Evaluating The Impact of Self-Care Program Based on Orem Model on Self-Efficacy of Patients Suffering from Multiple Sclerosis

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ABSTRACT

Background and objective: Multiple sclerosis (MS) is considered as one of the most important causes of disability in the world, which might influence the self-efficacy of patients suffering from this disease. Thus, using self-care methods has high importance for these patients. The objective of current research was evaluating the impact self-care training program based on Orem model on the self-efficacy of multiple sclerosis patients.
Methodology: this study is a clinical trial, in which 68 multiple sclerosis patients, who were member of Zahedan MS Association in 2016, were selected using convenient sampling, and they were randomly assigned into two groups of intervention and control (each group containing 34 subjects). Nine sessions of training program were developed and implemented given the needs of the patients and based on the Orem model, and the level of programs used by patients was evaluated by using self-reporting checklist. The hope of patients was measured before and three months after the intervention by using Multiple sclerosis Self-efficacy Scale (MSSS). SPSS 16 software, independent t-test, and the paired t-test were used to analyze the data.
Findings: The mean of self-efficacy score before intervention revealed no significant difference in two groups (p = 0.75), while the mean self-efficacy score in the intervention group increased significantly compared to control group after implementing the training program (p=0.00).
Conclusion: Findings of the research revealed that implementing the self-care training program based on the Orem model could enhance the self-efficacy of patients suffering from multiple sclerosis. Given the limitations of current research, it is recommended that further studies to be conducted in this regard.

Key Words: self-care, Orem model, self-efficacy, Multiple sclerosis

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INTRODUCTION

Multiple sclerosis (MS) is a chronic and progressive disease in the central nervous system, associated with side effects and disabling symptoms [1]. It is estimated that 2.5
million people are suffering from this disease in the world [2]. This disease has unpredictable prognosis [3]. Based on the World Health Organization, its prevalence has been reported to be 80, 14.9, 8.3, 5, 2.8, and 0.3 people per one hundred thousand people for Europe, Eastern Mediterranean, United States, the West of Pacific Ocean, Southeast Asia, and Africa, respectively [4]. Relying on data obtained from 12 provinces up to 2011, multiple sclerosis prevalence in Iran was reported to be 41.81 per one hundred thousand people. It was found that the provinces of Isfahan with 83.3 and Mazandaran with 33.32 patients per one hundred thousand people had the highest and lowest prevalence, respectively [5]. The prevalence and incidence of multiple sclerosis In Sistan and Baluchestan have been reported to be 13.96 and 2.67

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people per one hundred thousand people [6]. This disease has been reported as the third leading cause of disability in the United States, and it happens often between the ages of 20-40 years [7], and its prevalence in females has been reported twice that in males [8]. Its early incidence, high level of disability, and normal life span of the patient will impose high costs on patient, family members, healthcare system, and society [3]. Some of the most common initial and early symptoms of this disease include visual disorders, pain, urinary incontinence, and weakness [9]. These cases will threaten the independence and capability of people in performing the family and social functions [10]. These problems will restrict the patients' involvement in health-promoting activities, leading to increased secondary complications and restriction in independent life. Finally, it will leave negative impact on their quality of life [9]. In addition, the subject of quality of life is associated with issues such as self-perception, family relations, impacts of stress and adaptation, having physical and mental health, and self-efficacy [10]. Self-efficacy has higher importance among the cases mentioned above. It refers to feeling self-esteem, self-value, and self-efficacy in coping with life issues [11]. In addition, self-efficacy through intrinsic motivation makes one person make effort in environment and achieve to self-efficacy beliefs [12]. Hence, it could be stated that self-efficacy has relationship with quality of life [13]. Self-efficacy is regarded as a tool to promote the health and educate the client. Self-efficacy Theory of Bandura stresses on the role of trust, self-esteem, and caring one's capabilities in performing the wanted behavior. Bandura argues that self-efficacy is the main and important prerequisite to change the behavior, such as health behaviors [14]. Training self-care leads to increased satisfaction, reduced anxiety and increased involvement in healthcare programs and increased independence [15]. Training has been regarded as one of the functions of the health employees and one of the duties determined by American Nurses Association [16]. Thus, we can train multiple sclerosis patients to accept that they are able to change their views and they can make use their other abilities. They should accept that some of the life realities cannot be controlled by them and they should be trained to adapt with new life style [17]. Self-care training stresses on people capability to care themselves [8]. Lack of knowledge and deficiency in self-care is some of the reasons resulting in multiple sclerosis patients' re-hospitalization. Hence, self-care training plays vital role in preventing re-hospitalization, decreased frustration, and increased self-esteem of the patients suffering from multiple sclerosis [1]. The self-care model of Orem provides a proper clinical guideline to develop and implement a self-care program. It is applied as a conceptual framework to guide the self-care programs [18]. This model has been used in different studies conducted on the patients suffering from multiple sclerosis, and it has been proved that it increases the physical and psychological quality of life and reduces the tiredness [7, 10, 19]. Given the problems threaten caregivers of multiple sclerosis patients and their impact on the self-efficacy, the current research was conducted to evaluate the impact of the self-care program on self-efficacy of patients suffering from multiple sclerosis in 2017.

