EFFECTIVENESS OF NURSE-LED COGNITIVE BEHAVIOR THERAPY (NLCBT) ON DEPRESSION AMONG ALCOHOLIC DEPENDENT CLIENTS IN A SELECTED DEADDICTION CENTRE

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DOI: http://doi.org/10.47211/trr.2020.v06i02.018

ABSTRACT:

Alcoholism and drug addiction affect the whole family: young, teenage, grown- up children, wives or husbands, brothers or sisters, parents or other relatives and friends. Various studies have found CBT alone to be as effective for treating less severe forms of anxiety among alcohol dependent clients when it compared to treating patients with psychoactive medications. An evaluative study was conducted to find out the effectiveness of Nurse Led Cognitive Behavioral Therapy on Level of Anxiety among Alcohol Dependent client. Quasi experimental pre and post-tests control group design was used. Purposive sampling technique was used to select the samples. The study was intended to reduce the level of anxiety among alcoholic use disorders clients who are subjected to a Nurse Led cognitive behavior therapy in a selected de addiction Centre's at Madurai. The principles are manipulation, control group and no randomization. Standard deviation and mean difference of pilot study was used to determine the sample size by using cohen's formula. Having multiple anxiety disorders (versus any specific anxiety disorder) at the baseline was the strongest predictor of having at least one active ("persistent") anxiety disorder at the follow up. Cross sectional analysis at the follow up showed that anxiety disorder persisted in the absence of a relapse to alcohol dependence far more often than relapse to alcohol dependence occurred in the absence of a persistent anxiety disorder.

***Key Words**: Depression, Alcoholism, drug addiction, alcohol dependence.*

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BACKGROUND OF THE STUDY

Alcohol misuse has wide-ranging adverse consequences. In the United States, nearly 88,000 people per year die from alcohol-related causes. Globally, alcohol accounts for 3.3 million deaths and 5.9 percent of all deaths every year. Alcohol use is widely prevalent in Indian society. It is one of the leading causes of death and disability globally and the same is true for country India. A total of 3.2% of deaths worldwide are caused by alcohol every year. One fourth to One third of male population drinks alcohol in India and neighboring south Asian countries. It is also found that alcohol use among Asian women in increasing **(WHO, 2010).**

Alcohol use is quite common in India both in rural and urban areas with prevalence rates as per various studies varying from 23% to 74% in males in general and although it's not that common in females but it has been found to be prevalent at the rate 24% to 48 % in females in certain sections and communities. In 2005 the estimated numbers of people using alcohol in India was 62.5 million with 17.4 % of them (10.6 million) having alcohol use disorder and of all hospital admissions in India 20-30% are due to alcohol related problems.

An estimated 2.2% of the world's population had either an alcohol or illicit drug use disorder in 2016. This equates to around 164 million people. An estimated 1.3 percent (more than 100 million people) had an alcohol use disorder in 2016 **(NIAAA, Strategic plan, 2016).**

Cognitive behavioral therapy (CBT) is a psycho-social intervention that aims to improve mental health. CBT focuses on challenging and changing unhelpful cognitive distortions (e.g. thoughts, beliefs, and attitudes) and behaviors, improving emotional regulation, and the development of personal coping strategies that target solving current problems. Originally, it was designed to treat depression, but its uses have been expanded to include treatment of a number of mental health conditions, including anxiety. CBT includes a number of cognitive or behavior psychotherapies that treat defined psychopathologies using evidence-based techniques and strategies **(Wikipedia, 2016).**

OBJECTIVES OF THE STUDY

1. To assess the level of depression among alcoholic dependent clients between experimental and control group in selected de-addiction Centre's.
2. To evaluate the effectiveness of Nurse-Led Cognitive Behavior Therapy on level of depression among alcoholic dependent clients in selected de addiction Centers.

