Research Paper:
The Effects of Life Skills Training on Patients' Adaptation With Multiple Sclerosis

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ABSTRACT

Background: Multiple Sclerosis (MS) affects people's lives for a long time, therefore it is necessary to improve their quality of life by all means, including the most appropriate way of adaptation. The purpose of this study was to investigate the effect of life skills training on patients' adaptation with MS.

Methods: This study is a quasi-experimental study with a sample size of 80 subjects who were selected with convenient sampling method. Patients were assigned in the experimental and control groups. The experimental group received four 1-hour sessions training of life skills within a month. The control group received routine cares. Patients in both groups completed Coping with Multiple Sclerosis Scale (CMSS) at the beginning and one month after the last training session. To compare the findings between two groups, independent T-Test was used and to compare pre- and post-intervention results, paired T-Test was used. To analyze the data, SPSS 21 was used.

Results: Most respondents in both experimental and control groups (55% - 55.7%, respectively) were male. In the control group, the average age of respondents was 32.22 years and in the experimental group it was 33.02 years. There was no significant difference in coping with MS scores between experimental and control groups before life skills training (P > 0.05) but after training, both groups showed significant differences (P < 0.01).

Conclusion: Our main study result suggests positive effects of using life skills training. Because the main objective of these trainings was preparing and helping patients to solve problems and difficulties encountered due to their diseases, thus, applying life skills training in care plan is recommended in these patients.

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1. Background

Multiple sclerosis (MS) is an autoimmune disorder, characterized by a combination of motor and cognitive symptoms and mental/nervous disorders (Schmitt et al. 2014). This damage can interfere with nervous system ability for communication and cause several physical signs and symptoms (Comptson & Coles 2008). The prevalence of the disease was 400000 in the United States and about 2 million in the world according to the National MS Society (Mcguire et al. 2015; Pagnini et al. 2014). In 2010, in Iran MS prevalence ranged from 5.3 to 74.28 per 100000 people in different regions (Hemmati Maslakpak & Raiesi 2014).

The effective component in quality of life that is impaired in people with MS is adaptation (Schmitt et al. 2014; Wollin et al. 2010). Studies on the people's adaptation with MS have shown that the adaptation has balancing effect on anxiety, depression and even creating new brain lesions (Cynthia et al., 2004). Adaptation encompasses cognitive and behavioral efforts to control, reduce, or tolerate internal or external demands that are threatening or more than one's personal resources (Farran et al. 2015). Unpredictable and unpleasant symptoms, treatment protocols and medication side effects impose multiple challenges on patients regarding psychological adaptation (Alschuler & Beier 2015). Factors such as health care barriers, economic pressures and political instability influence the adaptation mechanisms used and often increase the use of negative coping mechanisms (Farran et al. 2015). Although most people seem to have positive adaptation to maintain their quality of life, abnormal mechanisms are common which are closely associated with depression (Bianchi et al. 2014).

Despite the availability of disease-modifying treatment since 1993, MS management remains challenging (Tan et al. 2010). Although the drugs used to treat MS are modestly effective, they have side effects and are poorly tolerated (Weinshenker 1994). Effective coping mechanisms protect people against cognitive, environmental and biological factors that cause anxiety. It is important to be aware of adaptation mechanisms alongside with medical treatment to experience the best of life with MS (Milanlioglu et al. 2014). MS can affect people's lives for a long time and therefore it is necessary to improve their quality of life by all possible ways, including the most appropriate ways of adaptation (Mikula et al. 2014).

Results of studies have shown that psychological interventions can improve physical and psychological well-being of patients with MS through the treatment of mood disorders, improving self-management, strengthening self-efficacy and self-esteem, reducing stress, improving coping skills and general quality of life (Thomas et al. 2014). In this regard, life skills training is one of psychological interventions. Life skills are the abilities to adapt and have positive behavior which strengthen people to deal effectively with the demands and challenges of daily life (Vaidia 2014). This study aimed to investigate the effectiveness of life skills training in improving patients' adaptability in with multiple sclerosis.

