0.00195 when comparing pre-treatment scores to scores at time of study

** p = 0.00795 when comparing pre-treatment scores to post-treatment scores

*** p = 0.4375 when comparing post-treatment scores to scores at time of study

As is apparent in Table 3.2, treatment appeared to be effective for all participants immediately post-treatment as there was a marked decrease in stuttering for all participants as measured by %SS from pre-treatment scores. This finding was confirmed by the Wilcoxon signed rank test, as the p-value when testing for a decrease between pre-treatment %SS and post-treatment %SS was 0.00195 which is highly significant. This finding allows one to reject the null hypothesis - on the basis of this sample (H_0 : The decrease in median %SS from pre-treatment to post-treatment is zero) at most commonly used significance levels and allows one to accept the alternative hypothesis (H_1) that a decrease in stuttering was detected.

When using the Wilcoxon signed rank test to measure whether the %SS had increased from post-treatment scores to those obtained at the time of the study, the p-value was 0.4375, thus one fails to reject the null hypothesis (H_0 : The increase in median %SS from termination of therapy to the time of this study is zero) at most commonly used significance levels and allows one to conclude that there was insufficient evidence – on the basis of this sample – of an increase in the median %SS measure after the termination of therapy.

Thus, the statistical test failed to detect a statistically significant median increase in median %SS over the interval between the termination of therapy and the time of this study. Hence, no signs of relapse were detected.

When further analysing these data, it is apparent that most pre-treatment %SS scores were substantially higher than 4% and virtually all post-treatment scores were at or below 1% except for participant 9 who presented with an extremely high %SS pre-treatment i.e. 30% and compared to the 30% obtained a low %SS post-treatment i.e. 4%. Onslow et al. (1994) note that less than 1% of stuttering is generally considered by clinicians to be an excellent treatment outcome.

These gains were retained for all children post-treatment except for participants 1, 2, 6 and 8 with participant 8's %SS increasing by only 0.5%SS. However, even though treatment appeared to be less effective for participants 1, 2 and 6, the %SS still remained lower than pre-treatment scores. It should be noted that no child presented any of the secondary behaviours which were listed on the check-list of potential visual secondary behaviours (Refer Appendix A). This finding implies that the children had maintained the reduction of stuttering which they achieved immediately post-treatment and did not experience any relapses or worsening of stuttering symptoms which has been reported with so many adults following stuttering therapy (Hayhow, Kingston & Ledzion, 1998; Van Riper, 1992).

Furthermore, the Wilcoxon signed rank test revealed a significant decrease in %SS between pre-treatment scores and scores recorded at the time of the study as all %SS recorded at the time of the study were lower than those recorded pre-treatment ($p = 0.00195$). Thus, all of the children demonstrated a definite decrease in stuttering at the time of the study compared to pre-treatment scores.

3.1.2 Reliability

The inter-judge reliability score and intra-judge reliability score were 100% and 90% respectively and are in agreement with Riley's (1994) recommendation that for research purposes an intra judge reliability score obtained should be at least 85%. To ensure intra-judge reliability 10 percent of the assessment recordings were selected for inter-judge reliability and intra-judge reliability analysis four months after the original analysis.

3.1.3 Stuttering Severity Measure Scale

As depicted in Table 3.3, all parents gave their children a rating of above 5 for their speech pre-treatment on a scale with 0 indicating no stuttering and 10 indicating very severe stuttering. Immediately post-treatment, all parents gave their children scores below 4, thus all parents noted an improvement in their child's speech after attendance at therapy while 8 out of 9 mothers reported that their child's speech had improved since the termination of therapy and one mother (Participant 4) reported that her child's speech behaviour had remained the same.

Table 3.3 – Severity rating for participants given by mothers (N=9)

Participants	<i>Pre-treatment*</i>	<i>Post-treatment**</i>	<i>At the time of the study***</i>
1	SR = 8 (7)	SR = 0 (0)	SR= 0
2	SR = 9 (9)	SR = 2 (0)	SR= 0
3	SR = 5 (4)	SR = 2 (1)	SR= 1
4	SR = 9 (8)	SR = 2 (1)	SR= 2
5	SR = 6 (9)	SR = 2 (4)	SR= 0
6	SR = 6 (5)	SR = 4 (0)	SR= 2
7	SR = 8 (8)	SR = 3 (0)	SR= 1
8	SR = 6 (4)	SR = 2 (2)	SR= 2
9	SR = 8 (6)	SR = 3 (2)	SR= 0

Rating given by mothers retrospectively

Rating given by mothers at the time of the study

* p = 0.00195 when comparing pre-treatment scores to scores at time of study

** p = 0.00195 when comparing pre-treatment scores to post-treatment scores

*** p = 0.9922 when comparing post-treatment scores to scores at time of study

When using the Wilcoxon signed rank test to measure whether the median SR score differed between pre-treatment and post-treatment, the p-value obtained was 0.00195. Thus, one may reject the null hypothesis (H_0) at most commonly used significance levels and accept the alternative hypothesis (H_1) - on the basis of this sample - that a decrease in the median severity rating score was detected.

The p-value obtained when measuring if there was an increased difference post-treatment to the time of the study was 0.9922, thus one fails to reject the null hypothesis (H_0 : The increase in median SR from termination of therapy to the time of this study is zero) at most commonly used significance levels and allows one to conclude that there is insufficient evidence – on the basis of this sample – of an increase in the median SR measure after the termination of therapy. Thus, the statistical test failed to detect a statistically significant median increase in the median severity rating score over the interval between the termination of therapy and the time of this study. Hence, no signs of relapse were detected.

It is interesting to note that if one tested for the null hypothesis (H_0) where the null hypothesis was that the median change in SR from termination of therapy to the time of this study was zero and the alternative hypotheses (H_1) was that the median change in SR from termination of therapy to the time of the study was negative i.e. the SR had decreased / fluency improved, one would reject the null hypothesis, at most commonly used significant levels, in favour of the alternative hypothesis (p value = 0.0078). Thus, there is evidence - on the basis of this sample - that the median SR rating decreased after the termination of therapy.