Materials and Methodology:

An evaluative study was conducted to find out the effectiveness of Nurse Led Cognitive Behavioral Therapy on Level of depression among Alcohol Dependent clients. Quasi experimental pre and post-tests control group design was used. Purposive sampling technique was used to select the samples. The study was intended to reduce the level of depression among alcoholic dependent clients who are subjected to a Nurse Led cognitive behavior therapy in a selected de addiction Centre's at Madurai. The principles are manipulation, control group and no randomization. Standard deviation and mean difference of pilot study was used to determine the sample size by using Cohen's formula. The sample consists of 120 (60 samples in experimental group and 60 samples in control group) alcoholic dependent clients from three Neurotic Addiction Psychosis Hospice de addictions Centre, Madurai, Tamil Nadu.

DESCRIPTION OF THE TOOL

It is better to use the existing tool to save the time but is to be validated and reliability. The data was collected through tools such as socio-demographic proforma and depression scale. The standardized PHQ- GAD -9 depression questionnaires of Spitzer RL, Williams, Kroenke K et.al were used to assess depression level among alcoholic dependent clients. To validate the tool, it was subjected to seven experts. Content Validity Ratio was computed and the obtained value was +1. Reliability was done by using test- retest method. Karl Pearson formula and spearman's brown prophecy correlation value is 0.86 shown that the tool was highly reliable. Before implementation, pilot study was done and shown that the tools are feasible and accurate.

DESCRIPTION OF THE INTERVENTION (NLCBT): The aspects of NLCBT explained under following headings

1. Developing a nurse– patient relationship.
2. Collecting, analyzing and interpreting relevant information.
3. Assessment of level of depression related problems.
4. Establishing the effectiveness of NLCBT outcomes with the patients.
5. Determining feasible for interventions.
6. Selecting the best NLCBT techniques.

7. Designing a therapeutic monitoring plan
8. Implementing the group regimen and monitoring plan.
9. Follow up.

DATA COLLECTION PROCEDURE: The formal permission was taken from de addiction Centre's authority for the data collection and the investigator met the subjects and informed consent was obtained. The subjects were asked to answer a structured standardized questionnaire. After pretest, NLCBT demonstration of progressive muscle relaxation and worksheet were given for the experimental group whereas, control group have not received any intervention. Post test was conducted using the same tool, with an interval of every 7 days for 8 weeks to assess the effectiveness of NLCBT. The data was collected from 01/01/2021 to 28/02/2021. Data collection process was terminated after intimating the participants and thanking each respondent for their participation and co-operation.

ETHICAL CLEARANCE: The research title and objectives were approved by the research committee of Himalayan University, Itanagar, Arunachal Pradesh and from three selected Neurotic Addiction Psychosis Hospice de addiction Centre's, Madurai, Tamil Nadu. Confidentiality was ensured to the subjects. An informed consent was obtained from them and assured that they have rights to refuse to participate in the study and no physical and psychological pain was caused.

RESULTS AND ANALYSIS

Section A: Distribution of alcoholic dependent clients based on demographic variables.

Table .1 Frequency and Percentage Distribution of alcoholic dependent clients in Selected De Addiction Centre's according to their Socio Demographic Data. n = (60+60)

Table .1 shows that highest percentage (36.7%) of them in Experimental group, were belongs to 31 to 40 years, whereas highest percentage (35 %) of them were belongs to 41 to 50 years in control group. Almost all patients (100 %) were male in both Experimental and Control group, which is the limitation of the present study. Highest percentage (46.7%) of them were studied up to higher secondary level in Experimental group besides in Control group highest percentage (33.3%) of them were educated up to higher school level. In Experimental group, highest percentage (46.7%) of them were belongs to daily wages, in Control group highest percentage (52.3 %) of them were belongs to daily wages. Majority of them were married in Experimental (80%) and Control (85 %) group respectively. Further, majority of them in Experimental (88.3%) and Control (81.7%) group respectively were belonging to nuclear family. Highest percentage (63.3%) and (56.7 %) of them in Experimental and Control group were having 1 – 2 children and in contrast minimum (3.3%) and (5%) of them were having 5-6 children respectively. Highest percentage highest of them in Experimental (40%) and Control (35 %) group respectively were having Rs. 10001/. to Rs.15000/. Majority of them in Experimental (66.7%) and Control (56.7%) were belonging to Hindu religion.

