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# The Role of Emotional Reactivity in Tendency Toward Drug Use Among Individuals Referring to a Substance Abuse Treatment Center

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## ABSTRACT

**Objective:** Substance dependence is currently recognized as a serious public health problem. Identifying emotional components and personality traits that predispose individuals—particularly young people—to drug use is of great importance. This study aimed to examine the role of emotional reactivity in tendency toward drug use among individuals referring to a substance abuse treatment center.

**Methods**: This applied study employed a descriptive–correlational design using path analysis. The statistical population consisted of all individuals who referred to the Bani Nik Substance Abuse Treatment Center during the first six months of 2024. A total of 250 eligible participants were selected using convenience sampling. Data were collected using the Emotional Reactivity Questionnaire and the Addiction Tendency Questionnaire. Data analysis was conducted using SPSS version 24, and structural equation modeling (SEM) and bootstrap tests were performed using AMOS.

**Results**: The results indicated that the path coefficient between emotional reactivity and tendency toward drug use was positive and statistically significant at the 0.01 alpha level ($p < 0.01$). These findings demonstrate that higher levels of emotional reactivity are associated with an increased tendency toward drug use among the participants.

**Conclusions**: The findings confirm the direct effect of emotional reactivity on tendency toward drug use. Therefore, emotional reactivity can be considered a significant psychological factor in vulnerability to substance use. Preventive and therapeutic interventions targeting emotional regulation and reactivity may play an important role in reducing the risk of drug use.

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## Introduction

Addiction or substance dependence is a chronic and relapsing disorder with profound social, psychological, physical, and economic consequences. Beyond individual deterioration, substance use disorders impose substantial burdens on families, communities, and health systems. In Iran, substance abuse is recognized as one of the most serious and widespread preventable public health threats, posing a major challenge to mental health and social well-being (Ekhtiari et al., 2008; Noori & Mokri, 2008).

According to estimates by the United Nations Office on Drugs and Crime (UNODC), approximately 200 million people worldwide aged 15–64 (about 5% of the global population) use illicit drugs, among whom nearly 16 million are opioid users and 11 million are heroin users. In Iran, the number of individuals who use drugs has been estimated to range between 1.8 to 3.3 million, with opioids being the most commonly used substances (Mokri, 2002). Official national statistics indicate that approximately 1,350,000 individuals suffer from substance dependence; considering the average Iranian household size (3.6 persons), nearly five million people are directly affected annually by substance use disorders (Drug Control Headquarters of Iran, 2013). These figures highlight the magnitude of addiction as a major public health crisis in Iranian society.

Among psychological factors associated with the initiation and maintenance of substance use, emotional reactivity has received growing attention. Emotional reactivity plays a critical role in the development and persistence of behavioral problems, including addiction. It has been suggested that severe maladaptive behaviors may function as attempts to avoid, suppress, or escape from intense emotional reactions to distressing experiences (Moghbeli Henzai et al., 2020). Emotional reactivity refers to the intensity, sensitivity, and duration of emotional responses to emotional stimuli, as well as the time required for emotions to return to baseline (Etesamipour & Einollahi Maryan, 2023).

As an intrapersonal construct, emotional reactivity reflects an individual's capacity for emotion regulation and the ability to produce appropriate emotional responses in interpersonal contexts (Shapiro, Abramson, & Alloy, 2016). Emotional reactivity prepares individuals for action, enables discrimination between threatening and non-threatening stimuli, and guides behavior accordingly. Thus, it is considered a multidimensional construct involving changes in subjective experience, behavior, and central and peripheral physiological processes (Mauss et al., 2005).