These results, therefore, suggest that the children in the study maintained the reduction of stuttering obtained in every day speaking situations which provides support for the data obtained in Australia (Onslow, Menzies and Packman, 2001) that the Lidcombe Programme eliminates stuttered speech in the medium and long term and is able to maintain these effects in the long-term (Jones, Onslow, Harris & Packman, 2000; Lincoln & Onslow, 1997; Onslow, Andrews & Lincoln, 1994; Onslow, Costa & Rue, 1990). It is

interesting to note that parents observed improvement in the period between post-treatment and the time of the study which may be attributed to the long lasting effects of therapy or the fact that as children mature, their speech generally improves. This finding i.e. further improvement of stuttering post Lidcombe Programme is not reported in other studies. Reasons may include the fact that most of the severity rating scores of these children immediately post treatment were not 0 compared to the severity ratings of those children in other studies (Lincoln & Onslow, 1997; Onslow, Andrews & Lincoln, 1994; Onslow, Menzies & Packman, 2001). Further investigation would appear to be necessary.

It is also apparent from Table 3.3 that except for participant 5, the ratings that the mothers gave their children retrospectively i.e. compared to the ratings that the mothers gave their children at the time of therapy, were one to two points worse i.e. they remembered their child's stutter as more severe than what they had rated their child's speech at the time of therapy. This finding may be attributed to the recall-effect and / or time-effect, that the mothers' perceptions of their children's speech may have changed with time.

Furthermore, the Wilcoxon signed rank test revealed a significant decrease in SR between pre-treatment scores and scores recorded at the time of the study as all SR scores recorded at the time of the study were lower than those recorded pre-treatment ($p = 0.00195$). Thus, all of the children demonstrated a definite decrease in the severity rating score at the time of the study compared to pre-treatment scores.¹

¹ It should be noted that the researcher is aware that there is a slight discrepancy between the %SS and SR scores for participant 1 and 2 since the %SS for participant 1 was 2.25 and participant 1's mother rated the SR score 1, while the %SS of participant 2 was 2 and the SR score that participant 1's mother reported was 0. This discrepancy may be attributed to the fact that the researcher asked the participants' mothers to give a SR score for the participants' speech in general and not based on one speech sample i.e. based on their conversation with their son/daughter when the researcher was present. Furthermore, this discrepancy is feasible due to the fact that the rater who was listening to the participants' speech is a speech therapist and was rating the participants' speech with a trained ear as opposed to the participants' mothers. Furthermore, 2%SS in the presence of no secondary behaviours may be considered as a normal dysfluency to a lay person.

3.2 QUALITATIVE ANALYSIS

3.2.1 Parent interview

In addition to the quantitative measures, a face-to-face parent interview was conducted. Interviews were conducted using a semi-structured interview schedule focusing on family background information as well as detailed data concerning the development of stuttering and attendance at therapy from the time of onset of stuttering to the time when the study was carried out. The interviews were conducted in the participants' homes with the mothers of each participant, as all the mothers served as the primary informants who administered the Lidcombe Programme. Supplementary information was obtained from the case history records from the participants' respective speech therapists.

3.2.2 Profile of participants

School

When the participants' school performance was probed, it was ascertained that only one child had repeated a Grade (participant 6) and that all the children were reported to be performing on average or above average levels at school. This finding differed from that of Guitar (1998) who noted that in terms of school performance, people who stutter are more likely than their non-stuttering peers to be a grade behind. However, one must interpret this finding with caution as it was based on parents' perceptions rather than objective measures of school performance thus introducing an element of bias which is a limitation of the study.

Furthermore, the issue of social desirability may have also been introduced. Rosnow and Rosenthal (1997) define social desirability as the tendency of an individual to respond in a way that elicits a favourable evaluation. Thus, the participants' parents might have provided answers they thought were desirable and that the researcher wanted to hear and not provided true responses, which is a further weakness of this study.

Social skills and personality

When the parents were asked to describe their children's social behaviour, three mothers (of participants 4, 5 and 6) reported that their children preferred playing with others than playing alone and six mothers (of participants 1, 2, 3, 7, 8 and 9) mentioned that their children enjoyed playing with others as well as playing alone. It is interesting to note that no parent reported that their child preferred playing alone and did not like playing with others. This finding was surprising since Nelson (1992) and Stewart and Turnbull (1997) report that low self-esteem and feelings of worthlessness and hopelessness which result from repeated failure and avoidance of speaking situations, can sometimes lead to social withdrawal and isolation. This result may be attributed to the fact that these children received speech therapy at a young age and therefore may not have experienced feelings of low self-esteem, worthlessness and hopelessness. However, results must be interpreted with caution as once again these results were based on reports from participants' parents and there may thus have been an element of bias involved.

In terms of personality, four parents (of participants 3, 5, 6 and 8) described their children as outgoing, one parent (of participant 7) described her child as reserved, one parent described her child as bossy and assertive (participant 2) and three parents (of participants 1, 4 and 9) described their children as initially shy and reserved but outgoing if they were around familiar people. This finding contrasts sharply with Murphy and Fitzsimons (1960) findings that people who stutter usually withdraw and become shy or serious since they may feel incapable of adjusting to the demands of reality. Once again, this result may be attributed to the fact that these children received speech therapy at a young age and therefore may have been better adjusted as therapy may have provided them with the tools to handle these situations. Alternatively, it is possible that because their stuttering was remediated at a young age, they did not develop a negative self-concept. One can also not rule out other possible influencing variables such as positive and accepting home and school environments which encouraged outgoing behaviour.

Description of the participants' speech

▪ *Before attending therapy*

According to the participants' mothers, 6 participants stuttered very severely and 3 participants (participants 3, 5 and 6) did not stutter severely before attending therapy. This information was considered important as parents' overall perceptions of their children's speech may differ from their children's actual speech stuttering behaviour.

