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Difficulties in emotion regulation mediate negative and positive affects and craving in alcoholic patients

Vahid Khosravani [a,*], Farangis Sharifi Bastan [a], Fatemeh Ghorbani [b], Zoleikha Kamali [c]

[a] Psychosocial Injuries Research Centre, Ilam University of Medical Sciences, Ilam, Iran
[b] Toxicological Research Center, Department of Clinical Toxicology, Loghman-Hakim Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran
[c] University Technology Malaysia (UTM), Johor Bahru, Malaysia

HIGHLIGHTS

- Relations of positive/negative affects to craving were tested via emotion regulation difficulties.
- The study was performed by controlling for gender, depression, and severity of alcohol dependence.
- Increased negative affect had indirect effect on craving through limited access to emotion regulation strategies.
- Decreased positive affect had indirect effect on craving via limited access to emotion regulation strategies.

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ABSTRACT

The aim of this study was to assess the mediating effects of difficulties in emotion regulation (DER) on the relations of negative and positive affects to craving in alcoholic patients. 205 treatment-seeking alcoholic outpatients were included. DER, positive and negative affects as well as craving were evaluated by the Difficulties in Emotion Regulation Scale (DERS), the Positive/Negative Affect Scales, and the Obsessive Compulsive Drinking Scale (OCDS) respectively. Clinical factors including depression and severity of alcohol dependence were investigated by the Alcohol Use Disorders Identification Test (AUDIT) and the Beck Depression Inventory-II (BDI-II) respectively. Results revealed that both increased negative affect and decreased positive affect indirectly influenced craving through limited access to emotion regulation strategies. It was concluded that limited access to emotion regulation strategies may be important in predicting craving for alcoholics who experience both increased negative affect and decreased positive affect. This suggests that treatment and prevention efforts focused on increasing positive affect, decreasing negative affect and teaching effective regulation strategies may be critical in reducing craving in alcoholic patients.

1. Introduction

Craving which refers to "the strong desire to drink alcohol" is a subjective and persistent experience which even those who are recovered continue to experience (Lindenmeyer, 2009). It has a central role in the development, maintenance and relapse of alcoholism (Addolorato, Leggio, Abenavoli, & Gasbarrini, 2005). Craving is associated with impaired control over drinking and includes obsessive thoughts and compulsive drinking behaviors (Addolorato et al., 2005). Obsession includes cognitive preoccupation and thoughts related to alcohol for subjects suffering from an alcohol-use disorder, while compulsion is the behavioral and motivational aspects of alcohol consumption (Mann & Ackermann, 2000).

Craving has been viewed as a conditioned reaction that might be induced by stimuli (cues) which have previously been associated with the consumption of drugs; hence, alcohol-associated stimuli can become conditioned cues that generate conditioned responses such as alcohol craving (Heinz, Beck, Grusser, Grace, & Wrase, 2009). In addition to conditioning models of craving, cognitive models have also been proposed assuming that responses to alcohol-associated stimuli involve cognitive processes (e.g., expectations regarding the positive effects of alcohol) (Anton, 1999). In this regard, desire thinking has been defined as a voluntary cognitive process including verbal and imaginary elaboration of a desired target (e.g., alcohol consumption) (Caselli & Spada, 2011). It is based on the so-called elaborated intrusion theory of desire which states that the occurrence of craving might result from a combination of conditioned and voluntary cognitive processes (Caselli & Spada,

* Corresponding author.
E-mail addresses: vahid.psy@gmail.com (V. Khosravani), sharififarangis@yahoo.com (F. Sharifi Bastan), fghorbani.5713@sbmu.ac.ir (F. Ghorbani), zkamali55@gmail.com (Z. Kamali).

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2015; Kavanagh, Andrade, & May, 2005). It has been found that desire thinking contributes to the increase of craving (Caselli, Soliani, & Spada, 2013).

Also, craving can be considered as a motivational mechanism that may be commenced or increased by stress or negative affect, often leading to substance use (Skinner & Aubin, 2010). Baker, Piper, McCarthy, Majeskie, and Fiore (2004) reported that the stimulation of craving by the negative emotion processing system made the elicitation of drinking possible as a mean to escape negative affect.

Negative affect refers to the degree to which an individual experiences negative emotions and positive affect deals with the degree to which someone experiences positive emotions (Mroczek & Kolarz, 1998). According to positive and negative affect scales (Mroczek & Kolarz, 1998), positive affect consists of six symptoms such as happiness and gladness, extreme gladness, euphoria and patience, relax and relief, satisfaction, vibrancy and vitality, and negative affect encompasses six symptoms including sadness, impatience and restlessness, concern and anxiety, disappointment, putting so much energy to do the job, feeling of worthlessness.

Laboratory procedures found that inducing negative affect consistently leads to cue-elicited craving in alcoholics (Fox, Berquist, Hong, & Sinha, 2007). Negative affect has been described as the predominant emotional reaction to most or all craving experiences (Kavanagh et al., 2005). Several studies have demonstrated significant and positive relationship between negative affect and alcohol craving (Pombo, Figueira, Walter, & Lesch, 2016; Schlauch, Gwynn-Shapiro, Stasiewicz, Molnar, & Lang, 2013). Also, there are conflicting results about the correlation between positive affect and craving. It has been revealed that positive affect was associated negatively with alcohol craving (Kavanagh et al., 2005; Schlauch et al., 2013). On the other hand, few reports showed that positive affect was linked to craving positively (Mason, Light, Escher, & Drobes, 2008; Maude-Griffin & Tiffany, 1996; Zinser, Baker, Sherman, & Cannon, 1992).