Table .1 data shows clinical variables related to alcohol dependence shows that highest of them in Experimental (50%) and Control (33.3%) group respectively were having habit of drinking all type of alcohol, highest (38.3 %) of them were belongs 23 -26 years of age in Experimental group and in Control group majority (40%) of them were belongs to 19-22 years. Majority of them in Experimental (45%) and Control (38.3%) group were drinking alcohol for 6-10 years. highest and of them in Experimental (55%) and Control (51.7%) group were having Family History of drinking habit of alcohol. Majority of them in Experimental (86.7%) and Control (81.7%) group were not having knowledge about CBT. Majority of them in Experimental (86.7%) and Control (81.7%) group were not attended class on CBT. Majority of them in Experimental (70%) and Control (65%) group respectively were admitted in that de-addiction centre. Majority of them in Experimental (78.3%) and Control (85%) group respectively were willing to stop drinking alcohol.

Table No .1, Frequency and Percentage of Experimental Group Post-test of Nurse Led Cognitive Behavior Therapy on Level of Depression on alcoholic dependent clients in a Selected De-Addiction Centre's.

n=60

Level of depression	Experimental Group																	
	Pre - Intervention		Post- Intervention															
	Pre -Test		Post -Test 1		Post -Test 2		Post -Test 3		Post -Test 4		Post -Test 5		Post -Test 6		Post -Test 7		Post -Test 8	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	9	15	37	61.67
Moderate	7	11.67	7	11.67	8	13.33	10	16.66	13	21.67	23	38.33	52	86.67	50	83.33	23	38.33
Moderate Severe	6	10	22	36.67	25	41.67	37	61.67	43	71.66	37	61.67	8	13.33	1	1.67	0	0
Severe	47	78.33	31	51.67	27	45	13	21.67	4	6.67	0	0	0	0	0	0	0	0
Total	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**

The data presented in table shows**,** that majority 31 of them had severe level of depression among experimental group. In post-test one 51.6%, post-test two 45%, post-test three 21%, and post-test four 6.6% respectively had severe level of depression.

Post test1 to 6 none of them had mild level of depression. post-test seven 15% and posttest eight 61.6 % of them had mild level of depression and post-test eight 38.3 % of them had moderate level of depression.

It indicates that level of depression reduced after implementation of NLCBT.

Table .2, Frequency and Percentage of Control Group of Post-test Nurse Led Cognitive Behavior Therapy on Level of Depression among alcoholic dependent clients in a Selected De-Addiction Centre's.

n=60

Level of depression	**Control Group**																	
	Pre - Intervention		**Post- Intervention**															
	Pre -Test		**Post - Test 1**		**Post - Test 2**		**Post - Test 3**		**Post - Test 4**		**Post - Test 5**		**Post - Test 6**		**Post -Test 7**		**Post -Test 8**	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Mild	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Moderate	5	8.33	5	8.33	6	10	7	11.67	10	16.67	11	18.33	13	21.67	15	25	17	28.33
Moderate Severe	6	10	12	20	14	23.33	15	25	15	25	18	30	17	28.33	26	43.33	30	50
Severe	49	81.67	43	71.67	40	66.67	38	63.33	35	58.33	31	51.67	30	50	19	31.67	13	21.67
Total	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**	**60**	**100**

Table No .2 the data shows that majority 81.6 of them had severe level of depression among control group. In post-test one 71.6%, post-test two 66.6 %, post-test three 63.3%, post-test four 58.3 %, post-test five 51.6%, post-test six 50%, post-test seven 31.6% and post-test eight 21.6% respectively had severe level of depression.

Post-test 1 to 8 none of them had mild level of depression but in post-test eight 50 %, 28.3% of the were remain had moderately severe and moderate level of depression.

Hence it indicates that only minimal reduction in level of depression among control group.

