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Comparison of Cognitive Distortions and Emotion regulation in People with Depressive disorder, Obsessive-Compulsive Disorder and Normal Individuals in Bandar Abbas City

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Abstract: *Present study was conducted to compare cognitive distortions and emotion regulations in people with depressive disorder, obsessive-compulsive disorder and normal individuals. In terms of goal, this research was applied, and in terms of method, it was expost facto or causal-comparative. 50 depressed patients, 50 obsessive-compulsive order patients and 50 normal individuals were selected as samples of this research by purposive sampling method. The data was analyzed using analysis of variance (ANOVA) and Tukey test. In terms of cognitive distortions and emotion regulation, there was significant difference between depressed patients and normal individuals and also significant difference was observed between obsessive-compulsive disorder patients and normal individuals but there was no significant difference between depressed patients and obsessive-compulsive disorder patients. The research suggested that people with depressive and obsessive-compulsive disorders, have significant distortions in recognition of themselves compared to normal people and also use more negative emotional strategies in facing with stressful events in their live, so, they experience more anxiety and stress. This study indicated that people with obsessive-compulsive and depressive disorders have more cognitive distortions than normal people and use maladaptive strategies of emotion regulation in coping with negative events.*
Key words: *cognitive distortions, emotion regulation, depressive disorder, obsessive-compulsive disorder*

INTRODUCTION

Hygiene and mental health are of needs of the community; because optimal performance of the community requires people who are in desired conditions in terms of hygiene and mental health. Accordingly, one of the objectives of social programs is to try to enhance the level of welfare and well-being of society. For preventive policies and promotion of public health, firstly, it is required to provide an image of health status of the community. Obviously, all efforts to achieve health and mental peace, which are an individual need as well as social necessity, require to know the precise meaning of health and how to measure it (Asad Zandi, Sayari, Ebadi and Sanaei).

Mood disorders are the most prevalent psychiatric disorders that appear as low mood in depressed patients and high mood in manic patients. Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (American Psychiatric Association, 2004). In the etiology of these disorders, several factors such as biological, heredity, psychological and social

factors have been mentioned (Kaplan and Sadock, 2003). Researchers also reported the prevalence of depression as much as about 3% (Noorbala, Bagheri Yazdi and Yasemi, 2001).

Obsessive - compulsive disorder (OCD) is a common psychiatric disease and 2 to 3% of the public suffer it in their lifetimes. It was estimated that this disorder can be found in 10% of outpatients admitted to the clinics and Psychiatry clinics and it is the fourth psychiatric disease after phobias, drug-related disorders and major depressive disorder (Kaplan and Sadock, 2003). According to DSM-IV classification criteria, obsessive- compulsive disorder is described as follows: there are so severe temptations or compulsions that are time-consuming or cause great pain or significantly disrupt the functions (Kaplan and Sadock, 2003). Otto (1992) provided a model of the formation and continuation of the aforementioned disorders in which he knew dysfunctional beliefs as areas prone to the incidence of these disorders and feeling of responsibility lies in them and affects information processing process of patients.

Cognitive distortions or irrational belief refers to the belief that underlines the compulsion, obligation and duty and makes a person becomes anxious and unusual (Baraheni, 1996). The concept of dysfunctional attitude (DA) has been firstly raised to describe the thoughts of depressed patients and as the original concept of the center for creation and reliability of depressive disorder by Beck (1975, 1979, 2006) (Lotfi Kashani, 2008). According to this model, irrational thoughts and cognitive distortions are important factors in creating and sustaining harm behaviors (Ibrahimi, Zeynoddini and Meraasi, 2011). In fact, irrational thoughts are known as beliefs emphasize on compulsion, obligation and duty and make people anxious and unusual and they gain unhealthy character (Procheska and Norcross, 2009). Additionally, changing the individual's beliefs with emphasizing on the irrationality of his beliefs is usually associated with significant resistance. Hence, the expressions: 1) modifying cognitive distortions and 2) dysfunctional beliefs are used.

