

# The Effects of Dialectical Behavior Therapy(DBT) Skill Training on Depression and Alcohol Abstinence Self-efficacy of Patients with Alcohol Use Disorder

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## Abstract

**Background/Objectives:** This study is an experimental study to investigate the effect of Dialectical Behavior Therapy (DBT) skills training on depression and abstinence self-efficacy of people with alcohol use disorder.

**Methods/Statistical analysis:** The study was conducted on patients with alcohol use disorder diagnosed in one mental health department hospital, and 10 subjects were included in the control group receiving medication and 10 subjects were in the experimental group receiving additional dialectical behavior therapy skills training. Data collection was conducted from July 17, 2017 to September 4, 2017, once a week for a total of 8 sessions. The collected data were analyzed by Mann-Whitney U test, Friedman and repeated measure ANOVA.

**Findings:** The results showed that there was a significant effect on the viewpoint and interaction of the experimental group and the control group on depression, and the abstinence self-efficacy showed a significant difference in the pre-post-follow up period.

**Improvements/Applications:** It is expected that this program will continue to be used in education for the treatment and rehabilitation of patients with alcohol use disorders.

**Keywords:** Alcohol, Abstinent, self-efficacy, Alcohol Use disorder, Depression, Dialectical Behavioral Therapy(DBT)

## Introduction

According to the results of the mental illness survey by the Ministry of Health and Welfare in 2016, the annual prevalence of alcohol use disorder was estimated to be 3.5% (1.39 million) of the 18-64 year old population, followed by anxiety disorder (5.9%), and the lifetime prevalence was 12.2%, which was the highest among mental disorders<sup>[1]</sup>. In addition, alcohol use disorder has a high recurrence rate, with more than half recurrence within 1 year after treatment and show highest recurrence

risk within the first 3 months after discharge<sup>[2]</sup>.

Depression is a common emotional condition in people with alcohol use disorder, especially in that it induces negative patterns of communication and causes negative emotions and behaviors to manifest dysfunctional interactions with family members<sup>[3]</sup>. Depression promotes recurrence of people with alcohol use disorder<sup>[4-5]</sup>, and promotes irritability, sleep disturbances, loss of appetite, and indigestion, all of which lead to ineffective symptoms in general life, which diminishes the quality of life<sup>[6]</sup>.<sup>1</sup>

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Since alcohol is a central nervous system inhibitor, it increases the mood at first, but higher intake leads to

higher depression, and depression increases even after sobering up<sup>[7]</sup>.

Abstinence self-efficacy acts as an important psychological factor in maintaining abstinence and recovery<sup>[8]</sup>. When faced with internal and external high risk situations related to drinking, those with high self-efficacy tend to actively abstain with strong belief in skills and abilities that they can overcome themselves, but those with low self-efficacy is more likely to give up or avoid work with focus in his or her inability in the same situation<sup>[9-10]</sup>. In the intervention program related to abstinence, the study of depression as a variable<sup>[11-13]</sup> and the study of abstinence self-efficacy as a variable<sup>[13-14]</sup> have already proved effective in many studies in Korea. However, while dialectical behavior therapy skills training has been intervening in a variety of subjects outside the country, it has not seen the light in Korea. Dialectical Behavior Therapy skills training has been shown to be beneficial to people who are experiencing problems with substance use, anger control, depression, and anxiety as well as emotional problems such as an urgent response to intense emotions<sup>[15]</sup>.

Dialectical behavior therapy reduces the avoidance behavior by stopping the evaluation or judgment of oneself replacing the meaning of true life with material through the mindfulness technique and having an attitude accepting unpleasant and painful experiences as it is<sup>[16]</sup>. It also improves the ability to continuously pursue goals through Mindfulness and improves behavioral outcomes such as automatic drinking habits<sup>[17]</sup>.

The purpose of this study was to determine whether dialectical behavior therapy skills training is effective in depression, which is an important variable in the prevention of recurrence and recovery of people with alcohol use disorders and to examine whether there is a change in abstinence self-efficacy<sup>[18]</sup>, which is an important psychological factor in improving the quality of life<sup>[3]</sup> of people with alcohol use disorders. Research problems to achieve this objective are as follows.

## Method

### Research design

This study is an experimental study to investigate the effect of Dialectical Behavior Therapy (DBT) skills training on depression and abstinence self-efficacy of people with alcohol use disorder.

## Research subject

This study was conducted on adult patients who were diagnosed with alcohol use disorder according to DSM-IV or DSM-5 criteria and were admitted to hospital in one mental health medicine hospital. 2 patients who had been absent for more than 2 times, and 3 patients who were discharged during the program were excluded from the study, and then 10 control subjects and 10 experimental subjects were selected as final subjects.