2. Materials & Methods

Study design and participants

This study was quasi-experimental study where the impact of life skills training on the adaptation of people with MS was investigated. Samples were subjects with MS referring to the Society of Supporting Patients with Multiple Sclerosis in Tehran in 2017. According to the research inclusion criteria and using convenient sampling method, a total of 89 samples were chosen. Patients were referring to MS Society from Saturday to Wednesday to participate in training courses. Thus, the class participants were different in each day of the week.

To select the control and experimental groups, the researcher referred to the Society in odd and even days respectively and due to selection of the experimental and control groups in separate days there was no possibility of random allocation of cases to prevent information interference. This way, 46 subjects were selected as the experimental group and 43 as the control group. Six persons were excluded from the experimental group: one for failing to attend in one training session, one for discontinuing to participate in the study and four others due to disease recurrence and hospitalization. In the control group 3 people were also excluded because of their absence in the second stage to complete the questionnaire, due to disease recurrence and hospitalization.

Eventually, in experimental and control groups, data from 40 patients with MS were investigated and analyzed. The patients in the experimental group were asked to attend classes an hour before the start of training class of the Society. Life skills were taught in four 1-hour sessions to the experimental group. Inclusion criteria included a definite diagnosis of MS by neurologist, ability to read and write, ability to participate in training sessions, lack of experiencing disease attack by the patient over the

past three months, non-pregnancy, lack of changing the dose of disease-modifying drugs in case of taking these drugs, lack of other debilitating diseases and involvement of cognitive system, lack of chronic heart and lung disease, no psychiatric disorders or use of psychiatric drugs.

Exclusion criteria included hospitalization and disease recurrence, unwillingness or not attending in a training session, developing progressive type of MS and having excessive fatigue so that the patient cannot receive the training. Questionnaire of personal, medical and adaptation information were at their disposal for basic evaluation of patient before training. Coping with Multiple Sclerosis Scale (CMSS) was completed again in the eighth week by patients in both groups. Four sessions was held for patients in the experimental group within 4 weeks for an hour (1 session per week). At the same time, training manual and the relevant CD were given to the experimental group. Training manual has been prepared according to the topics taught to the participants as follows:

First session: Multiple sclerosis, its nature, the concept of life skills training and its applications, self-awareness skills. Second session: empathy skills training, interpersonal relationships and effective communication. Third session: reminders of past content and starting coping skills training, emotion management and problem solving. Fourth session: Previous review, teaching decision-making skills, creative thinking and critical thinking. All session held with presence of the researcher and subjects in the training room which was coordinated with the training center. Also in all counseling sessions, psychiatric nurse monitored the proper implementation and administration of the sessions. Training was presented by the researcher and through the lecture, discussion and Q & A methods. In case of absence from a training session, the subject was excluded. The control group received usual care and research instruments was given to them to be completed. To observe ethical principles, training manual and the relevant CD was at disposal of the control group at the end of training sessions. After collection of completed questionnaires, the researcher analyzed them.

Demographic information

Demographic questionnaire included information regarding gender, age, race/ethnicity, educational level, economic/social status, place of residence, marital status, employment status, personal health assessment, history of psychiatric disorder and medication as well as questions about MS such as type of MS (progressive / relapsing, remitting), duration of disease and experience of disease worsening.

Coping with Multiple Sclerosis Scale

To evaluate patient self-management, Coping with Multiple Sclerosis Scale (CMSS) was used. This instrument was introduced for the first time in 2001 by Pakenham to investigate the mechanisms of adaptation to cope with MS. CMSS is a 29-item questionnaire that investigates a person's reaction to specific stressful situations. Participants are asked to evaluate the main problem associated with MS which have experienced in recent months and also how much the problem has been stressful in the last month based on 7-point Likert-type scale (From 1 = not at all to 7 = very stressful). Then the participants are asked to report how often they have used these 29 adaptation mechanisms in connection with this problem in the past month.

Answers are rated in a 5-point Likert-type scale (0 = never, 4 = most of the time). A score of 4 represents the highest adaptation and a score of 0 indicates no adaptation. CMSS factor analysis showed that it has 7 subscales, including problem solving, physical help, acceptance, avoidance, control of personal health, conserving energy and emotional release. Problem solving factor had 3 items (11, 13 and 21), physical help factor had 5 items (6, 8, 26, 27 and 28), acceptance factor had 6 items (12, 18, 20, 22, 25 and 29), and avoid factor had 5 items (3, 9, 16, 19, 24). Personal health control factor has 4 items (1, 2, 15 and 17). Energy conservation factor has 4 items (4, 5, 7 and 23). Emotional release contains 2 items (10 and 14) (Chalk 2007).

