ORIGINAL ARTICLE

Impact of Quality of Life and Related Factors in Patients with Multiple Sclerosis Treatment

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ABSTRACT

MS is a disease of the central nervous system that created many challenges in the psychological adjustment of patients around the world. The aim of this study was to identify predictors of adherence to treatment in patients with multiple sclerosis MS society in Tehran was in 1392. The above study is based on a descriptive correlation method. The participants consisted of 120 patients with MS in MS Society in Tehran and the community's support of the MS patients who were selected based on accessibility. For all patients, demographic questionnaire, following the treatment of MS patients, general self-efficacy, Neo character - Short Form, Beck Depression Inventory, Quality of life, anxiety, Panas positive and negative effect, Social support and feedback Phillips was completed. Data analysis was performed using multivariate analysis of variance and discriminate analysis and logistic regression analysis. The findings suggest a significant difference for adherence to depression, Neuroticism, extraversion, conscientiousness appetite, quality of life, Family social support, and anxiety at a=0.50. The results show that the compliance of the treatment of MS is directly related psychological factors and to better treat these patients in addition to counseling the drug should reduce anxiety and depression and increases self-efficacy to improve their quality of life.
Keywords: Multiple sclerosis, treatment adherence, predictors

INTRODUCTION

Multiple Sclerosis is briefly called MS and is a chronic disease of the nervous system that affects parts of the brain and spinal cord. Patients with multiple sclerosis may lose their ability because of the disease. It is more common in young people, and with the clever and active community involvement. The cause of this disease is not fully understood and complete cure for it is not provided. However, knowledge of the disease, cognitive aspects of personality sufferers of the disease and protective measures may be effective in restoring the patients to live active and productive [9-11].

Multiple sclerosis is an autoimmune disease (immune system against the host and not an external factor) that affects the brain and spinal cord and the general condition of the central nervous system (CNS). In this disorder the myelin sheath (the protective coating around nerve cells) is damaged and thus the speed of nerve signal decreases or stops. The nerve damage is caused by inflammation. Inflammation occurs when the bodies own immune cells attack the nervous system.

It can vary depending on the location and severity of attack symptoms. The severity of symptoms can last for days, weeks or months before in the intermittent period, the symptoms can trigger or worsen attacks. Regression of the disease is common. However, no improvement of courses may happen and also have increased attacks and symptoms. Because nerves may be damaged in any part of the brain and spinal cord, patients can have symptoms in many parts of the body, including:

- Muscle symptoms: loss of balance, muscle spasms, numbness or abnormal sensation in any area, problems moving your arms or legs, difficulty walking, problems with co-ordination and small movements, tremors in the hands or feet.
- Bowel and bladder symptoms: constipation, difficulty urinating, urinary frequency, urinary incontinence..

- Ocular symptoms: double vision, eye discomfort, rapid and uncontrollable movements of the eyes, vision loss.
- Numbness or tingling, or pain: facial pain, painful muscle spasms, tingling in the arms or legs .
- Brain and Nerve symptoms: loss of interest, poor judgment, memory loss, difficulty reasoning, depression, dizziness, and difficulty with balance, hearing loss [1]. Sexual symptoms: erectile problems, vaginal problems, decreased libido.
- Other symptoms: difficulty swallowing and speaking, fatigue.
- Fatigue is a common symptom of MS is expansive and progressive disease is often more severe in the late afternoon [2].

Although there is not yet a cure for MS patients, however, several techniques to reduce the rate of disease progression and the faster the attack subsides and reduce disability and symptoms are annoying. In addition, we have conducted extensive research to achieve effective methods of treatment and it seems that new treatments are discovered in the coming years.

At present, treatment methods can be divided into several categories:

1. Treatment of recurrent attacks of the disease process in which methyl prednisolone, ACTH and plasma exchange.
2. Treatments which reduce the rate of disease progression: Types of interferon beta (Avonex, Betaferon, Rebif), Glatyramrastat (Kvpaksvn),Fyngvlymvd, Natalyzvmat (Taysabry), Mytvgzantrvn (Nvantrvn).
3. treatments that mitigate the symptoms are:
4. Researchers have shown that some exercise and hydrotherapy can be significantly reducing the progression of the disease.

