







## Cognitive avoidance as a coping mechanism in patients with opioid use disorders (OUDs): a cross-sectional study in Western Iran

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### ABSTRACT

**Introduction:** Opioid use disorders (OUDs) have a high prevalence as social problems. Scientific evaluation and understanding the mental and psychological components of OUDs are highly important for improving these patients' adaptability and mitigating their psychological damage. The purpose of this study was to compare cognitive avoidance in patients with OUDs and a control group.

**Methods:** This study is a case-control study. The selected population includes all the patients with OUDs and the control group visiting Farabi Hospital of Kermanshah in western Iran in 2018 for treatment. From this population, 202 individuals were selected as the sample of the study. The required data were collected using the Cognitive Avoidance Questionnaire (CAQ) and the data were analyzed using logistic analysis.

**Results:** The majority of the individuals under study were in the age range of 26–35 years (48.5%), male (92.6%), with a secondary school education (80.6%), unemployed (55.4%), and single (59.9%). Moreover, the results of the logistic analysis show that the total score of cognitive avoidance among patients with OUDs, 7.50 (1.34–13.66), was higher than that of control group ( $P < 0.05$ ).

**Conclusions:** The findings from the current study indicate the high prevalence of cognitive avoidance among patients with OUDs, which shows that this component must be considered while attempting to prevent and treat OUDs.

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### Introduction

OUD is one of the most serious public health and medical challenges all over the world, particularly in Iran (Shirani, Shakiba, Soleymanzadeh, & Esfandbod, 2010). In 2017, the United Nations Office on Drugs and Crime (UNODC) reported the prevalence of opioids 0.38% (opioid 0.27% – opiates 0.49%) (United Nations Office on Drugs and Crime [UNODC], 2017).

Iran is one of the countries where the prevalence of opioid use has increased in recent years, one of the reasons is the common border between Iran and Afghanistan, which is the largest producer of opium in the world (Moradinazar et al., 2020). Also, price reduction, social problems, and disorders, along with population growth, have affected the upward growth of opioid use in Iran (Gholamrezayee et al., 2016). According to the World Health Organization, opium use in Iran is three times the global average, and about 2.7% of the Iranian population consumes opioid derivatives daily (Moradinazar et al., 2020).

Opioid dependence causes impairments in cognitive function, including cognitive flexibility and cognitive avoidance. Opioid use severely imbalances the neural networks and leads to reduced activity of brain areas responsible for cognitive processes (Gholamrezayee et al., 2016).

According to research, substance use is influenced by people's beliefs and attitudes (Petersen et al., 2018). Moreover, experiencing negative emotions and cognitive avoidance impact the onset of substance use and its persistence (Hopwood et al., 2015).

Cognitive avoidance is an attempt to avoid negative events that can be presented cognitively (denial, thought substitution, and thought suppression) and behaviorally (avoidance of responsibility and substance use) (Farris et al., 2015). The concept of avoidance refers to escaping an action or escaping a person or an object, which reduces distress but causes the continuation of anxiety in the long run. Avoidance prevents individuals from showing effective responses to emotional stimuli and leads to the substitution of emotion management strategies, so it is not an efficient strategy (Hong et al., 2017; Pomerleau et al., 1992; Shadel et al., 2001).

In some studies, the role of cognitive avoidance in anxiety disorders (Olatunji et al., 2010), depression disorder (Quigley et al., 2017), hyperactivity disorder (Knouse & Mitchell, 2015), anti-social behaviors (Nestler & Egloff, 2010), and tendency toward alcohol and substance use has been shown (Hong et al., 2017).

In a study by Pomerleau et al. (1992), the authors show a positive relationship between the cognitive avoidance score and smoking cigarettes. Hong et al. (2017) evaluated 17 men who used tobacco and found a relationship between cognitive avoidance and tobacco use. Shadel et al. (2001) showed a positive relationship between dependency on nicotine and cognitive avoidance. Accordingly, Farris et al. (2015) showed the effects of cognitive avoidance on relapse and craving in individual's dependent on nicotine.

Various factors may affect cognitive patterns, including social and cultural contexts. Due to the complexity of people's relationships with society and the culture in which they live, the impact of cultural and social factors on the behavior of them and, consequently, the incidence of opioid use cannot be ignored. People's lifestyle affects the social, economic, mental health, and psychological existence of individuals (Fartookzadeh et al., 2013).