Methodology

The current research was conducted in the form of randomized controlled clinical trial. The population of research included all patients suffering from multiple sclerosis, who were member of Zahedan MS Association in 2016. The sample size was estimated 34 people for each group [20] ($S1 = 4.97$, $S2 = 6.17$, $Z\ 1-\beta = 1.28$, $Z1-\alpha = 1.96$). In total, 64 people were included in the research using the convenient method, and they were randomly divided into intervention and control groups using random numbers table. Three people in the intervention group did not participate in training sessions, and three people in the control group did not refer to complete the follow-up questionnaire. Finally, 62 patients (31 patients in each group) were analyzed. Inclusion criteria of the research included age between 20 and 50 years, being able to read and write, non-dependency on wheelchair, not being in the acute stage of disease, lack of suffering from chronic physical and psychological disorders, such as severe depression, impaired speaking or hearing. The exclusion criteria of the research included the incidence of complications and serious physical-psychological disorders during intervention. Individual characteristics questionnaire, need-assessment form, self-reporting checklist, and multiple sclerosis Self-efficacy Scale (MSSS) were used as tools to collect the data. Individual characteristics questionnaire included questions to assess the age, gender, education level, marital status, and duration of disease. It was completed by both of the intervention and control groups before intervention.

Need-assessment form of patients: This is researcher-developed form used to assess the problems of patients, and it includes a list of patients' common problems, including diplopia, blurred vision, and lack of balance during walking, muscle cramp, tiredness, constipation, urinary and stool incontinence, loss of memory, muscular weakness, and other problems. Patients were asked to state what are their problems and what is the level of their problems at present in a 4-option scale (always, often, rarely, and no case). This form was completed before intervention to assess the intervention group training needs.

Self-reporting checklist: Self-reporting checklist was developed daily to follow-up the implementation of the program during 3 months so that patients of the intervention group completed it after daily implementation of the trained program, and their information was collected and evaluated three months later.

Multiple sclerosis self-efficacy scale (MSSS): This scale is a multidimensional and self-reporting tool. It has