- **Part II:** Description of Pre- and Post-test of Depression score on NLCBT alcoholic dependent clients**.**
- **Table .3 Description of overall Mean, SD and Mean percentage depression Scores of Pretest (A_1) and consequent post-test one (A_2) post-test two (A_3), post-test three (A_4) post-test four (A_5), post-test five (A_6), post-test six (A_7), post-test eight (A_8) and post-test nine (A_9) among alcoholic dependent clients on NLCBT in the experimental and the control group.**

n=60

Area	Experimental Group				Control Group				Diff. In Mean %
	Max Score	Mean	SD	Mean %	Max Score	Mean	SD	Mean %	
Pre - Test (D_1)	27	23.08	1.87	85.48	27	22.97	1.64	85.07	0.41
Post-test one (D_2)	27	21.60	1.61	80	27	22.87	1.73	84.70	4.70
Post-test two (D_3)	27	20.82	1.79	77.11	27	22.67	1.70	83.96	6.85
Post-test three (D_4)	27	19.10	2.43	70.74	27	22.63	2.24	83.81	13.07
Post-test four (D_5)	27	17.40	2.11	64.44	27	22.58	1.85	83.62	19.18
Post-test five (D_5)	27	14.93	1.84	55.29	27	22.17	2.47	82.11	26.82
Post-test six (D_7)	27	12.48	1.75	45.85	27	22.03	2.75	81.59	35.74
Post-test seven (D_8)	27	9.73	2.03	36.03	27	21.88	4.08	81.03	45.00
Post-test eight (D_9)	27	7.25	1.89	26.85	27	21.5	4.06	77.96	51.11

Table .3 Represented that in experimental group, mean depression scores of post-test eight, post-test seven, post-test six, post-test five, post-test four, post-test three, post-test two and post-test one was lesser than the pre-test mean level of depression score 23.08 ±7.25. where in control group mean depression scores of post-test eight, post-test seven, post-test six, post-test five, post-test four, post-test three, post-test two and post-test one was lesser than the pre-test mean level of depression score 22.97 ± 21.5 so there is a minimal decrease in level of depression. The overall difference in mean percentage between experimental and control group is 51.11%.
Hence it is concluded that there is a significant reduction in the level of depression in experimental group than control group after intervention of (NLCBT) among alcoholic dependent clients.

Effectiveness of NLCBT on depression among alcoholic dependent clients.
Normality of the distribution through Kolmogorov – Smirnov goodness of fit test:
purposive sampling technique was adopted to select the alcoholic dependent use disorders patients**.** The investigator wants to use the parametric test to compute repeated measures ANOVA. Therefore, the Kolmogorov-Smirnov test was applied to check the sample for normal distribution.

Table .4 Description of normal distribution using one sample Kolmogorov–Smirnov test for Pre-test depression score (A_1) among alcoholic dependent clients in both experimental and control group.

n= (60+ 60) = 120

Group	Test Parameters				Most Extreme Differences		
	Mean	SD	D Value	P value	Absolute	Positive	Negative
Experimental Group	23.08	1.87	0.138	0.064	0.138	0.119	-0.138
Control Group	22.96	1.63	0.203	0.063	0.203	0.123	-0.203

Table .4 shows the mean and the standard deviation of the pre-test knowledge score of experimental group 23.08 ± 1.87 and control group 22.96 ±1.63. The result showed that the test distribution was normal. Hence it was inferred that the sample came from normal distribution. It indicates that all the observations in experimental and control group follow normal distribution.

Testing Hypotheses

This section deals with the significance of difference between the pre-test and consecutive post-tests depression scores of alcoholic dependent clients on NLCBT. A Repeated measure of ANOVA was used to test the hypothesis.
The first step was to check for the sphericity by applying Mauchly's test of Sphericity.

