DEVELOPING EFFECTIVE THERAPEUTIC STRATEGIES AMONG YOUNG ADULT STUTTERERS

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BY

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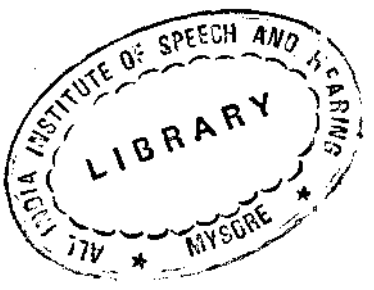

Dedicated
to my
parents

CERTIFICATE

I hereby certify that the thesis entitled DEVELOPING EFFECTIVE THERAPEUTIC STRATEGIES AMONG YOUNG ADULT STUTTERERS submitted by Shri Kiran Kumar Lai, Lecturer-cua-Speech Pathologist, ENT " Department, MLN Medical College, Allahabad, for the Degree of Doctor of Philosophy of the University of Mysore, is the product of bonafida research work carried out by hint at the Department of Clinical Psychology, All India Institute of Speech and Hearing, Mysore 570 006, India, under my guidance and supervision during the period 1986-1991.

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DECLARATION

I do hereby declare that the thesis which is baing submitted for the award of the Degree of Doctor of Philosophy in Speech and Hearing of the University of Mysore, is the result of an independent investigation carried out by me under the guidance of Dr. 3. Bharath Raj, Ph.D., Professor, Head, Department of Clinical Psychology, All India Institute of Speech and Hearing, Mysore 570 006.

I further declare that this thesis or part thareof has not basn submitted bafore to any other University for the award of any Degree.

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CHAPTER - I

I N T R O D U C T I O N

Speech is one faculty which sets man apart from all other living organisms, which makes him unique in his ability to think and communicate in language. Speech is a form of communication which man uses most effectively in interpersonal relationships. Through speech, he gives expression to his innermost thoughts, needs, ambitions, sorrows and joys. Even acceptance in social organisations depends on how compatible the individual is, how clearly he can express his opinions,how well he gets along-with people in the daily life situations. Speech directly affects the individual's personal adjustment.

Just as many other aspects of behaviour, like motor development, emotional development, social development etc., speech and language behaviour is also developmentally determined,, In other words, development of speech and language is a product of the two important fundamental processes namely maturation and learning.

A 12 to! 18 months old child understands and comprehends mere of other's speech than what he can himself express through speech. He iuses one word for many unrelated things or objects and repeats the same syllables or word sequences in an easy manner.

Between J24 and 30 months, the child does not understand many specifici words spoken by others but at the same time he develops functional equivalents of other's speech. There is an actior response to verbal request or instructions given by other people.

Sgocentric and socialised speech are found to develop during this stage.

Between 30 and 36 months, the comprehension of sentence structure, syllable sequences and prosody develops speedily. During this period, there is simultaneous development of language and motor coordination by which the child learns production of specific speech sounds of that language. That is, there is a progressive maturation of motor abilities of the child, whiich ultimately makes the child to gain mastery to produce different speech sounds. A remarkable fact about the acquisition ©f language is the speed with which a child acquires a language. This is common among all children. Mostly normal children arrive at the same grammar of a language within a brief span of time, with almost the same speed. There is not much Of conscious training for speech given to the children front the parents during the period of language development.

There are certain social and environmental factors which facilitate or hamper the learning of speech and language in the child. In the course of development the child acquires more and more words and becomes enthusiastic to use them. During such periods nonfluency in speech is not unexpected.o Almost all children are nonfluent on occasions. Such nonfluencies

give rise to concern among parents. They become anxious about their children's speech. And these parents unwittingly transfer their anxieties to their children.

This normal nonfluency of the child is mistakenly interpreted by thieir parents as stuttering. When a child becomes av$_a$re of parlental anxiety and apprehension in this regard, the child starts expressing and developing anxiety in anticipation of his speaking. Parents are most likely to misevaluate the nonfluencies of their children as stuttering. Such misevaluations only tend to produce anxiety and apprehension in the child.

As the child grows and experiences different kinds of situations, the specific anxiety reactions occurring with nonfluent speech becomes a strengthened habit pattern. Stuttering ha3 such a slow and gradual development that its specific time of onset is difficult to determine.

Speech is the highest form of integrated response of a human being.: Speaking in a social situation is a greater s~rain than Speaking in informal situations like at home, or at play etc., A child stutterer feels being trapped in social speaking situations. During this period, there is an increase of tension and anxiety in the child.

As the child reaches teen age, speech becomes more demanding in social situations. Stutterers are capable of clear thinking and formulation of ideas but when these have to be translated into speech they become a prey to undesirable emotions like, anxiety, apprehension, fear, etc., This is a crucial situiation for the stutterer. At this stage, stutterer's speech becomes disorganised whenever he attempts to speak. He experiences tension and anxiety which leads to interruption of his speech. With such repeated frustrating experiences, stutterers often develop deviant personality characteristics. The rhythm and fluency of speech are affected. That is, stuttering behaviour gets strengthened. This stuttering behaviour includes speech blocks either complete or incomplete with hesitation or repetition of initial sound or their combinations.

Very yoiung stutterers who are not emotionally mature and whose personality has to- be still developed and stabilised face a great deal! of difficulty in social speaking situations. Usually by the age of 15 to 16 years the personality of an individual tkkes a shape and optimal development would have occurred. At this age and in young adult stutterers social adjustment piroblems become more difficult and serious in terms of personal adjustment in family and society. Many of them during this Stage are passing through the phase of puberty. At this time there are several physiological and psychological

changes taking place. This also adds to the emotional problems in young stutterers.

During the teen age period these individual stutterers develop adjustment problems because of their speech problem. During such times they are more likely to develop emotional and psychological problems which may off-set them from their normal counterparts. Adolescent and young adult stutterers during this phase are very likely to develop certain deviant/ abnormal patterns of behaviour which may serve as an impediment in their progress. The nature of problems they face could result in social isolation, anxious and apprehensive responses, feelings of inferiority etc., In certain respects they may deviate from the mainstream of normal individuals.

The kinds of trying situations which stutterers face in social interaction would leave them in dilemmas. The speech anticipatingi situation, the actual form of communication that takes place and their consequences are so different for the stutterer that he may develop a number of devices to adopt when he has to confront such situations in future. This may lead to quite a few alternatives which he can adopt, like (1) avoidance-giving up the attempt to speak, substituting a different word (2) postponement, pausing, repeating preceding word (3) initiation or using starters - a word, sound, phrase (4) distraction of attention such as by voluntary movements etc,

Finally, the stutterer attempts to speak and so called primary symptoms of stuttering emerge in the form of speech block. Repetition of sounds or words or complete cessation of speech temporarily characterise the speech block.

Shame, guilt, embarrassment are the consequences of a series of such episodes. They become highly sensitive, when they anticipate similar speaking situations. A vicious circle is created within which a stutterer is caught. All this may give rise to certain undesirable personality characteristics.

The two cardinal features of any kind of abnormal behaviour applies to stuttering also. These are (1) intensity and (2) duration. In other words how much severe the stuttering is in a given individual and how much persistent it is in a given individual. Both these factors of severity and persistence colour the stuttering behaviour of a given individual. The more often the stutterer stutters, the more he feels miserable in social interaction. A stage may be reached when he may shun away from all communicative situations like avoiding people, avoiding use of telephones etc.. He may become immobilised, depressed and anxious.

Liinical experience with treatment of stutterers has brought out certain interesting findings. It is observed that no single method of treatment like prolongation, syllable timed

But clinically, it is often observed that stutterers are more anxious, more sensitive in speaking situations. Possibly, they are more anxious than nonstutterers. Several studies have used different anxiety measures to find out whether stutterers are more anxious. Here again we do not have very clear consistent results. Some studies have clearly pointed out that some stutterers are more anxious, whereas other studies have pointed out that stutterers are no more anxious than their normal counterparts. Similarly so with reference to certain other personality characteristics like lack of self confidence, introversion, submissiveness etc.

There are many other investigators who tend to think that stutterers do not have a unique personality of their own and that individual differences among the stutterers is more or less same as individual differences in normals. This perhaps may be true that all stutterers may not have a particular personality pattern.

On the dimension of emotinnal adjustment-maladjustment, there is substantial evidence that stutterers are more emotionally maladjusted than normals but not so severely maladjusted as neurotics or psychotics. But even this amount of emotional maladjustment itself is sufficient enough to produce problems of adjustment.

The above statements do not require that we accept or reject a relationship between stuttering and personality. All research reviews provide conflicting reports about stuttering and its relationship to personality. Stutterers have repeatedly differed from normally fluent persons in their self reported traits on personality inventories. Commonly included traits are shyness, anxiety, lack of self-confidence, and social withdrawal.

Based on repeated clinical observations it is our tentative belief that there are significant differences between stutterers and nonstutterers on certain personality characteristics.

Research studies primarily addressing themselves to the problems of adolescent/young adult stutterer are rare. More research studies are available about child stutterer and adult stutterer. There is a lacuna in our body of knowledge about subjects belonging to the age period commonly denoted as adolescent/young adulthood.

There are numerous behaviour therapy procedures that are known to suppress/eliminate stuttering but there is little theoretical understanding of how they achieve their effectiveness. There are many reports of effectiveness with speech shadowing, rhythmic procedures, auditory masking, negative

practice, prolonged speech, relaxation methods, regulated breathing approach, systematic desensitisation, assertion training and many others.

Successes and failures of therapy have not unfortunately been correlated with the assets and deficiencies of personality of the stutterer. This should be considered as a lacuna in our knowledge. Logically enough a patient with a high degree of self confidence would not require assertion training because he is self sufficient. A patient who does not have high anxiety component need not be tried with relaxation methods because he is already relaxed. So, what is stressed here is that a knowledge of assets and deficiencies in the personality of stutterers should be taken into account in the choice/ selection of methods of treatments.

(while focussing our attention on the variety of treatment methods available, we find that there are innumerable methods of treatment having rationale varying any where from psychoanalysis to behaviour therapy. Some investigators are closely affiliated to a particular school of thought like psychoanalysis trying that method only. Some other investigators having strong belief in behaviour therapy based on learning theories trie those methods only, similarly so, other school of thought. like Cognitive Restructuring, Rationale Emotive Therapy etc., The very fact that we have a plurality of many schools of

thought in understanding and explaining behaviour is itself an anathema. These kinds of contradictions have always led to a stagnation in scientific progress. What is most important in the present context is that we should not worry too much about the theoretical backgrounds. The practical therapeutic procedures which gives the best of possible results irrespective of the theoretical principles on which they are based, this requires a great deal of ecleticism and freedom to choose the appropriate procedures. In the clinical context what is more important is the recovery and relief from the problem with which the patient is suffering from. If this becomes the goal, it does not really matter whether techniques or components of techniques are derived from one school of thought or the other (Ironically for example, there are some staunch behaviour therapists who even question the use of a concept like "PERSONALITY" which perhaps has found such a wide currency in the field of psychology that perhaps even after decades it can not be eliminated from usage. In fact H.J. Eysenck who is a leading psychologist and who coined the term Behaviour Therapy has brought out a popular test, EYSENCK PERSONALITY INVENTORY. Perhaps we cannot reduce all experiences to S-R bonds) .

The present study, therefore focuses itself on this particular premises. The explicitly chosen experimental group is young adult stutterers falling between the age group of 16 to 30 years. Because this age range is very crucial in the

process of physiological and psychological development, it provides for ample flexibility in our approach. This is the period when the subject is anticipating of settling in life by choosing a partner in marriage, choice of a vocational carreer, increase and expansion of social interaction with others etc., The above challenges pose new problems to the developing individual in addition to stuttering. A " single comprehensive well established personality test namely the 16 PF questionnaire (C-form Indian Adaptation) of R.B. Cattel was chosen to be tried with each stutterer.

As mentioned earlier there has been an emergence of many treatment methods like DAF, prolongation, masking, speech shadowing, negative practice, relaxation, systematic desensitisation, syllable timed speech, regulated breathing approach, assertion training etc., which have definitely benefited" the stutterers. But we should discover what treatment methods will be how much effective in the case of each stutterer. Keeping this in mind an attempt has been made in the present study to match the treatment methods with the personality assets and deficiencies.

The purpose of present study is to evolve appropriate treatment strategies for each stutterer depending upon his personality profile and try to correlate the treatment results

with his personality profile.

In this context the following are kept as the aims of this study.

1. To investigate the personality characteristics of young adult stutterers on 16 PF questionnaire.

2. To select a small group of young adult stutterers, who would show'differences in their personality profiles.

3. Clinically and experimentally to correlate treatment results with their personality assets and deficiencies.

CHAPTER - II

T E R M S & D E F I N I T I O N S

II. 1. STUTTERING

II. 2. PERSONALITY

II. 3. SYLIABLE

In any scientific study, it becomes very necessary to precisely define the terms and concepts used. This is a formidable job particularly in area of stuttering because of multifarious definitions offered by different authorities in this field. The kinds of definitions offered depend upon their own points of view. Thus, there would be tremendous variations right from psychoanalytically oriented investigators to behaviorally oriented investigators. In the present time greater importance is attached to quantification and measurement of the phenomena in question. When measurement of observed behaviour is the focus, it becomes more easy in terms of quantification. In the present study also the same principle has been followed.

In spite of the present stand taken in this study, it would be fitting to see through the differeirig points of view by different investigators about stuttering. And hence a preliminary survey is made covering the definitions and descriptions offered by some of the known investigators in immediate next few pages. The precise distinctive features of stuttering which permit precise quantification are described in the later part of the chapter.

II.1. STUTTERING

The term "stuttering" is commonly used to denote a disturbance of speech fluency. Many investigators and clinicians have attempted to provide an adequate definition of stuttering.

Some of the definitions are merely statements of the author's point of view with respect to cause or nature of the disorder. The following definitions which will serve as examples are presented. "Stuttering is a psychological difficulty and should be diagnosed and described as well as treated as a morbidity of social consciousness, a hypersensitivity of social attitude, a pathological social response" (Fletcher, 1943). "Stuttering is a symptom in a Psychopathological condition classified as a pregenital conversion neurosis" (Glauber, 1958). "Stuttering is an evaluational disorder,, It is what results when normal nonfluency is evaluated as something to be feared and avoided; it is, outwardly, what the stutterer does in an attempt to avoid nonfluency" (Johnson, 1946). "Stuttering is a disorder of communication rather than of speech, always involves a disturbance in interpersonal relationships. No matter what its origin might have been, in its advanced stages, it is accompanied by fear and by compulsive, stereotyped reactions which its possessors cannot control" (Van Riper, 1957).

Other definitions are s6 broad that they fail to provide proper limits, which is usually expected for a satisfactory definition. For example, "stuttering is a disorder of rhythm". "Stuttering is a deviation in the ongoing fluency of speech, an inability to maintain the connected rhythm of speech". These definitions would lead one to believe that

there are no normal speakers, unless the word 'deviation' is further characterised. We at all times are not perfect in the production of fluent speech. "It is a matter of common knowledge that speakers in any speech community vary in fluency or control, and that the same speaker varies in fluency from one occasion to another. Some times this scale of variation is mistaken for the difference between 'correct' and 'incorrect' speech, but this confusion should be avoided" (Hockett, 1976).

There are other definitions which because of their restrictiveness exclude many individuals who would generally be labelled or would call themselves as stutterers. Wendell Johnson preferred to restrict stuttering to designate the speech of only those individuals who show "anticipatory, hypertonic, avoidance reactions" due to misevaluations of normal disfluencies. In other words, stuttering is what a speaker does when (1) he expects stuttering to occur, (2)dreads it, (3) becomes tense in anticipation of it and (4) tries to avoid it. This definition served the purpose well in supporting his semantogenic theory. Brutten & Shoemaker (1967) have defined stuttering as the involuntary repetitions and prolongations that result from conditioned negative emotionality. According to this definition the adjustive attempts of an individual to escape from or avoid punishing stimulation, do not characterise stuttering. In other words, such voluntary

instrumental adjustment as foot tapping, nose - wrinkling, and eye blinking do not signify stuttered speech.

There are definitions consisting of descriptions of phenomenon which seek to identify the essential speech characteristics that differentiate stuttering from other phenomena with which it could be confused. These try to describe behaviours common to all stutterers, and indicate the kind of behaviours shown by the same. Vingate (1964) defined stuttering as under (1) (a) Disruption in the fluency of verbal expression which is (b) characterised by involuntary, audible or silent. Repetitions or prolongations in the utterance of short speech element, namely sounds, syllables and words of one syllable. These disruptions (c)occur frequently or are marked in character and (d) are not readily controllable. (2) Sometimes the disruptions are (e) accompanied by accessory activities involving the speech apparatus, related or unrelated body structures, or stereotyped speech utterances. These activities give the appearance of being speech related struggles. (3) Also, there are not infrequently (f) indication; or reports of the presence of an emotional state, ranging from a general condition of "excitement" or "tension" to more specific emotions of a negative nature such as fear, embarrassment irritation, or the like (g) the immediate sources of stuttering is some incoordination expressed in the peripheral speech

mechanism; the ultimate cause is presently unknown and may be complex or compound (Wingate, 1964).

Another approach to stuttering has emphasised the role properties of the stutterer. Sheehan (1970) does not consider stuttering as a speech disorder but a conflict revolving around self and the role, an identity problem and a disorder of the social presentation of the self. He views stuttering as a role specific behaviour as it is specific to the speaker role and to the listener relationship. Stuttering occurs to the role, as roles are attached to positions, to statuses, not to the persons temporarily enacting the role. It varies both with the role of the speaker and that of the listener. It might be that stuttering is a role disorder primarily, and inter personal disorder secondarily. Sheehan, further states that in a situation where the speaker role is brought forward more positively, stuttering is likely to decrease.

International classification of diseases defines stuttering as "disorders in the rhythm of speech, in which individual knows precisely what he wishes to say, but at the same time is unable to say it because of an involuntary, repetitive prolongation or a cessation of a sound" (WHO, 1977). This definition is almost similar to that of Andrews & Harris (1964)

which states, "because of an involuntary repetition, prolongation or cessation of a sound" and is in accord with Wingate's standard definition, in which the main features of stuttering are repetitions and prolongations of sound or syllable whether audible or silent (Wingate, 1964). After reviewing these three definitions, Andrews et al (1983) concluded that "there is a consensus that repetitions and prolongations are necessary and sufficient for the diagnosis of stuttering to be made".

Perkins (1984) proposed that stuttering be defined as "temporary overt and covert loss of control of the ability to move forward fluently in the execution of linguistically formulated speech". In his view, involuntary disruption of the flow of speech is a private experience available only to the stutterer.

To us the term stuttering is synonymous with stammering and is preferred term in the professional usage in India. In the present study the terms stuttering and stammering have been used as synonyms.

In this study, stuttering phenomenon was believed as comprising/characterised by prolongations, part word repetitions, word repetitions and interjections or additions of sounds, syllables and words. Since these types of stuttering

behaviours have been used in many investigations and found to be most useful and quite satisfactory (Schiavetti, 1975; Curlee, 1981; Young, 1969; Young & Downs, 1968), the same has been followed in present study.

Prolongation - Syllables, parts of words that were judged to be unduly prolonged were included in this category.

Repetition - Repetitions of parts of words - that is syllables and phonemes were placed in this category. Within each instance of repetition the number of times the phoneme or syllable was repeated, were counted.

Repetition of words - Within each instance of repetition the number of times the word was repeated, were counted.

Interjections or Additions of sound, syllable and word - This category included extraneous sounds such as, "uh", "er" and "hmm" and extraneous words such as "well". An instance of interjection included one or more units of repetition of the interjected material. The number of times the interjection was repeated - that is, the number of units of repetition within each instance, for example; 'uh-uh' is an interjection repeated once and 'uh-uh-uh' is an example of an interjection repeated twice.

II. 2. PERSONALITY

Approaches and definitions which have been adopted for the concept of personality are varied and bewildering.

Most theorists agree that the major way to study personality is by observing what people actually do or say that they do; either by directly watching some one behave, and tallying what he does, or indirectly counting up his responses to questionnaire items. The basic assumption is that personality relates to what people do or what they experience. A second assumption is that personality is an entity and it really exists and is not just a convenient way of summarising a person's behaviour, A third assumption is that personality is relatively fixed and enduring, so that the 'core' remains relatively immutable, while its only more surface features are modifiable. Based on these assumptions, most personalitytheorists have been content with such definitions of personality as "those structural and dynamic properties of an individual as they reflect themselves in characteristic responses to situations" (Pervin, 1970); or "those relatively stable and enduring aspects of the individual which distinguish him from the other people and, at the same time, form the basis of our predictions concerning his future behaviour" (Wright et al, 1970); or "a dynamic organisation within the individual of those psychological systems that

determine his characteristic behaviour and thought "•(Allport, 1961).

Some clinicians have defined 'personality[1] very widely so that it covers virtually every thing and any thing that a person does, from how he solves problems and how he deals with incompatible thoughts to changes in psychological functioning in response to emotion arousing situations. Although it may be reasonable to adopt such positions, the types of definitions given, emphasize the individuals pattern of behaviour within a social or interpersonal context. The main reason for different definitions and approaches seems to be the complexity of human behaviour as it is determined by multiple sets of factors.

R.B. Cattell (1970) defines personality as[tt]that which permits a prediction of what an individual will do in a given situation" • He has mathematically formulated the statement: R=f (S.P) which says that E, the nature and magnitude of a person's behavioural response; i.e., what he says, thinks, or does,is some function of S, the stimulus situation in which he is placed and of P, the nature of his personality. He states that personality can be measured by a number of traits, and perhaps also by mood states at the time.

It was stated earlier that stuttering means different

things tcr different people. This is perhaps a smaller tragedy when compared with the use or misuse of the term 'personality'. Perhaps no other term in the field of psychology has created greater confusion than the term 'personality[1]. Infact, in one of the monograph on "Trait Names" by Allport & Odbert, the list of personality traits ran to as many as 17953-

There is a great deal of plurality in the meaning attached to the term 'personality[1]. However, the largest credit to bring order and systernisation to the field of personality has to be given to R.B. Cattell. Almost spending his who^e life time he has brought order and organisation in the field of personality. His ultimate end results of personality research has resulted in what he terms as primary personality factors. His 16 PF Questionnaire and its various forms are widely used both in the clinical as well as normal populations. Even international cross cultural research studies have been undertaken for comparison of personality profiles.

In the present study, therefore, personality means the same thing as Cattell felt and the personality trait meaning3 also are the same as enunciated by R.B. Cattell.

II. 3. SYLLABLE

In the present work, the term 'syllable' is used in the following sense:

(1) Syllables contain different consonants with one and only one vowel.

(2) Syllable can be either formed by a solitary vowel or dipthong or by combining a vowel or dipthong with one or more consonants.

In the present study, syllable count has been made to compute the measures of severity of stuttering. This allowed to assign more than one moment of stuttering in multisyllabic words. Syllable counts are unaffected by variation in word length. And all syllables are composed of about the same number of phonemes(Umeda & Quinn, 1980).

CHAPTER III

REVIEW OF LITERATURE

III. 1. INTRODUCTION

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III. 1. INTRODUCTION

"Stuttering has attracted considerable interest for centuries. Over a span of more than 2,000 years many different ideas have been offered to explain its nature, cause and treatment. Inspite of this, the disorder is still not well understood" (¥ingate, M.E., 1976).

The phenomenon of stuttering has been examined from many angles, including neurological, physiological,genetic and psychological perspectives. However, the issue as to why individuals stutter can hardly be considered settled. Most of the research studies in psychological perspectives have concerned with the personality characteristics with stutterer which has included various emotional and adjustment problems. In most of the studies, the various aspects of the personality of a group of stutterers have been compared with a group of nonstutterers. The studies on personality characteristics by using different tests have found that stutterers are definitely,more shy, more anxious, less self confident and with greater tendencies of social withdrawal when compared with nonstutterers. Based on some of these basic personality factors there are few techniques developed to reduce these deficiencies of personality which ultimately would reduce stuttering. For example, it was thought that since stutterers are more anxious than non-stutterers the reciprocal inhibition method, like systematic

dysensitisation would bring better speech fluency among stutterers. The premise for this being that anxiety is a serious impediment in speaking situations and reduction in anxiety would prepare ground for greater speech fluency.

The observation that stutterers are more tense while speaking lead some therapists to try relaxation methods. The results did point out that under relaxation state, the stutterers spoke more fluently. Also the observation that stutterers are more shy and socially withdrawn than non-stutterers made some therapists try methods like assertion training.

A review of the past research studies do point out that therapists had taken cognisance of the fact that the stutterers did have certain personality deficiencies as stated above. However, considering these deficiencies in isolation they had tried isolated methods of treatment. Unfortunately a wholistic attitude of taking into account all the personality deficiencies in stutterers and to try treatment procedures to overcome these deficiencies in a systematic fashion had not been attempted. As there was no integrated therapeutic approach, the results of such treatments had not brought about the expected degree of speech fluency.

Studies on personality characteristics of stutterers had shown their deficiency areas. However, all stutterers did not show necessarily all the deficiencies in personality. In other words, stutterers among themselves would show lot of variations in their personality characteristics. Some would be anxious where as others would not. Some would be shy where as some would be quite out-going. In this way stutterers themselves can be considered as a heterogenous group with lots of individual differences among themselves. No two stutterers are exactly alike. This being so to believe that one single method of treatment would bring about recovery/improvement can occur among all stutterers would be a wrong assumption. The major disadvantages of most of the treatment methods, presumably tried had this lacuna of not addressing all the personality deficiency areas of a given stutterer. There are again those investigators who consider stuttering as learnt behaviour, although mal-adaptive. They have also developed techniques based on learning principles to extinguish stuttering using such methods. These investigators believe therefore that learning and maintenance of stuttering, depend on some form of rein-forcement. Several have attempted to decrease frequency of stuttering blocks or to increase the fluency by reinforcing either negatively or positively by making use of various kinds of stimuli. These are aversive shock, click noise,

time out, verbal reinforcement etc., But once again there are reported studies which have used operant conditioning techniques with appropriate reinforcements that do not show satisfactory results in terms of improvement of stuttering and maintenance of fluency.

Although, there are different stand points taken by different schools of thought for stuttering, this has not helped in practical therapeutic applications. For example, psychoanalysis as a method of treatment has not at all helped in the treatment of stutterers. In fact, S.Freud, the founder of psychoanalysis himself categorically stated that psychoanalysis should not be tried with stutterers (Van Ripe, C, 1973) .

Ingham and Andrews (1973), after reviewing the behaviour therapy approach to stuttering conclude that "Masking and Shadowing now seem limited in therapeutic promise and the negative practice and anxiety reduction have got to be demonstrated to have powerful therapeutic potential. Rhythmic speech and prolonged speech appear to have greater therapeutic promise although, they rely on changing the patterns of speech which in turn should be modified towards normal speech. Operant conditioning procedures appeared to be useful for effective therapy. In general however, reports of behaviour

therapy for stuttering are disappointing in their absence of concern for appropriate and systematic evaluation of the outcome".

The research evidence shows that there are plenty of investigations done in the area of personality characteristics of stutterers which have found commonality among them.

The knowledge of findings about the personality deficiency areas of stutterers have not been kept in focus where treatment procedures were tried. Quite possibly this is one of their important reasons why, we have not been getting the expected therapeutic outcome. Any therapeutic procedure/ procedures should not only take into account the nature of stuttering behaviour itself that is in terms of behavioural analysis etc., but it must also take into account all the possible personality deficiencies in a given stutterer. It is not just the question of modifying stuttering but it is a question of treating the stutterer as a whole. As it is often stated, it is more important to know the kind of person who stutters rather than stuttering itself in a vacuum. So what is relevant now, is not only to give importance to stuttering phenomenon itself, but also to personality assets and deficiencies of stutterers.

It is highly commendable that such voluminous amount of

literature is available about personality characteristics of stutterers and it is again commendable that we have an umbrella of different therapeutic techniques evolved for treatment of stuttering. The important thing is that these two aspects have stayed independently of each other. No systematic approach has been evolved to integrate these two aspects. This has resulted in a knowledge gap about what types of techniques of treatment are to be tried with what types of stutterers.

As mentioned earlier there has been voluminous research carried out on personality characteristics of stutterers. These studies would include various aspects like emotional instability, social anxiety, feelings of inferiority, frustration tolerance, aggression and hostility etc., In the present review as there have been innumerable studies in this area, it would be virtually impossible to cover all of them. Therefore, only those studies which are breadth oriented and depth oriented, covering larger number of subjects have been explicitly chosen and presented here. Discussion of therapeutic methods for stuttering are presented in the later part of the chapter.

Although a large body of literature is available on emotionality of stutterers, there has been a major thrust to relate stuttering with fear. Some other studies focus on

generalised anxiety, guilt and hostility. The intimate association of emotionality with stuttering was demonstrated by Robbins studies as early as in 1920. During early 30s, observation of speech pattern of stutterers had demonstrated amply that breathing disturbance was intimately associated with stuttering, causing emotional distress.

Emotion is often reflected in increased muscular tension and many stutterers do experience such tension during speech. There is wide spread use of relaxation methods with these stutterers. Such studies do suggest the importance of relaxation in reduction of tension in stutterers. Jacobson (1938) has shown long ago that anxiety is reflected in muscular tension.

III. 2. PERSONALITY STUDIES '

Research findings about the personality of stutterers do not portray a universal agreement. Some of the authorities take the stand-point that a close examination and observation of the stutterers definitely point out certain personality deficiencies, for example, feelings of inferiority, presence of anxiety characteristics, depressive feelings etc., (Richardson, 1944; Bharath Raj, J., and Pranesha Rao, 3.N., 1970; Hegde,M.N., 1972; Bender, 1942; 3o1 and , 1952; Brutten, 1957; Gray and Karmen, 1967). On the other hand contrary

findings are reported (Thorn, 1949; Goodstein et al, 1955; Prins, 1972), that there are no significant personality disturbances. In spite of these few contradictions, repeated clinical observations of stutterers as a group convince one of the difference in the more common personality characteristics like self-confidence, neuroticism,depressive tendencies and emotional instability. As the field of clinical psychology grew, more refined psychological tests were developed. This led to greater interest in studying the personality of stutterers.

Personality assessment of stutterers has been carried out using a variety of tests, which can *be* grouped in the following subheadings, depending upon the nature of tests and modality of interpretation.

(i) Questionnaire studies;

(ii) Projective technique studies;

(iii) Objective test studies for measurement of intelligence;

(iv) Other miscellaneous test studies;

There have been many investigations reported using different kinds of techniques for personality assessment. But quite often it appears as if they were carried out without relating or comparing their findings with the already existing

ones. As stated succinctly by Sheehan "Many investigators have carried out their studies with little or no regard for other studies which have used the same instrument. Virtually no attempts had been made to relate the findings of one study with another, except for separately published reviews", (Sheehan, 1958, G-oodstein, 1958).

III. 2. i. GUESTIONNAIRE- STUDIES

Amongst the various types of tests, the questionnaires are the most frequently used ones as apparent from research literature. Questionnaires vary among themselves, there are those questionnaires which consists of large number of questions like MMPI and there are some questionnaire which are short and brief as for eg. EPI or Willoughby Questionnaire which consists of much less number of items. And there are those questionnaires which try to cover a large number of personality traits and there are those questionnaires which try to tap one aspect of personality. Some questionnaires are forced choice type, where the subject has to answer 'yes' or 'no' depending upon presence or absence of that quality in him. Some questionnaires provide three alternatives like •yes[1] 'no[f] or '?' (doubtful). A fortunate thing about questionnaires is that a large number of them have been standardised and norms are readily available. The reliability

and validity co-efficients are provided for majority of questionnaires.

There are quite a few questionnaires like EPI which have been adapted to local conditions in India.

a. MMPI studies - The MMPI is designed to provide an objective assessment of some of the major personality characteristics that affect personal and social adjustment. The carefully constructed and cross-validated scales provide a means for measuring the personality status of literate adolescents and adults. Nine scales were originally developed for clinical use of the inventory and were named for the abnormal conditions on which their construction was based. These scales are now commonly referred to by their abbreviations - HS (Hypochondriasis); D (Depression), Hy (Hysteria), Pd (Psychopathic deviate), Mf (Masculanity-feminity), Pa (Paranoia), Pt (Psychasthemia), Sc (Schizophrenia) and Ma (Hypomania). Many other scales have subsequently been developed from the same items, Si (Social introversion) is one that is commonly scored. There are also three validating scales L (Lie), F (Validity) and K (Correction).

The instrument itself contains 550 statements covering a wide range of subject matter-from the physical condition to the morale and the social attitudes of the individual being tested. The subject is asked to sort all the statements into three categories; True, False and Cannot say. For validity, high score on a scale has been found to predict positively the corresponding final clinical diagnosis.

Thomas (1951) has used MMPI in 29 stutterers and found a slight elevation in the range of normal adjustment whereas Pizzat (1949), using the same test in 53 stutterers noted that they had poorer scores on all clinical scales except psychopathic deviant, but the scores fell well within the normal range.

Dahlstrom and Craven (1952) compared 100 college stutterers with 100 normal speaking college fresh men, 1763 psychiatric patients and 3966 college students who had sought counselling help on their personal problems. The authors inferred that, while the stutterers did differ from the control students, they were not as severely disturbed as the psychiatric patients and most closely resembled the college students with other kinds of problems.

3oland (1952-) using MMPI and other derived measures on 24 stutterers and an equal number of controls reported that stutterers were higher on measures of anxiety. Boland investigated chronic general anxiety in stutterers as well an anxiety associated specifically with speaking on two indices derived from the MMPI, Welsh's anxiety index and Taylor Manifest Anxiety Scale. He reported that stutterers showed significantly higher general anxiety than non-stutterers.

Walnut (1954) using the MMPI found that on all ten clinical scales, the 38 stutterers of his group were well within the normal range as measured by the MMPI norms. On only two scales, depression and paranoid, the stutterers had significantly higher scores than the controls, indicat-r ing adjustment problems.

Fredrick (1955), used MMPI in 63 stutterers and 36 non-stutterers (both group consisted male and female subjects) and found that female stutterers were significantly more disturbed than male stutterers, high anxiety stutterers differed from low anxiety stutterers in their reactions to reward and punishment.

b. California Psychological Inventory Studies - The CPI was created in the hope of attaining two goals of personality assessment. The inventory is intended primarily for use with normal subjects. Its scales are addressed to personality characteristics important for social living and social interaction. Although the inventory has been found to have special utility in work with particular kinds of problems as for eg. delinquent and social behaviour, it can also provide valuable information in regard to educational, vocational, familial and many other areas. CPI includes 18 standard scales. Each scale is intended to assess one important facet of interpersonal psychology and the total set is intended to furnish a comprehensive survey of an individual.

This test has been used by various investigators in the study of personality of stutterers. Powers (1944) used California Test of Personality on junior high school stutterers and non-stutterers. He did not find any significant difference between the two groups in self adjustment or in total adjustment,but there was a tendency among stutterers towards social maladjustment.

c. EPI Studies - The Eysenck Personality Inventory is one of the established tests of personality and has gained wide popularity. The inventory consists of a total number of 57 items to be answered either as 'yes' or 'no' depending upon the presence or absence of the quality in the subject. This is a forced choice questionnaire. This test measures two major dimensions of personality namely, Introversion-Extroversion and Neuroticism. Twenty four items appear on each dimensions. The lie scale consists of remaining 9 items. The score on 'the 'lie scale[1] provides what Sysenck calls 'social desirability response set'. Thus, if a person gets a large score on the lie scale, his answers on the test are to be deemed as invalid and unreliable.

Elaborate work has been done by using EPI, testing different clinical groups. There are some studies which have used this test with stutterers. The fact that this test has been standardised on a large population with established reliability and validity coefficients has provided a special status to the test.

The EPI has been widely used in our country also.

It is being tried with different clinical groups and a number of studies are reported in Indian journals.

3harath Raj and Pranesha Rao (1970) were the first to use EPI to study the personality differences of stutterers and non-stutterers. The results pointed out significant differences between the two groups on the N and *E* scales, at 0.01 level. The mean N score for stutterers and non-stutterers was 13.25 and 11.05 with SD's of 4.60 and 4.25 respectively. A comparison of N-score of stutterers with that of normals and neurotics pointed out a definite leaning of the stutterers towards neurotics rather than towards normals. The stutterers as a group were more inclined toward introversion and introverted neurotics were many more among them than extroverted neurotics.

Hegde (1972) analysed the EPI scores of 106 stutterers. He compared the stutterers mean score on the neuroticism and extroversion scales with the test norms of the psychiatric and normal populations. Stutterers emerged as less extroverted than the average and can be considered introverts with their degree of introversion roughly corresponding to anxiety patients. Stutterers were found to be more neurotic than the normal population but according to test norms they were still within the normal limits.

Stutterers scored nearly 4 points higher than the normal

population and they were found to be close to the mixed neurotic group. The percentage of neurotics in this sample as classified by EPI was about 52%.

(Judi, S., et al (1985) studied stutterers and normals (N = 75 in each group) on the Junior Personality Inventory. There was no significant difference on the scale of extraversion but significant differences were found on neuroticism scale-the stutterers tending to score higher. The urban and the rural subjects both in controlled and experimental groups did not differ in their responses on the neuroticism scale (They tended to get high N score equally).

Harpreet Singh (1986) administered the EPI (both English and Kannada version) to 75 stutterers. The stutterers' mean score on the neuroticism and extroversion scale were compared with the Indian norms. , The stutterers were found to be less extroverted than the average and had more affinity towards introversion,, The standard error of the difference between means 2.44, was significant at 0.05 P level. The stutterers can also be considered introverted with their degree slightly higher than that of anxiety patients. The stutterers obtained a mean score of 15.82 on the N-scale showing stutterers to be having anxiety components. A close examination of studies which were carried out on EPI, reveal a common thread running among them. Stutterers as a group did show greater leaning

towards neuroticism than did normals.

d. Other Questionnaire Studies - Johnson (1932) administered the Wood-Worth House Mental Hygiene Inventory to a group of 50 stutterers and a group of psychoneurotics and concluded that stutterers reported significantly more problems than normals. In 1932 Fagan also used the same test with 33 stutterers and found a mild degree of maladjustment in a majority of the cases.

Bender (1939) used Bernreuter Personality Inventory and reported the results which suggested personality disturbances in stutterers. The study included 249 college stutterers and same number of non-stutterers who were matched for age, intelligence and socio-economic background. The findings were that stutterers were more introverted, neurotic, less dominant in inter-personal relationship,lacked in self confidence and less social.

