The Effectiveness of Acceptance and Commitment Therapy (ACT) on Depression, Anxiety and Stress Syndrome in Patients with Gender Dysphoria Disorder

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Abstract--- Introduction: The aim of the present study was to determine the effectiveness of Acceptance and Commitment Therapy (ACT) therapy on depression, anxiety and stress syndrome in patients with Gender Dysphoria Disorder. Method: The present study is a quasi-experimental study based on pretest-posttest design with experimental group. The statistical population of this study is all patients with female sexual dysfunction referred to the Institute of Psychiatry in Tehran in the second half of the year 2017 whom are proved by medical records constitute gender dysphoria disorder and Thirty of them were selected by convenience sampling and randomly assigned to experimental and control groups, then answered to the Anxiety, Depression and Stress Questionnaire (Lovebound & Lovebound, 1995) before and after the intervention. Results: The results of multivariate covariance test showed that ACT intervention was effective in reducing anxiety, depression and stress in patients with gender dysphoria. Conclusion: Therefore, the results showed that ACT therapy can be used in the treatment of some disorders of gender dysphoria patients.

Keywords---- Gender dysphoria disorder, Acceptance and commitment therapy, Stress, Depression and Anxiety.

I. INTRODUCTION

Sexual identity is an indispensable part of human identity, and is the image that each person has of himself as a man or woman, people learn behaviors and norms suitable to it by being aware of their sexual identity (Dadfar, 2009), however, there are persons who have difficulty identifying their sexual identity. Based on the DSM-IV classification, gender identity disorder includes a heterogeneous group of disorders whose common sign is a strong and permanent preference for role and status of the opposite sex (Javaheri, 2006), the diagnostic classification of sexual function disorders and sexual identity in the DSM-IV revision was divided into three diagnostic categories of sexual function disorders, sexual disorder , and paraphilias; and in DSM-5 the term gender dysphoria disorder was used for sexual identity disorder (Psychological Association American Medicine, 2013), in this context, Peronas et al. (2013) describe gender dysphoria as a conflict between a person's true gender and the gender with which he or she defines himself or herself, and they state that when there is no coordination between a person's gender identity and sexual organs, this state is called gender dysphoria (Zadok et al., 2015).

Gender dysphoria is prone to many disorders, including personality disorders (Grant, Flynn, Odlag, & Scrober, 2011),

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neuroticism and psychosis (Barisek et al., 2017), and mood disorders (Acampo et al., 2003), and it is believed as the highest comorbidity of gender dysphoria disorder related to depression, anxiety and stress by Hepp et al (2005). In this regard, Garkavoga, Camero, Frunds and Villaver (2018) indicated that depression, stress and anxiety are among the causes of suicide among patients with gender dysphoria. in the field of depression, anxiety and stress, behaviorists believe that people with panic, anxiety and stress first learn fear through conditioning, and then generalize it. Depression can also be explained on the basis of these theories; depression can occur as a result of conditioning or the combination of distressing events, or depression can be learned by observing the depressive behaviors of others. Cognitiveists also blame thoughts and social pressure for mood disorders (Beck and Clark, 1976). In this regard, it can be stated that one of the most important causes of depression, anxiety and stress in patients with gender identity disorder is social pressures and blame that leads to feeling guilty and negative self-image (Cook, 2004). Adelson and Baj (2013) and Hoffman (2014) also consider social attitudes and lack of social support as factors in the prevalence of depression and anxiety among these patients.

Many efforts have been done to treat this disorder, including effective treatments for this disorder including hormonal and surgical treatments, but these hormonal and surgical treatments are limited in some sensitive communities, especially religious communities. Therefore, cognitive therapies can be used to decrease mood disorders such as depression, stress and anxiety. Cognitive therapies are among the most effective treatments for depressive and anxiety disorders, and have been revealed to be effective in treating stress, depression, anxiety, reducing suicidal inclination, and increasing mental health among patients with gender dysphoria (Austin, & Craig, 2015; Burns et al., 2010). For the treatment of comorbid disorders with gender dysphoria including depression, stress and anxiety, specialists (Evans et al., 2014; Ahlam, Al-Sanawi and Al-Alavi, 2016; Michelle and Kurtella, 2016; Baden et al., 2015) suggest therapies based on the third wave, commitment and acceptance therapy is known as one of these therapies.

