CHAPTER V
RESULTS AND DISCUSSION
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Data collected following the methodology mentioned in the previous chapter, were tested for normality and homogeneity of variance. The parametric statistics such as multiple regression analysis, analysis of co-variance, and two types of student 't' test (one for co-related groups and the other for independent groups) were used for the analysis. Details of which are presented and discussed in the following sections.

5.1 EFFECT OF PSYCHOLOGICAL TREATMENT ON ALCOHOLICS

Researchers in the field of alcoholism have called for challenging therapeutic approaches for the effective treatment of addiction. Cautela (1970) has suggested that multifaceted treatment approach is necessary in order to make an alcoholic, successfully sober. Lazarus (1965), Marlatt (1973) and other scientists have felt a greater need for broad spectrum behavioural treatment for the successful treatment of alcoholics. The same was experimented and evaluated by Sobell and Sobell (1973) and Volger et al (1975). Encouraging result of their studies have motivated other investigators to follow in the same direction.

In the present study basic psychological treatment, fradic aversion therapy, covert sensitization therapy, and the combination of covert sensitization and fradic aversion therapy were administered to male alcoholics. Treatment programme was primarily aimed at reducing alcoholic dependence besides studying the effect of treatment on certain psychological functions.
namely emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms.

In the following sections data obtained from the subjects from pre-test phase to follow-up phase, using the various psychological treatment techniques, separately, has been discussed.

Table 3 shown in the next page reveals the effect of Basic Psychological Treatment on alcoholics and certain other psychological functions.

From table 3, significant difference could be noticed on the scores of alcoholic dependence, emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms between pre-test and post-test assessments. The difference implies that the basic psychological treatment given to the alcoholics were effective in reducing the alcoholic dependence and in improving certain psychological functioning.

The basic psychological treatment which consisted of a group of techniques namely individual counseling, family counseling, relaxation therapy, group therapy, self control procedure, and social skill training was effective in reducing alcohol dependence and in improving emotional stability and interpersonal relationship. It also successfully reduced the psychophysiological symptoms and abnormal symptoms perceived by the alcoholics. In other words it could be mentioned that after the basic psychological treatment subjects stopped drinking and there was a significant improvement in channelizing their emotions appropriately. The interaction with other individuals also improved
Table 3

Effect of Basic Psychological Treatment on alcoholic addiction and certain psychological functions of alcoholic addicts from pre-test to follow-up phases of assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre-Test X</th>
<th>Pre-Test Y</th>
<th>Post-Test X</th>
<th>Post-Test Y</th>
<th>SE Post-Pre</th>
<th>SE Pre-Follow-up</th>
<th>SE Follow-up</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic Dependence</td>
<td>12.07</td>
<td>0.93</td>
<td>1.13</td>
<td>0.75</td>
<td>14.87**</td>
<td>0.37</td>
<td>0.54 N.A</td>
<td>0.89</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>21.00</td>
<td>3.60</td>
<td>2.33</td>
<td>1.82</td>
<td>11.40**</td>
<td>0.59</td>
<td>2.15*</td>
<td>1.74</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>11.53</td>
<td>2.26</td>
<td>1.00</td>
<td>0.65</td>
<td>14.24**</td>
<td>0.56</td>
<td>2.24*</td>
<td>0.64</td>
</tr>
<tr>
<td>Psychophysiological symptoms</td>
<td>14.93</td>
<td>3.40</td>
<td>1.86</td>
<td>1.22</td>
<td>9.41**</td>
<td>0.39</td>
<td>3.94**</td>
<td>1.23</td>
</tr>
<tr>
<td>Abnormal Symptoms</td>
<td>15.40</td>
<td>2.93</td>
<td>0.73</td>
<td>1.33</td>
<td>9.34**</td>
<td>0.42</td>
<td>5.14**</td>
<td>1.68</td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level  
** = Significant at 0.01 level  
NS = Not Significant
markedly and the perception of psychophysiological symptoms ie., tremors, fatigue, and stress, etc., reduced remarkably. Abnormal symptoms such as paranoid ideas (I strongly feel that others are talking about me), feelings of hallucinations (I feel somebody is talking to me when I am alone) and delusions (I feel that all that is happening around me is mystical) were also reduced.

The effect of the various techniques under the basic psychological treatment is discussed briefly in the following paragraphs.

Individual counselling was effective in forming good rapport between counselor and the addict which made them to openly discuss their problem, explain their strengths and weaknesses, the various ways the subject has been trying to cope with the problem etc. Since individual counselling gives much room to the addicts they feel free to discuss about their intimate personal problems, which has venting out experiences, and results in gaining insight about his own conditions and understanding for further improvement.

Family counselling enables the family members to understand the addicts positions and also the precipitative factors. Family counselling also helped the family members and the significant other, associated with the addict, to change their attitude about alcoholism and about the affected individual. The resentments of family members are channelised in more constructive and positive ways. Mutual trust was established once again between the addict and the spouse. This has great impact on the recovering addict. Moreover the addict who has always faced complaints about himself, now receives encouragement and support from the family members to overcome his problem and his condition.
These findings are in line with the findings of Maeka and Kelly (1970), Rae (1972), Moos et. al. (1979), Berger (1981), Christina (1992), and Fukunishi et. al. (1994).