Richardson (1944) used Guilford Inventory of factors STDC R for studying stutterers. He investigated the personality differences between stutterers and non-stutterers. The total 30 stutterers were taken in which 22 were male and 8

female aged between 17-48 years (Mean age: 27.8). The comparison group of 30 non-stutterers were matched for age, sex, college, experience, and decile rating for mental ability. He reported that stutterers were more socially introverted, more depressed and less happy-go-lucky than the non-stutterers.

Brown and Hull (1942) studied a group of 19 stutterers on Speech Attitude Scale, Speech Experience Inventory and Personal Inventory Schedule which included 50 male stutterers and 9 female stutterers, ranging in age from 17-34 years. All subjects were receiving clinical treatment. The following conclusions were drawn:

1. The stutterers as a group were less confident and less enthusiastic in their use of speech, enjoyed speaking to a lesser degree, and had less poise in doing so.

2. In stutterers, behaviour tendencies as well as attitudes deviate significantly from the normals and that, the stutterer has used speech in social situations to a lesser extent.

3. As revealed by the personality questionnaire's finding, though stutterers are significantly 'lower' in social adjustment, there is no generalised infe-riority as might be postulated.

Duncan (1949) used Bell-Adjustment Inventory on a group of 62 stutterers and 62 non-stutterers. He found that stutterers were more maladjusted at home than non-rstutterers as revealed by the -test scores.

Shames (1951) using the Guilford Inventory of the factors STDCR did not find any observable difference in his group of 53 stutterers except that they scored a little high on factor T i.e., thinking introversion. He did not use a control group but relied on the published test norms.

Santostefano, S (1960) rated anxiety in 26 stutterers and 26 non-stutterers with Taylor Manifest Anxiety scale and Ssked the subjects to recall previously learned material in neutral and stressful conditions. All subjects showed significant decrement in performance under stress conditions in the laboratory as compared to neutral ones, but s"tufterers showed greater decrement than non-stutterers.

III.2. ii. PROJEGTIVE TECHNIQUE STUDIES

The chief distinguishing feature of protective technique is to be found in their assignment of a relatively unstructured task, ie., a task that permits an almost unlimited variety of possible responses. In order to allow free play to the subjects' imagination, only brief, general instructions are provided. For the same reason, the test stimuli are usually vague and equivocal. The underlying hypothesis is that the way in which the individual perceives and interprets the test material, or "structures" the situation, will reflect fundamental aspects of his psychological functioning. In other words, it is expected that the test materials will serve as a sort of screen upon which the subject 'projects' his characteristic ideas, attitudes, strivings, fears, conflicts, aggression, and the like.

There are different projective techniques like story completion technique, sentence completion technique, Rorschach Test and Thematic Aperception Test which are used in the study of personality. The more frequently used tests in study of personality are the Rorschach and TAT. The story completion, and the sentence completion tests can be considered as partially projective tests.

The Rorschach Test consists of a series of ten ink-blots which are presented one at a time to the subject who is instructed to say what they look like, resemble, or might be. Four features of the subjects responses to the Rorschach Test are scored. These had been termed as location, determinants, content and the popularity or originality of the response. There are several systems of scoring but in general, they are all variations of the same basic scheme.

While the Rorschach Test has emphasised more of the formal or expressive aspects of the interpretation of ambiguous stimuli, the TAT has achieved wide popularity as a technique for studying the content side of interpretation. Most frequently it is used together with the Rorschach in the same battery of psychodiagnostic tests.

The original and basic TAT was developed by Murray and his staff at the Harverd Psychological clinic. The TAT materials consist of 19 cards containing vague pictures in black and white and one blank card. The subject is asked to make up a story to fit each picture, telling what led up to the event shown in the picture, describing what is happening at the moment and what the characters are feeling and thinking, and giving the outcome. In the case of the blank card, the

subject is instructed to imagine some picture on the card, describe it, and then tell a story about it. A fair amount of normative information has been published regarding the most frequent response characteristics of each card.

The TAT has been used extensively in personality research.

Ingebregtsen (1936), Piterlli (1948) and Haaney (1951) used the P.orschach 40, 311 and 6 stutterers respectively and concluded that stutterer's responses were symptomatic of neurotic disorder. Though these studies did not involve a control group.

Santestefano (1960) studied a group of 26 stutterers and equal number of non-stutterers. Both the groups were matched for sex, age and IQ. Rorschach test was administered to stutterers and non-stutterers. The results revealed that stutterers projected on the Rorschach significantly more content indicative of anxiety and hostility than did non-stutterers.

After an analysis of both oral and written responses to the TAT, Solomon (1963) after testing 35 stutterers and 35 non-stutterers concluded that they did not differ in terms

of broad categories of aggression. Stutterers expressed more themes involving a particular kind of aggression namely more subtle and less physically violent aggression.

Sermas and Cox (1982) administered Rorschach and TAT to 14 stutterers and noted that "the two projective techniques elicited emotional responses similar to the various emotional issues and personality trends found in the interview of the stutterers. *A* scattered variety of other conflict areas were also found, including achievement, impulse control, dependency, sexuality and authority".

Rorschach and TAT had been administered to stutterers in both controlled and uncontrolled studies and a variety of results have been reported. "The lack of any consistent results may be to some extent a function of the projective tests themselves. Although, the Rorschach and TAT are capable of eliciting an emotionally rich series of responses, their subjective nature and lack of psychometric qualities render them some what unsatisfactory as research tools", (Sermas and Cox, 1982). Sheehan further observes, however, the Rorschach may be potentially useful in predicting psychotherapeutic aspects of a given stutterer's response to treatment (Sheehan, 1970).

III. 2. iii. OBJECTIVE TEST STUDIES FOR MEASUREMENT OF INTELLIGENCE:

Intelligence, as a personality trait is known to be very important particularly in terms of adaptability of an individual, several studies have been carried out about measurement of intelligence amongst stutterers. A great deal of adaptability in a stutterer would mean he would be capable of being flexible and adaptable for therapeutic strategies.

McDowell (1928) employed Stanford 3inet and Pinter Patterson shorter performance scale to measure the intelligence of 61 stutterers and an equal number of non-stutterers. Both groups consisted of children, matched for sex, race and language. They did not find stutterers to be different from controls in IQ or achievement measures.

Freuwald (1936) examined 190 stutterers and 100 non-stutterers freshman and concluded that stutterers ranked definitely higher in intelligence than the Freshman college population.

Carlson (1946) studied a group of 50 child stutterers with an average IQ of 109 (range 80-130) and a control group of 50 non-stuttering children with emotional problems, using

Stanford-Binet form-L and come to the following findings. "Stutterers rated superior to problem children in verbal material test but below them in non-verbal performance involving visual perception and motor coordination. As a group stutterers were better readers and showed a higher scholastic achievement but were not functioning upto their potentialities". This could have been possibly because of the emotional inhibitions, lack of spontaneity and adaptability on the part of stutterers. He came to the conclusion that there was no direct relationship between stuttering and intelligence.

Darley (1955), studied a group of 50 stutterers age ranging between 2 to 14 years (Mean age 9.2), using revised Stanford-Binet, Form I and Wechsler-Bellevue Intelligence Scale. He compared the results with general population norms. Results did not show any significant difference between the groups. It was interpreted that stutterers were not different from the general population in intelligence.

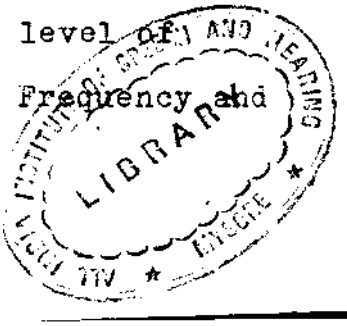
III. 2. iv. OTHER MISCELLANEOUS TEST STUDIES

Many researchers have used a variety of test materials for studying the personality of stutterers which cannot be easily subsumed under the categories mentioned earlier. So such studies have been presented here.

Despert (1946) studied 50 stutterers using Duss's Fables, case history and interview methods and found that stutterers as a group, were intelligent but more rigid than non-stutterers. While there is no specific personality type characteristic of stutterers, specific neurotic trends were found with obsessive compulsive traits predominating.

Spriestersbach (1951) compared 50 male stutterers (median age 21.5) with 183 non-stuttering college males (median age 20.5) and 20 male psychotics (median age 47) on word picture test of social adjustment. Findings showed that stutterers differed from the normal males only slightly more than could be attributed to chance. Both the normals and the stutterers differed significantly from the psychoticg. From the findings, he interpreted that stutterers displayed mild degrees of social maladjustment, but they more closely resembled the evaluative reactions of the normals than the psychotics.

Berlinsky (1954), used Pursuit Tasks Performed under stress conditions of electric shock and Saslow Screening Test- to measure chronic anxiety level in 14 stutterers and 14 non-stutterers matched for age. His findings indicated that stutterers and non-stutterers did not differ in erferd level of anxiety as measured by Salow sceering test. Frequency and



kinds of stuttering varied significantly for stutterers between experimental conditions. Anxiety measures showed a different pattern of relationship for stutterers and non-stutterers. Stutterers showed greatest anxiety under conditions of "anxiety with no speech allowed". The investigator further interpreted that "stuttering is a symptom of an internal maladjustment which increases when the stuttering symptoms cannot be expressed. Stuttering acts as a cathartic activity relieving the anxiety of the stutterer. Stuttering is inferred to be the cathartic activity, not the speech itself".

Brutten (1957) used a measure of palmar perspiration (GSR) as an anxiety index with a group of stutterers and a matched control group in 33 subjects, each group. He reported on the inter group differences in anxiety in verbal situations. He further stated that "stuttering and anxiety adaptation were highly similar in decrement form and slope while expectancy and anxiety adaptation covaried for stutterers but not for nonstutterers".

Snyder et al (1958) administered Sack's Sentence Completion Test to stutterers and parents of stutterers matched for age, socio-economic background and education among 75 subjects in each group and inferred that stutterers as a group present a

more disturbed personality structure than parents of stutterers. The attitudes of the stutterers varied significantly from that of parents of stutterers with respect to family, sex, interpersonal relationship and self concept<,

Wingate (1962) tested 70 male stutterers on Edward Personal preference schedule and compared the results with test norms. The results indicated mild to moderate mal-adjustment in the area of social relationship.

Rieber (1962) in a pilot study of stutterers and clutterers with 20 subjects in each group interpreted the low score of stutterers on a figure drawing test as indicating their greater dependency, introversion and withdrawal. In this study results were difficult to interpret because no control group of .normal speaking subjects were used.

Anderson (1967) reported from an analysis of responses to Guilford Zimmerman Temperament Survey and the Gordon Personal Profile that his group of stutterers and a matched controlled group (50 subjects in each group) were highly similar in general emotional stability. However, they differed or. several less global personality traits. Stutterers were reported to be more shy and less self assured than non-stutterers out friendlier and more respectful towards others

than the normal speaking controls.

Gray and Karmen (1967) studied the relationship between non-verbal anxiety and non-fluency adaptation in stutterers and non-stutterers using Palmer Sweat Index as a measure of anxiety. Their results indicated that:

1. The moderate non-fluency sub-group of stutterers demonstrate a significantly higher level of PSI than the high or low non- fluency subgroups of stutterers.

2. The low and high- non-fluency sub-groups of stutterers dc not differ significantly in PSI level.

They also stated that stutterers do not respond in the same way to situational adjustment of non-verbal anxiety. In other words the relationship between frequency and non-verbal anxiety is not the same for both the stutterers and non-stutterers.

Devaki (1981), on the Sacks Sentence Completion Test fcund that stutterers as a group differ significantly from ncrmals regarding the composite scores, indicating greater adjustment problems. She reported that the stutterer as a group were low in self-confidence indicating guilt feelings,

fears in family life and showing more concern about their speech problem. Her study supported the findings of earlier study on the same test done by Snyder et al (1958).

From the above review it becomes apparent that a large number of investigators have studied the personality and adjustment problems of stutterers, but due to methodological inadequacies, small size of samples used and failure to cross validate, only a few generalisations have been made. In general there is consistent evidence to support the inference that stutterers differ from non-stutterers on some important personality traits. Though, stutterers do appear to have adjustment difficulties, they are quite different in this respect from other severely maladjusted persons like neurotics. We also observe that investigators have studied the assets and deficiencies of personality in stutterers and had compared them with non-stutterers.

But, unfortunately the important findings from such studies were not taken into account to try appropriate treatment methods in order to overcome their problems efficiently. It appears as if findings on personality studies and the treatment methods of stutterers existed as separate entities in themselves. It should generally be surmised that stutterers who have anxiety would benefit more from Systematic Desensitisation and again

those having deficiency in assertion would benefit more from Assertion Training Methods. Similarly appropriate treatment strategies can be thought of to overcome other related deficiencies. What is urgently required is to channalise one or more methods of treatment to systematically eliminate/reduce stuttering' and also strengthen those areas of personality which would result in long term maintenance benefits in fluency for the stutterers.

Thus the present study aims to bridge this gap by systematically and sequentially to try those methods of treatment which not only reduce/eliminate stuttering but also to overcome the personality deficiencies so that the treatment benefits become more apparent, stable and continue for a long duration of time.

III. 3. THERAPEUTIC APPROACHES IN TREATMENT OF STUTTERING

There have been various treatment methods for stuttering - ranging from mystical treatments of occult practitioners, to hypnosis and psychotherapies right down to behaviour therapy.

One of the earliest accounts go back to ancient Greek Literature, in which a change of environment was prescribed

to a stutterer (quoted by Van Riper 1972). A change of environment is known to decrease situational fear and also permits an escape from the same stressful situations which a stutterer usually faces. During the middle ages, it was thought that a defect in tongue was the cause, so the treatment varied from burning and surgical removal of the parts of tongue. Many clinicians have used relaxation as basic treatment of stuttering. Persuation was one of the methods used in earlier times. Suggestion was used as another method. Suggestion was being used during hypnosis in treatment of stuttering. There are studies reported in literature about the treatment of stuttering using hypnosis (Voegel, 1934, Moore, 1946). 3ut in general they have failed to produce a permanent cure.

In twentieth century, Bryngelson, Wendell Johnson and Charles Van Riper have opened the way for a new therap^tic approach, which aimed at reduction of fear and avoidance in stuttering. They have also attempted to reduce the amount cf difficulty in speech through gradual modification of stuttering pattern.

A distinctive contribution Bryngelson (Ref. 31oodstein, 1975) had made as therapy technique, he termed as 'voluntary stuttering', in which the stutterer was to learn to imitate the basic components of his own characteristic speech

behaviour and he was to use it in speech situations outside the clinics.

Wendell Johnson (Ref. Bloodstein, 1975) formulated a therapeutic programme, based on his "diagnosogenic theory". This type of treatment involved the bringing about of certain important changes in the stutterer's perceptual and evaluative reactions. The chief objective in the therapy was to learn to handle speech situations adequately without apologising for his blocks or allowing himself to be handicapped by his speech difficulty.

Van Riper's major contributions have been in relation to the more difficult and in many ways more crucial problem of modifying the speech behaviour itself. Van Riper used the different techniques like 'Pull outs', 'cancellation' etc.,

Psychoanalysis and psychotherapy, with or without the use of drugs have failed to produce normal speech in stutterers. Repeated failures in Psychoanalytic and Psychotherapeutic approaches brought to the fore the inefficacy of such treatment methods. It was felt that psychotherapy was not an appropriate method to treat stammering (Ref. Van Riper, 1973).

All these early historical treatment methods were not

based on sound scientific theory tested in laboratory. They were only empirically/clinically verified. More sophisticated treatment methods have come in recent years and they have proved their efficacy to control many kinds of behaviour including stuttering. Based on different theories and concepts a wide range of various modern techniques for the Treatment of stuttering are now herewith reviewed.

A feature of traditional stuttering therapy has often been a concern for the treatment of more than speech behaviour. A reflection of this is found in the following objecttives of stuttering therapy enumerated by the Speech Foundation of America (1960).

To restore or increase the stutterer's ability to speak normally in any situation.

2. To enable the stutterers to achieve a reversal of those evaluations which motivate the reactions which are involved in his stuttering.

3. To enable the stutterers to achieve necessary changes in the attitudes, beliefs and feelings that affect the interpersonal relationships involved in speaking.

There are innumerable treatment methods of stuttering

available in research literature. It would not be possible here to describe all these treatment methods. Only such methods which have empirical validity, and those which have proved valuable consistently in reduction of stuttering are described. However, detailed descriptions are given of methods U3ed in the present study.

III. 3. i. RHYTHMIC STIMULATION

Van Dantzing in 1940 described the syllable tapping therapy and since then a variety of techniques have been devised to provide rhythmic stimulation. The devices used to make the speech rhythmic are portable desk metronome and the hearing aid type electronic metronome (behind the ear type) .

Lazarus (1969) and Wolpe (1969) reported the use of rhythm in treating individual cases. Lazarus had reported that paced speech with metronome in conjunction with other techniques was beneficial treatment for one patient. Wolpe found that a combination of Syllable Timed speech and Relaxation resulted in 90-95% improvement, which was found to have maintained.

Generally more information is provided in studies that have used unaided rhythmic speech. Andrews and his associates

have (1964, 1966, 1967) closely identified the use of a procedure known as Syllable Timed Speech (3T). Andrews and Harris (1964) reported on a 10 day programme of group treatment involving a combination of ST practice and non-directive group therapy. This was followed by weekly group therapy and speech practice seminars for nine months. In this study subjects were divided into a child, an adolescent, and two adult groups. The children's group was more successful, throughout the treatment.

Brandon and Harris (1967) have also used Syllable Timed Speech, with, psychotherapy and desensitisation to outside situations. In this study 647° of a group of 28 stutterers showed significant speech improvement on a follow up of at least 18 months. However, no date were provided on pretreatmen" speech of subjects. The authors concluded that Syllable Timed Speech Technique is not entirely successful. But, it is effective and worthwhile in two thirds of the cases treated.

Azrin, Jones and Flye (1968) have found a reduction of *9Ofo* or more of the stuttering for each subject when they synchronised their speech with a simple regular beat presented to them tactually to the wrist by a portable apparatus.

Brady (1971) has much publicised Metronome Conditioned Speech Retraining (MCSR) programme, which used a miniature earpiece metronome. This (pace master) had been the foundation for some recent therapy studies. MCSR begins with the subject speaking in the clinic to the accompaniment of a desk metronome. Subject is instructed to vary the number of syllables between two beats (each beat) in order to improve speech quality and to practice speaking with others to aid transfer of fluency.

Brady 0 971) reported data on 23 out of 26 stutterers who completed the treatment and were followed from 6 to 44 Eonths later. A number of measures were made including the percentage cf disfluencies while the subject was not wearing the Pacemaster. The data obtained at follow up indicated that *90%* of subjects improved and the group as a whole decreased their dysfluency level by 67.36%..

Adams and Hotchkiss (1973) and Hotchkiss (1974) have reported briefly on the reactions and responses of their three adult stutterers to MCSR and found that one subject failed to respond, another refused to wear pace master and a third responded well to the programme. The data provided were insufficient to assess the effects of treatment nevertheless the last mentioned subject was followed for over a year and

reported that he had maintained a low level of stuttering in all speaking situations. Melin (1976) compared five stutterers treated for three months by MCSR, with five stutterers treated by speech shadowing for the same period and another five who formed a control group. The subjects were assessed immediately before and immediately after, and three months following treatment. The data indicate 44$ reduction in percentage nonfluencies, but no change in speech rate in the MCSR group after treatment. 3y contrast there was no significant change in the pre and post treatment percentage of nonfluencies in speech of the other two groups, although the shadowing group showed a significant increase in speech rate. The study was limited to the extent that only one MCSR subject completed the five treatment stages at the end of three months and the data were from three minute, samples in a clinic setting only.

Hersccvitch and LeBow (1973) reported a study in which two 12 year old twin boys who stuttered were trained to pace their speech to rhythmic taps on their body and then to an imagined beat, after desk metronome practice. Data were provided from within the clinic for one subject in oral reading and conversational speech, before, during and five months after treatment. The data indicated that stuttering remained near zero and speech rate increased dramatically during followup,

but there was no evidence that his improvement was maintained beyond the clinic,

Berman and 3rady (1976) reported the results of survey on clinicians who used a miniaturised, electronic metronome in the treatment of stutterers. The survey showed that 103 of 144 patients were judged as improved by 72%. Those who used metronome tended to give better results than those who did not. Survey revealed that *57%* of the respondent clinician; considered the metronome conditioned technique as a major advance in treatment.

Although these studies showed dramatically improved results there was a lacuna regarding information about long term benefits.

III. 3. ii. REGULATED BREATHING APPROACH

One of the most impressive treatment intervention of adult stutterers is the regulated breathing method reported by Azrin and Nunn (1974). In this procedure the speaker interrupted his speech at moments of actual or anticipated stuttering at natural pause points, resumed speaking immediately after breathing deeply during the pause. In addition to this regularised pausing and breathing, the

programme included other factors such as (a) formulation of one's thoughts prior to speaking (b) identification of stutter prone situations (c) identification of mannerisms associated with stuttering, (d) speaking for short durations when tense or nervous (e) daily breathing exercises (f) immediate display of improved speaking, and (g) enlisting family support for progress. Fourteen stutterers were given training on this programme during a single counselling session of about 2 hours duration. The next day, the average number of stuttering episodes decreased by 94$, by *91%* at the end of one month, and by *99%*, during the extended followup. The new procedure appeared to be more rapid and effective than other alternative procedures.

A replication study by Azrin, Nunn and Frantz (1979) confirmed the results reported earlier. This method (used), was modified slightly from that reported earlier. The clients were taught to exhale slightly before speaking without taking too deep a breath and to initiate phonation without interrupting the exhalation. The authors used a control group of stutterers receiving alternate treatment namely systematic desensitisation. Out of total 38 patients, 21 were placed in the regulated breathing procedure and 17 in the abbreviated desensitisation procedure. Average ages

for the two groups were 29 and 30 years respectively. Both the groups of patients were seen for one or two sessions, each session lasting for two to three hours. The results showed that, in the regulated breathing group, stuttering decreased by 94$ on the first day and further decreased by 97%, and remained at that level upto the 3 months followup. For clients treated by the abbreviated desensitisation procedure, stuttering decreased by about 15% on the first two days, and, at the third month, 12% decrease from the pretreatment level. Followup was made by telephone contacts. For validating the report regarding the client's stuttering, a family member or a close person to the stutterer was contacted regularly. Present findings showed that stuttering continued to decrease to a 1 to 2$ level during the three to four month followup as long as occasional phone contact advice was available. But, when such contact was not scheduled or easily available in this study for 13 months, some clients began stuttering again. This study suggested that the booster instructions or support, such as telephone contacts, are necessary to maintain the reduction of stuttering.

Williamson et al (1981) studied the effects of a regulated breathing procedure on several characteristics of speech of an adult stutterer in a multiple base line across situations

design. Speech rate, dysfluency rate, and masseter eleetromyelogram were measured during reading, an interview a simulated social situation, and while speaking on the telephone or over an office intercom. Results showed reliable change in each dependent measure. The treatment effects were substantiated by a social validation procedure in which naive observers listened to tape recorded samples in all phases of the experiment. The results of this single subject experiment suggested that the regulated breathing procedure was an effective method for reducing stuttering and improving the quality of speech as judged by unbiased observers.

Jones (1981) reported the use of the regulated breathing technique for nine 2. hour sessions with a severe stutterer. The method was combined with relaxation and biofeedback. The results showed that stuttering was reduced from 46.1% stuttered syllables to 5.2%. This marked improvement, was not only clinically significant, but was generalised beyond the clinical setting and was maintained after the three month followup.

Ladouceur and Martineau (1982) reported 21 stuttering children (17 boys, 4 girls) were recruited by means of advertisements offering treatment for stutterers. Their age ranged from 5 to 16 years (Mean 9.6 years). They were

divided into two experimental groups and one control group. The first group received the regulated breathing treatment, the second group was treated by their parents, trained to apply the regulated breathing method, and the third group was a waiting list control group. Obtrusive and unobtrusive measures of speech were recorded. At one month followup, although the frequency of stuttering in the two treatment groups was not statistically less than the results obtained by the control[1] group, a 50% decrease occurred from baseline to followup periods. On the other hand, the control group showed an increase of stuttering of about 20%.

It can be concluded from the above studies that if regulated breathing approach can be tried systematically on stutterers, it would then definitely bring about satisfactory results for a sustained duration of time. Replicated studies have pointed out the usefulness of this method.

III. 3. iii. PROLONGED SPEECH/DELAYED AUDITORY FEEDBACK (DAF)

Some therapists have advocated the use of *DAF* procedure in stuttering therapy as one of the most promising developments in the field (for example Webster and Lusker, 1968; Yates,1970; Van Riper, 1970). The known auditory effect of DAF is to slow iown the speed of speech. Greater the delay in DAF, the

slower is the speed of speech. But, when speech is found stutter free, the delay factor in DA? is reduced, resulting into corresponding increase in rate of speech (Curlee and Perkins, 1969, 1973). It has been suggested that delayed speech feedback provides compensation or correction for the instability inherent in the stutterers auditory feedback mechanisms (Soderberg, 1 968). The stutterer, through DA?, comes to speak or read in an unusually slow rate, prolonging each syllable. As the patient reaches fluency, the prolongation of the syllable is decreased. This method is particularly beneficial to those, who speak fast (Bharath Raj, 1978).

Adamczyk (1959) provided the first report on the therapeutic use of DAF. He used continuous 250 m. sec. delay on 15 stutterers, over a period of 3 months. He reported considerable improvement in 13 of the cases and slight improvement in two cases. After therapy period was completed, no appreciable change in stuttering was observed when the stutterers came back on followups.

Subsequent reports on DAP procedure have stemmed mainly from the findings of Goldiamond's (1965) studies on DAP. He has emphasised the use of prolonged speech. Prolonged speech was established at approximately 25 words per minute with 25m. sec. DAP. After the criterion of fluency was achieved,the

delay level was reduced and reading rate increased in programmed steps.

Gross and Nathanson (1967) used DAP shaping procedures with eight male stutterers over a week period. Each stutterer attended three 30 min. sessions and four 15 minute sessions for a total of two and a half hours in the entire sequence. The results showed that stutterers significantly reduced the frequency of their stuttering. A six week and six month followup revealed maintenance of minimal stuttering rate in oral reading.

Curlee and Perkins (1969) reported variation on the Goldiamond's DAP procedure in the form of conversational rate control therapy. Subjects were initially instructed to slow down and prolong their speech in conversation with the clinician while experiencing "bilateral 250 m. sec. DAF. After clients achieved a criterion of fuency, they underwent social complexity successive approximation procedures until the completion of treatment. Results, reported on 15 adolescents and adult stutterers, showed stuttering to have decreased from 75% to 95% in outside situations.

Watts (1971) reported on the brief use of DAF to instate the prolonged speech pattern in 8 subjects and subsequent

practice without DAP assistance, for 10, two hours sessions of conversation in a small group setting. from the reported ratings it was evident that most subjects were fluent t'hrough-out the treatment but did not generalise satisfactorily beyond the clinic nor proved stable over time.

Curlee and Perkins (1973) studied a 90 hour treatment programme on 27 adolescent and adult stutterers, using conversational rate control therapy, prolongation during conversation. The evaluation was done by the frequency of stuttering per minute and percentage of words stuttered. The clinical findings indicated that each client showed significant reductions in the clinic, and each client generalised, without exception, to every outside measurement situation. The results showed that both measures of stuttering decreased by well over 90% for the clients as a group. All clients reported that their speech had improved.

Ryan and Van Kirk (1974) reported developments in a therapy programme which integrated operant methodology with prolonged speech on 50 stutterers. This programmed therapy aimed to establish fluency in oral reading, monologue and conversational speech, systematically transfer fluency to different settings, and finally maintain these gains via clinic checks on the subject's speech at decreasing intervals

over two years. Throughout all the phase of the programme, words stuttered per minute or syllable stuttered per minute were counted. The results indicated that the clients were able to achieve and maintain normal fluent speech.

Webster (1974) reported a current programme which originally relied on continuous DAF to produce fluency. Later he relied on the techniques of gentle initiation of phonation, on how to produce unvoiced consonants and how to slightly increase the duration of most speech sounds. Subjects were instructed to practice between clinic sessions to add transfer and achieve speech rate of between 100 and 120 words per minute. Twenty subjects, who completed this three week programme, were followed up for approximately 2 years. Nineteen of the 20 subjects reported their speech had improved. But no data were reported on speech quality or speech performance beyond the treatment settings.

Howie, Tanner and Andrews (1981) reported about a three week intensive treatment programme for 36 adult stutterers using prolongation. A gradual shaping of speech rate to normal and systematic transfer of skills acquired in the clinic to real life situations„ Immediately after intensive treatment, stuttering was virtually eliminated and speech rate and

attitudes towards communication were normalised. There was no substantial deterioration in treatment effects when subjects were evaluated in the clinic two months after treatment. Speech and attitude measures collected outside the clinic 12-18 months after intensive treatment showed lasting overall improvement in most clients. However, some deterioration in fluency from immediate post intensive treatment levels had occurred in 40% of clients.

In view of the wide spread use of prolonged speech in stuttering therapy there is still a surprising absence of data on its long term effects on the general speech behaviour of subjects.

III.2 iv. AUDITORY MASKING

This technique depends on a method of controlled presentation of noise which is designed to prevent the stutterer from hearing part or all of his speech. Stuttering is usually reduced when the subject's voice is partially or completely masked. When masking noise is used, the feedback system of speech is disturbed due to the noise. In turn, the subject is relatively free from the anxiety producing cues involved in hearing himself stutter, resulting in the lowering of fear of making errors and the subject feels relaxed and fearless. Several studies have shown that, stuttering

frequency decreases, when high intensity noise is presented to the ears of stutterers. This phenomenon has 'been labelled as 'the masking effect' (Cherry and Sayers, 1956; Maraist and Hutton, 1957; Adams and Hutchinson, 1974).

Derazne (1966) had. described a masking unit which he had used for stuttering therapy in the USSR since 1959. The unit emits a sound volume of 50 to 60 d3 and low frequency of 50 c/sec. It was also used in conjunction with breathing exercises and increased sleep.

Cherry and layer's (1956) state that masking studies have been the theoretical foundation for most recent clinical uses of masking devices.

Packer and Christopherson (1963) reported using a transistorised portable masking unit with three stutterers. They claimed that several resistant stutterers recovered after a few months of treatment.

In a long term auditory masking study by MacCulloch, Eaton and Long (1970) eight subjects experienced 23 weekly half an hour session or oral reading and conversation under 300 Hz masking, with decibel level individually adjusted to prevent self monitoring of speech. After 12 treatments,they made fewer oral reading errors, but the reduction remained

unchanged in the subsequent 12 sessions. Their oral reading rate was not significantly different throughout treatment, in-spite of a decrease of more than 50% in errors.

Trotter and Lesch (1967) reported the effectiveness of the masker in stuttering therapy. Trotter claimed to achieve a • 757° reduction in the frequency and severity of stuttering and some changes in vocal features, but no absolute elimination of stuttering and no permanent carry over were observed.

Adams and Hutchinson (1974) and Gonture (1974) found that the vocal intensity was significantly greater in the loud noise and stuttering frequency was significantly lower in the noise conditions than in the quiet conditions. Gonture and 3rayton (1975) reported reduction in the total number of instances of dysfluency behaviours in 1 7 adult stutterers. They read prose aloud in the presence of white noise (95 d3 SPL) It significantly influenced only those dysfluency types (Part-word repetitions) that had a high frequency of occurrence during contro. condition.

Yairi (1976) found that binaural masking noise caused significant decrement in stuttering associated with increased vocal intensity and faster speaking rate.

Dewar, Dewar and Barnes (1976) reported significant

decrease in speech errors in 53 stutterers while wearing a unit 'Edinburgh-Masker'. This permits the wearer to hear other sp3akers$_t$ 'luring oral reading, reciting and spontaneous speaking conditions. Repeated tests on one subject over a period of 22 weeks showed no discernible improvement of his general speech although, when in use, the apparatus maintained its effectiveness throughout this period.

Altrows and Bryden (1977) reported the effect of masking noise under four conditions on 19 stutterers: Continuous 95 dB white noise over headphones, white noise preceding speech initiation, white noise following speech initiation and *no* white noise. The results showed that white noise presented following speech initiation led to shorter reading times and fewer dysfluent words, especially for part-word repetitions. The more severe the stutterer the greater was the effect of auditory masking.

Overall review 6f the aforestated studies show that although patients do show improvement during therapy, the generalisation and carry over effects are negligible.

III. 3. v. SPEECH SHADOWING

Descriptions of "Shadowing" in stuttering therapy are

invariably associated with techniques and procedure of masking an: delayed auditory feedback (Cherry and Sayers, 1956). Speech shadowing involves two speakers. This procedure requires the stutterer to orally read in-company vith another oral reader and follow, or shadow, the words read by the latter. A decrease in stuttering is frequently reported to occur under these conditions.

Cherry and Sayers (1956) provided clinical reports on the use of shadowing with 10 subjects from four to 59 years of age. Seven of the 10 cases responded favourably to shadcving practice in the clinic and at home. Data were insufficient to enable one to evaluate the results of therapy.

Walton, and B1ack (1958) reported the results of shadowing therapy with. a 32 year old male stutterer. The subject follcved shadowing in oral reading over a telephone in the presence of strangers. Results showed that the total number cf stammers and hesitations per 10 minutes telephone conversation vere reduced from 80 to approximately 15 after 20 sessions. The subject reported improvement but no followup and reliability of results were reported in this study.

Subsequently, Walton and Mather (1963) reported treatment

of another subject by a combination of shadowing, systematic desensitisation and relaxation. They reported that after six months of treatment there was "still room for further improvement, although the progress he has made so far is considerable".

Kelhan and McHale (1966) reported using shadowing therapy which resembled Walton and Black's (1958) method. Thirty eight subjects aged 4 to 43 years were treated in groups over approximately three years. They reported the percentage of successes in each case was very close to overall success rate of 74%.

Two brief reports by Shelton **(1975)** and Kondas and Pukacova (1977) have described therapy strategies in which shadowing was claimed to have reduced stuttering. In the former report, the subject read aloud to the accompaniment of a recording of the clinician reading a passage which contained 'difficult words'. Only the subject's counts of his frequency of stuttering per day were used as data. He demonstrated improvement after six weeks treatment and on followup a month later. The later report claims 'significant improvement in speech fluency' was obtained from 20 subjects who practiced repeated reading during shadowing conditions.

It was reported that the subject's improved fluency was stable at followup.

The studies show that shadowing could be combined with other procedures in effectively treating stuttering.

III. 3. vi. RECIPROCAL INHIBITION PROCEDURES

The relationship between anxiety and stuttering has led to the use of procedure which are designed to reduce anxiety by deconditioning stimuli which are associated with increased stuttering or feelings of tension. Anxiety reduction techniques mainly include Systematic Desensitisation (SB) and Assertion Training.

Joseph Wolpe (1958) designed, the procedure SD based on the principles of reciprocal inhibition. He found that if certain responses or behaviours, like relaxation, eating, sexual arousal, assertive behaviour and motor activity could be made to occur in the presence of the stimulus, that evoked anxiety, its tendency to do so would be weakened. SD therapy consists of procedures to induce relaxed state in the stutterer by various methods, such as Jacobson's (1938) progressive muscular relaxation* Later based on a hierarchy of speaking situations graded in terms of their anxiety potential, items are presented step by step beginning with

* Wolpe modified this to a considerably short duration.

the lovest step on the hierarchy. The situation least feared by the stutterer is presented first. Stutterer is to imagine under relaxed state, the presented item over and over again until his anxiety subsides in the presence of the imagined situation. The process is repeated until all the items in the hierarchy have been evoked.through.

Traditionally, anxiety has played a central role in theory of causation and treatment of stuttering. The anxiety reduction procedures; systematic desensitisation and Assertion Training, were then suggested for the treatment of stuttering.

III. 3. vi. a. SYSTEMATIC DESENSITISATION

Several pronosing studies have utilised some form of systec=-ic desensitisation with stutterers. The basic premise underlying this form of therapy, as wolpe (1954) has stated, is that "If a response incompatible with anxiety can be made to occur in the presence of anxiety evoking stimuli, it will weaken the bond between these and the anxiety responses". In clinical practice, the two most common competing responses used tc inhibit the anxiety of stutterers have been assertive behavi:ur and relaxation. Wolpe's methods first were applied in stuttering therapy by Wolpe himself.

Browning (1967) used combination of systematic desensitisation, token reinforcement, and social reinforcement procedure to treat a 9 year old schizophrenic who stuttered. The results indicated that only the oral reading speech was improved during the first treatment phases, which combined token reinforcement and relaxation. The percentage of stuttering decreased for conversation, only when staff gave praise or social reinforcement for fluent conversation.

lanyon (1969) has reported a 25 year old male stutterer who was systematically desensitised to situations in a fear hierarchy. The severity of stuttering was measured both before treatment and two months after treatment ended. The results showed 56% reduction of non-fluency after therapy.

Adams (1971) reported on the treatment of 12 subjects by reciprocal inhibition of feared speech situations. After 28 weeks of therapy, subjects and their families reported that about half of the fear situations were no longer associate with stuttering. Five subjects reported to be fluent in all the fear situations, whereas 3 of the 12 subjects made no improvement.

Fried (1972) reported a case of 19 year old College

student, who was a severe and chronic stutterer,treated by systematic desensitisation. The stutterer had long speech blockage so severe that he could not be treated by psychotherapy. He spoke fluently after 42 sessions of systematic desensitisation.

Tyre, Maisto and Companik (1973) had applied systematic desensitisation on a case of 23 year old stutterer. They had reported significant reductions in stuttering frequency and self-rating of severity percentage at pre, post and six months after treatment occasions.

Boudreau and Jeffrey (1973) compared pre and post therapy assessment of 8 young adult stutterers on systematic desensitisation and 4 subjects who received no treatment. There was significant reduction in percentage of words stuttered in the treatment group but not in the control group. The speech assessments were made in oral reading and spontaneous speech in the presence and absence of another person.

Lai, Latte and Bharath Raj (1976) reported a 23 year old stutterer treated with systematic desensitisation. The subject showed considerable improvement and overcame the previous problems. The case reported about 75% improvement

in his speech after the total of 22 sessions tried.