## Research tool

### *Beck Depression Inventory: BDI*

For the degree of depression, the Beck<sup>[19]</sup> depression index (BDI) was used. A total of 21 items were composed of 3 sub-factors including negative attitude, difficulty in performance, and difficulty in physical condition.

### *Alcohol Abstinence Self-efficacy Scale: AASE)*

For abstinence self-efficacy, abstinence self-efficacy scale<sup>[20]</sup> was used. The 4 sub-domains were negative emotions, social pressure, physical pain, withdrawal and craving, consisting of 20 items, with 5 items in each domain.

## Research process

Dialectical behavior therapy skills training in this study was reconstructed based on the dialectical behavior therapy guide of Linehan<sup>[21]</sup>, and the dialectical behavior therapy guide by Marra<sup>[15]</sup>.

The dialectical behavior therapy skills training process of this study was conducted for a total of 8 sessions once a week for 120 minutes each time, and after 4 weeks after the program termination, post examination was performed.

## Data analysis method

To verify the effectiveness of the program, the data obtained from the pre- and post-test were analyzed using SPSS 23.0 program as follows. The collected data were analyzed by Mann-Whitney U test, Friedman and repeated measure ANOVA.

## Result

### 1. Verification of homogeneity between experimental group and control group

[Table 1] There was no significant difference

between the two groups as a result of verifying differences between groups.

**Table 1. Homogeneity test Between Experimental Group and Control Group**

Variable	Group	M	SD	z
Depression	Exp.	24.00	5.08	-.23
	Cont.	24.00	6.62	
Alcohol Abstinence Self-Efficacy	Exp.	44.00	8.54	-.46
	Cont.	44.60	9.56	

**2. Differences in pre-post-follow up tests of depression and abstinence efficacy**

[Table 2] Participants in the experimental group showed that the negative attitude ( $\chi^2 = 6.4, p < .05$ ) and difficulty in physical condition ( $\chi^2 = 7.2, p < .05$ ), which are subordinate factors of depression, were significantly lower in the post-test and follow-up test scores than in the pre-test scores.

[Table 2] In the sub-scales of abstinence self-efficacy, the scores of post and follow-up test were significantly higher than pre-test scores in all sub-factors such as withdrawal and drinking impulse ( $\chi^2 = 15.3, p < .001$ ), bodily and other anxiety ( $\chi^2 = 11.2, p < .01$ ), negative emotions ( $\chi^2 = 12.8, p < .01$ ), and social pressure ( $\chi^2 = 7.4, p < .05$ ), showing significant difference between the tests.

**Table 2. Comparing Pre-Post-Follow up test Scores of the Depression and Alcohol Abstinence Self-efficacy**

Variable	Groups	Pre-test		Post-test		Follow up-test		df	$\chi^2$
		M	SD	M	SD	M	SD		
Depression (1= Negative attitude, 2= Difficulty in performing, 3= Difficulty in physical condition, 4=Total)									
1	Exp.	12.50	2.76	6.60	2.88	7.10	3.03	2	6.38*
	Cont.	12.00	3.01	12.50	3.21	12.30	2.75	2	0.75
2	Exp.	6.50	2.51	4.3	2.0	4.6	1.6	2	4.90
	Cont.	7.60	2.516	7.50	1.72	7.60	1.96	2	0.54
3	Exp.	4.70	1.95	3.30	1.16	3.40	1.27	2	7.19*
	Cont.	4.50	2.07	4.70	2.26	4.50	2.07	2	2.00
4	Exp.	24.00	5.08	14.20	4.47	15.10	4.63	2	2.92
	Cont.	24.00	6.62	24.60	6.45	24.50	6.31	2	3.06
Alcohol Abstinence Self-Efficacy (1= Withdrawal and drinking impulse, 2= Body and the other anxiety, 3= Negative emotion, 4= Social pressure, 5=Total)									

*Cont...*

1	Exp.	11.40	151	14.40	2.17	13.80	2.15	2	1526***
	Cont	11.70	250	12.20	2.10	12.10	2.33	2	2.40
2	Exp.	11.70	353	14.60	3.17	14.0	2.94	2	11.17**
	Cont	11.10	281	11.40	2.84	11.40	2.95	2	1.00
3	Exp.	9.70	283	14.80	2.57	15.10	2.51	2	12.77**
	Cont.	10.40	363	10.50	3.69	10.50	3.66	2	0.33
4	Exp.	11.20	286	13.50	2.88	13.30	2.83	2	7.40*
	Cont.	11.40	360	11.40	3.06	11.20	3.46	2	1.00
5	Exp.	44.00	854	57.30	8.37	56.20	8.24	2	15.16**
	Cont	44.6	956	45.50	9.11	45.20	9.61	2	1.87

### 3. Changes in pre-post-follow up tests of depression and abstinence self-efficacy

[Table 3] Shows changes in pre-post-follow up tests of group depression and abstinence self-efficacy. Depression showed a significant difference between the two groups in the pre-post-follow up tests scores between the two groups ( $F = 7.12, p < .001$ ), and there was significant difference according to time ( $F=82.05, p < .001$ ). Abstinence self-efficacy by group did not show a significant difference between the two groups in pre-post-follow up tests, and there were significant differences according to time ( $F=86.74, p < .001$ ).