Acceptance and commitment therapy originally instigated from the philosophy of the functional context and is within the framework of the theory of mental relationships (Tabatabai et al., 2017). This treatment includes six processes: acceptance, self-as-context, connection to the present, values, and committed action (Hayes, Loma, Bond, Masuda, & Lilis, 2006). In this treatment, first, it is tried that the client has psychological acceptance about his or her mental experiences, then, the psychological awareness of the person from the present moment is added (that you are a prisoner with all the limitations); then the client is taught to free oneself from these experiences, and in the next stage, the individual's excessive focus on his or her cognitive diffusion is decreased. In the next stage, the values of individuals are clarified for them, and finally, the motivation is made for committed action according to the specified values for the individual (Rajabi and Yazdkhasti, 2014). Research studies indicate that the effectiveness of acceptance and commitment therapy has been reported to be satisfactory based on clinical experiences associated mood disorders and anxiety (Asman, Wilson, Strassley, & McNeill, 2006).

The effectiveness of act-based therapy on many types of disorders has been presented. For example, Gharayi Ardakani, Azad Fallah and Tavallaie (2012) have presented its effectiveness in decreasing the severity of pain in women with chronic headache disorder. McCarken and Wawel (2014) presented that acceptance and commitment-based therapy is effective in chronic pains. Rajabi and Yazdkhasti (2014) also reported that group therapy of acceptance and commitment is effective on anxiety and depression in women with MS. Izadi, Asgari, Neshatdoust, and Abedi (2014) revealed that group therapy based on acceptance and commitment is effective in treating the symptoms of obsessive-compulsive disorder, and mood disorders and anxiety. Also, Aminpour and Ghorbani (2015) indicated the effect of acceptance and commitment based therapy on decreasing stress in patients with gastrointestinal disorders. Alfonso, Caraquel, Delgardo-Pasteur, and Verdejo-Garcia (2011) presented that group therapy based on acceptance and commitment is effective and commitment is effective in decreasing stress in patients with gastrointestinal disorders.

cravings and reducing stress and anxiety. De Gort, Morens, & II (2014) and Gonzalez Menendez and Fernandez, Rodriguez, and Villagra (2014) also presented that acceptance and commitment-based therapy is effective in decreasing the psychological symptoms of addicts. However, the effectiveness of act-based therapy in decreasing depression, stress and anxiety in patients with gender dysphoria has not been considered by researchers, and the current study intends to answer the question of whether act-based therapy for decreasing depression, stress and anxiety is effective in patients with gender dysphoria disorder?

II. METHODOLOGY

In terms of purpose, the current research method is of the applied research methods, and in terms of data collection method, the current research is a quasi-experimental study based on pre-test-post-test design with experimental group. The statistical population of the current study was chosen among the statistical population of all female patients with gender dysphoria who referred to the psychiatric institute in the city of Tehran in the second half of 2017 and had gender dysphoria disorders based on medical records. Due to the existing social conditions for the difficulty of random sampling in selecting patients with gender dysphoria, the study sample was selected from women with gender dysphoria who volunteered to participate in the training program based on available sampling and according to the following criteria: 30 People were selected as the sample, 15 people were randomly assigned in the experimental group and 15 people in the control group.

Measuring Instruments

The questionnaire of measuring anxiety, depression, and stress DASS-42, and the scale of depression, anxiety, and stress (DASS-42) (Lavibund & Lavibund, 1995) in a 4-point Likert scale (1- It is very true about me, 4- It is not true about me at all) is scored. This scale includes three subscales of anxiety, depression and stress, each of which including 14 items. Depression subscale includes terms that measure unhappy mood, lack of self-confidence, hopelessness, worthlessness of life, lack of interest in engaging in affairs, lack of enjoyment of life, and lack of energy and capability. The Anxiety subscale contains terms that attempt to assess physiological arousal, fears, and situational anxieties, and the stress subscale includes terms such as difficulty in achieving calmness, nervous tension, irritability, and restlessness (Asghari Moghadam et al., 2008). The validity of Leibond and Leibond (1995) reported a correlation of anxiety subscale with Beck Anxiety Questionnaire 0.81 and a correlation of Depression subscale 0.47. Brown, Corpita, and Barlow (1998) reported the reliability of the depression subscale retest as 0.71 for anxiety (0.79) and stress (0.81). Bakhshipour (2004) reported the internal consistency of the depression and anxiety subscale as 0.74 and 0.89, respectively, and the reliability of the depression and anxiety subscale as 0.70 and 0.83, respectively. The validity of the questionnaire was reported by appropriate factor analysis. Simultaneous validity of Depression Scale (DASS-44) with Beck Depression Inventory was examined and a correlation of 0.69 was obtained between the two questionnaires. The reliability of the questionnaire was reported by Cronbach's alpha as 0.93 for the depression subscale, 0.90 for the anxiety subscale and 0.92 for the stress subscale (Asghari Moghadam et al., 2008). In the current study, Cronbach's alpha test was used to evaluate the reliability of the instrument, which was 0.90, 0.87 and 0.93 for stress, anxiety and depression, respectively.

