Original Article

The effectiveness of psychological intervention on multiple sclerosis patients' subjective well-being

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Abstract

Introduction: The present study aimed at investigating the effectiveness of group quality of life therapy (GQOLT) on Multiple Sclerosis (MS) patients' subjective well-being.
Methods: The design of the study was experimental with an experimental and a control group, including a pre-test, post-test and follow-up test. Statistical population consisted of patients suffering from MS referring to health centers in Shiraz from which 24 patients were selected using convenience sampling method. They were randomly assigned into experimental and control groups (each 12 members). The experimental groups received GQOLT during eight 90-minute weekly sessions. The control group received no treatment. All participants completed the Subjective Well-being Questionnaire as pre-test, post-test and follow-up test.
Results: All differences regarding to comparing of means of pretest, posttest and follow up phase were significant. The results of the post-test revealed that group quality of life therapies have positive and significant effects on improving subjective well-being of MS patients. In the follow-up test, these impacts proved to be long-term.
Conclusion: This research shows that GQOLT have improved subjective well-being of MS patients remarkably. Therefore, it is recommended that psychological interventions to be done for these patients.
Declaration of Interest: None.

Key words: Multiple Sclerosis, Group Quality of Life Therapy, Subjective Well-being.

Introduction

Multiple Sclerosis (MS) disease has a high prevalence rate. Approximately 2.5 million people around the world suffer from MS (1). The prevalence of this disease in Iran is about 20 to 60 cases among 100000 people, and women are affected by MS 3 or 4 times more than men (2). This disease is a neurocognitive disorder with unknown cause and it has no absolute treatment. Genetic and immunological factors, as well as, environmental factors (such as viruses) play a role in increasing the susceptibility to MS (3-4). The prevalence of MS is mostly between ages 18 to 40. Moreover, individuals with MS are more vulnerable to mental health disorders. About 50 to 60 percent of these patients suffer from depression, and 37 percent of them suffer from anxiety disorder (3, 5-7).

One of the most important concepts in the context of life quality and positive psychological approach is the concept of well-being. It is a function of personality and general attitudes toward the environment and conditions (8). Subjective well-being which is one of the constituents of life quality (9) refers to how individuals evaluate their lives and it has two dimensions: cognitive and affective. Cognitive aspect refers to individuals' cognitive evaluation of life satisfaction. Affective aspect means having maximum positive affection and minimum negative

affection (10). Well-being has positive effects on individuals' short-term and long-term health, as well as controlling the diseases and syndromes (11). Furthermore, positive and negative affection create different thinking mechanisms which influence the mental health (11). Positivist psychologists believe that instead of emphasizing on the pathology, we should try to find out something from human being's experience of shortage, agony, and disease to his efflorescence, well-being, and happiness (12-13). Because psychology is not just focusing on diseases and treatment, also, is not just focusing on the shortcomings and weakness (14). Moreover, according to the high rate of depression, distress, anxiety, subjective well-being, low quality of living, social problems and social relations in these patients, up to now there has been no approved treatment to stop the disease or provide an absolute improvement in that. If patients possess appropriate mental health, it can help them prevent depression, anxiety and stress. It can also improve their life quality and satisfaction (15).

Different studies indicated that cognitive interventions could succeed in reducing negative affection and increasing positive affection. These interventions, also, increase the sense of subjective well-being in patients affected by MS (16-18). In a study, cognitive-behavioral group treatment leads to an increase in quality of life, mental well-being, and self-efficiency in people affected by MS (19). Khezrimoghadam et al., (20) reported that group treatment was effective in decreasing depression and anxiety of MS patients. Mokhtari ei al. (21) showed that cognitive-behavioral group treatment could decrease anxiety and depression in these patients. Moreover, Asadnia et al. (22) reported that behavioral and cognitive intervention has a positive and significant effect on the therapy of depression level and the decrease of anxiety symptoms in patients affected by MS.

One of the treatments which can affect the therapy of subjective well-being in patients, is mental treatment based on quality of life therapy (QOLT). This treatment consists of 5 stages about life satisfaction which introduces a plan for life quality and positive psychological interventions. This treatment is an approach, designed by Frisch (23), which is based on positive psychology, cognitive treatment, life quality theory and action theory, and it can be implemented for both individual and groups. In a structural form and with some cognitive-behavioral practices and tasks, this treatment aims at making an evolution in 16 areas of life. In this treatment, improvement in quality of life takes place through making cognitive-behavioral changes in five primary concepts. These 5 concepts are briefly called CASIO (the first letter of each word: Circumstance, Attitude, Standards of fulfillment, Important, Overall satisfaction) (23).