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High emotional reactivity has been theoretically and empirically linked to various forms of psychopathology. Mood disorders, anxiety disorders, and eating disorders, for example, have been conceptualized as maladaptive strategies aimed at avoiding or regulating aversive emotional and cognitive states (Nock & Prinstein, 2005). From a theoretical perspective, heightened emotional reactivity may increase anxiety arousal and bodily sensations associated with distress, leading to misinterpretation of internal cues as signs of illness or threat. Consequently, individuals may engage in reassurance-seeking or avoidance behaviors to reduce emotional discomfort, which may ultimately reinforce maladaptive coping patterns, including substance use (Abramian et al., 2017). Empirical studies support the role of emotional and cognitive regulation processes in substance use tendencies. Vatandoust et al. (2023), in a study of 250 high school students, found that emotional control mediated the relationship between basic psychological needs and tendency toward drug use. Similarly, Ebrahimipour et al. (2022) reported significant positive associations between rumination, worry, alexithymia, and tendency toward addiction. Their findings indicated that difficulties in identifying and describing emotions, externally oriented thinking, ruminative responses, and distraction-based coping strategies significantly predicted addiction tendency. Mina and Amini-Manesh (2021) also demonstrated a significant negative relationship between emotional dysregulation and risky behaviors, while Mousavinassab and Bahrami (2021) found that tendency toward drug use was negatively associated with emotional self-regulation, self-efficacy, and resilience.

Drug abuse and addiction are considered among the four major crises of the twenty-first century, representing one of the most critical psychological, social, and public health challenges worldwide (Moghadam, 2022). The severe consequences of addiction not only undermine individual and family health but also exert a decisive impact on the economic, social, and cultural security of societies. Therefore, identifying psychological factors that contribute to vulnerability to substance use is both necessary and urgent.

Despite the growing body of research on emotional processes and addiction, a review of the literature reveals that direct examination of the role of emotional reactivity in tendency toward drug use among individuals referring to substance abuse treatment centers in Iran remains limited. Accordingly, the present study aims to address this gap by investigating the direct relationship between emotional reactivity and tendency toward drug use among individuals attending a

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substance abuse treatment center. Specifically, this study seeks to answer the following research question:

Does emotional reactivity have a direct and significant relationship with tendency toward drug use among individuals referring to a substance abuse treatment center?

## Material and Methods

The present study was applied in terms of purpose and employed a descriptive–correlational design using path analysis to examine the relationship between emotional reactivity and tendency toward drug use. This methodological approach was selected to evaluate the direct predictive role of emotional reactivity within a structural framework. The statistical population consisted of all individuals referring to the Bani Nik Substance Abuse Treatment Center during the first six months of 2024. Using convenience sampling, a total of 250 eligible participants were selected as the study sample. This sample size was considered adequate for path analysis and structural equation modeling, as it exceeds the minimum recommended number for stable parameter estimation in SEM studies.

Data analysis was conducted using SPSS software (version 24) to compute descriptive statistics and correlation coefficients. Structural equation modeling (SEM) and path analysis were performed using AMOS, and the bootstrap method was applied to test the significance of model parameters and ensure robustness of the estimates.

### Instruments

**Emotional Reactivity Questionnaire (ERQ)**: Emotional reactivity was assessed using the Emotional Reactivity Questionnaire (ERQ) developed by Nock et al. (2008). This instrument consists of 21 items and has a unidimensional structure that measures individual emotional reactivity across three conceptual components: emotional sensitivity, emotional intensity, and emotional persistence.

Items are rated on a 4-point Likert scale ranging from 0 to 4, yielding a total score between 0 and 84, with higher scores indicating greater emotional reactivity. The ERQ has demonstrated strong convergent and divergent validity, evidenced by significant correlations with the Behavioral Inhibition/Activation System (BIS/BAS) scales and mood measures. Criterion validity has also

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been supported through associations with self-injurious thoughts and behaviors. The original study reported excellent internal consistency (Cronbach's alpha = 0.94).

In Iran, Sajadinejad Vakbari (2022) confirmed the scale's convergent and discriminant validity and supported its factorial structure using exploratory and confirmatory factor analyses. Reliability coefficients reported for the Iranian sample included internal consistency (α = 0.91), split-half reliability (0.87), and test–retest reliability (0.86), indicating satisfactory psychometric properties.

**Addiction Tendency Questionnaire:** Tendency toward drug use was measured using the Addiction Tendency Questionnaire developed by Farhad (2006). This scale includes 16 items designed to assess individuals' inclination toward substance use across three dimensions: social, individual, and environmental factors. Responses are provided on a 5-point Likert scale ranging from 1 (Very Low) to 5 (Very High), with higher scores reflecting a greater tendency toward addiction.