Weiner (1981) reported a case of 36 year old male stutterer. Speech therapy was given with emphasis on desensitisation of abnormal emotional responses to speaking situations. In addition, techniques of vocal control for fluency were taught. Fourteen, hourly sessions were held within a 6 month period. Two booster sessions were added within a 2 year period, unexpected telephone calls were made during followup. The results showed improvement in speech, which however, was not completely stutter free.

III. 3. vi. b. ASSERTION TRAINING

Another procedure based on reciprocal inhibition principle in Assertion Training. In addition to muscular relaxation, wolpe (1958) advocated successfully inhibition of anxiety via Assertive Training. In this, patient's anxiety was ieconditioned through training in assertive behaviour when faced with the feared speaking situations. Only few studies have been reported on assertion training in relation to treatment of stuttering.

Dalali and Sheehan (1974) reported* a group study which compared the effects of two forms of "assertion training"with

avoidance reduction therapy across three groups with eight adult stutterers in each group. The "assertion training" group received either training in "active assertion" or simply discussed their feelings about situations in which they regarded themselves as unassertive. A comparison revealed no significant difference within or between the groups of either stuttering or assertiveness.

Balson (1976), reported a case of 22 year married adult with an acute onset of stuttering and free floating anxiety. He was treated by a variety of behavioural techniques, including relaxation training, assertive training with behaviour rehearsal and role-play, and modification of behavioural operants. The results showed complete elimination of the symptoms in five 50 minutes sessions. A six month followup showed the patient to be functioning well. However, no quantitative data in speech performance were reported.

3urns and 3rady (1980) reported the use of assertive technique as an adjunct to other treatments. They reported a case of 28 year old stutterer benefited by assertive technique including role rehearsal. The subject reported improvement and could handle the situations quite effectively after the training. Quantitative data on this subject,however were not presented.

III. 3.vii. nEGATIVE PRACTICE

Unlike many behaviour therapy techniques, the theory, design and first clinical application of Negative Practice can be mainly attributed to one person - Knight Dunlap. He was the first to recognise the untenability of earlier theories which postulated that a response repeated under similar stimulus conditions increases the probability of recurrence of that response. Dunlap (1928) introduced two alternative hypothesis which were intrinsic to the theory of negative practice. The first hypothesised that past appearances of the response may have no effect on the probability of the same stimulus producing the same response (betahypothesis). The second contended that the past

stutterers. He employed a method which closely resembled Dunlap's procedure with five adolescent and adult stutterers. Treatment was conducted for varying periods of time and resulted in reduced percentage of stuttering on a second test passage for 'repetition stutterers but increased percentage for 'speech blockers[1].

Fahmy (1950) reported the use of negative practice in therapy with 8 stutterers aged 8 to 24 years. Pour of the subjects worsened during the first six weeks of treatment, for speech blockers. In other four "repetition" stutterers, there was evidence of a reduced percentage of stuttering after the first six weeks.

Case (1960) drew on the findings of Fishman (1937) in designing a therapy program for 30 stutterers, whose age ranged from 8 to 39 years. In this sample five subjects were described as speech blockers. The aim of this study was to compare the effects of negative practice on this group and on another 25 who were not speech blockers. Case used Dunlap's procedure along with a faradic punishment shock. The five speech blockers worsened under negative practice, so their treatment was changed to a form of directive counselling, and 10 were "cured" and 15 showed "improvement" The results were assessed on the basis of reports by the patients and confirmed by clinician's own observation and the

patient's parents and friends.

III. 3. viii. OPERANT CONDITIONING PROCEDURES IN STUTTERING THERAPY

Operant conditioning is the process by which the frequency of a response is changed as a result of the consequence of that response (Skinner, 1938). The term operant emphasised that such responses operate on the environment to create consequences. The consequences contingent upon an operant response can either increase or decrease the future probability to that response occurrence. A reinforcer is any stimulus that, when made contingent upon a response, increases or maintains the frequency of that response (Skinner, 1938). A punisher is defined as any stimulus that decreases the frequency of a response on which it is contingent (Azrin and Holz, 1968).

III. 3. viii. a. PUNISHMENT

The use of punishment for the reduction of stuttering behaviour preceded the use of reinforcement by several years [Ingham and Andrews, 1973). Research concerning the use of -unishment to modify stuttering has typically used five kinds of punishments (a) loud noise (b) electric shock (c) aversive verbal stimuli (d) response cost and (e) time out.

Flanagon, Goldiamond and Azrin (1958), were the first to report that stuttering could be systematically controlled by environmental contingencies, including punishment and negative reinforcement.

Siegel (1970) gives an over view of work on punishment and stuttering noting that Bloodstein (1959) states, "greater the amount of punishment which the speaker expects to receive for stuttering, the more he tends to stutter". A similar observation is made by Brutten and Shoemaker (1967). Many speech therapists report that if stuttering is punished, it increases stuttering. These statements conflict with the findings of Flanagon et al (1958) and Goldiamond (1965), which have indicated that observable stuttering behaviour are subject to experimental extinction in the same way as are other operant behaviours for example, tics, compulsive behaviour, inappropriate sexual responses etc.#

Martin (1968) gives evidence that the overt behaviour emitted by chronic adult stutterer may respond to carefully structured behaviour therapy programme based on operant conditioning procedures.

Flanagon, Goldiamond and Azrin (1958) studied effect of loud noise on stutterers in their two experiments. They found in the first experiment, a reduction in the rate of stuttering

and in second experiment when noise was given continuously stuttering rates rose during these sessions.

Daly and Cooper (1967), hypothesized that stuttering was maintained by the anxiety reduction associated with it, when electric shock was used. They predicted that if electric shock was paired with stuttering then anxiety reduction would not occur and stuttering would extinguish. This prediction was not confirmed at a significant level in their study.

Martin (1968) found that stutterers under treatment, using physical or verbal punishment showed a dramatic decrease in their stuttering, but they went back to the pretreatment base line, when the punishments were withdrawn.

Blackham and Silberman (1971) made the same above comment but they stated that certain forms of punishment may beuseful under certain conditions.

III. 3. viii. b. TIME OUT

Time out is operationally considered as a form of punishment (Leitenberg, 1965). The reason is that, the time out involves the removal of a source of positive reinforcers

and therefore, it results in a decrease in the behaviour on which it is contingent (Ferster and Skinner, 1957).

Haroldson, Martin and Starr (1968) produced the first experimental data concerning the use of time out in treatment of stuttering. They suggested that the effects of time out do not extinguish as quiokly as the effects of other forms of punishments used in stuttering therapy, specially shock, noise or the word 'wrong*. Results showed that although all subjects increased in stuttering rate during return to base line conditions, no subject reached pretreatment levels.

Martin and Berndt (1970) demonstrated decreased stuttering rare in a single 12 year old subject. Martin and Haroldson (1?71) also noted markedly decreased rates of stuttering in four adult subjects using experimenter initiated time out. Then clients initiated the time out, however, no reduction in stuttering rates were observed.

Early experiments dealing with time out procedures assumed that time-out from talking was acting as punishment. Talking is itself considered reinforcing (Haroldson, Martin and Starr, 1958). If this theory was valid, then it should follow that time out periods of greater duration, should provide greater reduction of the stuttering response, since punishment effects

depend on the intensity of the punishing stimulus (Azrin and Holz,-- 1968) .

James (1976) tested the above hypothesis using time-out periods of various durations, ranging from 1 to 30 seconds. He found no difference in reduction in stuttering between treatment groups. But all treatment groups showed marked differences from a control group. from this he concluded that it was not the time-out from talking that was the punisher, but simply the interruption of continuous speech.

Martin and Haroldson (1975), reported that time-out procedures, produced the greatest suppression effects with the highest percentage of stutterers. All subjects exposed to time-out showed an average decrease in stuttering rate of 75% and also decrease in average duration of a stuttering episode.

Costelio (1975) reported in his single case study that the use of time-out produced greater reduction in stuttering than positive reinforcement.

III. 3. viii. c. <u>POSITIVE REINFORCEMENT</u>

Research using positive reinforcement techniques to manage

stuttering were begun later than research on the application of punishment.

Rickard and Mudy (1965) carried out a study in which positive reinforcement was used to increase speech fluency. The reinforcing stimuli varied from 'verbal praise', 'Ice Cream' and 'Points'. With all these reinforcement speech fluency had improved.

Shaw and Shrum (1972) were the first to make the response contingency for reinforcement, a specific interval of completely stutter free speech. During treatment, presentation of the reinforcer were contingent on 10 sec. interval of stutter free speech. This reinforcement procedure remained the same during the reversal condition. That is, instead of receiving marks for fluent intervals, a subject received marks for emissions of stuttering. The results of all children have indicated that this conditioning process was successful in manipulating the verbal behaviours of children in the experimental setting. All children had shown marked improvement in their stuttering.

Costello (1980) also used the concept of making reinforcement contingent on fluency per-se by expanding the procedure used by Shaw and Shrum (1972). In their program, the response

interval on which reinforcement was contingent was not static, but systematically increased during treatment, ranging from one stuttered word to 5 minutes of stutter free monologue. The case study described by Costello (1980) indicated that the client decreased stuttering rate.

III. 4. A CRITICAL EVALUATION OF THERAPEUTIC TECHNIQUES

There are several therapeutic techniques which have been implemented for treatment of stuttering by many investigators. The brief report of some of the therapeutic techniques which have been used frequently for treatment of stuttering were presented in the section Review of Past Studies.

A close observation of results of these therapeutic techniques show that most of the techniques used for treatment of stuttering have shown varying degrees of improvement. Some therapeutic techniques like Prolongation, speech shadowing, Auditory-Masking, Syllable Timed Speech, Reciprocal Inhibition Procedures like - Systematic Desensitisation and Assertion Training, Positive Reinforcement Methods, all these have definetely benefited the stutterers. There are some methods

of treatment like aversive shock therapy, click-noise therapy and punishment therapies, which have not shown improvement consistently. There are many contradictory findings reported from these studies. And some methods of treatment like time-out, Negative Practice, Aversive Shock Therapy, Click-Noise etc., are now only of historical importance. They did not prove to be effective consistently. The summary is that these methods are now nottbeing used. On the other hand, application of Prolongation, Rhythmic Stimulation and Reciprocal Inhibition procedures have been reported by many investigators. 3ut the results with these techniques have not lasted longer and complete or near complete elimination of stuttering has not taken place. The Regulated Breathing Approach, first implemented by Azrin and llunn (1974) on stutterers has shown a tremendously significant improvement within a few sessions of therapy. The therapeutic gains also are reported to be lasting longer as evidenced from the followup studies. The success of this approach could as well be attributed to the several components, each of which was perhaps effective in dealing with stuttering behaviour. It has been followed and replicated by other investigators confirming its value, Some other methods like systematic Desensitisation, Syllable Timed Speech and Prolongation also come very near to Regulated

Breathing in terms of their effectiveness.

In summary, therefore, what is required for an effective therapeutic approach is that, it should be primarily economical in terms of time taken for the treatment and efforts put for the purpose. 3y these criteria, it was explicitly decided to use Regulated Breathing Approach, Syllable Timed Speech, Systematic Desensitisation and Assertion Training either singly or in combination depending upon patient's need to provide therapy for the cases in the present study. This was done in line with what was stated earlier that a cognisance of personality test findings and speech characteristics must be kept in view.

1. EXPERIMENTAL DESIGN

There are numerous methods of establishing treatment effect in an experimental research. In the past few decades the between-group strategy and the within-subject strategy are most frequently used in experimental research.

The between-group strategy is a traditional method of documenting treatment effectiveness. This is based on the concept of group comparison. In this approach clinical research is based on the statistical theories of probability, random sampling and group performance differences, which are statistically evaluated. It is variously known by such names as between-group strategy, group-design method or statistical research design. The basic idea in this approach is that clients/subjects who are treated will change while those who are not treated remain unchanged. The method requires two groups of subjects who are comprable in terms of age, intelligence, family and social backgrounds, educational level, the type and severity of the disorder being treated, and other such characteristics. In this design, subjects of experimental group receive the treatment and subjects of control group do not receive the treatment. It is very important to make sure that the subjects in the two groups are indeed similar and comparable on all of the relevant variables.

CHAPTER - IV

R E S E A R C H M E T H O D O L O G Y

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3ecause of some basic requirements of the between-group strategy, it is especially difficult to use in clinical research. First, it is not easy to find a large number of persons with a given disorder who are accessible and villing to participate in the study. It is difficult to gain access to large samples of language disordered individuals, stutterers, aphasic persons or the hearing impaired. Second, the matching procedure is also very difficult to implement. Third, the requirements of control group that does not receive treatment may pose some practical and ethical problems. Fourth, enough clients to form two groups of subjects just may not be possible/practicable, irrespective of the random procedure. Fifth, group designs are not conducive to intensive observation of individual subjects, which is often needed in clinical research. Sixth, the betveen-group methodology does not give a total perspective of changes in client behaviour across treatment sessions.

For these reasons, we do not find many experimental studies in clinical fields that use the group methodology in an appropriate manner. An alternative to the group methodology is being used in many clinical fields which is knovn as within the subject or single-subject strategy. It is specifically developed for the intensive study of

individual subjects. The goal of the single-subject strategy is to isolate cause and effect relations among behavioural events.

In single-subject approach, many subjects are not observed just once or twice, instead each individual is repeatedly observed over a long span of time right from evaluation to therapy to followup. It does not require matching of the subjects because the subject himself serves as his own control. There is no control group that does not receive treatment. The same client's behaviour under treatment versus no treatment are compared to determine the effects of treatment. Each individual is treated as unique in the single-subject methodology.

The various types of experimental designs included in "clinical experimental designs" are, A3A design, withdrawal design, multiple-base line design, multiple-schedule and concurrent-schedule designs. Multiple-base line designs are classified into two categories, namely, concurrent type and non-concurrent type. The concurrent type of multiple base line design is subdivided such as multiple base line design across behaviours, across subjects and across settings (Hersen and Barlow, 1976). Bach design has its own merits and demerits. Therefore, the design has to be selected

according t6 the type of the clinical problem being investigated.

The traditional experimental designs, e.g., the matched multi-group designs suitable for out come studies, do not provide enough flexibility required in clinical research and are not suitable for process studies aimed at delineating functional relations among variables (independent and dependent) involved in therapeutic situation.

When there are larger number of subjects involved, invariably the problem involves "matching" of subjects to rule out the effects of intra-organismic variables. But matching can never be perfect. In the single case/clinical experimental designs, however, the subject is his own control and therefore, the problem of matching for intra-organismic variables is automatically solved.

In much of behaviour (therapy) research studies single-subject designs have been fundamental to the evaluation of therapy. Thus almost all articles appearing in journal of Applied Behaviour Analysis, are the single-subject design studies. Nevertheless studies with groups have also been used to evaluate the outcome of behaviour therapy. A major criticism of many such multi-group studies is that they often assume similarities rather than differences between

subjects within groups (Kiesler, 1966). The advantage of the single-case design is the feasibility to control the application and withdrawal of independent variable and to record the measures on the dependent variable more precisely (Hersen & Barlow, 1976).

In the present study, an extension of the ABA design is used to evaluate the treatment effects. In this extension of ABA design, A stands for base line, B stands for the treatment methods applied which may be one method or more than one method and then A becomes Post Treatment Measurement when there is no treatment applied. Then this design becomes A B^1 B" A' in which A is base line, B' is first treatment method, B" is second treatment method A' is post treatment base line and followup measurements are made subsequently. During period 'B' the number of treatment methods would vary.

It was decided to apply this method in the present investigation because the trends in behavioural change during intervention could be observed serially one treatment method after another successively with the goal being total elimination of target behaviour. The end results of these methods could be directly observed and followup sessions

would indicate the stability of improvements that would have occurred.

2. SUBJECTS AND THEIR CHARACTERISTICS

Subjects for the study were taken from E.N.T. and speech and hearing out patient department of S.R.N.Hospital, Allahabad, who had come with the complaint of stuttering for treatment. Each subject went through the routine E.N.T. and medical examinations. Then, they were sent to the investigator for treatment and needful. The investigator took a history of all the subjects and ensured that, they did not have any other speech defects than stuttering or associated with stuttering.

All the subjects included in the study aged between 16 and 30 years. This age range was selected because their self motivation for the treatment seemed to be high as they felt that stuttering-could be a severe handicap in getting a job.

All the subjects were male and single. Most of the subjects were studying in different fields of technical and educational faculties. The minimunm education of subjects

was intermediate. They were able to read and understand English fairly well. The mother-tongue of all the subjects was Hindi. It was ensured that all the subjects included in the study understood the items of the questionnaire and responded dependably.

Host of the subjects in this study were local. This was done because it was experienced in beginning of study that due to distance problem, most of the subjects were not able to attend the clinic at proper time and some of them had discontinued the programme.

All the subjects had fulfilled the following criteria after which they were taken for further study.

(i). Age ranged between 16 and 30 years.
(ii). No other speech defect than stuttering present.
(iii). Minimum education was Intermediate.
(iv). They were able to read and understand English well.
(v). They didnot have any organic abnormalities.

The personal history taken by the investigator included age of onset of stuttering, family history of stuttering, any significant history of illnesses or incidences before or after onset of stuttering. Informations were taken

regarding the subjective impression of his stuttering severity when he talked to different people in different situations. The anxiety hierarchy for each subject was prepared on the prescribed lines as advocated by Wolpe,for such of the cases which ware put on Systematic Desensitisation.

Subjects, who had fulfilled the above criteria were taken for their personality assessment. This was the first phase of the study. Personality assessment of all the subjects was carried out by using Cattell's 16 P.F questionnaire.

4. 3. PERSONALITY ASSESSMENT

Personality was considered as a major factor during the development of the subject as well as onset of stuttering. Therefore the aim was to have as comprehensive assessment and as complete knowledge of personality of each stutterer, as was passible.

Although there were various methods of personality assessment, the questionnaire method is being widely used in clinical research. The projectlve technique of personality assessment such as Rorschach, Thematic Apperception Test do not find a place here simply because of their various limitations and not being experimentally validated. It is true that they

have high reliability coefficients but their validity coefficients are considerably small.

In the same vein, rating scales of personality could not be made use of as they demand a direct observation of the individual in question under a series of situations. More over in order to objectify the ratings, at least three different observers will have to be made use of. These constraints compelled us to omit both projective technique as well as rating scales.

However, questionnaire methods have proved themselves to be far dependable instruments for this purpose. In this study, utmost importance has been attached to the present functioning of personality of the given individual at the time of testing. Simplicity of the nature of items, communication of meaning through items had a straight forward addressal to the respondent make the latter come out with a response that is more applicable to him.

Currently, the wide usage of many questionnaires such as MMPI, 16 PF Test, P.G.I., Health Questionnaire, E.P.I. Bernreuter's Personality Inventory, P.T.I, etc., have proved valid and reliable instrument for personality assessment. A detailed description of the personality test used in this

stady is described here.

4. 3. i WHY 16 PF QUESTIONNAIRE WAS CHOSEN

In the present study Cattell's 16 PP questionnaire ?:n 'C was used because:

a. This test has been designed for the use with subjects aged 16 and above. The present study included the subjects who were also 16 and above, so this test suited the purpose.

b. The test was most appropriate for literate subjects whose educational level was roughly equivalent to that of the normal high school student. The form •C• of Cattell's 16 PP test was selected because this included young stutterers, who had also completed their high school.

c. The 16 P? test is an objectively scorable test devised by basic research in Psychology to give the most complete coverage of personality possible in brief time.

d. The 1 6 PP test had been standardised on Indian population and norms were available.

4. 3. i i . DESCRIPTION OF THE 16 PF QUESTIONNAIRE

The Sixteeen Personality Factor Questionnaire (16 PF) was the result of more than three decades 6f work of Raymond Cattell and his numerous colleagues. Many reports of this work exist in the psychological literature. Cattell had developed the 16 PF test in order to define and measure the most important factors of human personality. According to him our language should provide information concerning what characteristics were important in human behaviour. Starting with a list of more than 4500 trait names culled from an unabridged dictionary, Cattell combined synonyms to arrive at 171 terms. College students rated peers on these terms, and inter-correlations and cluster analysis of these ratings identified 36 dimensions, that Cattelllabelled as surface traits. These 36 dimensions, plus some others that Cattell judged intuitively to be important, were used to obtain more peer ratings from subjects in several different kinds of settings. Factor analysis of these ratings identified 15 factors plus intelligence that accounted for inter-correlation among variables and these were called primary personality factors. Items were framed/drafted to represent these 16 factors, and the resulting scales were refined through subsequent factor analysis.

4. 3. iii. MATERIAL OF 16 PF TEST

Cattell and his colleagues used factor analytic procedures to develop questionnaires that could be uped for subjects aged six years through adulthood. The 16 PF was an adult level test and it was intended for subjects 16 years of age or older.

Five forms of the 16 PF are avail -able. Form A & B are considered equivalent each containing 187 items, and the reading level required is about that required for reading newspapers. Form C *& D* are also equivalent in their nature. They have only 105 items and require some what lower reading level than form A & B. Form E was designed for subjects with reading levels below sixth grade, and it has 142 items. All items are in the form of statements. For forms A,3,C *&* D, subjects respond by three alternatives for example "Yes", "perhaps" and "no", "yes", "once in a while", "no",. 3ut for form E a two response format is used.

In clinical practice form C & D are very frequently used. In this study form 'C' has been used which was found more suitable.

4. 3. iv. ADMINISTRATION OF 16 PF TEST

The items for 16 PF Test form 'G'[1] are printed in booklets that can be reused if separate answer sheets are used. The test can be administered to individual subjects or to group of subjects. Instructions for completing the test are printed on each test booklet. There is no time limit but most subjects can complete form A & B in about fifty minutes and form C & D in about thirty minutes. In clinical research at a time only one form is used. The 16 dimensions of personality or traits are essentially independent. Any item in the test contributes to the score on one and only one factor of personality so that no dependencies are introduced at the level of scale (trait) construction. More over, the experimentally obtained correlation among the sixteen scales are generally quite small so that each scale provides some new piece of information about the person being tested. In addition to the sixteen primary factors, the test can be used as a measure of four secondary dimensions called second order factors which are scorable from the component of primary factors.

In this study a single booklet of 16 PF test was used with all subjects. The test was individually administered to the subject and answers obtained. It was ensured that

all the items were responded to. The time taken for any subject was about 60 to 70 minutes to complete the test. The answer sheet of all subjects were scored by the use of scoring key (Manual for the 16 PF questionnaire, Indian Reprint, 1982).

4. 3. v. SCORING OF 16 P? TEST

Raw scores were obtained for 16 Personality Factors by assigning the specified number of points (one or two)for each item that was answered on answer sheet. A score of two was given whenever the second alternative was one of the extreme ones (for example - Yes or No). When a middle alternative was chosen for an item in a scale, a score of one was given. A raw score for each scale was determined by adding scores for all items included in the scale.

Raw scores were then transformed into specialised standard scores called Sten scores. These transformations were accomplished by referring to norm tables available. After obtaining the sten scores for various scales, they were plotted on a profile sheet which facilitated comparison and interpretation of each trait. The sten score of above 7 were considered high and score below 4 were considered low.

4. 3. vi. DERIVATION OF PERSONALITY PROFILES

Karson *&.* O'Dell in 1976 had developed the individual profile for in depth interpretation of personality from 16 PP test scores. The scores which were below and above the average score of each personality factors were taken in consideration for interpretation of personality of the subjects. The higher and lower scores from the average scores indicated the status of different factors of that individual on the profile. Finally a consideration was given on all the significant factors on the profile. Brief description and interpretation of each factor is described here as presented in the manual.

4. 3. vii. DESCRIPTION AND INTERPRETATION OP FACTORS AND TRAITS

Factor - A - Reserved Vs Outgoing - Reserved: Detached, Critical, Cool (Sizothytmia) : The person who scored low sten of 1 to 3 on factor A tends to be stiff, cool, skeptical and aloof. He likes things rather than people, working alone, and avoiding compromises of viewpoints. He is likely to be precise and 'rigid[1] in his way of doing things and in personal standards. He may tend, at times, to be critical, obstructive, or hard.

Outgoing: Warmhearted, Easy-going, Participating (Affectothymia): The person who scores high sten of 8 to 10 on factor A tends to be good natured, easy going, emotionally expressive, ready to co-operate, attentive to people, softhearted, kindly, adaptable. He likes occupations dealing with people and socially impressive situations. He readily forms active groups.

Factor - B - Less Intelligent Vs More Intelligent - Less Intelligent: Concrete - thinking (lower scholastic mental capacity): The person scoring low on factor B tends to be slow to learn and grasp, dull, given to concrete and literal interpretation. His dullness may be simply a reflection of low intelligence, or it may represent poor functioning due to psychopathology.

..More Intelligent - Abstract thinking, Bright (higher scholastic mental capacity) : The person who scores high on factor B tends to quick to grasp ideas, a fast learner, intelligent. There is some correlation with level of culture, and some with alertness. High scores contraindicate deterioration of mental functions in pathological conditions.

Factor - G - Affected by feeling3 Vs Emotionally Stable: Affected by feelings: Emotionally lesa stable, easily upset (lower ego strength): The person who scores low on factor C tends to be low in frustration tolerance for unsatisfactory conditions, changeable and plastic, evading necessary reality demands, neurotically fatigued, fretful, easily emotional and annoyed, active in dissatisfaction, having neurotic symptoms (Phobia, Sleep disturbances, psychosomatic complaints etc.,). Low factor C scores is common to almost all forms of neurotic and some psychotic disorders.

Emotionally stable - Faces reality, Calm, Mature (Higher ego strength): The person who scores high on factor C tends to be emotionally mature, stable, realistic about life, unruffled, possessing ego strength, better able to maintain solid group morale.

Factor - E - Humble Vs Assertive: Humble: Mild, Accommodating, Conforming (Submissiveness): The person who scores low on factor E tends to give way to others, to be docile, and to conform. He is often dependent, confessing, anxious for obsessional correctness. This passivity is part of many neurotic syndromes.

Assertive: Independent, Aggressive, Competitive Stubborn (Dominance): The person who scores high on factor E is assertive, self-assured, and independent-minded. He tends to be austere, a low tc himself, hostile or extrapunitive, authoritarian and disregards authority.

Factor - F - Sober Vs Happy-go-lucky; Sober: Prudent, serious, taciturn (Msurgency) : The person who scores low on factor F tends to be restrained, reticent, introspective. He is some times dour, pessimistic, unduly deliberate, and considered smug and primely correct by observers. He tends to be a sober, dependable person.

Happy-go-lucky: Impulsively - Lively, Enthusiastic (Surgency): The person who scores high on this trait tends to be cheerful, active, talkative, frank, expressive, effervescent, carefree.

Factor - G - Expedient Vs Conscientious : Expedient: Evades rules, feels few obligations (weaker super-ego strength): The person who scores low on factor G tends to be unsteady in purpose. He is often casual and lacking in effort for group undertakings and

eultural demands. His freedom from group influence may lead to anti-social acts, but at times makes him more effective, while his refusal to be bound by rules causes him to have less somatic upset from stress.

Conscientious: Persevering. Staid. Rule-bound (Stronger Super-ego 'strength) : The person who scores high on factor G tends to be exacting in character, dominated by sense of duty, persevering, responsible planful, "fills the unforgiving minute". He is usually conscientious and moralistic and he prefers hard-working people to witty companions.

Factor H - Shy Vs Venturesome: Shy; Restrained, Diffident, Timid (Threctia) : The person who scores low on this trait tends to be shy, withdrawing, cautious, retiring, a "wallflower".- He usually has inferiority feelings. He tends to be slowand impeded in speech and in expressing himself, dislikes occupation with personal contacts, prefers one or two close friends to large groups, and is not given to keeping in contact with all that is going on around him.

Venturesome: Socially-bold, Uninhibited, Spontaneous (Parmia) : The person who scores high on factor H is sociable, bold, ready to try new things, spontaneous, and abundant in emotional response, His "thick skinned-ness" enables him to face wear and tear in dealing with people and grueling emotional situations, without fatigue. However, he can be careless of detail,ignore danger signals, and consume much time talking.

Factor - I - Tough-minded Vs Tender-minded;

Tough minded: Self reliant, Realistic, No-nonsense (Harria) : The person who scores low on factor I tends to be practical, realistic, masculine, independent, responsible, but skeptical of subjective, cultural elaborations.

Tender Minded: Dependent, Over-protected, Sensitive (Premsia): The person who scores high on Factor I tends to be tender minded, daydreaming, artistic, fastidious, faminine, He is some times demanding of attention and help, impatient, dependent,impractical. He dislikes crude people and rough occupations.

Factor - L: Trusting Vs Suspicious:

Trusting: Adaptable, free of Jealousy (Alaxia): The person who scores low on factor L tends to be free of jealous tendencies, adaptable, cheerful, uncompetitive, concerned about other people, a good team worker.

Suspicious: Self-opinionated, hard to fool (Protension) : The person who scores high on factor-L tends to be mistrusting and doubtful. He is often involved in his own ego, is self-opinionated, and interested in internal, mental life. He is usually deliberate in his actions, unconcerned about other people, a poor team member.

Factor - M: Practical Vs Imaginative:

Practical: Careful, Conventional, Regulated by external realities, proper (Praxernia): The person who scores low on factor - M tends to be anxious to do the right things, attentive to practical matters, and subject to the dictation of what is obviously possible.

Imaginative: Warpped up in Inner Urgencies, Careless of practical matters, Absent-minded (Autia): The person who scores high on factor - M tends to be

uan conventional, unconcerned over every day matters, Bohemian, self-motivated, imaginatively creative, concerned with "essentials", and oblivious of particular people and physical realities. His inner directed interest some times lead to unrealistic situations accompanied by expressive outbursts.

Factor - N: Forthright Vs Shrews:

Forthright; Natural, Artless, Sentimental (Artlessness) : The person who scores low on factor N tends to be unsophisticated sentimental and simple. He is some times crude and awkward, but easily pleased and content with what comes, and is natural and spontaneous.

Shrewd: Calculating, Worldly, Penetrating (Shrewdness): The person who scores high on factor N tends to be polished, experienced, worldly, shrewd. He is often hard-headed and analytical. He has an intellectual, unsentimental approach to situations, an approach akin to cynicism.

Factor - C: Placid Vs Apprehensive:

Placid: Self assured, confident, Serene(Untroubled adequacy) : The person who scores low on factor 0 tends to be placid, with unshakable nerve. He has a

mature, unanxioua confidence in himself and his capacity to deal with things. He is resilient and secure but to the point of being insensitive of when a group is not going along with him, so that he may evoke antipathies and distrust.

Apprehensive; Worrying, Depressive, Troubled (Guilt Proneness): The person who scores high on factor 0 tends to be depressed, moody, a worrier, full of foreboding and brooding. He has a child like tendency to anxiety in difficulties. He does not feel accepted in groups or free to participate.

Factor - Qt : Conservative Vs Experimenting;
Conservative: Respecting Established Ideas, Tolerant of Traditional Difficulties (Conservatism): The person who scores low on factor Q1 is confident in what he has been taught to believe, and accepts the "tried and true", despite inconsistencies, when some thing else might be better. He is cautious and compromising in regard to new ideas.

Experimenting: Critical, Liberal, Analytical, Free-thinking (Radicalism): The person who scores high on factor Q1 tends to be interested in intellectual matters

and has doubts on fundamental issues. He is skeptical and liquiring regarding ideas, either old or new.

Factor - Q2: Group-dependent Vs Self-sufficient:
Group dependent; A "Joiner" and sound follower (Group adherence) : The person who scores low on factor Q2 prefers to work and make decisions with other people, likes and depends on social approval and admiration. He tends to go along with the group and may be lacking in individual resolution.

Self sufficient: Prefers Own Decisions, Resourceful (Self-sufficiency): The person who scores high on factor Q2 is temperamentally independent, accustomed to going his own way, making decisions and taking action action on his own. He discounts public opinion, but is not necessarily dominant in his relations with others.

Factor-Q3: Undisciplined Vs Controlled:
Undisciplined: Self-conflict, Careless of Protocol, Follows own urges (Low integration): The person who scores low on factor Q3 will not be bothered with will

control and regard for social demands. He is not overly considerate, careful, or painstaking.

- Controlled: Socially precise, following Self-image (High self-concept control): The person who scores high on factor Q3 tends to have strong control of his emotions and general behaviour, is inclined to be socially aware and careful, and evidences what is commonly termed "self-respect" and regard for social reputation. Ee some times tends, however, to be obstinate.

Factor Q4: Relaxed Vs Tense:

Relaxed: Tranquil, Torpid, Unfrustrated (Low ergic tension): The person who scores low on factor Q4 tends to be sedate, relaxed, composed, and satisfied. In some situations, his oversatisfaction can lead to laziness and low performance, in the sense that low motivation produces little trial and error. Conversely, high tension level may disrupt school and work performance.

Tense: Frustrated, Driven, Over-Wrought (High ergic tension): The person who scores high on factor Q4 tends to be tense, excitable, restless, fretful,

impatient. He is often fatigued, but unable to remain inactive. In groups, he takes a poor view of the degree of unity, orderliness, and leadership. His frustration represents an excess of stimulated, but undischarged, drive.

IV, 4. EVALUATION AND MEASUREMENT OP STUTTERERS

Stuttering behaviour is known to vary in different situations. That is, it does not display it-self in exactly the same form or frequency on every occasion (Bloodstein,1981). Therefore, the assessment procedure should seek to capture the variability in order to adequately describe the frequency of stuttering. When stuttering is present, a representative picture can not be drawn unless a wide range of sampling of stuttering behavior is obtained. Later, when treatment has teen tried, its effect cannot be adequately judged unless one can demonstrate that stuttering has been reduced much below the levels displayed during the pretreatment samples (Costello & Ingham, 1985). Procedure for data collection recording and evaluations were the same for all subjects in this study.

IV. 4. i - OBTAINING SPEECH SAMPLE

In the present study speech samples were recorded in

two different contexts. These were oral reading and monologue task. Speech samples were obtained after each session of treatment through out the treatment period.

For purpose of oral reading speech samples, a set of reading materials were procured for all subjects. The adaptation effect for oral reading samples was controlled by reading different passages every time. Although, oral reading is not a common daily talking activity for most of the persons, reading has value as a speech sample in pretreatment and continuing assessment procedures (Ryan,1974). Many of the clinicians have used oral reading task as one of the measures for speech sampling in evaluation of stuttering (Trotter, 1955; -Wendell Johnson, 1961; Ryan, 1974; Rustin, 1978; Ryan, 1980).

The monologue task, which is similar to job task (Johnson, Darley and Spriestersbach, 1963) and spontaneous speech, was used to record the speech samples throughout the program. This is being used universally by most of the clinicians because it requires self formulated speech similar to that used in conversation. In monologue speech sampling, subjects selected different topics and contexts to speak, which included current topics and narration of stories etc.,

IV. 4. ii. DURATION AND NUMBER OF SPEECH SAMPLES

It was necessary to get a speech sample adequate in length for severity measurement. Obviously too small a sample would not provide enough moments of stuttering to form any respectable basis for clinical judgement. Therefore, in the present study, speech samples of two minute duration in both the contexts were recorded in each session. A single speech sample was recorded in a particular session i.e., one oral reading speech sample and one monologue speech sample in a session.

Many investigators like, Williams, Darley and Spriestersbach (1978) have recommended two or three minute speech samples for analysing the stuttering. Curlee and Perkins (1985) have recommended two minute speech samples for measurement of stuttering severity. Kelly and Steer (1949) had observed two minute samples of the extempore speech in their study. Young and Prather (1962) found in their study that 20 second samples of consecutive speech were sufficient for group analysis, but a much larger sample recommended for diagnosing an individual case.

IV. 4. iii. TOOLS AND APPARATUS

The tools and apparatus used were stop-watch, tape recorder and speech materials.

In order to compute the measures of stuttering a high fidelity tape recorder Philips, Model No. 354 made in India with variable speed was used to record the speech sample. To keep a time record and analysis of speech sample a stop watch with second hand was used.

Speech materials for oral reading speech samples were selected in the form of passages from Hindi Text Books of High School standard. It was selected in Hindi only because the mother torngle of all subjects was Hindi and all were Hindi speakers. For monologue task, different topics and contexts were selected by subjects, for example, National News, Sport events, Narration of stories, T.V. serials, about his education, job plans and study subjects etc.,

IV. 4. iv. MEASUREMENT OF SEVERITY

For the measurement of severity of stuttering, frequency count of stuttering and speaking rate were found to have been used more frequently and experimented in past clinical

research (Young and Downs, 1968; Young, 1969; Ryan, 1980; Curlee, 1981; Evesham & Fransella,1985) and these were used in present study.

In the current treatment research literature, frequency of stuttering is most frequently reported by percentage syllables stuttered (%SS) or percentage words stuttered (% WS). In the present investigation % SS has been used to measure stuttering severity. Because in terms of motor production, syllables are considered to be the basic physiologic units of utterances. Further, counting syllables allowed to assign more than one moment of stuttering in multisyllabic words. Syllable counts are unaffected by variation in word length. And all syllables are composed of about the same number of phonemes (Umeda & Quinn, 1980).

Speaking rate is another measure of severity measurement. Moments of stuttering take up time in the flow of the speaker's speech, and, therefore, often serve to slow speaking rate. The more frequent and longer are stutterings, the slower is overall speaking rate. In the present study, the overall speaking rate has been measured in terms of syllables spoken for minute (SPM). SPM has been considered as an

indication of the efficiency of the speaker's communication. In general most often, one would expect abnormally low overall speaking rate prior to treatment (Bloodstein, 1944) and increase in speaking rate as successful treatment progresses.

IT. 4. v. FORMULAE FOR THE MEASURES OF SEVERITY

The frequency of occurrence of stuttering was measured in terrs of percentage syllables stuttered *(%* SS) . This was calculated by using the following formula and same was used in this study.

$$\%ss = \frac{\text{Total number of stutterings}}{\text{Total number of syllables spoken}} \times 100$$

The total number of stuttering was obtained by listening to the tape recorded speech sample and counting the entire number of moments of stuttering.

