

Research on fatigue and quality of life in people with multiple sclerosis in Yasuj

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Abstract

This study aimed to investigate fatigue and its effect on the quality of life in people with multiple sclerosis (MS) in Yasuj. This is a cross-sectional descriptive experimental study. The statistical population included all patients with MS in Boyer-Ahmad County (Yasuj) from weak to progressive levels. The statistical sample of this study included 122 men and women with MS who were selected by convenience sampling. Data collection tools in this study included the fatigue questionnaire (FSS) and quality of life questionnaire (WHOQOL). Data analysis was carried out using the statistical methods of mean, standard deviation, Pearson's correlation and stepwise regression in Statistical Package for the Social Sciences 17. Based on the findings of the study, it can be concluded that there is a significant relationship between fatigue and quality of life among people with MS in Yasuj, and the more fatigue a person feels, the more affected their quality of life.

Keywords: Fatigue, life, multiple sclerosis, quality;

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1. Introduction

Multiple sclerosis (MS) is a relatively common chronic neurological disorder in which the myelination of nerve fibre axons occurs in different areas of the central nervous system (Guo, Lozinski, & Yong, 2020). This disease is the second cause of neurological disability in the young workforce. On the other hand, due to the onset of this disease at the age of economic activity and its chronicity, MS is also a costly disease (Bagheri, Ghoreishi, Daneshpoor, & Mohebi, 2018; Hernandez, O'Donnell, & Postma, 2018).

In the course of the progression of this disease, a set of physical and mental problems arises where all of these problems affect most of the daily activities of the person such as dressing, bathing, self-care etc., and reduce personal independence, feelings of inadequacy as well as a decrease in quality of life (Brownlee, Hardy, Fazekas, & Miller, 2017; Dobson & Giovannoni, 2019; Tandogan, 2018). The decreased quality of life of patients is probably related to the characteristics of this disease such as the onset of the disease in the productive age of life, the uncertain and unstable course of the disease, the distribution of symptoms throughout the central nervous system and the lack of definitive treatment (Rezapour et al., 2017; Štern, Zaletel-Kragelj, & Fabjan, 2020; Ysraelit, Fiol, Gaitán, & Correale, 2018).

On the other hand, in the case of patients with MS and other local diseases for which treatment is not possible, the main goal of treatment is to optimise the quality of life of patients (Bandari, Vollmer, Khatri, & Tyry, 2010; Karatepe et al., 2011). The feeling of fatigue is another problem for patients with MS and it affects their quality of life. The feeling of fatigue often occurs at the onset of the disease and persists throughout the course of the disease and can be mild or severe (Çolak, Cetin, & Cîsinar, 2018; Kargarfard, Etemadifar, Baker, Mehrabi, & Hayatbakhsh, 2012; Marck et al., 2017).

1.1. Conceptual background

Fatigue is one of the most common and debilitating symptoms in MS patients known as a special problem (Gullo, Fleming, Bennett, & Shum, 2019). Fatigue is difficult to define due to its complex nature, and patients refer to it as an excessive, unusual and different symptom from previous experiences (Desborough et al., 2020; Gullo et al., 2019). One of the most common definitions of fatigue is the lack of adequate physical and mental energy that interferes with daily activities of life (Gullo et al., 2019). This symptom is usually present in a mild type of disease and may be the first symptom reported by patients (Ayache & Chalah, 2020; Rooney, McFadyen, Wood, Moffat, & Paul, 2019).

There are two main causes of fatigue, including primary and secondary causes. The primary causes of these symptoms are related to the course of the disease and are caused by damage to the central nervous system (demyelination, reduction of axons and inflammation) (Patejdl, Penner, Noack, & Zettl, 2016; Vucic, Burke, & Kiernan, 2010). Secondary fatigue factors included problems such as depression, poor nutrition, side effects of medication, sleep disorders, infection, pain and type of MS (Aghamohammadi, Ayromlou, Dolatkah, Jahanjoo, & Shakouri, 2019). These symptoms are present in 67%–95% of patients. Of these, about 50%–60% consider these symptoms to be the worst symptoms and 15%–40% consider them to be the most debilitating symptoms of their disease (Culnan, 2018).