been developed for adults, assessing the four dimensions of independence and activity (5 items), concerns and interests (4 items), and personal control (3 items). This scale is scored in a 6-point Likert scale ranging from strongly disagree [1] to strongly agree [6]. Among the items of this questionnaire, the items 4, 8, 9, 10, and 11 are scored reversely. The range of scores varies from 6 to 84 and the higher scores mean higher self-efficacy. The validity of this scale has been obtained 0.81, 0.83, and 0.81, using internal consistency of Cronbach's alpha coefficient, split-half, and test-retest, respectively. The scale validity has been approved through analyzing the main components and varimax rotation and convergent and divergent validity. In the study conducted by Reshvanlu and Soleymanian (2014) [21], the reliability of whole questionnaires using Cronbach's alpha coefficient and split-half methods has been reported 0.90 and 0.87, respectively. Cronbach's alpha coefficients and split-half reliability were also obtained 0.80, 0.78, and 0.72 for components of independence and activity, personal control, concerns and interests, respectively. The questionnaire validity was also reported at desirable level. Explaining the objectives of the study for patients admitted to Zahedan MS Association, they were asked to be included in the study by their consent. Then, they were included in the intervention and control groups. Demographic characteristics questionnaire was completed before the intervention and the level of self-efficacy was assessed in the patients of intervention and control groups. Then, need-assessment form of the patients' problems was completed in the intervention group, and accordingly, training program was developed for this group. A using the Orem model, a program was developed according to needs of the patients [7], which its content was confirmed by two experienced neurologists. This training program was provided for patients of the intervention group in 45-minute 9 sessions during two weeks, monitored by one neurologist. After complementary explanations on the research and its objectives, self-reporting form was provided for patients and they were explained on the way of recording the self-care program in this form. Then, training program contents were provided based on the disease definition, causes and symptoms of this disease, methods used for diagnosing and treatment of this disease, and self-care skills with regard to physical problems and muscle weakness, tiredness, and the way to remove the muscle cramp, dysfunction in walking, disorder in urination and defecation, physical and perceptual dysfunction, and psychological disorders. This program was provided for patients in the form of lectures and displaying the images. Finally, the trained cases were overviewed and patients' questions were responded. Patients in the control group received no intervention. After completing the intervention, the patients were followed-up for three months and they implemented the training program at home daily and completed the self-reporting checklist daily. Researcher attended in the Association site in a given day and patients asked their questions and problems in person or by phone. Patients of the control and intervention groups were invited to attend in the Association after three months. Then, multiple sclerosis self-efficacy scale was re-completed by patients of two groups. The training program developed in the form of training pamphlets was provided for patients of the control group to observe the ethical principles. Data were analyzed by using independent t test (to compare the level of self-efficacy with age of patients and to compare the mean score and mean changes in the score of self-efficacy and its dimensions between two groups), Chi-square (to compare the frequency distribution of some demographic variables between two groups), paired-t test (to compare the mean score of self-efficacy and its dimensions before and after intervention in two groups), and SPSS 16 software.

Findings

In the current research, 62 multiple sclerosis patients, who were member of MS Association of Zahedan were investigated. The mean age of the patients was found to be 34.69 ± 8.35. Twenty and one percent of the subjects were male and 49% of them were female. It suggests that most of the subjects were female. In addition, education level of 56.5% of people was higher than high school. Table 1 illustrates the demographic characteristics of the subjects investigated in the current study.

Table 1- distribution frequency of demographic characteristics:

Variables		N (%)
Gender	Male	21 (13)
	Female	49 (79)
Education level	Illiterate	(0) 0
	Elementary	3.2 (2)
	Secondary	9.7 (6)
	High school	30.6 (19)
	Higher than high school	56.5 (35)
Marital status	Single	16.1 (10)
	Married	80.6 (50)
	Spouse-deceased	1.6 (1)
	Married	1.6 (1)

The mean of self-efficacy score before intervention showed no significant difference between two groups of intervention and control (P = 0.75). The mean of self-efficacy score increased significantly in two groups of control and intervention after the self-care intervention based on Orem model (P = 0.00).Table 2 illustrates the comparing the mean of dimensions of the self-efficacy before and after intervention in the groups of control and intervention, and Tables 3 and 4 illustrate the mean of self-efficacy score before and after the intervention in the groups of control and intervention, and Table 5 illustrates

comparing the mean score of self-efficacy before and after the intervention.

Table 2- comparing the mean of self-efficiency before and after intervention in the groups of control and intervention

Table 3- comparing the mean score of self-efficacy before intervention in two groups of control and intervention

Before intervention	Independent t test	T	Df	P
Control group	2.2±31.75	0.31	59.68	0.75
Intervention group	2.2 ± 31.93	0.31	60	0.75

self-efficacy dimensions	Before intervention	After intervention	P value
Dependency and independency dimensions	9.83	12.32	0.00
Personal control	4.54	8.93	0.00
Concern and interests	17.45	11.96	0.00

Table 4- comparing the mean score of self-efficiency after intervention in two groups of control and intervention

Before intervention	Independent t test	T	df	P
Control group	2.3±32.03	4.6-	48.4	0.00
Intervention group	1.4 ± 34.34	4.7-	60	0.00