The instruments validity and reliability

To determine the validity and reliability of demographic data as well as the validity of the training manual, the content analysis was used. CMSS has been designed for the first time in 2001 by Pakenham to investigate the mechanisms of adaptation which is used in dealing with MS. In order to create convergent validity, Pakenham compared CMSS instrument with Ways of Coping Checklist (WCC) (Chalk 2007). Each subscales of the CMSS with the exception of physical help was significantly correlated with two different subscales of WCC.

Reliability and validity of this instrument was again confirmed in 2007 by Chalk. CMSS factor analysis by Pakenham in 2001 showed that α confidence coefficient for 7 subscales varied in the range of 0.54 to 0.74. Factor analysis of WCC by Chalk in 2007 showed confidence coefficient in the range of 0.53 to 0.70 in each subscale. Although, this confidence is low, results of the study by Pakenham showed that CMSS is valid particularly for people with MS. Participants in Pakenham study evaluated CMSS as perfectly related to adaptation with MS and showed that

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there is no need to add another adaptation mechanism to this instrument. This tool has been used in Iran (Chalk 2007). In Iran, the validity and reliability of CMSS had not been confirmed, therefore, the aim of this study was to confirm reliability and validity and Cronbach α was measured which its confidence coefficient was above 0.85.

The statistical analysis

To describe data, descriptive statistics was used and to achieve the objectives of the research and testing hypotheses, Chi-Square tests, independent T-Test, paired T-Test and Fisher Exact T-Test were used. All data were analyzed using the SPSS 21.

Research ethics

This research conducted with the approval of the University Research Ethics Committee with code No.

IR.IUMS.REC.1394.9311686009 and approval of Iran Research Council and MS Society. Before starting the study, written and oral consent were taken from patients. To observe ethics principles, the training manual with CD was provided for the control group at the end of the study.

3. Results

Most respondents in experimental and control groups were male (55%, 57.5%, respectively). The Mean (±SD) age of respondents in the control group was 32.22(8.88) years and in experimental group 33.02(10.34) years. Chi-Square, T-Test and Fisher Exact T-Test results showed that both groups were matched in terms of demographic data (Table 1).

Increasing the adaptability of people with MS after teaching life skills was significant compared with their initial adaptation and life skills training has significant

Table 1. Comparing demographic information between control and experimental group: Chi-Square, T-Test and Fisher Exact T-Test results (n = 80)

Variable		Control Group	Experimental Group	Test Results
Gender, No. (%)	Male	23(57.5)	22(55.0)	Chi-square = 0.822 df = 1 P = 0.051
	Female			
Age, mean ± SD		32.22±8.88	33.02±10.34	Independent T-Test, t = 0.371 df = 78 P = 0.712
Marital status, No. (%)	Single	24(60.0)	27(67.5)	Fisher exact T-Test P = 0.82
	Married	9(22.5)	8(20.0)	
	Divorced	5(12.5)	4(10.0)	
	Death of wife	2(5.0)	1(2.5)	
Education level, No. (%)	Under diploma	25(62.5)	26(65.0)	Fisher exact T-Test P = 0.38
	Diploma	13(32.5)	14(35.0)	
	Above diploma	4(10.0)	3(37.5)	
Health status, No. (%)	Poor	4(10.0)	3(37.5)	Fisher exact T-Test P = 0.65
	Good	32(80.0)	35(87.5)	
	Very good	4(10.0)	2(5.0)	
Type of disease, No. (%)	Recurring – remitting	19(47.5)	17(42.5)	Chi-square test = 0.79 df = 2 P = 0.47
	Elementary progressive	15(37.5)	18(45.0)	
	Secondary progressive	6(15.0)	5(12.5)	
Time period elapsed from the last attack of the disease, mean ± SD		7.80 ± 5.91	7.30±5.51	Independent T-Test t = -0.391, df = 78 P = 0.697
Number of disease attacks, mean ± SD		5.90 ± 3.40	5.90±3.01	Independent T-Test t = -0.001, df = 78 P = 0.99

