

# Efficacy of Acceptance and Mindful Based Relapse Prevention Program on Emotion Regulation Difficulty among Alcoholics in Kerala India

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## Abstract

Alcoholism is the devastating deadly disease destructively affects the individual, family and society. It is progressive and damaging that controls thinking and emotions of the alcoholic and produces severe consequences on physical and psychological well-being. Dysregulation of emotions is the important causal factor of alcohol dependence and relapse vulnerability. Growing evidence suggests that emotion regulation underlie clinically significant behaviors and psychological difficulties among the alcoholics. In response to these problems researcher integrates a focuses on difficulties in emotion regulation developed an intervention program based on acceptance and commitment strategy along with mindfulness and behavior change process. The study has two phases; Program development and assessment of the efficacy of the program in reducing emotion regulation difficulty thereby total abstinence and replacement of addictive pattern of behavior through experimental methods. Total 32 alcohol dependence randomly assigned to control (N=16) and experimental (N=16) situation. The difficulties in emotion regulation (DERS) scale was administered. The mean, paired sample t-test, independent sample t-test, and Cohen's d were utilized for data analysis. The null hypothesis tested at 0.05 level of significant. Pre-test and post-test scores of the experimental group showed significant difference (P=0.00) that revealed the effectiveness of the intervention program.

**Keywords:** Alcohol dependence; Difficulties in emotion regulation; Acceptance and commitment therapy; Mindfulness

## Introduction

Alcohol dependence is one of the global problems that affect the complete welfare of an alcoholic. Alcohol dependence is associated with various disparaging consequences for the individual drinker, the alcoholic's family and society at large such social consequences as traffic accidents, workplace-related problems, family and domestic problems, and interpersonal violence. Alcohol dependence leads to high health risks. According to [1] destructive nature of alcohol dependence is a causal factor for more than 200 major types of sickness and injuries. These health deficits cause 3.3 million deaths per annum. The worst effect is estimated as 20-50% on the physical health like cirrhosis of the liver, epilepsy, poisonings, and various types of cancer. It acts as a high risk among the younger generation comparatively to other populations [2].

Alcoholism potentially contributes to the damage of the liver, nervous system, and immune system. The easier and faster recognized effects of alcohol intoxication involve dysfunction of the central nervous system. The effects of alcohol concentration increase in the blood leads to depressant action in the brain which turns into memory and the voluntary motor skills impairment. The excessive intake of large amount of alcohol has longer devastating effects in the blood and immune system causing abnormalities in the blood, low hemoglobin and low platelets which can lead to cell death that makes the body difficult to fight bacterial infections. This makes an alcoholic more vulnerable to immune disease [3].

Another great injury linked with alcohol abuse is alcohol use disorders. Among the 30 international classification of disease (ICD10), out of which ten codes include alcohol definition pointing to alcohol abuse. Remarkably, ICD focuses on alcohol use disorders (AUD'S) and highlights its significance. Alcohol use disorders (AUD) include not only diagnostic categories of the harmful effects of alcohol and its dependence but also its psychosis features like delusion and difficult to contact with present reality. Alcohol dependence also points to group

of behavioral, cognitive, and physiological phenomena which strongly motivate an alcoholic to consume alcohol irrespective of its serious consequences [2].

Alcohol consumption in India has been dramatically raised about 62.5 million people in India infrequently consuming alcohol. Kerala is the Southern State of India and considered most progressive and developed in terms of social welfare, high rate of literacy, quality of life, high standards of educational and health care system [4]. Furthermore Kerala is tagged as God's own country with different religious faith and beliefs. The state is rich in spirit of tolerance and understanding among the various religious groups and traditions [5]. According to Tourism Secretary, Suman Billi alcoholism is a problem in Kerala despite its social, economic, and other forms of growth and development. The BBC news titled "Kerala's love affair with alcohol" point to the domination of alcohol consumption on most of the Keralalit's life and high level of alcohol sales in Kerala [6]. The state is known for higher per-capita consumption of liquor in India in spite of low per-capita income and lower domestic gross product. In fact the state earned the tag name "Boozist state of India" [7].

"Drinking is a disease in Kerala"; alcohol consumption rate has been dangerously increasing in Kerala. The negative consequences of alcohol dependence, especially the number of death due to alcohol abuse have increased last three years [8]. There are also reports from national and international media that highlight the adverse effects of alcoholism in Kerala. According to an Australian television network news God's own country has become the booziest state and holding

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a number of crimes and violence acts related to alcohol dependence [4]. The director of Alcohol and Drug Information secretary Johnson stated that social and health consequences of alcohol dependence started adversely triggering the Kerala State in huge ways. According to him more than 25% of hospitalization, 69% of crimes, 40 % of traffic accidents, and 80% of divorce and domestic violence are directly associated with alcohol dependence. According to the studies of ADIC-India report, Kerala received 75,110 million, but the Government spent double amount to reduce public harm, health problems, and other societal consequences due to alcohol dependence [9].

Alcohol dependence starts from the need to escape from negative and harmful emotions. Emotion dysregulation is one of the core concepts in developing disorders associated with alcohol use. According to the research studies, alcoholics suffer from lack of emotional awareness and clarity when they encounter with painful life situations and deficit in tolerating distress. Nonetheless, when demanding situations arise to pursue one's goals, there is high propensity to use adverse emotion regulation strategies [10]. Based on the comparative study on difficulties regarding emotional clarity and awareness it is found that individuals with drug abuse problems were found incapable and more vulnerable in acknowledging and being clear with their emotions. The inadequacy to have clarity and awareness of emotion are the consistent contributing factors in maintaining the use of alcohol among the addicted group. They have less capacity to consciously recognize their feelings and more difficulty to regulate emotions.

Emotion regulation is a state or situation that involves interplay of abilities namely a) awareness of the emotions, b) recognize and name them c) proper interpretation related to emotion with body reaction d) give attention to the prompting signal of the emotions, e) dynamism in adapting negative emotions to feel good f) reconcile with negative emotion as and when, g) tolerate emotions when difficult to adapt, h) to achieve goal and tackle distressing situation, I) be empathetic to self and support and encourage the disgusting situation [11].