Emotion regulation (ER) which is a multi-faceted construct contains the experience and separation of positive and negative emotions as well as the capability to regulate strong emotions (Gratz & Roemer, 2004). Gratz and Roemer (2004) have suggested a conceptualization of the difficulties in emotion regulation (DER) as impairments in one or more of the following capabilities: (1) awareness/understanding of emotions, (2) acceptance of emotions, (3) control of impulsive behaviors/ behaving in line with one's goals, and (4) use of appropriate emotion regulation strategies. This conceptualization posits that ineffective emotion regulation encompasses six specific domains which are assessed on the Difficulties in Emotion Regulation Scale (DERS; Gratz & Roemer, 2004). These domains include: 1) "Non-acceptance of emotional responses" examines the extent to which individuals experience more negative emotion as a result of their evaluation of current emotional states (e.g., "When I'm upset, I become irritated with myself"); 2) "Lack of emotional awareness" indicates the extent to which individuals attend to and acknowledge their emotions (e. g., I am attentive to my feelings"); 3) "Lack of emotional clarity" shows difficulties in identifying which emotions an individual is experiencing (e.g., "I have difficulty making sense out of my feelings"); 4) "Impulse control difficulties" reveals the extent to which negative emotion increases the likelihood of rash/impulsive action at the expense of future goals (e.g. "When I'm upset, I become out of control"); 5) "Difficulties engaging in goal-directed behavior" indexes the extent to which negative emotions interrupt an individual's ability to focus on specific tasks (e.g. "When I'm upset, I have difficulty getting work done"); and 6) "Limited access to emotion regulation strategies" focuses on an individual's subjective belief in his/her ability to use emotion regulation strategies in the presence of negative emotion (e. g., "When I am upset, I believe that there is nothing to do in order to feel better").

It is often underlined that most of the theories related to drinking behaviors and alcohol problems assume an important role for emotional factors, and that understanding the relationship between emotions and alcohol use is a fundamental and theoretical issue (Lang, Patrick, & Stritzke, 1999). Research has shown that the number of alcohol-related consequences is positively associated with DER domains including non-acceptance of emotional responses, impulse control difficulties, lack of emotional clarity, and limited access to emotion regulation strategies (Dvorak et al., 2014). Poor emotion regulation skills may increase the relapse risk in situations involving negative emotions (Bandura, Caprara, Barbaranelli, Gerbino, & Pastorelli, 2003).

Although correlational studies have demonstrated the relations of negative and positive affects and DER facets to craving, very little research has assessed the mediating effects of DER on the associations of negative and positive affects with craving. For example, Veilleux, Skinner, Reese, and Shaver (2014) showed that negative affect intensity indirectly predicted drinking to cope with negative affect, through lack of emotional clarity and limited emotional strategies. It has been shown that coping skills moderate the relationship between negative emotions and alcohol use (Holahan, Moos, Holahan, Cronkite, & Randall, 2003). Lynch, Robins, Morse, and Krause (2001) revealed that maladaptive emotion regulation strategies, such as emotion inhibition, mediated the relationship between affect intensity and psychological distress. Also, research suggested that coping motives had mediating effects on the relationship between neuroticism and drinking problems for young adults (Mezquita, Stewart, & Ruipérez, 2010; Stewart, Loughlin, & Rhyno, 2001; Theakston, Stewart, Dawson, Knowlden-Loewen, & Lehman, 2004). However, the influences of DER domains as mediators on the associations of negative and positive affects with craving have not yet been studied in alcoholic patients. Therefore, assessing the influence of DER particular domains on the correlations of positive and negative affects with craving in alcoholics may be valuable in both treatment and prevention efforts.

The aim of this study was to investigate the mediating effects of DER domains as multiple parallel mediators on the relations of negative and positive affects to craving in alcoholic patients by controlling for gender, depression, and severity of alcohol dependence.

2. Methods

2.1. Patients

250 seeking-treatment alcoholic outpatients, 18 to 65 years old, with principal diagnoses of alcohol dependence were recruited randomly from Aramesh addiction treatment clinic in Karaj, Iran, since October 2015 to May 2016. All patients scored 20 or higher (Mean = 28.73, SD = 9.27) on the Alcohol Use Disorders Identification Test (AUDIT), indicating dependency on drinking (Babor, Higgins-Biddle, Saunders, & Monteiro, 2001). They were still drinking alcohol. Participants were evaluated before pharmacotherapy (including anti-craving medication and antidepressants). While completing the questionnaires, patients were not drinking alcohol. They were in full consciousness and completed the questionnaires in the clinic. In order to motivate participants, we told them the results of this study will be included in future therapeutic programs. Some of the patient information such as age, age at onset of alcohol use, duration of alcohol use, and education level were collected from their psychiatric records. The study inclusion criteria encompassed a diagnosis of alcohol dependence in accordance with DSM-IV-TR (DSM-IV-TR; American Psychiatric Association, 2000) criteria. Exclusion criteria included a comorbid psychiatric disorder (e.g., schizophrenia), mental retardation, substance dependence, neurological disease, medical illness, organic brain syndrome or a history of head injury and heavy sedation. Also, alcoholic patients with comorbid major depressive disorder (without psychotic features) were included in the present study only if the alcohol dependence in these patients was their most prominent clinical phenomenon and if alcohol dependence and the onset of alcohol use antedated the onset of depressive symptoms. The psychiatric diagnoses were determined by an experienced clinical psychologist (FSh.B) based on the information provided by the Structured Clinical