Fatigue, regardless of whether a person has primary or secondary symptoms or complications, can harm a wide range of dimensions such as employment, socialisation process, adaptation to illness and other factors affecting daily life activities (Goverover, Genova, DeLuca, & Chiaravalloti, 2017; Strober, 2020). Therefore, fatigue is one of the main reasons for reduced quality of life and unemployment in these patients (Koziarska et al., 2018; Masat et al., 2019; Schiavolin et al., 2013).

A study conducted by Zifko (2004) in the United States found that 90%–75% of the patients with MS suffer from fatigue and 50%–60% of the patients reported that fatigue disrupts various aspects of their lives. He also showed that fatigue is the most important factor in reducing the quality of life and unemployment in patients with this disease. Fatigue manifests itself in the form of sudden weakness and decreased tolerance to activity, and often causes many problems for these patients (Jalala, Latifoğlu, & Uzunboylu, 2020; Zifko, 2004).

1.2. Purpose of the study

Therefore, given that MS often occurs at the age of less than 40 years, it involves active and productive forces, and this not only hurts the professional status of the individual but also endangers society economically. This disease threatens the independence and ability of infected people to participate effectively in the family and society and causes them to become incompetent, undermining a person's confidence in their health, because they have recurrent and unpredictable periods, and it inspires patients to be unable to plan for their future. Therefore, it is necessary to know the factors affecting the quality of life and especially fatigue, which is one of the most common and debilitating symptoms in MS patients in Yasuj due to the high prevalence of this disease in this city. This study aimed to investigate fatigue and its effect on the quality of life in people with MS in Yasuj.

2. Materials and methods

This research is fundamental in terms of purpose and descriptive correlation in terms of method.

2.1. Participants

The statistical population is people with MS in Yasuj. In the present study, a sample of 122 people was selected randomly according to Cochran's formula. Criteria for selecting a statistical sample were (1) people with MS with a definite diagnosis by a doctor; (2) no severe cognitive limitations; and (3) having not had an attack with severe neurological symptoms in the past month.

2.2. Data collection instrument

The fatigue questionnaire (FSS) and the quality of life questionnaires (WHOQOL) were used to collect information.

2.3. Analysis

In this study, Statistical Package for the Social Sciences 17 software was used to analyse the data. According to the type and nature of the present study, descriptive statistical methods including frequency distribution tables, mean and standard deviation were used to analyse the data, and inferential statistical methods including Pearson's correlation and stepwise regression were used.

2.4. Ethical considerations

The participants in the research were fully aware of the objectives and stages of the research. At the request of the participants, a report will be presented announcing the results of the research following the rights of the participants in the study. The participants in the programme were assured that the information related to them would remain with the researchers and would not be shared with anyone outside the group.

3. Results

According to the findings of the research in the field of gender, the highest frequency of was related to women (72 people, 59%) and the lowest frequency was related to men (50 people, 41%).

Regarding the employment situation, the highest rate was related to unemployed people (82 people, 67.2%) and the lowest frequency was related to working people (4 people, 3.3%).

The highest frequency was related to the level of undergraduate education (52 people, 42.6%) and the lowest frequency was related to people with MA education and higher (5 people, 1.4%). The highest frequency is related to the incidence of the disease under 5 years of illness (60 people, 49.2%) and the lowest frequency was related to people with 10–15 years of illness (9 people, 7.4%).

The results of the Pearson correlation test showed a significant relationship between fatigue and quality of life among people with MS in Yasuj (Sig. = 0.000). Due to the negative Pearson correlation coefficient (−0.735), there is an inverse relationship between the two variables. In other words, the higher the rate of fatigue in patients, the lower the quality of life, and the lower the rate of fatigue, the higher the quality of life. The results show that there is a correlation between fatigue and the quality of life of women with MS in Yasuj (Sig. = 0.000). There is a significant and inverse relationship between the two variables (0.685). In other words, the higher the rate of women's fatigue, the lower their quality of life, and the lower the level of fatigue in women, the higher their quality of life.