Despite the vast amount of research on depression and OCD, few studies have performed on emotion regulation strategies. However, the ability of an individual to control his emotions is one of the most important features that should be learned, and it is called emotion regulation. Different theorists and scientists have offered numerous definitions of emotion, Pekrun, Goatz and Perry (2005) know the emotions as a set of mental processes related to each other that consists of emotional, cognitive, physiological and motivational components (for example, discomfort and stress, being worry, being physiologically active and demanding to be release are raised as emotional components of anxiety). Emotion regulation is defined as the process of beginning, maintaining the regulation or changes in incidence, severity or continuity of inner feelings and emotions related to socio-psychological and physical processes for accomplishing individual's goals (Vims & Pina, 2010). Emotion regulation contains a range of conscious and unconscious cognitive and behavioral strategies to reduce, maintain or increase an emotion (Gross, 2002).

According to the literature review and theoretical background on cognition and emotion regulation, a study of these two components is important in mental disorders. In this study, researcher has tried to answer the following question: is there difference between cognition and emotion regulation of people with depressive disorder, obsessive-compulsive Disorder and normal individuals?

Method

In terms of goal, present study is applied and in terms of method, it is descriptive and causal-comparative.

Population and sample

The population included all patients admitted to all clinics during academic year 2013-14 and had received the diagnosis of depression and obsessive-compulsive disorder and all the people who didn't received the diagnosis of depression and obsessive-compulsive disorder. In present study, 150 people were selected by purposive sampling method (three 50-people groups).

Interpersonal Cognitive Distortion Scale (ICDS): the aim of using ICDS is to measure the general cognitive distortions that anybody shows in his relations with others. This scale was firstly developed by Homamchi and Bioko Z Turk (2004). It includes 19 items and based on Likert Scale (1= completely disagree, 2=disagree, 3= no idea, 4=agree, 5= completely agree); all items are scored inversely. High score represents high interpersonal cognitive distortions and low score represents low interpersonal cognitive distortions. Score range is from 19 to 95. The scale examines the severity of interpersonal distortions and their dimension, including interpersonal rejection, interpersonal unrealistic expectations and interpersonal misconceptions. Its validity was desirable and reliability of the questionnaire was estimated 0.816 by

Cronbach's alpha. In Iran, it was translated in 2009 by Bahari and then, it was used for 60 persons and reliability of the questionnaire was estimated 0.79 by Cronbach's alpha. In present study, its reliability was estimated o.68 by Cronbach's alpha.

Emotion regulation scale: it was developed by Gross and John (2003). It consists of 10 items. It has two sub-scales of reappraisal (6 items) and suppression (4 items). Questions 1, 3, 5, 7, 8 and 10 reflect the ability of individuals to reappraise and questions 2, 4, 6 and 9 reflect the individual's use of repression strategies in emotion regulation. The answers are based on 7-option Likert scale (from completely disagree (1) to completely agree (7)). The validity of reappraisal and suppression was estimated 0.79 and 0.73 respectively by Cronbach's alpha and reliability of the total scale was reported 0.69 (Gross and John, 2003). In a study by Gross and John (2003), internal consistency for reappraisal and suppression was estimated 0.79 and 0.73, respectively. Also, Kariman and Vingerhots (2012) reported internal consistency for reappraisal and suppression as much as 0.83 and 0.79, respectively. Rostami (2013) estimated the reliability of reappraisal and suppression as much as 0.83 and 0.79, respectively. Also, in another study, internal consistency (Cronbach's alpha range: 0.60-0.81) and validity of the questionnaire through analysis of main components using varimax rotation, correlation between the two subscales (r=0.13) and criterion validity were reported desirable (Qasempoor, Iill beige and Hassan nezhad, 2012). Reliability of the questionnaire was estimated 0.79 by Cronbach's alpha.

Results

In order to analyze the data, firstly, the statics of mean, standard deviation were used at descriptive level and analysis of variance was used as inferential level.

