

## Effectiveness of Kindness Behavior Training on Interpersonal Communication Skills and Self-Regulation in Depressed Individuals with Substance Use Disorder

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### ABSTRACT

**Purpose:** This study aimed to examine the effectiveness of kindness behavior training on enhancing interpersonal communication skills and self-regulation, and reducing depressive symptoms in depressed individuals with substance use disorder.

**Methods and Materials:** The research employed a quasi-experimental design with pre-test and post-test assessments, including a control group. The statistical population consisted of individuals with substance use disorder referred to the Welfare Organization Addiction Treatment Center in Semnan, Iran. A total of 30 participants were selected through random sampling and were assigned to experimental (n = 15) and control (n = 15) groups. The experimental group received eight 90-minute sessions of Kindness Behavior Training (KBT), while the control group received no intervention. Data collection tools included the Beck Depression Inventory-II (BDI-II), the Matson Social Skills Questionnaire, and the Self-Regulation Questionnaire by Brown et al. (1999). Statistical analyses were conducted using multivariate analysis of covariance (MANCOVA).

**Findings:** Inferential statistics indicated that kindness behavior training had a significant effect on all three dependent variables. Post-test results showed a significant reduction in depression scores ( $F = 16.221$ ,  $p < .001$ ,  $\eta^2 = .278$ ), a significant improvement in interpersonal communication skills ( $F = 18.499$ ,  $p < .001$ ,  $\eta^2 = .416$ ), and a significant increase in self-regulation skills ( $F = 43.542$ ,  $p < .001$ ,  $\eta^2 = .626$ ) in the experimental group compared to the control group. The results confirm that KBT contributed meaningfully to the psychological recovery of the participants.

**Conclusion:** Given the positive outcomes, KBT may serve as a valuable adjunct to standard substance use treatments, particularly when addressing emotional dysregulation and interpersonal dysfunction in comorbid depression.

**Keywords:** Kindness behavior training, communication skills, self-regulation.

## 1. Introduction

Substance use disorder is a behavioral pathology characterized by impulsive substance-seeking and continued use despite increasing loss of control, leading individuals toward negative health and social outcomes (Eftekharidoost Sani et al., 2024). In the fifth edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5), substance use disorders are defined as a set of cognitive, behavioral, and physiological symptoms in which the individual continues substance use despite significant substance-related problems. The diagnostic criteria include impaired control, social impairment, risky use, and pharmacological indicators. According to the World Health Organization (WHO), substance use accounts for approximately 5%, alcohol 4%, and other substances 8% of the total burden of various diseases (Kamarati et al., 2022).

Identifying and assessing individuals with substance use disorder is often complicated due to high comorbidity with other psychiatric disorders. More than half of substance users meet the diagnostic criteria for at least one additional disorder, with depression being the most common. The WHO (2017a) has reported that depression is the leading cause of global disability, affecting more than 350 million people. Studies indicate that addicted individuals exhibit higher levels of depression and anxiety compared to non-addicted individuals. Depression is also considered a core symptom of relapse and recurrence in substance use and must be considered at all stages of evaluation, diagnosis, treatment, and maintenance. Often, the motivation to eliminate unpleasant or distressing states such as pain, anxiety, or depression reinforces substance use (Kalatian et al., 2022).

Numerous studies have reported the comorbidity of substance use disorders and depression. For example, Ross et al. (1988) reported that 23% of individuals with alcohol dependence met the criteria for major depressive disorder, and 66% met the criteria for dysthymia. About one-third to one-half of individuals who use opioids have met the diagnostic criteria for major depressive disorder at least once in their lifetime (Eftekharidoost Sani et al., 2024; Ghorbanshamshi, 2020; Golestani Bakht et al., 2022). Research on quality of life has shown that cannabis use significantly increases depressive symptoms (Golestani Bakht et al., 2022). Priesbeck and Helzer (1988) stated that major depression and dysthymia are 1.5 to 2 times more prevalent among individuals with substance use disorders. Holloway and Bennett (2019) found that 39% of students use

substances with the motivation to relieve depression. Similarly, Lord et al. (2019) found that 27% of students with substance use disorders exhibited depressive and anxiety symptoms, and 11% used substances to manage these symptoms (Eftekharidoost Sani et al., 2024; Kalatian et al., 2022).

