Original Article

The effectiveness of acceptance and commitment therapy on the fear of death in patients with multiple sclerosis

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Abstract

Context: Considering the psychological component of multiple sclerosis (MS) in intervention could play a key role in patient compliance with their physical condition.

Aims: This study examines the effectiveness of acceptance and commitment therapy (ACT) based on the fear of death in patients with MS.

Setting and Design: The present study is a quasi-experimental study with a pretest, posttest, and control group.

Material and Methods: The study population included 57 patients with MS who were members of MS association in North Khorasan Province, Shirvan city in 2016. Using the available sampling method, 30 samples were selected by random assignment and included in experimental and control groups (15 per group). The instrument used in this study was Templer fear of death questionnaire. The experimental group received eight sessions of therapeutic intervention.

Statistical Analysis Used: Analytical and statistical analyzes are done by SPSS21.due to the nature of the plan and the two groups (control and test), the statistical method of analysis of covariance, and the effect size were used.

Results: The results of covariance analysis showed that treatment based on acceptance and commitment has a significant effect on the fear of death in patients with MS ($P < 0.001$). In addition, the level of fear of death in the pretest stage was also significant on the fear of death in the posttest ($P< 0.001$).

Conclusions: According to the results, it is expected that ACT maintains its effects in the long run with features such as: Encouraging people to live in the present moment, mindfulness, commitment to the pursuit of worthwhile goals, and an emphasis on process rather than the outcome.

Keywords: Acceptance and commitment therapy, Fear of death, Multiple sclerosis

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INTRODUCTION

Multiple sclerosis (MS) is a chronic disease. This disease is characterized by damage to the myelin tissue of the brain and spinal cord resulting in neurological symptoms.[1] Some researchers acknowledged that the demyelination of nerve fibers not only affects the sensory systems and motor functions but also may be signs and symptoms of psychological pathology.(H2). MS is a chronic inflammatory and neurodegenerative disease affecting approximately 400,000 people in the United States and 2.1 million people worldwide. MS affects quality of life, employment, social relationships, and patients' productivity, and now >40,000 people in Iran are suffering from the disease.[2] Due to the

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increasing trend of disease in Iran, considering issues of epidemiology, etiology, and psychological characteristics, and personality of these patients are essential to understand and cope with the disease.

People with MS experience unpleasant and unpredictable effects, strict health diets, side effects of drugs, and increased levels of physical disability. They have also been facing with psychological consequences such as disorder in life goals accessibility, employment, income, relationships, and leisure activities of daily living.[3] According to the research, considering the psychological component of the disease and intervening in this regard could play a key role in patient compliance with their physical condition.[4]

Studies show that psychological factors such as mental preoccupation as the result of illness, fear of death, concern about death and the future, loss of job, and cost of the treatment cause stress in patients with MS.[5]

Among these stressors, fear of death is the most suffering mental health problem from the perspective of existential psychologists which lowers the quality of life.[6] Due to the fact that death is the loss of the body and its vital functions, some researchers argue that the fear of the destruction of the body is actually the fear of death itself. In fact, death and dying are often the main reasons for the fear of people with serious diseases.[7]

Hence, fighting with the disease usually requires treatment, care, and special training to empower the sick person.[8] To help these patients toward disease control and its adaptation, it is essential to provide consulting services and training to patients. Treatment based on acceptance and commitment that aims to help people to live a rich and meaningful life while accepting the inevitable suffering of life are effective for this group.[9]

Research has shown that treatment based on acceptance and commitment has been effective in various fields such as depression,[10] job burnout,[8] and pain relief.[11] The fear of death and concern about the future and so on are stressors among patients with MS.[12] Since there is no cure for this disease,[13] it will become necessary that efforts go toward a way that the person accepts his illness and limitations caused by pathogenic part of the natural life of its own and tries a way of life that fits the conditions existing there.[14] However, all recent MS researches believe that MS treatment should be done as a holistic, team, and interdisciplinary approach to disease management and drug treatments are not the only treatment required by this disease, but many patients need counseling, psychotherapy, psychiatry, rehabilitation, speech therapy, social workers, and others to help bear the mental and social problems caused by the disease.[15]

MATERIALS AND METHODS

The present study is a quasi-experimental study with a pretest, posttest, and control group.

The statistical population of this study is consisted by MS patients of North Khorasan Province and Shirvān city in 2016. The patients had at least 2 and a maximum of 10 years of history of the disease and they were in the age range of 18-60 years old. Their MS type is relapsing-remitting and finally, 57 patients has entered the study.

Considering that nonrandom sampling method has been used, the sample size formula is not available in this method, and also the available sampling method was used, based on similar clinical studies (several articles), two samples of 15 and totally 30 samples were selected.

The criteria of the study are as follows: a minimum age of 18 years and maximum 60 years, the minimum qualification in education, no history of severe psychiatric disease, having MS, and membership in support of people with this disease for a maximum of 10 years, and relapsing-remitting MS type.

The absence of >2 sessions, symptoms of severe neurological and cognitive difficulties, requiring hospitalization for special treats, are the criteria for withdrawal from study. Whenever participants wanted, they could quit the test.