Table1 shows that participants were classified into three groups: 50 persons in normal individuals group (33%), 50 persons in depressed people group (33%) and 50 persons in obsessive-compulsive disorder patients (33%).

Table1. Frequencies of participants separated based on mental health

Group	frequency	percentage
Normal individuals	50	30%
OCD patients	50	33%
Depressed patients	50	33%

Kolmogorov-Smirnov test showed that the data distribution is normal in all grades, so, Analysis of variance (ANOVA) can be used to examine the research hypotheses. The results are listed in tables 2 and 3.

First hypothesis is that in terms of emotion regulation, there are differences between depressed patients, OCD patients and normal people. Analysis of variance was used to analyze it. The results are listed in table2.

Table2. Result of ANOVA for emotion regulation in three groups

Variable	The sum of squares		Degree of freed	F-statistic	Sig
Emotion regula	Intragroup	7564.848	148	71.228	0.000
	Intergroup	7859.245	2		
	total	15424.0.93	150		

According to table2, there are significant differences between three groups in terms of emotion regulation. The results show that the intragroup sum of squares was 7564.848 and the intergroup sum of square was 7859.245 and the total sum of square was 15424.0.93. F-statistic was estimated 71.228 at significance level of 0.001 (P<0.001). Post hoc Tukey test was used to examine the results more precisely. The results are listed in Table3.

Table3. The results of Post hoc Tukey test for the variable of emotion regulation

Group	Difference between means	Sig
Normal*OCD	-15.5	0.000
Depressed*OCD	-0.956	0.78
Normal*depressed	-14.54	0.000

According to table3, there are significant difference between depressed patients and normal individuals as well as OCD patients and normal individuals (P<0.001). But there is no significant difference between depressed patients and OCD patients (P>0.05). According to table3, it can be said that normal people have the highest emotion regulation and depressed and OCD patients have the lowest emotion regulation.
Second hypothesis is that in terms of cognitive distortion, there are differences between depressed patients, OCD patients and normal people. Analysis of variance was used to analyze it. The results are listed in table4.

Table4. Result of ANOVA for cognitive distortion in three groups

Variable	The sum of squares		Degree of freed	F-statistic	Sig
Cognitive disto	Intragroup	5393.882	148	43.18	0.000
	Intergroup	9243.84	2		
	total	14637.722	150		

According to table4, there are significant differences between three groups in terms of cognitive distortion. The results show that the intragroup sum of squares was 5393.882 and the intergroup sum of square was 9243.84 and the total sum of square was 14637.72. F-statistic was estimated 43.18 at significance level of 0.001 (P<0.001). Post hoc Tukey test was used to examine the results more precisely. The results are listed in Table5.

Table5. The results of Post hoc Tukey test for the variable of cognitive distortion

Group	Difference between means	Sig
Normal*OCD	-14.08	0.000
Depressed*OCD	3.44	0.07
Normal*depressed	-10.64	0.000

According to table5, there are significant difference between depressed patients and normal individuals as well as OCD patients and normal individuals in terms (P<0.001). But there is no significant difference between depressed patients and OCD patients. According to table5, it can be said that normal people have the lowest cognitive distortion and depressed and OCD patients have the highest cognitive distortion.
Third hypothesis is that there is a correlation between cognitive distortion and emotion regulation. Pearsons' correlation test was used to examine this hypothesis. The results are listed in table6.

Table6. Correlation between cognitive distortion and emotion regulation

	Emotion regulation	
Cognitive distortion	Correlation	-0.379
	sig	0.000

According to table6, the correlation coefficient of the variables of cognitive distortion and emotion regulation was significant and negative (p<0.001, r=0.379). This means increase in cognitive distortion is associated with the reduction in emotion regulation, so, there is a significant correlation between them and the hypothesis is confirmed.