Substance use disorder can also be conceptualized as a motivational system disorder, resulting in motivational abnormalities such as addictive behaviors and tendencies toward anxiety and depression (Ghazanfariyanpour & Chalabianlu, 2021). Furthermore, addiction processes are influenced by individual beliefs and attitudes that are directly related to depression and mood disorders. Dysfunctional attitudes bias individuals' perceptions of events, influencing emotions and behaviors, and making them vulnerable to depression and other psychological disorders (Ghazanfariyanpour & Chalabianlu, 2021).

One personality construct that may reduce the incidence of depression and substance use is kindness. Kindness is a positive human trait that has recently gained attention for its significance in psychological well-being and is strongly associated with other positive constructs. Eftekhari-Doust et al. (2024) showed that self-kindness is positively associated with motivation for addiction treatment; individuals high in self-kindness are more accepting of the negative aspects of their lives, including addictive behaviors, acknowledge them, and seek recovery due to heightened self-awareness and feelings of guilt stemming from isolation (Eftekharidoost Sani et al., 2024).

As Gilbert (2015) suggested, self-compassion enhances individuals' sense of emotional security, belonging, and calm, thereby improving their well-being. Otake et al. (2019) found that happier individuals score higher in recognizing, performing, and initiating kind behaviors. Jenkinson et al. (2018) posited that individuals who are kinder and volunteer to help others are generally healthier (Kalatian et al., 2022; Qayyan et al., 2022). Loria et al. (2023) stated that individuals who are kinder and more grateful exhibit greater personal well-being, stronger positive emotions such as joy and hope, and lower levels of depression and envy (Eftekharidoost Sani et al., 2024).

Among the most critical skills for preventing depression and externalizing disorders like substance use is self-regulation—defined as the conscious control of behavior and thought, including the ability to inhibit actions when necessary and act purposefully (Golestani Bakht, 2022). Self-regulation skills are crucial in preventing disorders and are effective in treatment and relapse prevention. For

example, effective self-regulation is associated with academic success, high empathy, prosocial behaviors, and lower risk for disorders such as substance use (Kashefzadeh et al., 2022; Yeo et al., 2020). Self-regulation capabilities also predict health problems, substance dependence, socioeconomic status, and criminal behavior in adulthood (Ghadampour et al., 2019; Planalp et al., 2022).

One self-regulation skill, exposure, lacks consistent evidence regarding its effectiveness as a behavioral change mechanism in treating substance use disorders (Kashefzadeh et al., 2022). However, multiple factors may temporarily impair exposure-based self-regulation, notably alcohol intoxication (Asdolahzadeh et al., 2021). Another effective self-regulation skill in disorders such as substance use and depression is emotion regulation (Ghadampour et al., 2019). Research consistently shows that emotion regulation plays a fundamental role in the development and maintenance of psychopathology. Maladaptive emotion regulation strategies lead to clinical phenotypes of depression and subsequent substance use disorder (Stellern et al., 2023; Yaztappeh et al., 2023).

Interpersonal and communication problems are major issues among individuals with substance use disorders and serve as both causes and consequences of depression and addiction (Tedgård et al., 2019). Theories suggest that depression stems from unmet basic human needs to form and maintain strong, stable relationships (Carver et al., 2017). Social skill deficits (i.e., inability to receive positive reinforcement from others) contribute to depressive symptoms and substance use. Poor social skills represent a vulnerability factor for depression; individuals with these deficits experience depression under stress due to a lack of social support. Moreover, the mechanisms linking depression and substance use involve a range of interpersonal problems and stressors, which may predict later depressive symptoms (Delavari, 2021).

