CHAPTER II
REVIEW OF THE LITERATURE
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From decades past many studies have been conducted in the realm of alcoholism to investigate the causes and the precipitating factors leading to alcohol dependence. Equally, scientists have also shown much concern to investigate and evaluate the impact of alcohol addiction. Treatment of alcoholism has been attempted at all levels by lay workers and qualified doctors. In the present chapter, few studies pertaining to the factors leading to alcoholism are mentioned. Few relevant studies in the treatment of alcoholism, which would facilitate in the understanding of the treatment methods used in the present investigation have also been mentioned.

2.1 FACTORS LEADING TO ALCOHOL DEPENDENCE

Although number of theories have been formulated the causes of alcoholism are still unknown. No single theory has yet proved adequate to explain the complex of the symptoms which are collectively term alcoholism, alcoholic addiction, or alcohol dependence. Nevertheless, researchers with specialised interest, and with needs to define alcoholism from their own perspectives, have continued to look for a unitary answer to solve the problem of how alcohol addiction occurs and to identify the crucial factors associated with it onset and progression.

Goodwin and Itemmer (1983) reviewed the available data and concluded that the inherited predisposition to alcoholism is the causes of addiction. They
also found that there is a distinct tendency for alcoholism to run in families. In similar kind of alcohol research, conducted by Garman and Peters (1990) which examined the data concerning the occurrence of life events in the year before the onset of alcohol dependence from 23 patients, found that the individual may enter the initial stages of alcohol dependence in response to stressful life events. Studies by Brown (1980) indicated that lesser the stress experience by a person, the lesser the risk for drug addiction.

Thomas (1994) have mentioned that personality factors have long been suspected of being influential in the development of addictive disorders. Even though no single, unitary, alcoholic personality has gained unanimous acceptance, personality factors nevertheless appear to be instrumental in the development of some, if not most, addictive disorders. However psychological research has focused on the extent to which personality traits underlie alcoholism rather than on the precursor temperaments from which personality disposition develops.

People with antisocial personality are vulnerable to addiction because of the thrill seeking character of the life (Sulker and Archer, 1983). Beezin (1983) in a study of 1500 male and female addicts reported that 7% of the subjects inclined to have antisocial personality. They have also observed that 60% of the addicts displayed the mixture of emotional problems. Goldman (1987) mentions that individuals turn to alcohol not so much to relieve tension but as to shield themselves from their feeling of inadequacy. He has reported that people who consume alcohol appear to be some what lacking in confidence, security and
skillfulness. O’Leary et al. (1977) concluded their study by mentioning that prealcoholic teenagers are less socially skilled than their light drinking and nondrinking counterparts. According to O’Leary et al., male pre-alcoholics appear to lack adequate models for socially appropriate masculine behaviour and adopt a simplistic, hypermasculine stance early in life. This stance in turn becomes increasingly maladaptive and is further reinforced as more sophisticated social responses are required of the prealcoholic. Additionally, since they tend to choose heavy drinkers as friends, pre-alcoholics are less likely to have socially appropriate peer models available to them during the late adolescent and early adult years.

Ganesan (1985) indicated that several inadequacies like impotence in the case of males may result in addiction as a defence in avoiding sexual intercourse. It is an escape mechanism to him. A study conducted by Bhat (1978) on addiction among 4000 university students in Varanasi, revealed that drugs were taken mainly to experiment out of curiosity and to remove boredom. The users were initiated into drugs by their friends. The drugs were procured mainly from market, chemist shop and friends.

Social, cultural, and familial factors may also operate by increasing or aggravating conditions of environmental stress of alcohol abuse (Bales, 1946). Alcoholism has been reported to develop during periods of crisis or following significant life events that have led to serious instability, confusion, and role stress (Coleman, 1972). Curlee (1969) have reported that women who have commenced excessive drinking in their late 30s or early 40s have attributed the
onset of their drinking problems to alteration in their roles as wife and mother. This may include the menopause, loss of husband, and children leaving home. Other instances of stress include marital disharmony, unemployment, and death of a relative. It is suggested that during such periods of heightened stress on individual’s normal coping mechanisms are overwhelmed and he or she resorts to more extreme means of easing the stress including in some cases heavy consumption of alcohol.

High rates of separation and divorce have been reported among alcoholics and some commentators have interpreted this as evidence of disabling psychological factors in the personality structure of the alcoholic. It has been argued that their social behaviour alternates between cycles of sociability and alienation, a pattern that makes the maintenance of normal marital relationships difficult (Barry, 1974). Others have blamed the high marital failure rate on the alcoholic's poor choice of a spouse which arises out of strong dependence needs or fantasies of occurring power.

Rotter (1954) defined expectancy as the probability held by the individual that a particular reinforcement will occur as a function of a specific behaviour. Sher (1965) in a study of male social drinkers has mentioned that, given the same amount of alcohol, those who drink in a group-setting had strong expectancies of reinforcement from alcohol, and reported more feeling of intoxication, immediately after consumption than all other subjects. These drinkers also differed from the others by scoring higher on the measure of pleasure and on several physiological responses. Brown et al.,(1980) found that
the more general expectation namely that alcohol makes global positive changes and that alcohol enhances social and physical pleasure, were related to abstinence or light consumption, while more specific expectations of increased sexual and aggressive behaviour were related to heavy or problematic drinking. Further more Brown et al. (1985) found that alcoholics and excessive drinkers maintained stronger expectations of relaxation and tension reduction than did light or moderate drinkers. Thus the expectation of tension reduction may play a role in the development of excessive drinking patterns and the perpetuation of alcohol abuse.

