CHAPTER - III

METHOD & PROCEDURE
The study has been conducted in two parts. Part ‘A’ deals with the study of causes of substance abuse among rural and urban adolescents. Part ‘B’ deals with the study of the relative efficacy of behaviour intervention with Behaviour Self Control Training (BSCT) only and with BSCT combined with Jacobson’s Progressive Muscle Relaxation (JPMR), in reducing substance abuse among adolescents.

PART - A

OBJECTIVE:

To study the causes of substance abuse among rural and urban adolescents.

DEFINITION OF THE TERMS:

Substance Abuse:

According to DSM-IV, “A substance abuse disorder is characterized by the use of a mood or behaviour-altering substance in a maladaptive pattern resulting in significant impairment or distress, such as failure to fulfill social or occupational obligations or recurrent use in situations in which it is physically dangerous to do so or which ends in legal problems.”

Adolescent:

- A young person who has undergone puberty but who has not reached full maturity.

- Adolescent is an individual during the period of adolescence. Adolescence is the transitional stage of development between childhood and adulthood, represents the period of time during which a person experiences a variety of biological changes and encounters a number of emotional issues. The ages which are considered to be part of adolescence vary by culture, and range from preteens to nineteen years. According to the World Health Organization (2000) adolescence covers the period of life between 10 to 20 years of age.
Rural Adolescents:

Rural adolescents are those who live in rural areas, pertaining to the area outside larger and moderate-sized cities and surrounding population concentrations, generally characterized by farms, ranches, and unpopulated regions.

Urban Adolescents:

Urban adolescents are those who live in urban areas or cities, an area with an increased density of human-created structures in comparison to the areas surrounding it.

SAMPLE:

Sample consisted of two groups of adolescents, who have been abusing pain killers or abusing inhalants at least for last one year. Group I comprised 40 rural subjects in which 33 were those, who have been abusing inhalants and 7 were those who have been abusing pain killers. Group II comprised 40 urban subjects in which 28 were those, who have been abusing inhalants and 12 were those who have been abusing pain killers. Sample was selected from among the adolescents studying in class 6th to 10th (age range 10 to 15 years) in different schools of rural and urban areas of Agra and Mathura city. Adolescents having any other physical or mental disorder were excluded from the sample. The information regarding the identification of substance abusers was partly gathered from the students in the school, during a preliminary investigation. Once few students were identified and they agreed to participate in the study, they helped in the identification of other such cases in the school.

DESIGN:

Ex-post facto design was used in the study. Ex-post facto design focuses first on the effect, and then attempts to determine what caused the observed effect. In the present study the observed effect was substance abuse among adolescents, and attempt was made to determine the causes of observed effect (substance abuse).
TOOLS:

Case study, Thematic Apperception Test (TAT) and Socio-Economic Status (SES) questionnaire were used for the analysis of causes of substance abuse among subjects.

Case Study:

According to Comer (1995) “A case study is a detailed and often interpretive description of one person. It describes the person’s background, present circumstances and symptoms. It may also describe the application and results of a particular treatment, and it may speculate about how the person’s problem developed”.

Case study method is a basic approach, not only in clinical and personality psychology, but in many areas of the behavioural and social sciences where general principles can be illuminated through the intensive study of particular lives (Bolgar, 1965; White, 1966). Ideally, the complete case study describes the patient’s personality and functioning from each of the six perspectives, namely, the motivational, structural, developmental, adaptational, ecological, and biological. The following outline suggests the major areas, and some of the specific questions, which were considered in a clinical case study of the adolescents with substance abuse disorder:

I. Present status

A. Adaptation in life situations

What are the major tasks in the patient’s life (school, family) and how well is he functioning? Does he seem to be at or below optimum?

B. Symptomatic behaviours

1. From the patient’s standpoint, what is troubling him? What are his “presenting symptoms?”

2. As viewed by concerned others, family or peers, what deviant or disturbed behaviours does the patient show? What bothers them?
3. From the perspective of the assessing clinician, what evidence is there of substance abuse? Anxiety? Depression? Are distressing conflicts visible? Specific dysfunctions, e.g., failures of memory, inept problem-solving, concrete thinking?