There is evidence that interpersonal dysfunction due to poor social skills contributes to resistance to addiction treatment and other psychological problems, including depression. Social skill deterioration is a consequence of substance use. Interpersonal conflict and poor social skills also contribute to relapse and resumption of substance use. Limited interpersonal resources and poor social skills prolong addiction treatment. Social skills training for substance users yields positive outcomes: (1) improved coping in high-risk situations; (2) development of positive skills and neutralization of maladaptive social behaviors acquired through prolonged substance use—including but

not limited to body language, nonverbal communication, initiating conversation, receiving and expressing complaints, identifying and describing emotions, listening skills, assertiveness, constructive criticism, confidently expressing opinions, refusing requests, and relationship development (boundaries, self-disclosure, trust, fear of rejection); (3) developing and utilizing social support; (4) equipping with refusal skills for prevention and treatment; and (5) enhancing success and promoting interpersonal skills growth (Abbaszadeh, 2021; Ghorbanshamshi, 2020).

In terms of treatment, substance use disorders are marked by repeated relapses and multiple treatment attempts (Chitsazha et al., 2019), underscoring the necessity for comprehensive interventions. In this context, positive psychological interventions have been widely employed in prevention and treatment with compelling results. For example, in improving psychological functioning, Martin Seligman (2003) emphasized increasing happiness through positive psychological interventions and proposed that targeting individuals' strengths and virtues or interventions such as reflecting on kind acts over a week can enhance personal happiness (Ying & Parsakia, 2024).

Kerr et al. (2015) found that kindness interventions, as emotional experiences, promote structural changes and serve as a beneficial early-stage treatment by reducing the negative effects of waiting for psychological treatment. They foster a sense of social connectedness, life satisfaction, optimism, anxiety reduction, and improved well-being in relationships. Self-kindness is the key component of Neff's (2003a, 2003b) construct of self-compassion, which has received substantial empirical and theoretical support for its link to psychological well-being. Research shows that self-compassion encourages preventive behaviors to promote and sustain well-being. Self-compassion therapy highlights limitations and identifies maladaptive behaviors, empowering individuals to take transformative action and encouraging change aimed at well-being (Faizi, 2018; Ghazanfariyanpour & Chalabianlu, 2021; Golestani Bakht et al., 2022).

The present study seeks to explore the role and impact of kindness behavior on substance use and depression. While preliminary studies suggest that such interventions are effective for depression and to some extent for motivating addiction treatment, the specific processes influenced by kindness and its potential outcomes in treatment remain unclear. The kindness behavior training program used in substance use disorder interventions was introduced by Abbaszadeh et al. (2022), who demonstrated its effectiveness in enhancing self-acceptance and social

interest, improving social relationships, reducing self-criticism and rigid expectations from others, improving emotional regulation, developing self-regulation skills, and increasing empathy in interpersonal relations—addressing many of the issues faced by individuals with substance use disorders. Kindness behavior training complements mindfulness approaches and, according to Gross (2014), is suitable for individuals with histories of depression, anxiety, and substance use (Abbaszadeh, 2021).

This study aimed to examine the effectiveness of kindness behavior training on enhancing interpersonal communication skills and self-regulation, and reducing depressive symptoms in depressed individuals with substance use disorder.

## 2. Methods and Materials

### 2.1. Study Design and Participants

The present study employed a quasi-experimental design. The statistical population consisted of all individuals with substance use disorder who were referred to the addiction treatment center in Semnan (Welfare Organization Addiction Treatment Center). The sampling method used was random sampling. A total of 30 individuals were selected for the study, with 15 participants assigned to the experimental group and 15 to the control group.

### 2.2. Measures

The Beck Depression Inventory (Second Edition) is the most widely used self-report measure for assessing depression. This inventory was revised by Beck, Steer, and Brown in 1996 to align more closely with the diagnostic criteria for depressive disorders in the DSM-IV. It consists of 21 items, each offering four response options. Participants select the option that best describes the severity of their depressive symptoms. Studies have consistently reported high internal consistency coefficients for the BDI-II, ranging from .89 to .94 across various populations (Arnau, Meagher, Norris, & Bramson, 1999, 2000). The test-retest reliability coefficient over a one-week interval was reported as .93 (Beck et al., 1996). Evaluations of content, concurrent, discriminant, and factor validity have generally been favorable. In a psychometric analysis conducted on a sample of 94 individuals in Iran, the BDI-II showed a Cronbach's alpha of .90, a split-half reliability coefficient of .89, and a one-week test-retest reliability of .94. The correlation between the BDI-II and the original version was .93. The

BDI-II also showed significant correlations with the Hamilton Rating Scale for Depression ( $r = .71$ ), the Beck Hopelessness Scale ( $r = .68$ ), and the Depression Anxiety Stress Scales ( $r = .88$ ).