Awareness is also one of the factor for alcoholism. Noll, et al., (1990), reports that when very young pre-schoolers were asked to identify beverages during a smelling game, a surprising proportion of preschoolers could identify alcoholic beverages and knew that only adults should use them. Success at the smelling game was related to heavier parental drinking rates. The results linking parental drinking with early childhood knowledge about alcohol suggests the possibility of enhanced risk due to premature formation of understandings about and interest in alcohol.

Gangrade et al. (1979) conducted a study on causative factors of alcoholism amongst 4000 industrial workers in Delhi revealed that 32.6% consumed alcohol because they felt good, 27% to relieve strain of physical work, 18.2% to give company to friends, 7.9% to overcome frustration and failure, 3.4% as family social customers, 2.6% to increase efficiency in work, and 2.2% to satisfy curiosity. Alcohol taking habit of family members, friends, favourite
teacher, sportsman and film star, awareness level and attitude towards alcohol had significant bearing on its usage (Khan 1985). A study of the socio cultural factors that lead to addiction among students in 27 colleges at Jabalpur revealed the reasons for alcohol use. They were, "Current fashion", "for kicks", and to "ease depression". Somasundaram (1982) examined the causes of drug addiction among 116 medical students in Madras and most of them gave reasons for drug abuse as 'enjoyment' to 'socially' and to get relief from psychological stress.

Goyal (1982) in his study on alcoholism and drinking behaviour among the households of Dome Community of Varanasi, in India, highlighted the various factors considered responsible for alcoholism. They were cultural issues and tradition (83.5%); social pressure (70.5%); unhygienic strenuous occupation (39%); prestige (25.3%); overcome physical fatigue (24.5%); fashion (21%); maladjustment in society (13.5%); higher standard of living (13.3%); and industrialisation (2.8%). In a study by Trivedi (1984) on addiction in India among 1000 males in Lucknow, reported that loss of a loved object was the reason given most frequently for addiction followed by economic problems and loss of prestige or scholastic failure. Forty eight percent of the addicts reported some stressful events as the initiating factor for addiction.

Alcoholism is also influenced by age. Chunkapura (1988), has mentioned in her study that alcoholism has traditionally been considered a problem of middle life, but recently it has become a public concern by suggesting that alcoholism might be increasing among young people. Chunkapura has sited a study conducted, by Cahalan and Cisin, which mentions that men aged 21 to 24
had the highest rates for any age group of high drinking, loss of control, and alcohol related problems with money, friends, neighbour and police. Robins (1988) indicated that non alcoholic Black males reported heaviest drinking at approximately age 25. Mulford and Miller (1988) discovered that the highest rate of heavy drinking in men occurred in the youngest group studied 21 to 25 years old, while Baily et al. (1988) reported a rate of alcoholism for men age of 20 to 24 of 13 per 1,000.

Shanmugam (1986) in a study of drug abuse among 6000 college students in Madras revealed that the main reason for taking alcohol/drugs was to get a feeling of well being and most of the drug abusers hailed from neglected families. Singh (1977) in a study on drug use among 750 students in Patialia revealed that many of them took to addiction to revolt against strict parental pressures. The main reason for drug addiction was to get over their problems among 978 drug abusers in 13 different cities (Veeraragavan, 1986).

2.2 EFFECTS OF ALCOHOL ADDICTION ON PHYSIOLOGICAL, PSYCHOLOGICAL AND SOCIAL FUNCTIONING

Alcoholism is known for producing serious physiological and psychological effects in a person consuming it. Effects of alcoholism on the body have been seriously investigated, in particular the central nervous system (CNS), gastrointestinal system, cerebrovascular system, and cardiovascular system. Behavioural changes have also been noticed among the alcoholic addicts. Studies are being continuously carried out in order to examine and explain the specific behavioural changes occurring in an alcoholic. Various treatment methods are
also being employed to reduce the alcoholic dependence and to improve psychological functions. Some review of literature pertaining to the same is presented in the following section.

Extended use of large quantity of drug result in liver damage, hypertension and malnutrition has been reported by Carson (1988). It is also found by Marks (1976) that alcoholic addiction reduces the desire to eat, drink or both. Many studies have mentioned that alcoholics died of increased likelihood of respiratory illness, cancer of mouth and bladder.

Kaplan and Sadock (1995) have reported that alcohol effect produces somnolence and decreased neuronal activities. More pronounced symptoms could be observed while the blood alcohol level are rising than when the blood alcohol levels are falling. They have pointed out that debate is continuing about the most important mechanisms of action of alcohol on the brain. The drug as a major effect on most neurochemical systems, demonstrating different effects at different doses and some times opposite effects during intoxication and withdrawal. Intake of more than two drinks a day it likely to increase low density lipoprotein cholesterol (LDLC), triglycerides and to raise blood pressure, with overall result of increasing the risk of cardiac disorders. And low levels of alcohol intake may increase the risk of breast cancer. Wilson (1979) conducted studies on the effect of addiction on its users and reported that addicts have impaired motor coordination, slurred speech, unsteady gait, and double vision.