Ghasemi et al. (24) reported that group quality of life therapy can promote mental health indices and individuals subjective well-being. Vatankhah et al., (25) showed the effectiveness of teaching skills based on quality of life in the elderly's happiness and vitality. Rodrigue et al. (26) conducted a research which accounted for considering the psychological intervention to improve quality of life and reduce psychological distress in adults awaiting kidney transplantation. Sixty-two patients assigned QOLT, supportive therapy (ST) or standard care (SC) with repeated assessments of quality of life, psychological distress, and social intimacy at pre-intervention (T1), 1 week post-intervention (T2) and 12-week follow-up (T3). Results indicated that QOLT patients had higher quality of life scores than ST and SC patients at T2 and T3, and higher social intimacy scores compared with SC patients at T3. Both QOLT and ST patients had lower psychological distress scores compared with SC patients at T2, although only QOLT continued to show reductions in psychological distress scores relative to SC patients at T3. The results of a recent study (27) indicated that group therapy based on the quality of life computer technology has significantly increased the rate of life satisfaction and happiness in teenagers suffering from spinal cord injuries. Shariati et al. (28) considered the effectiveness of cognitive-behavioral group therapy and QOLT in the self-effectiveness of

addicts. Results revealed that cognitive-behavioral treatment and the QOLT could significantly increase the addicts' post-test scores on self-efficacy in comparison with the control group's scores(28) .

Since a few studies aimed at finding methods to promote mental health of MS patients, and also QOLT has shown its effectiveness on the treatment of mental health in other groups and patients, the current study aims at considering the efficacy of group therapy based on quality of life therapy (QOLT) on the subjective well-being of patients who are affected by Multiple Sclerosis.

Methods

This is an experimental study with an experiment and a control group, and it included three phases; pre-test, post-test and follow-up phases. The participants were randomly assigned into experiment and control group. The experiment group received quality of life therapy (GQOLT) on a weekly basis, but control group received no psychological intervention.

The patients affected by MS who refer to Shiraz clinical centers were chosen as the sample population for this study. By the use of convenience sampling method, 24 of them were selected and were randomly assigned into 2 groups including each group 12 participants. Inclusion criteria were patients aging from 20 to 45, having at least 8 years of school education, receiving treatment without any change in their medicines during the time when this study was conducted. But they were not receiving medicine treatment for anxiety and depression or other psychological disorders. Moreover, they had not received corticosteroids in the last three months (due to their complications). Exclusion criteria were having other chronic physical disorders (such as disabling cardiovascular disease , breathing , liver , kidney or epilepsy), talking or hearing disorders , substance abuse, and having other mental disorders according to diagnostic and statistical manual of mental disorders (DSM-5). Majority of the participants in this study had an associate's degree and they were over the age of 35.

Subjective well-being questionnaire: This questionnaire is provided and standardized by Molavi et al. (29). It consists of 39 questions and it is conducted through 5-stage Likert scale. (Completely right=5 and completely wrong=1). It has four subscales which are vitality, determination, neurosis, and stress-depression. In addition to general scores, positive affection and negative affection are also obtained based on these four subscales. The general reliability coefficient for this questionnaire is 0.92 and for the subscales, it ranges between 0.80 and 0.90. Moreover, the test's internal consistory for teenagers (n=33) was 0.84. The results of factors analysis for Questionnaire questions are in line with the division of positive and negative affections (29).

Quality of life therapy (QOLT). QOLT is a combination of Beck's cognitive treatment and Seligman's positive psychology and the use of care approaches. This treatment, designed by Frisch (23), is a model which aims at providing subjective well-being and life satisfaction based on CASIO pattern in 16 areas of life (23). In these sessions, important aspects of life and their roles in treatment based on QOLT, principles and techniques relevant to them, teaching and elaborating on CASIO pattern and its application in various aspects of life were taken into consideration. In this study, eight treatment sessions were held for experiment group, each session was about 90 minutes. During this period, the control group received no treatment or psychological education. Some studies have shown the effectiveness of QOLT in treatment of different psychological patient groups (24, 25).

To screen the participants, a clinical interview based on DSM-5 was used for each of the individuals. The people who did not have the entrance condition to the study were put aside. In pre-test phase, participants answered the questions on subjective well-being test. After pretest phase, treatment sessions were implemented on the experimental group. In the post–test phase, the subjective well-being questionnaire was filled in by the two groups. After one month, in a follow-up session, the

participants answered the study's questionnaire again.

To analyze the data, descriptive statistical methods as well as covariance analysis were used.

The participants consciously took part in the study and they signed the written consent form. They were informed that they can leave the study whenever they wish.

Results

In table 1, the means and standard deviations of subjective well-being in pre-test, post- test and follow- up phases are shown. As it can be noticed, the mean of subjective well-being components in post-test and follow-up phase in the experiment group has increased in comparison with the means in pre-test phase. Also, it should be mentioned that in all subjective well-being components, higher scores are indicative of higher subjective well-being.

