# Research Article

# EVALUATE THE EFFECTIVENESS OF COGNITIVE BEHAVIOUR THERAPY (CBT) ON DEPRESSION AMONG DETOXIFIED INMATES OF DE-ADDICTION CENTERS AT SELECTED DISTRICTS OF RAJASTHAN

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| ARTICLE INFO | ABSTRACT |
|---|---|
| | Psychoactive substance such as Alcohol, Heroine, Opioids, and Cannabis etc. has been used by human in all culture from prehistoric period. People abuse these substances for many different reasons. Continuous use of substance may alter brain function which lead many mental disorder. Aim of the study to evaluate the effectiveness of cognitive Behaviour Therapy (CBT) on depression among detoxified inmates. The research design was adopted for the study was quasi experimental non-equivalent control group design. Researcher planed face-to-face interview to collect the data. The tool consisted of demographic variables (Personal or Clinical data) & Beck Depression Inventory - II (BDI-II) was used. The study sample consist 131 detoxified inmates (experimental group = 70, control group = 61). In which 08 CBT sessions (weekly once) were provided by the researcher in a counselling room set-up. The finding of the study showed that in experimental group pre-test – follow-up mean difference was 15.55, 't' value was 28.429, (P = 0.001,Significant), where as in control group pre-test – follow-up mean difference was 11.06, 't' value was 18.526,(P = 0.001, significant). The result revealed that CBT was more effective on depression in experimental group as compare to control group. |

## INTRODUCTION

Substances have been used by the human race since the stone age when fermented drinks were made from plants saps and wild fruits. Earlier in 8000 BC wine was a most popular drink in Egypt, whereas in 4000 BC narcotic drugs were popular in Europe & the use of marijuana was common in 2737 BC for medical purpose in China.[1]

Tobacco, Alcohol, heroin, Cannabis, opioid and prescription drugs are the most often abused substances in India. Use of such substances has been in existence in India from the period of Mahabharata. Alcohol was known as "Somras" "Sura" traced to year 2000 B.C. Some substance has discovered religious sanctity just because of that illicit drugs are abused in the country, name as few Alcoholic beverage, Opioids & Cannabis products like charas, bhang, or ganja.[2]

Depression is most common mental disorder in the world. It carries heavy burden on society. Globally it is estimated that nearly 350 million all age group people suffer from depression. In the worst condition depression leads suicide. Nearly one million people in the world commit suicide every year.[3] Depression can occur at any stage during the life, the median age among the US population was identified 32.5 years, approx 14.8 million (6.7%) adult over the age of 18 yrs suffer from depression.[4]

### Objectives of the study

1. To assess the level of depression among detoxified inmates of De-addiction centers at various districts of Rajasthan.
2. To evaluate effectiveness of cognitive behavior therapy on level of depression among detoxified inmates of De-addiction centers at various districts of Rajasthan.

### Null-Hypothesis

- $H_0 1$ There is no statistically significant relationship between the obtained score of depression & detoxified inmates of de-addiction centers at various districts of Rajasthan.
- $H_0 2$ There is no statistically significant relationship between the effect of Cognitive Behaviour Therapy

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(CBT) & score obtained on the level of depression among detoxified inmates of de-addiction centers at various districts of Rajasthan.

## MATERIALS AND METHODS

**Research Approach:** Quantitative experimental research approach.

**Research Design:** Quasi – experimental research design; Non-equivalent control group design / Non-randomized control group design.

Exp. Group  Per-test  Treat.  Post-test
Con. Group  Pre-test  ------  Post-test

**Population of the study:** All detoxified Male inmates of de-addiction centers at various districts of Rajasthan.

**Sample:** All detoxified Male inmates of de-addiction centers.

**Sampling Techniques**: Consecutive sampling technique was used for the present study. Initially researcher contacted 19 de-addiction centers of various districts of Rajasthan. The managing committee of 07 de-addiction centers did not permited to conduct the study. Hence, researcher decided to conduct his research study on remaining 12 de-addiction centers only.

**Sample Size:** Initially 285 Detoxified Male inmates were included from the various de- addiction centers at various districts of Rajasthan. Out of 285 detoxified inmates, researcher found depression among 143 inmates only & researcher started his study on the same inmates. But, in between 12 detoxified inmates were dropped out from the research study because they were irregular for the CBT sessions. So, finally researcher decided to conduct his study on remaining 131 detoxified male inmates.

