The Effectiveness of Acceptance and Commitment Therapy on the Illness Perception in Dialysis Patients

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ABSTRACT

One of the proposed psychological treatments in hemodialysis patients is acceptance and commitment therapy. The acceptance and commitment therapy focuses on psychological flexibility and this occurs when a person consciously accepts his or her thoughts and feelings and shows a behavior consistent with his or her personal values. As chronic kidney failure causes many psychological problems for patients, which can affect their various aspects of life and significantly reduce their quality of life and as acceptance and commitment therapy has provided promising results in helping patients with severe and chronic conditions to cope with their psychological, physical, social, family and economic problems and given the important role of the variable of illness perception in this regard, the present study was conducted to evaluate the effect of

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acceptance and commitment therapy on illness perception of patients. The statistical population of this study included hemodialysis patients in the dialysis ward of Bouali Marivan Hospital from 22-11-2018 to 22/11/2012. The number of subjects in each of the experimental and control groups was 15. The experimental group received acceptance and commitment therapy at 8 sessions and the control group received no therapy. The data were collected using Illness Perception Questionnaire-Revised (IPQ-R). Data were analyzed by SPSS software using descriptive statistics and covariance analysis. The results of the study showed that acceptance and commitment therapy (ACT) was effective on illness perception, consequences of the illness perception, illness personal control perception, illness treatment control perception, concern and emotional responses perception in dialysis patients. However, acceptance and commitment therapy (ACT) did not affect the illness timeline perception, identity of the illness perception and the illness recognition in dialysis patients.

1. INTRODUCTION

Kidney failure is a progressive and irreversible disorder that can cause many stressful conditions for the individual [1]. Because hemodialysis kidney patients.

Due to the complexity of the disease and the numerous and complex drug treatments and their psychosocial functioning, they experience problems and changes in their late stages.

Experiences of life pattern and perception of these patients are different by understanding the nature of these patients' problems, better medical and educational measures can be taken to improve their quality of life and reduce their problems. Therefore, measures are needed to improve the understanding of dialysis patients [2].

Illness perception means organized cognitive representation of the patient of his or her illness. Studies have shown that illness perception is one of the most important predictors of low-level adaptation, including social dysfunction, fatigue, anxiety, depression and self-esteem [3]. Patients' knowledge of their illness known as illness perception or illness cognitive representation by the patient is achieved based on the obtaining of information from various sources and patient beliefs. This reason can affect mental health and personal ability to adapt to the illness [4]. In general, the cognitive scheme of the disease or the understanding of the disease has five aspects, including the patient's beliefs about the identity of the disease, the reasons for the disease progression, the disease timing, control or treatment, and the consequences of the disease [5]. In addition, patients with the same status and severity of symptoms have a different understanding of their disease and affect the behavior, function, and severity of patients' symptoms and their consequences [6]. The results of a study conducted on dialysis patients suggest that, patients with higher levels of illness perception are concern more about the behavioral risk factors leading to their current condition and they rarely blame hospital staff. The results of a study conducted on female hemodialysis patients also showed that the illness perception could have positive consequences on the medical control of people with kidney problems [7]. The results of the study conducted by Masoudnia (2011) showed a significant correlation between the perception of the illness and the coping strategies as well as some of the components of these two structures. Recently, the role of illness perception on the quality of life of patients with chronic illness has been investigated [8]. Azemi Zeinal et al (2016) stated that investigating the illness perception in developing proper psychological interventions for chronic illnesses is essential [9]. A general review of the literature shows that there is a significant relationship between the illness perception and quality of life in dialysis patients [10]. The results of the research conducted by Sarizadeh et al (2017) also showed that physicians' estimation of the quality of life of people with chronic illnesses has a significant difference with that of patients themselves due to their different perceptions of the illness [11,12]. As chronic kidney failure causes many psychological problems for patients, which can affect their various aspects of life and much cut their quality of life and as acceptance and commitment therapy has provided promising results in helping patients with severe and chronic conditions to cope with their psychological, physical, social, family and economic problems and given the important role

of the variable of perceived illness in this regard, the present study conducted to evaluate the effect of acceptance and commitment therapy on the perceived illness of patients.