To enhance reliability among observers, stuttering was typically measured in a global fashion, that is, a moment of stuttering. One moment of stuttering was counted for each of the speaker's attempts to produce a given syllable irrespective of the duration of that attempt. The basic decision was binary. A given syllable was perceived as either stuttered or not. Stuttering can occur between words

and within words. As more than one stuttering can occur in a word, when this occurred each moment of stuttering was counted separately. Further, stuttering was not recorded according to different forms or topographies, as most clinical researchers and clinicians have given up this practice. Since researchers have shown those divisions not to be clinically meaningful (Costello and Hurst, 1981).

The second measure of severity of stuttering was in terms of syllables spoken per minute (SPM). The SPM was calculated by using the following formula.

$$SPM = \frac{\text{Number of syllables spoken in 2'}}{}$$

The number of syllables spoken in a particular speech sample were counted by listening to tape recorded sample for 2 minute duration.

IV. 4. vi. RATING BY OBSERVERS

In the present work, tape recorded samples of oral reading and monologue were rated by three observers through out the study in which one was investigator himself. Two observers other than investigator were trained and discussed regarding the criteria to identify the moments of stuttering.

These two (other) observers were qualified speech pathoiogists. During any observation/therapy sessions there were at least two observers for recording episodes of stuttering.

Although, there have been many different ways of rating stuttering severity using different rating scales in this study, severity of stuttering was measured in terms of frequency of occurrence of stuttering and speaking rate. These two measures are most frequently used currently.

IV. 4.vii. INTER OBSERVER RELIABILITY

The inter observer reliability was calculated in terms of percentage agreement because the severity of stuttering was measured in terms of frequency count method. In this study, 90% and above was kept as the criterion between the observers for reliable ratings.

In this study, inter observer agreement between the observers was found above 90% for all the subjects and in all stages of evaluations.

Several studies have shown the criteria of agreement between observers above 90%.

IV. 4. viii. PRETREATMEINT BASE LIKE MEASUREMENT

After completing the preliminary evaluations and assessment of personality, subjects were taken in clinic set up which was same for all. Pre treatment base rate measurement were made by recording the speech samples in oral reading and monologue. *JOT* oral reading,subjects were provided with typed reading passages on cards. Different reading passages were used for different sessions of evaluations to avoid adaptation and familiarity. For monologue task, subjects were asked to speak on any topic of his choice as instructed. In each session, one recording of each context was made. In this way, three different sessions were devoted on different days. They were rated by two other observers and analysed for severity. When a stable rate cf stuttering was not obtained, then some more sessions were devoted to get a less variable base rate.

IV. 4. ix. FREQUENCY MEASURES DURING TREATMENT

The same method was followed as on pretreatnent evaluation. Only one sample of each context was recorded in each session of treatment after therapy was over. And the measures of **severity were** calculated as per the formulae given earlier.

IV. 4. x. FREQUENCY MEASURES DURING FOLLOWUP

After completion of treatment, when subjects had shown remarkable improvement and reached the target criteria established, then they were asked to come for revaluations of their speech after one month and after 3 month for follow up measurements. This was done to see the followup maintenance of their improved speech.

Three sessions for reading and spontaneous speech (Monologue) respectively were spent to obtain speech samples during each followup period. And same procedures were followed for computation of measures of severity.

IV. 4. xi. SESSIONS

Pre-treatment base line evaluations were continued till on 3 successive occassions a stable rate was reached.

During the treatment period, the number of sessions devoted were within the range of 8-10 sessions, but not more than 20 sessions for each of the treatment methods. About 8 to 10 sessions of treatment were sufficient to identify the maximal amount of improvement. More sessions of treatment were tried in some cases in order to reach the maximum benefit

by that method. Each treatment session lasted for about 45 minutes. Only three sessions each session inclusive of both reading and spontaneous speech (Monol5gue) was devoted for each followup evaluations.

IV. 4. xii. THERAPEUTIC TARGETS SET FORTH FOR THE STUDY

Clinically significant improvement may be said to occur when stuttering episodes are considerably reduced. Although different investigators may differ in terms of target behaviour, in the present investigation, a 3% or less of stuttering episodes were considered sufficient as to produce significant speech fluency/elimination of stuttering. This was decided so because even non-stutterers would show about 0-3% stuttering episodes.

IV. 5. THERAPEUTIC STRATEGIES USED IN THIS STUDY

Mainly four therapeutic strategies were selected from the numerous strategies available to be administered in this study. These were Rhythmic Syllable Timed Speech using electronic desk type metronome, Regulated Breathing Approach, Systematic Desensitisation and Assertion Training, Out of all the therapeutic strategies mentioned here only few were tried with each stutterer depending upon the deficiencies in

their personality shown in their profile. In few subjects stuttering was almost eliminated by trying only one method of treatment.

Each treatment method was tried for an optimal of 10 sessions or till the improvement in stuttering became stable in three consecutive sessions. The subjects who showed no further improvement in consecutive three sessions was taken as criteria to discontinue that method and to start another method of treatment.

The procedure of administration of each treatment method is described here in their headings.

IV. 5. i. RHYTHMIC SYLLABLE TIMED SPEECH

In this study, Rhythmic Syllable Timed Speech method was applied with the help of desk type electronic setronome. This instrument was housed in a small box of 1 ' x 3/4' in size.

The subjects were instructed and demonstrated as to how to read and speak with the help of metronome beats. Instruction given to subjects was aa follows: Listen to me carefully. This instrument, which is kept

in front of you gives sound beats at regular intervals. The regular intervals of beats will be varied by me in a systematic fashion on which you have to concentrate and read and speak like this - "you - will - try - to - speak - in this - ta - nner". Try to say them with each beat. If you cannot speak any word because of your stuttering, then stop and commence again at the next convenient beat. Try to relax, be quiet, wait and start to speak once again along with the beats.

To make an easy beginning the subject was started to speak or read at 40 beats per minute rate which was most convenient for all the subjects. Depending on his capability to read or speak with the given speed of metronome, the speed was raised step by step by 5 beats per minute, as the subject picked up the speed and fluency in reading or speaking with metronome. If the subjects had difficulty with the speed of the metronome at raised rate, then immediately the speed of the metronome was reduced at which he was able to speak comfortably. This process was repeated and speed was also raised step by step till an acceptable speed was obtained.

Each treatment session lasted for about 45 to 50 minutes divided into two halves-giving rest of about 3-5 minutes. In first half, subject was asked to read a passage with the help

of metronome. In the second half, he practiced to speak any topic of his choice with the metronome beats.

After obtaining an acceptable rate of speech with metronome beats both in reading and monologue, subjects were asked to come for followup evaluations.

IV. 5. 11. REGULATED BREATHING APPROACH

The original approach of this method described by Azrin & Nunn (1974) consists of several steps followed in a single session of treatment, as described here.

Inconvenience review: The client reviews the inconveniences and annoyances that have resulted from stuttering. This procedure heightens his motivation to engage in the necessary training effort.

Awareness training;; The client deliberately stutters and is required to describe in great detail the nature of the episode including the type of words stuttered, the situations or persons which provoke stuttering, and associated body movements such as eye blinking or facial or hand movements. This procedure clearly identifies for the client the circumstances under which he stutters so that he can prepare himself

better for those circumstances. The procedure also teaches the client to focus his attention on each stuttering episode so he will be prepared to take action on every such episodes.

Anticipation awareness: The client is taught to alert himself to the likelihood of a stuttering episode,whenever he feels as if he will stutter, he indicates this to the counsellor by pausing in his speech. Also, the cdunsellor alerts the client when he detects such stuttering - related signs as neck tensing, eye blinking or hand movements.

Relaxation training; It consisted of three procedures - (1) In the Relaxed Posture Procedure, the client learns to sit and stand in comfortable posture by letting his shoulders drop slightly from their normal posture position and by slouching slightly. (2) - In the Relaxed Breathing Procedure, he learns to breathe deeply, slowly and regularly since such breathing is relaxing and is opposite to the shallow, fast, irregular breathing associated with anxiety and stuttering. Specifically, he learns to inhale and exhale for an equal duration and without pausing at the upper or lower limits of the breathing cycle. (3) - In the Self Directed Relaxation Procedure, the client learns to facilitate his relaxation by telling himself to "Relax" while letting his abdominal and

throat muscles go completely limp as he continues his Relaxed Breathing Exercises.

Incompatible activities: The competing activities to stuttering were to stop speaking, to take a deep breath by exhaling and then slowly inhaling to consciously relax one's chest and throat muscles, to formulate mentally the words to be spoken, to start speaking immediately after taking a deep breath, to emphasise the initial part of statement, and to speak for short durations. As the speech became more fluent, he gradually increased the duration of speech.

Corrective training: The client was given practice in initiating the competing activities the instant he started stuttering. The counsellor reminded him to stop speaking and to carry out the competing activities if the client failed to do so.

Preventive training: The client was given practice in engaging in the competing activities when he anticipated that he vould stutter. Also, when the counsellor detected stuttering associated mannerisms or speech hesitancy, he signalled to the client to perform the competing activities.

Symbolic Rehearsal; The client imagined himself in stuttering prone situations and demonstrated, as well as described, to the counsellor the prescribed activities he would engage in within such circumstances.

Positive practice: Several types of structured practice were given (1) The client practiced the competing breathing pattern while reading, the number of words spoken per breath being progressively increased as he was able to speak more fluently (2) As he spoke to the counsellor, he practiced the interrupt and breathe pattern (3) While not speaking, he practiced the several relaxation exercises (4) They were asked to telephone friends each day for the first few weeks to practice their new method of breathing and speaking on the phone (5) A telephone group was established in which earlier clients telephoned tha more recent clients. (6) Additional speaking practice was given to the clients who had difficulty with specific letters or words.

Social support: The client contacted interested friends or family members and told them of his progress and asked them to remind him to practice his new manner of breathing and speaking should they ever notice him beginning to stutter.

Public display: The client was instructed to seek out

those circumstances or words or people that had been previously avoided because of their greater likelihood of producing stuttering and to speak in those circumstances using the prescribed procedure.

Post treatment practice: The client was instructed to use the prescribed procedures continually and further, to practice the new breathing pattern at regular times each day.

FLLOWUP: The counsellor telephoned the client about three times during the first week to provide encouragement and to answer questions and called intermittent thereafter to obtain the reports of progress in addition to providing encouragement.

The total time for this method was spent about 70-80 minutes in first few sessions of treatment. Since, it required more practices and understanding of procedures by subjects. Later, time spent in sessions were less than 60 minutes.

IV. 5. iii. SYSTEMATIC DESENSITISATI0KN PROCEDURE

Systemic Besensitisation procedure was followed in the

following steps as described by Wolpe.

Step 1 - Introduction of subjective anxiety scale; The subjective unit of Disturbance (SUD) scale was introduced to each subject to rank their anxieties in different situations in terms of percentage. For this purpose, subjects were asked to think of the worst anxiety, they 'have ever experienced or can imagine experiencing, and this was assigned the number 100. Later they had to think of the situations whichmada th feel absolutely calm and anxiety free and called this zero. Now, they had a scale of anxiety, the unit of which is called subjective unit or disturbance (SUD). Subjects were asked to rate various situations of anxiety according to the amount of anxiety they would have experienced. A hierarchy was prepared for all the items presented.

Step II-Relaxation training; For relaxation training, Wolpe's adaptation of Jacobson's (1938) approach was followed. Subjects learned the relaxation procedure and followed precisely. Subjects were asked to practice the relaxation exercises every day. An actual demonstration of relaxation was made to patient so that through vicarious learning he would be able to execute the same at home.

step III - Gounteroosing relaxation and anxiety-evoking stimuli froTr. the hierarchies: The desensitisation of the

items of the hierarchy began following the relaxation practice. The subject was asked to relax with his eyes closed in accordance with the regular relaxation procedure until he reported zero disturbance. Then the first item from the bottom of the hierarchy was presented to him to imagine and asked to indicate whether he had a clear picture of the scene. He was allowed to imagine the scene for few seconds. He was then asked to report how much disturbance he had experienced during the period of imagination. when subject indicated 'zero or 'no' disturbance, by lifting his little finger of left hand,then the next higher item from the hierarchy was presented to him and asked to imagine. Whenever, the subject reported disturbance on any particular item he was taken back to immediate previous item and ensured *that* he was relaxed, subsequently he was taken to next higher item at which he would feel greater ease and again indicate full relaxation or otherwise.

One after, the other, all items of hierarchy were presented in the same way. The total number of sessions to complete the programme varied from subject to subject. The total time for each session was about 45 to 50 minutes. Speech samples were taken for analysis at the end of each session.

IV. 5. iv. ASSERTION TRAINING

In this study, Wolpe's principle of assertion training method was followed. During assertion training, the techniques utilised were concrete problem solving, modelling, imitation, and role-playing in the clinic setup and in a few cases out of the clinic setup also. Emphasis was given on making the situation as real and concrete as possible. An effort was made to help the stutterer to learn via modelling and imitation how to enter the store, approach the sales person, meet strangers, talk to seniors etc., attend to the content of the communication with particular focus on initiating and maintaining an assertive quality in stutterer's speech. The stutterers practiced these situations outside the clinic set up and review of these were made with subjects in next session. Their doubts and questions were clarified. Proper guidance for maintenance of their improved speech were given and verbal reinforcement was also given from time to time.

Assertion training was also used as a vehicle for proper verbal expression which incorporated certain features, talking with appropriate voluminousity, with appropriate body gestures, reduced rate of speaking, all of which served as complementary procedures to make assertion training more effective.

CHAPTER - V

R E S U L T S A N D D I S C U S S I O N

As described in the chapter on Methodology every case was first interviewed in order to gain, a general impression about the nature of problem. When the case met all the criteria laid down he was included in the study. As it is true in all clinical case studies, a brief history of the problem and associated characteristics was obtained of every case.

Although 40 consecutive cases were registered for stuttering at E.N.T. OH) Department were given preliminary testing and even a few sessions of therapy were tried, not all of them continued to take therapy and met the criteria laid down in the study. Only 15 cases out of the 40 met all the criteria laid down in the study and the results of these cases are presented in this chapter. Details regarding preliminary observation, testing, therapeutic techniques tried have been already presented in the chapter methodology.

16 PF questionnaire was tried and profiles were obtained. Brief descriptions are given for every case. Base line evaluations were made at least on three consecutive occasions and if the case showed nearly stable rate of stuttering, therapeutic sessions were started. The number of therapeutic sessions had varied from case to case. Therapeutic sessions were continued till the targets set out were reached.

Subsequently measurements were made during followup sessions. For practical reasons the followup session measurements could not be made because of nonavailability of the cases at expected times. Depending upon when the patient became available, measurements were done during followup period.

It was ensured that inter-observer-reliabilities came to the expected level or very near to expected levels, so that there would not be any dilution in any therapeutic effects. As could be seen through the tables presented, the lowest, inter-observer agreement was 83.33% and highest being 100%.

The 16 PF questionnaire findings are presented in the profile form for each case. Although the profile itself is suggestive of assets and deficiencies of the traits of case, a brief verbal description is also presented.

Two graphs are presented for each case, one for rate of syllable per minute (SPM) and another for percentage syllable stuttered (%SS) in both monologue and oral reading. The graphs are presented in the conventional standard single case design sequence namely base line, treatment sessions and followup. Another table presents inter-observer reliabilities in % of agreement. These procedures have been followed in every case.

In the methodology it was clear that the goal of treatment was elimination of stuttering. Taking into account the speech characteristics, personality assets and deficiencies appropriate treatment methods were tried. In some cases a single method of treatment was effective enough to reach the target. Some cases required more than one method. The graphical profiles under each case depicts the effects of treatment when different methods were tried. A particular method of treatment was withdrawn only when it failed to produce further improvement beyond three sessions. The case was switched over to another method of treatment. All these relevant informations are presented in each graph drawn. As it is expected in single case study design, measurements were done in every session.

In the following pages details of findings of every case is presented sequentially.

Case I

He was 20 year old muslim student of Intermediate Science. He had left study for about 2 years after completing high school and got admission' once again in Intermediate Science. He had been stuttering since child-hood and it had

become worse after the death of his mother at the age cf about 12 years. None of his friends or relatives had the same problem. Due to his speech problem, he was very-much shy to talk with girls and women even if they were his relatives. Neither he would dare asking questions in the classroom nor answer them. He was worried about other's critical attitudes towards his stuttering. He had some medical treatment for long duration but did not improve. He had lost all hope to get cured. He was persuaded to attend therapy by ENT specialist.

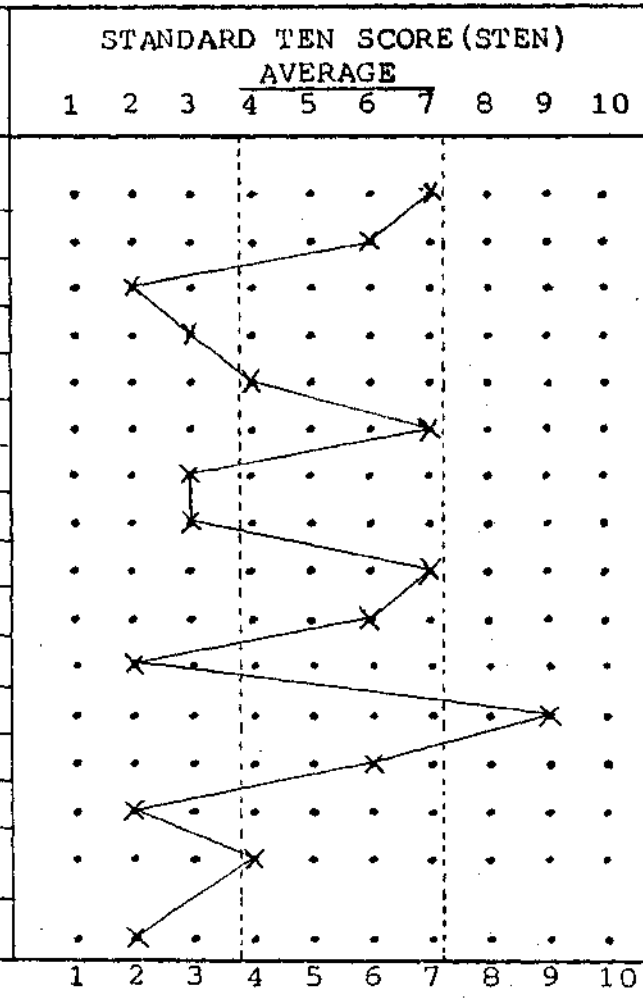
Speech characteristics showed more hard contact cf lips, repetition of sounds and words. Prolongations were very few. There were no breathing disturbances. He reported that he had more difficulty on bilabial sounds. He had a tendency to speak fast. There were few facial grimaces observed like - eye blinking and pulling of facial muscles during hard contact of lips.

Cattell's 16 PF test profile revealed that he was a less emotionally stable (C = 2), humble (lacking in assertion) and shy (socially withdrawn) individual. Sten score of 9 on 0 factor suggested that he was apprehensive (more worried, depressive and troubled). Sten score of 2 on Q2 factor

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. I AGE: 20 years EDUCATION: I. Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	10	7	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	5	2	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	2	3	HUMBLE	ASSERTIVE
F	6	4	SOBER	HAPPY-GO-LUCKY
G	10	7	EXPEDIENT	CONSCIENTIOUS
H	6	3	SHY	VENTURESOME
I	2	3	TOUGH-MINDED	TENDER-MINDED
L	9	7	TRUSTING	SUSPICIOUS
M	7	6	PRACTICAL	IMAGINATIVE
N	2	2	FORTHRIGHT	ASTUTE
O	8	9	SELF-ASSURED	APPREHENSIVE
Q1	7	6	CONSERVATIVE	EXPERIMENTING
Q2	5	2	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	6	4	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	3	2	RELAXED	TENSE



suggested that he had high dependency on others.

The personality profile indicated that he had more anxiety problem. He had described himself an anxious person in the interview also. Based on this profile, systematic desensitisation technique was tried with the case. For this purpose, a list of anxiety hierarchy items was prepared after detailed discussions with the case,which is presented here.

		SUP
1.	While talking with the father	100
2.	While talking with girls	90
3.	While talking with higher authority figures	80
4.	While talking with teacher in class	70
5.	While talking with elderly strangers	60
6.	While discussing things in a group	40
7.	while talking with relatives particularly women	30
8.	While communicating with shop keepers and at counters	20
9.	While talking with friends	10

During therapy sessions progressive muscular relaxation was carried out as described by Wolpe. One complete session was devoted to demonstrate the Progressive Muscular Relaxation.

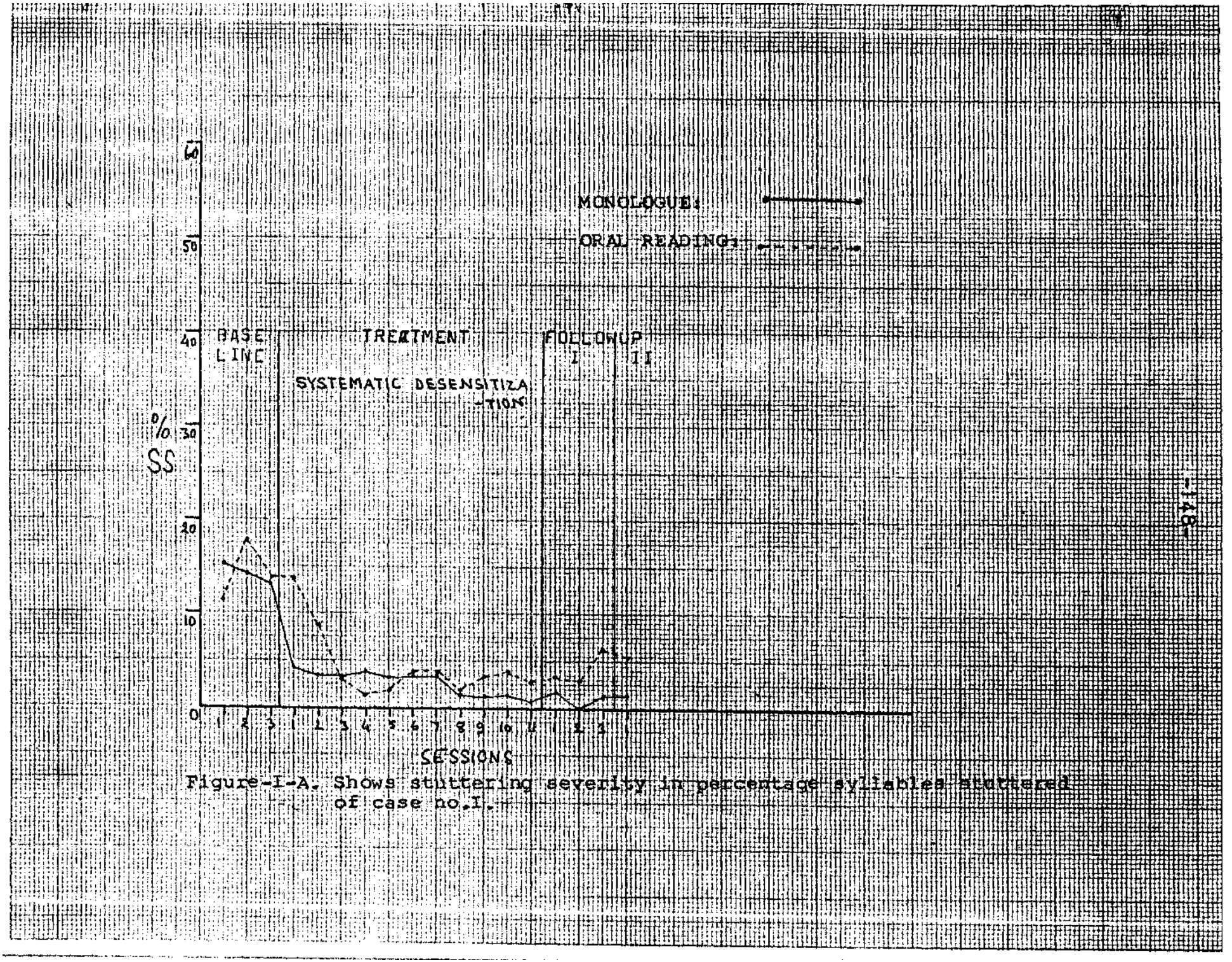


Figure-I-A. Shows stuttering severity in percentage syllables stuttered of case no.I.

Figure-I.B.: Shows speaking rate in SPM of case no.'I'.

This facilitated quick learning. He could easily learn to go into a deeply relaxed state. He was then gradually exposed to the situations starting from the lowest item to the highest under imagination. He had good fertility in visual imagination and so could get vivid visual images of situations while they were being described.

Figure 1 - A presents $S8 across baseline, therapy session and followup. It may be observed that on the 1st three sessions of base line measurements a fairly consistent degree of stuttering could be noted. Within the 1st session of therapy, there was a dramatic decrease in 5&S in monologue and again a dramatic decrease in $SS in oral reading during first three sessions of therapy. This trend was maintained fairly consistently during all future sessions of therapy, particularly #SS went on decreasing reaching to almost zero in the 11th session.

The fact that in monologue, he gained great fluency which was maintained even during followup demonstrates the therapeutic effectiveness of systematic desensitisation. With improvement occurring in monologue, it should be expected that in oral reading also there should be great improvement with continued sessions of therapy. This is so because

Table-I. Shows inter-observer reliabilities in percentage of agreement of case no.I

PERIOD		PRE TREATMENT			DURING TREATMENT																				FOLLOW UP								
																									1 MONTH			3 MONTH			6 MONTH		
CONTEXT ↓	MEASURES → / SESSIONS ↓	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3	1	2	3
ORAL READING	SS	90.9	93.18	90.9	90.0	90.9	100.0	100.0	100.0	87.5	100.0	100.0	100.0	100.0	100.0	-	-	-	-	-	-	-	-	-	-	85.71	100	90.9	88.88	-	-	-	-	-
	TS	98.97	98.77	99.58	99.13	98.18	99.0	99.04	99.57	99.04	98.7	98.72	99.18	99.5	99.49	-	-	-	-	-	-	-	-	-	-	99.5	99.48	98.85	98.82	-	-	-	-	-
MONOLOGUE	SS	94.28	97.05	94.11	91.66	84.61	100	100	92.3	92.85	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	100	100	100	100	-	-	-	-	-
	TS	98.7	99.12	99.61	99.65	99.12	99.48	100	98.76	98.4	99.66	99.65	99.64	99.27	97.37	-	-	-	-	-	-	-	-	-	-	99.11	99.57	100	98.9	-	-	-	-	-

monologue is more challenging and demanding for a stutterer than the oral reading.

A careful analysis of the study brings about some important findings. This case with the dominant personality features namely being less emotionally stable, being shy and nonassertive, has responded excellently well to the systematic desensitisation method. It may be remembered here that systematic desenaitisation incorporates progressive muscular relaxation in the initial stage itself which would help to decreasing the level of anxiety in the case. Purther a study of items of hierarchy indicates a variety of inter personal communication situations. So when the patient was made to face these situations under imagination, the patient quite possibly must have become more self confident and more self sufficient in dealing with those situations. Here is a specific illustration of how a case with predominant anxiety and shyness characteristics would respond well with systematic desensitisation method.

A reference to figure 1-3 shows the rate of speech in syllable per minute (SPM). It is observed that during base line ths SPM is more or less close for both monologue and oral reading. The increase in SPM during monologue

can be attributed to the improvement that occurred and have increased speech rate. After 7th session, however,he was specifically instructed to speak slowly which was maintained subsequently. A similar tendency was perhaps expected in oral reading also. However, this was not to be. It is difficult to explain, how this happens so. One reason may perhaps be that he is accustomed and habituated a particular rate in reading.

The followup could only be had on two occasions i.e., one month after and three months after. Even at these followup evaluations the patient seemed tohave maintained the therapeutic benefits.

Table-1 shows the inter-observer-reliabilities in percentage of agreement, which was found to be near 90 percen[H] in all of the evaluative sessions.

ThQ Case had shown good improvement in his speech fluenc; which was maintained at followup. This indicated that the treatment method chosen for this case was appropriate to his problem.

Similar findings have been reported by other investigate (Lacyon, 1969; Lai et al, 1976) who have tried systematic

desensitisation method. The one draw back of these studies wag that they had not taken any account of the personality characteristics of stutterers. As was stated earlier in introduction, the failure to correlate personality traits with specific treatment method is itself untenable, because those investigators have considered stuttering as unitary syndrome.

Case II

He was a 17 year old student of I.Sc, He had been stuttering since childhood. There was no family history of stuttering and none of his friends had the same problem. He had right side paralysis of both the limbs since child hood. He was a left hander.

Speech behaviour included mostly repetition of initial sounds and words. Silent blocks between the words and in starting of the sentences were also observed. Addition and prolongation of sounds and words were less observed. He had disturbed breathing pattern during speech.

Interview with the case revealed that he did not feel shy to talk with others. He was not hesitant to talk with senior people like father, teacher and other elderly people.

He U8ed to participate in games and other functions freely. He did not seem to have much anxiety problem,

Cattll[f]s 16 PF test profile revealed that he was emotionally stable (C =8), tough minded (I = 3)$_t$ more trusting (L = 1-), self assured (0 = 2), experimenting (Q1 = 9), and relaxed (Qu = 3). In other words, he was less affected by feelings, less tender minded, not suspicious, less apprehensive or worried or troubled, less conservative and less tense or frustrated. These had indicated that he did not have much anxiety. The same trend was also revealed from the personal history of the case.

Considering all the above findings aa stated, Regulated Breathing Approach was tried as a choice of treatment. A session of one and a half hour duration was devoted to discuss and demonstrate the different steps of the therapy technique as described by Azrin & Nunn (1974). Ho evaluations of stuttering were done during this session. Consecutive sessions had lasted some where between 60 - 70 minutes. The case had understood the technique and had followed it up to satisfaction, during clinic set up and in outside situations.

Figure II - A shows %SS across base line, therapy sessions and followup in both monologue and oral reading. It is observe

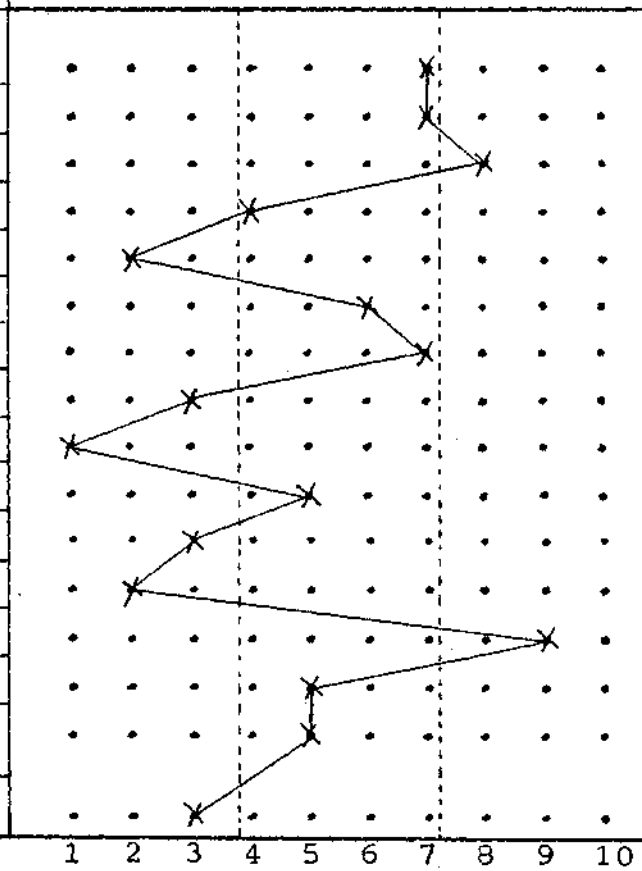
CASE NO. 11 AGE: 17 yrs EDUCATION: I.Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	10	7	RESERVED	OUTGOING
B	6	7	LESS INTELLIGENT	MORE INTELLIGENT
C	11	8	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	3	4	HUMBLE	ASSERTIVE
F	4	2	SOBER	HAPPY-GO-LUCKY
G	8	6	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	2	3	TOUGH-MINDED	TENDER-MINDED
L	1	1	TRUSTING	SUSPICIOUS
M	6	5	PRACTICAL	IMAGINATIVE
N	3	3	FORTHRIGHT	ASTUTE
O	2	2	SELF-ASSURED	APPREHENSIVE
Q1	10	9	CONSERVATIVE	EXPERIMENTING
Q2	8	5	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	8	5	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	3	3	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10



1 2 3 4 5 6 7 8 9 10

that during base line measurement, %SS in monologue is markedly higher than oral reading. In the immediately following session of therapy stuttering had decreased dramatically in monologue in first session of therapy itself. It had further decreased in the second session of therapy. The same trend of improvement was also observed in oral reading and reached almost zero level in the 8th session. In monologue, %S3 was slightly higher than %SS of oral reading but it was consistently maintained upto 8th session of therapy. By the 8th session of therapy his stuttering had been virtually eliminated and had consistently fluent rate of speaking. May be because of this reason he was not interested to take further sessions of therapy and left.

The followup could only be had on one.occasion i.e., one month after. At this followup evaluation, %SS had increased slightly in monologue but it was maintained in oral reading. When the case was interviewed regarding the increase of %SS in monologue he had reported that he could not devote much time to follow all the steps of therapy because he had final examinations of I.Sc, This was perhaps the reason that could be attributed to increase in %SS in monologue. Otherwise, the case had shown a remarkable improvement in his fluency during therapy sessions. He had reported that he was speaking

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Figure-II-A. Shows stuttering severity in percentage syllables stuttered of case no.II.

Figure-III-B: Shows speaking rate in SPM of case no.II.

very fluently with every one. The Some report was also given by his parents also.

Figure II - B shows the rate of speech in syllable per minute (SPM) in both monologue and oral reading. It is observed that during base line the SPM is markedly higher in oral reading when compared with monologue. This higher rate of speech may be attributed to the amount of %S3 in oral reading (figure II-A). It is observed that when %SS is less# then lesser is the %SS in monologue. This might be the reason why higher rate of speech in oral reading. During therapy sessions and followup, the SPM is more or less at the same level through out. The slight increase in SPM of monologue might be due to the tendency to speak faster than reading.

A close observation of the result indicates that the case had shown very good fluency which was maintained throughout the treatment programme in a limited number of sessions tried. This has indicated the effectiveness of this therapeutic method and its appropriateness to the easels problem.

Table II shows the inter-onserver reliabilities between observers in terms of percentage agreement which was above 90 in all the sessions.

Table-II. Shows inter-observer reliabilities in percentage of agreement of case no.II.

PERIOD →		PRE TREATMENT			DURING TREATMENT																					FOLLOW UP								
																										1 MONTH			3 MONTH			6 MONTH		
CONTEXT ↓	MEASURES ↓ / SESSIONS →	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3	1	2	3
ORAL READING	SS	93.54	94.54	87.80	100	100	100	100	100	100	100	100	-	1	1	1	1	1	1	1	1	1	1	1	1	100	100	100	1	1	-	1	1	1
	TS	99.40	98.52	97.56	96.93	99.44	99.01	98.09	99.50	99.57	99.10	99.56	-	1	1	1	1	1	1	1	1	1	1	1	1	98.36	97.20	98.38	1	1	1	1	1	1
MONOLOGUE	SS	95.23	96.82	96.29	91.66	100	100	100	100	88.88	100	100	-	1	1	1	1	1	1	1	1	1	1	1	1	100	100	93.33	1	1	1	1	1	1
	TS	99.40	98.20	96.53	96.79	99.52	98.79	99.62	99.61	98.58	99.59	99.04	-	1	1	1	1	1	1	1	1	1	1	1	1	99.59	98.13	98.47	1	1	1	1	1	1

Similar results have been shown by other investigators (Azrin & Nunn, 1974; Ladouceur and Martineau, 1982; Laurent and Ladouceur, 1987), who have tried the same method. They have also shown marked reduction in stuttering in a few sessions of therapy, which was maintained at their followup. But it was observed that these studies have not taken the personality of the cases as criteria to try the niethod of treatment. The present study focuses our attention on the point that if personality characteristics are taken into account to select a treatment method, then ultimately this results in economy in terras of duration of therapy and therapeutic effectiveness.

Case III

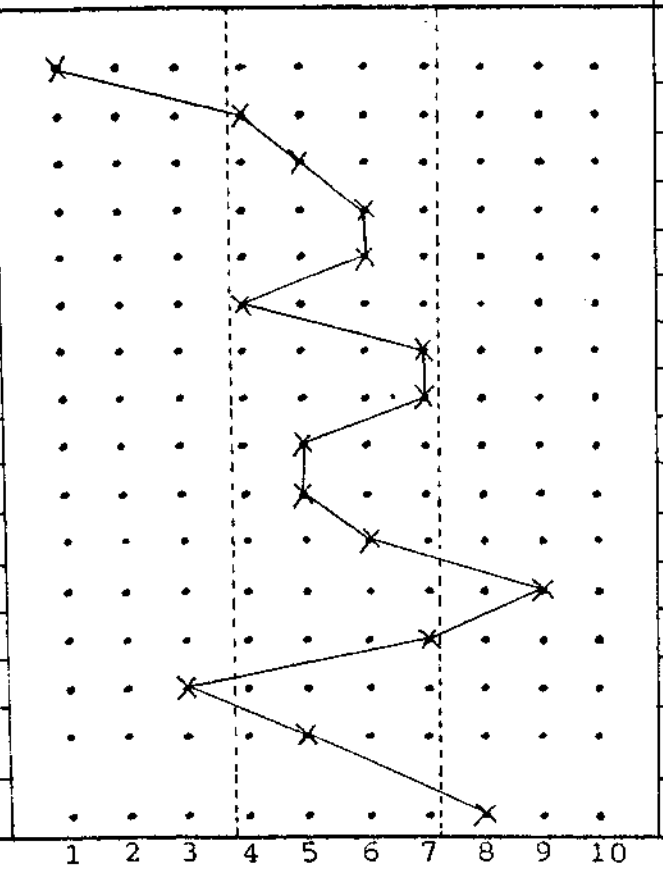
He was a 18 year old student of I.Sc, He had started stuttering since child hood. His father had stuttering, which was more in his early life, but it had improved later. No other person of his- family had the same problem.