Culture can be a type of stress factor that activates some vulnerabilities in the tendency to use opioids (Sederer & Marino, 2018). In some cultures, stress is experienced more than others, which can be attributed to various factors such as race, ethnicity, socio-economic status, and social conditions of that culture that lead to mental disorders or cognitive dysfunctional patterns (Zarani et al., 2017).

Using avoidance coping styles by people with OUDs for dealing with worrying circumstances and situations intensifies and causes the continuation of the clinical symptoms of substance use (Hyman & Sinha, 2009). On the other hand, it can be said that specific types of coping mechanisms can reduce or increase the risk of substance use among individuals (Capella & Adan, 2017). Some studies have focused on the role of cognitive avoidance in substance use. However, very few studies have compared cognitive avoidance and its subscales in the individuals who are users and the control group.

## Objectives

The current study aims to compare cognitive avoidance between patients with OUDs and control group.

## Methods

### Participants

This study is a case-control study approved by the Ethical Committee of the Medical University of Kermanshah (KUMS.REC.227), and it has been done in order to investigate and compare the level of cognitive avoidance in patients with OUDs and control group. The statistical population of the study includes all the individuals visiting Farabi Hospital in Kermanshah City (in western Iran) from May 22, 2018 to September 23, 2018 in order to treat their substance use disorder. In order to select patients with OUDs, the subjects were first interviewed based on the criteria from the Diagnostic and Statistical Manual of Mental Disorders, 5th Edition (DSM-5), and people who did not meet the criteria for OUDs were eliminated from the study, while the remaining individuals were entered into the study. At first, two groups were matched and selected based on control variables including age, gender, educational level, occupational status, and marital status. Overall, 102 individuals in the OUDs group and 100 individuals in the control group were entered into the study.

### Procedure

The procedure of the study was in such a way that after obtaining the necessary permits and coordinating with the

Medical University of Kermanshah and the management in Farabi Hospital, the researcher visited the population of the study during the selected timeframe and after explaining the objectives of the study and acquiring the consent of the patients being treated for substance use, based on the inclusion criteria (an age between 20 and 50 years, having at least a secondary school education, OUDs diagnosis based on DSM-5 criteria, and signing an informed consent form for participating in the study) and exclusion criteria (meeting the diagnosis criteria for other psychological disorders, alcohol use during the last 5 years, medical and neurological diseases such as brain strokes, seizure disorder, infection, HIV, and head trauma) of the study, the researcher selected the participants from the population using convenient sampling based on their willingness to participate in the study. The individuals in the control group were selected using convenient sampling from among the nonuser family members of patients once the hospital psychologist confirmed their non-dependency on drugs.

## Measure

### Cognitive avoidance questionnaire (CAQ)

This questionnaire was developed in 2008 by Sexton and Dugas. The questionnaire contains 25 questions, and its objective is to measure cognitive avoidance based on various dimensions including suppression of worrying thoughts, substitution of positive thoughts for worrying thoughts, using distraction for interrupting the course of worrying (distraction), avoiding circumstances and actions which activate worrying thoughts, and transformation of mental images to verbal thoughts. This scale is scored based on a five-option Likert spectrum from completely wrong to completely right. In order to obtain the total score for this scale, the scores for all the questions are summed up. The range of the scores for the scale is from 25 to 125. Low scores show low cognitive avoidance and higher scores indicate higher cognitive avoidance (Sexton & Dugas, 2008).

### Statistical analysis

The collected data were entered into SPSS20 software application by a statistical expert and were analyzed using the related statistical analysis methods. In order to determine the distribution of age, gender, marital status, education level, occupation, as well as the levels of cognitive avoidance, descriptive statistical methods including frequency and percentage were used. In order to evaluate the homogeneity of demographic variables including age, gender, marital status, occupation, and education level between the two groups in the study, the chi-square test and if necessary, its adjustment (Fisher's exact test) were utilized. Finally, in order to evaluate the level of cognitive avoidance (suppression, substitution, distraction, avoidance, transformation, and total score of cognitive avoidance) for both groups, the logistic analysis was used. All the analyses were

performed using SPSS20 statistical software application and at the error level of 5%.

### Ethical considerations

The study was approved by the ethics committee of the vice chancellery of research and technology, Kermanshah University of Medical Sciences. In order to follow the ethical principles, the questionnaires were filled out after obtaining the informed consent of the participants, and they were assured that their information would stay confidential.