Stages of act-based treatment

In this research study, acceptance and commitment therapy intervention was used for the first experimental group, in such a way that the experience of attending a workshop and combining several acceptance and commitment therapy protocols (ACT) was used (Hayes, Strosahal and Wilson, 2011; Hayes et al., 2006). These meetings were held in groups.

Session	Meeting contents
	Subject: Introductions and main views of the treatment
First	Meeting Objectives: 1) Why did we participate in this group? 2) Basic rules 3) Introductions 4) Review of treatment and goals
l	of this program 5) Review of the basics of this treatment 6) Homework
Second	Subject: Options and determining the path of the treatment
Second	Meeting Objectives: 1) Homework review 2) The relationship between dysphoria, mood and function 3) Mindfulness
Third	Topic: Learning to live with the ways of eliminating dysphoria
Timu	Meeting Objectives: 1) Accept dysphoria 2) Values 3) Mindfulness and practice review
Fourth	Subject: Values and action
	Meeting Objectives:1) discussion about values 2) barriers to values 3) goals and action 4) mindfulness
Fifth	Meeting Objectives: 1) Reviewing homework and unifying activities 2) other "What if" and "Yes but" tricks of the mind 3)
1'llul	Mindfulness
	Subject: Start moving and acting
Sixth	Meeting Objectives: progress report and review 2) making plans for action, versus the action 3) mindfulness and self-
	observation 4) action-orientation.
Seventh	Subject: Commitment
	Meeting Objectives: 1) Continuation of mindfulness practice and cognitive diffusion practice, 2) Introducing oneself as
	conceptualized and oneself as a context for identifying action stages (small behaviors to achieve larger goals 3) Commitment to
	barriers 4) Mindfulness practice while walking
Eighth	Subject: Lifelong preservation
Lightin	Meeting Objectives: 1) Commitment 2) Farewell to the group 3) Lifelong homework

Table 1. Table of Meeting Structure

III. RESEARCH FINDINGS

Table 2 indicates the descriptive indicators such as mean, standard deviation and skewness and elongation related to the research variables in the pre-test for the experimental and control groups.

Group	Status	variable	Mean	standard deviation	skewness	Elongation
Mindfulness Group	Pre-test	Depression	26.70	3.11	-0.99	0.57
	Post-test		21.87	3.23	-0.14	-0.84
	Pre-test	Anxiety	31.11	3.56	0.78	1.16
	Post-test		21.65	3.70	0.03	-0.95
	Pre-test	Stress	31.11	4.12	-0.14	-0.63
	Post-test		19.59	3.66	0.61	-0.88
Control	Pre-test	Depression	27.98	4.12	-0.53	0.05
	Post-test		30.01	1.09	0.89	0.60
	Pre-test	Anxiety	30.11	3.20	-0.05	-0.29
	Post-test		29.56	2.74	-0.72	1.26
	Pre-test	Stress	31.15	3.94	-0.38	0.31
	Post-test		30.10	2.60	-0.41	-0.12

 Table 2: Descriptive indicators of pre-test Total number: 30

The mean and standard deviation indicators show the appropriate dispersion in the table above and the skewness and elongation indicators (between \pm 1.96) indicate the normality of the data distribution.

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Inferential findings

1. Act-based therapy is effective on symptoms of anxiety, stress and depression in patients with gender dysphoria disorder.

Multivariate analysis of covariance was used to test this hypothesis. The results of F test to test the homogeneity of the pre-test and post-test regression slope of the dependent variables in the experimental and control groups (P = 0.39 and F = 1.12, Lambda = 0.90) indicated that this assumption has been observed. Also, the lack of significance of Mbox test results to check the homogeneity of variances (P = 0.34 and F = 3.19, Mbox = 14.12) displays that the homogeneity of variance of post-test scores in experimental and control groups is observed. Also, the results of multivariate test (P = 0.001 and F = 15.11, lambda = 0.18) revealed that the difference between post-test and pre-test scores is significant. Accordingly, Table 3 displays the results of the test of intergroup effects.

Source	Variable	SS	MS	F	р	effect size	degree of freedom
Group	Depression	879.44	461.70	60.17	0.001	0.86	1 & 27
	Anxiety	1259.33	602.11	57.33	0.001	0.86	
	Stress	1309.49	588.73	55.12	0.001	0.86	
Error	Depression	401.02	8.69				
	Anxiety	390.55	8.55				
	Stress	478.29	13.09				

 Table 3: Results of analysis of covariance of the intergroup effects between Experimental and Control group differences

According to Table 3 of Statistics F, the mean scores of dependent variables in the post-test are significant at the level of 0.001, and this indicates that there is a significant difference in the mean scores of dependent variables between the groups studied in the post-test. Examination of group means in descriptive tables indicates that educational intervention has decreased the scores of variables of depression, stress and anxiety among patients.