Empirical studies reveal that emotions significantly contribute to mental health. Incapacity in emotion regulation tactics is connected with potential predictors of relapse mainly cognitive incapacities, level of comorbidity, and elation in unhealthy mood which play an important role in alcohol use [11]. The pessimistic attitude has an impact or reflects clear indications of alcohol use. Deficit in emotional regulation has higher chances of alcoholism/dependence. In a controlled setting of alcohol use the result predicted the adverse behavioral effect such as interrupted thinking, distress, incapacitating movement and external physical consequences such as shivering and tremors. Further analysis shows that during the course of emotional skill treatment the symptoms displayed by the alcoholic have a greater capacity to control unhealthy emotions [12].

Emotion regulation skills are particularly important for present mental health conditions as well as treatment outcome of the various mental disorders. Multivariate analysis on emotion regulation skill and treatment outcome reveal that integration of several skills such as acceptance and modifying of emotion response has a significant effect on the effectiveness of psychotherapeutic interventions [13]. According to [14] difficulty in accepting one's own emotions will likely lead to the development of multiple disorders. The ample empirical findings show that the development and maintenance of psychopathology is connected with deficit in various forms of emotion regulation skill [15].

Effective emotion regulation skills focuses on the adaptive way of coping with emotions [16]. Acceptance and mindful strategies promote the individuals emotional awareness and clarity by observing their physical and emotional changes in relation to particular emotions [14].

According to [17] the process of observing self-changes is projected to facilitate the ability to accept, identify and differentiate various emotional states. According to [18] ACT strategies especially, cognitive defusion technique is significantly effective in reducing emotional distress and acceptability of negative self-referential thoughts ("I am depressed"). Defusing strategies usually employed in situations where clients are unreasonably entangled or stuck with their private events. Several studies investigated the effect of different defusion techniques for difficult private events instead of applying control-based strategies [18,19].

The principal attribute of ACT focuses on helping the people to get rid of psychological suffering caused by their experiential avoidance that is by trying to run away, evade or get away or experiences that are considered by the people to be unwanted or private mainly unacceptable thoughts, emotions, ambiance, desires and memories [20]. Acceptance and commitment therapy as a psychological intervention stands on current behavioral psychology that includes Relational Frame Theory. The Acceptance and Commitment Theory focuses on the process of mindfulness and acceptance, commitment and behavioral change to bring about psychological flexibility [21].

Acceptance and commitment therapy has extensive therapeutic benefits for various mental health disorders. A research study by [22] on substance abuse problems with experiential avoidance process a person become unwilling to respond to the negative events especially those that are very private such as divorce, health problems and other memory related consequences. This is due to the demands on behavioral effects that are associated with long term difficulties. Nonetheless, psychotic symptoms and substance abuse problems significantly manifested positive association with patients with life purpose and growth.

A nonjudgmental approach to consistent substance abuse individual indicated higher measure of value integration both within and outside. It worked as a powerful resolve in a therapeutic relationship in which individuals experience confidence in the therapies, and as a result the openness, acceptance and a person realizes of the aversive effects of the problem. ACT treatment manifested effective in its application in substance abuse problems.

## Purpose of the Study

The purpose of the present study is to examine the Efficacy of Acceptance and Mindful Based Relapse Prevention Program to reduce difficulties in emotion regulation thereby complete abstinence from alcohol dependence and relapse. The researcher basically intends contribute through her program to reduce the causes that contribute to relapse susceptibility. The study is thus anchored exclusively to the population of Calicut, Kerala, India. The inspiration of this study comes from researcher's personal experience/work experience in this field. As a psychologist in the center she has encountered alcoholics with various problems mainly of relapse vulnerability. In the present study the researcher comes up with a program based on the pre-experimental data to alleviate alcohol consumption focusing on the emotion regulation difficulty among the alcoholics.

## Method

This study has utilized mixed method, descriptive and experimental design. There are two phases in this study. The first phase was the development of Acceptance and Mindful Based Relapse Prevention Program based on various literatures theoretical models of ACT and pre-intervention data to reduce emotion regulation difficulty among the alcoholics in Kerala. To qualify the program the researcher explored the expertise in the field of psychiatry, clinical psychology,

rehabilitation and social work and it is conceptualized accordingly. The second phase was the true experimental design especially pre-test post-test control group design [23] to examine the efficacy of Acceptance and Mindful Based Relapse Prevention Program in reducing emotion regulation difficulties.

### Participants

The participants in this study consisted of 32 (N= 32) with an age range of 30- 50 years male alcoholics. They were diagnosed as dependence based on Alcohol Use Disorders Identification Test (AUDIT) from drug the alcohol addiction treatment centre, Kerala, India.

### Procedures

The data gathering procedure was divided into three phases: pre-experimental, experimental and post-experimental.

**Pre-experimental phase:** This phase was the development of Acceptance and Mindful Based Relapse Prevention Program alcohol dependence. The researcher made extensive study on the literature and the resources of various models of addiction treatment expertise in the rehabilitation procedures, clinical psychologists, social workers and Pre-intervention data (interview with the study participants, family members, Pre- DERS scores, mini psychiatric examination) and developed a program to reduce emotion regulation difficulty. The researcher contacted the Administrator of the de-addiction center for men alcoholics and submitted a letter mentioning the purpose and the importance of the intervention program. With the help of the administrator and staff the researcher organized the alcoholics to join the modules.

The Alcohol Use Disorders Identification Test (AUDIT) was used to identify the alcohol dependence and categorize severity state of alcohol. On the basis of the AUDIT scale those who scored 15 and above were marked as alcohol dependence. From the total number of 80 men alcohol dependent 32 were selected for the study with significant level of emotion regulation (higher score suggest greater problems in emotion regulation). After which the selected participants were randomly assigned to experimental (N=16) and control (N=16) group. The participants in the experimental group treated with Acceptance and Mindful Based Relapse Prevention Program.

**Experiment phase:** The experimental phase was conducted after the pre-test followed by the experts validation of the intervention program. The experimental group was treated with Acceptance and Mindful Based Relapse Prevention Program with 9 modules. While those in the control group were not exposed to any form of treatment however on ethical consideration the researcher conducted a program for the control group after the post test.

