

# Family Intervention on Relapse Rate of Persons with Alcohol Dependence Syndrome

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## Abstract

A study was done to determine the effectiveness of family intervention on relapse rate of persons with alcohol dependence syndrome, in selected De-addiction centre. Objectives were (1) Determine the effectiveness of family intervention on relapse rate of persons with alcohol dependence syndrome. (2) Identify the effectiveness of family intervention on Gamma Glutamyl Transferase (GGT) levels of persons with alcohol dependence syndrome. True experimental approach with pre test, post test control group design was used for 100 samples, 50 each of control and experimental groups by simple random sample. Research tools were structured questionnaire for personal data and AWARE (Advance Warning Signs of Relapse) scale. Friedman's RM ANOVA on ranks by Dunn's method and Mann Whitney rank sum test were used to evaluate the relapse rate of control and experimental groups. The pre test and post test GGT values of control and experimental groups were evaluated by unpaired 't' test. The study concluded that family interventions was effective for reducing relapse rate, GGT level showed a significant decrease in the experimental group compared to control group.

**Keywords:** Family intervention, Relapse rate, Alcohol dependence syndrome.

## Introduction

Substance related disorder have become matters of global concerns because of its impact on individual health, family and social consequences, criminal and legal problems, and effect on the natural productivity and economy. Harmful use of alcohol is one of the world's leading risk factors for morbidity, disability and mortality and imparts different diseases and injury outcomes to various degrees. The harmful use of alcohol gives social and economical loses to individuals and society at large<sup>1</sup>. Family is an important part of the diagnosis and a treatment chain of alcohol and substance abuse. Participation of family in the treatment process will act as a supportive role in terms of preventing

relapses<sup>2</sup>. People with alcohol dependence are more vulnerable to get relapse. Once withdrawal from alcohol is complete relapse prevention strategies help to maintain abstinence. The aim is to anticipate and prevent relapses from occurring and to minimize the negative consequences and maximize learning from the experiences<sup>3</sup>. A study to assess the outcome treatment of alcohol dependence syndrome among 341 cases. All patients suffering from ADS reported to follow up were scrutinized. The result showed that 33.16 percent had relapse, 35.49 percent had partial improvement and 31.35 percent cases were abstinent. The treatment will reduce the chances of relapse with subsequent reviews<sup>4</sup>.

Gamma glutamyl transferase (GGT) is clinically important due to its sensitivity to detect alcohol abuse<sup>5</sup>. Drinking four or more drinks per day for four to eight weeks significantly raises level of GGT in alcohol dependent people<sup>6</sup>. The aim of family intervention for chemical dependence is to bring an addict back to a productive and normal person in the family and in society. Motivation to change is an important variable in the treatment outcome of an alcoholic person<sup>7</sup>. Very

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often alcoholic patients are getting readmitted in the De-addiction centers with relapse. So the whole family especially spouses of the patient can involve in the treatment process to reduce relapse and bring out a new life. This study also aimed towards reducing the relapse rate through family interventions.

### Materials and Method

Pre testpost test control group design was used. The dependent variable was relapse rate and independent variable was family intervention. Demographic variables were age, years of marriage, type of marriage, education, occupation, monthly family income, support from family and years of alcohol usage. Using simple random sampling hundred persons (50 each in control and experimental group) diagnosed with alcohol dependence syndrome between 25–55 years of age and admitted for first time in De-addiction centre with their legally married spouses and able to read and write Malayalam were included in the study. Research tools used were (1) Structured questionnaire for demographic data(2) AWARE, the warning sign of relapse rate was assessed by the 28 item scale by Miller and Harris.

The permission for conducting study was obtained from the head of the department of De-addiction centre and informed consent was obtained from both sample and their spouses. Progressive muscle relaxation (Jacobson) was given for person subjected to study and their spouses in the experimental group, everyday in the early morning for 15 minutes and family intervention was also provided to the person and their spouses in the experimental group everyday for 15 minutes with a help of a video assisted program till discharge. A diary was given to them to record the level of adherence based on the family intervention. Telephone conversation was made with spouses once in every week to remind the family intervention. Family intervention was again reminded to the experimental group whenever they came for second, fourth and sixth month of follow up after discharge. Assessment of warning signs of relapse by aware questionnaire was done in their post assessments (1,2 and 3) and GGT was assessed for both control and

experimental groups during their admission time and in third follow up (post test three).

**Findings:** Table 1 shows the effectiveness of family intervention on relapse rate of persons with alcohol dependence syndrome. AWARE Questionnaire was used for assessing the warning signs of relapse. When score increases, relapse symptoms also increases. The table values represented in terms of median. The median score of control group in post test 1, post test 2 and post test 3 were increased and risk were high for relapse. Post test score was 116 and in experimental group it was only 32. Hence the experimental group had less chances for getting relapse. Table 2 shows the gamma glutamyl transferase score level in control and experimental groups. Control pre test and post test were analyzed in terms of mean and standard error. Pre test mean 251.4 which is reduced to 123.3 in control post test. In experimental group Mean was high in pre test (mean 147) and significantly decreased to 23.7 when post test was done.