On highlighting the effect of alcohol on central nervous system, Kaplan and Sadock (1995), have reported that 'blackout' that is memory impairment
occurs for a period of time when the person heavily drunk but awake. They have also reported that alcohol intoxication can help a person fall asleep quickly but tend to depress rapid eye movement sleep and inhibit stage 4 sleep. It is likely to be associated with frequent alternations between asleep stages, a process sometimes referred to as sleep fragmentation. A more serious and potentially permanent problem is seen in perhaps 10% of alcoholic persons after years of heavy drinking. The deterioration of nerve functioning to the hands and feet, called peripheral neuropathy, arises through an apparent combination of vitamin deficiencies and the direct effects of alcohol or its metabolites. The symptoms include numbness of the hands and feet, often bilateral and are frequently accompanied by tingling and paresthesias. Although the condition is usually relatively mild and often improves with abstinence, the pain and the numbness can result in a permanent impairment (Kaplan and Sadock 1995).

The Canadian Commission (1982) stated that long term heavy use of drugs resulted in significant amount of mental deterioration and disorder, chronic use leads to psychological dependence which often gains strength over a period of time. It produces acute pain and clearly psychotic reactions, often with brain wave changes and disorganisation of cognitive and social judgement (Pekaunar, 1976). The use of drugs also leads to psychosis. In a study on patients admitted in the hospitals, 48% of the psychotive patients had some form of addiction (Brown, 1980). Some studies done by Judith (1987) revealed unusual findings. They were taken aback to discover that a more severe drinkers had healthier Minnesota Multifacet Personality Inventory profiles than the less severe drug users.
National council on alcoholism, London, has mentioned chronic use of alcohol beverages may lead to problems as found in individuals suffering from psychiatric illnesses. In a Study conducted by Carson (1988) revealed that none of the addicts showed significant level of thought disturbances compared to psychiatric patients. Symptoms like depression, anxiousness, suspiciousness were found. Transient feelings of depression or being miserable are common human experiences. Such moods amongst people with drinking problems are often of longer duration and severity. Associated with these moods are irritability and feelings of guilt and unworthiness. Excessive fear or a marked sense of foreboding, which is without justification and not amenable to reason, can be very disabling. Such morbid anxiety merits the label of an illness.

A follow-up study of 300 alcoholics by Markovskaia (1991), revealed symptoms of depression in all of them. Because of labile symptoms and structural indistinctiveness it was difficult to ascertain the type of depression. In addition to this feature, depressions in alcoholics is characterized by its common association with anxiety, dissociation between apparent disorders and their subjective interpretation.

Alcohol is known to offer temporary relief (Dutch courage) and some problem drinkers may have started their excessive drinking as a self-prescribed cure, but over a period, alcohol excess may have generated anxiety and compounded the situation. As in the case of anxiety or depression, some problem drinkers of the future will start using alcohol as a drug to reduce the tensions associated with phobias. Morbid and irrational feelings of jealousy directed
against the fidelity of the female spouse are occasionally seen amongst people with drinking problems. If untreated it can sometimes result in severe or fatal assaults on the spouse.

Malhotra and Murthy (1977) compared ten drug addicts, ten psychiatric patients and ten normals using 16 P.F., Multiphasic Personality Questionnaire (M.P.Q.), Thematic Apperception Test (T.A.T.), and a detailed case history. Results show that the addiction group has a significantly higher psychopathic deviate and hostility score, high ergic tension and also scores high on the 'simple, awkward' factor compared to normal controls. This group also showed more neurotic traits and antisocial behaviour patterns during childhood, as compared to other control groups. Data obtained indicate that the addiction group is more similar to the psychiatric control group. Another study by Bushman and Cooper (1980) revealed a casual relationship between, drug addiction and aggression.

Buss and Plomin, (1975), have mentioned that emotionality at the psychological level, is susceptibility to become easily and intensively distressed. At the physiological level it could be explained at excessive autonomic lability. A high degree of association exists between physiological lability and psychological instability (Eysenck, 1983). Sieber and Bentler (1982), studied 750 nineteen year old men and retested them when they were 22 years old. They found that excitability, dominance and aggressiveness were directly related to subsequent substance misuse. Rosenberg (1969), found that alcoholics under 30 years of age scored higher on the EPI Neuroticism Scale than alcoholics over 30
years of age, which led the author to conclude that young alcoholics have abnormally high levels of anxiety that they are unable to control or release in a suitably adaptive fashion. The finding that the young alcoholics, without a long standing history of alcohol misuse, exhibited more neuroticism, combined with the finding that their scores were higher than those of older alcoholics (contrary to what one would expect if this feature had developed as a consequence of alcoholism) suggests that the psychological and inferred physiological lability either predates the onset of problematic drinking or develops soon thereafter. Evidence that these disturbances predate the onset of alcoholism was presented by Gomberg (1982), who observed that young alcoholics (30 years of age or under) showed numerous behavioural disturbances in childhood that were indicative of neurotic propensities. These features included nail biting, shyness, nightmares, phobias, tantrums, tics, stuttering, thumb sucking and eating problems.

Dembo et al., (1990) have concluded their study stating that children involved in the justice system often have serious, multiple problems in the areas of physical abuse, sexual exploitation, and alcohol/other drug use (ADM). Using data collected in a longitudinal study of detained juveniles, the authors have tested a model of the relationships of these problems. Significant over-time interrelationships are found among these problems.