**Post-experimental phase:** The post-experimental phase was done after the intervention program utilizing similar strategies to measure the difference between both the experimental and control group to see the effectiveness of the intervention program in reducing difficulties in emotion regulation. The result was subjected to assess the pre-intervention and post-intervention scores to statistical analysis for significant differences

### Research Instruments

#### Personal data information sheet

The personal data information sheet consists of alcohol dependence name, age, years of alcoholic use, marital status.

#### The alcohol use disorders identification test (audit) (screening)

The AUDIT is a 10-item screening instrument developed by WHO collaborative study conducted in six countries: Australia, Kenya, Bulgaria, Norway, Mexico and the USA. It is designed to screen for a range of drinking problems and in particular for hazardous and harmful consumption. It is particularly suitable for primary health care settings and has been used in different countries and cultural groups. AUDIT has been assessed across a range of populations, including university students, women, psychiatric patients, geriatric populations and the unemployed.

The AUDIT has been found to have good internal reliability across these populations, with Cronbach's alpha ranging from .80 to .94. In one of the few studies conducted to date, [24], found the AUDIT, embedded within a larger general health questionnaire, to have good test-retest reliability ( $r = .88$ ) over a 6-week period. More recently, Reid Hester and colleagues found that AUDIT have excellent test-retest reliability over a one-week period in a pilot study for a computerised motivational interviewing program for problematic adult drinkers ( $r = .96$ ). A score of 13 or more in women, and 15 or more in men, is likely to indicate alcohol dependence [25].

#### Clinical Institute Withdrawal Assessment of Alcohol Scale, Revised (CIWA-Ar) (screening)

This is a commonly used and studied 10-item scale developed by [26] to assess severity of alcohol withdrawal syndrome. This scale has well-documented reliability, reproductability and validity [26]. The factor analysis of this test shows that there is a high internal consistency with this 11 factors (Cronbach alpha 0.91). The list of 10 signs and symptoms are addressed in this Scale Wiehl, 1994. It can be useful in a variety of clinical settings including detoxification units, de-addiction centers and mental health centers. CIWA-Ar can measure 10 symptoms related to alcohol withdrawal. Score <8-10 indicate minimal to mild withdrawal. Score ranging from 8-15 indicate moderate withdrawal and score more than 15 specify higher withdrawal symptoms.

#### Difficulties in emotion regulation scale (DERS)

Difficulties in emotion regulation scale, is a 36 item self-report measure that assesses six dimensions of emotion regulation. Each item has a with 5-point scale based on as how often the participants believe each items that is applicable to them.(1= almost never, 2= almost always, ). The internal consistency for the scale ( $\alpha=.94$ ) was good and equally good with subscales ( $\alpha$  values ranging from .82 to 0.91). It (DERS) is a multi- dimensional and popularly used self-report measure to assess the emotion regulation. This self - report measure comprehensively assesses the emotion regulation [27] used both deductive and an inductive approach to construct DERS. DERS has 36 items focusing on its characteristics and an Exploratory Factor Analysis (EFA). The six dimensions best resulted of EFA represented all the 36 items of the main scale DERS. The six subscales of DERS are non-acceptance (NON-ACCEPTANCE) dimension of emotion regulation, difficulty in engaging goal directed behaviors while experiencing negative emotions (GOALS), impulse control difficulty (IMPULSE), lack of emotional awareness (AWARENESS), difficulty in assessing the emotion regulation strategies (STRATEGIES) and finally lack of clarity (CLARITY). According to Gratz & Romer DERS subscales (six) manifested good internal consistency and found significantly correlated compared with six dimensions of emotion regulation (eg, ranging from- 0.34to - 0.69 ) with higher negative mood regulations score indicating with mood regulation expectancies with greater positive mood.



## Result and Discussion

### Problem1. What are the composition of the Acceptance and Commitment Therapy Based Intervention (ACTP) program and the supporting theories/concepts behind this program?

“The moment you change your perception is the moment you rewrite the chemistry of your body” (Dr. Bruce H. Lipton). Perception of particular life events considered as threatening and overwhelming may precipitate alcohol drinking. Stress developed from the interaction between individual and environmental demands in which an individual perceived the situation and events threatening and harmful. Positive and negative emotions are strongly connected with adaptation of stressful life events and coping with them. Unsuccessful use of emotion regulation strategies lead to maladaptive coping strategies like self-harm, drug abuse, spending time in night club etc. Perceived stress and emotion regulation difficulty is marked as menace for illicit alcohol dependence and relapse. Alcohol dependence is a leading cause for death and 60 major type of disease [28]. Thus there is an alarm need to help the individual with alcohol dependence problem. Psychological intervention is one of the most commonly sought form of help when an individual experience stress and emotional conflict. Since Acceptance and Commitment Therapy proposes a complete model with effective strategies for stress reduction as well as emotion regulation, it is to be expected that an integrative intervention program based on this theory would be efficient enough to address the alcoholic’s problem. Hence this intervention is designed as a nine modular program to reduce emotion regulation difficulties among the alcoholics. The scientific evidence proves the alcohol dependence treatment has a long history of its positive outcome of treatment even the community treatment have given the basis the alcohol dependence. It can be reduced or controlled from the induced treatment and this is a great benefit for the individual.

Many research studies have evidences of the fast effect of the treatment among the alcohol dependence. In addition the psychoneuroimmunology approach to alcohol dependence focuses on evidence based treatment from the same perspective. The treatment is a biggest challenge to treating patients with that disorder yet psychotherapy has qualitatively contributed to prevent relapse with appropriate program that enhances the various aspects of a person’s life. Psychotherapeutic treatment is a stimulant factor to decrease the behaviors of craving for alcohol and gives individuals motivational incentives for an attitudinal change.

International studies provide empirical data on the research on substance use disorders applying Acceptance and Commitment Therapy model in controlling the behavior of the addicts. ACT proposes a comprehensive approach guide for treatment of addicts focusing on the personal values. It considers as the best context in which clients can experience meaning and they can eliminate their unhealthy behavior through value based commitment. Therefore the researcher found this as the best treatment approach to help the alcoholics and developed a program to investigate the effectiveness in reducing alcohol dependence and to envisage the future relapse prevention (Table 1).