### Results

A total of 102 individuals in the substance use group and 100 individuals as nonusers were entered into the study.

The distributions of the demographic characteristics of the participants in both groups are presented in Table 1. The results of evaluating the relationship show that the two selected groups are relatively homogenous with regards to demographic characteristics including age, gender, marital status, occupation, and education level ( $p > 0.05$ ).

As can be seen from Chart 1, the level of cognitive avoidance for both groups in the study shows the highest frequency for high, moderate, and low levels, respectively. That is, in the control group, the scores of cognitive avoidance for more than half the individuals in the group 69 individuals (69.0%) were high (75.1–125); for 26 individuals (26.0%), the scores were moderate (50.1–75); and for 5 individuals (5.0%), the scores were low (25–50). In the group containing patients with OUDs, the scores of cognitive avoidance were high for the majority of members 79 individuals (77.45%), moderate for 19 individuals (18.63%), and low for 4 individuals (3.92%).

Table 1. Demographic groups in the study.

Variable	Levels	Groups n(%)	
		Control group	OUDs
Age	15–25	10(10.0)	7(13.5)
	26–35	52(52.0)	19(36.5)
	36–45	23(23.0)	13(25.0)
	> 45	15(15.0)	13(25.0)
Gender	Female	7(7.0)	3(5.8)
	Male	93(93.0)	49(94.2)
Educated level	Secondary school	78(78.0)	42(80.77)
	High school diploma	15(15.0)	7(13.46)
	University	7(7.0)	3(5.77)
Occupation	Office worker	13(13.0)	8(15.4)
	Self-employed	28(28.0)	16(30.8)
	Unemployed	59(59.0)	28(53.8)
Marital status	Single	53(53.0)	21(40.4)
	Married	40(40.0)	26(50.0)
	Divorced	7(7.0)	5(9.6)
Total		100(100.0)	52(100.0)

After controlling for confounding variables, the total score of cognitive avoidance for patients with OUDs is 7.50 (1.34–13.66) times higher than that of control group. However, there was no difference between patients with OUDs and control group with regards to the subscales (Table 2).

### Discussion

The current study was carried out in order to compare cognitive avoidance between patients with OUDs and control group. The data analysis shows that the total score of cognitive avoidance in patients with OUDs is 7.50 times higher than that of the control group. However, there was no statistically significant difference between the patients with OUDs and control group with regards to the scores for the subscales. This finding is consistent with the results of Pomerleau et al. (1992), Hong et al. (2017), Shadel et al. (2001), and Farris et al. (2015).

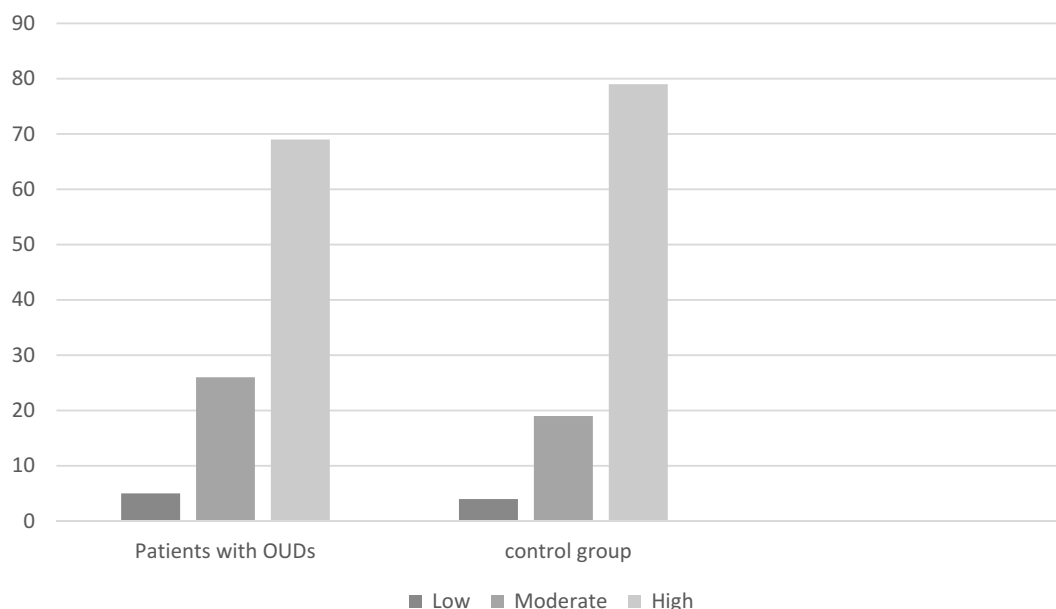


Chart 1. Frequency distribution of cognitive avoidance for groups in the study.

