Comparative study of cognitive regulation between addicted and non-addicted peoples

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ABSTRACT

Background: The addiction-related brain regions considerably have overlap with those that support cognitive functions. Therefore, this study aimed to investigate and compare the cognitive regulation in addicted and non-addicted groups. Methods: In this comparative causal study, the samples (N = 320) selected via randomized multicluster categorical sampling according to demographic variables and randomized as addicted (N = 160) and non-addicted (N = 160) groups. The samples measured via standard tool of cognitions and emotion regulation. Gathered data analyzed through SPSS 20 software using descriptive tools and t-test. Results: Results showed that the addicted group in compared to non-addicted one is significantly different in emotional and cognition strategies. The addicted group showed higher scores in negative cognitive strategies. Conclusion: These results highlight the impact of cognitive and emotional structures in addiction. The authors suggest to future studies to designee native planned program which helps to addicted people to regulate cognitive and emotional strategies.

KEY WORDS: Forensic sciences, forensic psychiatry, addiction, cognitive strategies, emotional strategies, substance abuse

INTRODUCTION

Addiction is one of the most critical issues in health field results to a broad range of physical and mental consequences. This prevalent problem poses a considerable burden on the public health of society [1]. As Iran is located along the opium trade route, opiate addiction is the most common drug abuse problem in this country [2]. Many researchers and professionals of substance abuse area are interested to find out which traits effects the addict people to start and continue drug abuse and vice versa which traits prevent or do not exist in involved peoples in compare to non-addicts. It seems this subject is multifactorial, and many factors are related to this perception. Identification of psychological variables, especially personality-related factors was one of the common targets of health psychologist. Some personality traits can play an important role in the etiology and the progression of addiction and can make the individual sick, indirectly and by creating unhealthy behaviors such as smoking, addiction, and insomnia [3].

Previous researches reported clinical associations between psychiatric disorders and substance abuse. According to the National Comorbidity Survey Replication, Glantz et al. found any psychiatric disorder enhances the risks for substance dependency. In addition, these data indicate, the relationship between the level of psychiatric disorders and increased risk for substance dependence [4]. Meanwhile, some theories and models attempted to explain the relationship of substance abuse with a different personality and psychological factors [5]. Parker et al. believed substance abuse results to some deficits in cognitive and emotional regulation strategies [6]. As when they feel compulsory to use drug, they cannot manage their emotions regarding substance abuse. The ability of emotion management leads to selecting appropriate coping strategies in high risked situations [7].

Emotional and cognitive regulation strategies have been introduced as including cognitive strategies, i.e. self-blame, acceptance, rumination, positive refocusing, refocus on planning, positive reappraisal, putting into perspective, catastrophizing, and other-blame [8]. These strategies help people to regulate the negative emotions and stimulation which are associated with growth, development, and mental health [9]. These strategies comprised internal and external processes, which are responsible for monitoring, evaluating, or changing of a person’s emotional response. It is noteworthy any imbalance in emotional and cognitive regulation effects the vulnerability of mental health [10]. Stressful situations, in addition to creating different emotional reactions such as rage, anxiety, and depression, can also contribute to adopting risky behaviors such as alcohol abuse, smoking, and substance abuse [11]. The results of a recent study show a significant relationship between positive and negative cognitive emotion regulation strategies and tendency to cigarette and hookah smoking [12]. Franques et al. also reported a significant relationship between addiction and cognitive emotion regulation strategies [13].
Considering rare inconsistent native studies, which compare the cognitive-emotional strategies between addicts and non-addicts. The authors aimed to investigate the cognitive-emotional strategies level in addicts and compare it with non-addicted peoples.

**METHODS**

This study was a comparative cross-sectional study included all addict and non-addicted males of the capital city.

**Ethics**

The participants given consent to participate in the study; the participant asked to remove any personal information from questionnaires, and they assured that information would be confident.

**Sampling and Procedure of Study**

The study population included males aged 25-45 who referred to camps to recovery and second group comprised people with same demographic characters in the same area without addiction history. The samples selected via cluster sampling method, researchers selected four area of 22 area of capital city randomly; the addicted group included 160 cases who selected randomly out of four camps, and the non-addicted group included 160 men selected randomly among four same area.

**Inclusion and Exclusion Criteria**

Age 25-45; belonging to middle socio-economic level; education up to diploma; having children.

**Questionnaires**

**Clinical addiction**

Clinical drug addiction profile by Mokri et al. (2011) was used for collecting demographic information. The first part, the basic demographic information includes age, marital status, and education. The second part, addiction, profile includes information about the type of drugs used, and also the age, duration, and number of days in which the drug was used in the last month before their participating in the inpatient program. In the third part, treatment history, previous psychiatric treatment for substance use like methadone maintenance treatment, and naltrexone treatment were asked. Risk behavior profiles include injection, sexual relationship, and criminal history [14].