Another research done on drug addiction revealed that abusers are apt to be maladjusted. In a number of studies researchers have located groups of people and followed upon them over a period of years and concluded the same (Kandel,
Typically those who begin making heavy use of drugs appear to become rebellious, untrust worthy, impulsive, less self reliant, and academically under achieved (Kandel, 1987). Rao (1989), have reported that addicts significantly differed on personal and social adjustment when compared to normal person. Sumann (1989), reports that addicts are less self reliant. A study conducted by Gowri (1993) revealed that addicts had problems in interpersonal relationships. Her study mentioned that almost all the addict had conflicts, with friends 28%, parent 25%, relatives 20%, siblings 14%, and with other people like neighbours 9%. The conflicts were mainly due to financial conditions and needs 35% and yet to be solved for nearly 64% of the respondents.

Further studies done by Thankachan (1992), revealed that addicts have more anti-social tendencies. Ruth (1956), worked with alcoholics for many years and reports that "probably no marriage with an alcoholic could be considered a happy one", as their may be periods of relative harmony but there is such a basic inadequacy in the one who drinkings and has lack of faith in human beings that the mutual trust and sharing necessary for a good relationship are absent.

A study done by Gandossey (1980), revealed that regular drug abuse leads to crime. Worchell (1989), has supported the findings of Gandossey. Worchell reports that the addicts tend to become economically poor, unskilled and unemployment which makes them to resort to illegal means for getting money. Drug addiction also leads to loss of productivity, high absenteeism and impaired performance. Studies conducted by Vinod (1991) revealed the same. Addiction is accompanied by impaired coordination and strain too. Experts estimate that it
plays a part in a substantial proportion of fatal automobile accidents (Gallatin, 1982).

Os good (1991), conducted a study on Psychological factors in late-life suicide revealed that alcoholism was one among the major precipitating factor in late-life suicide. Approximately one third of all suicides are alcoholics. The same view has been mentioned in an earlier study by Allebeck and Allgulander (1990). Many of the same factors which contribute to depression also increase the risk of alcoholism and suicide. Loss, stress, loneliness, low self-esteem, and feelings of anxiety, rejection, helplessness, and hopelessness characterize late life alcoholism and depression. Alcoholism, depression, and suicide form a deadly triangle.

2.3 TREATMENT FOR ALCOHOLIC ADDICTION

This section deals with the studies directed towards the treatment of alcoholism and studies directed towards understanding the nature of alcoholism. It is clear that new approaches have evolved from changes in our understanding of the nature of alcoholism. It is equally apparent that the treatment studies reviewed in the present chapter have contributed to the alternations in our view of alcoholism.

A variety of psychotherapeutic techniques have been employed in the treatment of alcoholism, including psychodynamic therapies (Brunner-Orne, 1958; Freytag, 1967; Silber, 1959), psychodrama (Weiner, 1967), transactional analysis (Steiner, 1969), and milieu therapy (Kendell, 1967). Exhaustive reviews
of the psychotherapy literature relevant to the treatment of alcoholism have been prepared by Hill and Blane (1967), Voegtlin and Lemere (1942), and Wallgren and Barry (1970). The conclusion reached in all three of these reviews was that the value of psychotherapeutic methods in the treatment of alcoholism is needed to be demonstrated conclusively. Furthermore, the relapse rate for patients receiving various conventional hospital procedures (e.g., didactic therapy, Antabuse therapy, AA meetings, tranquilizing and antidepressant medication, conventional group therapy) is discouragingly high. For example, Gerard, Saenger, and Wile (1962) reported that only 19% of 399 patients exposed to a variety of conventional alcoholic treatment programs were able to remain abstinent for one year following treatment.

The lack of success achieved by conventional methods has undoubtedly served to encourage behavioural approaches to the treatment of alcoholism. The behavioural approaches reviewed in this chapter are discussed in two main sections. The broad-spectrum procedures and aversion conditioning procedures. Denney (1975) mentions in his work that aversion conditioning procedures are mostly directed towards abstinence and abstinence figure are the outcome measures of the procedure. Denney further mentions that broad-spectrum procedures are recent development in the treatment of alcoholism. These procedures stem from the recognition that a variety of factors can serve to bring about and maintain excessive drinking, and that alcohol can serve a variety of functions for the individual. Several techniques are combined within broad-spectrum treatment packages, including training behaviours in compatible with
drinking, altering the environment of the alcoholic so that it support non-drinking behaviour, as well as bringing about direct aversions towards alcohol.

Rimm and Masters (1974), have drawn an important distinction between procedures aimed at reducing the likelihood or frequency of a particular behaviour and procedures aimed at reducing the attractiveness of a particular behaviour and the stimuli which elicit that behaviour. The former is termed as punishment and the later type of procedure is termed as aversion conditioning. An extensive programme for treating alcoholic addiction employing chemical aversion therapy was conducted by Voegtlin and his associates (Lemere and Voegtlin, 1940, 1950; Voegtlin 1940). They reported that an aversion was established to one alcoholic beverage used in the conditioning trails, but in the patient subsequently changed his preference to another alcoholic beverage. Thus other beverage yet be introduced during later therapy sessions, with particular attention being paid to the patient's favorite alcoholic beverage.

In another study Lemere and Voegtlin (1950) surveyed 4,468 patients treated over a 13-year period and obtained data from 4,096 of these. They found 44% of their patients had remained totally abstinent (and 51% had remained abstinent after one relapse and retreatment) over a follow-up period ranging from one to 13 years. The results showed 60% of their patients were totally abstinent after one to two years, 51% after two to five years, 38% after five to ten years, and 23% after ten to thirteen years. These figures are conservative estimates of treatment success since patients who failed to remain totally
abstinent but who nonetheless maintained moderate, nonalcoholic drinking patterns were counted as treatment failures.