The content validity of the questionnaire was evaluated under the supervision of expert faculty members in psychology and counseling. The reliability of the instrument was assessed using Cronbach's alpha, yielding a coefficient of 0.79, which indicates acceptable internal consistency (Mir Hesami, 2009).

**Ethical Considerations**

All procedures in the present study were conducted in accordance with the ethical standards of psychological research and the principles outlined in the Declaration of Helsinki. Participation was entirely voluntary, and informed consent was obtained from all participants prior to data collection. Participants were assured of the confidentiality and anonymity of their responses and were informed of their right to withdraw from the study at any stage without any negative consequences. Collected data were used solely for research purposes and were securely stored to protect participants' privacy.

## Results

Table 1 presents the descriptive statistics for the scores of the Addiction Tendency variable and its three dimensions (social, individual, and environmental), including mean, standard deviation, skewness, and kurtosis.

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**Table 1.** Descriptive Statistics of Addiction Tendency and Its Dimensions

| Variable | Skewness | Kurtosis | Mean | Standard Deviation |
|---|---|---|---|---|
| Social Dimension | −0.487 | 0.353 | 15.90 | 2.646 |
| Individual Dimension | −0.310 | 0.061 | 11.04 | 1.907 |
| Environmental Dimension | −0.202 | 0.599 | 19.98 | 3.925 |
| Total Addiction Tendency | −0.272 | 0.472 | 46.92 | 7.233 |

As shown in Table 1, the mean scores for the social, individual, and environmental dimensions of addiction tendency were 15.90, 11.04, and 19.98, respectively. The overall mean score for addiction tendency was 46.92. Examination of skewness and kurtosis values indicates that all variables fall within the acceptable range of −2 to +2, suggesting that the data are approximately normally distributed at the 0.05 significance level. Therefore, the assumption of normality required for parametric analyses and path analysis was considered satisfied.

To examine the direct effect of emotional reactivity on tendency toward drug use, path analysis was conducted using AMOS, and the bootstrap method was applied to test the significance of the path coefficient.

**Table 2.** Path Coefficient for the Direct Effect of Emotional Reactivity on Addiction Tendency

| Path | Unstandardized Coefficient | Standardized Coefficient (β) | t-value | P |
|---|---|---|---|---|
| Emotional Reactivity → Addiction Tendency | 0.362 | 0.319 | 3.810 | 0.01 |

As reported in Table 2, the path coefficient representing the direct relationship between emotional reactivity and tendency toward drug use was positive and statistically significant. The standardized coefficient ($\beta = 0.319$) indicates that higher levels of emotional reactivity are associated with a higher tendency toward drug use.

The obtained t-value (3.81) exceeds the critical threshold (±1.96), and the significance level confirms that this relationship is significant at the $\alpha = 0.01$ level ($p < 0.01$). These findings demonstrate that emotional reactivity is a significant positive predictor of addiction tendency.

Accordingly, the research hypothesis proposing a direct effect of emotional reactivity on tendency toward drug use is supported.

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## Discussion

Based on the findings of the present study, the path coefficient representing the relationship between emotional reactivity and tendency toward drug use was positive and statistically significant. Accordingly, the research hypothesis proposing a direct effect of emotional reactivity on tendency toward drug use was supported. This finding suggests that as emotional reactivity increases, individuals' inclination toward substance use also increases. The obtained result is consistent with prior empirical evidence and theoretical models emphasizing the role of emotional processes in substance use vulnerability.

The findings of this study are in line with several previous investigations. Vatandoust et al. (2023) demonstrated that emotional control plays a mediating role in the relationship between basic psychological needs and tendency toward drug use among students. Similarly, Mina and Amini-Manesh (2021) reported a significant negative association between emotional dysregulation and risky behaviors, indicating that poorer emotional regulation increases engagement in maladaptive behaviors. In a study conducted among university students in Qom, Mousavinassab and Bahrami (2021) found that tendency toward drug use was negatively correlated with emotional self-regulation, self-efficacy, and resilience. Additionally, the findings of Hayeri-Meybodi et al. (2021) showed that relapse into addiction was positively associated with maladaptive repetitive thinking patterns, such as referential thinking and perceived inefficacy, and negatively associated with emotional self-awareness and mental vitality. Khanehkeshi, Khanmohammadi Otaghsara, and Malekian (2017) also reported that emotional instability, aggression, and reduced prosocial behavior significantly predicted readiness for addiction.