Personal interview with the case indicated that he did not like to talk more with any person and most of the time he tried to keep himself away from speaking situations. He used to stutter more with his father. Stuttering was less

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. III AGE: 18 yrs EDUCATION: I. Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	4	1	RESERVED	OUTGOING
B	4	4	LESS INTELLIGENT	MORE INTELLIGENT
C	8	5	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	6	6	HUMBLE	ASSERTIVE
F	8	6	SOBER	HAPPY-GO-LUCKY
G	6	4	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	8	7	TOUGH-MINDED	TENDER-MINDED
L	7	5	TRUSTING	SUSPICIOUS
M	6	5	PRACTICAL	IMAGINATIVE
N	6	6	FORTHRIGHT	ASTUTE
O	8	9	SELF-ASSURED	APPREHENSIVE
Q1	8	7	CONSERVATIVE	EXPERIMENTING
Q2	6	3	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	7	5	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	9	8	RELAXED	TENSE



with other members of the family. There were some occasions, when he had become more sad and worried due to inability to start the sentence.

Speech behaviour showed a delay in initiating a word or sentence. This delay was attributed to his breathing disturbances during speech only. Stuttering was more in conversation than in reading,

Cattell's 16 PF test profile revealed that he was reserved (less outgoing), apprehensive (more worried, troubled and less self assured), group dependent (less self sufficient) and tense The personal history had also suggested that he had more anxiety.

In this case systematic desensitisation method was tried which was based on his personality characteristics shown on test profile and interview. Regulated Breathing Approach was not selected because it was thought that it would not inhibit the anxiety provoking stimuli in the difficult situation which the case would face or experience. As progressive muscular relaxation in systematic desensitisation is going to ensure relaxation prior to exposure to items under imagination, systematic desensitisation was considered as more appropriate method.

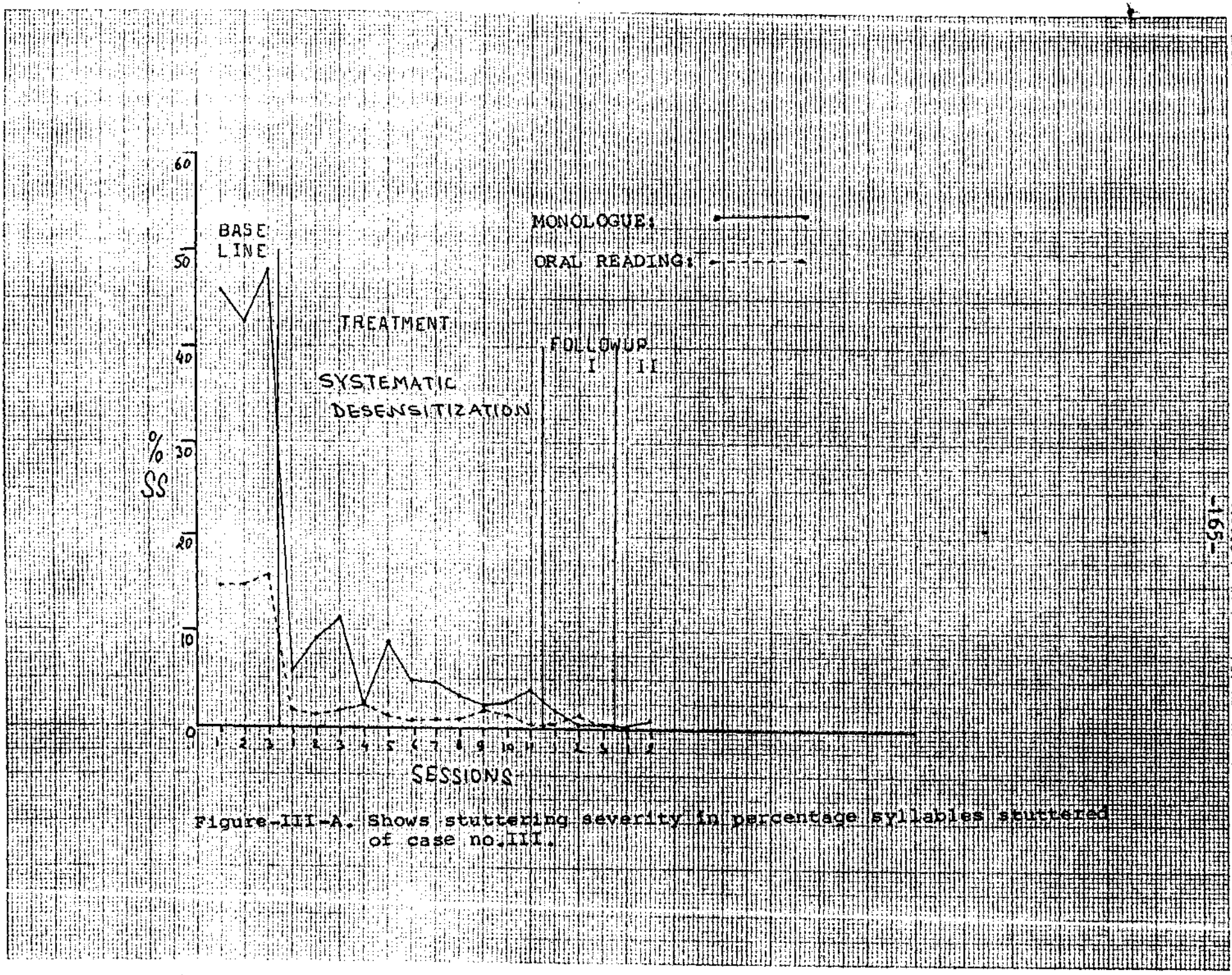


Figure-III-A. Shows stuttering severity in percentage syllables stuttered of case no.III.

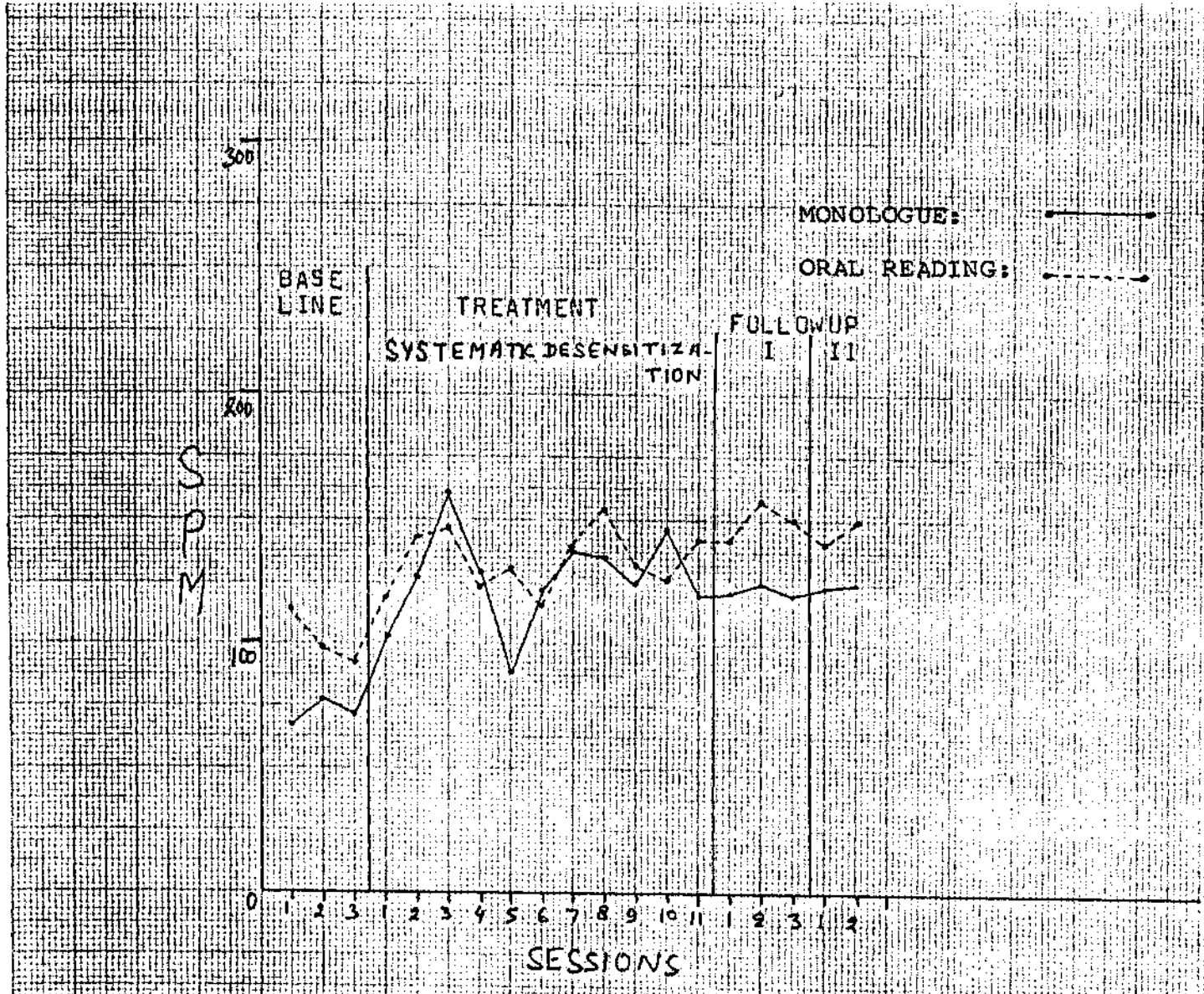


Figure-III-B. Shows speaking rate in SPM of case no.III

A hierarchy of anxiety items was prepared in consultation with the case.

	3UD
1. While talking with father	100
2. While talking with teacher in class	80
3. While talking in a group situation	70
4. While talking to a stranger	50
5. While talking with senior and elder people	50
6. While talking with older and senior members of family	40
7. While talking with girls	30
8. While talking with friends	20
9. While talking with younger persons of the family	10

Systematic Desensitisation method was carried out with progressive muscular relaxation. One complete hour was spent in a session to demonstrate the therapy technique. The case was able to go into deep relaxation state. This was checked by asking him to raise the little finger of the left hand to indicate relaxation. An item from the bottom of hierarchy list with least anxiety was presented first. He was able to get a good picture of the scene described. In the following sessions of therapy, other items of hierarchy list were present **from lower** anxiety level to higher anxiety level. He was also

instructed to carry out the same practices at home regularly. He had reported that he was following the method as per instructions given.

Figure - III A shows the pattern of reduction in stuttering ($SS) from base line to followup. During base line, it is evident that stuttering u&s much more in monologue than in oral reading. After trial of the 1st session of therapy stuttering had reduced markedly in monologue as well as in oral reading. After first session of therapy, there was some variation in the amount of stuttering till the 6th session of therapy. After the 6th session of therapy %SS had become almost stable till the last session of therapy tried. Stuttering had become almost nil in these sessions of therapy in oral reading context and fluency was consistently maintained.

Figure III - B shows the rate of speech in monologue and oral reading. It is obserred that the rate of speech in both contexts prior to treatment was less, which had gone higher with improvement in fluency (i.e., with reduction in stutterir The rate of speech was almost maintained nearer to each other in both contexts during the treatment period and followup. Th< case was discharged since he had shown the consistency in his fluency on consecutive sessions and no further improvement wa

Table 111. Shown inter-observer reliabilities in percentage of agreement of task no. 111.

PERIOD →				DURING TREATMENT																			FOLLOW UP									
																							1 MONTH			3 MONTH			6 MONTH		
CONTEXT →		MEASURES ↓ / SESSIONS →	PRE TREATMENT			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3	1	2	3
MONOLOGUE	ORAL READING	TS	99.85	99.48	97.87	97.12	99.4	99.38	98.86	98.34	97.96	98.54	98.9	99.6	98.63	99.57	-	-	-	-	-	-	-	-	-	-	98.77	99.8	99.17	99.19	99.6	-	-	-
		SS	96.77	92.48	96.1	83.33	91.64	97.36	100	94.11	83.33	92.3	88.88	100	87.5	88.88	-	-	-	-	-	-	-	-	-	-	100	100	100	100	100	-	-	-
		TS	98.83	98.37	97.34	98.34	97.9	98.6	97.0	99.2	97.0	97.0	97.7	98.0	98.0	98.0	-	-	-	-	-	-	-	-	-	-	97.0	99.0	98.0	98.6	99.1	-	-	-
		SS	96.55	93.1	96.55	100	100	100	85.0	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	100	100	100	100	100	-	-	-
		TS	96.9	97.39	97.34	100	100	98.6	97.0	99.2	97.0	97.0	97.7	98.0	98.0	98.0	-	-	-	-	-	-	-	-	-	-	97.0	99.0	98.0	98.6	99.1	-	-	-
		SS	96.77	92.48	96.1	83.33	91.64	97.36	100	94.11	83.33	92.3	88.88	100	87.5	88.88	-	-	-	-	-	-	-	-	-	-	100	100	100	100	100	-	-	-
		TS	98.85	99.48	97.87	97.12	99.4	99.38	98.86	98.34	97.96	98.54	98.9	99.6	98.63	99.57	-	-	-	-	-	-	-	-	-	-	98.77	99.8	99.17	99.19	99.6	-	-	-

expected. He was instructed to practice the same at home.

Followups, which were on two occasions, i.e., one month after and three months after, showed that the %SS had gone down to almost zero level in both the contexts. It was maintained at both followups. This may be attributed to the fact that the case had followed the practices and instructions sincerely after discontinuing the therapy. The patient confirmed that he regularly practiced at home.

Table-III shows the inter-observer reliabilities in terms of percentage agreement between observers. It was found to be between 83.33 to 100%.

The choice of systematic desensitisation method in this particular case clearly points out that it is indeed a very effective method with the cases who have similar personality patterns and speech characteristics.

The studies which had been reported with systematic Desensitisation for treatment of stuttering, have not taken into consideration the personality deficiencies as their criterion to try the method.

Case IV

He was a 20 year old student of B Sc, He had started stuttering since childhood. No family history of stuttering was reported, and none of hi3 friends had a similar problem. No significant history of severe illness was reported. ENT and hearing examinations did not show any abnormalities.

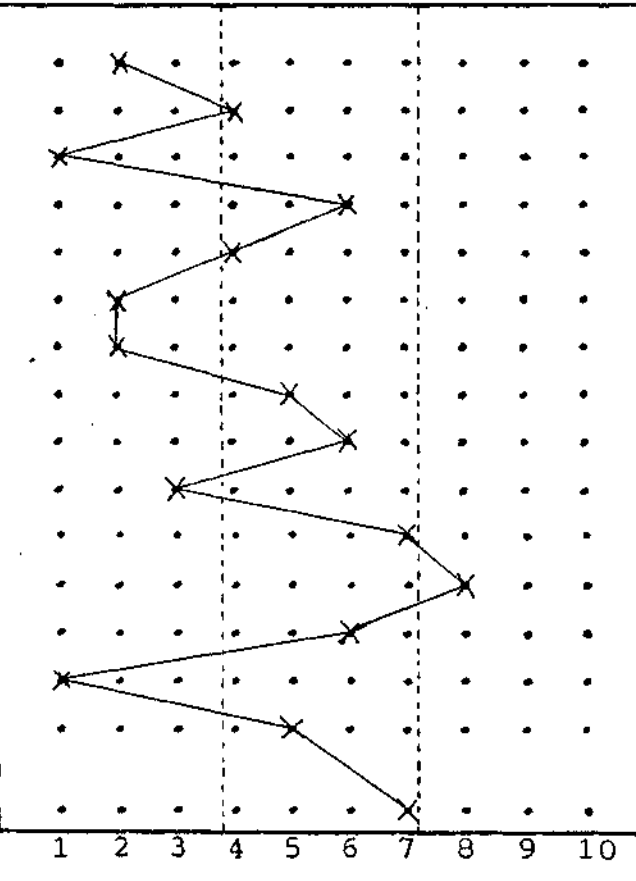
Personal interview and observation of his behaviour revealed that he did not have eye contact while talking. He used to keep his head down while answering the questions. He was a shy person. He used to avoid talking with persons. He used to speak fast. Listeners had to keep their ears alert to understand his speech. Many friends of the case had told him about his fast rate of speech. Repetitions were observed more. There was no breathing disturbances during speech. There were no secondary behaviours observed while speaking.

Cattell's 16 PF test profile revealed that he was reserved (A = 2), emotionally less stable (C = 1) with weaker super ego strength (G = 2) and shy (H = 2). Sten score on factor 0 suggested that he was apprehensive (Worried, troubled) and Sten score on factor Q2 suggested that he was more group dependent. All the major factors on the profile indicated that he was an anxious person having tendency towards entroversion.

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. IV AGE: 20 years EDUCATION: B.Sc

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	5	2	RESERVED	OUTGOING
B	4	4	LESS INTELLIGENT	MORE INTELLIGENT
C	4	1	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	6	6	HUMBLE	ASSERTIVE
F	6	4	SOBER	HAPPY-GO-LUCKY
G	4	2	EXPEDIENT	CONSCIENTIOUS
H	5	2	SHY	VENTURESOME
I	5	5	TOUGH-MINDED	TENDER-MINDED
L	8	6	TRUSTING	SUSPICIOUS
M	4	3	PRACTICAL	IMAGINATIVE
N	7	7	FORTHRIGHT	ASTUTE
O	7	8	SELF-ASSURED	APPREHENSIVE
Q1	6	6	CONSERVATIVE	EXPERIMENTING
Q2	4	1	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	7	5	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	8	7	RELAXED	TENSE



Systematic Desensitisation was tried with the case to inhibit anxiety components. The rate of speech was observed very high in both tha contexts. The method like metronome therapy would have been tried to control his rate of speech. But metronome therapy was not tried because it would not have counteracted the main problem namely anxiety.

A hierarchical list of situations producing anxiety was prepared in consultation with the case.

		SUB
1.	During interview or viva-voce examinations	100
2.	While talking on telephone	90
3.	While talking with higher authority	80
4.	While talking with any teacher of his school	70
5.	While talking with senior member of family mostly with father and uncle	60
6.	While talking on being present in a group	50
7.	While talking with a stranger	40
8.	While talking with girls and shopkeepers	30
9.	While talking with younger persons	20
10.	While talking with friends	10

In the first session, systematic desensitisation procedure was described to the case and demonstration of progressive muscular relaxation was done. The actual therapy had started

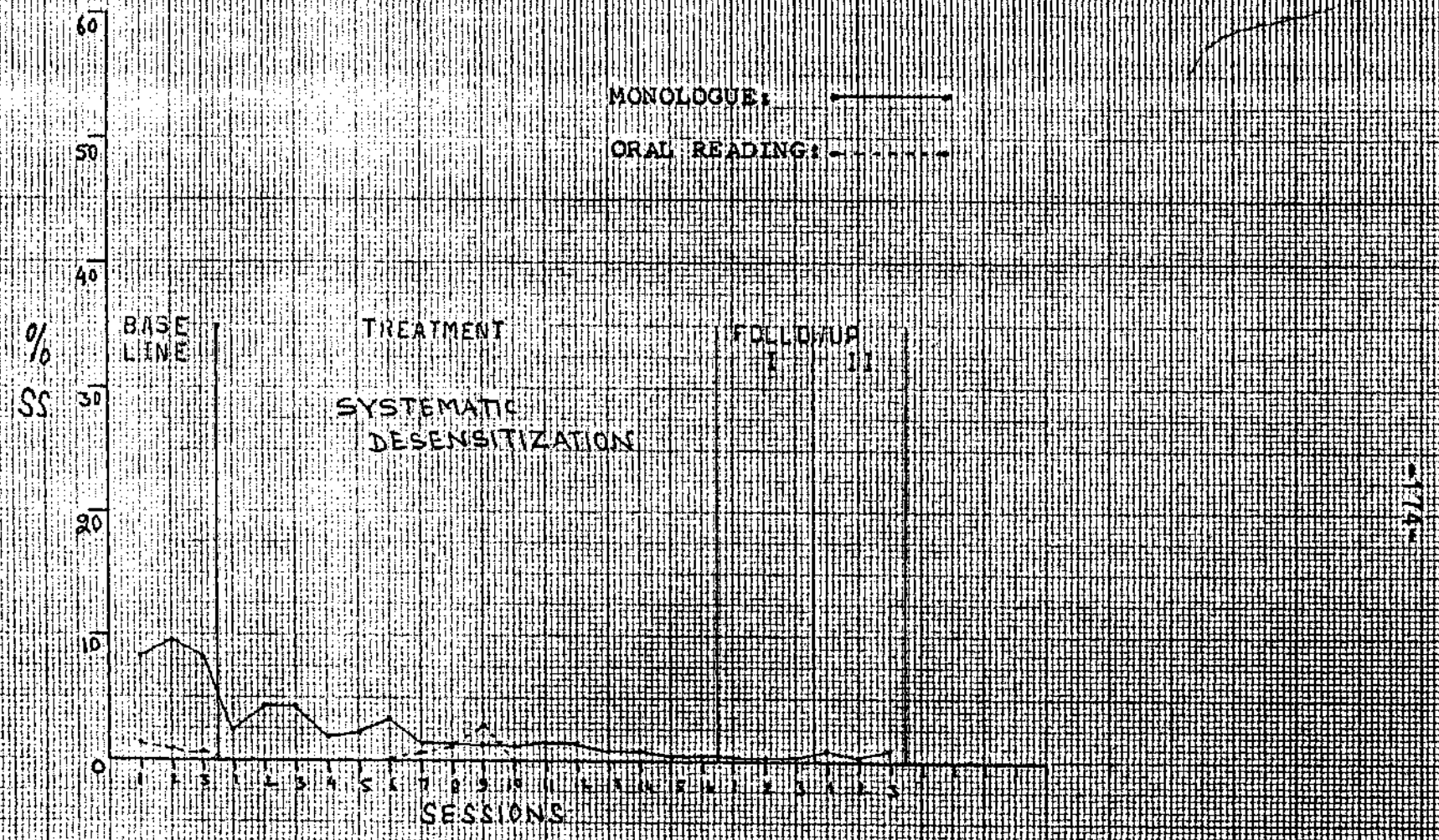


Figure-IV-A. Shows stuttering severity in percentage syllables stuttered of case no. IV.

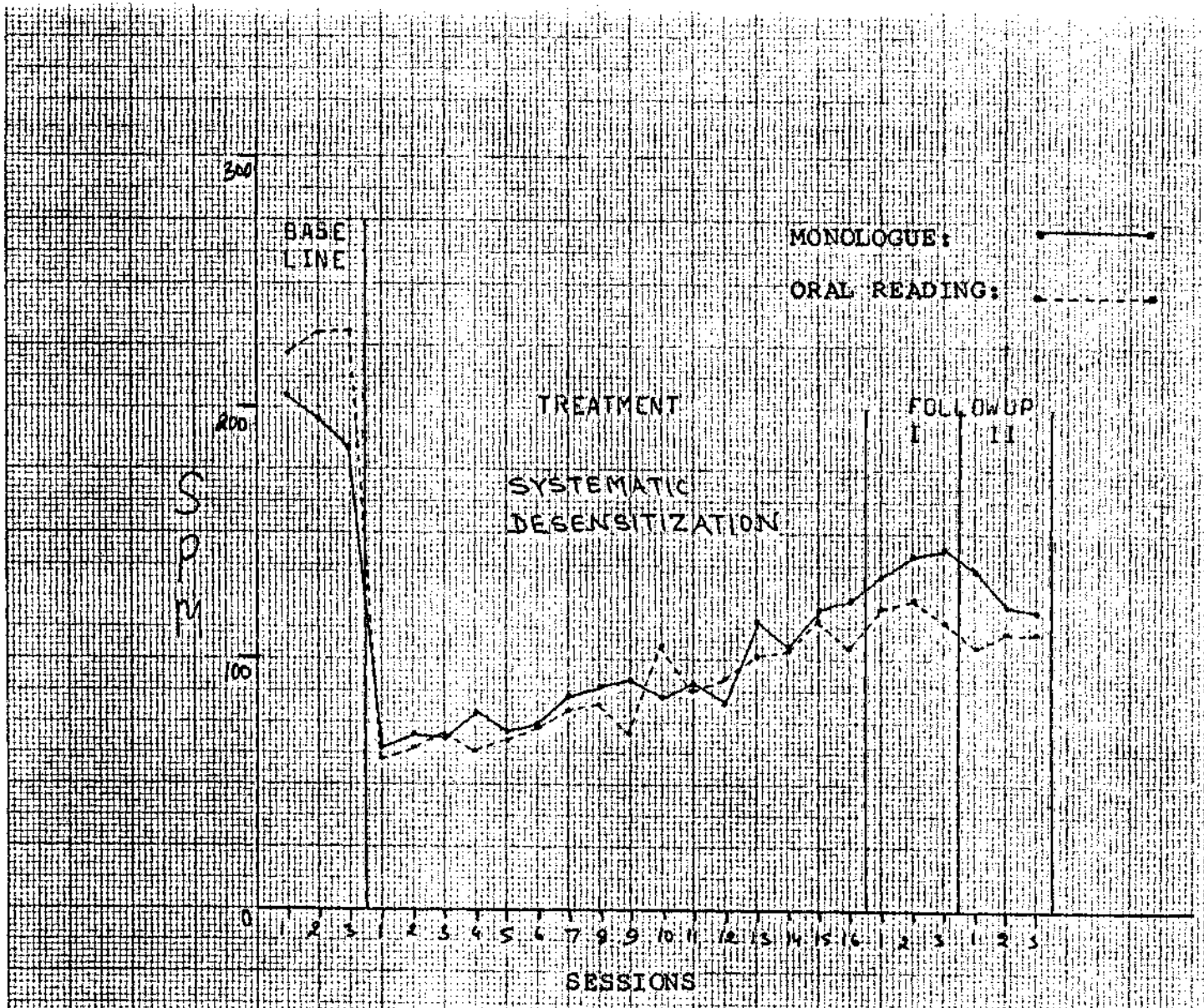


Figure-IV-B. Shows Speaking rate in SPM of case no. IV.

from the second session. He had understood the technique and he was very much motivated for taking the therapy. The list of items in the hierarchy was tried with the case. The case was able to attain a very satisfactory state of relaxation. As could be ascertained,he was reporting that he could get vivid visual pictures of scenes presented. In the next session other items from the hierarchy list were presented. Like this a total of 16 sessions were devoted to complete the presentation of all hierarchy items. In the first session itself, he was instructed to speak very slow by trying a little prolongation on each word. This was done because he had shown a high rate of speech during interview and on base line evaluations (Figure IV - B). Prolongation was reduced in the successive therapy sessions and it was completely eliminated in the last few sessions of the therapy.

Figure IV - A shows stuttering severity in terms of %SS across base line to followup. It is observed that stuttering is more in monologue than oral reading, and is almost nil in oral reading during base line evaluations. Within the 1at session of the therapy, there was a decrease in %SS in monologue. There was slight variation in %SS between the 2nd session and 6th session of the therapy. From the 7th session of the therapy, %SS had become almost minimum and

Table-IV. Shows inter-observer reliabilities in percentage of agreement of case no.IV.

PERIOD →		CONTEXT →	ORAL READING		MONOLOGUE	
		MEASURES → / SESSIONS ↓	SS	TS	SS	TS
PRE TREATMENT		1	100	98.66	94.11	98.89
		2	100	98.89	97.89	96.41
		3	100	99.36	96.77	98.37
DURING TREATMENT		1	100	97.56	100	96.98
		2	100	99.83	93.33	93.57
		3	100	96.45	100	95.58
		4	100	95.34	100	99.36
		5	100	98.54	100	97.84
		6	100	98.67	100	99.38
		7	100	99.37	100	98.83
		8	100	99.40	100	96.64
		9	100	99.80	100	99.44
		10	100	96.66	100	96.59
		11	100	98.89	100	98.90
		12	100	99.46	100	100
		13	100	99.50	100	98.86
		14	100	97.12	100	98.59
		15	100	96.86	100	99.58
		16	100	97.15	100	99.39
		17	-	-	-	-
		18	-	-	-	-
		19	-	-	-	-
		20	-	-	-	-
		21	-	-	-	-
FOLLOW UP	1 MONTH	1	100	98.34	100	99.68
		2	100	96.78	100	98.98
		3	100	96.65	100	99.65
	3 MONTH	1	100	98.59	100	99.86
		2	100	97.30	100	99.59
		3	100	98.63	100	99.17
	6 MONTH	1				-
		2				
		3				

near zero in last few sessions of therapy. In oral reading %SS was almost nil and near zero during all the subsequent therapy sessions.

Figure IV - 3 shows the rate of speech in SPM. It is observed that during base line the SPM is much more in both monologue and oral reading. During the first session of therapy, alongwith systematic desensitisation method, he vas also instructed to speak very slow with prolongation. This had brought the SPM down in the 1st session of therapy itself. This dramatic reduction in SPM, made the investigator to know the reason for it. When the case was interviewed after the 1st session of the therapy, he had told that when he is more anxious and tense, he tries to speak or read fast to finish the matter soon. So, here it may be true that the SD method had induced a considerable relaxation in the case and therefore, he could speak at a slow rate. The mild prolongation during the speech had also facilitated him to speak at a lower rate. In further sessions the rate of speech was brought near the expected level by reducing the prolongation and at last it was eliminated. The case was discharged from the therapy after completion of a total of 16 sessions of therapy, in which the case had completed all the hierarchical items. He had shown considerable amount of fluency in his speech. He was instructed to carry on the practices and come for followup.

Table IV shows the inter-observer reliabilities between observers. It was observed above 9Q% in all the sessions.

Two followups could be had on two different occasions i.e., one month after and three months after. On these followup sessions also, the case had maintained the fluency very well. There was slight increase in the rate of speech in both monologue as well as in oral reading but it did not have any effect on fluency gained.

Systematic desensitisation method was successfully tried in a total of 16 sessions of therapy which was very much sufficient to achieve consistent and normal fluency in the case. This has indicated that the systematic desensitisation method with mild prolongation was very much appropriate and effective with the case who had faster rate of speech.

Case Y

He was a 20 year old student of Engineering Diploma. He had been stuttering since child-hood. There was no family history of stuttering. There was no history of any severe illness reported before and after the onset of stuttering. ENT and hearing examinations had showed no abnormalities.

Personal interview with the case revealed that he did not have much anxiety while talking to people, He was not shy and he used to talk with every one without feeling much problem. Some friends had told him that his speech was not very clear and intelligible. During conversation, it was observed that rate of speech was fast. He was not opening his mouth properly while speaking. And the voluminosity of voice was not sufficient. No breathing disturbances were observed during speech. Repetition of sounds and words were core in his speech.

CattelVs 16 PF test profile revealed that on most of the factors the score fell within average limits. Sten score on some factors revealed that he was assertive (not humble), practical, forth right, apprehensive (not self assured)group dependent and relaxed. The case had not shown much anxiety problem. Regulated breathing approach was tried to improve his fluency. The complete procedure was discussed and explained to the case. Demonstration of therapy procedure wer also done in one session prior to the first session of therapy. In the first session, the complete procedure was followed systematically as described by Azrin and Nunn (1974). For the purpose of social support, his friends were taken into confidence to help him in doing practices and also to report

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

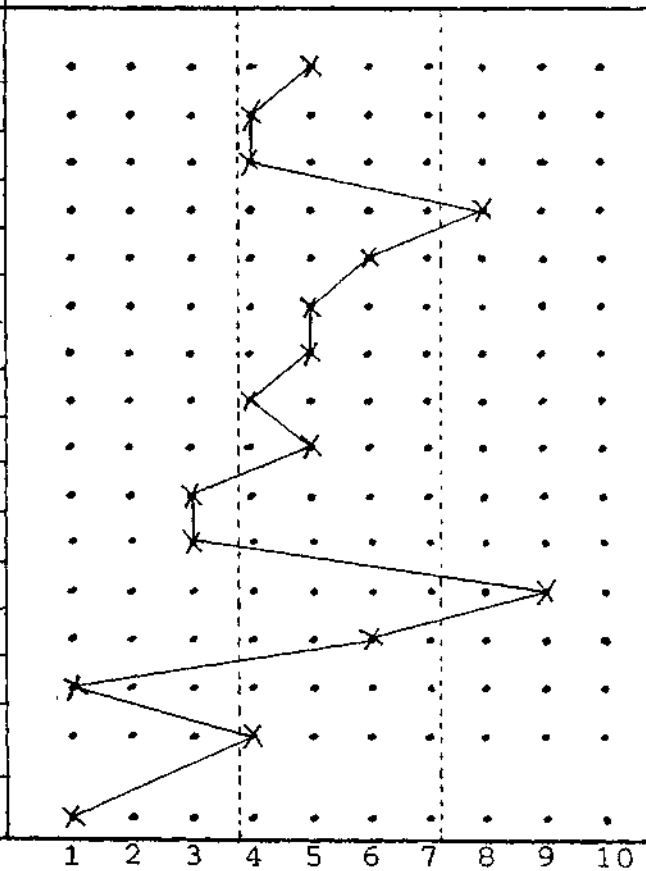
CASE NO. V AGE: 20 years EDUCATION: Inter Diploma Engg.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	8	5	RESERVED	OUTGOING
B	4	4	LESS INTELLIGENT	MORE INTELLIGENT
C	7	4	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	8	8	HUMBLE	ASSERTIVE
F	8	6	SOBER	HAPPY-GO-LUCKY
G	7	5	EXPEDIENT	CONSCIENTIOUS
H	8	5	SHY	VENTURESOME
I	4	4	TOUGH-MINDED	TENDER-MINDED
L	7	5	TRUSTING	SUSPICIOUS
M	3	3	PRACTICAL	IMAGINATIVE
N	3	3	FORTHRIGHT	ASTUTE
O	8	9	SELF-ASSURED	APPREHENSIVE
Q1	6	6	CONSERVATIVE	EXPERIMENTING
Q2	2	1⁻	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	6	4	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	0	1⁻	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10



1 2 3 4 5 6 7 8 9 10

the progress. This was done because the case was staying in a hostel. After a few sessions of therapy his friends were counselled, they had reported good improvement in his fluency. They had reminded the case to do the practices.

Figure V - A, presents the pattern of %SS during base-line, therapy session and followup. It is observed that on the base line evaluations, %SS is a little higher in tnonoi.ogue than oral reading, and a fairly good amount of stuttering could be noted. During the 1st session of therapy %SS had decreased in both monologue and oral reading. The case had consistently shown the similar fluency on the last 3 sessions of therapy, he was discharged from therapy and asked to come for followup evaluations. He had come for all the three occasions of followup. Prom 5th session, the %SS had decreased further and it went on decreasing to almost minimum in the last session of therapy, attended by the case. The same trend is observed in oral reading also.

On three different followups which were at different intervals, the case had shown slight increase in %SS. The increase in %SS was very much consistent and constant in both monologue and oral reading. When the patient was interviewed regarding his progress and about following the practices, he

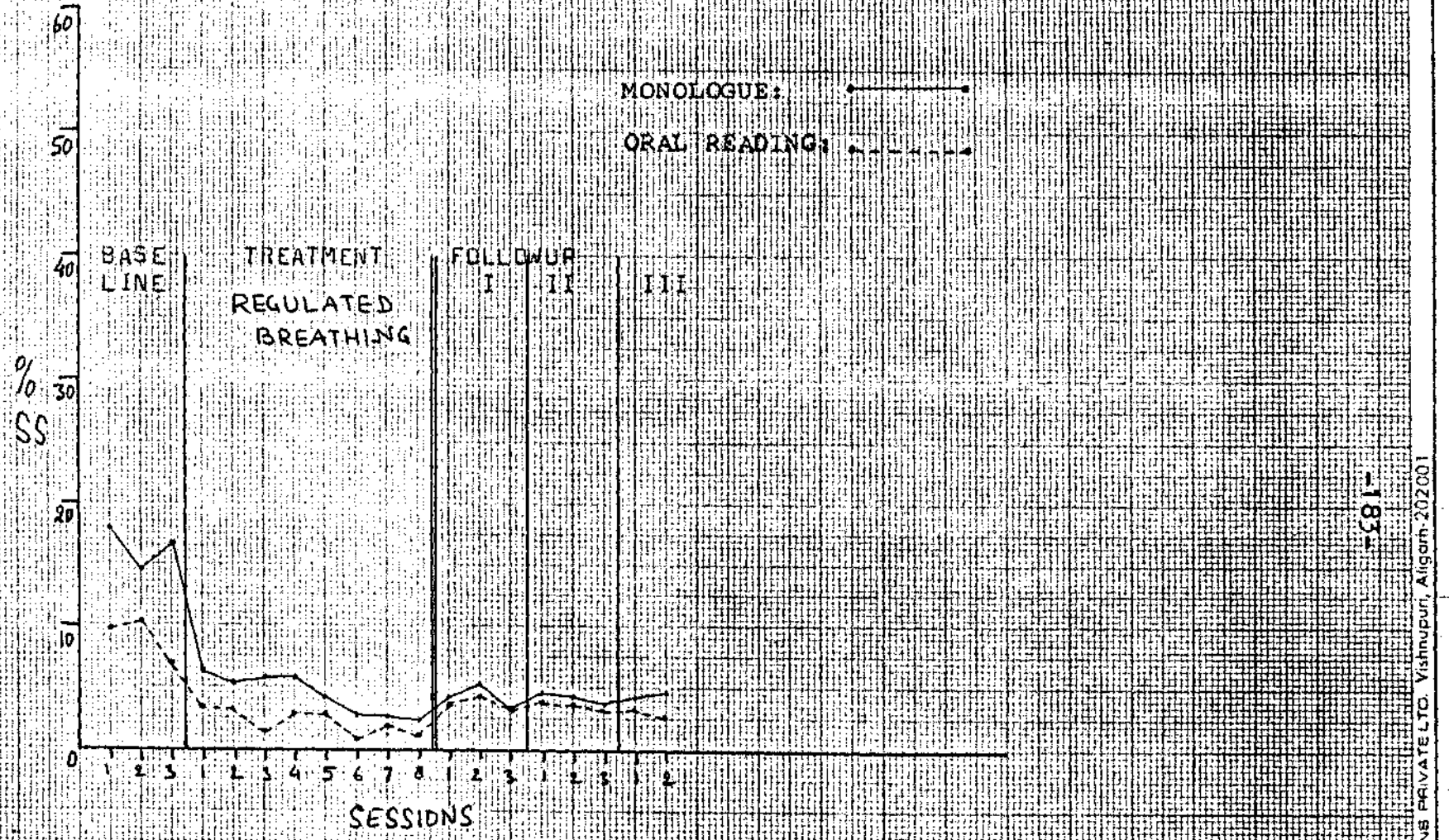


Figure-V-A. Shows stuttering severity in parcentage syllables stuttered of case no.V.

Figure-V-8. Shows speaking rate in SPM of Case no.V.

Figure-V-8. Shows speaking rate in SPM of Case no.V.

Table No.V. Shows inter-observer reliabilities in percentage of agreement of case no.V.