According to the speech therapists' reports in Table 3.4, one child was classified as a mild to moderate stutterer, one as a moderate stutterer, 5 as a moderate to severe stutterers, one as a severe stutterer and one as a very severe stutterer. (Refer to Darley & Spriestersbach's (1978) classification of stuttering set out in Appendix I). Only 2 children presented with secondary behaviours and interjections, four children presented with associated neck and facial tension, blocks and / or associated rise in pitch, 4 children presented with prolongations and 6 children presented with repetitions. When asked how aware each child was that they were stuttering, 5 parents reported that their children were aware of the fact that they stuttered and displayed a certain amount of frustration and a reluctance to speak with one child even running away from situations when she blocked (participant 2). One mother told the researcher that her child said, 'I can't help it' while another child said 'I can't talk in class'. This finding is very interesting as the children were very young at the time and one would assume that they might not have been aware of their stuttering.

These findings are similar to those documented in the literature as it has been reported that early stuttering may cause distress in young children (Bloodstein, 1987; Ingham et al., 1993; Van Riper, 1982). Yairi (1983) reported that 18% of parents mentioned that their children were "bothered" by early stuttering while Onslow, Harrison and Jones (1993) reported that 30% of parents indicated that their preschool children who stuttered said things to suggest distress at stuttering. In the present study, 5 of the 9 children indicated feeling distressed about their stuttering.

It is not clear from these data whether negative feelings about early stuttering were chronic or whether they consisted of isolated episodes, as suggested by Bloodstein (1987). However, there seems to be little doubt that early stuttering was capable of causing significant distress to some of the children.

▪ **Since the termination of therapy**

Since the termination of therapy, four parents (of participants 1, 3, 5 and 9) reported that their children's speech had been completely fluent, two mothers (of participants 2 and 7) who described their children's speech as good with an occasional stutter (but reported that only they would notice this dysfluency as they were sensitive to any dysfluency), two mothers (of participants 6 and 8) reported that their children still stuttered while one mother described her child's speech as fast (participant 4). This finding is similar to that of Lincoln and Onslow (1997) who found that 29% of parents reported that they thought their child had begun to stutter again. However, it is difficult to compare this research project to that of Lincoln and Onslow's study (1997) because of the difference in sample size namely 9 versus 43 participants respectively.

When asked if the parent had noted any facial twitching, repetitions, blocks or prolongations, only one mother reported that she had observed some facial twitching (participant 4) while another mother reported that she had heard blocks and repetitions (participant 6). This finding is in contrast with Lincoln and Onslow's (1997) study which found that parents reported with varying frequency the presence of repetitions, blocks, prolongations and associated behaviours in their children's speech.

In terms of relapses, no parent reported any relapses more than six months post therapy. Only one mother (of participant 8) reported a relapse immediately after the termination of therapy. She claimed that one month after therapy was terminated, the family went on holiday and her son was bullied and subsequently began stuttering. Thus, upon return from holiday, the child resumed therapy for a period of three months, where he regained his fluency and was discharged. Subsequently, the child had not experienced any relapses.

Perception of the child's speech by the children themselves and significant others

When the parents were probed whether they had been asked by anyone if their child stuttered, two mothers (of participants 4 and 6) stated that their child's teacher had asked if their child had a speech problem and seven mothers reported that no one had ever mentioned the fact that their child might stutter. This finding is similar to Lincoln and Onslow (1997) who reported that in their study, 5% of parents reported being told by others that their child was stuttering.

In terms of the children themselves mentioning stuttering, 8 of the children had never mentioned stuttering, however one child (participant 4) had apparently asked his mother when he would be returning to therapy because he felt that sometimes he still stuttered. It is interesting to note that participant 4's mother reported that at times, her child displayed some facial twitches and prolongations and that the child's teacher asked if he had a speech problem. All these factors allude to the probability that this child was still stuttering at the time of the study. When participant 4's mother was probed about the status of her son's speech, she reported that her child tended to speak fast and she was not sure if he was using rapid speech as a compensatory strategy for stuttering. Thus, she was aware that her child's speech was not one hundred percent fluent which could suggest that the child's stutter has re-surfaced.

When the researcher arrived at each participant's home, she asked each parent what their child had been told as to the reason why the researcher had come to talk to their child. If the parent had told the child that the researcher had come to talk to the child because he/she stuttered when they were younger then the researcher asked the child if he/she remembered stuttering. However, if the parent did not mention stuttering to their child, then the researcher did not broach the topic of stuttering with the child but asked the parent if the child ever talked about stuttering or remembered stuttering.

The results were intriguing as 4 children claimed that they remembered stuttering, with one child saying that he didn't like stuttering (participant 1) and one child reporting (participant 9) that she thought stuttering was embarrassing. Five children claimed that they did not remember stuttering. It is interesting to note that of the 9 parents, 6 had told their children that the researcher was coming because they stuttered in the past and three parents did not mention stuttering to their children. Thus, one may deduce that the majority of parents felt quite at ease with the concept of stuttering and felt no need to hide the fact that the child had stuttered in the past.

Use of techniques

All the parents claimed that they used all the techniques taught to them by their therapist and that homework was completed daily. This factor is important because if the Lidcombe Programme is to be successful, one needs parents who are fully compliant. In this respect Guitar (2003, pg 36) notes that: "the Lidcombe Programme is a parent-centered approach which depends on the willingness and ability of parents to deliver treatment". When asked if any of the techniques were used since the termination of therapy, 6 mothers reported that there was no need to use any of the techniques, 3 mothers (of participants 1, 4 and 6) reported that they consistently praised their child's speech and two of these mothers (of participants 4 and 6) reported that if their child was dysfluent they asked their child to repeat what he or she had said.

These findings are consistent with those of Lincoln and Onslow (1997) who found that 44% of parents reported administering verbal feedback about stuttered and stutter-free speech to their child since therapy. However, Onslow et al. (1997) noted that no conclusions could be drawn from their study regarding the relationship between the durability of post-treatment stuttering reductions and continued parental vigilance, as some parents reported never providing verbal response contingent stimuli (RCS) to their children after the programme and some reported providing verbal RCS at different rates, ranging from daily to monthly.