**Sampling Criteria:** The following criteria were set to select the sample.

### Inclusion Criteria

- Detoxified male inmates of de-addiction centers at various districts of Rajasthan.
- Those male inmates aged 18 to 57 years received treatment for any one drug of abuse or alcohol abuse diagnosed according to ICD-10 DCR criteria.
- Minimum education level of sample was primary class to make them understand well about the process of CBT.

### Exclusion Criteria

- Those detoxified Male inmates who had spent less than 01 months at de-addiction centers at various districts of Rajasthan.
- Female inmates were not included in the study due to non availability of female inmates in de-addiction centers.
- Inmates who were taking treatment for Depression.
- According to ICD -10 DCR inmates who were suffering with comorbid psychiatric disorder, personality disorders, major physical illnesses, organic brain syndromes, mental retardation, etc.
- Inmates who have multiple substance abuse i.e.

- Alcohol with tobacco smoking & drug abuse co-morbidity or vice versa.
- Drug abuse with alcohol & tobacco smoking co-morbidity or vice versa.
- Inmates dependent on anti-depressant drugs.

### Data Collection Technique & Tool

**Part I – Socio-Demographic Proforma:** Consists of 12 items of socio-demographic variables, which includes information of respondents about Age, Religion, Types of family, Habitat, Marital status, Educational qualification, Occupation, Family monthly income, Choice of substance, Period of using substance, period of abstinence, Family history of substance abuse. Part II- Beck Depression-II Inventory (BDI- II) for assessment of depression.

Tool consist 33 items (Socio-demographic and BDI- II) which were translated & validated in to vernacular language. The comprehension, feasibility and time required to complete the statement was assessed. The average time taken for completion of the tool was 20 minutes & scoring time was 02 minutes. The language was found to be clear and the items were easily comprehended by the sample.

### Procedure

After obtained informed written consent / willingness to collect the data from participant's, direct interview (face-to-face) was conducted with each individual & confidentiality of study subject was assured & Standardized assessment tools were administered in a counseling room to obtained pre-test score. 08 weeks (weekly once) CBT sessions were conducted with detoxified inmates. Based on the pre-test obtained depression score Cognitive Behavior Therapy (CBT) intervention was planned by the researcher. Post-test assessment for depression was conducted 08 weeks after completing the CBT sessions & further follow-up session was conducted after 30 days of post-test assessment in the same sat-up.

## RESULT AND DISCUSSION

### Description of Participants According to Personal data

Experimental group i.e. 47%, control group i.e. 50% participants belonged to the age group of 18 - 27 years. In experimental group i.e. 58% & control group i.e. 48% participants were Hindu. Most of the participants in experimental group i.e. 54%, in control group i.e. 61% belonged to nuclear family. Majority of participant in experimental group i.e. 35%, in control group i.e. 41% belonged to the urban area. In experimental group i.e. 57%, in control group i.e. 62% participants were married, which formed majority. Most of the participants in experimental group i.e. 32%, in control group 30% of participants studied up to Primary class. In experimental group i.e. 28% & in control group i.e. 32% majority of participants were Private employed. In experimental & control group majority of participant's monthly family income was more then 20,000/- i.e. 28% & 31% respectively. In experimental group majority consumed alcohol i.e. 52% & 48% were drug addicts, where as in control group majority consumed alcohol i.e. 51% & 49% were drug addicts respectively.
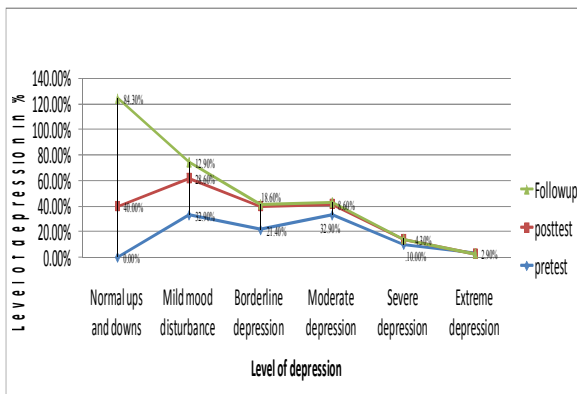
**Table 1** Level of Depression among Experimental Group.   N = 70

| Sr. No | Classification | Total Score | Level of Depression | Pre- test | Percentage (%) | Post-test | Percentage (%) | Follow up | Percentage (%) |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Low | 1 - 10 | Normal ups and downs | 00 | 0.0% | 28 | 40.0% | 59 | 84.3% |
| | | 11 – 16 | Mild mood disturbance | 23 | 32.9% | 20 | 28.6% | 09 | 12.9% |
| 2. | Moderate | 17 – 20 | Borderline clinical depression | 15 | 21.4% | 13 | 18.6% | 01 | 1.4% |
| | | 21 – 30 | Moderate depression | 23 | 32.9% | 06 | 8.6% | 01 | 1.4% |
| 3. | Significant | 31 -40 | Severe depression | 07 | 10.0% | 03 | 4.3% | 00 | 0.0 % |
| | | Over 40 | Extreme depression | 02 | 2.9% | 00 | 0.0 % | 00 | 0.0 % |