### What are the mean scores and standard deviation (SD) values of the participants before and after the intervention program in terms of the following variables?

#### A. Emotion regulation measured by Difficulties in Emotion Regulation Scale (DERS) in terms of the following six factors

##### a. Non-acceptance of emotional responses (NA)

##### b. Difficulties in engaging Goal-directed behavior (DG)

##### c. Impulse control difficulties (ID)

##### d. Lack of emotional awareness (LA)

##### e. Limited access to emotion regulation strategies (LS)

##### f. Lack of emotional clarity (LC)

Table 2 discloses the Pre-test and Post-test scores of experimental and control groups in DERS. Before the intervention program the scores of experimental group in Pre-test (Mean=160.31, SD=2.40) and control group Pre-test (Mean 159.25, SD=2.95). This shows there is a high level of difficulty in emotion regulation in both experimental and control groups. According to DERS higher score indicates high level of difficulty. We can consider the great difficulty in emotion regulation due to individual’s difficulty in regulating their emotions. The person is in a state where he/s is not able to modulate the emotions precisely because of the incapacity to reach the desired goal. Difficulty in emotion regulation is a maladaptive component that results in to impulsive behavior. Impulsive behavior primarily is associated with alcohol dependence which is related with emotion dysregulation. An alcoholic’s perception by consuming alcohol they can acquire the capacity to handle emotions associated with increasing the percentage of alcohol abuse [29].

The DERS consists of total 36 item self-report questionnaires that assess the difficulty in emotion regulation. It designed to measure various characteristics of emotion dysregulation. The measure yields total score as well as scores on six scales: awareness, clarity, impulse, goals, non-acceptance and strategy. The sub-scale scores in DERS are uniquely related to externalizing and internalizing the problems. The scale was developed comprehensively to assess the emotion dysregulation.

Examining the Subscales of DERS it can be noted that indeed the experimental and control group has high level of emotion regulation difficulty before the intervention program (Lack of emotional awareness (LA):Mean:26.75, SD:1.18; Lack of emotional clarity (LC):Mean:21.62,SD=1.36;Impulse control difficulties (ID): Mean:26.87,SD:1.20;Difficulty engaging in Goal- directed behavior (DG): Mean:22.25,SD:1.48; Non- acceptance of emotional responses (NA): Mean:26.06,SD:1.38; Limited access to emotion regulation strategies (LS) : Mean:36.75, SD:1.12) and control group (Lack of emotional awareness (LA):Mean:26.37,SD:1.35, Lack of emotional clarity (LC) : Mean:21.93,SD: 1.28; Impulse control difficulties (ID) : Mean:26.43,SD:1.75; Difficulty in engaging Goal- directed behavior (DG): Mean:22.56,SD:1.30;Non-acceptance of emotional responses (NA) Mean: 26.37,SD:1.74; Limited access to emotion regulation strategies (LS) Mean :35.93,SD:.92).

With respect to subscale the lack of emotional awareness (Awareness) the scores were high, specifically indicating the participants reported difficulty in emotional awareness. Another reason for the participant’s higher score in lack of emotional awareness reveals their difficulty in attending to their emotions. This could be an inhabited behavior reflected during the exposed intense stressful realities. The consistent physical and emotional imbalance manifested through frequent flare-ups, irritation, inappropriate behavior and argumentation consequently leading to alcohol dependence [30]. When emotions are very strong persistently they become the source of distress that lead to self-destruction, threatening, and confusing. This becomes a difficulty in becoming aware of one’s overwhelmed emotions. Consequently this leads to the damage of emotional and physical self (Self-assessment). Emotional awareness consists of two meaning namely ‘attention to emotion’ while the other, ‘emotional clarity’.

Emotional clarity is one's ability to distinguish, identify and label the emotions they experience. Contrary to the definition the results show in this study high scores in Lack of emotional clarity in Pre-test both in experimental (Lack of emotional Clarity (LC) Mean:21.62, SD:1.36) and control (Lack of emotional Clarity (LC) Mean:21.93, SD: 1.28) groups. The individual's lack of emotional clarity is considered as an inability to verbalize emotions. Moreover, this incapacitates the individual's expression of emotions which leads them to a confused state ultimately entering into a risk for regulating their emotions.

Interestingly, it emphasizes on the difficulty in observing and describing one's emotions. The studies reveal that low level of emotional clarity has a great impact on individuals which strongly predict towards substance abuse specially alcohol abuse [31]. Lack of emotional clarity has been found to be directly connected with several maladaptive behaviors, relentless and emotional disturbance that directed towards self-harm and substance abuse [32].

Another factor of DERS is lack of impulse control which relates

	Modules	Theme	Objectives	Activity
Acceptance Phase	1	Get to know Each other and ACTP	Rapport Building, General Introduction to ACTP and benefits for controlling alcohol dependence	Psycho education, Group juggle game
	2	Alcohol Woes	Educate the negative consequences alcohol consumption on physical, psychological, social, occupational, segments. Familiarize the concept Alcohol dependence is a mental disorder	Psycho education, Video presentations on impact of alcohol on brain and body, Alcohol hallucination and human body drawing exercise.
	3	Think before You Drink	Educate on the causes of Alcohol dependence especially emotion regulation difficulty. Help them to understand the cue related problem of drinking and relapse	Psycho education, Cue-response- action exercise with mindful present awareness
	4	Take the mystery out of your emotions	Impact- emotion dis-regulation on thought and behavior result in alcohol dependence	Monitor your emotions, Letting go Emotional wave exercise allow the feeling just come and go) Observing yourself exercise
	5	Stop myself control	This aims to give the insight and awareness about the negative consequences of impulse control difficulty and encourage them to practice successful impulse control strategies.	Be guard on your impulse, exercise (Hays,2007), Drop your anger and relax
Control Phase	6	Emotion Resilience	The main objective of this module includes the discussion on six major emotion regulation strategies such as acceptance, avoidance, problem solving, reappraisal, rumination, and suppression.	Just hold it, Trap your emotions exercise, stand for something that matters
	7	Value based life planning	Advantages of value embraced life , values set goals move forward to successfully ensure to reduce alcohol dependence and increase the health of mind, body and behavior	Emotional Safety plan exercise, Malas, Mantras Mindfulness meditation Value puzzle exercise, Psycho-education
	8	Taking Action making a Commitment	It helps them to set goals based on their values and make commitment to move forward successfully. This also ensures to reduce alcohol dependence and increase holistic health and well-being of the participants	SMART goal setting
Committed action Phase	9	Conclusion	Facilitates the participants to develop an action plan to reduce emotion regulation difficulty there by supporting the complete abstinence from alcohol dependence.	Summary of the program, program evaluation , group activity skit (awareness for the community), Symbolize yourself

Table 1: Summary of the program.