IV. DISCUSSION AND CONCLUSION

Multivariate analysis of covariance was used to evaluate the effectiveness of act-based treatment on the symptoms of depression, stress and anxiety in patients with gender dysphoria disorder. The results revealed that the mean of the actbased treatment group had a significant decrease in post-test scores compared to the mean of the control group. The effectiveness of act-based therapies on the treatment of mental disorders has been presented in many studies (Khodayari Fard and Abedini, 2011; Khodayari Fard et al., 2003; Austin, & Craig, 2015; Peronas et al., 2013), that the findings of the present study is consistent with these research studies. In this regard, Khodayari Fard et al. (2003), conducted a study with the aim of examining a case study of the effect of cognitive-behavioral therapy based on increasing awareness of obsessive thoughts and their own behaviors, on conversion disorder with emphasis on spiritual therapy on a teenager with gender dysphoria disorder. They concluded that psychotherapy with a cognitive-behavioral approach is effective in increasing mental health and decreasing mood problems in this patient. Austin, and Craig (2015), in their study that examined the effectiveness of mindfulness therapy on patients with gender dysphoria, indicated that cognitive therapies have been shown among the most effective therapies in the treatment of mood disorders and reducing the tendency to suicide and increased mental health among the patients with gender dysphoria disorder. Peronas et al. (2013), in their study aimed at examining the psychological characteristics of patients with gender dysphoria disorder, indicated that the main characteristic of gender dysphoria disorder is the conflict between the actual gender of the person and the gender that the person defines himself or herself with, causes depression and anxiety. Therefore, based on increasing the level of gender

self-awareness, of the individual, he or she can be helped to reduce their depression, also this finding is consistent with some of the results of other research studies (Gharayi Ardakani et al., 2012; Rajabi and Yazdkhasti, 2014; Izadi et al., 2014; Aminpour and Ghorbani , 2015; McKarken & Wawel, 2014) which have examined the effect of acceptance and commitment therapy on depression, anxiety and stress in people with specific diseases.

In explaining this finding, the return of consciousness can be regarded as one of the basic elements of stress reduction. In other words, the patient imagines himself in the past with a complete disconnect from the situation, then realizes his situation and identity with re-self- consciousness (Kalal Quchan Atiq et al., 2016). In the therapy based on acceptance and commitment, the concept of cognitive defusion is the extent to which a thought has an effect on behavior, the behavior dependent on the situation in which the person is, and behavior dependent on the thought is in a continuum from defusion to reality. Thus, when a person mixes with his thoughts, he can not distinguish his own mental judgment about reality from the reality itself (Hayes et al., 2012). In the defusion stage, the amount of patient's stress and anxiety increases, but in the acceptance and self-awareness stage, the stress and anxiety level decreases to the minimum. Because, in these therapies, by teaching mindfulness and action in the moment, one's self-awareness increases. In this treatment, patients are taught to be able to accept their experiences and to endure these experiences to the extent that they can accept. To the same extent, they can act independently of these experiences (Kiani et al., 2012). In other words, the person with gender dysphoria disorder feels that he has no choice but to adopt an approach of acceptance and commitment to it, so adopting this approach eventually becomes part of the individual's personality. In this regard, Kiani et al. (2012) also declare that acceptance and commitment-based therapy is based on the level of acceptance, increase of awareness, presence in the moment, observation without judgment and avoiding empirical avoidance can affect on the person's behavior. On the other hand, people with gender dysphoria lose most of their depression and stress when get exposed to their disease. The next mechanism is a cognitive change toward the disease. In the act, patients have cognitive changes in their schemas and attitudes toward the disease, and become more aware of their disease, so tolerating the view of the society about them becomes more acceptable, which can also lead to a decrease in the level of depression (Baber, 2003). Eventually, the act leads to the elimination of prejudices about the disease, and when the person reaches self-awareness, biased judgments are reduced or eliminated, and the person gains a more open and better view of the disease.

The current study, like many research studies, had general and specific limitations. The use of a questionnaire or selfreport tool can always lead to biasedness of the results of the research, and one of the limitations of the present study was the use of a questionnaire. Therefore, one should be careful in interpreting the results, and also the limiting the study population to women with gender dysphoria of Tehran psychiatric institute is another limitation of the current study. Thus, in generalizing the results, caution should be observed, as well as the inability to fully control the disturbing variables like intelligence, family effects and the environment outside the clinic, are other limitations of this study that can make the validity of the study biased. However, the findings indicated that mindfulness-based therapy was effective in decreasing the symptoms of depression, anxiety and stress in patients with gender dysphoria, so treatment centers can make use of mindfulness and act-based treatment programs to decrease depression in patients with gender dysphoria. Finally, it is suggested that in future research studies, gender differences in the effectiveness of each mindfulness-based treatment strategy and act on depression, anxiety, and stress symptoms to be examined in patients with gender dysphoria.

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