The Matson Social Skills Questionnaire (1983) includes 19 items designed to assess interpersonal communication skills in individuals. It uses a Likert-type scale ranging from 1 ("very poor") to 5 ("very good"). The concurrent validity of this questionnaire was confirmed in the thesis by Monjemi Zadeh (2012), showing a strong correlation ( $r = .698$ ) with the Effective Communication Ability Questionnaire. Reliability was assessed using Cronbach's alpha, which generally ranges from 0 (no reliability) to +1 (perfect reliability). The alpha coefficient for this questionnaire was calculated to be .73, indicating good reliability.

The Self-Regulation Questionnaire was developed by Brown, Miller, and Lawendowski in 1999 to evaluate self-regulation processes. It consists of 63 items and seven subscales designed to measure overall self-regulatory ability. Each item is rated on a five-point Likert scale ranging from "strongly disagree" to "strongly agree." This instrument has been normed on both alcohol-dependent patients and student populations, with internal consistency and test-retest reliability coefficients of .91 and .94, respectively. The questionnaire has demonstrated strong concurrent validity with related constructs. Aubrey et al. (1994; as cited in Carey et al., 2004) administered the scale to individuals with alcohol use disorders and found that lower scores were significantly and inversely related to the severity of alcohol use and negatively associated with drinking outcomes. Similarly, Brown et al. (1997; as cited in Carey et al., 2004) found that in a sample of 300 students, lower scores on this scale were associated with alcohol use, alcohol-related consequences, and higher marijuana use. In Iran, Razavi et al. (2012) reported a Cronbach's alpha reliability coefficient of .91 for this questionnaire.

### 2.3. Intervention

The Kindness Behavior Training (KBT) program was developed with the goal of supporting and expanding mindfulness and cultivating kindness behaviors as a complementary approach to mindfulness-based interventions. The program incorporates three core components of mindfulness practice: expanding awareness, learning to accept and cope with distressing experiences, and making conscious, informed choices based on enhanced awareness. The KBT program consists of two mindfulness

sessions, six kindness-focused sessions, and one integrative session combining kindness and mindfulness relaxation. These sessions were delivered weekly to the experimental group over a 90-minute period each.

The intervention protocol consisted of nine structured sessions, including an initial screening (Pre-Session) and eight therapeutic sessions, designed based on Kindness Behavior Training (KBT) principles to promote self-regulation and interpersonal communication in depressed individuals with substance use disorder. In Pre-Session, the target group was selected based on the Beck Depression Inventory, initial kindness assessment, and interpersonal and self-regulation skills questionnaires. Session 1 focused on acknowledging human suffering and recognizing the distress caused by substance use, using mindfulness, breathing exercises, and meaningful reflections. Session 2 addressed how individuals intensify their own suffering by introducing maladaptive coping mechanisms and temptations, guiding participants to identify personal triggers and practice mindful awareness. Session 3 emphasized the impermanence of suffering, encouraging acceptance of change and self-growth through life reflection and emotional awareness. Session 4 deepened participants' motivation for recovery by exploring self-compassion, gratitude, and empathy, including exercises for cost-benefit analysis of substance use and recovery. Session 5 explored the transformation of thoughts, behaviors, and social interactions by linking behavior to outcomes, promoting moderation, and practicing forgiveness and self-accountability. Session 6 centered on internal values by engaging in imagery and identifying supportive versus

hindering individuals in recovery. Session 7 focused on sustaining recovery through self-compassion after relapse, identifying barriers, and preserving constructive emotional states. Finally, Session 8 encouraged participants to help others by sharing their gains and reflecting on previous steps to promote mutual support and continued healing.