2. METHODOLOGY

The method of this study is experimental with pre-test, post-test and follow-up with control group. The research population included dialysis patients of dialysis department in the Bouali hospital of Marivan from 2018-11-22 to 2019-11.22. The research sample selected among them using a purposeful sampling method. The female patients had the least secondary level of education. The number of subjects in each of the experimental and control groups was 15. The experimental group received acceptance and commitment therapy during 8 sessions of 45 minutes (weekly for eight weeks) and the control group received no treatment.

The data collected using Illness Perception Questionnaire-Revised (IPQ-R). IPQ-R developed by Petrie et al (2006). This questionnaire was first prepared by Wainman et al. (1996) based on the Leventhal model. The first section of the questionnaire includes 14 items related to the identity of the illness. Another component is the timeline (acute or chronic) of the illness, which includes 6 items. The other component of the questionnaire is the consequences of the illness, which includes 6 items. The personal control of the illness is another component of the questionnaire, which is evaluated by 6 items. Treatment is another component of the questionnaire, which is evaluated by 5 items. Coherence (5 items) is another component of the questionnaire, evaluated by 5 items. Cyclical timeline is also evaluated by 4 items. Finally, the emotional representation is evaluated by 6 items. The components of the timeline, the consequences of illness, illness control, illness treatment, coherence, cyclical timeline, and emotional representations evaluated in a 5-degree Likert scale. Validity and reliability of these questionnaires were reported 0.73 and 0.87, respectively, in a study conducted by Kleverson (2014). In a study conducted in 2001, the Cronbach's alpha in different parts of the questionnaire was found between 0.79 and 0.89, and the pretest reliability coefficient reported between 0.46 and 0.88 in a 6-week interval. Moreover, the correlation coefficient between different parts of the questionnaire reported between 0.46 and 0.88. Validity of the questionnaire calculated 0.83 by

Table 1. Treatment protocol for acceptance and commitment therapy

Sessions	Content of sessions
Session 1	Establishing a therapeutic relationship, providing information on the subject of study to research subjects, examining the chronic kidney illness, including the illness duration and the therapeutic measures taken, assessing the control methods and creating creative helplessness and answering the questionnaires. Performing the focused exercise
Session 2	Examining the inner and outer world in acceptance and commitment therapy, creation of tendency to abandon the inefficient program of change, and explaining that control is the problem not a solution and the introduction of an alternative for control, that is, tendency. Mindfulness training and performing mindfulness and relaxation exercises.
Session 3	Identifying the values of the clients, specifying the value, specifying the goals, specifying the actions and the barriers, clarifying the values and setting goals, and introducing the commitment-based action and exercising the mindfulness "body scan" exercise
Session 4	Examining the values of each person and reflection on previous concepts, examining the barriers, completing the form of valuable paths
Session 5	Explaining the fusion and cut-off doing exercises for cut-off, review of the assignments, cut off of the threats of language and mindfulness.
Session 6	Explaining the self-conceptualized fusion and training on the ways to its cut off. Primary and secondary suffering and commitment and barriers to the formation of satisfaction.
Session 7	Emphasis on being at the present, mindfulness in walking and breathing exercises.
Session 8	A review of the story of life and committed action, review of treatment, committed action, recurrence and events, preparation not prevention and life-long duty.

examining 90 chronic illnesses. In a study where the IPQ-R used for the first time in Iran, its Cronbach's alpha was used to check its reliability and construct validity used to check its validity. The Cronbach's alpha obtained 0.81. Pearson test was also used for re-test (re-test) reliability in 37 normal people and its result was reported at 0.73%. The treatment protocol for acceptance and commitment therapy is presented in Table 1.