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Table 2. Comparing adaptation before and two months after the intervention in the experimental group (n = 40)

Variable	Before Intervention	After Intervention	Results of Paired T-Test
	Mean ± SD	Mean ± SD	
Adaptation	97.54 ± 11.70	112.37 ± 11.35	t = 7.48, df = 39, P < 0.001

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Table 3. Comparing adaptation before and two months after the intervention in the control group (n = 40)

Variable	Before Intervention	After Intervention	Results of Paired T-Test
	Mean ± SD	Mean ± SD	
Adaptation	96.77 ± 11.15	98.24 ± 10.17	t = 1.92, df = 39, P = 0.061

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Table 4. Comparing adaptation before and two months later in the intervention and control groups and presenting results of independent T-Test (n = 80)

Variable	Groups	Experimental	Control	Independent T-Test Result
		Mean ± SD	Mean ± SD	
Adaptation (total)	Pretest	97.54 ± 11.70	94.77 ± 11.15	t = 1.082, df = 78, P = 0.283
Adaptation (total)	Posttest	112.37 ± 11.35	96.50 ± 9.63	t = 6.742, df = 78, P < 0.001

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impact on increasing adaptation of people with MS in the experimental group (P < 0.001) (Table 2). Changes in adaptation of people with MS in the control group was not significant after intervention, compared with the initial adaptation (P < 0.05) (Table 3). Independent T-test showed that experimental and control groups had no significant difference with regard to adaptation with MS before training life skills (P < 0.05) but after life skills training, control and experimental groups had significant difference with regard to adaptation (P < 0.001) (Table 4).

4. Discussion

Our findings suggest that increase in patients' adaptation with MS after teaching life skills was significant (compared with the initial adaptation) and life skills training had significant effect on enhancement of patients' adaptation with MS. In other words, the experimental group had higher adaptation with MS compared with the control group. Therefore, according to the results, the effect of life skills training on adaptation with MS is confirmed. Research carried out in this field confirm the results of this study, too.

Rahmati et al. (2010) showed that life skills training improves communication disorders, behavioral distur-

bances, social adjustment and adaptation by effective learning interaction and reducing the inappropriate social behavior. A study showed that psychological interventions can improve mood disorders (such as anxiety and depression), self-management, self-efficiency and self-esteem, stress, adaptation skills and general quality of life, physical and psychological well-being of patients with MS (Thomas et al. 2014). The results of a systematic review study on the psychological interventions in patients with MS by Lara et al. showed that cognitive-behavioral interventions was useful in the treatment of depression in patients with MS and also helped patients to adapt with MS (Stepleman et al. 2009). Most studies in this field had not directly investigated the impact of psychological training in MS and investigating the matter in MS has been a step to increase knowledge related to non-drug interventions in the field.

The study results showed that teaching ten life skills improved overall adaptation in patients with MS through improving problem-solving, reception, control of personal health and energy conservation. Because of the content of ten life skills and its common points with adaptability dimensions, these skills can be used extensively to improve this important factor. Given that adaptability is

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considered highly influential in the quality of life, through psychological training and in particular, life skills training, we can take a step towards solving the problems of these patients and ultimately improve their quality of life.

In this study, the need to acquire adaptation in patients with MS was mentioned in relation to the psychological needs as a nursing diagnosis, then in order to meet these requirements, training was given. The study results showed that after the implementation of educational-consulting role for nurses in the field of psychological trainings, adaptability behavior improved in the patients. Studies showed that lack of knowledge with regard to adaptation to the disease and problems in these patients caused various problems and finally led to various complications and their low quality of life.

Thus, due to the chronic nature of the disease, type of problems in these patients, inefficiency of drug treatment in solving these problems, and the need for continuous care, training can provide active and informed participation of the patients to solve some of their problems. Therefore, the fundamental achievement in this study is positive effects of using life skills training. This training aimed at preparing and helping the patient to solve problems and difficulties that they encounter due to their illnesses. And it is not possible unless we, nurses, provide a reassuring relationship between ourselves and patients in supporting, training and counselling them. Using this training provides valuable information and can have implications in nursing research and assessment and evaluation of care program of patients with MS.

Acknowledgments

Conflict of Interest

The authors declared no conflict of interests.

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