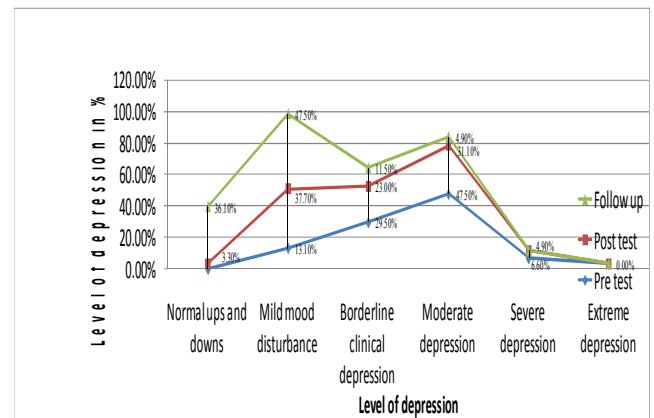**Table 2** Level of Depression among Control Group. N = 61

| Sr. No | Classification | Total Score | Level of Depression | Pre-test | Percentage (%) | Post-test | Percentage (%) | Follow up | Percentage (%) |
|---|---|---|---|---|---|---|---|---|---|
| 1. | Low | 1 - 10 | Normal ups and downs | 00 | 0.0 % | 02 | 3.3% | 22 | 36.1% |
| | | 11 – 16 | Mild mood disturbance | 08 | 13.1% | 23 | 37.7% | 29 | 47.5% |
| 2. | Moderate | 17 –20 | Borderline clinical depression | 18 | 29.5% | 14 | 23.0% | 07 | 11.5% |
| | | 21 – 30 | Moderate depression | 29 | 47.5% | 19 | 31.1% | 03 | 4.9% |
| 3. | Significant | 31 -40 | Severe depression | 04 | 6.6% | 03 | 4.9% | 00 | 0.0% |
| | | Over 40 | Extreme depression | 02 | 3.3% | 00 | 0.0 % | 00 | 0.0% |

Most of the participants in experimental group i.e. 37% & control group i.e. 36% were using substance more than 10 yrs. In experimental group i.e. 53% & control group i.e. 46% were not using substance 1–3 months. Majority of participants in experimental group i.e. 63% & control group i.e. 63% admitted history of substance use in the family.



**Fig 1** Level of Depression among Experimental Group

Table-1 & Fig.-1 showed pre-test, post-test & follow-up level of depression. In experimental group pre-test majority inmates had moderate depression i.e. in 32.9%, in post-test majority inmates had normal ups & down i.e. 40.00%, and whereas in follow up majority inmates had normal ups & down i.e. in 84.3%.So, there was significant association between experimental group depression score & detoxified inmates of de-addiction centers at various districts of Rajasthan. Hence, the null hypothesis $H_01$ was rejected.



**Fig 2** Level of Depression among Control Group.

Table-2 & Fig.-2 Projected pre-test, post-test, follow-up level of depression. In control group pre-test majority inmates had moderate depression i.e. in 47.5%, in post-test majority inmates had mild mood disturbance i.e. in 37.7%, whereas in follow up majority inmates had mild mood disturbance i.e. in 47.5%.

So, there was significant association between control group depression score & detoxified inmates of de-addiction centers at various districts of Rajasthan. Hence, the null hypothesis $H_01$ was rejected.