C. Appearance and behaviour in front of clinician/researcher

Is he anxious? Guarded? Trusting? Uncooperative and resistant?

II. The manifest personality

A. Biological features

Is the patient healthy, robust? What is his medical history? Physical appearance?

B. Temperament

Is the patient energetic, lethargic, active? Are emotions intense, controlled, impulsive? Are emotions appropriate to his age and life circumstances?

III. Personality dynamics and structure

A. Motives and affects

What are his major conscious and unconscious motives? How are they related? What gives pleasure? What are his fantasies and whishes, concealed as well as revealed?

B. Moral principles, social, values, and attitudes

What are the major precepts by which the patient lives? Is his conscience stern, rigid, corruptible, and nonexistent?

C. Ego functions and identity

1. Thought organization, cognitive controls, and styles. What are the characteristic ways the subject approaches cognitive problems? Can he tolerate ambiguity? Delay appropriately before decision?
2. Identity and self-concept. How does the patient view himself? What kind of person does he see himself to be? What are his aspirations? How much self-esteem does he have?

IV. Social determinants and current life situation

A. Family

What are the relationships between patient and his parents or siblings? How does the present family system work?

B. School

What are the relationships between patient and his teachers? Is the patient satisfied with his academic achievements, conditions of school? Is leisure available? How is it used?

C. Friends

What are the relationships between patient and his friends? Is he happy with his friends? Have he made any new friends?

V. Major stresses and coping potential

What are the major stresses in the patient’s current life? Are there excessive demands in his school situations, intense competition? Do strains result from interpersonal relationships? To what extent can the person reduce or avoid stress through his own efforts?

An interview schedule was developed to collect the above information about each subject (Appendix-1).
Thematic Apperception Test (TAT):

The TAT is most widely used "constructive" projective method. TAT was first developed in 1935 by Murray, Morgan, and their colleagues at the Harvard Psychological Clinic to explore the underlying dynamics of personality, such as internal conflicts, dominant drives, interests, and motives. After World War-II, the TAT was adopted more broadly by psychoanalysts and clinicians to evaluate emotionally disturbed patients. Later, in the 1970s, the Human Potential Movement encouraged psychologists to use the TAT to help their clients understand themselves better and stimulate personal growth. Its adherents claim that it taps a subject's unconscious to reveal repressed aspects of personality, motives and needs for achievement, power and intimacy, and problem-solving abilities.

The TAT is a method for the stimulation, recording, and analysis of fantasy. It is based on the assumption that in the construction of stories around ambiguous picture stimuli the individual organizes material from his own personal experiences, partly on the basis of immediate perceptions of the stimuli and partly the associations to those perceptions selected from conscious and preconscious imagery. In achieving these fantasies the conscious and unconscious impulses, the defenses, and the conflicts of the individual are expressed, permitting the skilled interpreter to discover the content of such characteristics of the personality and to make certain assumptions about the development and the structure of the personality.

The TAT, is a projective measure intended to evaluate a person's patterns of thought, attitudes, observational capacity, and emotional responses to ambiguous test materials. In the case of the TAT, the ambiguous materials consist of a set of cards (30 provocative yet ambiguous pictures and one blank card) that portray human figures in a variety of settings and situations. The standard set contains 30 cards, 10 of which are to be used with both men and women, 10 with men alone, and 10 with women alone. The subject is asked to tell/write a story about each card that includes the following elements:
- What has led up to the event shown?
- What is happening at the moment?
- What the characters are feeling and thinking?
- What the outcome of the story will be?

Each story created by a subject is carefully analyzed to uncover underlying needs, attitudes, and patterns of reaction. The TAT is a projective test, its assessment of the subject is based on what he or she projects onto the ambiguous images.

