DOI: http://dx.doi.org/10.22122/ijbmc.v8i3.290 Published by Vesnu Publications

International Journal of Body, Mind and Culture

Assessment of the Effectiveness of the Self-Review Technique on Quality of Life and Self-Efficacy in Patients with Multiple Sclerosis

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Emperical Study

Abstract

Background: Due to the high prevalence of multiple sclerosis (MS) in the country and the mental and physical constraints resulting from it, applying psychological interventions to overcome and improve the limitations patients, who are often of a young age (with an average age of 20-40), are faced with in their lives seems essential. Although MS is a progressive autoimmune disease, its mental symptoms can affect many aspects of life. The aim of this study was to investigate the effect of the self-review method on life satisfaction, efficacy, and quality of life (QOL) of MS patients.

Methods: This study evaluated the effectiveness of the "self-review" method as a cognitive intervention in improving efficacy and QOL in patients with MS through a semi-experimental design with a pretest-posttest design and control group. Through convenience sampling, 26 members of the Iranian MS Society (12 women and 14 men) were selected and were randomly divided into control and experimental groups (each group containing 13 subjects). After responding to the Multiple Sclerosis Self-Efficacy Scale (MSSS) and Multiple Sclerosis Quality of Life (MSQOL-54) questionnaire, the experimental group received therapy sessions based on the "self-review technique" for about 3-4 weeks. The control group did not receive cognitive therapy.

Results: To evaluate the difference between the obtained scores, the self-review method was considered as the independent variable, and self-efficacy and QOL (a combination of physical and mental health) were considered as dependent variables. The results from the slope of regression lines on the combination of physical health ($P < 0.001$; $F = 19.29$; $df = 24$) and mental health ($P < 0.001$; $F = 13.34$; $df = 2$) indicated that the slope of the regression lines was not homogeneous. The findings of this study indicated that using the self-review treatment method in individual counseling sessions improved self-efficacy and QOL in MS patients. This method positively changed patients' perception of their physical health, and improved their mental health.

Conclusion: The results show a meaningful change in self-efficacy and QOL in patients with MS who have undergone the therapy sessions. In this study, we concluded that the psychological intervention with a self-review method is effective in improving the level of self-efficacy in MS patients. It can be stated that the self-review method consists of a

psychological intervention, which positively affects the perception of patients by decreasing the psychological energy spent for negative events through content and feelings reflection technique, as well as promoting their level of self-awareness. Thus, the intervention can promote the QOL of patients, which in turn affects their perception of the disease.

Keywords: Multiple Sclerosis, self-efficacy, Quality of life, Self-review technique

Citation: Pourhosein R, Yaghoobirad M. **Assessment of the Effectiveness of the Self-Review Technique on Quality of Life and Self-Efficacy in Patients with Multiple Sclerosis.** Int J Body Mind Culture 2021; 8(3): 154-63.

Received: 14 Feb. 2021

Accepted: 07 Jun. 2021

Introduction

Multiple sclerosis (MS) is an autoimmune and progressive disease of the central nervous system known to produce extensive lesions or plaques in the brain or the spinal cord. The diagnosis of MS is based on different symptoms in each individual due to the loss of the myelin sheath in various parts of the brain and the spinal cord; no two patients with MS show the same symptoms. Although the exact causes of MS are yet to be identified, the current trend of the literature suggests that MS is a multifactorial disease, which occurs when these multiple factors exist in a specific ilness. Until today, genetics, viruses, environmental factors including lack of sunlight and vitamin D, stress, immune deficiency, and smoking (Mayer-Rienecker, Wegener, & Hitzschke, 1984; Summerday, Brown, Allington, & Rivey, 2012; Lovera & Reza, 2013; Sundstrom, P., & Nystrom, 2008; Ascherio & Munger, 2007), psychological stress (Goodin, Ebers, Johnson, Rodriguez, Sibley, & Wolinsky, 1999), perceived health and functional status (Li, Rumrill, Bishop, & Leslie, 2020) have been recognized as interfering factors. Symptoms of MS consist of a range of physical and psychological disabilities (Bol, Duits, Hupperts, Vlaeyen, & Verhey, 2009), quality of life (QOL), integrating physical and psychological components of wellbeing (Poser et al., 1983; Mitchell, Benito-Leon, Gonzalez, & Rivera-Navarro, 2005), and depression (Gay, Vrignaud, Garitte, & Meunier, 2010).

MS decreases the QOL of the patients by influencing their physical and psychological health, and reducing their ability to conduct social interactions and perform daily routines (Lankhorst et al., 1996). MS often occurs within the age range of 20-40 years, which is the peak of social, occupational, and individual progress of people; thus, it is not surprising that these barriers would reduce the QOL of affected people. Moreover, an important factor in dealing with chronic diseases such as MS is the patient's perception of his/her abilities in facing the uncertainty and functional impairments caused by the disease. The reports indicate that there is a correlation between higher efficacy and adaptation with the disease, and less mental illness in patients with MS.