Feelings about the Lidcombe Programme

In order to allow for all possible responses of the parents regarding perceptions of the Lidcombe Programme, an open-ended question was asked. Themes that emerged from the content analysis of responses are included in Table 3.5.

Table 3.5 – Perceptions of parents regarding the Lidcombe Programme (N=9)

Themes	Number of Participants	Example of responses reflecting themes
<u>Strengths:</u> High levels of satisfaction with the programme	7	<ul style="list-style-type: none">• ‘Good, simple logical programme’• ‘Worked amazingly’• ‘Excellent, brilliant’• ‘Fantastic, very efficient programme’• ‘Great, worked for my son’
Importance of collaboration with therapist	2	<ul style="list-style-type: none">• ‘C guided us through the programme’• ‘I worked so well with C’
Parental involvement in therapy	4	<ul style="list-style-type: none">• ‘I liked the fact that you get involved with therapy – unlike any other type of therapy’• ‘It’s a practical way of helping your child’• ‘Great bonding experience with my daughter’
Openness	1	<ul style="list-style-type: none">• ‘I liked being open with my child’
<u>Weaknesses:</u> Lack of transparency regarding stuttering	1	<ul style="list-style-type: none">• ‘The programme was not open enough’
Lack of models provided	1	<ul style="list-style-type: none">• ‘I felt sometimes you need to give examples’
Time consuming	2	<ul style="list-style-type: none">• ‘It’s very time consuming as you have to work daily with your child’• ‘The programme could be a problem if you work full day’

Note: Responses do not total 9 as some participants furnished more than 1 answer

Strengths

High levels of satisfaction with the programme

All participants expressed satisfaction with the programme with seven participants expressing high levels of satisfaction as reflected in the verbatim quotes.

Importance of collaboration with the therapist

Two of the participants' mothers (participants 2 and 3) mentioned that they enjoyed working with the therapist and emphasized the importance of collaborating with her. This theme would appear to be a unique feature of the Lidcombe Programme and is confirmed in the literature by Packman (2003) who notes that with the Lidcombe Programme, the clinician and parent work as a team, making joint decisions about how the programme proceeds, and mutual respect and cooperation are required in order to achieve successful collaboration.

It is interesting to note that in Australia, parents reported that as a result of the Lidcombe Programme, they had noticed that their children had become more confident when speaking with other people (Onslow, Attanasio & Harrison, 2003) – a finding that no parent in the South African study reported. A limitation of the present study is that this theme was not probed and possibly needs to be investigated by future researchers.

Parental involvement in therapy

Several of the participants' mothers (participants 2, 4, 6 and 7) noted that a strength of the programme was that unlike any other therapy programme that they had encountered, the Lidcombe Programme provided them with the opportunity of actually becoming involved with therapy. Thus, the parents felt that they aided their child's progress and consequently felt competent and confident in the therapy process.

Openness

One mother (of participant 8) reported that she enjoyed the fact that the programme allowed her to be open with her child and praise her child's speech. However, in juxtaposition to this view, another mother reported that she did not find the programme

open enough as it did not encourage her to actually talk about the child's stuttering to the child. She felt that the programme could be enhanced if she was honest with her child about stuttering and explained to her child what stuttering meant.

Weaknesses

In terms of weaknesses of the programme, 5 parents reported that they did not note any limitations in the programme, while 4 parents noted some weaknesses.

Lack of models provided

One mother (of participant 6) expressed the view that examples and models should be given to teach the child what was meant by fluent speech.

Time consuming

Two mothers (of participants 7 and 9) noted that the Lidcombe Programme was very time consuming which may be a problem if one is very busy. This limitation is mentioned in the literature as one of the drawbacks of the Lidcombe Programme, as it is based on a parent-centred approach which depends largely on the willingness and ability of parents to deliver the treatment (Guitar, 2003). Thus, those parents who are too busy or too distracted may not be able to meet the demands of this approach, which requires parents to conduct daily sessions with their child in addition to rating their child's speech on a daily basis. If these components of the Lidcombe Programme are not adhered to, the outcome of the programme is likely to be compromised.

This limitation is an important factor to take into account when considering the suitability of using the Lidcombe Programme with the broader South African community as in many rural settings in South Africa, mothers and care-givers live away from their children or work all day and may therefore not have time to spend with their children practicing the speech techniques which would probably have a direct impact on the effectiveness of the Lidcombe Programme.

Ease or difficulty in administering the Programme

Seven mothers reported that the programme was easy to administer while one mother reported that she found the programme difficult to administer, as she reported that she was not intrinsically a very orderly, organised and disciplined person and the programme demanded that one work with the child on an ongoing basis and keep records of SR scores. A further two parents (of participants 3 and 4) reported that they initially felt foolish praising their child's speech with reference to the terminology 'good talking' but they soon became accustomed to this practice and praising became spontaneous and enhanced parenting skills.

Additional Comments

Four parents reported that they had no additional comments, four parents (of participants 1,2,3 and 9) reported how amazed and impressed they were with the programme and one parent stated that she was not sure about her child's fluency as he tended to talk too fast which she thought might be a compensatory strategy for stuttering.

3.3 TREND ANALYSIS BASED ON QUANTITATIVE AND QUALITATIVE RESULTS

As there were only nine participants in this study results were not generalizable and it was therefore considered more valuable to regard each participant as a single case study and compare participants to each other. The researcher therefore divided the nine children into three different groups based on the level of fluency that each participant's mothers reported and then attempted to identify trends, similarities and / or differences within each of the three groups and then between the groups.

The three groups consisted of:

- ***Participants with fluent speech*** (Participants 1, 3, 5 and 9 – Table 3.6)

These mothers reported that their child never stuttered and that their child's speech was fluent.