The relaxation therapy developed by Jacobson (1939) is a method of reducing the tension and anxiety arising out of various stressful situations in life. Relaxation training reduces the tension and anxiety faced by an alcoholic in their day to day life. Research studies have indicated that individuals consuming large amount of alcohol have lot of inadequacies. They are poor in decision making, poor in interpersonal relationship, poor in communication, non-assertive, lacking in self confidence, and poor in problem solving ability. Because of their inhibitions arising out of their inadequacies, stress faced by them is large when compared to non-alcoholics. The recovering alcoholics, also feel all the more uncomfortable as they have to cope up with the stress without being in the influence of alcohol. Hence the practice of relaxation therapy would have improved concentration, decision making, judgements, emotional stability and interpersonal relationship indirectly (Kamalanabhan 1986, Murugadoss 1989).

In other terms the relaxation therapy reduces the tension and anxiety which in turn stimulates clear thinking thereby bringing clear insight into the condition of the recovering alcoholic. This also results in gaining insight to develop adequate behavioural outcomes thereby improving interpersonal relationship, communication, problem solving and emotional stability. Relaxation therapy also helped the alcoholics to have voluntary control over autonomic responses. This has helped the individual to manage withdrawal symptoms. In other words it could be emphasized that practice of relaxation therapy has enabled the alcoholic
to manage tremors, irritation, nausea, and uneasiness. These results acted as rewards which reinforced the recovering alcoholics to practice relaxation for a longer duration. The same has been reported in the findings of Kaliappan et al. (1991).

The rational behind employing the group therapy in the treatment of alcoholic addiction is that it helps the addicts to discuss/share their experiences with one another. Through this process they learn skills of coping, decision making and problem solving. The advantage of group counselling session is that it enables the group members to share their problem of addiction. During the session the addicts discuss, among themselves, the causes of their addiction, duration of their addiction, problems faced because of addiction, and the measures taken by them, so far to get rid of them. During the group counselling sessions those individuals who have recovered from alcoholic addiction become the source of inspiration and insight to the recovering individuals. Through this process the motivation of the recovering individual increases. Since they have an opportunity to discuss freely about the problems faced, solutions on some common problems are quickly reached. Hence improvement of interpersonal relationship, communication, management of psychophysiological symptoms could be noticed apparently. Similar research findings are reported by Pomerleau et al. (1976), and Flores and Mahon (1993).

Research studies have found that certain cues present in the environment, would elicit drinking responses among alcoholics. A recovering alcoholic is vulnerable to such cues and therefore it is necessary to help him have control
over them. In simple terms, it could be stated that while an alcoholic is fighting
to cope up with the problem of addiction, there are certain tempting cues present
in the environment which induces him to go for drinks. Self control procedures
refers to the planned set of responses by which an individual modifies his own
behaviour, particularly in relationship to the antecedent and consequent events
associated with alcohol abuse. In other words, the self control procedures are
the set of actions taken by the recovering alcoholic to avoid drinking under the
various tempting situations. These actions are results of imagining the negative
consequences of alcohol abuse. Hence self control procedures will guide and
build courage in an alcoholic to either postponed the idea of taking a drink or
completely avoid it (Kumaraiah, 1990).

As mentioned earlier an alcoholic's characteristic under social situations
are marked with inhibitions, deteriorated interpersonal relationship and
communication skills (both verbal and non-verbal). An alcoholic is possessed with
Self, inferiority complex because of his addiction to alcohol, which results in
non-assertive and inappropriate behaviour during social situations. Training on
social skill would equip the recovering alcoholic to modify his behaviour in social
situations. Social skills training i.e., training on assertiveness, interpersonal
relationships, communication skills, self analysis, developing self confidence and
self esteem, stress coping ability, problem solving skills would enable the
alcoholic to perform appropriate behaviour during various interactive situations.
In other words social skill training would shatter inhibition present in an
alcoholic and encourage him to be more social i.e., encourage him to move freely
with friends and family on various occasions. Social skill training also equips an
alcoholic to take proper decision for his own personal life. The alcoholic who once was considered to be irresponsible and useless in the family, as well as, to the society, now involves himself in taking up responsibilities and in decision making process. The ability to say 'No' to drinks in significant social situation is also developed through social skill training. The alcoholic who possessed poor self image and esteem is able to realize his strengths and weakness and also his worth after the training on self development, which results in the development of positive self image and self esteem. These results in line with the findings of O'Leary et al (1976) and Chancy (1978).

From table 3 it could be seen that there is a significant difference between the post and follow-up assessment on all the variables. The significant difference noticed reveals that the subjects after undergoing the basic psychological treatment were able to maintain abstinence the after 6 months of the treatment. It also revealed that the subjects were carrying out the training procedures taught during the treatment sessions. Further implication also can be made that the subjects were encouraged by the basic psychological treatment as it helped them to maintain abstinence from alcohol which resulted in improved psychological functions, and recognition in the society by family and friends. Hence hypothesis no 1 is accepted.
**Table 1**