Dealing with the uncertainties and functional impairments resulting from the disease can be facilitated through using strategies that improve patients' perception of their abilities.

The body of literature on the effectiveness of psychological treatments for MS patients indicates that treatment sessions can have a positive effect on reducing depression and improving the QOL and self-efficacy of patients (Brenk, Laun, & Haase, 2008; Burschka, Keune, Oy, Oschmann, & Kuhn, 2014; Cuijpers, van Straten, Andersson, & van Oppen, 2008).

Pourhosein (2010) introduced a cognitive intervention to the psychology community of the country using a self-review technique. This method is based on Beck's cognitive theory (Aaron T. Beck, 1964), and Albert Elis's research. The self-review method can teach the patient the correct way of facing his/her thoughts and help him/her to replace the unrealistic, negative, and involuntary evaluation of him/herself and his/her abilities with correct and more accurate understandings. This method can positively change the patient's cognitive theme by decreasing thrill load and emotional investment in negative events or undesirable characteristics of the patient, adding positive meanings to his/her actual and potential abilities, and focusing on his/her positive definitions of him/herself. This method can also reduce the negative biases of the memory (Pourhosein, 2010; Pourhosein, 2021).

Previous studies have shown that using this technique had a significant positive effect on increasing the happiness of delinquent adolescents (Ezzati, 2014), reducing negative thoughts in depressed women (Salar, Pourhosein, Besharat, & Gholamali Lavasani, 2013), reducing negative idealism, and use of non-growth defense mechanisms among students in Tehran, Iran, (Bidast, 2014), the physical image of women (Khodabandehlo, Pourhosein, & Gholamali Lavasani, 2014), depression in cardiac patients (Safaei Firoozabadi, Pourhosein, & Gholamali Lavasani, 2013), and depression in patients with MS (Yaghoobi Rad, Pourhosein, & Gholamali Lavasani, 2016; Pourhosein, 2021).

Considering these results, if the self-review technique is effective in improving depression, QOL, and self-efficacy in MS patients, it can help these patients due to the short onset of the disease symptoms. In this research, we tried to find out whether using the self-review technique could improve self-efficacy and QOL in MS patients.

Methods

Statistical population, Case study: The present semi-experimental study was conducted with a pretest-posttest design, and a control group. During the study, the study subjects underwent the self-review intervention. The statistical population of this study included all MS patients who were members of the Iranian MS Society; 30 individuals who had the inclusion criteria were selected as the study participants. The participants were randomly assigned to 2 intervention groups (n = 15) and a control group (n = 15). The number of participants decreased to 26 patients during the study period, of which 13 were in the control group (5 women and 8 men) and 13 belonged to the intervention group (7 women and 6 men). The age of the participants in the intervention group and control groups was in the range of 22-54 years (mean ± SD = 38.3 ± 29.8), and 31-45 years (mean ± SD = 38.37 ± 59.4), respectively. The participants' level of education varied from high school graduate to master's degree. In the intervention group, 5 individuals were high school graduates, 4 had an associate degree, 2 had a bachelor's degree, and 2 had a master's degree. Moreover, 9 were high school graduates, 2 had a bachelor's degree, and 2 had a master's degree in the control group.

The inclusion criteria included membership in the Iranian MS Society, a minimum education of high school graduate, balance in motion and being able to speak, and willingness to enter the research. Moreover, the exclusion criteria included severe eyesight problems that prevented reading or writing, psychosocial-motion slowness, balance problems, and simultaneous participation in similar psychological meetings. After obtaining written consent from the participants, the Multiple Sclerosis Self-Efficacy Scale (MSSS) and Multiple Sclerosis Quality of Life (MSQOL-54) instrument were completed individually. The intervention group received a session of treatment per week for 3-4 weeks (based on the patient's need). The duration of each session was 60 to 90 minutes and included an intervention of the self-review technique. The control group did not receive this intervention.

The patients were asked to describe themselves in at least 20 sentences as if to themselves and as if they are in front of a mirror. These sentences, which were mostly evaluated as positive and negative sentences, were reviewed in the presence of the therapist. For the negative sentences, we tried to reduce the emotional and thrill load in these sentences using the content and feelings reflection technique, in addition to strengthening the relationship between references and psychologists. Positive sentences were reviewed again with emphasis and confirmation. The therapist

was a psychologist. She had successfully passed the self-review course under the guidance of a teacher; moreover, she has had much experience in using her own browsing technique.