In this study, first we refered to the MS association of North Khorasan, and after obtaining the relevant licenses, a briefing was formed for members of the association before the treatment process. Participants in the meeting expressed their consent to participate in this study. A total of 30 applicants were randomly assigned into two experimental and control groups and four applicants were assigned to be replaced in case of loss as well. In the first meeting, the pretest group was conducted on both control and experimental groups.

Then, the experimental group received acceptance and commitment in eight sessions (two sessions/week), and each session for 2 h and the control group received no intervention. The posttest was performed on both groups, and then again after 1 month follow-up, test was performed on both groups.

For blindness during pretest and posttest, coworkers who were responsible for registering the research tools did not know the nature of the groups, so that all 30 people at the same time received and filled a copy of life expectancy form in educational hall.

In this study, data collection was done by a questionnaire of Templer Death Anxiety. This 15 items inventory was first introduced in 1970 by Templer. This questionnaire measures death anxiety and had the most usage of its kind. This scale is a self-executable questionnaire which is composed of 15 correct-incorrect questions; the correct questions are signs of anxiety in the individuals. The validity and reliability were measured in a study by Tavakoli *et al.* (2011) using Templer death anxiety questionaire. The validity of questionaire was obtained 87% by the test-retest method. Content and face validity of the questionnaire has been accepted by experts.

Data analysis method

Analytical and statistical analyzes are done by 21-SPSS software (SPSS Inc., IBM). Experience and data analysis were conducted in two levels of descriptive and inferential statistics. Descriptive statistics were used to describe the variables and includes tables and graphs for better average comparison of the pretest and posttest. In addition, due to the nature of the plan and the two groups (control and test), the statistical method of analysis of covariance, and the effect size were used.

RESULTS

Results show that 73.3% of the experimental group and 60.0% of the control group were female and 26.7% of the experimental group and 40.0% of the control group were male. Marital status indicated 93.3% of the experimental group and 66.7% of the control group were married. Review from the perspective of education showed that in the experimental and control groups 33.3% had diploma and 33.3% had association degree, 26.7% of the control group had certificate of middle school, and 20.0% of the control group had association degree, 6.7% of the experimental group, and 13.3% of the control group had a bachelor's degree or higher. The age range of patients showed 40% of the experimental group and 46.7% of the control group were under 30 and 60% of the control group and 53.3% of the control group were under 30. The average age range in the experimental group was 33.1 years and in the control group was 32.9 years.

Fear of death variable is placed in the range of 0 to 15. The mean score in pretest in the experimental group is 1.9 and in the control group 8.9. In the posttest the control group is 9.2, and the experimental group is 5.5 and during the follow-up, the control group is 9.4, and the experimental group is 5.7.

To study the inferential analysis, the precondition of covariance analysis was performed that the confidence of 0.05, the assumption of being normal throughout the study in both experimental and control groups, as well as assumption of the equal level of average in the pretest in the two groups were confirmed ($P > 0.05$). And also, the assumption of equality of variance using Levene test in pretest and posttest in fear of death variable was confirmed ($P < 0.05$). The precondition of linear relationship between the variables in the pretest was accepted by posttest and posttest by follow-up. Equal regression slope assumption was confirmed as well.

Results of Table 1 after the intervention showed that acceptance and commitment therapy (ACT) had a significant impact on the fear of death in patients with MS ($P = 0/001$;27, df: 1, F = 72.586, MS = 94.924). In addition, the score in fear of death in the pretest had a significant impact in fear of death in posttest ($P = 0/001$;27, df: 1, F = 128.385, MS = 167.010) [chart1].

One month after the intervention changes in variable of fear of death during follow-up compared to the posttest ($P = 0.485$; 27, df: 1, F = 0.501, MS = 0.331) were not significant. According to the scores in follow-up, pretest, and posttest, therapy was continued till follow-up. The score of fear of death in posttest ($P > 0.001$; 27, df: 1, F = 265.154, MS = 175.103) has been effective on the life expectancy and the fear of death in the follow-up, respectively.

DISCUSSION

The findings showed that there was no significant difference between the two groups in fear of death in the pretest stage. In the pretest phase, the scores fear of death in the experimental group were higher than the other stages (posttest and follow up). A significant reduction in the fear of death score was observed after the intervention of the group which received intervention (test) in the posttest stage, and the reduction compared to the pretest was still observed at the follow-up stage. Fear of death changes in the control group was very slight so that in this group, the level of scores did not change during the measurement steps. In addition, in all variables, the effect of auxiliary pretest variables was significant and treatment was stable in the follow-up phase. Since till now, no research has taken place on the effects of ACT on the

Table 1: Covariance analysis of efficiency of acceptance and commitment therapy based on the fear of death during the study in patients with multiple sclerosis