**Table 3** Beck Depression Inventory – II (BDI – II) Score   N = 131

| BDI – II Test | Group | N | Mean | Std. Deviation | Std. Error Mean | Mean Diff | t | P Value |
|---|---|---|---|---|---|---|---|---|
| Pre-test Total BDI | Experimental Group | 70 | 21.91 | 8.095 | .968 | - 1.430 | - 1.067 | 0.288 |
| | Control Group | 61 | 23.34 | 7.099 | .909 | | | |
| Post-test Total BDI | Experimental Group | 70 | 13.76 | 6.723 | .804 | - 4.931 | - 4.295 | 0.001 |
| | Control Group | 61 | 18.69 | 6.358 | .814 | | | |
| Follow Up Total BDI | Experimental Group | 70 | 6.36 | 4.188 | .501 | - 5.922 | - 7.989 | 0.001 |
| | Control Group | 61 | 12.28 | 4.282 | .548 | | | |
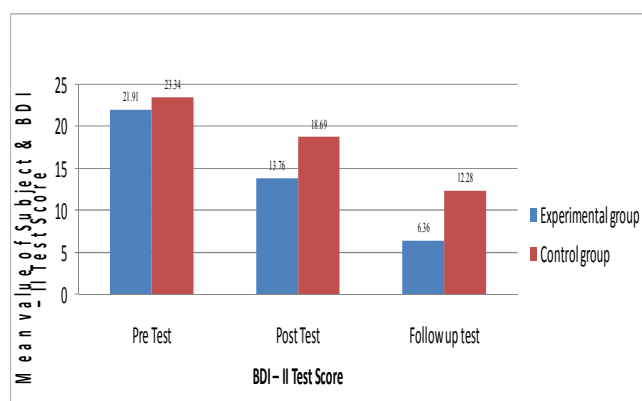
**Fig 3** Beck Depression Inventory – II (BDI – II) Score

Above Table-3 & Fig.-3 revealed that the mean value of pre-test, post-test, follow-up test depression among experimental group & control group. In experimental group pre-test mean score was 21.91. In control group pre-test mean value was 23.34,'t'= - 1.06, (P= 0.288) In experimental group post-test mean score was 13.76, in control group pre-test mean value was 18.69, 't'= - 4.29, (P =0.001, Significant). In experimental group follow up test mean score was 6.36 In control group pre-test mean value was 12.28,'t'=-7.98, (P=0.001, Significant).

So, there was significant association between effect of Cognitive Behaviour Therapy & obtained score of depression among experimental group detoxified inmates of de-addiction centers at various districts of Rajasthan. Hence, the null hypothesis $H_02$ was rejected.

## DISCUSSION

A cross sectional study was conducted on 42 substance abuse patients at Kathmandu medical college. Researchers used Hamilton rating scale to identify depression level. Data revealed that 31 i.e. 73.8% participants were suffering with depression, in which 19 i.e. 45.2% had mild to moderate depression, 12 i.e. 28.6% had moderate depression.[5]

Another study was conducted on dysthymia, major depression, and double depression among individuals receiving substance abuse treatment among 336 male substance abuse inmates at Florida (USA.). Researcher used convenient sampling technique, result showed that 41.4% inmates had dysthymia, 4.5% inmates had Major depressive disorder and only 14% inmates had Double depression.[6]

Another study conducted on 105 alcoholic out- patients' subjects (male 76 & female 29) to identify Self-reported precedence of depression in alcoholism. Researcher used, Beck Depression Inventory, Beck Hopelessness Scale, Scale for Suicidal Ideation, and Hamilton Psychiatric Rating Scale to analyze level of Depression. Result showed that Depression was described by 45.7% of the alcoholics as having preceded their starting to drink heavily; 15.2% denied ever having been depressed and 39.1% stated that their alcoholism had preceded the development of depression.[7]

A cohort study was conducted on 12-month outcome from the Australian treatment study center (ATSC). Researcher used BDI – II to identify depression among 495 heroine users. Result revealed that in pre-test current rate of major depression was identified in 26.00% & it declined up-to 11.00% in follow-

up test. Results also indicated that depressed subjects had less exposure to Methadone / Buprenorphine maintenance & residential rehabilitation during follow-up period, & subjects spent more time in detoxification period.[8]

A quasi experimental study was conducted among 19 alcoholic inmates. Researchers used Beck depression inventory (BDI) to analyze level of depression & also conducted 8 individual CBT sessions among identified depressed inmates & follow up sessions were planned after 3 months & 6 months. Result revealed that subjects had greater reduction in somatic depression score. During the follow-up sessions subjects had better significant outcome (47% vs. 13%).[9]

Meta analysis of 33 studies was conducted in Australia on Cognitive behavioural therapy for depression. Result indicated that CBT is more effective for mild to moderate depression 0.68, 95% confidential interval, 01 = 0.51-0.84. Study also indicated that CBT is less effective in severe depression disorder.[10]

### Acknowledgement

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