Scale	Grouping	Test	Mean (SD)	Interpretation	Test	Mean (SD)	Interpretation
DERS	Exp	Pre	160.31(3.04)	High level	Post	46.81(2.40)	Low le Low level
	Ctrl	Pre	159.25(2.95)	High level	Post	159 (2.28)	High level
NA	Exp	Pre	26.06(1.38)	High level	Post	7.5(0.63)	Low level
	Ctrl	Pre	26.37(1.74)	High level	Post	27(1.09)	High level
DG	Exp	Pre	22.25(1.48)	High level	Post	7.1(0.71)	Low level
	Ctrl	Pre	22.56(1.03)	High level	Post	21(1.46)	High level
ID	Exp	Pre	26.87(1.20)	High level	Post	7.3(0.79)	Low level
	Ctrl	Pre	26.43(1.75)	High level	Post	26.18(2.0)	High level
LA	Exp	Pre	26.75(1.18)	High level	Post	7.5(0.63)	Low level
	Ctrl	Pre	26.37(1.31)	High level	Post	26.75(1.48)	High level
LS	Exp	Pre	36.75(1.12)	High level	Post	10.2(0.68)	Low level
	Ctrl	Pre	35.93(0.92)	High level	Post	35.68(1.19)	High level
Lc	Exp	Pre	21.6(1.36)	High level	Post	6.90 (1.12)	Low level
	Ctrl	Pre	21.93(1.28)	High level	Post	21.25(1.52)	High level

DERS: Difficulties in emotion regulation scale, NA: non-acceptance of emotional response: DG: difficulties in engaging goal directed activities, ID: impulse control difficulties, LA: lack of emotional awareness, LA: limited access to emotion regulation strategies, LC: lack of emotional clarity

Table 2: Mean and Standard Deviation values of the Experimental and Control Groups in terms of DERS with six factors

to the inability, incapacity or a strong tendency to behave without any consideration of the consequences. The higher the impulsivity the lesser the inhibitory to controls one's behavior. The measures of impulse control difficulty indicated in the results of the Pre-test in this study reveals (Mean: 26.87, SD: 1.20 of the experimental group and Mean: 26.43, SD: 1.75 of the control group) a high level lack of impulse control. The higher score explicitly points to the lack of impulse control with regard to inappropriate behavior manifestations during stressful events. Previous studies have confirmed that greater motor and cognitive impulsivity is an imperative risk that reason for substance abuse Mitchell 2005. Stressful situations directly related to lack of impulse control that may direct towards an inappropriate expression of an impulsive behavior [33].

The difficulty engaging in Goal-directed Behavior (GOALS) is another subscale of DERS shows high level of scores in the Pre-test of the Experimental (Mean: 22.25, SD: 1.48) and Control group (Mean: 22.56, SD: 1.30). It can be assumed the participants of both groups before the intervention seem to find difficult in engaging goal directed behavior. Seemingly, it directs towards the characteristics of the individual with alcohol abuse.

Difficulty in focusing with realistic goals, focusing on something concrete and strong will to achieve desired goals might be associated with high level scores in this subscale. The higher the difficulty the greater is the inhibition that promote to alcohol beverages. Another contributing factor could be the negative affect state that have a greater impact on many maladaptive behaviors especially alcohol abuse. Recent research has shown difficulty in goal related activities turn into violence and aggressive behavior and resolve to alcohol dependence. Lack of motivation becomes a guiding factor for an emotional dysregulation which can be regarded as the inability to reach an agreement with the desired goals when encountered with depressing emotions [34]. Difficulty in goal directed behavior can surface as a result of lack of emotion regulation strategies.

Emotion regulation strategies are distinct from the experience of emotion. They are different specific strategies which may be adaptive or maladaptive. These destructive strategies can lead to inability to down regulate negative emotion [35]. Incompetence of the individual to utilize the emotion regulation strategy ultimately can turn out to negative emotions which could be severe and uncontrollable [36]. Interestingly, the previous empirical research positively support the results of the present study in the pre-test scores of experimental (Mean: 36.75, SD: 1.12 and control (Mean: 35.95, SD: 92) groups which have limited access to emotion regulation strategies. The difficulty can lead to harmful and unhealthy coping strategies which become a negative drive to the alcoholics to resolve alcohol abuse.

Non-acceptance of emotional responses scores clearly show the higher level of difficulty in emotion regulation. In the pre-test the Mean and the Standard deviation values points to the greater difficulty in acceptance of emotional responses. Before the intervention in the pre-test the scores of the experimental group Mean=26.06, SD=1.38 and control group Mean= 26.37, SD=1.74 reveals higher level of difficulty. It is obvious in the results that the emotional non-acceptance is a negatively inducing phenomena that supports the individuals' incapacity to judge emotional experiences, and trying to evade or discount, and suppress the emotional experiences. This paradoxically leads to feeling of shame, guilt, and irritation. The non-acceptance of emotional responses negatively enhance the emotional arousal and obscurity in emotional regulation. Previous research studies reveal non-acceptance is a subjective experience of emotion that resulted in exploring and experiencing embarrassed feeling, guilt and withdrawal

ultimately driven to alcohol abuse. Also higher score supported that non-acceptance affect the appraisal of emotional experiences and emotional arousal [37].