**Reliability of TAT:**

To determine the reliability and validity of a technique such as TAT introduces problems similar to those found in evaluating many other projective techniques. Balken (1945) points out the difficulty involved in determining the reliability of the TAT. He points out that the split half method cannot be applied in reliability studies because of the variability of the fantasies produced in terms of style, content and amount.

The experimental evidence for the reliability of the TAT is slight, but sound. Two studies have dealt with the reliability of the responses of the test. Slutz (1941) used the TAT and a somewhat similar set of 10 pictures to compare the responses of subjects to each. He found that very similar material was produced in each test. Tomkins (1942) repeated the test to establish its reliability. Over a 10 months period a single subject was tested, repeatedly. Tomkins regarded the relative consistency of the fantasies as being the result of an absence of any interpretation of their meaning to the subject.

Three studies have been made of the reliability of interpretation of the test Slutz (1941) found good agreement between the analyses by two judges. Harrison and Rotter (1945), using 5 pictures in a group administration of the test to 70 subjects at the Armored Officer's Candidate School, Fort Knox, each rated the responses 'blindly' for emotional maturity and stability. The subjects were rated twice on a 3-point scale and once on a 5-point scale. With the shorter scale there was complete agreement in 64% of the ratings, partial agreement in 30% and complete disagreement in 6%, yielding a contingency coefficient of 0.73. On the longer scale complete agreement was registered in 43%, complete disagreement in 0%, essential concurrence (not more than one point's
divergence) in 74%. These later ratings produced a correct contingency coefficient of 0.77. In his reliability study Combs (1946) used a “Desires List” by which he and other judge evaluated the responses to the test and autobiographical material. Making separate analyses, the two judges reached only fair agreement (60% for the TAT, 48% for autobiographies). Combs repeated his own ratings after several months, securing 68% agreement with his previous ratings for the TAT and 63% for the autobiographies.

Validity of TAT:

Balken (1940) points out that validity is of a complex order, depending upon the definition and formulation of the problem. The matching method has been most used in determining validity of TAT. This was the procedure of 2 experiments by Harrison (1940). In order to reduce chance factors in the experiment two-control groups were used. These control experiments confirmed the fact that more than chance success in matching was involved with the experimental group. The mean validity index for the experimental group was 82.5%. Comparison of estimates of intelligence from the TAT with Binet scores for 37 of the cases produced a correlation of +0.78. Diagnoses made on the basis of the tests were correct in 30 out of 39 cases (76.9%) when the major clinical category was considered. With 12 out of 18 cases where a clinical subtype was involved, the diagnoses were accurate (66.7%). The matching method was also used by Slutz (1941). In a statistically controlled study, he found that a group of staff members, who had observed his subjects in their homes, at play, or in psychiatric interviews were able to identify the subjects from their TAT records.

The third method of determining TAT’s validity has been in the demonstration of statistically significant variations in the responses of various diagnostic groups to the test. In this, the studies of Balken (1940) and Masserman (1938, 1939); and Rapport, Gill and Schafer (1946) are the most important. The fourth method is prediction used as yet, in only minor ways. The experiment of Bellak (1942, 1944), illustrates one phase of prediction. The other demonstration of prediction was in the study of hypnotizability by White (1937). From the TAT stories of 15 subjects he attempted to predict their hypnotizability. A rank order correlation of +0.72 was secured between the predictions and the rank order of hypnotizability established in later experimentation.
Description of TAT Cards:

10 common cards of TAT were used for all subjects included in the sample. A brief description of 10 common cards (used in the study) is as follows:

(1) A Young Boy: A young boy is contemplating a violin, which rests on a table in front of him.

(2) Country Scene: In the foreground is a young woman with books in her hand; in the background a man is working in the fields and an older woman is looking on.

(4) A woman is clutching the shoulders of a man whose face and body are averted as if he were trying to pull away from her.

(5) A middle-aged woman is standing on the threshold of a half opened door looking into a room.