Medical follow-up of patient adherence has been noted as medical advice. Typically, adherence to treatment and medication returns but can be in other contexts, including medical advice, Personal care, exercise and other personal items are used. There is a positive relationship between patient and therapist factors in adherence to treatment although the doctors' advice is important.

Research hypothesis:

1. there is a significant difference between quality of life and adherence and lack of adherence to treatment in patients with multiple sclerosis,
2. Adherence to treatment:
3. Theoretical Definition: In medicine, the patient's adherence to medical advice points to the patients following. Typically, adherence to treatment and medication returns but can be in other contexts, including medical advice, personal care, exercise and other personal items. There is a positive relationship between patient and therapist factors in adherence to treatment although the version of the doctor's role in the play. In case of non-compliance with treatment, patients with reduced quality of life, increased morbidity and mortality. on the other hand additional costs will be imposed on health care..

METHODOLOGY

This study is a correlation field and in most researches in the humanities since the main objective of this study is to evaluate a topic in the field, it can be said that the aim of the present study is in the area of applied research. On the other hand, given that in this study is from library and field methods are used, such as questionnaires, it can be argued that research on the nature of the data collection, is correlational. The possibility of achieving the generalization of results to the entire target population through the study provides a representative sample.

The research process:

This study aimed to identify predictors of adherence in MS patients. In this study, the dependent variable is "adherence" and predictor variables include "depression, anxiety, self-efficacy, personality traits (neuroticism, extraversion, openness, agreeableness, and conscientiousness), positive and negative affect, quality of life, social support, feedback from patient to a specialist ". On the other demographic variables in the disease process and affect the course of treatment and adherence to as predictor variables were examined.

Statistical Society:

The study sample consisted of all male and female patients in support community for MS patients in Iran in Tehran in autumn 1392. According to the latest statistics provided by the MS Society of Iran, about 70 million people in the country are suffering from this disease and nearly 7,500 are members of the support community of people with MS patients in Iran.

Sampling Method

In order to define the sample volume this formula is used: $n = \dfrac{z^2\left(1-\frac{\alpha}{2}\times p(1-p)\right)}{d^2}$ Based on a=0.05 and

using studies p=0.3 d=0.1 are calculated and sample it is obtained as 80 participants. However, in order to increase the reliability of the data collected at and reduce the sampling error, the final sample of 120 MS patients recruited for the study.Sample was selected based randomly based on categories.

Research Instrument

Demographic Questionnaire

The questionnaire included demographic information such as age, sex, height, weight; marital status, employment status, educational level, place of residence, race, family size; smoking and risk of chronic diseases are tested. After taking the consent of the participants, data was collected from the participants. Among the variables that the disease can be process and the course of treatment and adherence to affect including age, sex, race, marital status and the level of education as independent variables and the quality ratings are measured.

Adherence questionnaire

Adherence questionnaire in MS patients was created in 2011 by Paul Vick in America. This tool causes which include medication adherence, drug consumption, type of injection, the injector, taking medications and their causes, side effects of injection, injection techniques used to mitigate the effects and the patient's feelings and opinions about treatment and medication, in the last 28 days will be assessed.

The questionnaire consists of 11 questions. This instrument consists of questions: first part (kind of drug, 14), the second part (drug consumption, and 6), the third component (how the drug is injected, 4), section five (injection by another person, 5), Section V (taking medications, 2), section six (Page no drug, 1 case), Part VII (the causes of substance abuse, 13 cases), section eight (injection complications, 10), Section IX (solutions used for infusion reactions, 7), section ten (felt sick to treatment, 5 cases) and section eleven (in terms of the patient to treatment, 5 cases).

Question 7 Likert scale grading using 4 points and No. 8 with a 5-point Likert scale questions 1 to 6 were nominal and Question 9 in form of yes / no assess the patient's adherence to treatment.
 This tool was used for the first time. To use this scale in this study was the reverse translation. It was translated into Persian first and of was translated to the original language by an expert of English language. Farsi text was amended based on matching the text in English.