Table 2 also explains the Post-test mean and standard deviation scores of DERS in experimental (Mean: 46.81, SD: 2.4) and control (Mean: 159, SD: 2.28) groups. There is a noticeable difference in Mean and Standard deviation scores in both control and experimental group. Moreover, the experimental group shows remarkable change in the Mean and SD scores of DERS. Before the intervention, the experimental group has a high level of difficulty in Emotion Regulation (DERS). Examining the Subscales of DERS it can be noted that indeed the experimental group has high level of Emotion Regulation difficulty before the intervention program (Lack of emotional awareness (LA): Mean: 26.75, SD: 1.18; Lack of emotional Clarity (LC): Mean: 21.62, SD: 1.36; Impulse control difficulties (ID): Mean: 26.87, SD:1.20; Difficulty engaging in Goal-directed behavior (DG): Mean:22.25,SD:1.48; Non-Acceptance of emotional responses(NA):Mean:26.06,SD:1.38; Limited access to emotion regulation strategies (ST): Mean:36.75, SD:1.12). While in the post-test Scores show remarkable change (Lack of emotional awareness (LA) :Mean:7.5, SD:.63; Lack of emotional clarity (LC) : Mean:6.93, SD:1.12; Impulse control difficulties (ID) :Mean:7.31, SD:0.79; Difficulties engaging in Goal directed activities (DG) :Mean 7.12,SD:0.71; Non-Acceptance of emotional responses (NA): Mean:7.5,SD:0.63; Limited access to emotion regulation strategies(LS) : Mean:10.25, SD:.68) that indicate the intervention had a positive outcome with low level degree of difficulty. The Intervention Program has influenced the experimental group to a great extent in reducing difficulties in emotion regulation.

On the other hand the Control group did not show any change in DERS Scores. It can be observed that on the Pre-test and Post-test scores the control group has high level of difficulties in emotion regulation (DERS) (Pre-test Mean: 159.25, SD: 2.95and Post-test Mean: 159, SD: 2.28). It is revealed that the control group that did not receive any intervention apparently remained unaffected.

## **Is there a significant difference between the pre-test scores of the experimental and control group in terms of the following variables?**

### **A. Emotion regulation in terms of six factors**

#### **a. Non-acceptance of emotional responses (NA)**

#### **b. Difficulty in engaging Goal-directed behavior (DG)**

#### **c. Impulse control difficulties (ID)**

#### **d. Lack of emotional awareness (LA)**

#### **e. Limited access to emotion regulation strategies (LS)**

#### **f. Lack of emotional clarity (LC)**

T-test of comparison between Pre-test scores of experimental and control groups in DERS is shown in Table 3. This comparison presents the homogeneity of the condition in both groups before the intervention program. Through the t-test comparison of both experimental and control group divulge the state of equal condition in their characteristics preceding to the Intervention program. This is to ensure that the quality change brought about is accredited to the effectiveness of the intervention program alone rather than any other factor. Explicitly the Pre-test scores of the both experimental and control groups were subjected to t-test for independent samples, setting the significant level at 0.05 that the empirical outcome may establish 95% accuracy. In comparison to pre-test score of experimental and

Scale	Group	Mean (SD)	t-value	P-value	Interpretation	Decision
DERS	Exp	160.31(3.04)	1.00	0.32	Not Significant	Ho accepted
	Ctrl	159.25(2.95)				
NA	Exp	26.06(1.38)	0.56	0.58	Not Significant	Ho accepted
	Ctrl	26.37(1.74)				
DG	Exp	22.25(1.48)	0.69	0.49	Not Significant	Ho accepted
	Ctrl	22.56(1.03)				
ID	Exp	26.87(1.20)	0.82	0.41	Not Significant	Ho accepted
	Ctrl	26.43(1.75)				
LA		26.75(1.18)	0.85	0.40	Not Significant	Ho accepted
		26.37(1.31)				
LS		36.75 (1.12)	2.22	0.30	Not Significant	Ho accepted
		35.93 (0.92)				
LC		21.6 (1.36)	0.66	0.51	Not Significant	Ho accepted
		21.93(1.28)				

At 0.05 level of significance

**Table 3:** t - Test for the difference between the pre-test Score of experimental and Control Groups in Terms DERS with six factors.

control groups there is no significant difference in DERS (P-value: 0.32) and subscales LA: 0.40, LC: 0.51, ID: 0.41, GD: 0.49, NA: 0, 58, LS: 0.03. It explicitly shows that the P- value level is greater than  $\alpha$ : 0.05. We can state that the results measure no significant difference in both the groups with regard to their difficulty in emotion regulation. Consequently, the null hypothesis accepted that there is no significant difference the pre-test results between the experimental and control groups. There are no inferential biases affected in selecting the sample.

### Is there a significant difference between the post-test scores of the experimental and control group in terms of the following variables?

#### A. Emotion regulation in terms of six factors

- a. Non-acceptance of emotional responses (NA)
- b. Difficulty in engaging Goal-directed behavior (DG)
- c. Impulse control difficulties (ID)
- d. Lack of emotional awareness (LA)
- e. Limited access to emotion regulation strategies (LS)
- f. Lack of emotional clarity (LC)

Table 4 established the comparison between the Post-test score of experimental and control groups in terms of DERS with six factors. It is remarkably evident that there is a large difference in the post-test scores after the Intervention Program. We can say that the participant have well responded to the program and hence the p value in DERS and its six sub-factors is 0.00 ( $p=0.00$ ) which is less than 0.05. That indicates there is a significant difference between experimental and control group in the post-test condition. Thus the null hypothesis rejected as there is no significant difference in the Post-test scores of the experimental and control group in emotion regulation. It means to say the program has been a useful tool to make a significant difference in perception of stressful situations and difficulty in emotion regulation and was good treatment outcome.

The life experiences of the alcoholics often are devastating and crucial. They often fail and are victims of stress and emotional imbalance. Many internal experiences are inadequate to drive them to resolve alcohol abuse. In such conditions the acceptance and commitment therapy helps to perceive the situations in an acceptable way through mindful strategies [20]. In the present study the researcher made use of the mindful based acceptance and commitment strategies

along with behavioural approaches to help the participants to come into contact with the essence of their difficulties in emotion regulation and help them to reconstruct their lives with sense of values. It is a systematic intervention program that encourages the participants to deal with physical, behavioural, cognitive and emotional barriers related to excessive alcohol consumption. Studies have shown that alcohol consumption is a means of reducing daily life painful realities. Heavy drinking is most likely associated with in anticipation of stressful events [38]. Previous research investigations also suggest that emotion regulation difficulties is generally associated with alcohol related-consequences.