(10) A young woman’s head against a man’s shoulder.

(11) A road skirting a deep chasm between high cliffs. On the road in the distance are obscure figures. Protruding from the rocky wall on one side is the long head and neck of a dragon.

(14) The silhouette of a man (or woman) against a bright window. The rest of the picture is totally black.

(15) A gaunt man with clenched hands in standing among gravestones.

(16) Blank card.

(19) A weird picture of cloud formations overhanging a snow covered cabin in the country.

(20) A dimly illumined figure of a man (or woman) in the dead of night leaning against a lamppost.
Socio-Economic Status (SES) Questionnaire:

SES questionnaire developed by department of psychology, Dayalbagh Educational Institute, was used to measure SES of subjects. It covers five variables—educational level, occupation, income, cultural living and social organization. Social status refers to the role, social power, and behaviour of the subject’s family in their society and the economic status refers to the financial conditions of the family. Social status, to a very great extent, depends on financial status of the family. Subject’s SES is determined mainly on the basis of income per capita.

Reliability: The questionnaire possesses high reliability. Test-retest reliability on a sample of 100 subjects over a time interval of 3 weeks was calculated by Product-moment method of correlation and it was found to be 0.84.

Validity: The validity of the questionnaire was established by correlating the scores of this questionnaire with scores of other standardized scales of SES. Correlation between scores of this questionnaire and the scores of Socio-economic status scale by Srivastava (1991) was found to be 0.91. Correlation between the scores of this questionnaire and the scores of Kakker Socio-economic status scale (1993) was found to be 0.94.

PROCEDURE:

After careful selection of the sample researcher prepared case study of each subject, included in the sample. TAT and SES questionnaire were administered on the sample according to the method of administration given in their respective manuals.

Case Study:

Case study was conducted on the basis of case study outlines. An interview schedule was developed on the basis of case study outlines to collect the information about each subject. Each subject was interviewed individually to elicit the required information. Interview schedules for parents, teachers, and peers of subjects were also prepared to gather detailed information about subjects (Appendices- 2, 3, and 4). Each
subject’s parents, two teachers and two friends were contacted and interviewed. They were taken in confidence and told that the success of treatment of the subject’s problem will depend on the accuracy of the required data pointed by them during interview. Further, they were assured that the data will be used strictly for treatment and research purpose only. Length and frequency of interviews were determined as per the requirements of each subject. The responses during interviews were audio taped.

**Administration of TAT:**

TAT was administered individually on each subject. 10 common cards and one blank card were used. After establishing good rapport with the subject, following instructions were given, “This is a story-telling test. I have some pictures here that I am going to show you one by one, and for each picture I want you to make up a story. Tell what has happened before and what is happening now. Say what the people are feeling and thinking and how it will come out. You can make up any kind of story you please. Do you understand? Well, then, here is the first picture. You have five minutes to make up a story. See how well you can do.” The exact words of these instructions were altered to suit the age, intelligence, personality, and circumstances of the subject.

All the 10 cards were presented one by one in the given sequence and the subject was asked to write the story according to the instructions given. Each card was presented only for 30 seconds. After 30 seconds card was removed and subject was asked to write the story on the blank sheets provided for the purpose. After each story writing, the paper was collected and after a short interval of 2 minutes next picture was presented. By following this procedure a total of 10 cards were presented. After all the 10 stories were written the blank card was presented to subject and, following instructions were given, “See what you can see on this blank card. Imagine some picture there, describe it and write a story about it.” Care was taken by the researcher that subjects finish all the stories and devote about the same amount of time to each. Encouragement and prompting was given whenever necessary during the testing. Care was taken not to be suggestive in prompting. After all the stories were written, probing was made, subject was asked for elaboration on specific points wherever required.
Administration of SES Questionnaire:

To study the SES of subjects included in the sample of the study, the SES questionnaire (Appendix-5) was given to any one parent of each subject. They were asked to read the instructions and answer the questions accordingly. They were assured that the data furnished by them will be used strictly for research purpose only. The completed questionnaire was collected from them.