Effect of fradic aversion therapy on alcoholic addiction and certain psychological function of alcoholic addicts from pre-test to follow-up phases of assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre Test</th>
<th>Post Test</th>
<th>SE Pre-test</th>
<th>SE Post-test</th>
<th>SE Post-follow-up</th>
<th>SE Test</th>
<th>SE Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic Dependence</td>
<td>12.11</td>
<td>14.40</td>
<td>0.66</td>
<td>1.39</td>
<td>7.56**</td>
<td>0.43</td>
<td>1.79NS</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>22.77</td>
<td>5.77</td>
<td>2.66</td>
<td>1.31</td>
<td>12.95**</td>
<td>0.63</td>
<td>3.78**</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>10.44</td>
<td>3.00</td>
<td>1.77</td>
<td>0.80</td>
<td>9.29**</td>
<td>0.61</td>
<td>1.98NS</td>
</tr>
<tr>
<td>Psychophysiological symptoms</td>
<td>19.00</td>
<td>4.77</td>
<td>2.55</td>
<td>1.06</td>
<td>13.36**</td>
<td>0.72</td>
<td>3.08**</td>
</tr>
<tr>
<td>Abnormal Symptoms</td>
<td>14.55</td>
<td>2.66</td>
<td>1.44</td>
<td>1.04</td>
<td>11.36**</td>
<td>0.45</td>
<td>2.63*</td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level  
** = Significant at 0.01 level  
NS = Not Significant
Table 4 shows the effect of fradic aversion treatment on alcoholic dependence and the four psychological functioning variables of 11 male alcoholics, from pre-test to follow-up assessment phases. It is seen from the table that there exists a significant different between pre-test and post-test assessments on the scores of alcoholic dependence, emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms. The results indicate that the fradic aversion therapy was effective in reducing alcoholic dependence and in improving the psychological functioning of alcoholics, i.e., emotional stability, interpersonal relationship and by reducing psychophysiological symptoms and abnormal symptoms. In terms of the principle operating behind the fradic aversion therapy it could be explained as, that the undesirable behaviour (i.e., alcoholic addiction) is weakened by conditioning it to a painful stimulus (i.e., Fradic Aversion).

Mostly when a response is followed by pain or punishment its strength is weakened. A behaviour change could be achieved by conditioning an aversive response to an undesirable behaviour. In the present study by associating the noxious stimulus (i.e., Electric shock) with odor (i.e., of alcohol) conditioning between the two is established and the problem behaviour i.e., drinking is weakened. Thus after the conditioning process is over an individual’s dependence on alcohol is either reduced significantly or eliminated completely. Reduced dependence or complete elimination of alcohol brings about certain improvement in psychological functioning of the individual. Lowering of guilt and fear, caused out of drinking habit, could be noticed. Marginal improvement in channelising the emotions could also be noticed. Improvement in tolerating frustration is
achieved. The individual picks up courage to resolve conflicts. His family accepts
him and hence improvement in family relationship and taking up of family
responsibilities could be found.

The scores on alcoholic dependence, emotional stability, interpersonal
relationship, psychophysiological symptoms, and abnormal symptoms continued
to show significant improvement during the follow-up assessment. These
significant improvement indicated that the fradic aversion treatment was
successful in keeping the individuals sober for a longer time i.e., even after 6
months from the treatment. It could be emphasized, in simpler terms, that the
fradic aversion therapy was successful in creating an aversion in the alcoholic
about drinking. In other words the association between alcohol and the noxious
stimulus was so strong that whenever an alcoholic, thought about taking a drink
or desired to go for a drink the painful electric was all that came into his mind.
The same has been concluded in the findings of McGuire and Vallance (1964),
Baker (1967), Falkowski (1972), Miller et al. (1973), and Wilson et al. (1975). Thus
hypothesis no. 2 was fully accepted.

The Covert Sensitization therapy was administered to 9 subjects on
whom basic psychological treatment was not significantly effective. Table 5 below
shows the effect of covert sensitization therapy on pre, post, and follow-up
phases of assessment.
Table 5

Effect of covert sensitization therapy on alcoholic addiction and certain psychological functions of alcoholic addicts from pre-test to follow-up phases of assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre Test X</th>
<th>Post Test X</th>
<th>Follow-up</th>
<th>SE Post Follow-up</th>
<th>SE Pre Follow-up</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic Dependence</td>
<td>11.71</td>
<td>17.1</td>
<td>28.5</td>
<td>1.48</td>
<td>6.76**</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>20.00</td>
<td>3.14</td>
<td>3.71</td>
<td>1.96</td>
<td>8.56**</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>12.00</td>
<td>1.28</td>
<td>2.42</td>
<td>1.06</td>
<td>10.08**</td>
</tr>
<tr>
<td>Psychophysiological symptoms</td>
<td>16.57</td>
<td>3.42</td>
<td>3.71</td>
<td>0.59</td>
<td>22.10**</td>
</tr>
<tr>
<td>Abnormal Symptoms</td>
<td>14.57</td>
<td>1.57</td>
<td>1.00</td>
<td>2.23</td>
<td>5.81**</td>
</tr>
</tbody>
</table>

** = Significant at 0.01 level
NS = Not Significant
From table 5 a significant difference could be noticed between the pre and post assessment scores on alcoholic dependence and other psychological functions. The significant difference implies that the covert sensitization therapy was effective in reducing alcoholic dependence and in improving the psychological functions i.e., emotional stability and interpersonal relationship. It has also brought down psychophysiological and abnormal symptoms due to alcoholism.

Contrasting covert sensitization therapy over fradic aversion it would be worthwhile to note that in fradic aversion therapy the actual noxious stimulus is presented to the subject in order to associate it with the drinking behaviour. Whereas in covert sensitization therapy aversive images are used in order to enable the subject to associate with his drinking problem. Moreover, positive images or pleasant images are also used to enable the subject to associate the alcohol avoiding behaviour with a relief situation.