Table 5- mean score of self-efficiency before and after intervention

Before intervention	2.26±31.83	P=0/00
After intervention	21.4 ± 33.22	

Discussion

The current research revealed that implementing self-care program based on the Orem model enhanced the self-efficacy of patients suffering from multiple sclerosis. Multiple sclerosis patients showed lower mean self-efficacy score in the whole questionnaire, compared to normal people. Schwartz et al [22] stressed on the importance of self-efficacy in multiple sclerosis patients and recommended continuous assessing of self-efficacy in multiple sclerosis patients. Self-efficacy has high importance for multiple sclerosis patients, since changes in self-efficacy have great impact on physical and mental health. In this regard, Ametan et al [23] stated that high self-efficacy is correlated with better mental and physical health, less tiredness, less stress, low pain, less sleep problems, and lower depression symptoms. McFadden et al [24] also found that feeling capability to maintain psychological health is very important in multiple sclerosis patients. Motel et al [25] also stated that the self-efficacy is considered as a moderating variable in enhancing the quality of life of multiple sclerosis patients, as it influences their physical activity. In addition, the research conducted by Fjeltad et al [26] revealed that higher self-efficacy is associated with lower psychological problems and higher capability in performing the physical tasks. Silver et al argue that high complications of the chronic diseases require trained and experienced caregivers at discharge time and care at home. They argue that Smith principles need to be used in order to enhance the quality and efficacy of these caregivers. These principles involve providing appropriate physical and psychological methods and conditions by caregivers, leading to enhanced health and quality of life [27]. These principles were applied in the form of self-care program based on Orem model in the current research, and it was found that it is a method affecting the physical and psychological conditions of caregivers and leaving positive impact on self-efficacy and quality of life of them. The control of many chronic complications through self-care behaviors is possible. These behaviors stress on assessing and controlling symptoms of disease, adapting to therapeutic diet, maintaining the healthy life style, controlling the impact of disease on everyday function, emotions, and social relations [28], which might enhance the self-efficacy of the patients. One limitation of current research related to individual differences of the patients in the intervention in performing the trained program and the way of using skills and methods despite follow-ups.

Conclusion

Given findings of this research, it seems that implementing the self-care program based on the Orem model, developed according to the problems of multiple sclerosis patients, can have a positive impact on self-efficacy of the patients. Thus, as this program is considered a non-invasive and cost effective intervention, it can be used for training the nurses. Given the limitations of this research, it is recommended that further studies to be carried out in this regard.

Conflict of interest

No conflict of interest was reported by authors.

Contribution of authors

Hanieh Dehmardeh: developing and conducting the research and compiling the paper

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References

[1] Sahebalzamani M, Zamiri M, Rashvand F. The effects of self-care training on quality of life in patients with multiple sclerosis. Iranian Journal of Nursing and Midwifery Research. 2012; 17(1):7-11.

[2] Madan S, Pakenham KI. The stress-buffering effects of hope on adjustment to multiple sclerosis. International Journal of Behavioral Medicine 2014; 21(6): 877-90.

[3] Soundy A, Benson J, Dawes H, Smith B, Collett J, Meaney A. Understanding hope in patients with Multiple Sclerosis. Physiotherapy 2012; 98(4): 344-50.

[4] Atlas: multiple sclerosis resources in the world 2008. Geneva, Switzerland: World Health Organization and Multiple Sclerosis International Federation; 2008. Availablefrom: http://whqlibdoc.who.int/publications/2008/9789241563758_eng.pdf.

[5] Shahbeigi S, Fereshtenejad SM, Jalilzadeh G, Heydari M. The Nationwide Prevalence of Multiple Sclerosis in Iran. Neurology 2012; 78(Meeting Abstracts 1):P01.143.

[6] Moghtaderi A, Rakhshanizadeh F, Shahraki-Ibrahimi S. Incidence and prevalence of multiple sclerosis in southeastern Iran. Clinical Neurology and Neurosurgery 2013; 115(3): 304-8.

[7] Masoudi R, Mohammadi I, Ahmadi F, Hasanpour-Dehkordi A. The Effect of Self-Care Program Education Based on Orem's Theory on Mental Aspect of Quality of Life in Multiple Sclerosis Patients. Iran Journal of Nursing 2009; 22(60): 53-64.[persian]

[8] Madani H, Navipour H, Roozbayani P, Mousavinasab N. Effects of self- care program education of patients on complications of multiple sclerosis. Journal of Birjand University of Medical Sciences 2008; 15(2): 54-9.[persian]

[9] Omrani s, Mirzaeian b, Aghabagheri h, Hassanzadeh R, Abedini M. Effectuality of Cognitive-Behavioral Therapy on the Life Expectancy of Patients with Multiple Sclerosis. Journal of Mazandaran University of Medical Sciences 2012; 22(93): 58-65.[persian]

[10] Hamidizadeh S, Masoodi R, Ahmadi F, Mohammadi E. Evaluation of the Effect of Self- Care Program Based on the Orem Framework on the Physical Quality of Life in Multiple Sclerosis Patients. The Journal of Shahid Sadoughi University of Medical Sciences. 2009; 17(2): 153-62.[persian]

[11] Bandura,A.(1997).CognitiveProcessesin mediatingbehavioral change, Journal of personality and social psychology, 35, 125-139.