A variety of other studies have also been reported involving chemical aversion therapy using emetic drugs. These studies employ procedures very similar to those of Voegtlin, and like Voegtlin's studies, none of these studies employ appropriate untreated or placebo control groups. Either emetine (Edlin et al. 1945; Kant, 1944, 1945; Shanahan and Hornick, 1946; Thimann, 1949; Wallace, 1949) or apromorphine (DeMorsier and Feldmann, 1950; Mestrallet and Lang, 1959; Ruck, 1956) has been employed as the aversive stimulus. In general, the abstinence rates reported in these studies average slightly higher than 50%. As one might expect, abstinence figures are quite high when examined shortly after treatment, tending to decline very sharply during the first 12 months after treatment and continuing to decline more gradually thereafter.

Kantorovich (1928) studies using electrical aversion procedures to treat alcoholism are more contemporary than those using chemical aversion. Rachman and Teasdale (1969), and Davidson (1974) highlighted that the principal advantages to electric shock are a) electrical stimulus can be tightly controlled, b) a large number of discrete trials can be administered during a treatment session, c) medical complication are fewer, d) self administered more easily and e) fewer staff members are needed. One potential problem concerning the use of electrical aversion therapy in treating alcoholism was pointed out by Wilson and Davison (1969). They noted that the conditioning of aversive responses to gustatory and olfactory cues may be more easily accomplished with biologically
allied drugs which produce nausea and vomiting than with painful electrical stimulation. In support of this notion, Garcia, McGowan, and Green (1972) have shown that taste aversions in rats can be more easily conditioned using chemical rather than electrical aversive stimuli. To date, no studies have been completed which directly compare chemical and electrical aversion therapies in the treatment of alcoholism. However, in general, outcome studies involving electrical aversion therapy report about the same levels of success as do those employing chemical aversion, and thus Wilson and Davison’s concerns have been largely ignored.

Blake (1965, 1967) evaluated the effectiveness of electrical aversion therapy both alone and in combination with training in progressive muscle relaxation. Aversion conditioning was administered over a period ranging from four to eight days and required a total of about five hours of the patient’s time. Relaxation training consisted of the administration of Jacobson’s (1938) deep muscle relaxation procedure in combating tension and bringing about the onset of sleep at night. In Blake’s first study (1965), electrical aversion therapy was combined with relaxation training and “motivation-arousal” procedures in which the patient was instructed to think about the negative effects of his drinking and other problems. 52% of the patients who received this combined procedure were abstinent after a six-month follow-up, and 52% were abstinent after one year. In Blake’s second study (1967), 37 patients who received both electrical aversion therapy and training in progressive relaxation were compared with 22 patients who received only electrical aversion therapy alone. Of the former group, 46% were totally abstinent, 13% were improved and were considered controlled social
drinkers, 30% had relapsed, and 11% could not be located, one year after
treatment. Concerning the latter group, given only aversion therapy, the figures
were 23%, 27%, 27%, and 23% respectively. Although these differences between
the two groups were not significant, the trend in favor of the combined
procedure is noteworthy in view of the broad spectrum approaches to alcoholic
treatment.

Some caution must be exercised in attempting to generalize from Blake’s
results since his patients represented a rather select group. His patients were
fee-paying, upper class individuals with above average intelligence, a group which
would have a favorable prognosis under any type of treatment programme.
Similar levels of treatment success might not have been obtained with an
unselected sample of alcoholics. The absence of any untreated control group
selected from the same upper class sample makes these results even more
difficult to interpret.

A similar conclusion can be drawn from the study done by Regester (1972)
comparing the aversion conditioning and the pseudo-conditioning procedures.
Sixty alcoholic patients were assigned to four treatment condition. In the first
condition, patients received electric shock contingent upon the ingestion of
alcohol. In the second condition, the same aversion conditioning procedure was
combined with additional information concerning the negative effects of alcohol.
The third condition included the same negative information along with a pseudo-
conditioning procedure wherein non-contingent shocks were randomly
administered. In the fourth condition, patients received only routine hospital
care. A sixth-month follow-up evaluation showed all four groups having made a significant reduction in their alcohol intake, with no differences existing between the groups.

Marlatt (1973) compared simple aversion conditioning, escape conditioning, and avoidance conditioning procedures with pseudo-conditioning and routine hospital care controls. Follow-up evaluations were conducted three months after treatment. No significant difference existed between any of the five groups in terms of total abstinence figures over the three month period. The abstinence rate was about 23% for each of the groups. However, when considering the percentage reduction in consumption of alcohol from pretreatment levels, significant differences among the groups did emerge. The percentage reduction figures were as follows: simple aversion conditioning, 94%; escape-conditioning, 69%; avoidance conditioning, 65%; pseudo-conditioning, 23%; routine hospital care, 42%. Clearly, the simple aversion conditioning was more effective than other treatment methods. The success of aversion therapy are also reported in the recent studies by Climenho (1977) and Rothech (1988). They have suggested that long term effects of this aversion therapy could be enhanced through follow-up treatment.