There is a strong correlation between fatigue and the quality of life of men with MS in Yasuj (Sig. = 0.000). There is a significant and inverse relationship between the two variables (−0.810). In other words, the higher the level of fatigue, the lower their quality of life, and the lower the level of fatigue in men, the higher their quality of life. There is no significant difference between fatigue of men and women with MS in Yasuj (Sig. = 0.572). Fatigue is one of the most common symptoms in MS patients, which is evaluated here by the sex of the patients. Due to the lack of significance, it can be said that fatigue is not significantly different between male and female patients, and other factors are involved in this disease.

Table 1. Summary of independent *t*-test between gender and fatigue among people with MS

Independent variable	Average	Significance level	df	<i>T</i>
Male	32.90	0.572	106	0.911
Female	34.91			

There is a significant difference in the quality of life between men and women with MS in Yasuj (Sig. = 0.002). Therefore, the research hypothesis is accepted and there is a significant difference between the two variables. The average quality of life is higher among men than women.

Table 2. Summary of independent *t*-test between gender and quality of life among people with MS

Independent variable	Average	Significance level	df	<i>T</i>
Male	85.54	0.002	119	0.189
Female	85.21			

There is a correlation between the duration of disease and fatigue among people with MS in Yasuj (Sig. = 0.004). There is a significant relationship between the two variables (0.002). There is a significant and

direct relationship between the two variables (Pearson's correlation = 0.262). In other words, the higher the incidence of MS, the greater the level of fatigue in the patients, and the shorter the duration of the disease, the lower the rate of fatigue in the patients.

There is a correlation between the duration of the disease and the quality of life among people with MS in Yasuj (Sig. = 0.277). There is no significant difference between the two variables. The duration of the disease varies from person to person. According to the results, it can be inferred that for the people who have studied the duration of infection has not affected their quality of life.

In terms of fatigue, there is a significant difference between occupational groups of people with MS in Yasuj in terms of fatigue (Sig. = 0.002). Therefore, the research hypothesis is accepted and there is a significant difference between the two variables. The average fatigue is higher among unemployed people than others, and the lowest rate of fatigue is among self-employed people.

Table 3. Summary of the analysis of variance test of fatigue between occupational groups of people with MS

Independent variable	Average	Significance level	df	T
Unemployed	36.91			
Manual worker	28.50			
Self-employed	27.80	0.002	117	5.1
Employee	28.92			
Total	34.05			

To test this hypothesis, an analysis of variance test was used due to the interval scale of the dependent variable, nominal independent variables and the type of hypothesis. There is a significant difference between people with MS in Yasuj (Sig = 0.009). Therefore, the research hypothesis is accepted, and there is a significant difference between the two variables. The average quality of life among employees is higher than others, and the lowest quality of life is among unemployed people.

Table 4. Summary of the analysis of variance test between occupational status and quality of life among people with MS

Independent variable	Average	Significance level	df	T
Unemployed	81.26			
Manual worker	95.92			
Self-employed	92	0.009	120	4.003
Employee	97			
Total	85.34			

In terms of fatigue, there is a significant difference between the educational groups of people with MS in Yasuj (Sig. = 0.000). Therefore, the research hypothesis is accepted and there is a significant difference

between the two variables. The average fatigue is higher among people with under diploma education than others, and the lowest rate of fatigue is among people with post-diploma education.

Table 5. Summary of the analysis of variance test of fatigue between educational groups of people with MS

Independent variable	Average	Significance level	df	T
Under diploma	46.66			
Diploma	35.34			
Post-diploma	29.94	0.000	117	9.08
Bachelor	30.15			
Master's degree and higher	36.60			
Total	34.05			

There is a significant difference between the level of education in terms of quality of life among people with MS in Yasuj (Sig. = 0.009). Therefore, the research hypothesis is accepted and there is a significant difference between the two variables. The average quality of life is higher among people with post-diploma and bachelor's degrees, and the lowest quality of life is among people with under diploma education.