After completing the necessary coordination and receiving a letter, they will be referred to Marivan Bou Ali Hospital and after selecting a statistical sample of 30 hemodialysis patients (15 test groups, 15 control group) their research goals will be explained. In the first session, pre-test will be administered for both groups and research questionnaires will be provided to both groups. Then the intervention group will be applied. The duration of treatment sessions for the experimental group will be 8 sessions of 45 minutes. After intervention, post-test will be administered for both groups. Finally the questionnaires will be collected and the data will be analyzed using SPSS software.

After the above section, data were analyzed ANCOVA Test through SPSS-22 software.

3. RESULTS

In Table 2, the frequency distribution of the research sample (dialysis patients) based on the age range and the number of years of the illness, were presented.

Table 3 presents the descriptive indicators of the research sample (dialysis patients) for the variable of illness perception for experimental and control groups.

The Kolmogorov-Smirnov test was used to examine the normal variables of the research, as shown in Table 4.

First, to test the homogeneity of variances, the Leven's test was used (Table 5).

As Table 6 shows, according to the significance of the difference between the mean score of the experimental group patients and that of control group patients, it is revealed that acceptance and commitment therapy (ACT) has an effect on illness perception, illness consequences perception, illness personal control perception, illness treatment control perception, concern perception, and emotional responses perceptions in dialysis patients. Due to the lack of significant difference between the mean score of the patients in the experimental group and that of patients in control group in Table 6, it is indicated that acceptance and commitment therapy (ACT) does not affect the illness timeline perception, illness identity perception, and illness recognition in dialysis patients.

Table 2. Frequency distribution of research sample (dialysis patients) based on age range and number of the years of the illness

Variable		Frequency	Percentage
Age range	30-40	5	%17
	41-50	6	%20
	51-60	12	%40
	Over 61	7	%23
	Total	30	%100
Number of the years of the illness	1-4 years	3	%10
	5-8 years	16	%53
	9-12 years	7	%23
	Over 13 years	4	%14
	Total	30	%100

Table 3. Descriptive indicators of research variables for experimental and control groups

Test time	Variables	Experimental group n=15				Control group n=15			
		mean	SD	Min	max	mean	SD	min	max
Pre-test	Illness perception	33.192	95.8	98	297	41.215	79.12	113	278
Post-test	Illness perception	08.254	67.5	139	308	59.210	74.13	109	285

Table 4. Results of the Kolmogorov-Smirnov test of variables

Dependent variables	Kolmogorov-Smirnov test
Illness perception	0.078 0.35

Table 5. Leven's test results

Dependent variable	F	Sig
Illness perception	6.471	0.159
Illness consequences perception	11.349	0.357
Illness timeline perception	6.265	0.193
Illness personal control perception	25.870	0.087
Illness treatment control perception	18.092	0.233
Concern perception	36.431	0.085
Illness identity perception	6.290	0.072
Illness recognition	18.771	0.065
Emotional responses perceptions	11.549	0.653