Cautela (1967, 1970) has mentioned that the best known form of verbal aversion therapy is covert sensitization. In earlier studies conducted by Gordova and Kovalev (1961), Miller (1969), Strel'chuk (1957) similar procedures combining aversive imagery with hypnosis have been discussed. In these earlier procedures, patients were first hypnotized and then were led to imagine scenes
in which they became nauseated and began vomiting while engaging in drinking activities. Using this procedure, Miller (1959) reported that 83% of his 24 patients remained completely abstinent during a 9-month follow-up period.

The covert sensitization procedure does not employ hypnosis, although relaxation training is usually included during the initial treatment sessions. The patient is then instructed to imagine a scene in which he is about to drink an alcoholic beverage and he becomes nauseated and vomits profusely. Cautela (1970) recommended that a total of ten sensitizing scenes and ten relief scenes be presented during each treatment session and that special care be taken to insure that the patient is imagining the scenes vividly and actually experiencing feelings of visceral malaise during the presentation of the scenes. Patients are instructed to practice the twenty scenes twice daily between treatment sessions. Cautela also recommended that covert sensitization therapy continue for six to twelve months, with two sessions per week. Over the course of this treatment periods, the aversive images of nausea and vomiting are associated with increasingly earlier steps in the chain leading to the ingestion of alcohol. Ultimately the patient imagines scenes in which he becomes nauseated as a result of merely the urge to drink. As in the case of other of aversion therapy, the effects of covert sensitization appear to be highly specific.

Accordingly, Cautela emphasized that beer, wine, and hard liquor be incorporated within the scenes used in treating alcoholism. A very few of Cautela's recommendation have been followed in studies examining the effectiveness of covert sensitization in the treatment of alcoholism. Covert
sensitization is often combined with other forms of treatment. Cautela (1970) discussed the combination of covert sensitization with desensitization, thought stopping, and relaxation procedures. Also, the aversive images in covert sensitization have been augmented by the use of electric shock (Cautela, 1970), noxious odors (Maletzky, 1974), and even false physiological feedback (Elliott and Denney, 1975).

Four studies have investigated the effectiveness of covert sensitization in the treatment of alcoholism. Anant (1967) employed from five to ten covert sensitization sessions to treat 26 chronic alcoholics. Eleven of these patients were treated individually, while 15 were treated in groups of four. The results of this study are unclear. Anant claimed that 25 of the 26 patients remained abstinent during a follow-up period ranging from 8 to 15 months. In a later report, Anant (1968) stated that only 3 of the 15 patients who received group treatment remained abstinent during a 6 to 23 months follow-up period. The results are reported in a very sketchy fashion with no indication of abstinence rates over various follow-up period and no untreated control groups for comparison purposes. Accordingly, this study can only be considered as anecdotal evidence of the effectiveness of covert sensitization.

A somewhat better study was conducted by Ashem and Dobber (1968). Twenty-three chronic alcoholic males were randomly assigned to covert sensitization-forward conditioning, covert sensitization-backward conditioning, or regular hospital care groups. Patients in each of the covert sensitization conditions received nine treatment sessions with a total of 35 sensitization and
relief scenes. Ashen and Donner noted that backward conditioning patients were making as strong an association between the conditioned stimuli and the unconditioned stimuli as were those in the forward conditioning procedure. Thus, although originally intended to be a pseudo-conditioning control group, the backward conditioning patients were combined with the forward condition in patients, and these combined covert sensitization patients were compared with regular hospital care group. Six months after treatment, patients were questioned about their drinking, and their responses were checked against the reports of their wives or parents. Forty percent of the patients who received covert sensitization were totally abstinent while none of the control group patients had remained abstinent over the six month follow-up period.

A study conducted by Rohan (1970) in which the effectiveness of covert sensitization was compared with electrical aversion therapy. Patients in the covert sensitization condition received 22 treatment sessions in which they were to imagine a single sensitization scene. Patients in the electrical aversion therapy condition received 11 treatment sessions during which they were instructed to ingest six drinks. After a three month follow-up period, 20% of the covert sensitization patients and 58% of the electrical aversion therapy patients were found to have remained totally abstinent.

Another study comparing covert sensitization and electrical aversion therapy was conducted by Wilson and Tracey (1974), their study employed a cross-over design and was conducted in the Alcoholic Behaviour Research Laboratory. Two patients were administered a covert sensitization procedure
during the first treatment period and an escape conditioning electrical aversion procedure during the second treatment period. The remaining two subjects in the design received the same treatment procedures in reverse order. The decrease in alcohol consumption (from the initial baseline period) was 36% for the covert sensitization procedure and 41% for the electrical aversion procedure. Were considered these results "distinctly unimpressive," since the patients were still drinking over ten ounces of alcohol per day while residing in a minimally stressful, conflict-free laboratory environment.

Denney (1975) reports that the studies concerning covert sensitization share many of the same methodological weaknesses that have plagued outcome studies of other aversion therapies. Untreated and placebo treatment control groups are frequently omitted. Abstinence measures predominate and the follow-up periods are usually too short to be of much practical significance in appraising the effectiveness of the procedure. However, the studies of covert sensitization also suffer from a second major weakness. None of the studies have followed Cautela's recommendations regarding the administration of covert sensitization to the treatment of alcoholism. Homework assignments are usually not included. Scenes are never presented for twenty times per session, as Cautela advised. And no studies have employed a six-month treatment period which Cautela stated was necessary in treating a long-standing habit such as alcoholism. In contrast to these recommendations, we have studies in which only one scene is presented per session (Rohan, 1970) and in which only five to ten treatment sessions are employed (Anant, 1967; Ashen and Donner, 1968). While the research does not indicate much effectiveness for covert sensitization, no conclusions can be drawn
until the procedure as described by Cautela is actually subjected to empirical investigation.