Discussion and conclusion

According to tables 2 and 3, the results of analysis of covariance and post hoc Tukey test illustrate that there are significant differences between groups in terms of emotion regulation and research hypothesis is confirmed.
The results of present study are consistent with the results of the studies by Ryan et al.(2005), Garnefski et al.(2004) and Flender et al. (2006) and Kambel-Selis and Barlo (2007). They reported that emotion regulation plays a key role in people with depressive and obsessive- compulsive disorder and in terms of emotion regulation, there are significant differences between people with these disorders and normal individuals.
In theoretical explanation of research hypothesis, it can be said that the strategies used to regulate emotions by people, can promote human health in different biological, psychological, social and moral aspects and thereby, increase the quality of life and its efficiency or can be the basis of psychological problems (Salehi Moorkani, 2006).

Research shows that emotional regulation is associated with emergence of aggressive and agitated behavior disorders, and people with emotional dysregulation are more likely to risk and to do dangerous behaviors (Robin, Hostingez, Chen et al., 1990; quoted by Schroder and Gordon, 2002).

In dealing with stress and uncomfortable events, OCD patients use disastrous strategies such as rumination, blame himself and blaming others, more than normal individuals and normal individuals use positive emotion regulation strategies (positive reappraisal, positive refocusing, refocus on planning and perspective) more. The findings are consistent with the results of other studies (Garnefski & Kraaji, 2006; Ryan et al., 2005). Garnefski & Kraaji (2006) suggest that people who use mild cognitive strategies such as rumination, catastrophizing and blaming themselves, are more vulnerable to emotional problems than other people; while people who use desired strategies such as positive reappraisal, positive refocusing on perspective, are less vulnerable.

It can be said that using maladaptive emotion regulation strategies predisposes a person to anxiety and as a result, instead of reacting to stressful events appropriately, he react to them with anxiety while using adaptive strategies doesn't result in such consequences. In support of this idea, some studies show that the ability to regulate emotions successfully is related with a number of physical, social and physiological health consequences (Gross, 2002; Gross, 2007).

In explaining another research hypothesis, it can be stated that individuals who cannot control their emotional response to the daily events, experience more turbulence and the turbulence can lead to anxiety disorders and depression (Gross, 2007).

Emotion regulation disorder predicts psychological damage of person in the future and it is considered an important factor in the development of mental disorders while the right skills in emotion regulation are associated with healthier relationships, better job and education performances and physical health.

According to tables 4 and 5, the results of analysis of covariance and post hoc Tukey test show that there are significant differences between the groups in terms of cognitive distortions and research hypothesis is confirmed. In other words, it was observed that there are significant differences between the depressed and OCD patients and normal individuals in terms of cognitive distortions nut there is no significant difference between depressed patients and OCD patients.

The results of present study are consistent with the results of studies by Rachman (1998), Azadi et al. (2001) and Akrami et al. (2010). They reported that cognitive distortions play a key role in depressive disorders and there is difference between people with these disorders and normal individuals in terms of cognitive distortions and they also use cognitive biases more than normal individuals.

Also the results of present study are consistent with the results of the study by Beck (1987), Salehi zadeh (2010). They reported that people with people with mood and depressive disorders use less inefficient cognition and more cognitive distortion compared to normal individuals. Also, in explaining the research hypothesis, the results of the studies by Bektash, Yaghobi et al. (2013) can be referred, they stated that the initial maladaptive schemas play very important and key role in OCD patients and the results of their study are consistent with the results of present study.

In theoretically explaining the hypothesis, it should be stated that cognitive constructs of individuals interact with negative events and psychological pressures of life. When the most profound cognitive structures are raised, levels of emotions will be released and directly or indirectly lead to different forms of psychological distress, such as depression, anxiety, obsessive-compulsive disorder and interpersonal interaction (Ellis, 2005).