Table 6. Results of covariance analysis

Variable	statistic Source of variations	Sum of squares	df	Mean of squares	F	Sig	Eta
Illness perception	pretest	255.2568	1	255.2568	184.37	007.0	619.0
	Inter-groups	392.614	1	392.614	215.18	000.0	592.0
	error	543.126	27	686.4			
illness consequences perception	pretest	119.437	1	119.437	672.21	013.0	427.0
	Inter-groups	451.62	1	451.62	096.34	001.0	613.0
	error	319.37	27	382.1			
illness timeline perception	pretest	302.84	1	302.84	329.1	093.0	009.0
	Inter-groups	659.29	1	659.29	458.0	317.0	012.0
	error	11/692	27	433.0			
Illness personal control perception	pretest	713.294	1	713.294	432.8	037.0	219.0
	Inter-groups	659.53	1	659.53	906.19	021.0	356.0
	error	218.31	27	156.1			
illness treatment control perception	pretest	713.294	1	713.294	432.8	037.0	219.0
	Inter-groups	659.53	1	659.53	906.19	021.0	356.0
	error	218.31	27	156.1			
Concern perception	pretest	098.255	1	098.255	337.9	000.0	465.0
	Inter-groups	342.175	1	342.175	643.25	015.0	599.0
	error	317.53	27	974.1			
Illness identity perception	pretest	389.176	1	389.176	598.0	408.0	014.0
	Inter-groups	377.48	1	377.48	548.1	089.0	003.0
	error	793.14	27	547.0			
Illness recognition	pretest	743.327	1	743.327	873.0	085.0	012.0
	Inter-groups	427.83	1	427.83	395.0	138.0	004.0
	error	004.21	27	777.0			
Emotional responses perception	pretest	357.768	1	357.768	609.35	001.0	488.0
	Inter-groups	116.265	1	116.265	327.19	000.0	590.0
	error	312.73	27	715.2			

4. DISCUSSION AND CONCLUSION

The main goal of this study was to check the effect of acceptance and commitment therapy (ACT) on the illness perception of dialysis patients. The results of this research revealed that acceptance and commitment therapy (ACT) is effective in the illness perception of dialysis patients. In other words, the results revealed that acceptance and commitment therapy (ACT) is

effective on the components of illness consequences perception, illness personal control perception, illness treatment control perception, illness concern perception, and emotional responses in dialysis patients, but acceptance and commitment therapy (ACT) had no significant effect on the components of illness timeline perception, illness identity perception, and illness recognition in dialysis patients. The results of this study are in line with those of the research conducted by Sheydaei Aghdam et al. (2014), Dehghani (2016), Azemi Zeynal and Ghaffari (2016), Sarizadeh et al. (2018), Gahlan et al (2018), Massoudnia (2011), Mohajerani et al. (2017).

In general, the review of research literature on the subject of the present study suggests that the use of psychological interventions in adaptive coping of chronic patients with their psychological and social complications is an undeniable necessity and acceptance and commitment treatment can be promising for this purpose. In studies conducted in line with the results of this study, Azemi Zeynal and Ghaffari (2016) in a study conducted to check the acceptance and commitment therapy (ACT) on the quality of life of hemodialysis patients showed that the acceptance and commitment therapy (ACT) had a significant effect on the improvement of quality of life (physical functioning, role impairment due to physical health, role impairment due to emotional health, emotional well-being, social functioning, general health, physical health and mental health) of hemodialysis patients. As nature of kidney illness is somewhat similar to illnesses like diabetes, any effectiveness of psychological approaches in the treatment of this illness can also affect the treatment of dialysis patients. In another study consistent with the present study, Bacayans (2013) investigated the effect of acceptance and commitment therapy (ACT) on illness perception and psychological capital of patients with diabetes and the results revealed that the acceptance and commitment therapy (ACT) can dramatically improve the illness perception and the psychological capital of people with diabetes [12]. In another study consistent with the results of this research, Sarizadeh et al (2018) showed that the use of acceptance and commitment therapy (ACT) can be an effective and complementary psychological intervention in hemodialysis patients to improve their quality of life.

Hemodialysis patients often face unpleasant experiences in their lives, which these factors cause distress in patients and reduce their quality of life and their life expectancy. Thus, physicians, nurses and other staff in the dialysis department should pay more attention to these patients. These results could be a reason for the necessity of psychological interventions to solve chronic problems associated with chronic kidney illness and to treat dialysis.

