

ORIGINAL ARTICLE

The quality of life in patients with multiple sclerosis in Qassim

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ABSTRACT

Background: Multiple sclerosis (MS) is a chronic disturbance of the immune system that can lead to multiple complications such as weakness, impaired vision, imbalance, as well as sphincter and sexual dysfunctions. This study aimed to evaluate the quality of life of people with sclerosis in relation to the factors that affect the quality of their life.

Methodology: The analytical cross-sectional study was conducted in Qassim, Saudi Arabia. A total of 95 participants were selected and responded to the questions through social media. The study took place from May to July 2020. The study data were collected via a validated questionnaire in Arabic. The items consisted of demographic characteristics, clinical factors related to participants, and a validated Arabic version of the short form questionnaire.

Results: The findings showed that over 50% of the respondents face difficulty in performing their activities or work. Over 60% of the patients agreed that emotional issues impeded their normal social undertakings. The results indicated that both men and women were affected equally by the disease.

Conclusion: The patients' lifestyle was affected greatly by the disease and problems related to MS had changed their lifestyle.

Keywords: Multiple sclerosis, lifestyle, work performance, quality of life, Qassim.

Introduction

Multiple sclerosis (MS) is a chronic disturbance of the immune system where the immune system fights itself (an autoimmune disorder), leading to the destruction of myelin sheaths (demyelination) and axonal damage of the central nervous system (CNS). MS is the leading neurological cause of disability in some populations [1]. The causes of the disease are not exactly known, but there are genetic and environmental factors such as vitamin D deficiency, Epstein-Barr virus, and Herpes virus infections that activate T cells and lead to myelin sheaths deterioration [2]. The clinical manifestations differ depending on the site of the lesion in the CNS and the phenotype of MS. MS attacks tend to be stable but might result in fatigue and heat sensitivity. The common clinical presentations are vision loss, sensory loss (numbness and tingling), motor dysfunction (weakness, incoordination, imbalance and gait impairment), and bladder dysfunction [3].

There are many types of MS, depending on the progression and deterioration or remission of the disease. They include the Relapsing-remitting form multiple

sclerosis (RRMS), primary progressive MS (PPMS), secondary progressive MS (SPMS), clinically isolated syndrome, and radiologically isolated syndrome. The McDonald diagnostic criteria states that the diagnosis of MS depends on clinical presentation, imaging, and presence of dissemination in space, as well as time, by either clinical or imaging features to rule out other diagnoses [4,5].

In recent years, the prevalence of MS has been changing dramatically worldwide [6]. A recent national descriptive study showed that the overall estimated prevalence of MS in Saudi Arabia was 40/100 [7]. A study was

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conducted in Finland on 8,722 MS patients, where some of the patients (66.7%) had the RRMS of the disease and some of them (13.5%) had the SPMS, while 7.9% of the patients had the PPMS. The resulting prevalence was between 10,000 and 11,000 patients, which corresponds to a crude prevalence of 180-200/100,000 [6].

MS is also a very common condition around the globe. A study conducted in Italy, in 2015, showed 122-232 cases/100,000 in the mainland and Sicily, and from 280 to 317 cases/100,000 in Sardinia, estimating more than 109,000 MS patients in Italy, which increased the prevalence due to increased incidences [8]. Another study was conducted in Iceland on 526 patients, and the result of the prevalence was high and similar to the prevalence rates in other Nordic countries [9]. The incidence and prevalence of MS has been on an alarming rise. A systemic review of 249 articles was carried out and the results showed that the prevalence and incidences were increasing; however, the prevalence was more frequent than incidence [10].

The diagnosis of MS faces challenges due to variability in clinical presentation and the lack of a definitive diagnosis. Magnetic resonance imaging (MRI) plays a role in the detection of MS lesions as a diagnostic tool. MRI also plays a vital role in excluding other diagnoses that mimic MS [11].

The quality of life in multiple sclerotic patients varies from one person to another depending on many factors, such as the type of MS, social relationships, psychological, environmental health, and treatment, that contribute to changing the quality of life. For instance, a study was conducted on 110 persons (67 women and 43 men), and the results showed that the quality of life in patients with PPMS was significantly lower than those who had other types of MS. It also showed that men had a worse quality of life than women [12].

A study conducted in China among 100 MS patients demonstrated an association between the quality of life of MS patients and depression, fatigue, and inability. For example, worse fatigue, depression, and disability lead to worse quality of life [13]. Depression in MS patients leads to decreased quality of life, aggravation of illness, extended fatigue, reduced adherence to medications, and increased suffering [14]. Quality of life among individuals with MS was not only lower than the general population, but it also exceeds those diagnosed with other chronic illnesses such as diabetes, irritable bowel disease, and epilepsy [15].

Another study was conducted on 160 patients, and the results showed that they had a poor quality of life and that psychosocial care might play a vital role in improving or worsening the outcome of quality of life in multiple sclerotic patients [16]. A systematic review with a meta-analysis was conducted (18 studies), and the results revealed that physiotherapy and aerobic exercise improved the outcome of quality of life and satisfaction in patients with MS [17]. Thereby, this study aimed to

evaluate the quality of life of people with MS in relation to the factors that affect the quality of their life in Qassim, Saudi Arabia.

Subjects and Methods

An analytical cross-sectional study was conducted among MS patients in Qassim. The random sampling technique was used to recruit the participants. Patients above the age of 18 years were included in the study; however, participants who failed to give complete information were excluded. A total of 95 participants were selected and responded to the questions through social media. The study took place over 3 months from May to July 2020.