On the second session, patients were asked to continue writing the sentences, and review and mark sentences in which they evaluated themselves positively, and begin the negative sentences with the phrase "instead...". During the next sessions, the completed sentences were reviewed and evaluated, and then, the new sentences were reviewed. On the final session, the participants completed the MSSS and MSQOL-54 again.

Tool of assessment: Multiple Sclerosis Self-Efficacy Scale: The MSSS is a multidimensional self-reporte tool developed for adults. In this tool, the dimensions of independence and activity (5 items), concerns and interests (4 items), personal control (3 items), and social efficiency (2 items) are assessed in 14 items. The validity of this scale was confirmed by calculating its internal consistency using Cronbach's alpha coefficient (0.81), and test-retest (0.81) with a 1-week interval in the main study. The validity of the scale was also confirmed by analyzing the core components, and through varimax rotation, and convergent and divergent validity (Schwartz, Coulthard-Morris, Zeng, & Retzlaff, 1996).

The obtained data on 120 MS patients in North Khorasan and Hamedan, Iran, was first examined in terms of diagnostic performance of items, and the correlation of the score of each item with the total score of the scale was assessed. The initial results indicated that the items have an optimal detection ability (r = 0.3-0.6); therefore, no item was removed in this step. In the next step, to investigate the validity of the scale structure, exploratory factor analysis with the pattern of principal components as well as Promax rotation with the consideration of a factor load of over 0.35 was used. After multiple rotations, items 12 and 13 were removed because of having a shared load in more than 1 factor, and therefore, the number of items in the Persian questionnaire was reduced to 11 items.

The final structure of the scale presented 3 variance factors of 71.12%. The divergent validity of the MSSS was assessed through the calculation of the correlation between the dimensions of this scale and the scores of depression and anxiety in MS patients. The results indicated a negative significant correlation between self-efficacy, and anxiety and depression, which indicates the suitable divergent validity of the self-efficacy scale in MS patients. Evaluation of gender differences in the dimensions of the MSSS confirmed that women had higher scores in independence, activity, and personal control dimensions. Furthermore, the scores of anxiety and interests were higher in men. Nevertheless, the only significant gender difference was in personal control ($t = 2.5$; $P < 0.01$). The reliability of the factors extracted from the self-efficacy scale in MS patients and the total score of the scale was assessed by calculating Cronbach's alpha and Guttman split-half coefficient. The Cronbach's alpha and Guttman split-half coefficient for independence and activity were 0.81 and 0.8, for personal control were 0.9 and 0.78, concerns and interests were 0.78 and 0.72, and the total score of the scale were 0.9 and 0.87, respectively (Tanhaye Reshvanloo and Soleimanian, 2014).

Multiple Sclerosis Quality of Life scale: The MSQOL-54 scale was created by Vickrey and Angeles (1995) by adding questions to the SF-36 (36-item Questionnaire of Health Assessment). This scale is used in the assessment of routine medical care in terms of the QOL of MS patients. In addition, the MSQOL-54 scale provides a tool to compare the QOL of MS patients with that of individuals with other diseases and the

general population, as well as to evaluate the effectiveness of treatment methods on these patients. This questionnaire was translated by Haghighi and Ghaem into the Persian language; they used the retranslate method and assessment of the questions to create linguistic validity (Borhani, Haghighi, & Ghaem, 2005).

This scale includes 14 areas that are evaluated using 54 questions. These areas include physical functioning, limitation of role-playing due to physical problems, limitation of role-playing due to emotional problems, pain, emotional health, energy, health perception, social function, cognitive function, health stress, sexual function, satisfaction from sexual function, and changes in public health and QOL. Finally, this scale provides 2 scores using a combination of weight percentage of these 14 areas. Using these 2 scores, the QOL of the person is estimated. The 2 final areas include the combined area of physical health and the combined area of mental health. The Cronbach's alpha of the Persian version of this questionnaire was estimated to be 0.926, and no significant difference was seen between each item and the average physical and mental score of the MSQOL-54 based on gender, marital status, and education. The scale had a successful (100%) convergent validity in each area. Finally, using factor analysis, the construct validity of the questionnaire was verified (Borhani, Haghighi, & Ghaem, 2005).

Results

To evaluate the difference between the obtained scores, the self-review method was considered as the independent variable, and self-efficacy and QOL (a combination of physical and mental health) were considered as dependent variables. The results from the slope of regression lines on the combination of physical health ($P < 0.001$; $F = 19.29$; $df = 24$) and mental health ($P < 0.001$; $F = 13.34$; $df = 2$) indicated that the slope of the regression lines was not homogeneous. Thus, to evaluate the results, the difference between the pretest and posttest scores were calculated for each variable, and then, the results were evaluated using t-test for the independent group.

The results presented in table 1 show a significant difference between the intervention and control groups in both physical and mental health dimensions ($P < 0.05$). Thus, it can be concluded that using the self-review method had a significant effect on improving the QOL of MS patients.