International evidence further supports these findings. Goul et al. (2020) found that emotion dysregulation was significantly related to substance use motives among substance users. Moreover, Kalmakis and McChesney (2009) reported a significant relationship between emotional reactions in individuals with a history of trauma and dependence on various substances. Collectively, these findings reinforce the notion that heightened emotional reactivity and impaired emotional regulation are central psychological mechanisms contributing to substance use tendencies.

From a theoretical perspective, emotional reactivity appears to be a key vulnerability factor in substance misuse. High emotional reactivity often leads individuals to rely on maladaptive emotion

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regulation strategies, thereby increasing the likelihood of substance use as a means of coping with emotional distress. Individuals who are unable to regulate emotional arousal effectively are more likely to experience intense negative affect and may turn to substances as a rapid and external method for emotional relief (Darwin, 2001). Impulsivity, a personality characteristic closely associated with high emotional reactivity, has also been consistently identified as a significant predictor of substance misuse across multiple studies.

Conversely, individuals with stronger emotion regulation abilities are better equipped to employ adaptive coping strategies in high-risk situations and are more capable of resisting substance use. Effective emotion regulation enables individuals to anticipate interpersonal demands, manage social pressures, and modulate emotional responses more efficiently, thereby reducing vulnerability to substance use (Trezise & Reeve, 2014). In contrast, deficits in cognitive and emotional regulation represent a core difficulty among substance users, often resulting in failure to manage emotional states and increased reliance on substances to regulate affect (Ali-Hosseini Maslak & Kiani, 2021).

Another interpretation of the findings highlights the role of emotional reactivity as an internal self-regulatory capacity. Emotional reactivity reflects an individual's ability to modulate emotions and behaviors in response to changing internal and external conditions. Individuals with adequate emotional reactivity can manage emotional arousal, focus on problem-solving, and adaptively cope with stressful situations. However, individuals with poor emotional reactivity lack sufficient skills to regulate emotions under stress and therefore tend to depend on external regulators, such as substances, to alleviate emotional discomfort. Such deficits may increase perceived stress and reinforce substance use as a fast and readily available solution. Thus, emotional self-regulation can be conceptualized as a powerful internal resource that enhances resistance to temptation, whereas low emotional self-regulation increases susceptibility to substance use (Mousavinassab & Bahrami, 2021).

Despite its contributions, the present study has several limitations that should be considered when interpreting the findings. First, the use of a descriptive–correlational design limits causal inference, and therefore conclusions regarding cause-and-effect relationships should be drawn with caution. Second, participants were selected using convenience sampling from a single substance abuse treatment center, which may limit the generalizability of the results to other populations or settings.

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Third, data were collected using self-report questionnaires, which are susceptible to response bias, social desirability, and inaccurate self-perception. Finally, the study focused solely on emotional reactivity and did not examine other potentially influential psychological variables, such as personality traits, trauma history, or social support.

In light of the findings and limitations, several recommendations are proposed. Future studies are encouraged to employ longitudinal or experimental designs to better examine causal relationships between emotional reactivity and substance use tendency. Expanding the sample to include individuals from diverse treatment centers and community settings would enhance the external validity of the findings. Additionally, incorporating multi-method assessments (e.g., clinical interviews or behavioral measures) could reduce reliance on self-report data. From an applied perspective, the results highlight the importance of designing and implementing emotion regulation–based interventions, such as emotional awareness training, distress tolerance, and self-regulation skills training, within substance abuse prevention and treatment programs. Strengthening individuals' emotional regulation capacities may play a critical role in reducing vulnerability to substance use and preventing relapse.

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**Data availability statement**

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

**Ethics statement**

The studies involving human participants were reviewed and approved by the ethics committee of Islamic Azad University. The patients/participants provided their written informed consent to participate in this study.

**Author contributions**

All authors contributed to the study conception and design, material preparation, data collection, and analysis. All authors contributed to the article and approved the submitted version.

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**Conflict of interest**

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

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