Also, in explaining the hypothesis that OCD patients have more cognitive distortions compared to normal individual, it can be stated that anyone can have unwanted, repetitive and unpleasant thoughts, such as hurting others, engaging in prohibited sexual acts and the fear of contagion of a disease; but while many people consider these thoughts meaningless and drive them out of the realm of their minds, they fear that these thoughts lead to harmful actions or consequences (Thought-action fusion) and they try to use the methods such as correct imaging, inducing good thought to himself, washing hands or checking the sources of risk and etc. to neutralize these thoughts. A temporary reduction in discomfort base on using such neutralizing strategies strengths them and consequently, the individual would use these strategies again in the future and an obsession or compulsive behavior is established (Dadestan, 2003). Maladaptive cognitive processes often motivate compulsive behavior to motivate and make OCD patients incapable of coping with such negative thoughts (piacentinij and Langel, 2004; quoted by Sturge et al., 2006).

In explaining the hypothesis that depressed patients have more cognitive distortions compared to normal individuals, it should be noted that one of the cognitive errors is "paying attention" to negative living conditions. People with this

cognitive error just pay attention to the aspects of their lives. They don't see their positive aspects and evaluate the living conditions negative and positive conditions are not considered cognitively (Clarson et al., 1997; quoted by Qorbani, 2005). Rutter (1966) has studied on the role of generalized expectations in human behavior. A control locus of an expectation is generalized and according to it, an individual attributes good or bad events, reinforcement or punishment to himself or out of himself (Parvin, 1998; Kamp and catalogs, 1998). Many specialists found that there is very high correlation between locus of control and mental disorders such as depression (Kiarouchi et al., 2003). Beck (1998) knew cognitive errors as the factors for disorders depression and obsessive-compulsive disorder and some researchers believe that people with disorders have different cognitive errors such as feel argument, selective deployment and magnification in their relationships (Corey, 2005; translated by Shafiabadi, 1385). So, it can be said that cognitive distortions play a key role in depressive and obsessive- compulsive disorders (Ellis, 2003).

According to table6, the results of Pearson's test show that there is a significant inverse relationship between emotion regulation and cognitive distortion.

The result is consistent with the results of the studies by Pessoa (2008), Garnefski, Kraaij, Spinhoven (2001) and Garnefski and Kraaij (2008). They reported that there are significant relationships between beliefs and cognitions and emotions and also stated that emotions have two dimensions of feeling and understanding and these two dimensions create emotions together and this relationship is circular (Garnefski et al., 2001) and there is a significant relationship between emotion regulation and deficient beliefs related to depression (Garnefski et al., 2008).

Gross (2007) argue that emotion regulation is a psychological component that predicts the health and psychological well-being of individuals and there are significant relationships between deficient emotional regulation and interpersonal and psychological problems and disorders; and there is a relationship between cognition and emotion regulation strategies. People who use positive emotion regulation strategies, have flexible and efficient cognition and vice versa, people who use negative emotion regulation, have inflexible and compulsory beliefs.

Also, in order to explain above hypothesis, Gottman et al. (2002) stated that there is a relationship between people's emotions and cognition. Fredrickson (1980) explained the broadening theory of positive emotions. Fredrickson and losada (2005) suggest that using positive emotions broaden thought-action repertoires, also individual resources are created and people can search for thought-action passes in their lives with new and creative ways (Fredrickson and losada, 2005). Fredrickson (1998) and Marthn (2003) suggest that increased positive emotion is one of the areas of positive psychology and emotion regulation and enhances creativity, cognitive flexibility and efficiency in decision-making and problem-solving (Modarresi Ghorori et al, 2004). Also, it should be noted that in recent years, studies have shown that emotional awareness and correcting emotional experiences even affect cognition (Wiser and Golfried, 1998; quoted by Johnson, 2007). New studies show that emotion is necessary in main cognitive processes including decision-making (Johnson, 2004).

Also, Gross (2001) suggests that Emotion regulation contains a range of conscious and unconscious cognitive and behavioral strategies to reduce, maintain or increase an emotion. This reflects the fact that in emotion regulation, people consciously and unconsciously use cognitive strategies to regulate their emotions.

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