Figure 1, The control and experimental groups were evaluated by Friedman's RM ANOVA on ranks by Dunn's comparison with each post test. Both groups p value is <0.001, but experimental group had significant difference with control group. Post test 1, post test 2 and post test 3 between control and experimental groups were evaluated by Mann Whitney rank sum test. 'p' values were (P <0.001). The findings revealed that family intervention was very effective in experimental group when compared with control group.

Figure 2 Indicates that paired 't' test was done to see the changes between pre test and post test of control group, it was not significant (P = 0.048) and a significant difference was seen in experimental group (P<0.001) and unpaired 't' test for control pre test and experimental pre test were not significant (P<=0.141). Control group post test and experimental group post test score were analyzed and a significant difference was observed (P <0.001). The findings revealed that family intervention was very effective in experimental group when compared with control group.

**Table 1: Effectiveness of family intervention on AWARE score of persons with alcohol dependence syndrome**

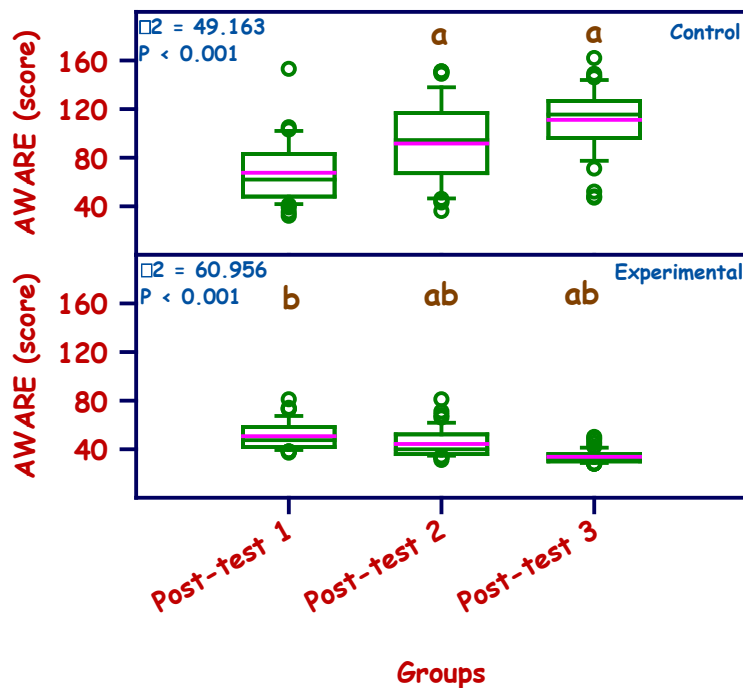
S.No.	Parameter	Group	Median (Percentile)
1	Aware (warning signs of relapse)	Control Post test 1	62 (48-83)
		Control post test 2	95 (67-117)
		Control post test 3	116 (96-127)
		Experimental Post test 1	48 (42-58)
		Experimental post test 2	40 (36-52)
		Experimental post test 3	32 (30-36)

n = 50 each, Statistical interpretation is given in Figure 1.

**Table 2: Assessment of gamma glutamyl transferase (GGT) of persons with alcohol dependence syndrome before and after family intervention**

S.No.	Parameter	Group	Mean± SE
1	Gamma Glutamyl Transferase (GGT)	Control Pre test	M=251.4
		Control post test	M=123.3
		Experimental pre test	M : 146.76
		Experimental post test	M : 23.7

n = 50 each, Statistical interpretation is given in Figure 2



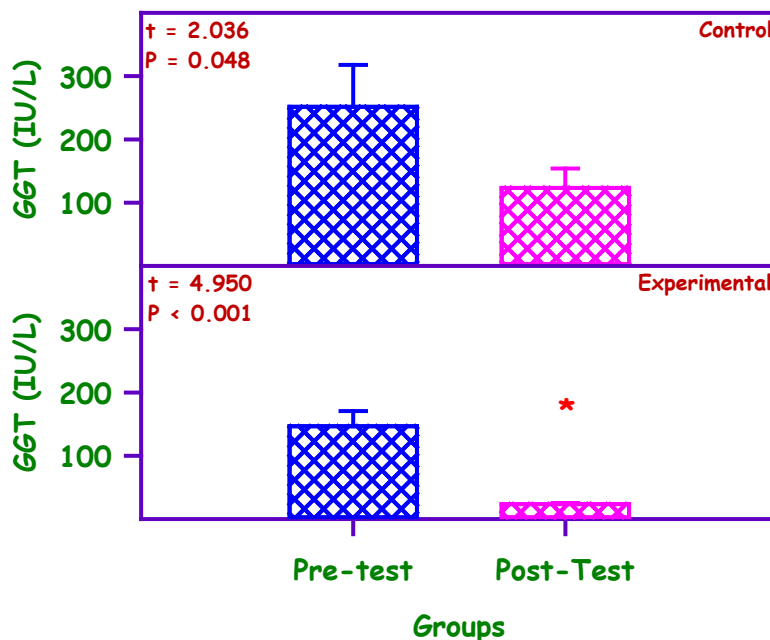
**Figure 1: Effectiveness of family intervention on relapse rate (AWARE SCORE) of persons with alcohol dependence syndrome (n = 50 each).**

The middle green line is the median and the pink line is the mean.