As hypothesized ACT intervention participants show significant improvement in emotion regulation as compared with control groups. This result is well supported by the empirical study findings done by [39]. This intervention developed on mindful based with emotional focused psycho education was a positive contributor path of reducing alcohol related problems. The techniques or the resources utilized in ACT processes affect in bringing about systematic change on the psychological distress. The mindfulness, acceptance and action is a unique method which helps identifies the inflicted pain related to stress. As a result during this process the elements of ACT frame work enables an alcoholic to go through the difficulties of the stress and emotional elations and facilitates to regulate the biological and other consequences that affect the well-being of the alcoholic.

Intervention Program encourages the participant towards a better goal. Its focus is on the present moment, creating awareness to facilitate the person to be open and understand guided by ones values. It reinforces them to live a complete and meaningful life with both pleasant and unpleasant experiences and permeates to accept the painful realities. Intervention program increases the awareness on reducing the consequences of avoiding pain that incur damage on the body, mind, and behavior.

### Is there a significant difference between the pre-test and post-test scores of the experimental group in terms of the following variables?

#### A. Emotion regulation in terms of six factors

- a. Non-acceptance of emotional responses (NA)
- b. Difficulty in engaging Goal-directed behavior (DG)
- c. Impulse control difficulties (ID)



Scale	Group	Mean (SD)	t-value	P-value	Interpretation	Decision
DERS	Exp	46.81(2.40)	135.53	0.00	Significant	Ho rejected
	Ctrl	159(2.28)				
NA	Exp	7.5(0.63)	61.66	0.00	Significant	Ho rejected
	Ctrl	27(1.09)				
DG	Exp	7.1(0.71)	34.09	0.00	Significant	Ho rejected
	Ctrl	21(1.46)				
ID	Exp	7.3(0.79)	34.98	0.00	Significant	Ho rejected
	Ctrl	26.18(2.0)				
LA		7.5 (0.63)	47.75	0.00	Significant	Ho rejected
		26.75(1.48)				
LS		10.20(0.68)	73.89	0.00	Significant	Ho rejected
		35.68(1.19)				
LC		6.90(1.12)	30.19	0.00	Significant	Ho rejected
		21.25(1.52)				

At 0.05 level of significance

**Table 4:** t - Test for the difference between the post -test Score of experimental and Control Group in DERS in terms of six factors.

**d. Lack of emotional awareness (LA)**

**e. Limited access to emotion regulation strategies (LS)**

**f. Lack of emotional clarity (LC)**

Table 5 presents t-test for the comparison between the Pre-test and Post-test scores of experimental group in terms of DERS with its six sub-factors. The paired sample test is utilized to make it certain that there is a statistically significant change in the mean scores of the experimental group after the administration of the intervention program. The level of significance was tested at 0.05. Interestingly, the results show that there is significant difference (P=0.00) found between Pre-test and Post-test scores in the experimental group, which is P< 0.05. Therefore, the null hypothesis of no difference is rejected. The scores in the pre-test of dependent variable DERS point to the higher level of difficulties in emotion regulation comparing to the post-test score findings remarkable differences is noticed. The source of reduction in the behavioral change applied to the intervention. The post-test scores also linked with previous research that acceptance based behavioral treatments highlights healthier way to responding emotional distress [40]. This approach emphasizes the multi- dimensional aspects of emotion regulation. According to ACT mindful strategy the emotion regulation construct involves awareness, clarity of emotions, individual capacity to understand and accept their emotions, ability to control their emotional arousal, capacity to engage goal-directed behavior when feel distressed, and flexible to use situationally appropriate emotion regulation strategies to lessen the intensity and duration of emotional response [41].

Table 6 shows the statistical difference between the Pre-test and Post-test scores of the control group in emotion regulation in terms of six factors. Accordingly the Pre-test and Post-test scores of the control group were subjected to dependent sample t-test, fixing the probability at 0.05 level of significance so that the result would provide with a 95% assurance or non-assurance. The test on the difference in the pretest and posttest values of the control group in all the variables tested showed statistical non-significance at 5% level of significance (p-value >.05). The p-values ( DERS=0.79). The scores yielded by the test are greater than the 0.05 level of significance in all the variables. This means that there is no significant difference between the pre-test and post-test scores of the control group. Therefore, the null hypothesis there is no significant difference between the pre-test and post-test score of Perceived Stress and Emotion Regulation is accepted. There is almost

95% certainty that the perception of stressful life events and difficulty in emotion regulation of alcoholics in control group is remained more or less the same during the period of study.

One of the noticeable things here is that there is no significant difference showed in the pre-test and post-test of control group which means that the absence of the Intervention Program sustains their difficulties in emotion regulation. It emphasizes the effectiveness of program to the participants of the experimental group who initially in similar conditions of the participants in the control group.

Table 7 explains the extent of the effectiveness of the treatment in comparing the pre-test post-test scores of the experimental group. Cohen, 1988 suggests that when the value lower than 0.2 implies very low effect size. Consequently the value from 0.4-0.8 infers medium or moderate effect size nonetheless the value is greater than 0.8 point to very high effect size. From the table it is observed that the Cohen's d value for DERS (44.02) and the sub- scale values NA (18.46), DG (13.83), ID(19.66), LA(21.27), LS(29.50), LC(11.87) are all above the value 0.8. That reveals Acceptance and Mindful Based Relapse Prevention Program have had a large impact on decreasing the degree of difficulty in emotion regulation and thereby reducing alcohol dependence among the participants.

As observed from the earlier results of the study before subjecting the participants to the intervention program there manifested a higher level of emotion regulation difficulties among the participants. In the pre-test of both experimental and control groups there was no significant difference in the mean scores. Moreover there was a large effect after implementing the intervention to the experimental group which is when computed in Cohen's d to check the effect size. Interestingly this is a potential outcome of the current findings that Acceptance and Mindful Based Relapse Prevention Program is highly reliable treatment to decrease the problems related to psychological disturbances, stress and emotion regulation related difficulties and support the alcoholics well-being.