**Table 3. Repeated measures ANOVA of Depression and Alcohol Abstinence Self-Efficacy**

Variable	Source	Type III Sum of Squares	degree of freedom	Mean Squares	F
1	Group	653.40	1	653.40	7.12*
	Time	176.40	1	176.40	82.05***
	Time*Group	220.90	1	220.90	102.74***
2	Group	821.40	1	821.40	3.55
	Time	409.60	1	409.60	86.74***
	Time*Group	336.40	1	336.40	71.24***

1=Depression, 2= Alcohol Abstinence Self-Efficacy

## Discussion

This study examined the effects of dialectical behavior therapy skills training on depression and abstinence self-efficacy of people with alcohol use disorder and examined whether the effects persisted after program termination.

First, the experimental group participating in the dialectical behavior therapy skills training showed a significant decrease in the negative attitude and the physical difficulty among sub-factors of depression after the program, and similar level was maintained in the follow-up test. This is a significant result that dialectical behavior therapy skills training affects depression in the experimental group and continues to be effective. These results are consistent with previous studies on middle school students with depression tendencies<sup>[22]</sup>, elderly depression patients<sup>[23]</sup>, and inpatient female patients<sup>[24]</sup>, showing that dialectical behavior therapy skills training is a useful means of intervention for people with alcohol use disorder. In the results of the pre-post-follow-up test scores of the depression between the experimental group and the control group, the experimental group showed a significant effect on the group interaction according to time in all the sub-factors, but no significant change was observed in the control group. This means that dialectical behavior therapy skills training affects the depression of the experimental group and the effect is sustained. In addition, results of this study was supported by the results of a study on middle school students with depression tendencies<sup>[22]</sup> and a previous study on elderly depression patients<sup>[23]</sup>.

Depression is a negative emotion commonly experienced by people with alcohol use disorders, which is uncomfortable and overwhelmingly prone to cause thought and action in suicide, requiring thorough management. The technique of imagination takes advantage of the power of the mind to produce a positive emotion, which is a simple way to visualize a relaxed scene in great detail<sup>[25]</sup>, and the contents of the program seemed to reduce the depression of the experimental group as a result of re-supplying the power to accommodate the strong and overwhelming emotional distress, causing the participants of the experimental group to experience physical and psychological relaxation.

Second, the experimental group participating in dialectical behavior therapy skills training showed a significant increase in all sub-factors in the pre-post-follow up tests of abstinence self-efficacy after the

program, and the score was also maintained in the follow-up test. In addition, through the change of the pre-post-follow up tests, the experimental group improved in all the sub-factors during the program implementation and remained until the follow-up examination period, while the control group remained almost unchanged. This is a result demonstrating that dialectical behavior therapy skills training is effective in promoting abstinence self-efficacy of people with alcohol use disorder. The result of the study is supported by a study of a 2-year clinical trial of patients with borderline personality disorder, the group that performed DBT reported that the number of days of substance use was significantly reduced, and that some have stopped using substances<sup>[26]</sup>, and a DBT program study on patients with methamphetamine abuse where abstinence was maintained in the 6-month and 1-year follow-up results<sup>[27]</sup>.

Based on these results and effects, the significance and implications of this study are as follows. For the first time in Korea, the study applied dialectical behavior therapy skills training to people with alcohol use disorder and the results showed that depression decreased and abstinence self-efficacy showed a significant change, thus providing a framework for self-regulation of abstinence and recovery of people with alcohol use disorders. In addition, the significance can be seen in that, based on the results of this study, there is potential to apply dialectical behavior therapy training at the hospital or in the community.

## Conclusion

There are limitations of this study and suggestions for follow-up studies. The subjects who participated in this study were a few people with alcohol use disorder who were admitted to a single mental health medicine hospital, and there is a limit to the environmental and sociological characteristics of the subjects, making it difficult to generalize them to people with alcohol use disorder. In future studies, there is a need to study people with alcohol use disorders according to various demographic and sociological characteristics. In addition, it is proposed to study various effects of dialectical behavior therapy skills training by adding various variables such as anxiety, depression and abstinence self-efficacy.

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**Conflict of Interest:** Nil

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