- ***Participants with insignificant dysfluencies*** (Participants 2 and 7 – Table 3.7)
These mothers reported that their children might experience slight dysfluency when they were tired but the dysfluency was not significant and only they (as mothers) would classify this dysfluency as stuttering.
- ***Participants who still experienced dysfluencies*** (Participants 4, 6 and 8 – Table 3.8)
The remaining two mothers reported that their children still stuttered but not as severely as when they originally began therapy while one mother reported that her child spoke fast which she thought might be a compensatory strategy for stuttering.

Participants with fluent speech (Participants 1, 3 5 and 9 – Table 3.6)

If one analyses those children who were perceived as completely fluent, it is apparent that possible trends within this group included the following:

- There was no family history of stuttering.
- All these children displayed repetitions.
- No child attended speech therapy before participating in the Lidcombe Programme
- All the children were reported to like playing alone as well as with others.
- Three out of the four children began speech therapy at a young age i.e. between 2 years 5 months and 3 years.
- Three out of the four children began stuttering at a young age i.e. between 2 and 2 years 5 months except for participant 9.
- Three mothers described their child's stuttering as not severe and one mother described her child's stuttering as severe.
- Three of the children were classified according to their speech therapist as moderate to severe stutterers and one child was classified as a very severe stutterer.
- Only one mother continued using a technique – praising her child's speech - which she reported had become habitual and she felt enhanced her role as an effective mother.
- Three out of the four children were male which provides support for the findings of Kloth et al. (1999) and Van Riper and Emerick (1992) that more males tend to stutter than females and that the ratio for male to female is 3:1.

No trends could be concluded from the following data within this group as the results were ambiguous and further research on a larger sample needs to be conducted

- Two out of the four children presented with neck and facial tension.
- In terms of the effect of stuttering, two children displayed a decreased desire to talk and became frustrated while stuttering, while two children did not seem to be aware of their stutter.
- Two children reported that they remembered stuttering while two children said that they did not remember stuttering.
- The %SS at initial assessment ranged from 8 to 30% and SR ranged from 4 to 10.
- The %SS at termination of therapy ranged from 1 to 4% and SR ranged from 0 to 2.
- The number of sessions ranged from 4 to 14.

Participants with insignificant dysfluencies (Participants 2 and 7 – Table 3.7)

Possible trends within this group included the following:

- There was no family history of stuttering.
- They attended previous speech therapy (indirect speech therapy) which was reported to be successful for both children for a short period of time i.e. 2 months and then stuttering returned.
- Both mothers when asked to describe their children's speech reported that their children stuttered severely, became frustrated when they stuttered and showed a decreased desire to talk.
- Both children experienced secondary behaviours, silent blocks, interjections, prolongations and a rise in pitch and intensity.
- Both children remembered stuttering.
- Both mothers reported that they had not used any techniques since the termination of therapy.
- Both mothers reported that their children still stuttered when they were tired. Interestingly, it was only the parents and not 'other people' who had noticed that their children experienced some dysfluency on occasion. Lincoln and Onslow (1997) also found that some parents still claimed that their children stuttered despite the fact that they had not been told by anyone else that their children stuttered. They suggest that

these parents are possibly more sensitive to stuttering because they had participated extensively in the treatment programme. There is also the possibility that some people may feel that it is insensitive to draw attention to dysfluent speech and therefore did not comment if they noted any stuttering.

- The %SS at termination of therapy was 0 and 1 and the SR was 1 for both children.
- The %SS for both children at the time of the study was 2% and SR was 0.

No trends could be concluded from the following data as the results were ambiguous and further research on a larger sample needs to be conducted:

- One child was classified as a severe stutterer and the other child was classified as moderate to severe stutterer according to the speech therapist's report.
- The %SS at initial assessment were 10% and 12%, while the SR were 8 and 11 respectively.
- One child attended two sessions and the other seven sessions.

Participants who still experienced dysfluencies (Participants 4, 6 and 8 – Table 3.8)

If one analyses those children who still experienced dysfluencies at the time of the study, it is apparent that possible trends within this group included the following:

- There was a family history of stuttering. (Two fathers stuttered and one mother stuttered).
- All three children received speech therapy at a later age compared to those children who were fluent i.e. they received therapy at age 3 years 5 months to 4 years 3 months as opposed to receiving therapy between the ages of 2 years 5 months and 3 years.
- When asked to describe their child's speech, two mothers reported that their children stuttered very severely and were not able to say one word fluently while the other mother described her child's stutter as not severe.
- Two children reported remembering that they had stuttered, with one child even asking his mother when he would be returning to speech therapy because he still stuttered. It was also noted that two out of three mothers were asked by their child's teacher if their child experienced a speech problem.

- Two out the three mothers used a technique and praised their child's fluent speech and reported asking the children to repeat words if the children were dysfluent.

No trends could be concluded from the following data as the results were ambiguous and further research on a larger sample needs to be conducted:

- One child had been to a previous speech therapist.
- The %SS at initial assessment ranged from 4.5 to 11% and the SR ranged from 4 to 9.
- The %SS at termination of therapy ranged from 0.5 - 1% and SR ranged from 1 to 2.
- The %SS at the time of the study ranged between 0 to 4.5% and SR was 2 which, in light of their parents' reports of their dysfluency, did not appear to be a true reflection of their everyday speech. Basing results on only one sample taken at one point in time is known to be a limitation of stuttering research.
- The three children attended 7, 14 and 22 sessions respectively.

3.4 SUMMARY OF CHAPTER

The purpose of this chapter was to present the results in respect of the percentage syllables stuttered (%SS), severity rating scores (SR), the data that were elicited through interview schedules as well as the trend analysis based on a combination of the quantitative and qualitative findings.