Much of the field of psychopathology has been dominated by a prevailing myth, one which has its origins in the medical model. The myth holds that there is a single determinant or etiological factor associated with each disorder. Denney (1975) analysed that in attempting to understand alcoholism behaviourists tended to make the same mistake that their medical model colleagues made in various other areas of psychopathology; they tended to seek out and ascribe a single determinant to alcoholism. A major consequence of the single determinant myth is that it leads to a search for the single solution (i.e., a single treatment procedure, or at best a single, inalterable combination of procedures) which will eradicate the problem. Marlatt (1973) concluded one of his pioneering study by stating that, along with aversion conditioning procedure for the treatment of alcoholism, treatments must also be given to resolve the other areas of problem. He recommended that assertion training and other training for developing social skill must also be added along with other conditioning procedure for alcoholic treatments.

The concept of broad spectrum behavioural treatment was introduced by Lazarus (1965), and it is noteworthy that one of the first illustrations of this concept deals with the treatment of alcoholism. Lazarus successfully brought about moderate drinking in a chronic alcoholic patient using a broad spectrum treatment. After careful functional analysis of the role played by alcohol in the patients's life, Lazarus incorporated the following procedures in the treatment
programme: a) specific measures were taken toward physical rehabilitation of the patient; b) aversion conditioning therapy was included to decrease the patient's urges to drink; c) relaxation, desensitization, and assertion training procedures were employed to eliminate the patient's social anxiety; d) alternative sources of reinforcement such as hobbies and sports were encouraged; e) significant person in the patient's environment, such as his wife, employers, and friends, were enlisted to support the patient's altered drinking patterns.

McBrearty et al. (1968) has also used broad-spectrum treatment programme among alcoholics. In their procedure didactic training for behavioural change, group sessions for reinforcing extinction, aversion relief procedure, thought stopping techniques to eliminate ruminations about alcohol, relaxation and desensitization, and training in the areas of behavioural deficit were used.

Hunt and Azrin (1973) devised another broad spectrum programme included five general procedures. a) Vocational counselling. The patients were shown how to prepare a resume, locate possible jobs through friends and newspapers, and conduct job interviews. As soon as a patient obtained a job or could return to a previous, satisfactory job, he was released from the hospital and the remainder of the programme was administered on an outpatient basis. b) Marital and family counselling. Behavioural contracting was illustrated during approximately five counselling sessions. Marital problems in areas such as money management, family relations, sex, social life, attention, and ideological differences were resolved through reciprocal contracting agreements. Unmarried patients were helped to formulate similar reciprocal contracting agreements with
their parents, and synthetic or foster families were established for patients having no family relations. In all instances, marital and family benefits were always made contingent upon sobriety. c) Social counselling. Patients were encouraged to schedule regular social contacts with friends and relatives who would not tolerate drinking and were discouraged from associating with former drinking partners. A self-supporting social club was formed through which a variety of social activities were scheduled. Business meetings were held, dues were collected, transportation to the club was provided whenever necessary, and all activities within the club were made contingent upon sobriety. d) Reinforcer-access counselling. The objective here was to increase patient's access to various sources of reinforcement commonly available to nondrinkers. To accomplish this, patients were assisted in obtaining transportation, telephones, newspapers, radios, and television. These facilities might increase the attractiveness of the patient's home and increase his access to potential employers, friends, and social events. e) Community maintenance. Counsellors visited the patients periodically for several months after their discharge from the hospital. These visits served to remind the patient of the reinforcers attached to sobriety and to address any problems the patient was having in implementing the various programs.

Yet another broad spectrum treatment programme was developed and evaluated by Volger, Compton, and Weissbach (1975). This programme included the following component procedures: a) Videotape recording and three sessions of videotape playback of the patient's drunken comportment, b) three sessions devoted to education about alcohol including discussions focussed upon controlled drinking, c) two training sessions for discriminating blood alcohol levels, d) five
sessions of electrical aversion therapy, e) behavioural counselling, assertion training, role playing, and contingency contracting to foster the development of competing responses incompatible with drinking, f) counselling and assistance directed toward the patient's post hospital plans, g) regular monthly booster sessions for the first year following discharge. Two groups of chronic hospitalized alcoholics were included in this study. The first group, consisting of 23 patients, received all of the above component procedures. The second group, with 19 patients, received only the various counselling sessions (h, e, f, g) and were administered no alcohol during the treatment sessions.

Over a 12-month follow-up period, 62% of the patients remained abstinent or engaged only in controlled drinking. Alcoholic intake declined significantly from pretreatment levels. Patients in the first group decreased from an average of 14 to an average of 3 drinks per day, and those in the second group decreased from 10 to 5 drinks per day during the first year. The difference in favor of the first group was significant. However, on all other outcome measures (changes in preferred beverage, drinking companions, drinking environment, the number of days of employment lost due to drinking) no differences were found between the two groups. On most of these additional outcome measures, both groups showed significant declines from pretreatment levels. Initial alcohol intake, preferred beverage, and drinking environment served as the best predictors of patient's response to the treatment programme.