PART - B

OBJECTIVES:

1. To study the effectiveness of behaviour intervention in reducing substance abuse among adolescents.

2. To study the relative efficacy of behaviour intervention with BSCT and with BSCT in combination with JPMR in reducing substance abuse among adolescents.

HYPOTHESES:

1. Behaviour intervention is effective in reducing substance abuse among adolescents.

2. Behaviour intervention with BSCT in combination with JPMR is more effective than BSCT alone in reducing substance abuse among adolescents.

DEFINITION OF THE TERMS:

Behaviour Modification:

- Behaviour modification is the field of study that focuses on using principles of learning and cognition to understand and change people's behaviour (Sarafino, 1996).
• Behaviour modification is the use of empirically demonstrated behaviour change techniques to improve behaviour, such as altering an individual's behaviours and reactions to stimuli through positive and negative reinforcement of adaptive behaviour and/or the reduction of maladaptive behaviour through punishment and/or therapy.

**Behaviour Self Control Training (BSCT):**

This set of techniques involves training patients to control their own behaviour through the systematic use of behavioural principles (International Encyclopedia of the Social and Behavioural Sciences, 2009).

**Jacobson's Progressive Muscle Relaxation (JPMR):**

Progressive muscle relaxation is a procedure originally introduced by Jacobson (1938) to reduce anxiety and tension by drawing attention of the individual to the sensations produced by gradual minimal contraction and relaxation of small group of muscles.

**SAMPLE:**

All 80 subjects of Group I (N=40 Rural) and Group II (N=40 Urban) were randomly assigned to two groups of 40 each. Each group consisted of 20 rural subjects and 20 urban subjects. Group I was treated/intervened with BSCT only and group II was treated/intervened with BSCT in combination with JPMR.

**DESIGN:**

Comparative and constructive design with pre and post measure was used in this part of the study. The constructive design involves adding components to a basic treatment strategy in order to increase its effectiveness (McFall & Twentyman, 1973). Comparative studies typically contrast the efficaciousness of two dissimilar techniques (Sloane et al., 1975). In the present study, the basic technique for intervention was BSCT. To increase its effectiveness JPMR was added to BSCT.
TECHNIQUES:

BSCT:

BSCT includes cognitive and behavioural skills used by individuals to maintain self-motivation and achieve personal goals. Initially the skills may be learned from a therapist, text, or self-help book. However, the individual is responsible for using these skills in real-life situations to produce the desired changes. Self-control strategies can be grouped into three broad categories: Environmental strategies, behavioural strategies and cognitive strategies. Environmental strategies involve changing times, places, or situations where one experiences problematic behaviour. Behavioural strategies involve changing the antecedents and/or consequences of a behaviour. Cognitive strategies involve changing one's thoughts or beliefs about a particular behaviour.

JPMR Technique:

Progressive muscle relaxation is a systematic technique for achieving a deep state of relaxation. This relaxation approach involves tightening and then relaxing various muscle groups throughout the body, a little bit at a time. One group of muscle is worked on and then, slowly, the next. In muscle relaxation training subjects are asked to tense and relax their group of muscles of fingers, proceeding to arms, shoulders, forehead, eyes, cheeks, jaws, tongue, neck, chest, abdomen, thighs, heels and toes. It does work best when patient can coordinate inhalation of breath with the tightening of the muscle phase and then controlled exhalation with the relaxation phase.