PERIOD →				DURING TREATMENT																			FOLLOW UP						
																							1 MONTH			3 MONTH		6 MONTH	
CONTEXT →	MEASURES ↓ SESSIONS →	PRE TREATMENT 1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3
ORAL READING	SS	87.09	90.0	89.65	87.5	100	100	88.88	87.5	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	100	83.33	-	90.9	83.33	88.88	100	88.88
	TS	99.05	99.3	99.27	98.85	100	100	99.01	99.02	98.88	99.36	99.81	-	-	-	-	-	-	-	-	-	-	-	-	-	99.43	98.9	99.08	98.94	99.02	99.3	99.65	100	99.65
MONOLOGUE	SS	98.03	96.07	98.07	88.88	88.88	94.73	100	100	83.33	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	90.9	93.33	90.9	100	92.3	90.9	91.66	100	-
	TS	98.6	94.85	95.55	96.21	96.6	98.66	96.78	96.34	97.8	96.65	97.95	-	-	-	-	-	-	-	-	-	-	-	-	-	99.59	97.89	97.18	99.82	98.28	99.23	99.3	99.82	-

had reported that he was not regular in his practices. This might be the reason for increase in %SS at followups,though he had maintained good fluency in his speech. He was instructed to keep up regular practices at home.

Figure V - B shows the rate of speech in SPM in both monologue and oral reading. It shows that during base line the SPM is more or less closer to each ether for both monologue and oral reading. The SPM had decreased in monologue after successive trial of therapy sessions, and had increased during followup. The SPM in oral reading had decreased in the first few sessions of therapy and once again increased in further (following) sessions of therapy. The increase in SPM during oral reading can be attributed to the improvement in fluency that had occurred.

Table V shows the inter-observer reliabilities between the observer. It was found to be above 90 per cent in all the sessions.

A close analysis of this case revealed that the Regulated Breathing Method had worked well in a limited sessions of therapy. The case had shown satisfactory improvement in his fluency during the therapy sessions vhich was also maintained in daily life situations. The studies reported

in literature with the same method of treatment also have shown satisfactory results.

Case VI

He was a 16 year old student of I.Sc, He had started stuttering since child hood. He had a significant family history of stuttering. His father had stuttering since child-hood and still ussd to stutter but less than earlier. His two elder brothers also had stuttering since child-hood. The case reported that he had developed stuttering from his brother only.

Personal history of the case suggested that he used to avoid talking. He used to become disturbed with other's comment about his stuttering. Speech behaviour showed more repetitions and blocks. He had disturbed breathing pattern, which was more during conversation than reading. No other secondary behaviours, were observed except disturbed breathing pattern. Stuttering was almost the same in both monologue and oral reading.

Cattetl's 16 PF test profile suggested that he was reserved, affected by feelings, and astute. Sten scores on factors I, L, M and Q3 suggested that he was tough-minded,

trusting, practical and had indisciplined self conflict (not controlled). From the profile and history, it was concluded that he had mild degree of anxiety problem, and also he had breathing disturbances. So, Regulated Breathing Approach was tried as a choice of treatment. It was thought that mild degree of anxiety problem can be taken care of by this approach.

Regulated breathing approach was discussed and explained to the case. It was tried systematically from the next session of therapy. He had understood the method and he was following it up to satisfaction.

Figure VI - A shows the %SS across base line to followup It is observed that during base line, *%SS* was more or less the same in both monologue and oral reading. After implementation of therapy, in first session %SS had decreased more in monologue than in oral reading. In further sessions of therapy, %SS had become consistent with slight variations till the last session of regulated breathing approach. Stuttering had not decreased to a minimum in both cont-exts after trial of a total 8 sessions of regulated breathing approach. When the case had not shown the expected result he was interviewed regarding the improvement in his fluency. He had reported that he was satisfied with gained fluency comparatively better than earlier but he had also reported that he used to stutter even now. Further it was noticed that, although he had gained

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. VI AGE: 16 years EDUCATION: I. Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	5	2	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	3	1	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	5	6	HUMBLE	ASSERTIVE
F	6	4	SOBER	HAPPY-GO-LUCKY
G	6	4	EXPEDIENT	CONSCIENTIOUS
H	7	4	SHY	VENTURESOME
I	3	3	TOUGH-MINDED	TENDER-MINDED
L	4	3	TRUSTING	SUSPICIOUS
M	3	3	PRACTICAL	IMAGINATIVE
N	9	9	FORTHRIGHT	ASTUTE
O	4	5	SELF-ASSURED	APPREHENSIVE
Q1	4	4	CONSERVATIVE	EXPERIMENTING
Q2	10	7	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	5	3	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	8	7	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10

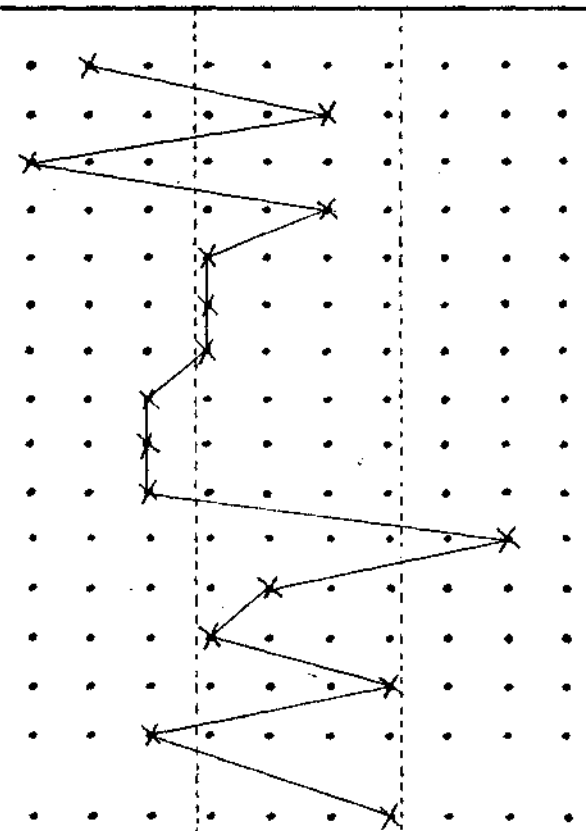


Figure-VI-A. Shows stuttering severity in percentage syllables stuttered of case no.VI.

Figure-VI-B. Shows speaking rate in SPM of case no.VI.

fluency it was not upto the mark. He was not following tha method properly* He was not speaking every time as instructed during therapy sessions. It was concluded that he was not assertive in speech behaviour. He was - ^ hesitant to talk in the instructed manner. Then it was decided to try assertion training to overcome this limitation.

The method of assertion training was described and discussed with the case. A total of 10 sessions of assertion training were sufficient to reach the expected fluency rate. Stuttering had become very much minimised and he could speak fluently. Prom figure VI - A, it is evident that, %SS had come to almost zero in all last four sessions of assertion training. The case was discharged after obtaining fluency and he was asked to come for followup. He was also instructed to continue the practice.

Three complete followups were held at different prescribed intervals. Followup evaluations showed that %SS had increased slightly on all the three occasions in both monologue and oral reading. The increase in %SS can be attributed to improper maintenance of fluency after discontinuation of therapy as could be seen in graph VI - A.

Figure VI - B presents the rate of speech in terms of SPM. The SPM in monologue and oral reading was almost near to each other in every session of evaluation. During the 1st treat-ment method, SPM had decreased in both the contexts. It had

Table-VI. Shows inter-observer reliabilities in percentage of agreement of case no.VI.

PERIOD →		CONTEXT → / MEASURES ↓ / SESSIONS →	ORAL READING		MONOLOGUE	
			SS	TS	SS	TS
PRE TREATMENT		1	94.44	98.97	96.49	97.57
		2	95.55	99.3	96.42	98.78
		3	97.82	96.79	95.39	99.58
DURING TREATMENT	I TREATMENT	1	97.22	99.64	96.42	99.37
		2	88.88	98.18	95.83	99.39
		3	100	98.39	92.0	99.21
		4	100	97.96	95.0	99.15
		5	92.3	99.04	90.0	99.56
		6	100	100	94.44	98.90
		7	92.85	99.05	91.30	98.18
		8	96.90	99.56	94.73	97.92
	II TREATMENT	1	92.85	99.14	96.29	99.62
		2	100	99.67	91.3	99.63
		3	100	98.27	94.73	98.41
		4	100	98.46	100	99.13
		5	100	98.63	100	99.33
		6	100	99.63	100	99.66
		7	100	99.31	100	98.99
		8	100	99.86	100	98.97
		9	100	99.65	100	99.62
		10	100	98.84	100	99.59
		11	-	-	-	-
		12	-	-	-	-
		13	-	-	-	-
FOLLOW UP	1 MONTH	1	90.90	98.66	93.75	98.32
		2	100	99.65	100	99.67
		3	100	99.28	100	99.32
	3 MONTH	1	100	99.63	100	99.36
		2	100	100	100	99.32
		3	100	100	91.66	98.95
	6 MONTH	1	100	99.58	100	99.29
		2	100	98.59	100	98.9
		3	100	98.25	100	99.29

increased once again when another method of treatment was tried. It was seen from the figure VI - A that first treatment method had not brought the expected amount of fluency, and so the rate of speech was lower during that period. But when the second treatment method had brought further improvement in fluency, the rate of speech had increased comparatively and it was consistent with the improvement gained in fluency. On second and third follow-ups?? the rate of speech had come down slightly along with increase in %SS in speech. The trend of SPM is shown in **the** figure VI - B.

Table VI shows the inter-observer reliabilities between observers in terms of percentage agreement. It was observed above 90% in all the sessions.

It was concluded that Regulated Breathing Approach had brought down the stuttering but due to lack of assertiveness the case could not gain expected fluency. When Assertion Training Method was tried the case had shown satisfactory fluency which was generalised in outside situations.

Case VII

He was a 20 year old student of B£c, He had stuttering

since child-hood. There was no history of stuttering in his family and friends. ENT and hearing examinations had not revealed any abnormalities.

Personal interview revealed that he was a shy person. He used to avoid talking in group. He was much scared to talk with females. He had reported that he did not have much difficulty with known persons like family members, friends, relatives. He did not have much difficulty when he used to talk with single unknown person or strangers.

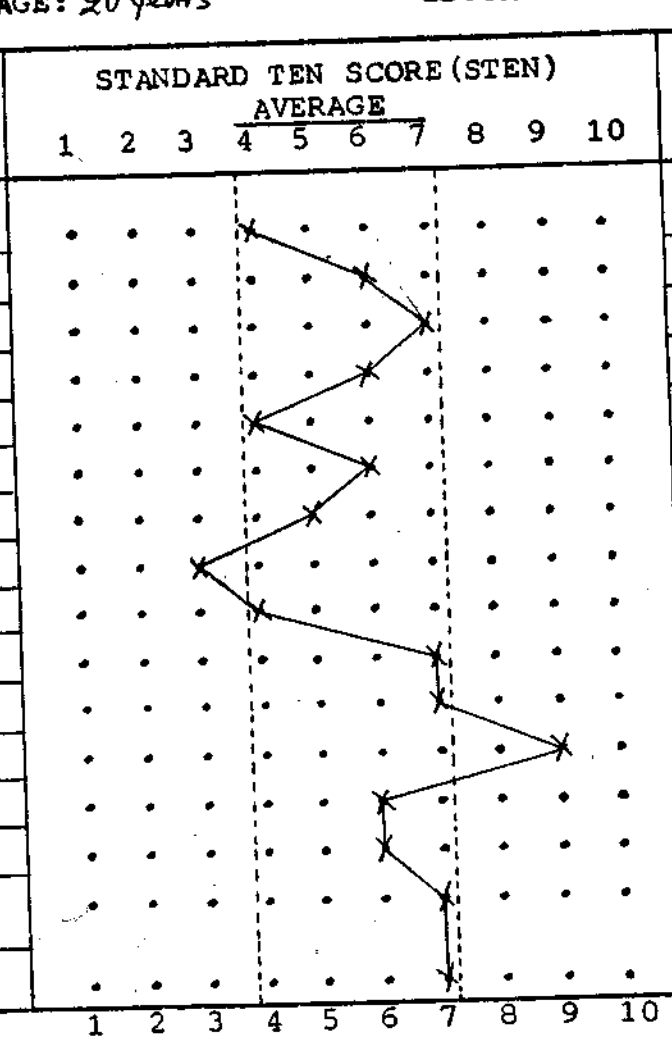
Speech behaviour showed disturbed pattern of breathing during conversation. The rate of speech was not fast. He had more repetitions and hard contact of lips.

Cattell's personality profile revealed that scores on most of the factors fell within the average limit. Sten score on factor I suggested that he was tough-minded (not tenderminded). Stan score on factor 0 = 9 suggested that he was apprehensive (i.e., more worried and troubled). The profile indicated that he had only one trait 0 on which the score had suggested anxiety component. The profile and the personal history had suggested that he had a mild degree of anxiety.

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. VII AGE: 20 years EDUCATION: B.Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	1	4	RESERVED	OUTGOING
B	7	6	LESS INTELLIGENT	MORE INTELLIGENT
C	4	7	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	6	6	HUMBLE	ASSERTIVE
F	2	4	SOBER	HAPPY-GO-LUCKY
G	4	6	EXPEDIENT	CONSCIENTIOUS
H	2	5	SHY	VENTURESOME
I	3	3	TOUGH-MINDED	TENDER-MINDED
L	3	4	TRUSTING	SUSPICIOUS
M	6	7	PRACTICAL	IMAGINATIVE
N	7	7	FORTHRIGHT	ASTUTE
O	0	9	SELF-ASSURED	APPREHENSIVE
Q1	6	6	CONSERVATIVE	EXPERIMENTING
Q2	3	6	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	5	7	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	6	7	RELAXED	TENSE



Based on personality profile and speech characteristics shown, Regulated Breathing Approach was tried. About an hour session was spent for discussion and demonstration of therapy procedure. The case was able to follow the instructions during therapy sessions. He was instructed to follow the same at home and in daily life situations. He had some difficulty in carrying out all the steps of therapy method in out side situations.

Figure VII - A, presents the stuttering in %SS across base line to followup. As could be seen, during base line %SSis more in monologue than compared to oral reading. In all the three sessions during base line %SS was almost nearer which had indicated a stable rate of stuttering. In monologue, %SShad come down markedly in the first session of the therapy itself. The reduction which had taken place during 1st session was consistent upto 9th session of the therapy with slight variations. On 10th session stuttering had decreased to minimum and it was consistent till last session of the therapy. The %SS during the last three sessions of therapy was consistent in both monologue and oral reading. And it was the same in both monologue and oral reading. The case had achieved a fairly satisfactory fluency in his speech after completion of a total of 12 sessions of therapy. He had reported that he was speaking fluently in out side situations.

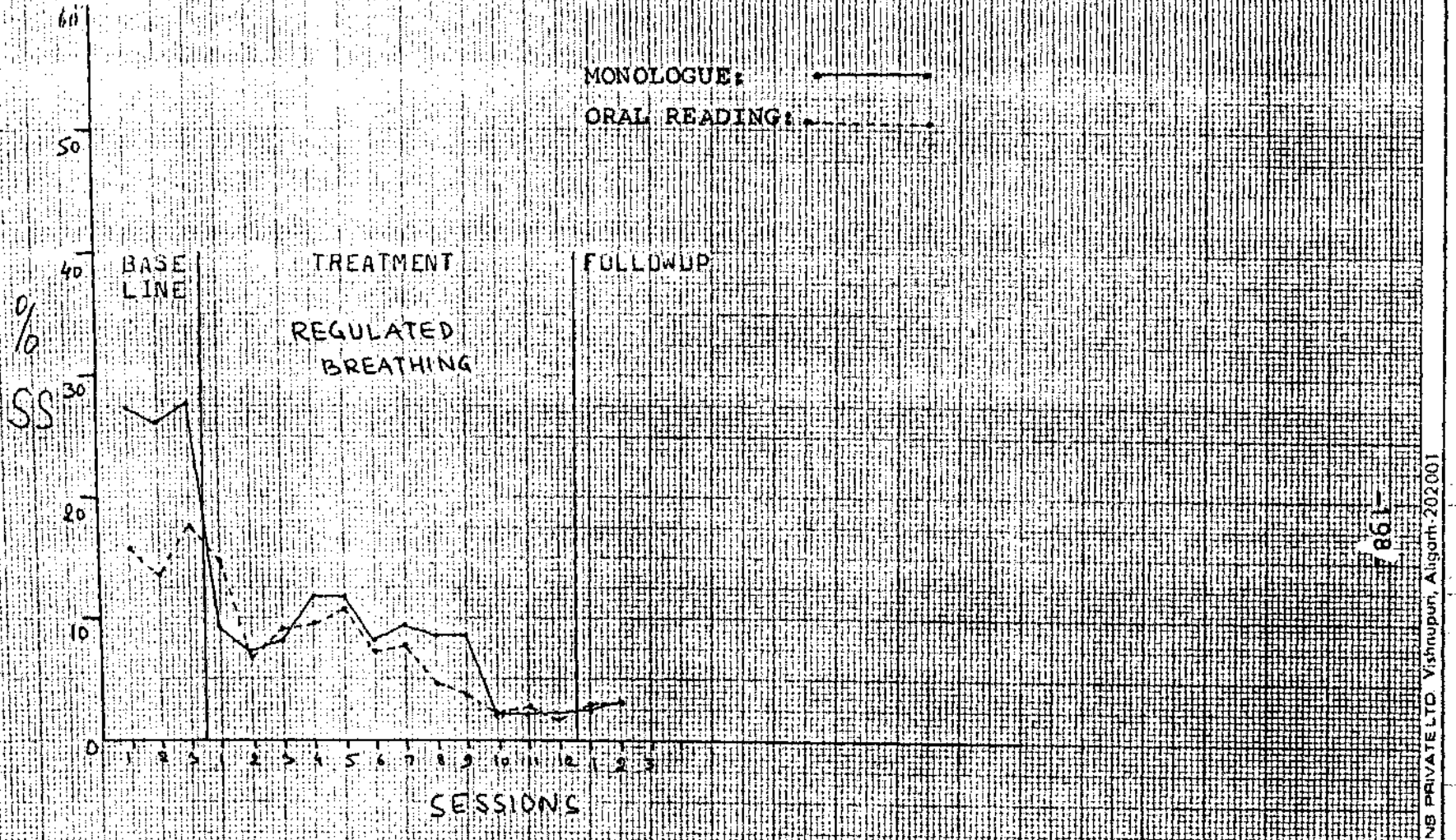


Figure-VII-A. Shows stuttering severity in percentage syllables stuttered of case no. VII.

Figure VII-8. Shows speaking rate in SPM of case no. VII.

His friend, who used to come along with the case, had also reported that fluency was maintained in different situations. He was discharged from therapy. Instructidns were given to follow the same at home and in different speaking situations.

Followup, could be had on only one occasion, i.e., after t month, during which only two sessions could be devoted for evaluation of fluency. Fluency was maintained at this follow-up.

Figure VII - B shows the rate of speech in SPM. During base line, SPM in monologue was observed lower (less) compared to oral reading. This may be seen in the graph VII - A. As seen from the figure VII - A, it is evident that %SS is more in monologue than in oral reading and so the decreased rate of speech. In oral reading, rate of speech was higher because his fluency was better. As we see through the other sessions, when therapeutic method was instituted, rate of speech had gone higher in both contexts. This may be because of improvement gained in fluency. The rate of speech had decreased in further sessions of therapy in monologue only and it was almost consistent till the last session. On followup also it was maintained. In oral reading, the rate of speech had gone higher after the 7th session of therapy and it was also maintained during followup.

Table -VII. Shows inter-observer reliabilities in percentage of agreement of case no.VII.

PERIOD →		CONTEXT →	ORAL READING		MONOLOGUE	
		MEASURES → / SESSIONS ↓	SS	TS	SS	TS
PRE TREATMENT		1	93.75	98.04	90.90	95.78
		2	91.17	82.32	93.75	97.52
		3	95.34	98.07	96.77	96.63
DURING TREATMENT		1	91.42	99.17	93.33	97.53
		2	92.30	98.97	92.30	97.15
		3	92.30	98.37	91.66	98.25
		4	91.30	99.70	92.59	97.18
		5	90.0	98.94	90.00	97.00
		6	91.66	98.84	87.50	96.68
		7	92.85	95.08	93.33	96.87
		8	100	96.85	100	95.97
		9	100	97.42	100	94.96
		10	100	98.36	100	97.05
		11	100	97.92	100	98.41
		12	100	97.83	100	97.19
		13				
		14				
		15				
		16				
		17				
		18				
		19				
		20				
		21				
FOLLOW UP	1 MONTH	1	100	98.71	100	96.31
		2	100	96.81	100	98.49
		3				
	3 MONTH	1				
		2				
		3				
	6 MONTH	1				
		2				
		3				

Table VII shows the inter-observer reliabilities between observers. It was seen that it fell above 90% in all the sessions.

It was observed from this case that he had gained satisfactory fluency in his speech during reading as well as in conversation. This had indicated the effectiveness of therapy though the case had shown lower degree of anxiety on personality profile and breathing disturbances which was completely eliminated during therapy sessions.

Case VIII

He was a 22 year old student of diploma in engineering. He had stuttering since childhood. There was no history of any serious illnesses. Family history had a significant role in development of stuttering. His father and two of the case's brother had stuttering. The case had reported that he had developed stuttering from his family members only. Examinations on ENT and hearing showed no abnormalities. No other medical or organic involvement were detected. The case had difficulties in breathing during conversation, which vas not related to any physical illnesses.

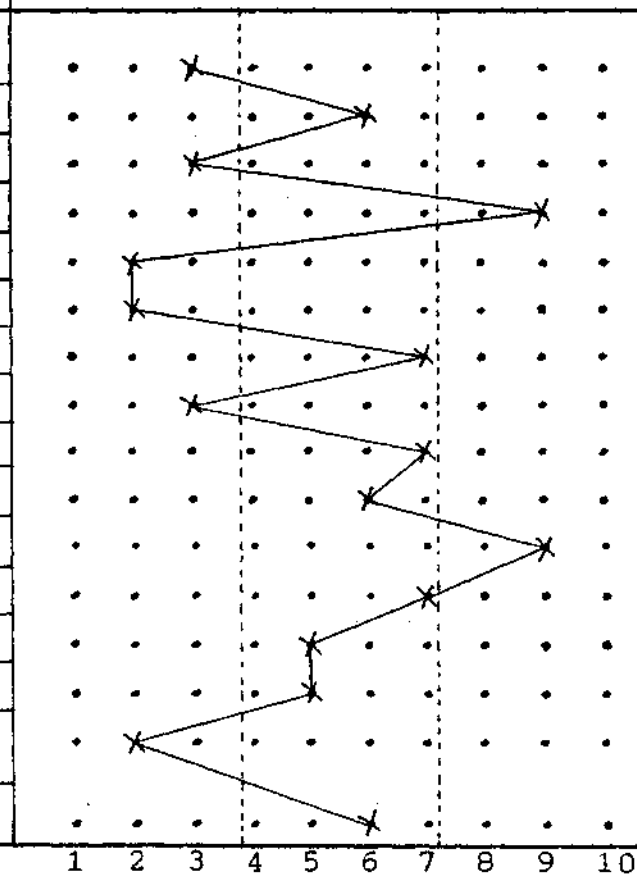
Personal interview revealed that he did not feel shy

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. VIII AGE: 22 years EDUCATION: Diploma Eng.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	6	3	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	6	3	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	10	9	HUMBLE	ASSERTIVE
F	4	2	SOBER	HAPPY-GO-LUCKY
G	4	2	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	2	3	TOUGH-MINDED	TENDER-MINDED
L	9	7	TRUSTING	SUSPICIOUS
M	7	6	PRACTICAL	IMAGINATIVE
N	10	9	FORTHRIGHT	ASTUTE
O	6	7	SELF-ASSURED	APPREHENSIVE
Q1	5	5	CONSERVATIVE	EXPERIMENTING
Q2	8	5	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	4	2	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	6	6	RELAXED	TENSE

STANDARD TEN SCORE (STEN)
AVERAGE
1 2 3 4 5 6 7 8 9 10



or hesitated to talk with others. He had undergone some medical treatment, but did not show any improvement.

Speech behaviour showed severe stuttering in both conversation and reading. Repetition and addition of sounds and words were more observed.

Personality profile revealed that he was reserved, emotionally less stable, sober expedient, tough minded and was a case of undisciplined self conflict. The profile had indicated a mild degree of anxiety because the sten scores on factor A and G were near to average limit. This also indicated that he had a tendency to be reserved and got affected by feelings. Personal history of the case was not suggestive of having much anxiety problems. Speech had shown disturbed breathing pattern during conversation. Based on these factors Regulated Breathing Approach was tried. The case was given more practice of breathing and relaxation exercises in the first session of the therapy lasted for about 90-100 minutes. Other steps of the method were also practiced. The case was able to carryout all steps and he could follow them at home also.

Figure VIII - A, shows the pattern of reduction in the

amount of stuttering during different periods. Curing base line, %SS was much higher in both monologue and oral reading. The %SS had come down gradually between the first and 7th session of therapy. After the 7th session of therapy it had become consistent till the last of a series of 10 sessions tried. During these sessions, %SS had reduced but it did not reduce to the minimum level. The fluency was not achieved after successive trial of 10 sessions of regulated breathing approach. When the case was interviewed after compXetion of the 10th session of the therapy, he had reported that after getting a reduction in stuttering, he had become some what careless in doing the practice, which had ultimately resulted in not achieving normal fluency. Then, Assertion training method was instituted to improve his fluency further. The case was explained about the method which was going to be applied. Demonstrations were shown by the investigator about the manner of talking. In a few early sessions of the therapy improvement in fluency was not consistent in monologue but it was consistent in oral reading. Prom the 4th session of assertion training, there was further reduction in stuttering and had come down to the minimum in both monologue and oral reading. Consistency in fluency was maintained in the last three sessions of a total of 10 sessions tried. The therapy was terminated because the case had achieved the criterion. He was asked to continue the methods.

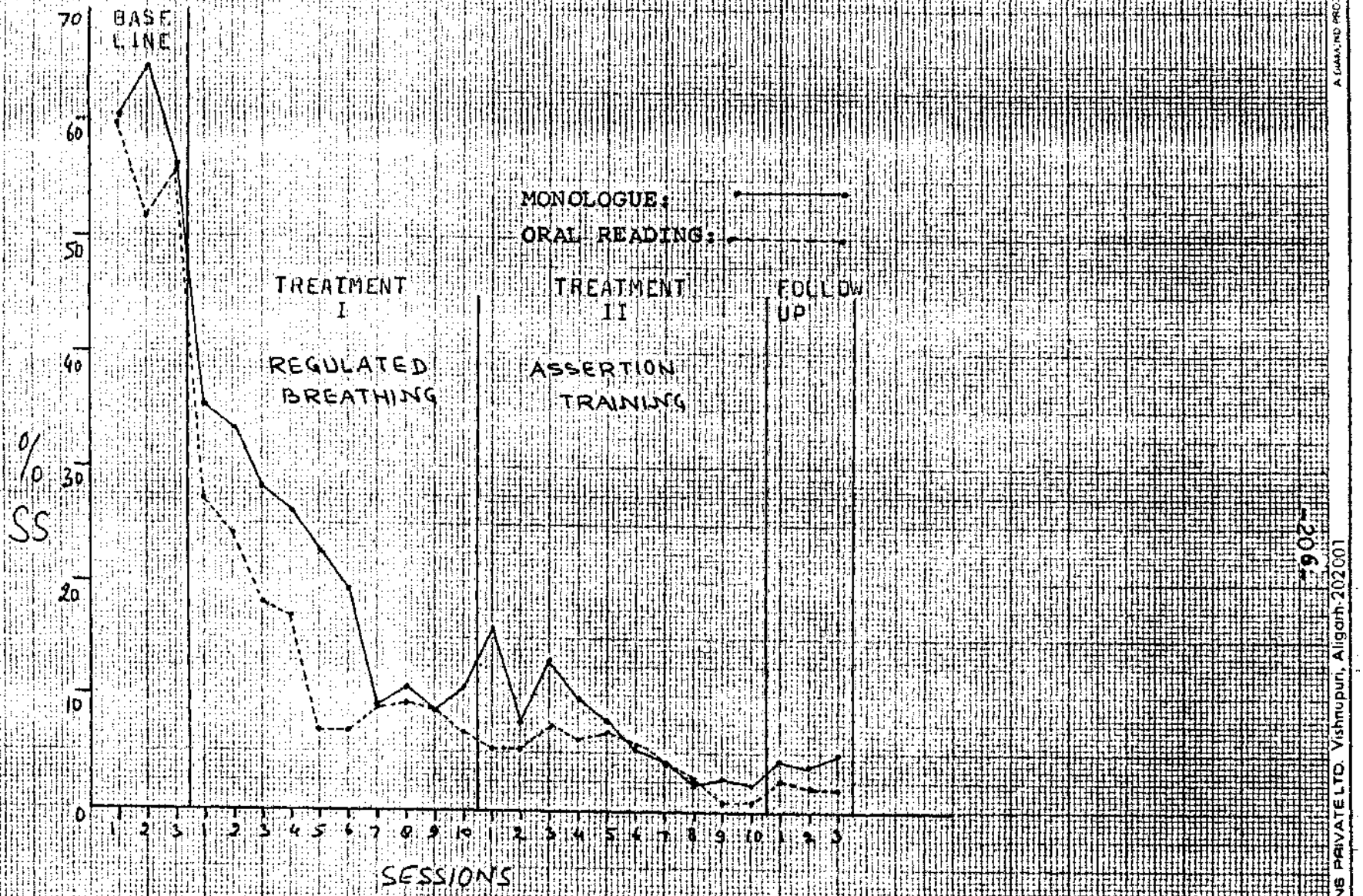


Figure-VIII- A. Shows stuttering severity in percentage syllables stuttered of case no. VIII.

Figure-VII-B. Shows speaking rate in SPM of case no. VII.

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On followup evaluations after 3 months the %SS had slightly increased and it was consistent in all the three consecutive sessions in both monologue and oral reading.

Figure VIII - B, shows the changing pattern of the rate of speech in 3PM from base line to follow up. It was observed that during base line, the rate of speech was lower and as the therapy had progressed there was increase in the rate of speech also along with improvement in fluency. The rate of speech in both monologue and oral reading was observed closer to each other throughout the sessions.

Table VIII shows the inter-observer-reliabilities in terms of percentage agreement between observers. It was found to be above 90% in all the sessions.

A close observation of the results shown by the case revealed that when Regulated Breathing Approach was tried he did not attain. the desired fluency due to lack of assertiveness. The implementation of Assertion Training had brought further improvement in his fluency which was consistently maintained and generalised.

Table-VIII. Shows inter - observer reliabilities in percentage of agreement of case no. VIII.

PERIOD ↓		CONTEXT →	ORAL READING		MONOLOGUE	
		MEASURES → / SESSIONS ↓	SS	TS	SS	TS
PRE TREATMENT		1	94.18	97.91	98.87	99.32
		2	90.75	99.39	98.76	100
		3	98.76	98.36	100	96.29
DURING TREATMENT	1 TREATMENT	1	97.87	94.70	97.67	100
		2	100	98.80	97.56	100
		3	96.29	99.33	96.90	99.14
		4	100	99.44	97.29	96.35
		5	91.66	98.20	95.34	99.47
		6	100	96.64	100	99.46
		7	92.30	98.84	100	96.17
		8	100	99.37	95.83	99.49
		9	100	99.35	100	99.01
		10	100	98.90	90.0	99.46
	II TREATMENT	1	100	98.85	80.76	98.77
		2	100	98.91	100	99.05
		3	90.90	98.65	89.28	99.01
		4	100	99.31	94.73	98.52
		5	90.0	99.30	100	98.80
		6	100	99.24	100	98.83
		7	100	98.95	100	99.37
		8	100	99.06	100	99.37
		9	100	96.80	100	99.46
		10	100	99.52	100	100
		11	-	-	-	-
FOLLOW UP	1 MONTH	1	-	-	-	-
		2	-	-	-	-
		3	-	-	-	-
	3 MONTH	1	100	98.88	100	98.77
		2	100	96.84	100	96.37
		3	100	97.56	100	93.50
	6 MONTH	1	-	-	-	-
		2	-	-	-	-
		3	-	-	-	-

Case IX

He was a 16 year old student of BSc., Part I. He had stuttering since childhood. There was no family history of stuttering and none of his friends or relatives had this problem. There was no history of severe illness during child-hood or later.

Personal interview revealed that he was a shy person and he had the habit of talking less. He did not like to talk in group. He had reported that there was not much variation in his stuttering while talking with different persons and in different situations. He had the habit of talking fast. The speech rate was faster than average. More repetition of sounds were observed. No secondary behaviours were observed. No breathing disturbances were observed either in conversation or reading.

Personality profile suggested that he was reserved (not much out going), shy, emotionally less stable and sober. Scores on other factors suggested that he was trusting (not suspicious), imaginative, self assured, conservative and group dependent.

Prom the personality profile and personal history of the

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

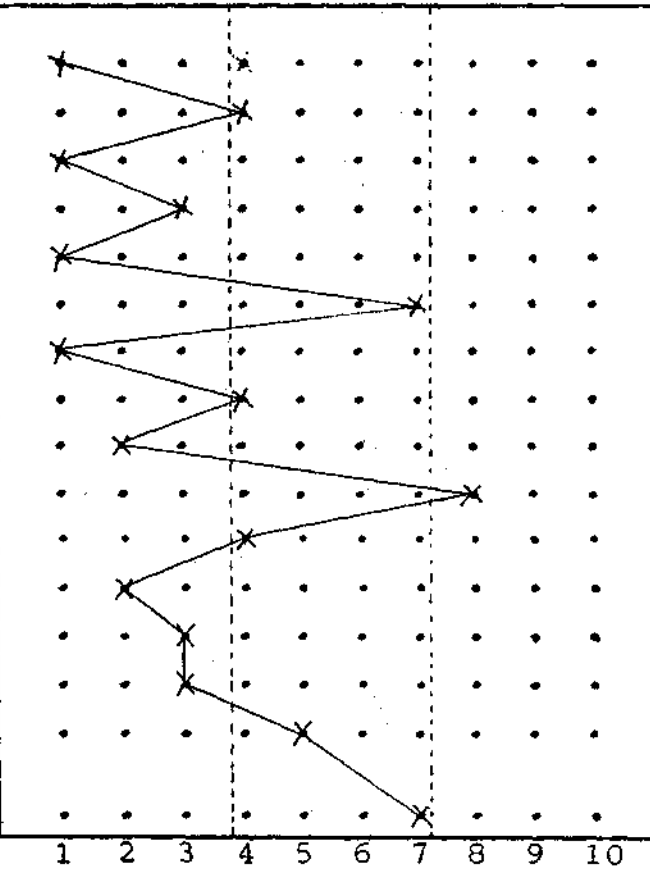
CASE NO. IX AGE: 18 years EDUCATION: B. Sc. Part I

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	3	1	RESERVED	OUTGOING
B	4	4	LESS INTELLIGENT	MORE INTELLIGENT
C	4	1	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	2	3	HUMBLE	ASSERTIVE
F	0	1⁻	SOBER	HAPPY-GO-LUCKY
G	10	7	EXPEDIENT	CONSCIENTIOUS
H	2	1⁻	SHY	VENTURESOME
I	4	4	TOUGH-MINDED	TENDER-MINDED
L	3	2	TRUSTING	SUSPICIOUS
M	9	8	PRACTICAL	IMAGINATIVE
N	4	4	FORTHRIGHT	ASTUTE
O	2	2	SELF-ASSURED	APPREHENSIVE
Q1	3	3	CONSERVATIVE	EXPERIMENTING
Q2	6	3	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	7	5	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	8	7	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10



ease, it was concluded that he was an anxious person. Personal history had suggested more specifically that his anxiety was generalised i.e., he had generalised anxiety.

Based on the above findings it was decided to try Regulated Breathing Approach for the purpose of treatment. A discussion regarding Regulated Breathing Approach and its different steps was demonstrated with the case. The case was made to understand the complete procedure of therapy. The procedure was systematically tried with the case. The case did not show any reduction in stuttering in the 1st session of therapy in both the contexts. This had happened because, he had developed some confusion regarding the method to be followed during conversation. Figure IX - A shows the changing pattern of stuttering. It is evident that from the second session of the therapy, decrease in %SS had occurred. The %SS had become almost near zero in both the contexts. Fluency was gained and maintained in further sessions of therapy consistently. A consistency in gained fluency made investigator to terminate the therapy.