Quality of life questionnaire SF-36:

This self-report questionnaire is used to assess quality of life and health by Veer and Sherborn and was built in 1992. This questionnaire shows people's understanding of quality of life. The SF-36 contains 36 questions and 8 dimensions. The score for each question varies between zero and 100. 100 show the ideal situation and a score of zero indicates the worst situation in each dimension.

The scale of the questionnaire included: physical functioning (Svalat3-4-5-6-7-8-9-10-11-12) , activity limitations due to physical problems (RP 13-14-15-16), physical pain (questions 21-22), head of Life (Questions 23-27-29-31), overall health (Question 1-33-34-35-36), mental health (24-25-26-28-30), activity limitations due to physical problems (RP 17-18-19) and social performance (questions 20-32), respectively. The 8 dimension overally form the physical and mental aspects. The physical dimensions includes: physical functioning, bodily pain, activity limitations due to physical problems and public health. And psychological dimension includes social functioning, activity limitations due to emotional problems, mental health and vitality.

The questionnaire has international reliability and validity and is translated in the Institute of Health Sciences and reliability and validity has been checked and verified. Cronbach's alpha tests reliability in all dimensions with the exception of the vitality of 0.77 to 0.90 and for life vivacity is 0.65. Validation was used to validate dimensions. The single line is assumed in all cases above 40% of the subscale between 0.85 and 0.95 and thus the reliability and validity of the Persian translation of the questionnaire was confirmed.

Data analysis and statistical methods used in the study and findings were analyzed in two ways: descriptive and inferential. For a description of the parameters of frequency, percentage, mean, standard deviation, minimum and maximum scores were used. To examine research hypotheses statistics illation like the chi-square test, Friedman test, Pearson correlation, Spearman correlation, regression analysis, multivariate analysis of variance and discriminant analysis were used. The statistical calculations were performed using the software 20SPSS.

Statistical descriptions of quality of life questionnaire (SF-36)
To assess the quality of life of respondents, rating for each of the components of physical function, activity limitations due to physical problems, bodily pain, vitality, general health, mental health, limitations due to emotional problems and social performance in accordance with the grading key. The components of physical functioning, bodily pain, activity limitations due to physical problems, public health were determined as dimensions of the quality of life and social functioning, activity limitations due to emotional problems, mental health and mental vitality were dimensions of quality of life.

Table 1: indices of quality of life

Components of quality of life	min	max	Mean	SD
Physical performance	0	100	57/85	27/339
Activity limitation due to physical problems	13	100	65/31	27/332
Physical pain	0	100	49/97	23/341
Vivacity	15	100	63/42	21/064
General health	0	100	43/67	23/351
Mental health	0	100	30/83	41/260
Activity limitation due to mental problems	0	100	33/96	41/225
Social performance	0	100	69/08	25/536

Our findings indicate that:
- The components of quality of life, factors of activity limitation due to physical problems, with 13 points, Alive with 15 points and all other variables to 0 have received the lowest number of points acquired.
- All components of quality of life have earned the most points, which is 100.
- Among the eight components of quality of life, social functioning components with the highest mean (69.08) and mental health component with the lowest average (83/30) in the first and last lines.
- Among the components, the standard deviation is alive with 064/21 least. This means that the average overall rating among respondents with less dispersion compared to other components.

Table 2: statistical indices of quality of life

SD	mean	max	min	Dimension of quality of life
22/003	59/97	100	12	physical
22/949	46/26	99	2	mental

- Physical aspect of quality of life had the least 12 points and psychological aspect has the lowest rating of 2.
- Physical aspect of quality of life had the highest score of 100 and psychological aspect had the lowest score of 99.
- Average physical quality of life (97/59) is more than average mental quality of life (26/46), respectively.
- Distribution among physical rates is less than scores of mental quality of life. The there is a significant relationship between the dose and the number of loss with public health component of quality of life.

To investigate the relationship between two variables (general health component of quality of life), the number of loss dosage Pearson's correlation coefficient was used. The correlation coefficient between

these two variables was less than 0.05 and so, the null hypothesis will be rejected. The correlation coefficient between these two variables is 0.197 and its direction is reversed. The public health over the life meter is ideal so increases in person's general health leads to forgetting dose or dose frequency loss.