Cautela (1967) has pointed out that covert sensitization would produce better results if used on persons with good imagery. The advantages of covert sensitization method is that it permits the subject and therapist to adjust the topography of the aversive imagery to the specific need of the client drinking problem. It also allows direct (imaginal) association between the aversive image, the behaviour (drinking), and the environment associated with drinking (i.e. including the people and the places with which it is associated).

The effectiveness of the covert sensitization therapy could be attributed to the very nature of the treatment. As highlighted in the previous paragraph,
while the subjects were being sensitized to associate drinking with the negative consequences of it, they were also made to associate an avoidance behaviour to pleasant imageries, which would produce a relief to the addicts. And since the relief imagery gives a feeling of pleasantness to the addict the avoidance behaviour is maintained. Hence after the covert sensitization procedure the subject is able to maintain abstinence.

The most advantageous aspects of covert sensitization is that it is mobile, i.e., it could be practiced when ever and where ever an individual feels tempted to take a drink. This could be clearly seen, on comparing the scores of alcoholic dependence, emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms, during the pre and follow-up assessment. In simple terms, the significant difference obtained between pre and follow-up assessment indicates that the subjects were practicing covert sensitization technique even after six months of therapy. Based on the instructions given at the treatment sessions the subjects were continuing the practice of covert sensitization method at all tempting situations. The subjects were able to manipulate the imageries and hence could remain abstained from alcohol for a longer duration.

After discussing the effects of basic psychological treatments, fradic aversion therapy, and covert sensitization therapy individually, the combined effect of fradic aversion and covert sensitization therapy on alcoholics is being discussed in the following section. This technique was administered for a group of 15 subjects.
Table 6

Effect of fradic aversion with cover sensitization therapy on alcoholic addiction and certain psychological function of alcoholic addicts from pre-test to follow-up phases of assessment

<table>
<thead>
<tr>
<th>Variables</th>
<th>Pre Test X</th>
<th>Post Test X</th>
<th>Follow-up X</th>
<th>SE Pre-post</th>
<th>SE Post-Follow-up</th>
<th>&quot;t&quot;</th>
<th>SE Pre-Follow-up</th>
<th>&quot;t&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alcoholic Dependence</td>
<td>10.46</td>
<td>12.6</td>
<td>2.80</td>
<td>0.93</td>
<td>9.87**</td>
<td>0.76</td>
<td>2.00N.S</td>
<td>1.14</td>
</tr>
<tr>
<td>Emotional Stability</td>
<td>22.80</td>
<td>3.53</td>
<td>3.46</td>
<td>1.47</td>
<td>13.03**</td>
<td>0.80</td>
<td>0.08N.S</td>
<td>1.33</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>12.13</td>
<td>2.13</td>
<td>3.16</td>
<td>0.99</td>
<td>10.05**</td>
<td>0.82</td>
<td>2.10'</td>
<td>1.10</td>
</tr>
<tr>
<td>Psychophysiological symptoms</td>
<td>16.63</td>
<td>3.60</td>
<td>4.26</td>
<td>1.15</td>
<td>11.22**</td>
<td>1.44</td>
<td>0.46N.S</td>
<td>2.21</td>
</tr>
<tr>
<td>Abnormal Symptoms</td>
<td>13.93</td>
<td>2.06</td>
<td>1.80</td>
<td>1.19</td>
<td>9.93**</td>
<td>0.52</td>
<td>0.51N.S</td>
<td>1.24</td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level
** = Significant at 0.01 level
N.S. = Not Significant
Table 6 above shows the combined effect of fradic aversion and covert sensitization on alcoholics from pre-test assessment to follow-up phases of assessment. It is indicated in the table that there is a significant difference between the pre-test and the post-test assessment on the dependent variables, alcoholic dependence, emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms. The result implies that the combined effect of the treatment, i.e., fradic aversion and covert sensitization, was effective in reducing alcoholic dependence, and in improving emotional stability and interpersonal relationship. The combined effect of the treatment was also effective in reducing psychophysiological symptoms and abnormal symptoms.

It could be explained in other words that the subjects received a two way benefit from the treatment, i.e., on one hand, through fradic aversion therapy the subject’s undesirable behaviour (i.e. alcoholic addiction) were weakened by conditioning it to a painful stimulus (i.e., electric shock), and on the other hand through covert sensitization therapy the subjects were able to associate (in imagery) the drinking problem with aversive images, along with associating their avoidance behaviour with a pleasant imagery.

From Table 6 it could also be noted that there was no significant difference between post and follow-up assessment on all the variables except for interpersonal relationship. The result implies that while the subjects maintain lower alcoholic dependence, psychophysiological symptoms, and abnormal symptoms, and high emotional stability, after the treatment, their interpersonal
relationship continued to become better and better. This clearly indicates that as an individual recovers from alcohol steadily, there is shatterling of inhibitions, boost in self image, and boost in self worth which paves the way for heightened interpersonal relationship.

From table 6 significant difference between pre-test and follow-up assessment on the scores of alcoholic dependence, emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms could be noticed. As mentioned earlier the results indicate the effect of the treatment after six months. In other words it could be explained that the subjects continued to be conditioned to all the aversive images practiced during the treatment sessions. At the same time, they also continued to condition themselves to the pleasant images, by saying no to alcohol, which mainly resulted out of modifying or changing their own behaviour at all tempting situations. Blake (1965, 1967), Laudea (1970), Malekzy (1974), Elliot and Denney (1975), have also mentioned that covert sensitization when combined with other forms of treatment especially with aversion therapy (Electric Shock) would be very effective in the treatment of alcoholism. Hence it could be concluded that the treatment administered by combining fradic aversion and covert sensitization was effective in reducing alcoholic dependence, psychophysiological symptoms, and abnormal symptoms, and in improving emotional stability and interpersonal relationship. Hence hypothesis no: 4 is also accepted.