Table1. Means and standard deviations of Subjective Well-Being (SWB)

			Pre test		Post test		Follow up	
Variables	**Groups**	**n**	Mean	SD	Mean	SD	Mean	SD
Vitality	Experimental	12	41.25	8.23	47.67	6.48	47	8.96
	Control	12	39.25	8.55	37.42	6.06	37.58	6.88
Determination	Experimental	12	32.83	5.67	37.58	4.75	37.33	4.88
	Control	12	34.33	5.77	33.75	5.94	33.50	5.31
Neurosis	Experimental	12	23.92	4.05	29.58	4.79	28.33	4.81
	Control	12	25.17	7.42	24.58	6.25	24.92	6.40
Stress-Depression	Experimental	12	17.17	4.19	19.67	3.20	19	3.19
	Control	12	17	5.08	16.83	5.09	16.75	5.06
Positive Affect	Experimental	12	74.08	12.74	85.25	11.02	84.33	13.23
	Control	12	73.58	13.72	71.17	11.54	71.08	11.52
Negative Affect	Experimental	12	41.08	7.37	49.25	6.91	47.33	7.13
	Control	12	42.17	12.09	41.42	10.53	41.67	11.04
General SWB	Experimental	12	115.2	16.61	134.5	15.68	131.7	17.17
	control	12	115.7	24.33	112.6	21.12	112.7	20.79

In a separate analyses in post-test phase, the scores of subjective well-being components in MS patients were considered as dependent variable, both groups with the same level of life quality treatment were considered as independent variable and pre-test scores were accounted as covariate variable and they were entered into the model. Likewise, in separate analyses in follow-up phase, the scores of subjective well-being components were considered as dependent variable, both groups with the same level of life quality treatment were considered as independent variable and post test scores were considered as covariate variable, and they all were entered into the model.

According to table 2, in post-test phase, the results of covariance analysis of subjective well-being components' scores indicated that, after scores adjustment, the group's main effect is significant, and there is a statistically significant relationship among group's post-test scores. In positive affection (determination and vitality) ($p< 0.001$) the obtained Eta^2 (Eta squared) is 0.767, in negative affection (neurosis and stress-depression) ($p<0.001$) the obtained Eta^2 (Eta squared) is 0.421, and in the general subjective well-being (positive and negative affection) is ($p<0.001$) the obtained Eta^2 (Eta squared) is 0.769.

Table 2. Results of covariance analysis of Subjective Well-Being (SWB)

Variables	Assessment	Source	df	Mean square	F	Sig	Effect Size
Vitality	Post-test	Pre-test	1	777.2	114.63	0.001	0.845
		Group	1	461.1	68	0.001	0.764
	Follow up	Post-test	1	1109.5	78.86	0.001	0.790
		Group	1	12.07	0.859	0.365	0.039
determination	Post-test	Pre-test	1	501.71	77.78	0.001	0.787
		Group	1	152.3	23.61	0.001	0.529
	Follow up	Post-test	1	431.2	63.56	0.001	0.752
		Group	1	2.43	0.359	0.555	0.017
Neurosis	Post-test	Pre-test	1	467.51	45.38	0.001	0.684
		Group	1	210.88	20.47	0.001	0.494
	Follow up	Post-test	1	495.75	49.61	0.001	0.703
		Group	1	3.47	0.348	0.562	0.016
Stress-depression	Post-test	Pre-test	1	193.05	19.74	0.001	0.485
		Group	1	44.61	4.56	0.045	0.179
	Follow up	Post-test	1	176.96	17.1	0.001	0.449
		Group	1	0.7	0.068	0.797	0.003
Positive affect	Post-test	Pre-test	1	2460.25	151.21	0.001	0.878
		Group	1	1123.09	69.03	0.001	0.767
	Follow up	Post-test	1	2797.75	99.60	0.001	0.826
		Group	1	2.85	0.10	0.753	0.005
Negative affect	Post-test	Pre-test	1	1137.36	39.16	0.001	0.651
		Group	1	443.45	15.27	0.001	0.421
	Follow up	Post-test	1	1234.56	38.76	0.001	0.694
		Group	1	4.17	0.13	0.721	0.006
General SWB	Post-test	Pre-test	1	6773.71	156.97	0.001	0.882
		Group	1	3012.03	69.80	0.001	0.769
	Follow up	Post-test	1	6587.46	97.73	0.001	0.823
		Group	1	8.32	0.12	0.729	0.006

In follow-up stage, the covariance analysis results for follow-up scores of groups' subjective well-being components indicated that there was no significant difference between their follow-up scores and post-test scores. Therefore, QOLT was effective on subjective well-being in post-test phases and the results of the treatment were also present in the follow-up phase (table2).