Table 3: correlation of quality of life and dose loss

-0/197	**Pearson correlation**
0/031	**Sig (two tailed)**

The fourth hypothesis: there is a significant relationship between the variables in this study and feeling of the patients toward treatment. In this study, only positive affect, physical functioning, activity limitations due to physical problems, bodily pain, vitality, general health, mental health, social functioning, physical, and mental, neuroticism, extraversion and depression had significant relationship with treatment variable. Since this variable of patient feeling about treatment is a categorical variable. Therefore, to calculate the correlation coefficients between the variables with respect to treatment varies from patient to feel Spearman's correlation coefficient.

Table 4: Pearson correlation of research variables and feeling about treatment

		Positive emotion	Physical performance	Limitation due to physical problems	Physical pain	vivacity	General health
Feeling toward treatment	**Spearman correlation**	-0/268	-0/231	-0/204	-0/183	-0/347	-0/301
	Sig (2-tailed)	0/003	0/011	0/026	0/046	0/000	0/001
		Mental health	**Social performance**	**Physical dimension**	**Mental dimension**	**psychiatric**	**extroversion**	**depression**
Feeling toward treatment	**Spearman correlation**	-0/261	-0/245	-0/297	-0/289	-0/240	-0/192	0/292
	Sig (2-tailed)	0/004	0/007	0/001	0/001	0/008	0/036	0/001

With regard to the rule of decision in this case to accept or reject the null hypothesis in this case is that if the test significance is smaller than usual, the null hypothesis is rejected and if the significance level of the test is greater, the null hypothesis is accepted. Consequently, as can be seen from Table 58-4:

- There is a reverse relationship between positive affect variables, physical functioning, activity limitations due to physical problems, bodily pain, vitality, general health, mental health, social functioning, physical, mental and eccentric sick feeling to treatment.
- There is a direct relationship between neuroticism and depression to treatment.
- Increased in positive affect among respondents reduces the bad feeling of patients toward pain.
- Increased scores in physical functioning, activity limitations due to physical problems, bodily pain, vitality, general health, mental health, social functioning, physical, mental (The Quality of Life Questionnaire) significantly reduces the patient feeing bad.
- In other words, the respondents increase their quality of life; they were less strict about their treatment experience.
- Increased neuroticism is emotional stability and calm to moderate the difficulties.
- Given the direct relationship between neuroticism and feelings of the patient to treatment, the constant increase a person's emotional, the more difficult it will feel towards their treatment.
- As extraversion increases, respondents are less difficult to treat themselves feel.
- The direct relationship between depression and feelings of the patient to treatment indicate that as respondents are more depressed, they feel more difficulty in treatment.

DISCUSSION AND CONCLUSIONS
In this study, demographic factors, depression, personality traits, self-efficacy, patient satisfaction, positive and negative emotion, anxiety, quality of life, social support and feedback of adherence to treatment in patients with MS were studied. Based on the results obtained, the following conclusions can be stated:

Hypothesis: there is a significant relationship between public health component of quality of life and the number of doses loss. This hypothesis was tested using Pearson's correlation. The correlation coefficient between these two variables was less than 0.05. As a result, the null hypothesis is rejected and the relationship between them is reversed. The public health over the life meter is ideal so what increases a person's general health is the repetition of the dose forgetting or reduction of dose loss.

There is significant difference between quality of life and adherence or lack of adherence to treatment in patients with multiple sclerosis. Another variable was quality of life measured with the SF-36 questionnaire and survey. The results showed that the 8 domains of quality of life and 2 overall dimensions of it between livicity (0.007 significance level), mental health (0.01 significance level), activity limitations due to emotional problems (0.02 significance level), activity limitations due to physical problems (level of significance 0.01), physical function (0.03), physical (significance level of 0.01) and psychological (0.004 significance level) to comply with the treatment of MS patients. The results of the research by [3-7] based on the impact of environmental factors on the incidence and severity of MS which indicates the quality of life for patients. Various symptoms of MS, including sexual dysfunction, forgetfulness, fatigue and tremors of the extremities, depression, difficulty in processing disorders and learning performance can lead to impaired social and occupational functioning and reduce the quality of life for patients.

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