Table .5, Mauchly's test of sphericity for depression Scores of Pretest (D_1) and consequent post-test one (D_2) post-test two (D_3), post-test three (D_4) post-test four (D_5), post-test five (D_6),post-test six (D_7), post-test eight (D_8) and post-test nine (D_9) among alcoholic dependent clients on NLCBT in both experimental and control group. **n=60+60=120**

Group	Mauchly's W	Approx. Chi-square	Df	Sig.	Sphericity Assumed	Epsilon		
						Greenhouse-Geisser	Hyunch-Feldt	Lower bound
Experimental Group	0.864	260.35	35	0.000	0.047	0.481	0.519	0.125
Control Group	0.10	110.48	35	0.132	0.088	0.565	0.618	0.125

The above **Table .5** depicts computed Mauchly's W was 0.864 for experimental group and 0.10 for control group for the depression variable among the alcohol use disorder clients. In experimental group P value is 0.000, which is lesser than 0.05 level of significance. Hence Mauchly's test sphericity was not assumed. In control group P value is 0.132 which more than 0.05 level of significance. Hence Mauchly's test of sphericity was assumed.

In experimental group, Mauchly's test sphericity was not assumed therefore epsilon correction for degrees of freedom was carried out. Hence the Greenhouse-Geisser value was considered, i.e., 0.481 for experimental group since its value is < 0.519 and in control group, Mauchly's test sphericity was assumed. Hence the sphericity assumed value was considered i.e. 0.088. Hence it is concluded that the variances between the 9 sets of scores are not equal in experimental group and equal in control group.

Table .6 Levene's test for equality of Variances for pre-test depression score (D1) on NLCBT among alcoholic dependent clients in both experimental and control group.

n=60+60=120

Levene's test				
Group	**Mean**	**SD**	**F**	**P value**
Experimental Group	23.08	1.87	0.132	0.717
Control Group	22.96	1.63		

The above **Table .6** depicts the Levene's test for equality of variances. The pre-test depression mean and SD for experimental group was 23.08±1.877 and for control group was 23.96± 1.63. The Levene's test indicated equal variances (F=0.132, p= 0.717) between experimental and control group. Hence, the investigator concluded that there was homogeneity in pre-test anxiety score between experimental and control group.

Part III: Effectiveness of NLCBT on depression score among alcoholic dependent clients.

Table .7 ANOVA for repeated measure of Experimental and Control groups to assess effect of Nurse Led cognitive behavior therapy on depression among Alcoholic Dependent Clients in a Selected De-Addiction Centre's. n= (60+60) =120

Observation	Experimental Group				Control Group			
	Mean	SD	f Value	p value	Mean	SD	f Value	p value
Pre - Test (D_1)	23.08	1.87	488.979	**0.00 HS**	22.97	1.64	1.65301	**0.10727 NS**
Post-test one (D_2)	21.60	1.61			22.87	1.73		
Post-test two (D_3)	20.82	1.79			22.67	1.70		
Post-test three (D_4)	19.10	2.43			22.63	2.24		
Post-test four (D_5)	17.40	2.11			22.58	1.85		
Post-test five (D_5)	14.93	1.84			22.17	2.47		
Post-test six (D_7)	12.48	1.75			22.03	2.75		
Post-test seven (D_8)	9.73	2.03			21.88	4.08		
Post-test eight (D_9)	7.25	1.89			21.5	4.06		

HS - Highly significant, NS - Not Significant

The data presented in Table No..7, shows the computed value of ANOVA. ANOVA is a method used to compute the means of repeated measurement. An 'F' test is used to test the null hypotheses that means of all the groups are equal. The data presented in the table 8 shows that there was highly significant reduction in level of depression post-test eight, post-test seven, post-test six, post-test five, post-test four, post-test three, post-test two and post-test one were lesser than pre-test mean level of anxiety score in the experimental group ($F= 386.44$, $p< 0.001$) than control group ($F= 73.06$, $p< 0.05$).It is concluded that there is an effectiveness of Nurse Led cognitive behavior therapy on anxiety among alcoholic dependent clients. Hence, the investigator rejected the null hypothesis (H_{01}) and accepted the research hypothesis (H_2).