CHAPTER FOUR

DISCUSSION

4.1 DISCUSSION OF TRENDS

From a qualitative inspection of the aforementioned results, the following trends can be deduced:

Time when children begin therapy

One of the most notable trends was that beginning therapy at a younger age might predict better outcome with the Lidcombe programme as 4 out of the 6 children who were reported to be fluent, began therapy between the ages of 2 years 5 months and 3 years while the three of the children who were dysfluent began therapy between the ages of 3 years 5 months and 4 years 3 months. Hence, there appeared to be an association between time that elapsed from the start of treatment and maintenance of the fluency as the younger the children were when they began therapy, the more success was apparent with maintenance of the fluency. This possible trend requires further research but has important clinical implications as it emphasises the importance of early communication intervention – a theme that has been highlighted in the literature (Blackman, 2003; Fair & Louw, 1999; Farran, 2001; Guralnick, 1997; Rossetti, 2001; Thurman, 2003).

The idea that the longer the time since onset the more intractable the condition, is 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). However, these results are in contrast with those of Jones, Onslow, Harrison and Packman (2000) who found that delaying treatment for a period after the onset of stuttering did not jeopardize responsiveness to treatment with the Lidcombe Programme as their study reported that a short delay before beginning treatment appeared not to make the condition less tractable.

A possible genetic link

Another notable trend and a finding that was not surprising was that those children who had a parent who stuttered exhibited some form of stuttering 2 to 6 years post termination of therapy. This finding is consistent with research conducted by Kloth et al. (1999) who state that children with a family history of chronic stuttering have an increased risk that their stuttering will persist and Mannson (2000) who reports that there is a strong familial factor in stuttering. Kloth et al. (1999) further found that children who recovered from stuttering had family members who also recovered from stuttering. This trend has implications for assessment in that a client's family history of stuttering should be probed and carefully evaluated as it may be a predictor of maintenance success and have possible prognostic value.

Higher %SS at the initial assessment

An intriguing trend that was noted in present study was that the children who presented with a higher percentage of syllables stuttered at the initial consultation showed better maintenance of fluency than the other children (those children who were fluent, initially began therapy with a %SS of between 8 to 30% - while those who were unable to maintain their fluency began speech therapy with a %SS of between 4 and 9%). This trend therefore suggests that the higher %SS stuttered at the initial consultation, the better the chance of maintaining the fluency achieved during therapy.

This finding is in contrast with those of Jones et al., (2000) and Starkweather and Gottwald (1990) but in agreement with Riley (1981) and Van Riper (1971) who reported that the initial frequency was not a predictor of chronicity but actually the initial level of severity in the recovered groups was higher than that of the persistent group. However, Yairi (1999) found that the initial level of dysfluency did not distinguish between the recovered and persistent groups since they reported that the children who recovered exhibited slightly more dysfluencies on initial evaluation. Hence, this finding is in agreement with Wingate (1976) who reports that that the level of severity does not necessarily limit the expectation of recovery in any particular case.

Use of the techniques post-therapy

Only one out of the 6 mothers who reported that their child's speech was fluent mentioned that they continued using a technique post therapy. This finding differs from that of Lincoln and Onslow (1997) who reported that most parents continued to administer the treatment i.e. use the techniques taught to them, after regular contact with the speech therapist had ceased. One may therefore deduce that perhaps continuing to use a technique is not necessarily a prerequisite for the maintenance of fluency for these children or alternatively one may speculate that if the child had received speech therapy at a young age, began stuttering at a young age and had not been for previous speech therapy then continual use of a technique might not be needed.

Treatment time

No trends were apparent when attempting to analyze the amount of treatment time for each of the three groups (i.e. participants with fluent speech, participants who experienced insignificant dysfluencies and participants who still experienced dysfluencies at the time of the study) which may be attributed to the small number of participants in the study. The number of sessions for those children who were fluent ranged from 4 to 14, the number of sessions for the children who stuttered occasionally ranged from 7 to 22, while the number of sessions for those children who were dysfluent ranged from 7 to 22.

When surveying the literature, it appears that an association has been made between treatment time and %SS. For example, Jones et al. (2000), Starkweather and Gottwald (1990) and Yairi and Ambrose (1992) found that there was a positive relationship between the severity of stuttering and time required for treatment as they deduced that stuttering severity at the first treatment session was a predictor of the time required for treatment and that children with a more severe stutter generally required more treatment time.

Jones et al. (2000) found that medians of 9 and 12 clinic sessions were needed for less and more severe stuttering respectively and that children who had been stuttering longer were 38% less likely to take 10 or more clinic visits to reach the maintenance stage. However, with regard to the present study, no trends were apparent in terms of the median number of sessions as some children with less %SS required longer treatment time than those with a higher %SS (Refer to Table 4.1). For example, participant 6 who was classified as a moderate stutterer began therapy with a %SS of 6.5 and required 22 sessions of therapy versus participant 9 who was classified as a severe stutterer, began therapy with 30%SS and required only 8 sessions.

Table 4.1 – Number of sessions, classification and outcome (N=9)

Participant	Classification	Sex	Number of sessions	Outcome
4	Mild to moderate	M	7	Still stuttering
6	Moderate	M	22	Still stuttering
7	Moderate	M	7	Insignificant stuttering
1	Moderate to severe	M	4	Fluent
3	Moderate to severe	M	14	Fluent
5	Moderate to severe	M	13	Fluent
8	Moderate to severe	M	14	Still stuttering
2	Severe	F	22	Insignificant stuttering
9	Very Severe	F	8	Fluent

The association between time of onset of stuttering and the persistency of stuttering

The available data appear to be somewhat ambiguous as to whether children whose stutter persisted started stuttering at a later age compared to those children who ceased stuttering. Among those children who were completely fluently or nearly fluent, 4 out of 6 children began stuttering between the ages of 2 years and 2 years 5 months with two children beginning to stutter at ages 3 and 4. When analyzing the children who were not fluent, two children began stuttering at 3 years and 3 years 5 months and one child began stuttering at 2 years 5 months.

It is of interest that Yairi, Ambrose, Paden, and Thorneburg (1996) found that the onset of stuttering was later for those children whose stuttering persisted than for those whose stuttering remitted. Thus, age of onset has been found to be related to stuttering chronicity but no definite trends were apparent in this study which once again may be attributed to the small sample size.