PROCEDURE:

Baseline substance abuse behaviour of subjects was measured. For this purpose, a self-monitoring chart was given to each subject and they were asked to keep this chart with them and put a tally in the appropriate column when they consume a substance or feel the urge for consuming substance. This chart was regularly monitored by the researcher.
Frequency of substance abuse behaviour was obtained from self-monitoring chart and continuous efforts were made to confirm this data from peer group reports. The average frequency of substance abuse behaviour of one week was taken as a baseline measure. Self-monitoring was continued throughout intervention period as was done during baseline period. After establishing the baseline for both the groups, intervention was started. Behaviour intervention for 6 months was given to subjects included in the sample. Intervention for group I included BSCT only and intervention for group II included BSCT in combination with JPMR. In BSCT following strategies were included:

**Environmental Strategy:**

In environmental strategy times, places or situations where subjects experience substance abuse behaviour was changed. The peer group or group of senior students with whom subjects socialize, was also changed. Situations or settings where substance abuse behaviour is more likely to occur, was monitored. The situations or settings, in which subjects usually abused substances, were- while coming to school, while coming back from school to home and in free periods in school. To monitor these situations researcher took the help of parents and teachers. All the teachers teaching the subjects of the sample
were given a list of these subjects. Teachers were requested to engage such students in sports, cultural and other competitive and creative activities during free periods in school. It was also suggested that they should try not to put them in the group of those students with whom they consume substances. It was suggested to parents to observe/escort their children when they are going to school and coming home from school. Thus, efforts were made to keep subjects away from the situations in which they consume substances.

**Behavioural Strategy:**

In behavioural strategy the antecedents and consequences of behaviour were changed. Social or familial support for subjects was increased. It was suggested to family members to give extra attention and care to their child, encourage the child for creative and constructive activities, to keep the friendly atmosphere of the family so that child may express his problems, tensions and anxieties freely. Family members should listen their problems carefully and try to solve their problems. It was also suggested to family members that if anyone in the family abuses substance, he/she should try to stop it and/or ensure that he/she never does so in the presence of the subject.

Schedule of reinforcers for engaging in constructive/creative activities and schedule of punishment for engaging in substance abuse behaviours was developed. When the subject did the creative/constructive activities reinforcement was given and for substance abuse behaviour, punishment was given. Punishment was used in combination with reward for alternative behaviour. Prepotent behaviours of the subject were used for schedule of punishment instead of using unethical consequences e.g. if subject likes most to watch television, he was not allowed to watch television if he was found indulging in substance abuse.

**Cognitive Strategy:**

In this strategy cognitive restructuring was included. Subject’s thoughts or beliefs about substance abuse were changed. The researcher discussed the negative effects of substance abuse with subjects e.g. how substance abuse negatively affects the physical and mental health, academic achievement, family life and social life of an individual. If
they use that time in creative/constructive activities, and to develop their talent they may achieve success in life and they may develop physical and mental health.

During six months intervention period BSCT was given in daily sessions for one week, in sessions on alternate days for another week, and then twice a week. Subjects were suggested to use stop thought technique also, i.e. when thoughts related to substance abuse come to their mind they should just say to themselves “STOP”. Subjects were assured that researcher was available to help them. If they face any problem in reducing substance abuse, they may ask for help from the researcher.

For group II JPMR was also used in combination with BSCT to reduce substance abuse among subjects. All sessions of progressive muscle relaxation were conducted in a quiet room and no extra person was permitted inside the room. The subjects were provided with a hard bed to lie down or an easy chair for relaxation depending upon the subject’s demand and comfort. JPMR was given to each subject individually for 40-45 minutes in sessions on alternate days. In muscle relaxation training subjects were asked to tense and relax their groups of muscles of fingers, proceeding to arms, shoulders, forehead, eyes, cheeks, jaws, tongue, neck, chest, abdomen, thighs, heels and toes. The subjects were also asked to extend this procedure to their daily life. After 6 months behaviour intervention post measure of substance abuse behaviour was done. Frequency of substance abuse behaviour was obtained from self-monitoring chart and peer group reports. The measurement conditions maintained during pre-intervention baseline measure were maintained during post-intervention measure also.

FOLLOW-UP:

Four weekly follow-ups followed by two monthly follow-ups followed by one three monthly follow-up followed by one six monthly follow-up were done in case of each subject. The researcher met the subjects and parents/teachers of the subjects to ascertain the stability of behaviour change that resulted from intervention.