On both followups conducted 1 month and three months after respectively the fluency was consistently maintained. Table IX shows the inter-observer reliabilities between observers in percentage agreements,it was found to be about

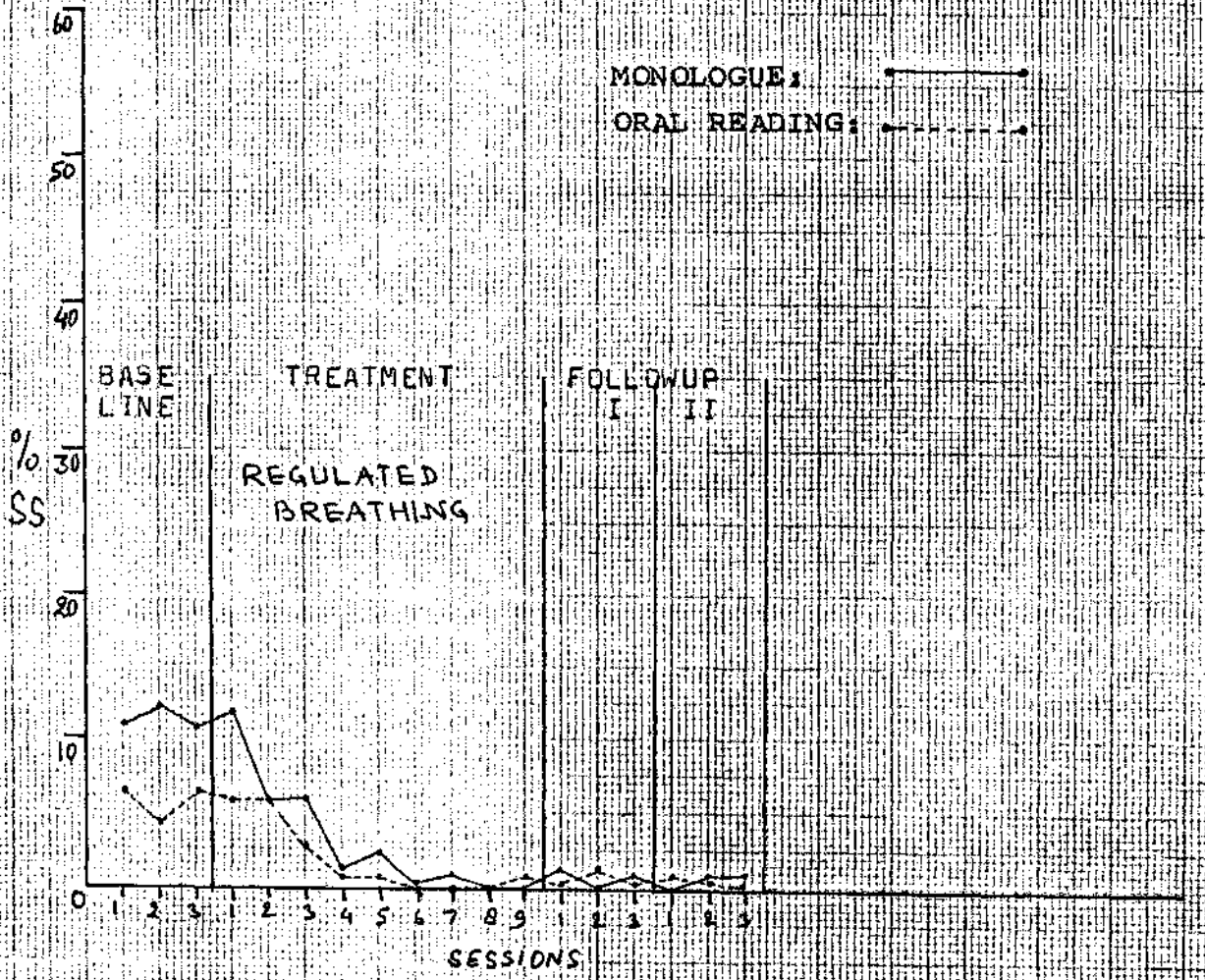


Figure-IX-A. Shows stuttering severity in percentage syllables stuttered of case no.IX.

Figure-IX-B. Shows speaking rate in SPM of case no. IX.

Table-IX shows inter - observer reliabilities in percentage of agreement of case no. IX

PERIOD →		PRE TREATMENT			DURING TREATMENT																				FOLLOW UP								
																									1 MONTH			3 MONTH			6 MONTH		
CONTEXT ↓	MEASURES → / SESSIONS ↓	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3	1	2	3
ORAL READING	SS	93.75	95.65	91.66	85.71	88.23	86.66	100	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	100	100	100	100	100	100	-	-	-
	TS	99.6	99.62	99.5	99.35	99.61	97.60	99.35	99.51	99.46	99.29	100	99.24	-	-	-	-	-	-	-	-	-	-	-	-	98.88	98.80	99.21	97.96	97.96	99.17	-	-	-
MONOLOGUE	SS	91.11	97.67	97.43	97.61	95.65	95.0	100	85.71	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	100	100	100	100	100	100	-	-	-
	TS	99.20	99.41	99.42	99.71	98.73	99.39	99.64	99.05	98.80	98.33	99.58	97.80	-	-	-	-	-	-	-	-	-	-	-	-	97.38	96.42	96.87	97.0	98.14	99.35	-	-	-

90 and above in all the sessions.

Figure IX - 3 had shown a high rate of speech during baseline compared to the rate of speech in monologue. This May be attributed to the less . amount of stuttering in oral reading. The rate of speech had come down in both the contexts from the second session of the therapy and it went on decreasing gradually till the 7th session of the therapy. After the 7th session, the rate of speech in oral reading had become consistent and it was maintained on followups. In Eonologue, the rate of speech had come down towards the last session of therapy, but it had gone slightly higher on follow-ups. It is observed that even though the rate of speech had gone higher in monologue, the fluency was maintained consistently. This again confirms the logic of trying Regulated Breathing Approach with cases presenting specific types of speech characteristics and certain trait constellations.

Case X

He was a 24 year old student of M.Com, He had stuttering since child hood. There was no family history of stuttering, and none of his relatives and friends had the problem. His father had died when he was 12 years old. There was no history of any severe illness. ENT and hearing examinations showed no abnormalities.

Per3onal history revealed that he had more stuttering with older persons, senior authorities, teachers etc., He had applied for a job, which he did not get because of his stuttering. After this incidence, he had become worried. He did not have much stuttering with known persons, friends, family members, and also in a group.

Speech behaviour showed severe stuttering during conversation, and minimum stuttering while reading. The rate of speech in reading was much faster than in conversation. Repetitions of initial sounds and words and also addition of sounds were observed. There was no breathing disturbance.

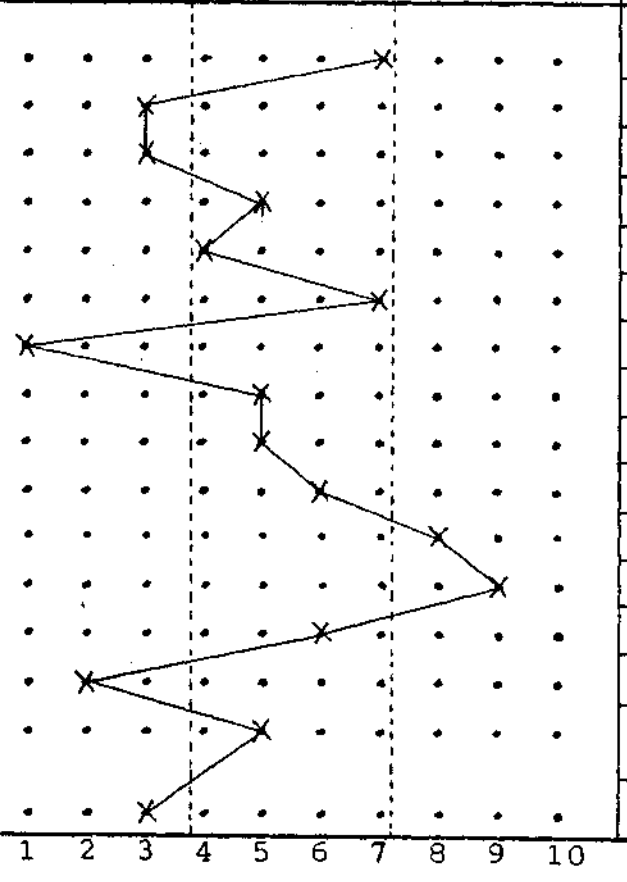
Personality profile revealed that he was shy (M = 1), apprehensive (0 = 8) and group dependent (Q2 = 2). Sten scores on other factors showed that he was some what less intelligent, a less emotionally stable person. The personality profile and personal history of the case suggested that he had anxiety.

Regulated Breathing Approach was tried with the case systematically. The case had followed the therapy procedures systematically as instructed. He was also instructed to follow the same at home. His elder brother, who used to visit the clinic, had given good support to the case in terms

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. X AGE: 24 years EDUCATION: M.Com

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	10	7	RESERVED	OUTGOING
B	3	3	LESS INTELLIGENT	MORE INTELLIGENT
C	6	3	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	4	5	HUMBLE	ASSERTIVE
F	6	4	SOBER	HAPPY-GO-LUCKY
G	10	7	EXPEDIENT	CONSCIENTIOUS
H	4	1	SHY	VENTURESOME
I	6	5	TOUGH-MINDED	TENDER-MINDED
L	6	5	TRUSTING	SUSPICIOUS
M	7	6	PRACTICAL	IMAGINATIVE
N	8	8	FORTHRIGHT	ASTUTE
O	8	9	SELF-ASSURED	APPREHENSIVE
Q1	7	6	CONSERVATIVE	EXPERIMENTING
Q2	5	2	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	8	5	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	3	3	RELAXED	TENSE



of encouragement and reminders to maintain the practices at home.

Figure X - A shows the pattern of percentage syllable stuttered across base line therapy sessions and followup. It is observed that during base line, %SS was much higher in monologue than compared to oral reading. It also indicated an almost stable rate of stuttering in all three sessions of base line evaluation. During the first session of therapy, %SS had decreased dramatically in monologue and remained consistent upto the 5th session of therapy. In oral reading, though stuttering was observed less had decreased to a minimum in the first session it^self, and it became almost zero in 8th session of therapy. The improvement, which had taken place was consistently maintained in further sessions of therapy with almost nil stuttering. In monologue, there was slight increase in %SS during the 6th and 7th session of the therapy which had come down to minimum in the following sessions. A total 15 sessions of regulated breathing approach was tried. This had bought an excellent fluency in the case during clinic set up and in out side situations, which was confirmed from his brother and his friends. The case was very much contented vith his fluency gained. He was discharged from the therapy and was asked to come for followups.

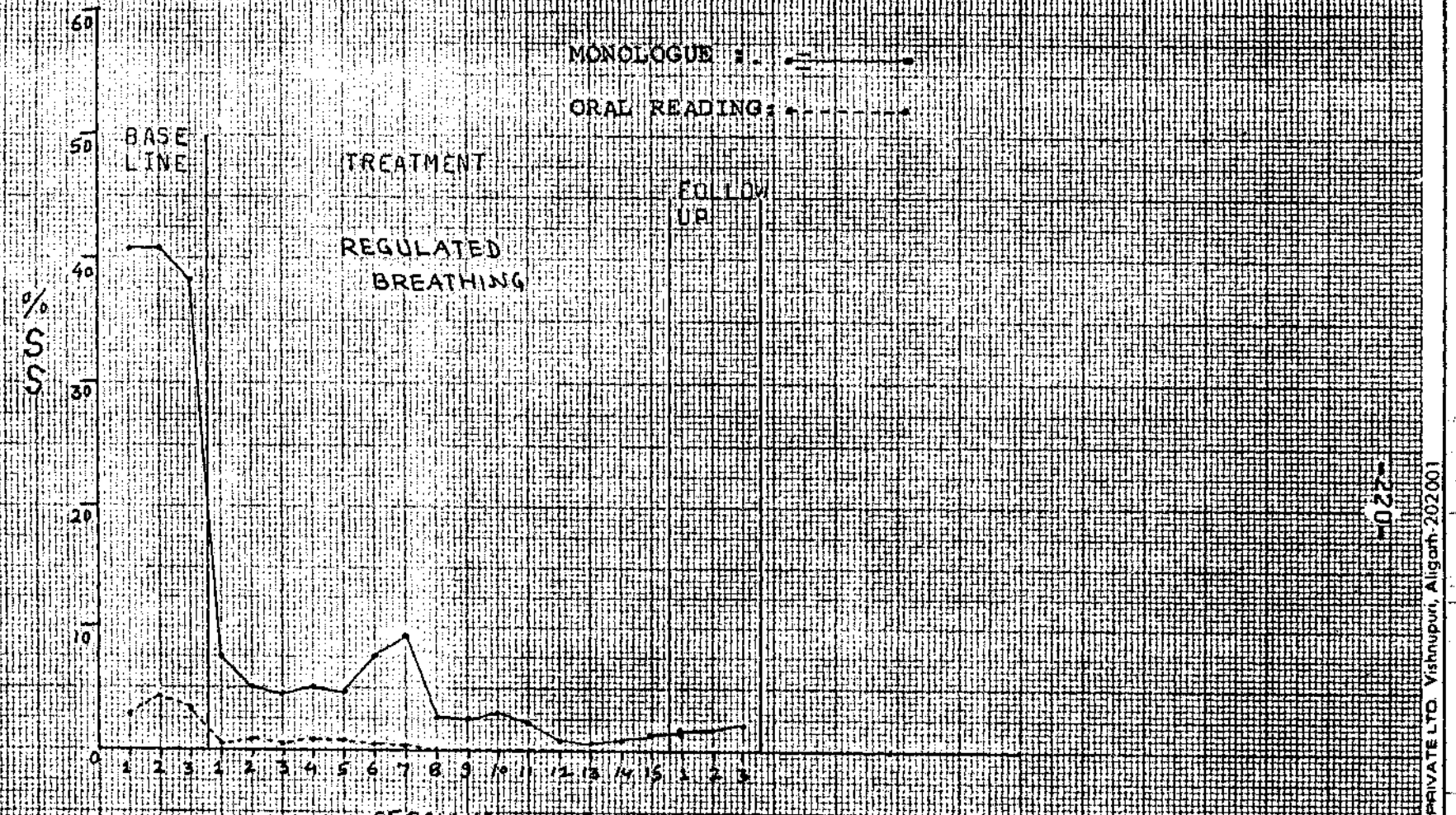


Figure-X-A. Shows stuttering severity in percentage syllables stuttered of case no.X.

Figure-X-B. Shows speaking rate in SPM of case no. X.

The case had come for only one followup, which was after one month. There was alight increase in %SS in monologue only on all the three evaluations. But this increase in *%SS* •aad not affected his fluency because it was very minimal. There was no increase in *%SS* during reading.

Figure X - 3 shows the changing pattern of the rate of speech during base line, therapy session and followup. It is obvious from the graph, that the rate of speech in monologue was very much less compared to the rate of speech in oral reading during base line. Within 1st and second session of the therapy as the %SS had decreased (Figure X - A), the rate of speech bad gone higher in monologue and it became almost near to the rate of oral reading. The rate of speech in both the contexts w**as** almost nearer to each other till the 5th session of therapy. With the increase in %SS during the 6th and 7th session, the rate of speech also got affected and had come down, and once again, with attaining fluency, the rate of speech had become consistent during remaining sessions of therapy. The rate of speech during the followup was also consistent and near to each other in both monologue and oral reading.

Table-X showed the inter-observer reliabilities in terms of percentage, which was about 90 in all the sessions from base line to followup evaluations.

Table- X. Shows inter observer reliabilities in percentage of agreement of case no.X.

PERIOD →				DURING TREATMENT																			FOLLOW UP						
																							1 MONTH			3 MONTH			6 MONTH
	PRE TREATMENT																												
CONTEXT →	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3
MEASURES ↓ / SESSIONS →																														
MONOLOGUE SS	96.42	96.62	97.22	97.78	98.51	98.06	98.27	98.36	90.0	87.90	7.51	7.46	98.66	96.78	97.08	99.56	99.08	97.90							98.03	99.23	98.77			
MONOLOGUE TS	92.98	98.36	92.85	88.88	100	100	100	100	87.50	88.25	100	100	100	100	100	100	100	100							100	100	100			
ORAL READING SS	90.90	87.50	85.71	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100							100	100	100			
ORAL READING TS	99.23	99.29	99.26	99.03	97.92	97.18	98.82	99.69	97.09	99.06	99.66	98.96	96.89	99.64	98.90	97.90	97.02	97.71							97.92	97.71	98.70			

Fluency and the rate of speech, both were excellently and consistently maintained during the last 8 sessions of the therapy and also on all the sessions of the followup. The regulated breathing approach had worked very efficiently with this case and had shown excellent fluency which was maintained even after termination of the therapy. This has indicated that the cases, who have anxiety with stuttering can be benefited fairly well by this method of treatment.

Case XI

He was a 26 year old student of final year M.D. He had stuttering since child-hood. There was no family history of stuttering. He did not have history of any severe illnesses. ENT and hearing examinations had shown no any abnormalities.

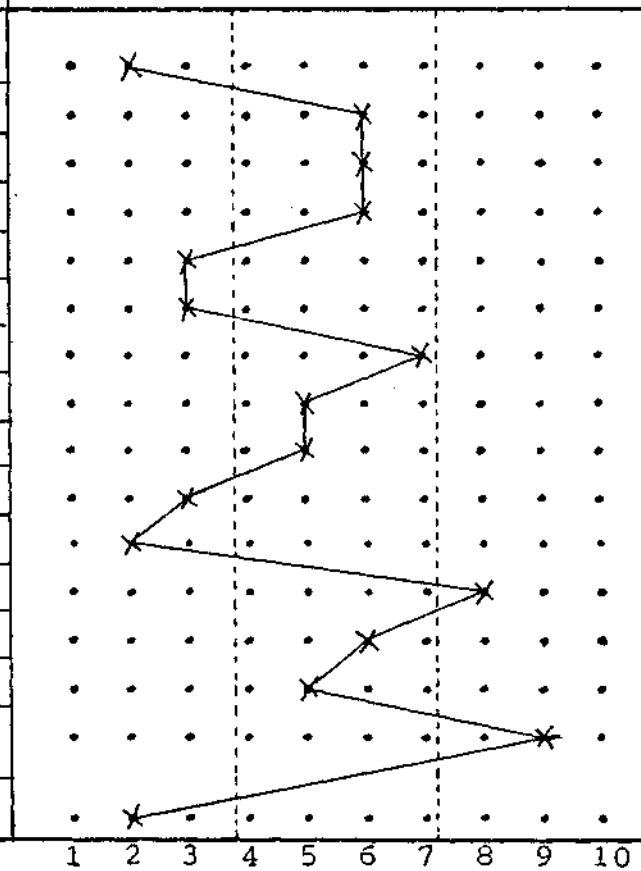
Personal history revealed that he had taken some medical treatment for his stuttering. He reported that there was a little improvement in his stuttering but not satisfactorily. At present, he had more difficulty with senior staff and other senior people. He did not have much stuttering with others like friends, and colleagues in the family, in a group, and also with strangers.

Speech behaviour showed more repetitions and additions of sounds. There were no secondary behaviour observed. The

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. XI AGE: 26 years EDUCATION: M.B.B.S.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	5	2	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	9	6	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	6	6	HUMBLE	ASSERTIVE
F	5	3	SOBER	HAPPY-GO-LUCKY
G	5	3	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	5	5	TOUGH-MINDED	TENDER-MINDED
L	6	5	TRUSTING	SUSPICIOUS
M	4	3	PRACTICAL	IMAGINATIVE
N	2	2	FORTHRIGHT	ASTUTE
O	7	8	SELF-ASSURED	APPREHENSIVE
Q1	6	6	CONSERVATIVE	EXPERIMENTING
Q2	8	5	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	12	9	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	2	2	RELAXED	TENSE



rate of speech was faster in reading. No 'breathing distur-bances were observed while speaking.

Personality profile revealed that he was reserved (leas out going), sober, expedient, forthright and apprehensive (worried). Sten scores on factor Q3 and Q4 indicated that he was controlled (socially precise) and relaxed (unfrustrated).

The personality profile and personal history was suggestive of having anxiety. Regulated breathing approach was tried with the case, since it had shown good results with the cases of this study, who had anxiety but were not severely affected. The method was described and discussed with the case prior to the therapy sessions. The case was able to easily adapt to therapy technique. He had shown some difficulty in following the method systematically in early sessions of therapy. During later therapy sessions, he could follow all the steps comfortably.

Figure XI-A shows the %SS during basa line, therapy sessior and followup. It is observed that stuttering was quite stable during the base line evaluation. The %SS had decreased in the first session of therapy but not to the minimum. It was almost consistent upto the 3rd session of therapy. During the 4th session again there was marked decrease in %SS and it had becom.

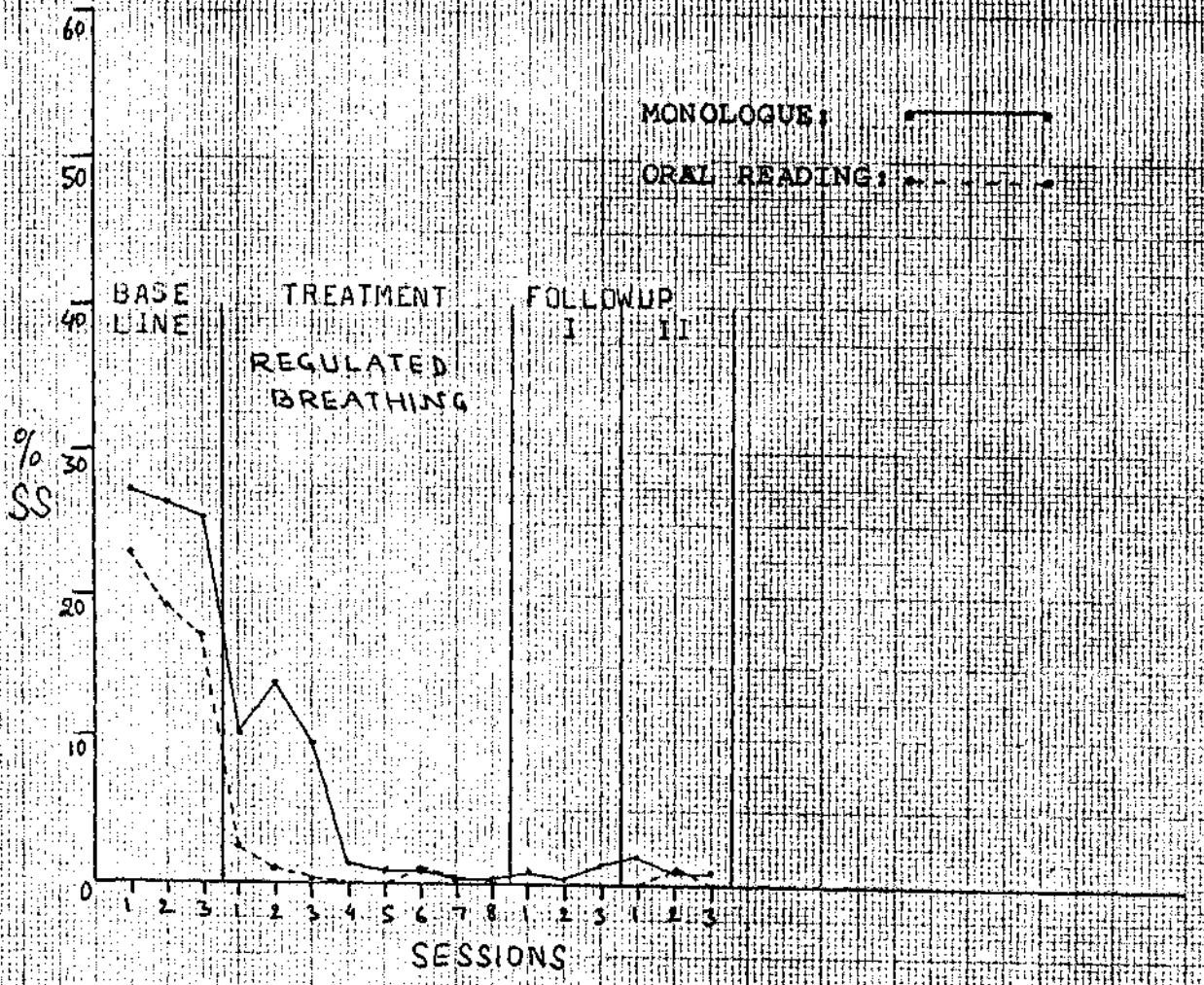


Figure-XI-A. Shows stuttering severity in percentage syllables stuttered of case no.XI.

Figure-XI-B. Shows speaking rate in SPM of case no."XI".

almcst minimum to zero in the last session of therapy. Stuttering was consistently almost nil after the 4th session. The case had gained excellent fluency in his speech. In oral reading, %SS had decreased markedly in the first session of therapy itself. It was almost nil in the second and third session and again had come to zero in all consecutive sessions. Then the therapy was terminated and the case was asked to come for followup.

During followup, the fluency was maintained excellently. There was slight increase in %*SS* in monologue during the second followup but it had not affected the fluency achieved. The case and his colleagues had reported that fluency was maintained in all situations including situations where he had sore difficulties in speaking.

Figure XI B shows the pattern of the rate of speech observed during base line to followup. It is observed that the rate of speech in monologue was lower than in reading during base line and also during first few sessions of therapy. The rate of speech in both monologue and oral reading had come closer in the last few sessions of therapy and was maintained on followup also.

Table No.XI. Shows inter-observer reliabilities in percentage of agreement of case no.XI.

PERIOD →																							FOLLOW UP								
																							1 MONTH			3 MONTH			6 MONTH		
	PRE TREATMENT			DURING TREATMENT																											
CONTEXT →	MEASURES / SESSIONS →	1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3
ORAL READING	SS	94.64	98.38	92.30	100	100	100	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	100	100	100	100	-	-
	TS	98.76	99.37	98.86	98.96	99.10	99.37	99.02	98.53	98.82	98.73	99.35	-	-	-	-	-	-	-	-	-	-	-	-	-	98.88	98.56	99.81	99.06	98.91	99.86
MONOLOGUE	SS	89.70	95.23	94.54	91.30	93.33	90.90	100	100	100	100	100	-	-	-	-	-	-	-	-	-	-	-	-	-	100	83.33	100	100	100	100
	TS	98.65	98.34	97.69	98.64	98.13	97.78	97.18	98.64	98.54	97.58	98.41	-	-	-	-	-	-	-	-	-	-	-	-	-	98.35	98.55	98.68	97.90	98.58	99.12

Table-XI shows the inter-observer reliabilities between observers, which was above 90% in almost all the sessions.

Case XII

He was a 24 year old student of LLB. He was also preparing for IAS. He had stuttering since child-hood. He did not have a history of any severe illness. ENT and hearing examinations revealed abnormalities.

Personal history revealed that he had become upset and depressed when he had more stuttering. He had more stuttering with senior staff, teachers and other senior authorities. He did not have much stuttering with other people.

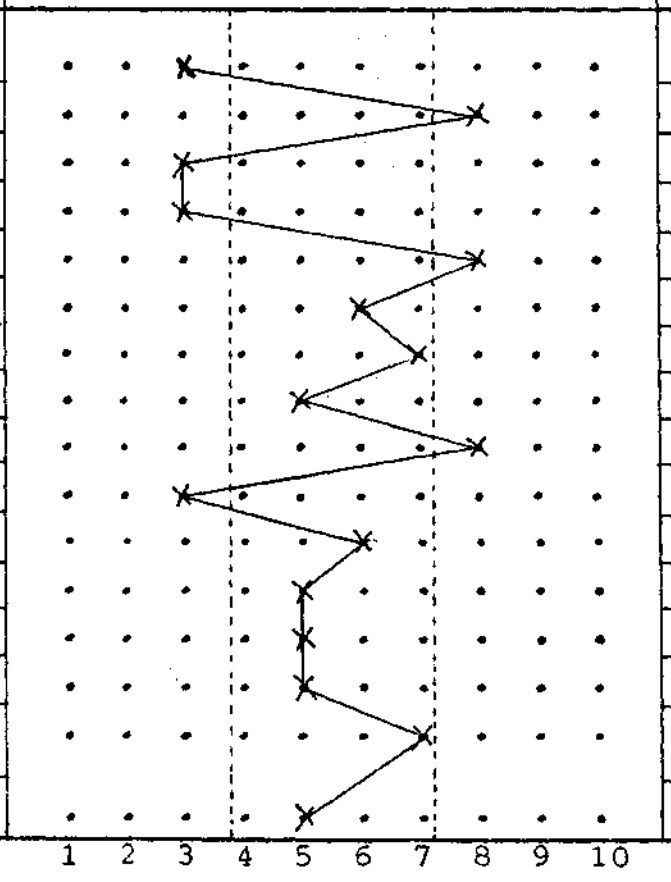
Speech behaviour showed higher rate of speech than average. More repetitions were observed than additions and prolongations of sounds. No obvious breathing disturbances were observed, but he reported that he used to have difficulty in breathing while facing anxious and tense situations.

Personality profile revealed that he was reserved (A = 3), more intelligent than the average (3 = 8), Affected by feelings (C = 3)• humble (E = 3), suspicious (L = 8), and practical (M = 3). The sten scores on these factors did not indicate

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. XII AGE: 24 years EDUCATION: B.A., L.L.B.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	6	3	RESERVED	OUTGOING
B	7	8	LESS INTELLIGENT	MORE INTELLIGENT
C	6	3	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	2	3	HUMBLE	ASSERTIVE
F	10	8	SOBER	HAPPY-GO-LUCKY
G	8	6	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	5	5	TOUGH-MINDED	TENDER-MINDED
L	10	8	TRUSTING	SUSPICIOUS
M	4	3	PRACTICAL	IMAGINATIVE
N	6	6	FORTHRIGHT	ASTUTE
O	4	5	SELF-ASSURED	APPREHENSIVE
Q1	5	5	CONSERVATIVE	EXPERIMENTING
Q2	8	5	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	10	7	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	5	5	RELAXED	TENSE



more severity in anxiety because most of the scores fell near the average limit. It can be said that he had a mild degree of anxiety, which was also noted from his personal history. Stuttering was not also much severe.

Regulated Breathing Approach was tried during a total 9 sessions of therapy. The therapeutic method was explained to the case. Demonstrations of different steps of this method were also shown. The case did not have any difficulties in understanding the therapy techniques. He had followed the technique upto satisfaction during clinic set up. But he had not shown the expected fluency in his speech even after the trial of 9 sessions of the Regulated 3reathing Approach.

Figure XII - A shows the %SS across the base line to followup. During base line, %SS was almost stable in all three sessions of evaluation in monologue. The %SS had decreased in the first session of the therapy and further decreased in second session of the therapy, but decrease was not very significant. The %SS had not come down to the minimum level in other consecutive sessions of therapy. When the case was interviewed regarding achievement in fluency, it was observed that he was not much assertive i.e., he was not following the instructions properly in speaking situations.

Figure-XII-A. Shows stuttering severity in percentage syllables stuttered of case no.XII.

Figure-XII-B. Shows speaking rate in SPM of case no. XII.

Keeping the above facts in mind, Assertion Training was started. The %SS had started decreasing further as therapy had progressed in the following sessions. In the 5th session of assertion training, %SS had decreased to the minimum and it had become almost zero in the 8th and 9th sessions of assertion training. Fluency was achieved to the maximum during these sessions and it was consistently maintained also. In oral reading also, the same trend was followed as in monologue, but at a lower level of percentage syllable stuttered. The therapy was terminated since the case had achieved consistent satisfactory fluency in his speech.

On the followups which were one month after and three months after the %SS had slightly increased in both monologue and oral reading but the fluency achieved was not much affected. The fact that he had gained fluency which was maintained consistently at both followups demonstrates the effectiveness of assertion training in this case.

Figure XII - B had shown a little higher rate of speech in both contexts during base line. It had decreased in the first session of therapy. It had become almost consistent during the regulated breathing method of treatment. Also during assertion training method the rate of speech was same

Table-XII. Shows inter-observer reliabilities in percentage of agreement of case no.XII.

PERIOD →				DURING TREATMENT																			FOLLOW UP								
				PRE TREATMENT			I TREATMENT								II TREATMENT								1 MONTH			3 MONTH			6 MONTH		
CONTEXT →		MEASURES ↓ / SESSIONS →		1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3
MONOLOGUE		TS		99.36	99.65	99.01	99.52	99.51	99.06	87.54	100	100	99.59	98.81	97.70	97.88	98.57	99.01	98.62	98.95	98.22	99.56	99.64	98.88	-	-	-	97.99	99.64	99.24	99.85	-	-	-
		SS		97.95	94.0	98.18	96.42	95.83	96.0	96.42	100	100	96.77	98.85	96.55	89.47	90.90	90.90	99.02	100	100	100	100	100	-	-	-	100	100	90.90	100	-	-	-
ORAL READING		S.T		99.38	100	99.04	98.65	100	99.13	99.54	100	99.17	99.54	97.48	97.78	99.81	99.85	98.59	99.02	99.56	99.61	99.59	98.88	98.18	-	-	-	98.80	99.33	97.99	98.04	-	-	-
		SS		93.33	97.89	96.96	100	100	100	100	100	100	100	85.71	88.88	100	100	100	100	100	100	100	100	100	-	-	-	100	100	100	100	-	-	-

with slight variation. The rate of speech in both the contexthi.e, in monologue and oral reading was closer to each other throughout all the sessions of therapy and also during followup. The rate of speech and fluency achieved by the case were maintained consistently on followup also.

Table-XII shows the inter-observer reliabilities between observers in terms of percentage agreement. It was above 90% in all the sessions.

It had indicated that the case had anxiety which was not completely counteracted by Regulated Breathing Approach. 3ut when Assertion Training Method was tried he could overcome his anxiety which ultimately improved fluency.

Case XIII

He was a 21 year old medical student of MBBS. He had developed stuttering during child-hood. There was no family history of stuttering. There was no history of any severe illness. He did not have any ENT and hearing problem.

Personal History revealed that he did not have much inter-personal problems. He reported that his friends used to tell him to speak slow.

Speech behaviour showed fast rate of speech in conversation as well as in reading. Repetitions and additions were observed more than prolongation of sounds. No breathing disturbances were observed. No secondary behaviours were observed during speaking.

Personality profile revealed that the score on factor C of 1 suggested that he was affected by feelings (i.e., less emotionally stable). Scores on other factors did not suggest anxiety in his behaviour. Both personality profile and personal history were not much suggestive of anxiety.

In this case, more emphasis was given first on the rate of speech which was higher in both the contexts. Since the case had also not shown much anxiety;it was decided that by controlling the rate of speech, we might reduce stuttering and improve his fluency. Therefore, syllable timed speech was tried using electronic desk metronome. Metronome was set at lower leve] of speed of 40 beats per minute and practices were given in both the contexts. During the first and second session of therapy, the decrease .in %SS was not marked. In the 3rd session of therapy marked decrease in %SS was observed (figure - XIII - A). The speed of metronome was increased gradually at the rate of 5 beats per minute in consecutive sessions as the fluency was maintained and stuttering did not occur.

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

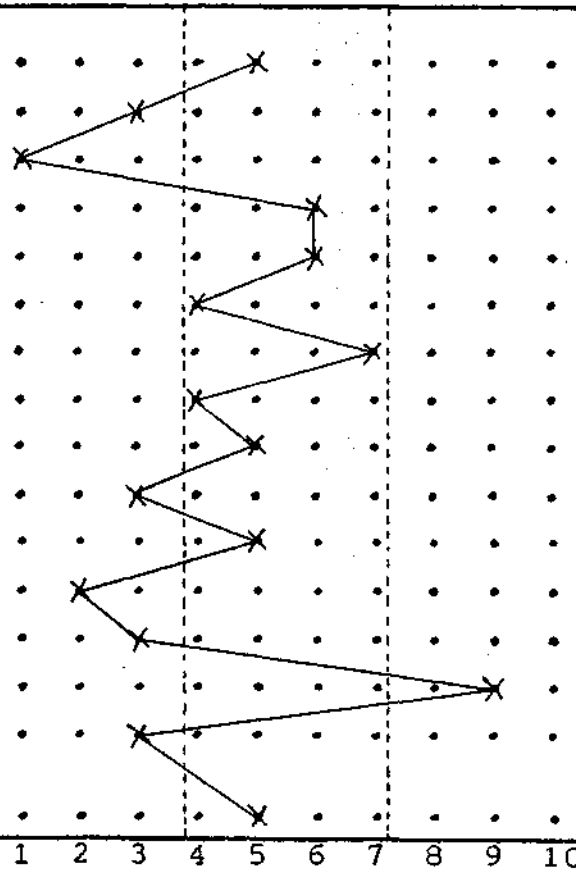
CASE NO. XIII AGE: 21 years EDUCATION: M.B.B.S

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	8	5	RESERVED	OUTGOING
B	3	3	LESS INTELLIGENT	MORE INTELLIGENT
C	3	1	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	6	6	HUMBLE	ASSERTIVE
F	8	6	SOBER	HAPPY-GO-LUCKY
G	6	4	EXPEDIENT	CONSCIENTIOUS
H	10	7	SHY	VENTURESOME
I	4	4	TOUGH-MINDED	TENDER-MINDED
L	6	5	TRUSTING	SUSPICIOUS
M	3	3	PRACTICAL	IMAGINATIVE
N	5	5	FORTHRIGHT	ASTUTE
O	2	2	SELF-ASSURED	APPREHENSIVE
Q1	2	3	CONSERVATIVE	EXPERIMENTING
Q2	12	9	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	5	3	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	5	5	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10



The %SS had decreased further in the 7th session of therapy to minimum and fluency was gained with optimum rate of speech. The therapy was terminated and the case was asked to follow the same procedure of reading and speaking at home and in daily life situations.

Figure XIII - A presents the %SS across base line to foliowup. It is observed that %SS is much higher in monologue than in oral reading. The %SS had not decreased much in first two sessions of therapy. This was because the case could not have sufficient practice in monologue as time spent at these sessions were insufficient. When more practices were given for about 70-80 minutes in the 3rd session of therapy, the %SS had come down and it was consistent upto the 6th session. Further practice had brought down %SS to minimum level with an increase in fluency. This was consistently maintained in four consecutive sessions of therapy. In oral reading, though %SS was not much high, it had come down to almost zero and it was consistent in the last four sessions of therapy. During the followup evaluation, there was slight increase in %SS in both the contexts without affecting the fluency obtained.

Figure XIII - 3 presents changes in the rate of speech from base line to followup. It is seen that SPMwas very high in both the contexts during base line. The rate of speech had come down markedly, in the first session of therapy itself.