Gender and maintenance of fluency

In terms of the relationship between gender and maintenance of fluency, no trends could be deduced due to the limited sample size and the fact that only two of the participants were girls. However, both females were reported to be fluent with one female presenting with occasional but insignificant dysfluency. This finding provides support for past research that suggests that females tend to have a better chance of recovery than males as stuttering seems to be more persistent in males (Ambrose, Cox & Yairi, 1997; Kloth et al., 1999; Mannson, 2000; Seider, Glastein & Kidd, 1983; Yairi, 1999; Yairi et al., 1996; Yairi & Ambrose 1992). However, this finding is in contrast with results obtained by Jones et al. (2000) who reported that there was no significant difference in recovery between boys and girls in their study. It is important to note that the females in this study did not have a family history of stuttering, which might have influenced their potential for the maintenance of fluency.

Satisfaction with the Lidcombe Programme

Overall, all parents indicated satisfaction with the results from the Lidcombe Programme and regarded the Programme as successful as they noted a reduction of stuttering in their child's speech in everyday speaking situations compared to when therapy first began (notwithstanding the fact that some of the mothers reported some dysfluency at times) and reported maintenance of this fluency.

This finding was confirmed by the Wilcoxon signed rank test which revealed a significant decrease in %SS between pre-treatment %SS and %SS recorded at the time of the study ($p = 0.00195$) as all %SS recorded at the time of the study were lower than those recorded pre-treatment. Four participants' %SS obtained at the time of the study compared to immediately after termination of therapy had increased slightly although this increase was not statistically significant in this sample ($p = 0.4375$).

Features common to those children who maintained fluency

In summary, trends that were evident for those children who maintained fluency after therapy, included the following:

- There was no family history of stuttering.
- They never received prior speech therapy.
- They attended therapy at younger ages.
- They initially presented with a severe %SS.
- They were female.

However, in critically evaluating these findings, one needs to be aware of limitations inherent in the research design and analysis of the data.

4.2 DISCUSSION OF LIMITATIONS OF THE STUDY

There are a number of limitations with regard to the sample. Firstly, the sample size was small which prevents the drawing of any definitive conclusions and generalisation of the results to the broader population of pre-school children who stutter. Secondly, all participants were white and originated from a specific socio-economic background thus further limiting the generalizability of the findings.

With regard to obtaining speech samples, the researcher is aware that it would have been preferable to have obtained two or three ratings of the participants' speech on various occasions in different settings as stuttering is cyclical and may be influenced by external variables. However, when probed, the parents indicated their reluctance to allow the researcher to engage in multiple observations of their children. Thus, it is important to take into consideration that this rating was based on two samples obtained on the same day and it is possible that there were variables that influenced the participants' speech on that particular day. Consequently, the scores obtained might not be a true reflection of the children's capabilities and overall speech. For this reason, the researcher attempted to overcome this limitation by obtaining supplementary information from each participant's mother about the child's speech in order to obtain a more holistic view.

Even though efforts were made 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 several of Breakwell's (1997) recommendations during the interview, the issue of social desirability and bias may have been introduced when the participants' school performance and aspects of their personality were probed and may have affected the parents' answers. Furthermore, when parents were asked to rate their children's speech at three points in time, this measure was based on the parents' memory and recall, which might have been subject to error.

With regard to the use of the Lidcombe Programme by therapists, to the best of the researcher's knowledge, this programme has only been used in its entirety by two speech-language pathologists in South Africa rather than a range of therapists. Hence, it was not possible to determine whether improvement in stuttering behaviour might have been attributed to the "good therapist effect" rather than the actual therapy programme. In addition, it was difficult to control for confounding variables such as maturation, impact of school attendance, spontaneous fluency and other factors within the family life of the child that might have influenced fluency.

In terms of the rating of the speech samples, one should note that the original rater who rated seven of the participants' speech, conducted the therapy programme. Hence, it is possible that she may have had a vested interest in the success of the programme, thereby influencing her ratings. In order to reduce this possible source of bias, the need for objectivity in rating was stressed.

Statistically, when measuring if there was any change in %SS and SR using the Wilcoxon signed ranked test, there are two cautionary factors that need to be considered. Firstly, the lack of evidence of a statistically significant increase/relapse in these measures does not necessarily imply that there was no increase/relapse in this population. Due to the relatively small sample size ($N=9$), the risk of a Type II error (failing to detect an increase in the sample when it is actually present in the population) cannot be ignored. Hence, it would be advisable that this research study be replicated with a larger sample.

The second factor to consider is that the lack of evidence of a statistically significant increase in stuttering/relapse may be due to the effect of the Lidcombe Programme but it may also be attributed to other confounding factors such as spontaneous fluency and/or maturation, over which this study had no direct control. Thus, future research should attempt to replicate the study using a control group as well as groups of children who undergo different therapy programmes for stuttering and then compare the results obtained for each group respectively.

Although the researcher acknowledges that 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 considered to be feasible because of the difficulties in obtaining a matched sample. Furthermore, the researcher was aware of the fact that ethical problems may militate against the use of a control group as the control group would be receiving no treatment which could violate the ethical principle of non-maleficence or doing no harm. By providing treatment from pre-school children who stutter, therapists could possibly prevent stuttering from becoming entrenched and impacting negatively on the quality of their future lives. Furthermore, it should be noted that the research design in fact allowed the sample to serve as its own control group.

4.3 SUMMARY OF THE CHAPTER

This chapter discussed the trends that emerged from an analysis of the quantitative and qualitative findings from the study. However, in critically evaluating these trends, it was necessary to consider the limitations inherent in the research design and analysis of the study.

CHAPTER FIVE

CONCLUSIONS AND IMPLICATIONS

The main conclusion that emerged from this study was that the Lidcombe Programme appeared to be successful with this particular group of participants as all of the children demonstrated a definite decrease in %SS and an improvement in SR scores following therapy compared to pre-treatment and most (except for one participant) had maintained the levels of fluency achieved post-treatment to the time of the study. In addition, all the parents expressed satisfaction with the programme. These findings provide further support for Onslow, Menzies and Packman's (2001) contention that the Lidcombe Programme may be a way of preventing childhood stuttering from becoming an intractable and debilitating disorder that continues into adulthood.