Conclusion

The aim of current study was to study the psychological interventions effectiveness on the increase and improvement of subjective well-being in patients affected by MS. One group of MS patients was under QOLT. The results revealed that this kind of treatment is effective on the increase and enhancement of these patients' subjective well-being. The subjective well-being scores in experimental group had a significant difference with the scores of control group. Moreover, the treatment effectiveness was continued in the follow-up phase.

The results of the current study match the findings of the studies conducted by some other researchers (16-18, 20-22) who revealed that psychological interventions in the realm of cognitive-behavioral treatment increase subjective well-being and mental health of the patients affected by MS. The findings of the current study revealed that this treatment has increased the rate of individuals' subjective well-being. Because the issues of intervention presented during the sessions are related to daily events and the life context of the individuals; besides, the provided behavioral tasks and practices in treatment based on life quality are designed in a way that the individuals using them need to have a kind of thought and cognitive involvement. For example, the role of meanings, goals and values in life, life script, social relations, creativity and problem solving which all need

a high cognitive attention. In the treatment based on QOLT and with the use of cognitive approach, individuals were helped to provide a cognitive evaluation of life satisfaction, and by using the maximum positive affection and minimum negative affection, they are able to improve their life's emotional and affective dimension. Moreover, they can put into practice cognitive and affective changes by conducting behavioral practices.

Regarding the relationship between cognition and affection, Rod and Mooney (30) believe that these two factors are controlled by separate systems which influence each other through various methods. With the help of cognitive methods in this treatment, individuals learned to control their affections and experience higher life satisfaction. The feeling of life satisfaction is one of the components which are directly taken into account in life quality treatment, and it is attempted to manipulate it through various methods and techniques (23).

Since the treatment based on QOLT is a combination of cognitive treatment and positive psychology, subjective well-being is an important goal of this approach, and the change in life satisfaction rate is confirmed in both this study and other studies. Subjective well-being or mental health is independent from mental illness. However, they are not necessarily two extreme poles in a continuum, but they are related to each other.

Considering 150 studies in this regard by the use of Meta-analysis, Howell et al. (11) reported that well-being has positive effects on short term and long term consequences in health, and the control of diseases and syndromes. Because higher well- being not only direct the individuals toward better results in health, but also strengthen the immune system's responses to pain, so that people can have better psychological reactivity against diseases. In the QOLT, subjects are taught to consider subjective well-being as an essential part of their mental health, and have a wider viewpoint that mental health does not mean to have no mental illness, but they should always try to increase and improve their life satisfaction.

Therefore, people with cognitive approach learn that by creating a balance between life's existing valuable areas and the ideal situation they wish, they can provide higher rate of subjective well-being, life satisfaction, as well as mental health for themselves. In this regard, Suldo et al. (31) supported the significance of two-factor model in mental health and specify that the existence of high subjective well-being is of great importance in optimum function during adulthood. That is, having mental health means higher subjective well-being and lower mental pathology. Moreover, with a better social support in family, this factor can be related to lower social problems in comparison with other vulnerable groups in mental pathology. Ballew et al. (32) revealed that spiritual activities can, to a great extent, control the increase of psychological well-being in patients with chronic diseases. One of the aspects used in treatment based on QOLT, is paying attention to individuals' spiritual life. Moreover, one of the valuable areas in having a better subjective well-being is the role of values and goals or, in other words, having a spiritual life. So in these sessions the subjects learned how they can differentiate between their spiritual and mundane goals. They achieved this attitude and insight that there should, daily, be some moments to allocate for their values; furthermore, by recreating the life script or road map and new designs and ideas, they can reach a comprehensive worldview about themselves and the world around them. So, they can find out the main function of spirituality which is optimism. Emmonse and Mccullough (33) reported that the participants with the positive attitude toward life had a better feeling and they were more optimistic about future. Some other studies revealed, that people who confront with the stressful and challenging situations by providing sense and meaning to those situations, usually, experience low negative affection and they report a higher rate of life quality. These findings indicate that giving sense and meaning to life can provide positive effects (34).

Lyubomirsky and Delaporta (35) believe that long term subjective well-being is related to environmental factors such as recreation and

playing with children, optimistic thought practice, thanking and appreciating others as well as yourself. Furthermore, QOLT is trying to promulgate these behaviors and activities through different methods and principles. It is imagined that by using and applying the techniques of treatment based on life quality, we can improve the function and performance of individuals' life in various areas.

The results of this study can be used to provide mental health services for patients affected by MS, so that they can increase their sense of subjective well-being and have a higher life quality. One of the limitations of this study is that just one gender (male patients) was selected to participate in the study. It is recommended that in future studies, both male and female participants take part in the study, so that gender differences can be taken into consideration. Moreover, it is recommended that similar studies can be conducted on the patients who are suffering from specific diseases which are difficult to cure. Consequently, the effects of this kind of treatment can be clarified with regard to these patients' cure.

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