Table 6. Summary of the analysis of variance test between the level of education and quality of life among people with MS

Independent variable	Average	Significance level	df	T
Under diploma	70.85			
Diploma	75.53			
Post-diploma	93.66	0.000	120	9.029
Bachelor	93.03			
Master's degree and higher	88.80			
Total	85.34			

4. Discussion

Today, MS is known as a disease in all countries and one of its main symptoms is fatigue. The results of this study showed that the higher the rate of fatigue in patients, the lower the quality of life, and the lower the rate of fatigue, the higher the quality of life. Fatigue affects the quality of life of individuals, and the greater the degree of fatigue in a person, the daily activities and work that each person should do themselves reduces, which is consistent with the studies by Lobentanz et al. (2004); Ghajarzadeh, Sahraian, Fateh, and Daneshmand (2012); Sahebalzamani, Zamiri, and Rashvand (2012); Connolly, Fitzpatrick, and O'Shea (2019); Kobelt, Langdon, and Jönsson (2019); and Yazgan, Tarakci, Tarakci, Ozdincler, and Kurtuncu (2020).

The results showed that there was no significant difference between gender and fatigue in these patients. But there is a significant difference between the gender and quality of life of people with MS in Yasuj. To explain this hypothesis, it can be said that men are better able to provide for their needs due to more work and activity in society than women who are involved in the diseases, which is consistent with the findings of Tabrizi and Radfar (2015); Kratz, Murphy, and Braley (2017); Vister, Tijmsa, Hoang, and Lord (2017); Barzegar et al. (2018); and Abonie et al. (2020). The results show that there is a significant relationship between the duration of the disease and fatigue among people with MS in Yasuj. MS is a disease whose symptoms become apparent over time and the person gradually experiences it. Disabilities in daily functioning are disrupted and fatigue occurs in the life of the person. Therefore, the more time passes after a person becomes ill, the more fatigue and decreased performance in the person, which is consistent with the findings of Motl, McAuley, Snook, and Gliottoni (2009); Grossman et al. (2010); Salehpoor, Rezaei, and Hosseininezhad (2014); Vitkova et al. (2014); and Hu, Muhlert, Robertson, and Winter (2019).

According to the results, the average fatigue is higher among the unemployed than others. And the lowest rate of fatigue is among the self-employed, which is consistent with the findings of Khezri-Moghaddam, Ghorbani, Bahrami-Ehsan, and Rostami (2012) and Strober et al. (2018). A person who does not have a job certainly does not have favourable material and mental conditions and he is more fatigued. And because people with freelance jobs have relatively more income and free time than other jobs, they also have less fatigue. The average quality of life is higher among people with post-diploma and bachelor's degrees. The lowest quality of life is among people with under diploma education. This is consistent with the findings of Strober (2018); Mir, Safavi, Fesharaki, and Farhadi (2011); Yamout et al. (2013); Flensner, Landtblom, and Söderhamn (2013); and Calandri, Graziano, Borghi, Bonino, and Cattelino (2020).

5. Conclusion

The results revealed that the average quality of life among employees is higher than others, and the lowest quality of life is among the unemployed. Each person's job status is related to their quality of life because the amount of salary, benefits and wages that a person earns from work has a significant impact on the quality of life. People who are employees and have administrative jobs receive salaries and benefits at the end of each month, which can affect their quality of life and even their spirit.

According to the results, each person's level of education is related to their quality of life. A patient with a higher level of education can certainly rely on his knowledge to obtain the necessary information about his disease and be effective in the process of treatment and follow the instructions of the doctor and try to improve himself, and it can improve the quality of his life. But those who have little education and awareness do not know about his disease and this is why he cannot improve his quality of life.

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