The findings are supported by earlier researches proving that acceptance and commitment strategy is an effective treatment to reduce the impulse control difficulties and enable emotion balance. Experimental evidence on ACT framework reveal that ACT incorporated with mindfulness advocated with lower stress and higher psychological and physical health together with self-awareness, self-observation and better interpersonal functioning, emotion regulation and healthy emotional reactivity in relationships [42]. Another empirical finding points to ACT intervention having consistent psychological flexibility



Scale	Test	Mean (SD)	t-value	P-value	Interpretation	Decision
DERS	Pre	160.31(3.04)	141.69	0.00	Significant	Ho rejected
	Post	46.81 (2.4)				
NA	Pre	26.06 (1.38)	41.53	0.00	Significant	Ho rejected
	Post	7.5 (0.63)				
DG	Pre	22.25(1.48)	38.13	0.00	Significant	Ho rejected
	Post	7.1(0.71)				
ID	Pre	26.87(1.20)	57.33	0.00	Significant	Ho rejected
	Post	7.3(0.79)				
LA	Pre	26.75(1.18)	82.71	0.00	Significant	Ho rejected
	Post	7.5(0.63)				
LS	Pre	36.75(1.12)	72.57	0.00	Significant	Ho rejected
	Post	10.2(0.68)				
LC	Pre	21.6(1.36)	35.34	0.00	Significant	Ho rejected
	Post	6.90(1.12)				

**Table 5:** T-test of comparison between pre-test and post -test Score of experimental and Control Group in Terms PSS and DERS in terms of six factors.

Scale	Test	Mean (SD)	t-value	P-value	Interpretation	Decision
DERS	Pre	159.25 (2.95)	0.26	0.79	Not Significant	Ho Accepted
	Post	159.00 (2.28)				
NA	Exp	26.37(1.74)	1.19	0.25	Not Significant	Ho Accepted
	Ctrl	27(1.09)				
DG	Exp	22.56(1.03)	3.07	0.008	Not Significant	Ho Accepted
	Ctrl	21(1.46)				
ID	Exp	26.43(1.75)	0.45	0.65	Not Significant	Ho Accepted
	Ctrl	26.18(2.0)				
LA	Exp	26.37(1.31)	0.80	0.43	Not Significant	Ho Accepted
	Ctrl	26.75(1.48)				
LS	Exp	35.93(0.92)	0.74	0.46	Not Significant	Ho Accepted
	Ctrl	35.68(1.19)				
LC	Exp	21.93(1.28)	1.45	0.16	Not Significant	Ho Accepted
	Ctrl	21.25(1.52)				

At 0.05 level of significance

**Table 6:** t - Test for the difference between pre-test and Post -test Score of control Group in Terms of DERS with six factors.

Variable	Cohen's d	Interpretation
DERS	44.02	Large effect
NA	18.46	Large effect
DG	13.83	Large effect
ID	19.66	Large effect
LA	21.27	Large effect
LS	29.50	Large effect
LC	11.87	Large effect

\*\*<0.2 = Small effect, 0.5= medium effect, >0.8= large effect

**Table 7:** The Cohen's d value of the intervention program.

that demonstrates improvements in psychological distress and augment value living [43,44]. The effectiveness of the ACT both mindfulness and acceptance intervention have an extensive use in reducing psychological disturbances as it facilitates the healthy coping styles. In the current study, the participants wholeheartedly responded to the intervention program and developed new growth promoting insights on controlling their addictive behavior. It is evident from the six month follow up that the participants continue to exhibit motivation and willingness to attend to the strategies of the intervention. It is a positive note that they are convinced that alcohol is not the adaptive coping style to resolve the difficulties. To summarize that the statistical analysis has shown a significant large effect in the results that intervention program had high influence on the participants.

## Conclusion

In conclusion: 1. The Acceptance and Commitment Therapy Based Intervention Program had enormous effect on the participants of the experimental group in reducing difficulties in emotion regulation and there by complete abstinence from alcohol dependence.

2. The results of participants in both experimental and control group before the intervention program observed from high level of emotion regulation difficulties and greater degree of alcohol dependence.

3. After the administration of the intervention program the level of difficulty in emotion regulation remarkably changed in experimental group compare to the participants in the control group. Feedback from the experimental group also revealed that their craving for alcohol significantly reduced. It can be understood that experimental group very well responded to the intervention Program treatment. Interestingly the Acceptance and Mindful Based Relapse Prevention Program will be a resourceful treatment to reduce emotion regulation difficulties and avoid alcohol dependence among the alcoholics.

4. The large significant difference between the scores of the experimental and control group as observed after the implementation of the program shows the effectiveness of the program in reducing difficulty in emotion regulation and its factors.

5. The reason that there was no significant difference observed in the results of the control group who were not part of the treatment program proved that the difficulty remained consistent due to not undergoing the intervention program and so the level of difficulty in the dependent variable shows any change. Therefore Acceptance and Mindful Based Relapse Prevention Program is a standard instrument to reducing difficulties in emotion regulation and thereby complete abstinence from alcohol dependence.

## Recommendations

Acceptance and Mindful Based Relapse Prevention Program had significant influence in reducing emotion regulation difficulty and avoid alcohol dependence. From the findings of the research the followings are recommended for the future research

1. The present study concentrated on small population in one part of Kerala. Therefore it is recommended to include larger population including male and female population.

2. The age group of the participants ranged from 30-50. Considering the positive outcome of the result further research can include the adolescent population with drug abuse.

3. The analysis of the outcome data statistically yielded significant result which is results among the alcoholics. This program could be utilized to other types of drug abuse.

4. It is recommended that a similar study program be implemented among the individuals' who undergo stress, depression and other types of psychological disturbances.

5. Psychologist, Psychiatrist and mental health professionals to encourage evaluating the impact of the program and utilizing its benefit among the individuals who suffer from maladaptive behaviors.

6. The researcher recommends choosing the participants from urban and rural population to test the effectiveness of the program.

7. The Acceptance and Mindful Based Relapse Prevention Program can be incorporated in the De-addiction centers program.

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