Lovibond and Caddy (1970) conducted a detailed investigation the discriminated aversion conditioning method. They compared three therapy
conditions in the treatment of 60 alcoholics: 1) discriminated aversion plus self-regulation, education, and psychotherapy, 2) self-regulation, education, and psychotherapy without the discriminated aversion conditioning, 3) discriminated aversion conditioning alone. In the discriminated aversion conditioning, subjects received a painful electric shock. Self-regulation included training in specific self-control techniques such as stimulus control and instructions to the effect that alcohol abuse could be brought under client control. The psychotherapy condition, though was not clear, included general support, some discussion of marital problems, and relaxation training. The combined treatment group showed greater improvement at post-treatment and at a six months follow-up than either the self-regulation or discriminated aversion conditioning groups alone. 80% of the combined group were estimated to be complete successes or moderately improved at follow-up. The discriminated aversion conditioning treatment fared most poorly. At six month follow-up, 70% of this group showed no improvement.

Several empirical studies recommend that families should be involved in the treatment of alcoholics. Studies by Davis (1980) and Stanton (1985) indicates that most alcoholics do not live alone. They live with or in some important way in contact with significant with others. The presence of family or lack of it has serious implication for therapy. In a study Berger (1981) found that family involvement was positively related to alcoholics completion of treatment. Evidence from the study by Rae (1972) is seen on the influence of family's involvement on outcomes. In his study Rae assess the influence of the wives, of 58 alcoholics inpatients, on treatment outcome, measured 2 years after admission
to hospital. He found that relapsing patients had wives with a pd-type (Psychopathic deviate score) on the MMPI. They had the greater liability to socio-sexual disturbance than the wives of successful patients. Moos et al., (1979) found that those patients who were successfully treated for alcoholism had wives who were active, recreational orientation and organisation, and lower in conflict.

Meeks and Kelly (1970) have also reported about family therapy with the family’s of recovering alcoholics. The ultimate goal was to help families communicate openly about areas of conflict and to mobilize family strengths in order to work on identified problems. Results showed evidence of improved relationships, healthier communication, and increased mutual support. Christian (1992) has also found in her study that family intervention programme was effective in bringing about certain changes in the psychological status of the subjects. The programme brought significant improvements in attitude towards alcoholism, knowledge about alcoholism and coping behaviour. In a study conducted by Ino et al., (1994) on the addiction trends seen among the wives of the alcoholics reports that the curving trends, dominating trends, and the involved traits would indicate a degree of healthiness or unhealthiness in the marital relationship, particularly in terms of a circular cause and effect relation in developing alcoholism, and also would be a prospective indicator of the prognosis of alcoholism of their husbands.

Galanter (1993) attempted network therapy for addiction. The author emphasises that network therapy is an effective approach developed to assure greater success on recovery among addiction patients. It uses psychodynamic and
behavioural therapy while engaging the patients in a support network composed of family members and peers. In an earlier study, conducted by Yalom (1975) certain factors have been identified as having curative value from the patient's point of view during group therapy. The factors were group acceptance, altruism, universalization, interpersonal learning-input, interpersonal learning-output, guidance, catharsis, identification, family re-enactment, insight.

Bowers and Al-redha (1990) have compared outcome with group/martial and standard/individual therapies with alcoholics. In their study 16 couples were assigned to either a standard individual therapy condition or a couples group therapy condition. The standard individual treatment condition was conventional outpatient therapy at an outpatient alcohol treatment center, while the couple condition was a group outpatient therapy for alcoholics and their spouses. Treatment outcomes was assessed on alcohol consumption for the alcoholic partner. In addition, measures of marital or relationship adjustment, ratings of social functioning, and ratings of work functioning was conducted at pretreatment, posttreatment, 6-month follow-up and 1-year follow-up. While the two treatment groups were not significantly different on any measures at the termination of therapy, the conjointly treated alcoholics had significantly lower alcohol consumption than the standard group at 6-month follow-up. There was also a trend for the couple treatment condition to be drinking less than the standard condition at 1-year follow-up. There was also a trend for the conjointly treated couples to report better Marital Adjustment Scale (MAS) scores than those in the standard treatment condition at 6-month follow-up. The conjointly treated couples also had significantly higher relationship ratings adjusted for
pretreatment differences at the 6-month and 1-year follow-up. The couple therapy condition appeared to facilitate greater maintenance of improvement, as reflected in follow-up assessments.

As mentioned earlier, under the broad-spectrum treatment programme, relaxation training and systematic desensitization have been used to provide the substance abuser with alternative ways of reducing anxiety to stressful situations (Kumarsiah, 1990). The study by Kaliappan et al. (1991) have also supported the same view. In their study 116 alcoholics were given relaxation training along with other treatment such as faradic aversion, covert sensitization, group therapy, family counselling, and self-control procedure. The results showed that deep muscle relaxation significantly contributed to the recovery of patients.

2.4 AN OVERVIEW

Review of the literature mentioned in the above sections brought forth an issue to examine the causes and nature of alcoholism, and an empirical treatment procedure, which would enable the individual to maintain abstinence from alcohol for a longer duration. As suggested in the review, much concentration was given over broad-spectrum treatment programme in conjunction with aversion therapies, since there was a greater need for a multifaceted treatment approach for alcohol addiction. Moreover, problematic areas had to be specified, along with the problem of addiction in order to employ different treatment approaches to make an alcoholic not only sober but also to maintain abstinence, along with enhanced psychological functioning such as emotional stability, interpersonal relationship, psychophysiological symptoms, abnormal symptoms,