#### 2.4. Data Analysis

Data analysis was conducted using descriptive and inferential statistical methods. Descriptive statistics, including means and standard deviations, were calculated for all variables across pre-test and post-test phases in both experimental and control groups. To test the assumptions of normality and homogeneity of variances, the Shapiro-Wilk and Levene's tests were applied. Given that the assumptions were met ( $p > .05$ ), multivariate analysis of covariance (MANCOVA) was used to assess the effectiveness of the intervention on the dependent variables—self-regulation skills, interpersonal communication skills, and depression—while controlling for pre-test scores. Effect sizes ( $\eta^2$ ) and statistical power were also calculated to evaluate the strength and reliability of the findings. All statistical analyses were performed using SPSS software version 26.

### 3. Findings and Results

Initially, the descriptive statistics results are presented. As observed, the scores in the experimental group showed noticeable changes, whereas the control group remained relatively stable.

**Table 1**

*Descriptive Statistics of Research Variables by Group*

Variable	Experimental (Pre-test)	Experimental (Post-test)	Control (Pre-test)	Control (Post-test)
Self-Regulation Skills	Mean: 25.53 SD: 4.07	Mean: 19.6 SD: 3.18	Mean: 24.93 SD: 3.37	Mean: 24.27 SD: 2.91
Interpersonal Skills	Mean: 7.93 SD: 1.71	Mean: 6.53 SD: 1.24	Mean: 8.00 SD: 1.93	Mean: 7.73 SD: 1.83
Depression	Mean: 3.8 SD: 0.94	Mean: 2.8 SD: 1.21	Mean: 3.53 SD: 0.99	Mean: 3.8 SD: 0.77

According to the results of Levene's test, the null hypothesis regarding the equality of variances for the groups' scores in all variables at both pre-test and post-test stages was not rejected. This indicates that the assumption of

homogeneity of variances across the experimental and control groups was met ( $p > .05$ ). Given the satisfaction of this assumption, along with the normal distribution of most scores, the intended inferential analyses were conducted.



**Table 2***Results of Multivariate Analysis*

Variable	Source	Sum of Squares	df	Mean Square	F	Sig.	Effect Size	Power
Self-Regulation Skills	Post-test	159.845	1	159.845	40.476	.001	.906	1.000
	Group	491.989	1	491.989	43.542	.001	.626	1.000
Interpersonal Skills	Post-test	61.438	1	61.438	10.052	.004	.279	.862
	Group	225.806	1	225.806	18.499	.001	.416	.985
Depression	Post-test	321.87	1	321.87	19.651	.001	.431	.564
	Group	543.12	1	55.76	16.221	.001	.278	.632

Based on the results presented in Table 2, the differences in mean scores for self-regulation skills, interpersonal skills, and depression between the experimental and control groups at the post-test stage are statistically significant ( $p < .01$ ). In

other words, kindness behavior training had a statistically significant effect on reducing depression, enhancing interpersonal skills, and reducing self-regulation skills.

**Table 3***Adjusted Means for Self-Regulation Skills, Interpersonal Skills, and Depression in the Post-Test Stage*

Variable	Adjusted Mean	Standard Error
Self-Regulation Skills	19.576	0.519
Interpersonal Skills	46.797	0.877
Depression	24.291	0.519

#### 4. Discussion and Conclusion

The present study aimed to examine the effectiveness of kindness behavior training on interpersonal communication skills and cognitive flexibility in depressed individuals with substance use disorder. Substance use is not merely an individual issue; it is a social harm that poses physical and psychological threats and causes irreversible social and economic consequences (Fouladi et al., 2014). Substance use disorders can be considered a major public health concern, leading to serious harm to individuals, families, and communities (Calabria et al., 2010). Substance use is associated with a wide range of health problems, including physical illnesses, cancers, infections, psychiatric disorders, and social issues such as domestic violence, criminal negligence, traffic accidents, and suicide (Eftekhari doost Sani et al., 2024; Faizi, 2018; Ghazanfariyanpour & Chalabianlu, 2021; Golestani Bakht et al., 2022; Kalatian et al., 2022; Qayyan et al., 2022).