**Table 2.** The results of the logistic analysis for the concepts of score of cognitive avoidance for groups in the study.

Variable	Group	N	Min – Max	SD ± mean	β(95CI%)
Suppression	Control group*	100	5–25	18.61 ± 4.35	1
	OUds *	52	7–25	19.42 ± 4.61	0.28(–1.14–1.71)
Substitution	Control group	100	5–23	14.03 ± 4.90	1
	OUds	52	5–25	17.79 ± 5.22	4.04(2.34–5.73)
Distraction	Control group	100	5–25	17.52 ± 4.90	1
	OUds	52	7–25	18.75 ± 4.90	.42(–.82–1.67)
Avoidance	Control group	100	5–25	16.91 ± 4.50	1
	OUds	52	11–25	19.65 ± 4.05	2.00(.65–3.35)
Transformation	Control group	100	5–25	14.54 ± 5.16	1
	OUds	52	5–25	15.54 ± 4.90	1.37(–.11>.2086)
Total score of cognitive avoidance	Control group	100	31–119	81.61 ± 17.65	1 7.50 (1.34–13.66)

In order to explain this finding, it can be said that the majority of patients with OUDs not only avoid certain circumstances (behavioral avoidance), but they may also avoid thinking about their problems as well (cognitive avoidance) (Hong et al., 2017). Furthermore, it can be said that one of the causes of increased vulnerability of individuals to using drugs is their high sensitivity to stress and their tendency to use avoidance strategies to prevent facing stressful situations (Gilbertson et al., 2019; Sinha, 2008). Neglecting and denying unpleasant emotions causes reduced self-awareness of emotions and the denial of current conditions. This can affect drug use in various aspects (Hyman & Sinha, 2009). For instance, the implicit denial of problems and avoiding facing current realities and neglecting them while like any other avoidance response can temporary mitigate the individual's distress, it is not a strategy which can be beneficial and compatible in the long run (Gyawali et al., 2016). Rather, in the long run, such a strategy can cause more problems. This is because avoidance responses may distance the individual more and more from his or her internal and external realities and his or her ability to understand and obtain accurate and reality-based feedback, which makes them miss the opportunity to take the accurate, proper, and effective measures (Oakland, 2015; Serowik & Orsillo, 2019; Shorey et al., 2017).

On the other hand, OUDs can affect cognitive events by changing beliefs and attitudes about avoiding cognitive events directly (e.g., creating peace, creating avoidance, escaping painful cognitions) or indirectly (suppressed evaluations) (Gould, 2010). These cognitive changes may be rooted in the powerful positive and negative reinforcements caused by using drugs (Fried et al., 2006).

In cognitive avoidance, since individuals are not willing to deal with problems and choose the path of least resistance for recreating mental balance, the risk of tendency toward using drugs is increased. Depending on the extent, the individual is willing to escape problems by denying them, using drugs seems like a potential coping mechanism since in cognitive avoidance, there is possibly a vicious (non-constructive) cycle. In fact, neglecting a problem will only worsen the initial problematic situations (Bartone et al., 2017; Levin et al., 2007).

According to the results of the current study, it can be said that because patients with OUDs utilize an avoidance coping mechanism, instead of facing everyday life problems and finding rational solutions for them, they escape these problems. Therefore, it is recommended that training and intervention

programs for patients with OUDs based on the concept of avoidance coping mechanism be held and drug rehab centers should teach proper strategies for coping with problems and solving problems to patients with OUDs so that they can properly mitigate their worries and do not report to unhealthy methods such as using drugs. Thus, it seems that therapists active in the field of OUDs must consider the avoidance responses of their clients more seriously besides medical treatments, detoxification and other interventions are usually considered to be used for treating substance dependency.

One of the limitations of the current study can be the fact that the necessary data for the study were collected using questionnaires, which may lead to bias and deviation in the answers of the individuals. Another limitation of the current study was the small size of the sample and not controlling the confounding variables. Therefore, it is recommended that future studies resolve these issues and if possible, investigate the role of cognitive avoidance in tendency to use various drugs including stimulants and opioids.

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The authors of this article hereby declare that there has been no conflict of interest.

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