Stage	Source changes	SS	df	MS	Fisher statistics (*F*)	*P*	Effect size	Test ability
After intervention	Pretest	167.01	1	167.010	128.385	0.000	0.826	1.000
	Group effect	94.424	1	94.424	72.586	0.000	0.29	1.000
	Fault	35.123	27	1.301				
1 month after intervention	Pretest	175.103	1	175.103	265.154	0.000	0.908	1.000
	Group effect	0.331	1	0.331	0.501	0.485	0.018	0.105
	Fault	17.830	27	0.660				

SS: Sum of squares, df: Degrees of freedom, MS: Mean square

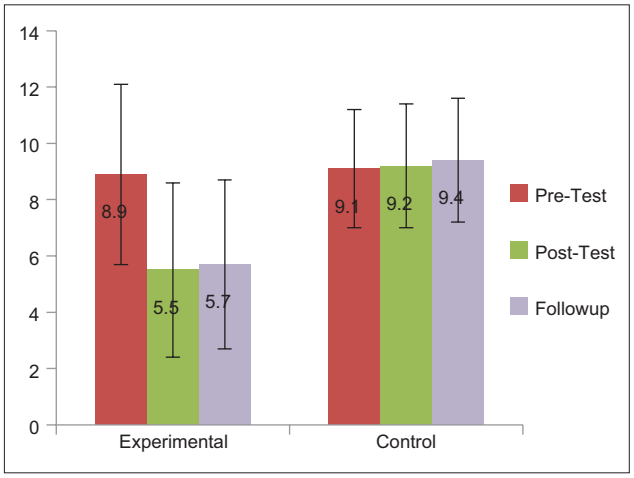

Chart 1: The fear of death score in each group during the study

fear of death; consonant reasearches do not exist directly. However, given that death anxiety is a subset of anxiety, results of the hypothesis is consistent with the research of Bvhrman *et al.*,[16] Power *et al.*,[17] McCracken[18] and Brown, and Jones[19] as the overall effectiveness of treatment based on acceptance and commitment on depression and anxiety in patients with chronic pain as well as researches of Rahimi[20] as the efficacy of treatment based on ACT in reducing anxiety and depression among individual students with Social phobia and results of Ghorbanalipour's study[21] as efficacy and comparison of schema therapy and logotherapy on fear of death in people with symptoms of hypochondriasis. Death anxiety is a term that encompasses a set of attitudes toward death and identified by fear, threat, stiffness, discomfort, and other negative emotional reactions. Although anxiety in the face of death values life and protects the life of the individual and human beings, the fear of death in the forms of severe and pervasive mental illness, can destroy all the values of life (Motamedi, 1388).In addition, given that death anxiety is a subset of anxiety collections, it can be said that ACT treatment teaches the patients to fight with the discomfort associated with anxiety and end it. By engaging in activities that close them to targets of their life (value), they are able to impose their control. ACT changes and reduces unwanted thoughts and, teaches the patients to understand and see unpleasant thoughts and feelings, and gain their abilities as they are.[22] Hence, we can say that this treatment reduces the fear of death, changes the rational belief of individuals to emotional, take the stress as a challenge rather than a threat, relaxation and meditation, mindfulness, and the ability to differentiate their reactions from sensory and pervasive consciousness data.

Since ACT puts the focus on teaching their clients to perform their actions with logic (x) not for the reason (x), if an activity is performed for some reasons, when the reasons change, those acts should also be changed clearly. In contrast, if an action is done for practical reasons, the action can continue independently from the reasons. The therapist should emphasize that commitment is in fact engaging in a process not the ability to achieve specific goals and outcomes.[23]

Therefore, it is expected that treatment ACT would maintain its effects in long-term with features such as encouraging people to live in the present moment, mindfulness, commitment to the pursuit of worthy goals, and focus on the process rather than the outcome. Thus, according to the findings, it is suggested that there would be widespread use of holistic, team, and interdisciplinary methods in the treatment of MS patients. Because the interdisciplinary collaboration of specialists in physical, psychological, and social issues is the main neccessity in comprehensive therapy and the only way to improve the quality of life of these patients.

Since this study has been implemented on a specific group (MS patients), the generalization of its effect on other chronic diseases is limited. Group meeting or alternative treatment did not form, therefore, the active mechanisms associated with the group's experience (such as the acceptance by the group) and the therapist (such as empathy) with other elements affecting the treatment plan (such as the effects of the positive expectations of treatment) were not included in the results.

Since ACT has significant effects in reducing the fear of death, this treatment is recommended for people who are on the verge of running out of life due to

illness or old age. The method is recommended in psychotherapy, counseling centers, and psychosomatic clinics (Psychosomatic Medicine) in the hospitals, particularly on certain diseases. Since the possible effects of treatment based on acceptance and commitment will not be sustained after a few months, thus support meetings are recommended to therapists after the end of treatment to maintain therapeutic effect and thinking for the long run.

CONCLUSION

The findings showed that there was no significant difference between the two groups in fear of death in the pretest stage. In the pretest phase, the scores fear of death in the experimental group were higher than the other stages (posttest and follow up).

Conflicts of interest

There are no conflicts of interest.

Authors' contributions

All authors contributed equally to the writing of the scientific proposal, data collection, and manuscript drafting. The final manuscript was reviewed and approved by all the authors.

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