**Cognitive emotion regulation questionnaire (CERQ)** (Garnefski et al., 2001; Iranian version: Hasani et al., 2011)

CERQ is a self-report questionnaire used to access specific cognitive emotion regulation strategies. It has 36 items using a Likert scale ranging from 1 (almost never) to 5 (almost always). CERQ included nine subscales of cognitive-emotional regulation strategies, i.e. self-blame, thoughts of blaming oneself for the event; rumination, thinking about the feelings and thoughts associated with the event; catastrophizing, thoughts of emphasizing the terror of the situation; other-blame, thoughts of putting the blame of what happened on others or in the context; acceptance, thoughts of accepting what one has experienced and resigned to what has happened; positive reappraisal, thoughts of attaching a positive meaning to the situation in terms of personal growth; refocus on planning, thinking about what steps to take to handle the negative event; putting into perspective, thoughts of playing down the seriousness of the event and emphasizing its relativity comparing to other events, positive refocusing, referring to thinking about joyful and pleasant events instead of thinking about what happened. In CERQ’s original study, alpha coefficients ranged from 0.68 to 0.82 [9,10].

**Statistics**

SPSS software version 20 used for analysis of data. The data analyzed using descriptive methods such as mean and standard deviation. The groups compared using independent samples t-test.

**RESULTS**

This study was performed on 160 addicted men (98 opioids, 62 methamphetamine). For marital status among addicts, 67 subjects (40.7%) were single, 52 (30%) married, 25 (17.1%) divorced, 12 (7.6%) separated, and 4 (2.9%) widowed. The average level of education was approximately 10 years (mean ± standard deviation [SD] = 10.2 ± 4.33). Education level of participants was as follows: 16.4% had maximum up to primary school, 17.9% had guidance school up to high school diploma, and 65.7% participants with high-school or higher education. The opioids (opium 19.7%, heroin 11.3%, and crack 18.9%) dependent group reported using opioids on a mean of 12.888 days last month (SD = 8.11). The methamphetamine-dependent reported using methamphetamine on a mean of 8.15 days last month (SD = 6.15). The results showed that most of the non-addicted group were married (97%) and rest widow of divorced. Education in the non-addicted group was almost higher than addicts and the addicted groups’ age mean was about 36 while non-addicts was 38. This implies that addict was almost younger than the non-addicted group. The results of K Squire showed no difference in two groups demographic characters (P = 0.243). The results of t-test in Table 1 shows addicted cases use more frequently negative cognitive strategies than non-addicts (P > 0.005).

**DISCUSSION AND CONCLUSION**

The results of the current study showed that there is a significant different between addicted and non-addicted cases [Table 1]. The mean score of cognition regulation was higher among addicted groups than non-addicted. This finding is consistent with the results obtained by Mohajerin et al. (2013) and Abbasi et al. (2014) [14,15].
This implies irregularity of emotion and cognition among abusers is more prevalent. These findings are similar to findings of Flett et al. (2007) reported a positive relationship between cognitive with distress and self-management failures [16].

In view of Rice and Preusser, using ineffective strategies (emotion-focused coping strategies) to deal with problems are more common among people consuming alcohol to get relax or cope with difficulties [17]. In contrast, using effective coping strategies, such as problem-focused coping strategies, showed lower problems. The peoples with low ability of emotional and cognitive regulation, due to lack of cognitive inflexibility, use various maladaptive coping strategies which are mostly emotion-focused such as substance abuse. They more likely suffer from anxiety and distress in confronting situations due to skepticism and cognitive inflexibility, and their cognitive bias of self-blame leads to feelings such as anxiety, depression, and helplessness. In addition, preoccupation leads to perceived inability, lack of confidence in the ability to manage stressful situations, reduces the ability to solve the problem, and stops the individual from direct and efficient involvement in the issue. This causes an increasingly vicious cycle of anxiety and concerns, which lead to an intensification of psychological pressures and helplessness [18]. In such circumstances, the individual's attempts are to change emotions raised from tension. When they notice the change in the event causing stress, some people tend to respond using avoidant strategies. These people approach to use denial, alcohol, or drugs to avoid dealing with stressful agents and to feel better and relaxed [19,20].

Garnefski and Kraaij (2006) found that individuals with weak cognitive strategies such as rumination, catastrophizing, and self-blame are more vulnerable to emotional problems compared to other people. This is so while those who employ other optimal strategies such as positive reappraisal are less vulnerable [21]. Colman (1995) stated that emotion regulation is low in substance abusers. This idea can be restated in this way that when the person is under stress for substance abuse; poor management of emotions increases the risk of substance abuse. In contrast, effective management of emotions reduces the risk of substance abuse [22].

Overall, studies indicated that the presence of maladaptive emotion regulation strategies is more harmful than the relative absence of emotion regulation strategies [23].

### Table 1: The t-test table of comparing addicts and non-addict in case of cognition regulation

<table>
<thead>
<tr>
<th>Variable</th>
<th>Mean</th>
<th>SD</th>
<th>T</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Groups</td>
<td>Addict</td>
<td>Non-addict</td>
<td>Addict</td>
<td>Non-addict</td>
</tr>
<tr>
<td>Negative cognitive-emotional strategies</td>
<td>69.55</td>
<td>58.39</td>
<td>16.98</td>
<td>13.93</td>
</tr>
</tbody>
</table>

SD: Standard Deviation

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REFERENCES


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