As mentioned earlier effective treatment of addiction has been a challenge for all therapeutic approaches. Though the addicts seem to respond well to the
treatment at first, within a few months or a year later may have relapsed and resumed to their old habits. This does not indicate that treatment approaches are ineffective, but that long-term follow-up therapeutic efforts are needed if an alcoholic is to be successfully made sober (Cautela, 1970). Hence scientists in the field of alcoholism research have taken various steps to evaluate and compare the effectiveness of different treatment/therapeutic technique.

In the following sections comparison between the various treatment techniques used for different groups in the present study have been discussed.

Table 7 in the next page shows the difference between the two groups in which one received fradic aversion therapy and the other received a treatment consisting of both fradic aversion and covert sensitization therapy.

It could be seen from the table 7 that there was no significant difference between the two groups at the pre-test level. The result indicate that, the two groups were similar in all respect before the commencement of the treatment programme. A significant different could be noticed in the post treatment assessment between the groups. The difference implies that the two treatment methods produced different results. In other words it could be said that the magnitude of effectiveness between the two treatment i.e., 1. fradic aversion, 2. fradic aversion combined with covert sensitization was different.

However at this point it is to be remembered that the two treatment methods had brought down alcoholic dependence significantly, as discussed in the previous sections. Hence the difference noticed between the effectiveness of
Table 7

Difference between fradic aversion and fradic aversion with covert sensitization therapy in the treatment of alcoholic addiction

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number of cases</th>
<th>Pre-test mean</th>
<th>Pre-test SD</th>
<th>Pre-test t' value</th>
<th>Post-test mean</th>
<th>Post-test SD</th>
<th>Post-test t'</th>
<th>Follow-up mean</th>
<th>Follow-up SD</th>
<th>Follow-up t'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fradic Aversion</td>
<td>9</td>
<td>78.89</td>
<td>14.03</td>
<td></td>
<td>17.67</td>
<td>4.85</td>
<td></td>
<td>9.11</td>
<td>4.05</td>
<td></td>
</tr>
<tr>
<td>Fradic Aversion with Covert sensitization</td>
<td>15</td>
<td>75.93</td>
<td>16.45</td>
<td>0.47 N.S</td>
<td>12.60</td>
<td>6.51</td>
<td>217 N.S</td>
<td>16.2</td>
<td>13.97</td>
<td>1.84 N.S</td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level
N.S. = Not Significant
the treatment could be attributed to the degree of their effectiveness. From the
table it could be seen that the mean of total score, obtained by the group which
received fradic aversion is 17.67, whereas the mean of total scores obtained by
the group which received fradic aversion combined with covert sensitization is
12.60. Hence the method fradic aversion combined with covert sensitization
proved to be better than fradic aversion alone in the present study. The reason
may be that multifaceted treatment method is always more effective than a
single treatment method. This idea has already been proved and suggested by
Brady (1976), and Elliott and Denney (1975). They have also mentioned that
covert sensitization when combined with other forms of treatment especially
with aversion therapy (Electric Shock) would be very effective in the treatment
of alcoholism.

It is also logical to assume that a treatment programme which includes
many different techniques would take a little longer duration than a treatment
with a single technique. The variations in the optimum duration of treatment
might have brought some variables in the outcome of the treatment. Hence it
could be emphasized that the duration of the technique very much contributes
to its effectiveness. Thereby the combined effect of aversion with covert
sensitization was better than fradic aversion alone. However, it is also rational
to emphasis that the combined treatment focused on making the individual
aversive towards alcohol both in imagery as well as in vivo. Fradic aversion
focused on associating noxious stimuli with the smell of alcohol in vivo and the
covert sensitization focused on creating aversion as well as a relief in imagery.
Thus the two way effect was more significant than the effect produced by a single method namely fradic aversion. Thus hypothesis no. 5 is accepted which states that the combination of fradic aversion with covert sensitization therapy will be better in making alcoholic sober than the fradic aversion therapy alone.

However, it could also be noticed from the table 7 that there was no significant difference on the total score during the follow-up assessments. The results here implies that, in the long run both the methods i.e., 1. Fradic aversion and 2. Fradic aversion with covert sensitization were equally effective in keeping the alcoholic sober and there was no much difference among them. The reason may be because of the influence of various other factors, such as maturational, insight, family, significant others, and environment.

The table below shows the individual effect of the two different techniques i.e., 1. Fradic aversion with covert sensitization and 2. Covert sensitization in the treatment of alcoholic addicts.
Table: 8

Difference between the cover sensitization and fradic aversion with covert sensitization therapy in the treatment of alcoholic addiction

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number of cases</th>
<th>Pre-test mean</th>
<th>Pre-test SD</th>
<th>Pre-test t' value</th>
<th>Post-test mean</th>
<th>Post-test SD</th>
<th>Post-test t'</th>
<th>Follow-up mean</th>
<th>Follow-up SD</th>
<th>Follow-up t'</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cover Sensitization</td>
<td>7</td>
<td>74.85</td>
<td>8.40</td>
<td></td>
<td>11.14</td>
<td>4.94</td>
<td>0.58*</td>
<td>13.71</td>
<td>10.90</td>
<td></td>
</tr>
<tr>
<td>Fradic Aversion with Covert sensitization</td>
<td>15</td>
<td>75.93</td>
<td>16.40</td>
<td>0.26*</td>
<td>12.60</td>
<td>6.51</td>
<td>0.45*</td>
<td>16.2</td>
<td>13.97</td>
<td></td>
</tr>
</tbody>
</table>

N.S. = Not Significant
From table 8 above, showing the Mean, SD, and 't' value of pre to Follow-up phases of assessment of the total scores on alcoholic dependence and certain psychological functions, it could be noticed that there was no significant difference on the pre-test assessment which reveals that the two groups in which one received treatment using fradic aversion combined with covert sensitization therapy and other covert sensitization therapy were matching equally.