The control and experimental groups are evaluated by Friedman’s RM ANOVA on ranks with Dunn’s comparison with pre-test.

- a. Significantly different the respective post-test:** The post-test 1, post-test 2 and post-test 3 of control and experimental are compared by Mann Whitney rank sum test. The ‘T’ and ‘P’ values of post test 1 are 1643 and <0.001, the ‘T’ and ‘P’ values of post-test 2 are 2877 and < 0.001, the ‘T’ and ‘P’ values of post-test 3 are 3011 and < 0.001

b. Significantly difference in the post-test.



**Figure 2: Effectiveness of family intervention on gamma glutamyl transferase (GGT) among persons with alcohol dependence syndrome.**

Mean + SE (n = 50 each).

The ‘t’ and ‘P’ values are by paired ‘t’ test of pre-test and post-test.

The pre-test and post-test of control and experimental were evaluated by unpaired ‘t’ test. For the pre-test the ‘t’ and ‘P’ values are 1, 484 and 0.141, and for the post-test the ‘t’ and ‘P’ values are 3.348 and < 0.001.

\* Significantly different from control for the respective pre-test or post-test.

### Discussions

Alcohol relapse is a major problem in the society. It affects the person, family, society and nation as a whole. Research article shows that craving for alcohol is always a problem to restart alcohol. In order to avoid this, alcoholic person and family should get adequate awareness regarding relapse preventive measures. Involving family members especially spouse will influence the continuity of the treatment.

In this study relapse rate was measured by AWARE Questionnaire and assessment of serum gamma glutamyl transferase (GGT). AWARE Questionnaire was used for assessing the warning signs of relapse. It was done for control and experimental groups during their post test 1, 2 and 3. GGT assessment at admission time (pre test) and at third follow up (post test 3) Friedman’s

RM ANOVA on ranks by Dunn’s method was used to compare the values of post test 1, post test 2 and post test 3 of control and experimental group and experimental group had significant effect due to FFI (P<0.001). Between the groups were assessed by Mann whitney rank sum test, post test 1, post test 2 and post test 3 of control and experimental groups were shown significant changes. Experimental group had significant reduction in AWARE score compared with control group due to family intervention (P<0.001).

A similar study was performed to understand the warning signs of relapse among 84 individuals. They were assessed for one year in every two months intervals. The AWARE Scale was administered to find any slips or drinking to heavy drinking. Relapse rate for clients with highest AWARE Scores as projected by regression equations were 33 to 46 percent higher

than those with lowest AWARE Scores. The article conducted that Gorski's warning signs to be a reliable and valid predictor of alcohol relapses<sup>8</sup>.

Paired t test for GGT was done for pre test and post test of control group and pre test and post test of experimental group. Experimental group had significant reduction compared to control group ( $p < 0.001$ ). It was 83 percent reduction of GGT in experimental group where as 51 percent only in control group. GGT was used as a clinical marker for identifying relapse in this study. Family intervention helped the experimental group from relapse symptoms and reduction in serum values of GGT. A similar study was conducted to see the GGT level by a randomized control trial to evaluate the effect of intervention in excessive drinkers. 23.38 subjects were selected on raised GGT and randomized to intervention and control group. After 2 years GGT was decreased from 1.52 to 1.21 mkat/l ( $P=0.02$ ) in the intervention group. But in the control group it was increased from 1.75 to 2.16 mkat/l<sup>9</sup>.

A study was done to assess the deviation in blood chemistry in persons with substance abuse and its relationship with substance dependence. 93 subjects were selected and divided into three groups such as alcohol, opiate and amphetamine dependent. The result suggests that increased activity of gamma glutamyl transferase, AST and ALT were noticed in alcohol and opiate dependent people than amphetamine group<sup>10</sup>.

A similar case study was done for a client with alcohol dependence syndrome having poor motivation was selected for study. Psychosocial intervention including family intervention was provided to the patient and his family members. At the end of the therapy, the client improves knowledge regarding the illness and the motivation level was enhanced to action phase and achieved the coping skills to recover from relapse<sup>11</sup>.

The effect of family intervention on relapse rate had significant change in experimental group by the analysis of AWARE score and GGT. Control group also had changes in their score values than the pre test due to the effect of treatment followed by the de-addiction centre. However the effect of experimental group was better than the control group. Various modules of family intervention imparted to the persons with alcohol dependence syndrome in the experimental group and their spouses enabled them to change their past attitudes and to formulate a positive approach in their lives.

## Conclusion

The present study concluded that the result shows significant difference in the post test values of AWARE Score of experimental group when compared to control group after family intervention.

There is significant reduction of GGT in experimental group compared to control group after family intervention.

**Conflict of Interest:** The author had no relationship/condition/circumstances that present a potential conflict of interest.

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**Ethical Clearance:** This study was conducted after getting approval from the institutional ethics committee and after obtaining written consent from all subjects.

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