Table .8 Description of depression Scores on NLCBT within Experimental and Control Groups through Post Hoc Bonferroni test. **n= (60+ 60) = 120**

Area		Experimental Group			Control Group		
		Mean Difference	SE	P Value	Mean Difference	SE	P Value
Pre-test (D_1)	Post-test one (D_2)	1.483	.120	.000	.100	.201	1.000
	Post-test two (D_3)	2.267	.242	.000	.300	.218	1.000
	Post-test three (D_4)	3.983	.328	.000	.333	.291	1.000
	Post-test four (D_5)	5.683	.296	.000	.383	.259	1.000
	Post-test five (D_5)	8.150	.297	.000	.800	.294	.306
	Post-test six (D_7)	10.600	.303	.000	.933	.315	.159
	Post-test seven (D_8)	13.350	.372	.000	1.083	.457	.762
	Post-test eight (D_9)	15.833	.354	.000	1.467	.452	.070

***** Significant at 0.001 level (P< 0.001)**
*** Significant at 0.05 level (P< 0.05)**
NS – Not significant (P > 0.05)

The post hoc analysis using Bonferroni test presented in Table 4.18 shows that there were significant changes in mean difference at different times of observation in anxiety scores from pre-test to post-test in the experimental ($p<0.001$) and mean difference was from 1.483 to 15.833. The post hoc Bonferroni test showed the difference between pre-test and consequent post-test was not by chance and there was highly significant between the consecutive assessments. Hence NLCBT was effective in reduction of depression among alcohol use disorder clients in the experimental group. In control group mean difference at different times of observation in skill scores from pre-test to post-test was ($p>0.05$, $p<0.05$) and mean difference was from 0.100 to1.467. There was no significant difference between pre-test and post-test one, pre-test and posttest scores.

To test the statistical significance of post-test knowledge score between experimental and control group the following null hypothesis was formulated.

H02: The mean post-test depression score of alcoholic dependent clients on NLCBT in the experimental group will be not significantly higher than that of the control group as measured by depression tool.

Table .9 Description of depression Scores on NLCBT between Experimental and Control Group through Multivariate Statistics MANOVA. n= (60+ 60) = 120

Area		Mean Difference	SE	F Value	P Value
Experimental Group	Control Group				
Pre-test (D_1)	Pre-test (D_1)	.11667	.320	.13	.717
Post-test one (D_2)	Post-test one (D_2)	-1.26667	.305	17.24	.000
Post-test two (D_3)	Post-test two (D_3)	-1.85000	.319	33.62	.000
Post-test three (D_4)	Post-test three (D_4)	-3.53333	.426	68.48	.000
Post-test four (D_5)	Post-test four (D_5)	-5.18333	.363	203.66	.000
Post-test five (D_5)	Post-test five (D_5)	-7.23333	.397	330.70	.000
Post-test six (D_7)	Post-test six (D_7)	-9.55000	.421	513.35	.000
Post-test seven (D_8)	Post-test seven (D_8)	-12.15000	.588	426.28	.000
Post-test eight (D_9)	Post-test eight (D_9)	-14.25000	.578	607.00	.000

***** Significant at 0.001 level (P< 0.001)**

NS – Not significant (P > 0.05)

The data presented in the above table 4.19 shows comparison depression score between experimental and control group. From the findings, F=0.132, 17.246, 33.625, 68.484,203.667, 330.705, 513.354, 426.280, 607.001 values were significant (P<0.001). The null hypothesis ($H0_2$) was rejected, hence the research hypothesis (H_2 was accepted. It is concluded that NLCBT was effective in reduction of depression among alcoholic dependent clients in the experimental group.

DISCUSSION:

In this study, level of depression among alcoholic dependent clients was assessed by the Robert Patient Health Questionnaire (PHQ) GAD-9 depression, the level of depression among alcoholic dependent clients depicts that majority of them were having severe level of depression in both experimental (78%) and control (82.3%) group. An evaluative study was conducted by **Bador K (2019**), on Integrated Intensive Cognitive Behavioral Therapy Treatment within Addiction Care. The study population consisted of 35 outpatients (18 males, 17 females) at a clinic in Western Sweden. The patients completed a four-month period of intensive group therapy and participated in the data collection at admission and discharge. The data were collected using the following inventories: Beck Depression and Anxiety Inventories, Rosenberg Self-Esteem Scale, Hopelessness Scale, and Trait Hope Scale. Results showed decreases in anxiety, depression, and experience of hopelessness, and increases in self-esteem and hope.

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