It could be noticed from the table that the two groups were not significantly different even after the treatment. In other words it could be said that the group which received fradic aversion combined with covert sensitization therapy were equal to the group which received treatment using covert sensitization therapy alone. In simple terms it could be understood that the individual who were made sober using fradic aversion and covert sensitization were not different from individuals who were made sober using covert sensitization therapy alone.

Eventhough in the previous section it was discussed that a multifaceted treatment programme would always be more effective than a single therapy, the results here have negatively indicated. This may be because of the employment of the technique covert sensitization on both the groups. As discussed earlier covert sensitization therapy is such a sophisticated technique that it makes an individual confident and more positive about recovery, at the same time is so a flexible and mobile techniques that it could be used by all the individuals any where and at any point of time, through his own imaginations. Moreover it could
be highlighted that almost all the subjects found it possible to practice it at their home because of its simplicity and flexibility.

No significant difference was found on the total score of alcoholic dependence and certain psychological functions during the follow-up assessment also. Hence hypothesis no. 6 is not accepted.

In this section the effect of fradic aversion therapy and the effect of covert sensitization therapy on alcoholic addiction has been discussed individually.

Table 9 shown in the next page shows the Mean, SD, and 't' value of the two groups in which one received fradic aversion and the other covert sensitization, from pre to follow-up phases of assessment.

Once again no significant difference existed between the two groups on the total score of alcoholic dependence and certain psychological functions during the pre-test assessment phase. Hence it could be made clear that the two groups did not differ before the commencement of the intervention programme. During the post-intervention assessment the Mean value of the total scores on alcoholic dependence and certain psychological functions of the group which received fradic aversion therapy was 17.67. A Mean value of 11.14 on the scores of alcoholic dependence and certain psychological functions was obtained by the group which received covert sensitization therapy alone.

A significant difference could be observed from the two mean values, inferring that covert sensitization therapy was better than fradic aversion
Table: 9

Difference between fradic aversion and Cover sensitization therapy in
the treatment of alcoholic addiction

<table>
<thead>
<tr>
<th>Groups</th>
<th>Number of cases</th>
<th>Pre-test mean</th>
<th>Pre-test SD</th>
<th>Pre-test 't' value</th>
<th>Post-test mean</th>
<th>Post-test SD</th>
<th>Post-test 't'</th>
<th>Follow-up mean</th>
<th>Follow-up SD</th>
<th>Follow-up &quot;t&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fradic Aversion</td>
<td>9</td>
<td>78.88</td>
<td>14.03</td>
<td>0.71 N.S.</td>
<td>17.67</td>
<td>4.85</td>
<td>2.64¹</td>
<td>9.11</td>
<td>4.04</td>
<td>1.06 N.S.</td>
</tr>
<tr>
<td>Covert sensitization</td>
<td>7</td>
<td>74.85</td>
<td>8.47</td>
<td></td>
<td>11.14</td>
<td>4.95</td>
<td></td>
<td>13.71</td>
<td>10.90</td>
<td></td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level  
N.S. = Not Significant
therapy. In other words, it could be explained that the group which received covert sensitization therapy was better than the group which received fear aversion therapy after the intervention programme. Looking at the results obtained during the follow-up assessment it could be once again noticed that there existed no difference between two groups which received two different types of treatment.

At the first place, an argument could be made on the higher effectiveness of the covert sensitization therapy over the fear aversion therapy at the post-treatment level. As discussed earlier, the very nature of the covert sensitization therapy proves to be advantageous over the other techniques. To put it in a simple way, the easily comprehensible, administrable, flexible, and manipulable nature of the technique makes it possible for all the individuals to quickly learn it and practice it. Moreover, the individual has to manipulate and evaluate the treatment outcomes. Hence this gives an opportunity to the individual to become enthusiastic and motivated by looking at the quick success received by him out of the treatment at the initial levels. The knowledge of results also develops confidence in him which makes him all the more positive and enthusiastic about the treatment thereby showing encouraging results soon after the intervention programme. In some of the review it has also been mentioned that the long-term effect of covert sensitization is surprisingly found to be less effective. Hence it could be concluded that the effectiveness of covert sensitization is mostly fairly high soon after the intervention programme but not in the long run.
The same could be observed from the results shown in Table 9. No difference could be noticed between the groups on the scores of alcohol dependence in the follow-up assessment. Hence it could be concluded that both the treatment techniques were equally effective in the long run. Thus hypothesis no. 7 is not accepted.