[12] Bahrami H, Abbasian Far M. The relationship between self-efficacy and motivation among female students in Tehran in pre-university education Indexing 2010-11, analytical and information Rsany.dvrh sixth / 1 / Fall 2010

[13] Glozman JM. Quality of life of caregivers. Neurophysiol Rev. 2004; 14 (4): 183-96

[14] Bandura A, Adams NE. Analysis of self efficacy theory in behavior change, cognitive theory therapy and research. 2002; 23(1): 287-310

[15] Bakhshi M. Effect of progressive muscle relaxation on cancer patients that suffering acute and delayed vomiting and nausea. MS thesis, Tarbiat Modares University, Tehran, 2001, 66-70[In Persian]

[16] Smeltzer S, Bare B G. Brunner and suddarth's text book of medical surgical nursing. 10th ed. Philadelphia: Lww Publishing; 2004. 1223. [Vo l 1]

[17] Agha bagheri H , et all. The effectiveness of group-based cognitive therapy Hzvrzhn increasing well-being and hope As.mjlh Sclerosis Patients Clinical Psychology, Issue 1 (13) Spring 2012

[18] Masoodi R , Khayeri F , Safdari A. Effect of self- care program based on the Orem frame work on self concept in multiple sclerosis patients. Journal of Gorgan University of Medical Sciences 2010; 12(3): 37-44.[persian]

[19] Masoodi R, Khayeri F, Ahmadi F, Mohammadi E. Effect of self- care program based on the Orem frame work on Fatigue and Activities of daily living in multiple sclerosis patients. Quarterly Journal of Rehabilitation 2009; 10(3): 43-52.[persian]

[20] R. Masoudi, MA. Soleimany, J. Moghadasi, M. Qorbani, H. Mehralian, N. Bahrami. Effect of progressive muscle relaxation program on self-efficacy and quality of life in caregivers of patients with multiple

sclerosis. JQUMS, Vol.15, No.2, Summer 2011, pp. 41-47

[21] Reshvanlo F, Soleymanian A.). Multiple Sclerosis Self-Efficacy Scale psychometric properties. Journal of Behavioral Sciences, 2014, Volume 12, Issue 1, pp. 9-18

[22] Schwartz CE, Coulthard-Morris L, Zeng Q, Retzlaff P. Measuring self-efficacy in people with multiple sclerosis: a validation study. Arch Phys Med Rehabil. 1996; 77 (4): 394-8.

[23] Amtmann D, Bamer AM, Cook KF, Askew RL, Noonan VK, Brockway JA. University of Washington Self-Efficacy Scale newself-efficacy scale for people with disabilities. Arch Phys Med Rehabil. 2012;93 (10): 1757-65.

[24] McFadden E, Horton MC, Ford HL, Gilworth G, McFadden M, Tennant A. Screening for the risk of job loss in multiple sclerosis (MS): development of an MS-specific Work Instability Scale (MSWIS). Mult Scler. 2011;18 (6):862-70.

[25] Motl RW, McAuley E, Snook EM, Gliottoni RC. Physical activity and quality of life in multiple sclerosis: Intermediary roles of disability, fatigue, mood, pain, self-efficacy and social support.
Psychol Health Med. 2014;14 (1): 111-24.

[26] Fjeldstad C, Pardo G. Self-efficacy, Physical Activity and QOL in People with MS. Neurol Neurophysiol. 2014;5:194.

[27] Silver HJ, Wellman NS. Family caregiver training is needed to improve outcomes for older adults using home care technologies. J Am Diet Assoc 2002 Jun; 102(6): 831-6

[28] Mohammad Hassani MR, Farahani B, Zohour AR, Panahi Azar SH. Self-care ability based on Orem's theory in individuals with coronary artery disease.Iranian Journal of Critical Care Nursing. 2010; 3(2): 87-91. [Persian]