However, these conclusions need to be interpreted with caution as one needs to bear in mind the limitations discussed in the previous chapter. Nevertheless - despite those limitations - the study has implications for early communication intervention, for training of speech-language pathologists, for theory and for future research.

5.1 IMPLICATIONS FOR EARLY COMMUNICATION INTERVENTION

The current research findings indicated that participants who had undergone the Lidcombe Programme had maintained the fluency they achieved immediately post-treatment and some children's fluency had even improved further. These results have important clinical implications for speech therapists and for the field of speech pathology because they suggest that the Lidcombe Programme is an effective early communication intervention.

5.2 IMPLICATIONS FOR THE TRAINING OF SPEECH-LANGUAGE PATHOLOGISTS

One should note that data from the present study are based on those participants who were treated by clinicians who were trained in the administration of the Lidcombe Programme and who used all aspects of the programme. However, as at the time of the study, very few clinicians had been trained in the Programme only 9 participants participated in the study. In view of this fact and in view of the fact that the present study demonstrated success with this form of speech therapy, it would seem important for greater numbers of speech-language pathologists to be afforded the opportunity or receive training in the Lidcombe Programme. Thus, future training with the Lidcombe Programme should be encouraged for qualified speech therapists and incorporated in university training.

5.3 IMPLICATIONS FOR THEORY AND FUTURE RESEARCH

Researchers and therapists throughout the world have focused increasingly on the importance of early intervention to enhance the development of infants, toddlers and young children (Blackman, 2003 & Thurman, 1997). Most agree that the early years constitute a unique opportunity for influencing child development and should be used to maximize long-term benefits for all concerned (Fair & Louw, 1999; Farran, 2001; Guralnic, 1997; Rossetti, 2001). The present study provides additional knowledge of pre-school children who stutter in South Africa and contributes in some small measure to the growing body of literature regarding the long-term and short-term effectiveness of early intervention for stuttering with operant methods internationally and nationally. It is hoped that this study may provide a springboard for future research.

A limitation of this study and of the application of the Lidcombe Programme in South Africa generally is that little, if any, research has been conducted on the application of the Lidcombe Programme on children from other cultures and / or who live in rural areas. Hence, this aspect would be an interesting and important topic for future research in the South African context.

South Africa is a multicultural and multilingual society and to the best of the researcher's knowledge, the Lidcombe Programme has only been properly implemented with middle-class, white, English-speaking children. For historical reasons there are wide schisms between various groups in the South Africa as in the past people were divided by race, language, class and educational status. At present, the majority of therapists are female, educated, white and middle-class with little personal experience of the specific cultures, languages and problems of daily life confronting other sections of the population (Penn, 2000).

Thus, there may be a feeling of distrust between members of different racial, language, cultural and social groups due to South Africa's history of Apartheid. The Lidcombe Programme demands that the therapist and caregiver work together in a relationship of mutual trust which is impossible if the relationship between the caregiver and therapist is one of fear, subservience and resentment. Not only race but also variables such as the education and social status of the parent are likely to affect whether the Lidcombe Programme will be successful as these factors have a direct influence on the way in which a parent perceives and reacts to the clinician and vice versa (Marks-Wahlhaus, Girson & Levy, 2003). Hence, research needs to be undertaken to evaluate whether the Lidcombe Programme has been implemented with other population groups and the results of therapy.

A controversial issue arising from the notion of equal opportunities for everyone and the changing face of South Africa, is the need for further research related to the optimal language in which stuttering therapy should be conducted (Pickering, McAllister, Hagler, Whitehill, Penn, Robertson, McCready, 1998). There are eleven official languages in South Africa and probably as many unofficial ones. Many children grow up with a Xhosa speaking father, a Tswana speaking mother, attend an English medium school and have neighbours who speak several of the other languages. Thus, the dilemma emerges regarding what language to use for stuttering therapy.

For practical reasons, therapists usually conduct the formal therapy sessions in English, while the parents work at home with the child in the language of choice. This situation sometimes creates problems as children may prefer English as their first language is English, while the parents may be adamant that the child retain and use their parents' mother tongue. One also needs to ensure that the parent understands all the terms and instructions used in therapy when therapy is given in English as English is often the parent's second language (Marks-Wahlhaus, Girson & Levy, 2003).

Finally, an important area for future research is to investigate why some therapists report that they do not use all aspects of the Lidcombe Programme and report using only parts or mutated forms of the Programme. When the researcher was attempting to recruit potential participants from different therapists, one of the inclusion criteria was that the therapist needed to have used all aspects of the Lidcombe Programme. Many of the therapists who were contacted reported only using part or mutated forms of the programme. This finding may possibly be attributed to a lack of training or personal preference. Furthermore, the difficulty in generalising the results of the present study due to the small sample size, implies that similar studies be replicated with larger samples. Future research should also include studies that compare the results of different therapies to that of the Lidcombe Programme and incorporate a control group.

5.4 CONCLUDING COMMENT

It is vital for speech therapists to evaluate therapy as many lament the lack of long term data (Bloodstein, 1987; Lincoln & Onslow, 1997; Silverman, 1981). The effectiveness of a treatment programme for stuttering can only be established when reliable, valid, long term outcome information is available. Thus, it is essential for clinicians, researchers and caregivers to attempt to collate studies in order to establish the long term outcome of early intervention for stuttering (Lincoln & Onslow, 1997). The present study endeavoured to contribute to the body of research on long-term speech outcomes for preschool age children following an operant treatment programme for stuttering.

In conclusion, it is hoped that further studies will be completed on larger scales and with diverse cultures in order to enhance our understanding of “the oldest and most puzzling of all the speech disorders” - stuttering - which despite hundreds of scientific investigations and decades of sophisticated clinical scrutiny has defied and challenged researchers, clinicians and the great minds of the past for centuries (Van Riper, 1992).