Depression alone has been identified as a strong predictor of substance use disorder. In fact, as stated by the Harvard Mental Health Institute (1998), depression, acute anxiety, attention deficit disorder, and other psychiatric disorders increase the likelihood of dependency and substance use because these disorders diminish the capacity to experience

reward. Etiologically, the link between depression and substance use is significant due to their shared origins. Therefore, addressing depression within the domain of substance use treatment is critical. However, research on positive constructs such as self-kindness, which appears diminished in depressed individuals, is also necessary (Golestani Bakht et al., 2022).

Individuals do not only turn to substances such as stimulants to alleviate depression and skill deficits; many long-term users develop tolerance, anhedonia, risky behaviors, impaired self-regulation skills, and dysfunctional interpersonal interactions. As a result, they resort to stimulant use to address these issues, perpetuating a cycle of depression, skill deficits, and substance use. Various theories on the causes, onset, and outcomes of substance use highlight the role of personality structure and self. In this regard, psychotherapy facilitates understanding and intervention in areas such as the individual's willingness, treatment maintenance challenges, self-regulation distress, affect and mood management, development and maintenance of self-esteem, self-care (interpersonal), and functional interpersonal relationships.

Just as the individual's interactions with others and personal distress should be considered in treatment, so too should environmental factors and the effects of substance use. Dysfunctional self-regulation is closely tied to relational

dysfunction. Furthermore, in discussions of cultural, gender, and minority differences, relapse prevention efforts must be sensitive to individual differences—especially in domains of self-regulation and relationships. Improved self-regulation is a hallmark of successful treatment (Qayyan et al., 2022).

The UK National Treatment Outcome Research Study (NTORS) in the 2000s showed that improvements in physical and mental health correlate with reductions in high-risk behaviors related to substance use. However, treating substance use disorders—especially when comorbid with psychological disorders like depression—has remained a clinical challenge. Many individuals drop out of treatment midway, or relapse occurs shortly after. According to the latest report from the UK National Health Service, nearly one-third of patients with substance dependency discontinued treatment prematurely, and for another third, their problems remained unresolved six months post-treatment. The reasons for the ineffectiveness of traditional treatments are not entirely clear, but treatment failure can have profoundly negative consequences on the patients' mental, physical, and social well-being and impose heavy costs on society.

Treatment approaches must account for the multitude of issues faced by these patients—many of which are not captured by traditional outcome measures. For example, low levels of kindness and high levels of isolation are characteristic of individuals with internet addiction (Eftekhari doost Sani et al., 2024). Given that depressed substance users suffer from self-regulation deficits and significant communication problems, they are at a higher risk of relapse, underscoring the practical importance of this study.

Treatments that neglect emotions, affect, self-regulation, motivation, and interpersonal problems are often ineffective, as these elements frequently play central roles in substance use. Numerous studies have confirmed the critical role of these factors in predicting treatment success and maintenance of recovery from substance use disorders (Eftekhari doost Sani et al., 2024; Faizi, 2018; Ghazanfariyanpour & Chalabianlu, 2021; Golestani Bakht et al., 2022; Kalatian et al., 2022; Qayyan et al., 2022).

In light of previous findings on self-kindness and the function of mindfulness and self-regulation training in revising addictive behaviors and substance use expectations, kindness behavior training may be a crucial domain in substance use interventions. This training may enhance individuals' ambivalence toward substance use (Golestani Bakht et al., 2022; Kalatian et al., 2022). Nevertheless, due

to the novelty of the kindness construct and the increasing prevalence of substance use, further research in this area is warranted. In Iran, kindness behavior training has yet to be widely implemented. Furthermore, deficits in kindness are particularly evident among individuals with depression and substance use disorders. This type of training addresses functional domains and positive constructs that are often overlooked by traditional treatments and represent areas of significant weakness in this clinical population.

### Authors' Contributions

All authors significantly contributed to this study.

### Declaration

In order to correct and improve the academic writing of our paper, we have used the language model ChatGPT.

### Transparency Statement

Data are available for research purposes upon reasonable request to the corresponding author.

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### Declaration of Interest

The authors report no conflict of interest.

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### Ethical Considerations

In this study, to observe ethical considerations, participants were informed about the goals and importance of the research before the start of the study and participated in the research with informed consent.

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