Regarding the effectiveness of the self-efficacy method, results from the slope of regression line homogeneity ($P = 0.18$; $F = 4.83$; $df = 2$) showed that there was a regression line slope homogeneity condition for applying covariance analysis.

The mean ± SD of pretest and posttest scores of the self-efficacy variable are presented in table 2. Based on the results of the analysis of covariance ($P < 0.01$; $F = 10.11$; $df = 1$), it can be stated that using the self-review method had a significant effect on the level of self-efficacy of patients in the intervention group.

Table 1. Average and standard deviation of pretest and posttest scores in the intervention and control groups and t-test results for the combination of physical and mental health variables

	Group	Pretest (mean ± SD)	Posttest (mean ± SD)	Mean ± SD difference	t	df	P-value
Combination of physical health	Control	69.84 ± 20.04	66.49 ± 18.87	3.34 ± 7.13	7.82	24	0.10
	Study	61.93 ± 15.14	70.19 ± 13.18	8.26 ± 13.23			
Combination of mental health	Control	72.23 ± 23.53	69.15 ± 25.62	3.07 ± 10.28	2.12	24	0.30
	Study	56.32 ± 20.06	62.74 ± 18.48	10.42 ± 19.38			

SD: Standard deviation; df: Degree of freedom

Table 2. The average and standard deviation of pretest and posttest scores of the self-efficacy variable in the intervention and control groups

Group	Pretest (mean ± SD)	Posttest (mean ± SD)
Control	51.93 ± 8.99	50.15 ± 9.21
Intervention	46.85 ± 6.10	51.85 ± 6.06

SD: Standard deviation

Discussion

The findings of this study indicated that using the self-review treatment method in individual counseling sessions improved self-efficacy and QOL of MS patients. This method positively changed the perception of patients of their physical health, as well as improving their mental health. These results are in line with the reports of Pagnini, Bosma, Phillips, and Langer (2014) on the beneficial effects of psychosocial interventions on the physical and psychological health of MS patients. These results illustrate the necessity of greater attention to the mental issues of patients and psychological treatments for them. Moreover, our results are consistent with the results of Grossman et al. (2010). They showed that the psychological intervention of reducing stress based on consciousness improves QOL in MS patients.

The effects of the self-efficacy factor in MS patients in this study are in line with the results of Barlow et al. (2009) They concluded that the psychological intervention with a self-review approach is effective in improving the level of self-efficacy in MS patients. Stuifbergen, Becker, Blozis, Timmerman, and Kullberg (2003) reported that a lifestyle changing intervention in MS patients improved the self-efficacy of these patients.

It can be stated that the self-review method consists of a psychological intervention, which positively affects the perception of patients by decreasing the psychological energy spent for negative events through the content and feelings reflection technique, and promotion of the level of self-awareness. Thus, the intervention can promote the QOL of patients, which in turn affects their perception of the disease. The effectiveness of the self-review method in reducing depression in MS patients has also been confirmed by Yaghoobi Rad et al. (2016).

Considering the mutual relationship between depression and QOL in MS patients (Darviri, Zavitsanou, Delikou, Giotaki, Artemiadis, Anagnostouli, 2016), it can be argued that the reduction of depression is an effective factor in improving the QOL of MS patients. Furthermore, these interventions lead to the correction of patients' perceptions toward themselves and environmental phenomena; thus, they affect the individuals' perception of the controllability of unexpected events and future prediction. Therefore, this can improve their confidence in showing appropriate behaviors in specific situations. Moreover, the negative theme of negative self-efficacy is recognized practically; therefore, using psychological interventions such as the self-review technique can correct the cognitive theme, so that it may lead to an alteration in self-efficacy. The MSSS evaluates a person's perception of his/her abilities and capabilities, which has improved as a result of using this intervention (Grossman et al., 2010; Pagnini et al., 2014; Stuifbergen et al., 2003).

It should be noted that due to limited sampling, small sample size, lack of sample members of the Iranian MS Association in Tehran and inability to follow patients, generalization of results will be limited.

Conclusion

According to the research results, we can conclude that the self-review method has been significantly effective on the self-efficacy and QOL of patients with MS. It can be stated that the self-review method, which is a psychological intervention, can have a positive effect on patients' perceptions by reducing the psychological energy used for negative events, reviewing the person's characteristics and techniques of reflecting his feelings, and improving his Self-knowledge These patients reported more life satisfaction after receiving the self-review technique. Therefore, this intervention can improve the QOL of patients, which in turn affects their perception of the disease. The self-review method can also be used as a method of adapting to chronic illness.

Conflict of Interests

Authors have no conflict of interests.

Acknowledgments

We would like to thank all the subjects who participated in the research and the Iranian MS Society for its cooperation.

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