The review of literature revealed that there existed a relationship between alcoholism and the factors such as abnormal symptoms, income, duration of addiction, number of dependents, emotional stability, interpersonal relationship, and psychophysiological symptoms. A multi-variate statistical analysis namely multiple regression analysis was carried out to examine the contributors to alcoholic dependence. Table 10 below shows the details of multiple regression analysis on alcoholic dependence. Only those predictors which contributed significantly to alcoholic dependence are mentioned in the table.

From Table 10 shown in the next page, it could be inferred that 85% of the variation ($R^2 = .85$) were explained significantly by emotional stability, psychophysiological symptoms, duration of addiction, and income. The other predictors did not contribute significantly to alcoholic dependence. Emotional stability, psychophysiological symptoms, and duration of addiction were found to have direct relationship to alcoholic dependence. The results may be interpreted as, more the emotional instability, duration of addiction, and psychophysiological symptoms, more was the alcoholic dependence.

It is found from the lives of alcoholic that their inadequacy, such as lack of confidence, lack interpersonal and communication skills, poor self images and
Summary of a multiple regression analysis on the criteria variable Alcoholic dependence

<table>
<thead>
<tr>
<th>General Details</th>
<th>Details relating to predictor variables</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Predictor variables</td>
</tr>
<tr>
<td>Multiple R = 0.85261</td>
<td>Income</td>
</tr>
<tr>
<td>R Square = 0.72694</td>
<td>Duration of Addiction</td>
</tr>
<tr>
<td>Adj R Square = 0.66791</td>
<td>Emotional Stability</td>
</tr>
<tr>
<td>S.E. = 1.37432</td>
<td>Symptoms</td>
</tr>
<tr>
<td>F = 12.31297</td>
<td></td>
</tr>
<tr>
<td>Sig F = 0.001</td>
<td></td>
</tr>
</tbody>
</table>

* = Significant at 0.05 level
** = Significant at 0.01 level
self concept puts them in anxiety. Inadequacies also makes them to behave inappropriate in social situation which further leads to guilt, fear and anxiety. Inability to resolve intrapersonal and interpersonal conflicts also leads to the development of guilt and fear. Hence prolonged period of emotional disturbance, and inability to channelise their emotions makes them to be more dependent on alcohol.

As mentioned earlier familial, social and cultural factors operate in increasing or aggravating conditions of environmental stress in an individual. The presence of an irritable and excitable autonomic nervous system are frequently seen in connection with stress situations. Since an alcoholic is an individual with inadequacies he depends on alcohol to manage psychophysiological symptoms. Hence a direct relationship is seen between psychophysiological symptoms and alcoholic dependence.

From the personal history of alcoholics it could be observed that all the alcoholics begin drinking with one-drink along with peers. But as years roll by they become addicted to it. At this juncture the popular Chinese saying, "first man takes drink, drink takes drink, and finally drink takes man", could be remembered. Some alcoholics even find it sentimental to leave alcohol. They say, "Why to get deprived of the companion who had been with me for such a long time".

Table 10 indicates that the predictor 'income' had a significant inverse relationship with alcoholic dependence. It could be inferred that lower the income more was the alcoholic dependence. Research studies have mentioned
that there exist positive correlation between lower income and family problems. The reason may be that, lower income of the family (of lower economic status), would restrict them from enjoying those facilities which a family without financial problem would be enjoying. Lack of money to buy alcohol would make an individual to steal things from his house. Which acts as yet another precipitatory factor for stressful family relation. Some alcoholics from lower socio-economics status even abuse their wife, to get their, hard earned money for drinking which again adds more stress to the family relations. Sometimes bemoaking also adds more stress to an individual. Therefore in order to get relieved from the family chores an individual from the lower economic status might resort to alcohol. Moreover it could also be noted in the lives of alcoholics that they are poor at work. Absenteeism is high with alcoholics. Efficiency and responsibility at work is also found to be low in individuals with alcoholic dependence. Which could be the reason for lower income of alcoholics.

Analysis of co-variance was yet another multi-variate technique computed to examine the variations among the dependent variables, at different assessment periods, in the present investigation. The cause and effect of the variables emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms were studied on alcoholic dependence was studied through analysis of co-variance. The summary of analysis of co-variance is given in the table 11, below.
Summary of Analysis of Co-variance of the variables Emotional Stability, Interpersonal Relationship, Psychological Symptom with Alcoholic Dependance

<table>
<thead>
<tr>
<th>Variable</th>
<th>COE</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>Emotional Stability</td>
<td>61.98</td>
<td>50.35**</td>
</tr>
<tr>
<td>Interpersonal Relationship</td>
<td>94.03</td>
<td>15.91**</td>
</tr>
<tr>
<td>Psychological Symptoms</td>
<td>292.18</td>
<td>51.61**</td>
</tr>
</tbody>
</table>

Significant at 0.01 level
From table 11, it could be noted that the variations on the score of emotional stability was significant with the variations on the score of alcoholic dependence at the pre-intervention period. The result signifies that a variation in the score of emotional stability showed a significant variation in the score of alcoholic dependence at the pre-treatment level. In other terms it could be told that the individual with pre-morbid personality, lower stress tolerance, lower frustration tolerance and those who were emotionally unstable resorted to alcohol than other individuals. It could also be mentioned that individuals who were addicted to alcohol were inadequate to express their emotions such as anger, fear and guilt appropriately. They were efficient in channelising their emotions.