When other psychological approaches, other than acceptance and commitment therapy (ACT), affect the illness perception in hemodialysis patients, the desired approach will be psychological approach, and this approach might be similar to acceptance and commitment therapy and it can be used as a complementary approach to acceptance and commitment therapy (ACT) to improve the illness perception in hemodialysis patients. Accordingly, in one of the studies in line with the results of the present study, Fang et al (2017) examined the effectiveness of cognitive-behavioral stress management on illness perception through cognitive-behavioral method on illness perception, quality of life, general health, and clinical symptoms of psoriasis [13]. The results showed that stress control training based on group cognitive-behavioral approach significantly improved the illness perception, quality of life, mental health and clinical symptoms of the experimental group compared with the control group. These results suggest that stress control through group cognitive-therapeutic approach can be used as a selective psychotherapy and complementary method in helping psoriasis patients to control the clinical symptoms of the illness and reduce the consequences of this illness. Thus, this approach combined with acceptance and commitment therapy (ACT) can be used to improve the illness perception in hemodialysis patients.

When acceptance and commitment therapy (ACT) can improve other psychological variables a such as mental and physical function of hemodialysis patients, it can naturally also improve the illness perception in hemodialysis patients, since most psychological variables have similar nature in patients. Shojaei et al (2010) showed that the illness perception, physical dimensions and psychological dimensions predict the quality of life of Multiple Sclerosis (MS) patients [14]. In addition, the illness perception affects the quality of life of MS patients. Therefore, the results of this study can

be used in future interventional studies to develop illness perception and to improve the quality of life of MS patients. The importance of investigating the illness perception is necessary in development of appropriate psychological interventions for chronic illnesses. A general review of the literature shows that there is a significant relationship between the illness perception and quality of life in dialysis patients. The results of the research conducted by Rada (2017) also showed that physicians' estimation of the quality of life of people with chronic illnesses has a significant difference with that of patients themselves due to their different perceptions of the illness. Identifying patients' beliefs on the illness and its treatment can be helpful in recognizing the complications of the illness [15]. Hence, enhancing the patients' knowledge of health will help the healthcare staff to recognize the state of patients' perception of their health, recognize the function and the sense of well-being of these patients and to use the methods of improving the quality of life of patients.

The results of some studies (Sayin, 2017) suggest that a person who has a positive perception of his or her illness can be able to realistically and properly perceive and analyze the different symptoms and dimensions of the illness and this perception can affect his or her health behaviors [16]. The reason for the importance of evaluating the perception of the illness and obtaining the significant results with regard to the effect of acceptance and commitment (ACT) on the illness perception is that the illness perception is important in guiding adaptation strategies and specific behaviors related to illness, such as adherence to treatment. Some studies have shown that negative perception and negative attitudes about illness in people is associated with greater disability in the future, reduced rate of recovery and the increased use of medical services. Moreover, some studies (Morgan et al., 2014) have shown that illness perception is a significant predictor of the illness consequences. High score of illness perception has been associated with the lack of adaptation to illness [17]. In addition, the research conducted by Chen et al. (2018) showed that the illness perception is associated with adherence to treatment. Recognizing the perception of the illness has a predictive value in improving the health behaviors of patients with chronic illness [18]. As illness perception can vary in different cultural and social conditions, illness perception provides an important

framework for assessing patients' beliefs and the way of effect of its components on the health behaviors. A person who has a positive perception of his or her illness can be able to realistically and properly perceive and analyze the different symptoms and dimensions of the illness and this perception can affect his or her health behaviors. In physical illnesses such as kidney illnesses, the illness perception explains the difference in the consequences of the illness.

The research results showed that a change in illness perception plays a role make better kidney patients, and the illness perception is associated with a number of consequences, such as treatment follow-up or improvement of function. As patients are the great processors of their illness, perceptual representation determines the patients' responding to these factors and determines patient adaptation to illness and its symptoms. Thus, conducting a study on the variable of chronic illness perception such as kidney illness seems to be necessary. Illness perception may increase the risk factors of the illness and jeopardize the health of the patient. Studies suggest the significant role of illness perception in determining consequences and adaptation to chronic illnesses.

CONSENT AND ETHICAL APPROVAL

As per international standard guideline participant consent and ethical approval has been collected and preserved by the authors.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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