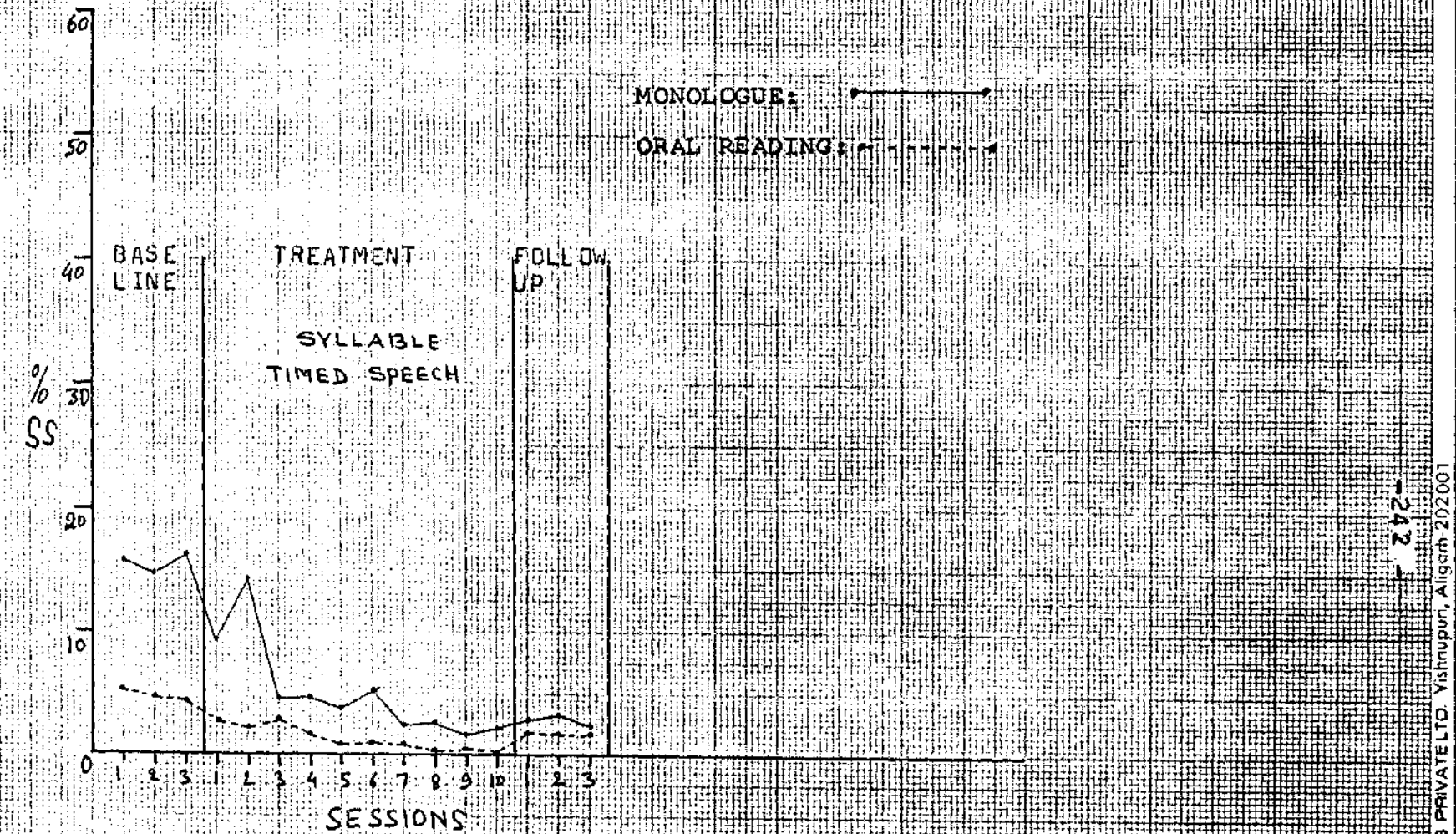


Figure-XIII-A. Shows stuttering severity in percentage syllables stuttered of case no.XIII.

Figure-XIII-B...Shows-speaking rate in SPM of case no.XIII

And as therapy had progressed in the following sessions, the rate of speech also had improved. In both the contexts, the rate of speech was closer to each other. It had gone high during the followup evaluation, but it had not affected the fluency of speech. That is, stuttering was almost nil during these followup sessions.

The table XIII - shows the inter-observer reliabilities in terms of percentage agreement which was above 90% in all the sessions.

A close analysis of the case reveals that syllable timed speech can be effective to a great extent in the cases, who have high rate of speech as a major problem with the least amount of anxiety. In this case, as it was observed from the personal history and personality profile, he did not have much of problem in inter personal communication.

Syllable Timed Speech had been used by several investigators with stutterers to control stuttering, but most of them have shown that the improved fluency in the case did not get generalised or could not be maintained longer.

Table-XIII. Shows inter-observer reliabilities in percentage of agreement of case no.XIII

PERIOD →			PRE TREATMENT		DURING TREATMENT																	FOLLOW UP						
																						1 MONTH			3 MONTH			6 MONTH
CONTEXT →	MEASURES → SESSIONS ↓		1	2	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	1	2	3	1	2	3
MONOLOGUE	TS		98·82	98·03	94·17	96·36	96·89	96·20	96·02	99·41	95·03	99·26	96·87	98·27	–	–	–	–	–	–	–	–	–	–	–	96·04	96·88	96·36	–	–	–
	SS		96·22	94·11	96·29	97·72	93·33	100	92·3	90·0	100	88·88	100	100	–	–	–	–	–	–	–	–	–	–	–	90·0	100	100	–	–	–
ORAL READING	TS		98·73	98·47	97·16	96·38	96·61	96·85	96·11	98·19	96·25	97·07	97·92	97·22	–	–	–	–	–	–	–	–	–	–	–	99·68	99·0	98·31	–	–	–
	SS		88·4	95·25	92·3	100	90·9	100	100	100	100	100	100	100	–	–	–	–	–	–	–	–	–	–	–	100	100	100	–	–	–

Case XIV

He was a 17 year old student of I.Sc, He had come with the complaint of stuttering since child-hood. There was no history of stuttering in his family. He did not have any severe illness. ENT and hearing examination had shown no abnormalities.

Personal history revealed that he did not have much anxiety problem in inter personal communication. He used to participate in games frequently. Stuttering was reported to be more with strangers. Stuttering was minimum with family members, friends, and known persons.

Speech behaviour showed that he had repetitions and prolongations and also blocks in his speech. Stuttering was observed almost the same in conversation and reading. Secondary behaviour^ like facial grimaces were observed during speech. 3reathing pattern was disturbed mostly on blocks.

Personality profile revealed that he was affected by feelings (less emotionally stable), expedient, practical and group dependent. The profile indicated that the case may have mild degreeof anxiety problem, which was also observed from the personal history of the case.

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

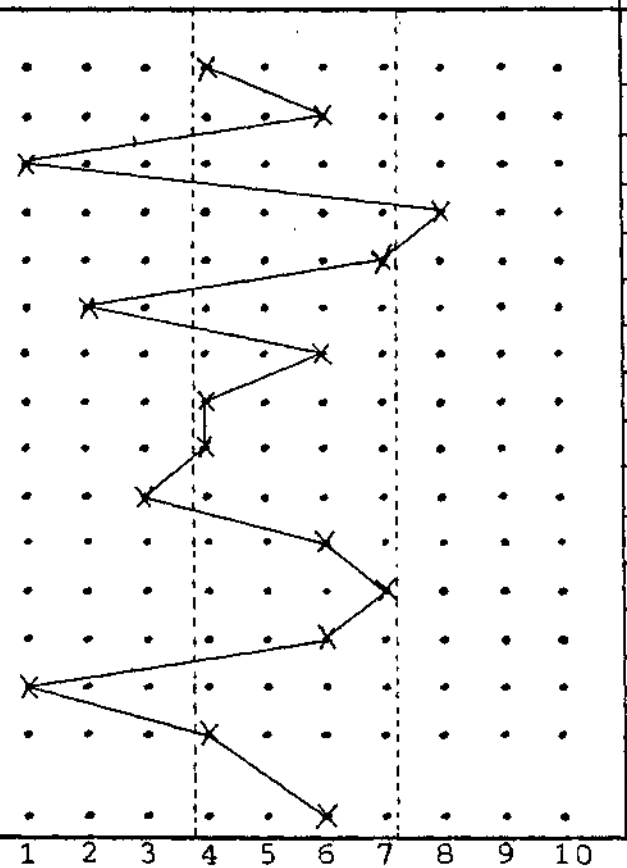
CASE NO. XIV AGE: 17 years EDUCATION: I.Sc.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	7	4	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	2	1	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	8	8	HUMBLE	ASSERTIVE
F	9	7	SOBER	HAPPY-GO-LUCKY
G	3	2	EXPEDIENT	CONSCIENTIOUS
H	9	6	SHY	VENTURESOME
I	4	4	TOUGH-MINDED	TENDER-MINDED
L	5	4	TRUSTING	SUSPICIOUS
M	4	3	PRACTICAL	IMAGINATIVE
N	6	6	FORTHRIGHT	ASTUTE
O	6	7	SELF-ASSURED	APPREHENSIVE
Q1	7	6	CONSERVATIVE	EXPERIMENTING
Q2	4	1	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	4	4	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	6	6	RELAXED	TENSE

STANDARD TEN SCORE (STEN)

AVERAGE

1 2 3 4 5 6 7 8 9 10



1 2 3 4 5 6 7 8 9 10

Regulated breathing method was tried systematically as described by Azrin & Nunn (1974). The method was explained to the case and demonstrations were held during the same sessions. The case was able to follow the instructions satisfactorily. He could demonstrate the procedure as instructed. He had followed the method at home as well as in outside situations.

Figure XIV - A shows the %SS across the base line, therapy sessions and followup. It is observed that the %SS was almost near each other in both monologue and oral reading during base line. The %SS had not fallen much in the first session of therapy in both the contexts, but it had come down markedly in consecutive three sessionss of the therapy in both the contexts. It had come to the minimum level and was consistently maintained till the 8th session of therapy. In the 9th session %SS had. fallen down further and consistently maintained till the last session of therapy. This decrease in %SS had produced marked fluency in the speech of the case, which was consistently maintained throughout after the 8th session of therapy till the last session.

There could be only one foilowup which was 1 month after the therapy. The %SS had slightly increased during all the three evaluations made during the period in both monologue and

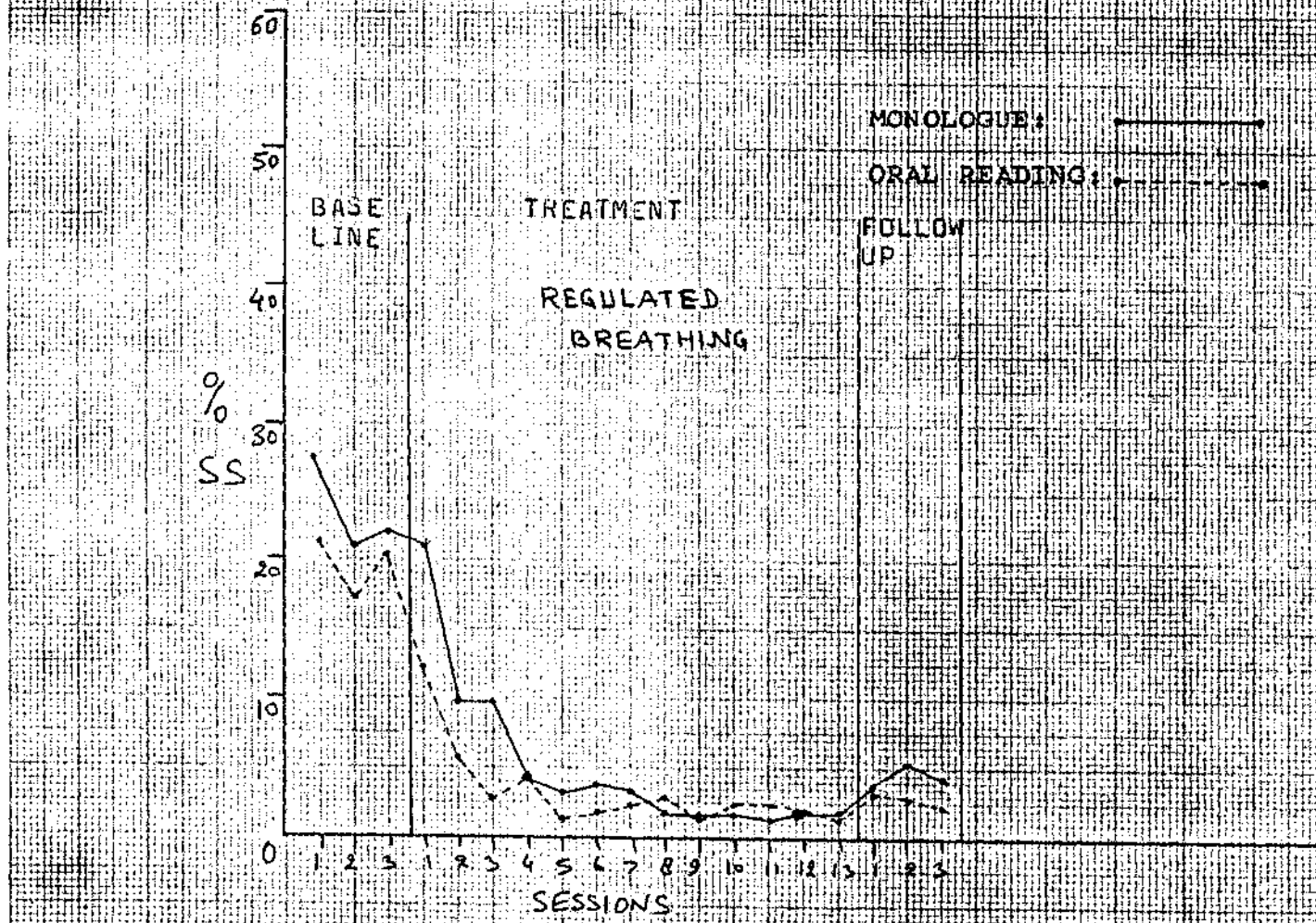


Figure-XIV-A. Shows stuttering severity in percentage syllables stuttered of case no.XIV

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Figure-XIV-B. Shows speaking rate in SPM of case no. XIV.

oral reading. As reported by the case, fluency was maintained. He had reported that he had consistent fluency in out side situations also. His parents had reported that he had achieved satisfactory fluency, but he had shown one or two moments of stuttering during conversation after termination of therapy.

Figure XIV - {3 shows the rate of speech (SPM) in both monologue and oral reading across base line, therapy sessions and followup. It is observed that during base line, 3PM was almost overlapping and it was consistent in all three evaluations. During therapy sessions, the SPM had gone slightly high with decrease in %SS in the first few sessions of therapy. It was again maintained consistently throughout all the consecutive therapy sessions. The rate of speech in both the contexts was near the average limit, which had given a surprising fluency in the case during last 8 sessions of therapy.

Table-XIV shows the inter observer reliabilities between observers. It was observed that, it fell above 90% in all the sessions. A close analysis of the case and therapeutic method tried revealed that though the case had shown mild degree of anxiety, Regulated Breathing Approach had benefited him within a limited number of sessions. Although this Assertion

Table - XIV. Shows inter-observer reliabilities in percentage of agreement of case no.XIV.

PERIOD →			PRE TREATMENT			DURING TREATMENT																				FOLLOW UP								
																										1 MONTH			3 MONTH			6 MONTH		
CONTEXT →	MEASURES ↓ / SESSIONS →		1	2	3	1	2	3	4	5	6	7	8	9	10	11	12	13								1	2	3	1	2	3	1	2	3
ORAL READING	SS		95.91	97.77	94.11	92.85	100	100	100	100	100	100	100	100	100	100	100	100								100	100	100						
	TS		97.41	97.49	98.57	98.13	96.78	97.14	92.40	98.65	98.52	95.97	99.49	96.66	98.16	98.54	97.28	98.06								97.78	97.88	98.26						
MONOLOGUE	SS		97.05	98.18	95.0	97.91	96.55	93.33	100	100	100	100	100	100	100	100	100	100								100	98.3	100						
	TS		97.39	98.84	97.24	97.78	94.78	98.07	98.16	99.19	97.80	97.12	97.35	99.24	97.04	96.63	95.51	98.18								97.11	99.19	98.23						

DURING TREATMENT

Training was not tried as a separate method of treatment, the Regulated Breathing was tried because quite a few components in Regulated Breathing Approach do involve Assertion Training. It was presumed that this would be greatly beneficial. However, it was anticipated that during Syllable Timed Speech the patient will be compelled to follow the pronounciation of sounds or words exactly during the beats of the electronic metronome. It was also ensured that in the progressive steps his pronounciation of sounds and words could be progressively increased in voluminosity.

Case XV

He was a 24 year old student of B..A. He had stuttering since childhood. There was no family history of stuttering. Ee had reported that he used to imitate one of his friends who was a stutterer. He developed stuttering from his friend and it became more later. There was no history of severe illness. ENT and hearing examination showed no abnormality.

Personal interviews with the case revealed that he did r.ot have much stuttering with friends and known persons. He used to stutter more with strangers and senior people. He used to worry on others comments on his stuttering. He used to avoid talking in anticipation of stuttering.

Speech behaviour showed fast rate of speech. Repetitions, blocks and additions were more observed than prolongations. Eis breathing pattern was very much disturbed during the starting of sentences and words. There was delay in starting of sentences. More stuttering were observed during conversation than in reading. The rate of speech was faster during conversation.

Personality profile revealed that he was reserved, affected by feelings (less emotionally stable and apprehensive (worried). The personality profile and personal history suggested that the case had anxiety problem during inter personal communication.

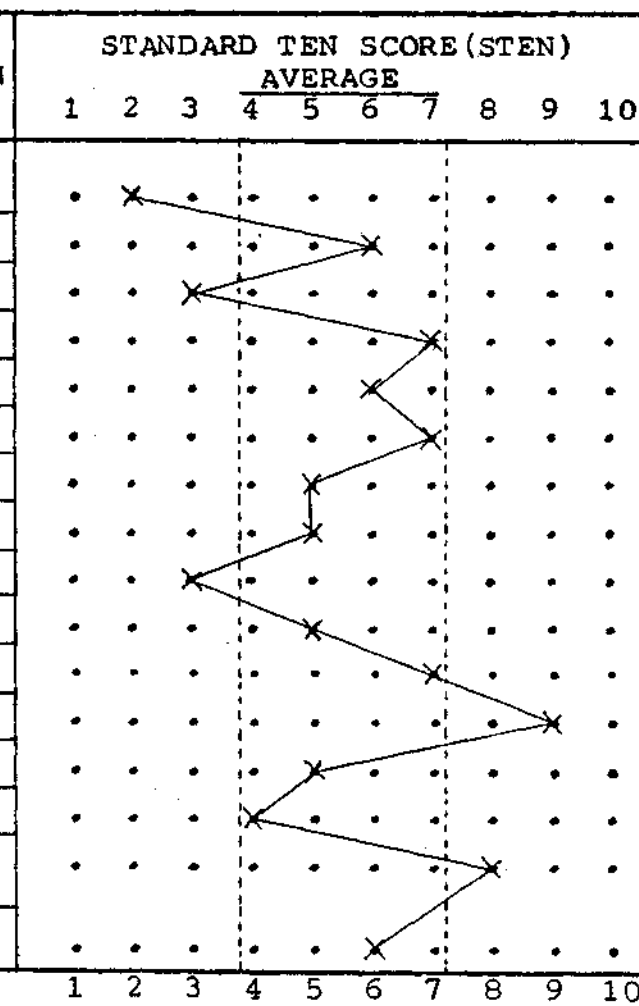
Based on the findings of personality test, personal history and speech characteristics, Regulated Breathing Approach was tried to over come his problems. The therapeutic procedure vas made clear to the case. The case had understood the method of treatment and followed systematically during therapy sessions. He had reported that he was also following the method at home as instructed.

Figure XV - A shows the pattern of changes in the %SS curing base line, therapy session and followup. Curing base line, %SS was higher in monologue. It had decreased in the first session of therapy markedly. The %*SS* had decreased

CATTELL'S 16 PF TEST PROFILE - 'C' FORM

CASE NO. XV AGE: 24 years EDUCATION: B.A.

FACTOR	Raw Score	Standard Score	LOW SCORE DESCRIPTION	HIGH SCORE DESCRIPTION
A	5	2	RESERVED	OUTGOING
B	5	6	LESS INTELLIGENT	MORE INTELLIGENT
C	6	3	AFFECTED BY FEELINGS	EMOTIONALLY STABLE
E	7	7	HUMBLE	ASSERTIVE
F	8	6	SOBER	HAPPY-GO-LUCKY
G	10	7	EXPEDIENT	CONSCIENTIOUS
H	8	5	SHY	VENTURESOME
I	5	5	TOUGH-MINDED	TENDER-MINDED
L	4	3	TRUSTING	SUSPICIOUS
M	6	5	PRACTICAL	IMAGINATIVE
N	7	7	FORTHRIGHT	ASTUTE
O	8	9	SELF-ASSURED	APPREHENSIVE
Q1	5	5	CONSERVATIVE	EXPERIMENTING
Q2	7	4	GROUP-DEPENDENT	SELF-SUFFICIENT
Q3	11	8	UNDISCIPLINED SELF-CONFLICT	CONTROLLED
Q4	6	6	RELAXED	TENSE



to a minimum and almost near zero in almost all the sessions of regulated breathing approach. In monologue, the %SS had decreased slightly more in further consecutive sessions of regulated breathing method but it had not minimised at all. The case could not gain much fluency in his speech during this method of treatment, even though it was tried for a total 11 sessions of therapy.

?rom figure XV-B , it is evident that when the case had gained some amount of fluency, the rate of speech had gone higher in both the contexts. The rate of speech was consistently higher throughout all the sessions of regulated breathing approach. Fluency was not achieved during this period. When the case was interviewed regarding his problems after trial of sufficient number of therapy sessions he had reported that he was not able to speak or read slowly though the %SS had come ..... down ..... Xt had indicated that the case was not following the method properly, though the regulated breathing approach had provision to control the rate of speech.

Considering all the factors reported by the case Syllable • Timed Speech -was tried. More practices were given on metronome in both reading and[1] speaking. The %SS had further decreased after trial of 3 sessions of therapy, but neither had it come down to minimum nor near zero in consecutive therapy sessions.

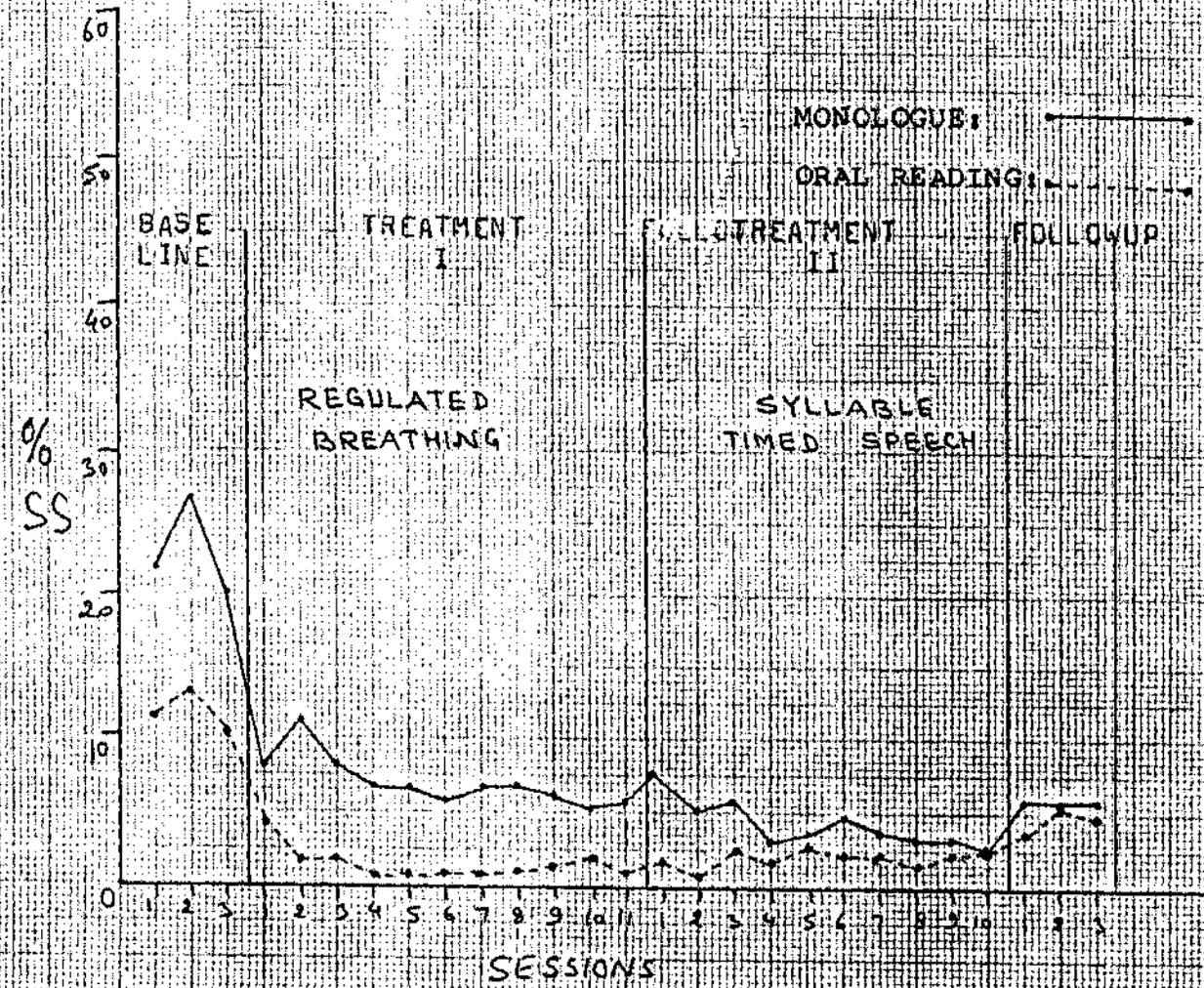


Figure-XV-A. Shows stuttering severity in percentage syllables stuttured of case no.XV

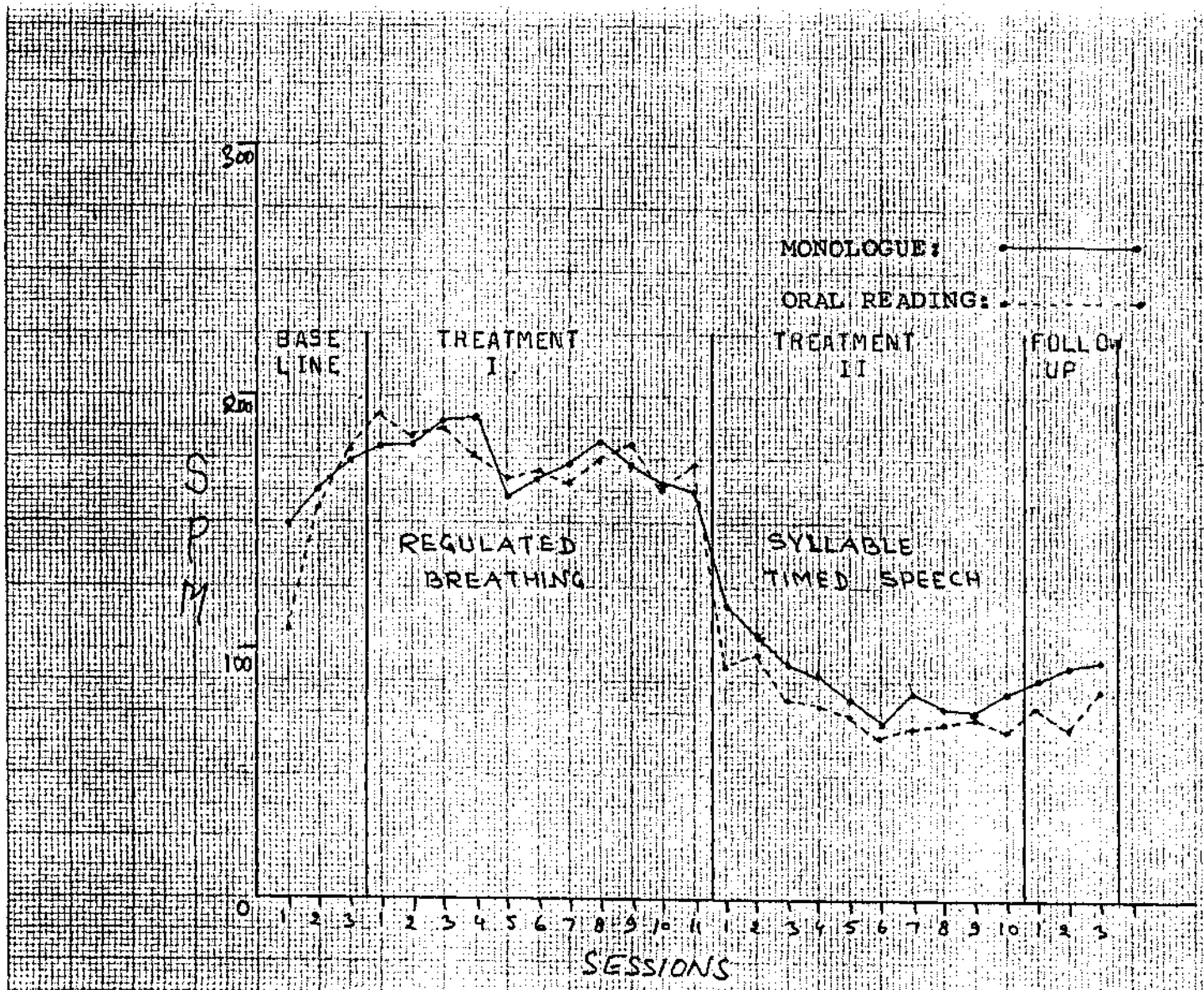


Figure-XV-B. Shows speaking rate in SPM of case no.XV.

Table-XV. shows inter-observer reliabilities in percentage of agreement of case no.XV.

PERIOD →			ORAL READING		MONOLOGUE	
CONTEXT →		MEASURES ↓ / SESSIONS →	SS	TS	SS	TS
PRE TREATMENT		1	89.74	97.23	93.84	98.03
		2	97.61	96.88	94.31	98.78
		3	94.73	97.80	95.77	98.03
DURING TREATMENT	I TREATMENT	1	94.11	98.47	94.64	99.72
		2	100	97.85	96.0	99.72
		3	100	97.90	96.77	98.44
		4	100	97.50	89.65	97.68
		5	100	97.95	95.83	98.76
		6	100	97.98	95.0	99.10
		7	100	97.92	95.83	98.84
		8	100	97.75	96.0	98.64
		9	100	97.83	91.3	98.84
		10	100	99.85	89.47	97.92
		11	100	99.71	95.0	98.15
	II TREATMENT	1	100	98.42	88.88	98.72
		2	100	97.51	99.90	99.52
		3	100	95.80	100	97.46
		4	100	97.50	100	98.34
		5	100	94.87	100	98.15
		6	100	99.83	100	98.63
		7	100	99.28	100	97.56
		8	100	98.40	100	99.34
		9	100	96.67	100	98.03
		10	100	97.84	100	94.37
FOLLOW UP	1 MONTH	1	100	97.56	100	97.77
		2	100	94.56	100	96.89
		3	100	96.64	100	96.90
	3 MONTH	1				
		2				
		3				
	6 MONTH	1				
		2				
		3				

?rcm figure XV - 3 it is evident that the rate of speech had decreased markedly during metronome therapy and fluency was achieved upto satisfaction. The case had shown very *sh*ight amount of %SS in his speech which was within the normal limits.

The fluency obtained during metronome therapy after trial of 3 sessions, it was consistently maintained till the last session of a total 10 sessions of therapy tried. When the case was interviewed regarding his fluency obtained he reported that he was very much contented with the fluency he had achieved, even though he had some moments of stuttering on some occasions. The case was discharged from the therapy since he had shown consistent satisfactory fluency in his speech on more than the 3 sessions of therapy during last few sessions. He had come for only one followup which was held one month after. It was observed that there was slight increase in %SS of this followup. The rate of speech had not gone high and it was consistently maintained. The case had obtained sufficient fluency but some stuttering moments were observed during followup. The case was again instructed to follow the methods which were followed during the therapy session.

AN EPILOGUE

There are certain facts which emerge from a careful perusal of the case studies which have been presented in the previous pages. To start with on the Cattell's 16 PF test, the results clearly indicate considerable differences in personality constellation among stutterers. This is no new observation. All stutterers cannot be treated as belonging to a single homogenous group. Personality differences must exist among stutterers just as they exist among ordinary people. Thus we find some stutterers who are withdrawn, shy introverted and intelligent. Some stutterers may have predominant amount of anxiety coupled with other anxiety characteristics. There are some other stutterers who happen to have a fast rate of speech where as there are others who have no appreciable fast rate of speech. Apart from these personality differences among stutterers they also differ in their speech characteristics. And it is perhaps because of these reasons we cannot think in terms of a single syndrome of stuttering but have to think of a possibility of different syndromes of stuttering.

In fact it is the contention of many authorities in this field that there are syndromes of stuttering rather than a single syndrome of stuttering. This must necessitate us to

think in terms of what methods of treatment either singly or in combination are likely to deliver the best of the results with which type of stutterers. Unless this issue is given serious consideration and research, we will not be in a position to achieve economy in our clinical enterprise. Looking at the existing situation now we find that more often lines of treatment like Speech Shadowing or Syllable Timed Speech or Delayed Auditory Feedback or Systematic Desensitisation or Regulated breathing Approach are being tried. And perhaps this is the reason why we are not finding that all the cases do not respond equally well to any single method of treatment like these. The failures which occur so often in the treatment of stuttering may as well be attributed to this monotonous approach that we are adapting.

Some behaviorally oriented therapists may rather not agree to the correlation between personality traits in terms of assets and deficiencies with the alternative appropriate treatment methods of stuttering. In fact, a careful study of literature in behaviour therapy itself i3 likely to suggest that they do make use of the concept of personality traits. In fact, Eysenck, one of the leading exponents of behaviour therapy himself has givan the hierarchical structure of personality where he mentions the organisation of personality at different levels, starting from-

personality types, down to personality traits, down to habits, and further down to specific responses. Thus the lowest level is specific responses.. Several specific responses become integrated together to form a habit. Several habits get integrated together to form a personality trait. A number of personality traits get integrated together to form a personality type. He gives this description in one of his well known books" The Structure of Human Personality". As long as we presume that stuttering is a maladaptive habit, nothing prevents us to deal with this problem at other levels like specific response level, habit level or trait level. Therefore one need not find fault with the use of term like personality traits. The same has been followed in the present study

A knowledge that a person is shy, with-drawn and socially introverted implies that as long as these deficiencies will be present along with stuttering, it becomes important to try to treat not only his speech, problem but also his problem of shyness, for which purposes we can make use of Assertion Train: etc., This is exactly what has been done in the present stud3 The encouraging results were obtained possibly because of matching the treatment methods with personality traits in a gi case.

CHAPTER - VI

SUMMARY, CONCLUSIONS AND SUGGESTIONS

SUMMARY

The objective of the present study was to develop effective therapeutic strategies among young adult stutterers, focussing upon the personality assets and deficiencies as revealed by Cattail's 16 PF Questionnaire.

A total of 40 cases were taken up, out of which 15 cases only could complete the treatment programme of the study as per the criteria laid down in the study. The age of the cases ranged between 16 year to 26 years. All the cases who had completed the programme of treatment were students and highly motivated to undergo treatment. All these cases were young adult stutterers.

Every case was evaluated on Gattell's 16 PF 'C'[1] Form Questionnaire and profiles were prepared. They were subsequently subjected to the appropriate treatment method. A case was tried on either one method or more than one method of treatment depending upon the case's personality and speech characteristics. The targets set-forth were elimination of stuttering episodes and also to see whether therapeutic benefit lasted longer. Results were presented in the form of standard graphical representation and tabular form for each caae

separately and discussed. Personality test results were presented in the form of personality profiles. These profiles had shown that some cases had more anxiety and some of them had comparatively less anxiety. Some cases were shy, withdrawn and some were not.

Four methods of treatment were selected which were tried with the cases depending upon their assets and deficiencies in personality. These methods were Regulated Breathing Approach, Systematic Desensitisation, Syllable Timed Speech, and Assertion Training. These methods have been tried frequently by many investigators with cases of stuttering during past years.

Three cases out of the 15 cases had shown more anxiety and tenseness on their personality and personal history. These subjects complained of anxiety as main problem along with stuttering. Their anxiety related to social contexts such as low self confidence, shyness, inferiority feelings, difficulty during interpersonal communications. Systematic Desensitisation was tried and found useful in these cases. All these cases hai shown satisfactory fluency which was maintained at followup.

One case had shown low anxiety with high rate of speech

without any breathing/secondary problems. He was tried with Syllable Timed Speech and had shown tremendous improvement in fluency which was generalised in daily life situations.

In the 11 cases, Regulated Breathing Approach was tried. These cases had comparatively low anxiety associated with disturbed breathing and secondary behaviours along-with stuttering. In the 7 out of the 11 cases a single method of treatment as Regulated Breathing Approach had brought satisfactory fluency which was consistently maintained on followup and generalised in daily life situations. In the 3 out of the 11 cases, Regulated Breathing Approach did. not show appreciable improvement in speech fluency and therefore, they were tried with Assertion Training Method. These 3 cases had shown marked improvement in their speech fluency and it was maintained on followup. One case out of the 11 cases, did not improve in his fluency due to high rate of speech which could not be controlledduring Regulated Breathir Approach. He was tried with Syllable Timed Speech which brought satisfactory improvement in fluency. Fluency was maintained at followup and generalised in daily life situati

All the cases were instructed to follow the method trie on them at home and in the daily life situations involving speech behaviour to achieve generalisation.

The two main parameters of severity measurement i.e., %SS and 3PM were taken for the assessment of stuttering in clinic set up in both oral reading and monologue contexts. Tape Recorder was used in the present study for recording speech samples in oral reading and monologue.

The inter-cbserver reliabilities both for oral reading and monologue were the same as in the literature of applied behaviour analysis namely, percentage of agreement which was about 90%.

Conclusions

1. Present study indicated that if therapeutic methods are selected based on the personality assets and deficiencies along-with the speech characteristics they are likely to bring more consistent speech fluency for longer duration.

2. Young stutterers who had pronounced degree of anxiety characteristics responded remarkebly well when tried with Systematic Desensitisation.

3. Young stutterers with low anxiety and irregularities in breathing responded remarke ly well on Regulated Breathing Approach.

4. Young stutterers who had fast rate of speech and did not show pronounced anxiety characteristics responded remarkebly well when tried with Regulated Breathing Approach and Syllable Timed Speech.

5. Young stutterers who were shy, withdrawn and entroverted responded remarke ly well when tried with Regulated Breathing Approach and Assertion Training Procedures.

Suggestions for further work

1. More studies when carried out on the similar linesmay tend to confirm the similar results.

2. The experimental design used in this study was an extension of ABA design, which has bsen not considered by many investigators as fulproof design in clinical settings. A design like multiple base line design across subjects,across situations may lead to more authentic results.

3. Use of certain comprehensive personality tests and their results are likely to be useful in the choice of suitable

treatment methods. As for example, Assertion Training Methodslikely to help shy and entroverted stutterers, patients with high anxiaty would benefit from Systematic Desensitisation etc., (Even in behaviourally oriented research studies, use of parametric tests are already vogue as for example Bernereuter 8.S. Schedule, Willoughby Questionnaire).

4. In order to find out what types of personality changes mould occur after a complete course of therapy, it is recommendab to evaluate tha cases on the 16 PF questionnaire and compare the pre and post therpy profiles.

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