Looking at the post-intervention level a significant relationship among the variations of the variables emotional stability, interpersonal relationship, psychophysiological symptoms, and alcoholic dependence could be seen. It could be inferred that, a variation in the score of alcoholic dependence, after the intervention programme, showed a significant variations on the scores of emotional stability, interpersonal relationship, and psychophysiological symptoms. In other words it could be said that the intervention given to the individuals in order to reduce alcoholic dependence has also brought about changes in emotional stability, interpersonal relationship, and psychophysiological symptoms. It is noteworthy to mention here that significant improvement interpersonal relationship and emotional stability was due to the reduction in consuming alcohol. When an individual evades from the unpleasant habit of drinking alcohol, he is being appreciated and accepted by his family and peers. Since the recovering alcoholic is encouraged to take up responsibilities he
becomes involved in the family activities which gives him security and recognition. It is also worthy to mention that the response of the autonomic nervous system has had an impact due to the reduction in the intake of alcohol.

It is indispensable to highlight at this point that the goal of the treatment was not only to cure the disease of alcoholism but also to improve the individual's cognitive and social skills even after the treatment (i.e., even after the alcoholic's recovery). Hence guidance and counselling was given after the treatment in order to enable the individual to function effectively in the society. Therefore the result signifies that the effect of psychological intervention i.e., basic psychological treatment constituting the techniques individual counselling, relaxation therapy, family counselling, group counselling, self control procedures, and social skill training, fradic aversion therapy, covert sensitization therapy, and combination of fradic aversion with covert sensitization was significant in modifying emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms along with reducing alcoholic dependence. Hence the goal of treatment was achieved.

5.2 AN OVERALL DISCUSSION

In the preceding sections, discussion was carried out on the effect of psychological intervention over alcoholic dependence and certain psychological functions such as emotional stability, interpersonal relationship, psychophysiological symptoms, and abnormal symptoms. Treatments administered were in conformity to the treatment schedule.
The result indicated that the basic psychological treatment (constituting individual counselling, family counselling, group counselling, relaxation therapy, self control procedures, and social skills training) given to the alcoholics were effective, on some subjects, in reducing alcoholic dependence, abnormal symptoms and psychophysiological symptoms. It was also effective in improving interpersonal relations and emotional stability. The remaining subjects were treated using Fradic aversion therapy, Covert sensitization therapy, and a treatment procedure combining fradic aversion and covert sensitisation. The results indicated that all the three techniques were found to be effective in reducing alcoholic dependence, psychophysiological and abnormal symptoms, and in improving emotional stability and interpersonal relationship.

Comparing the fradic aversion therapy with fradic and covert sensitization technique it was found that there was a significant difference at the post-intervention assessment. Whereas no difference could be noticed during the follow-up assessment. On comparing covert sensitization therapy with fradic aversion and covert sensitization technique it was revealed that there was no difference between the two treatment techniques in all the three assessment i.e., pre, post, and follow-up. Difference in post-intervention assessment was seen on comparing the two popular technique namely fradic aversion and covert sensitization. No difference existed in the follow-up assessment.

While processing the data through multi-variate statistics, the result of multiple regression analysis, indicated that income, duration of addiction, emotional stability and psychophysiological symptoms were the significant
predictors of alcoholic dependence. The predictors explained 85% of variations of the criterion. While investigating the cause and effect of the variables through analysis of co-variance it was found that alcoholic dependence was a significant co-variate of emotional stability before the intervention programme. During the follow-up assessment it was found that alcoholic dependence was a significant co-variate of emotional stability, interpersonal relationship, and psychophysiological symptoms. Which magnified the effect of the treatment programme.

However, at this juncture it is also necessary to highlight some of the experiences gained during the investigation. Motivation was observed to be the most important factor in the treatment of alcoholics. Attempts were made to motivate the individual at the very first interview session. The rate of recovery was also high with those alcoholics who had high motivation. The motivated individuals took initiative to lead in some of the group counselling sessions. Many recovered individuals referred other alcoholics to the counselling center for treatment.

Team work was adopted by the counsellors during the treatment of alcoholic addicts. The subjects were at advantage by coming to Pudhuvazhvu center (New Life). Pudhuvazhvu counselling center is a voluntary organisation run by Indian Society of Criminology. Ninety percent of the funds are given by the "Ministry of Welfare", Government of India. A team of Psychologists, Counsellors, Social workers, and part-time Psychiatrists. Tamilnadu (in Southern
part of India) has three Pudhuvazhvu centers. The broad aim of the center is to provide:

1. Preventive education on substance abuse to student community.

2. Awareness programme on evil effect of substance abuse to general public.

3. Psychiatric treatment to substance abuser and

4. Psychological treatment to substance abusers.

Hence the prime aim of the counselling center was not only to treat the disease (alcoholic addiction) but to treat the individual. Therefore treatment was attempted to improve the other areas such as financial management, time management, work motivation, work concentration and achievement motivation, of the recovering addicts. The center being a reputed one had many counsellors and social workers to attend to the subjects. Hence, subjects were at their liberty to put their confidence on the counsellors whom they like. This aided in the early recovery of the subjects. An intensive follow-up work was carried out in the present investigation. During the follow-ups, counsellors and social workers seeked an opportunity to visit the residence of the subjects, with a view to give them few tips for maintaining abstinence. Thus the trust and confidence shown by the subject over the counsellors and social workers made them to help in decision making in some of their life problems. During the treatment, counsellors
encouraged the habit of petty-savings as an alternate to alcoholic spending, which
after sometime facilitated in improving their economic status.

Conclusions drawn from the results discussed above are presented in the
next chapter, with a summary of the present investigation.