The study data were collected via a validated questionnaire in Arabic. The items consisted of demographic characteristics, clinical factors related to participants, and a validated Arabic version of the short form questionnaire. The questionnaire contained a total of 39 questions including demographics and questions relating to the quality of life of MS patients.

After collecting adequate data, the data were then reviewed, entered into Statistical Package for the Social Sciences, and cleaned for further analysis. The analysis involved both qualitative and quantitative analyses. Descriptive analysis was used to assess the various responses given on the questions administered. A chi-squared test was conducted to check for any association between the related variables. A *t*-test was also conducted to check for any significant difference between variables. The significant value was 0.05 at a 95% level of confidence interval.

Results

The study included 95 participants, including 25 (26.3%) males and 70 (73.7%) females (Figure 1).

In terms of general health status, 14.7% had an excellent health status, while 10.5% had poor health (Figure 2).

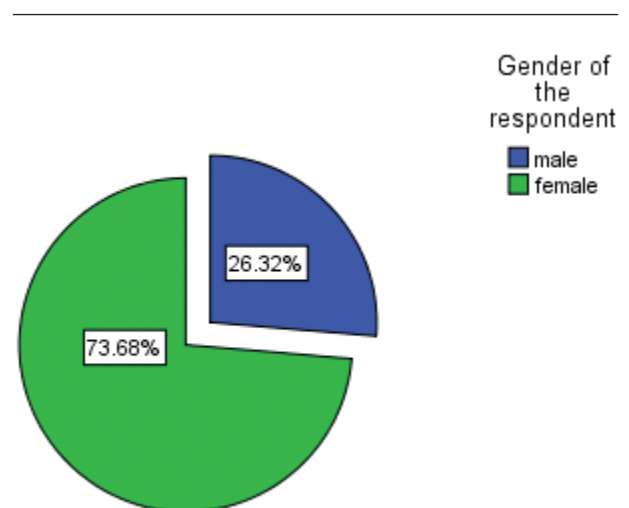


Figure 1. Gender distribution among the participants.

Quality of life with multiple sclerosis

The youngest participant was 18 years old and the oldest was 65 years old. The mean age of the participants was 32 years, which implies that the majority of them were young. The participants with excellent and very good quality of life were younger (27 and 28.54 years, respectively). The participants who reported poor quality of life were older (34.70 years) (Figure 3).

When the health status of the participants was compared with the previous year, it was found that the health of 20.0% of the participants was much improved, 28.4% of the participants had the same status, while 8.4% of the participants were in worse health than a year ago (Table 1).

In response to whether the participant faced challenges in executing work or other activities, 64.2% agreed that they had difficulty and 35.8% did not have any difficulty.

In relation to whether the participants' emotional issues impeded their normal social activities with their families and friends, 20.0% did not face any interference at all; however, 7.4% experienced very severe interference with their normal social activities because of their emotional problems (Figure 4).

In relation to the participants feeling exhausted, 24.2% felt worn out all the time, 21.1% felt worn out most of the time, whereas 8.4% felt fatigued a little bit of the time and 3.2% did not feel fatigued at all (Table 2).

There was a substantial association between poor lifestyle (affected) and the signs of an affected life. All factors showed a statistically significant association between related variables (Table 3).

Furthermore, no significant mean difference between poor lifestyle (affected) and gender was found. This

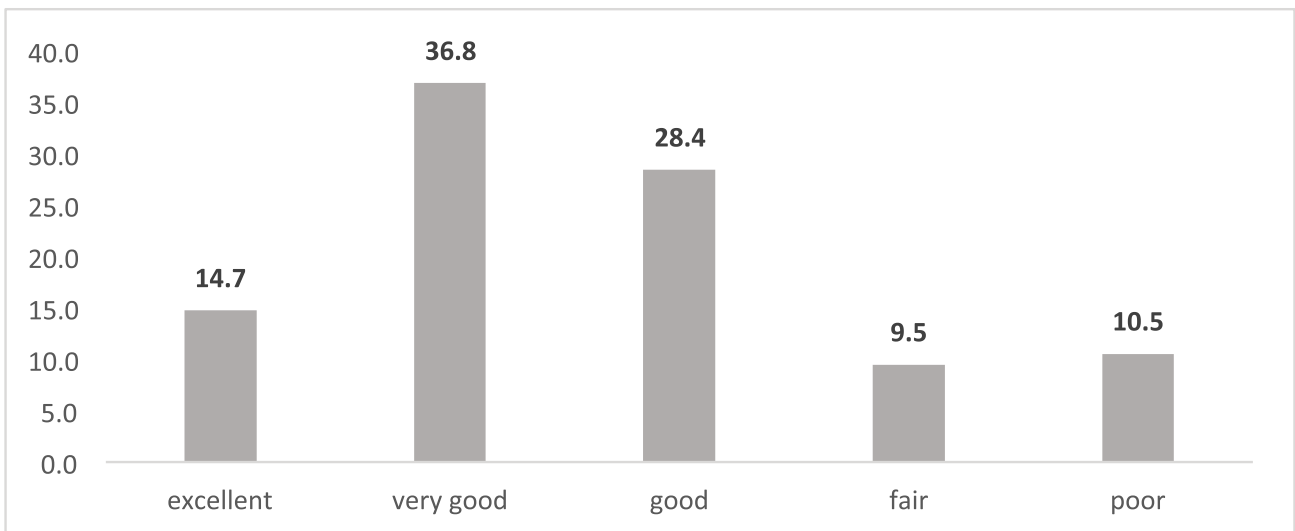


Figure 2. General health status of the participants.

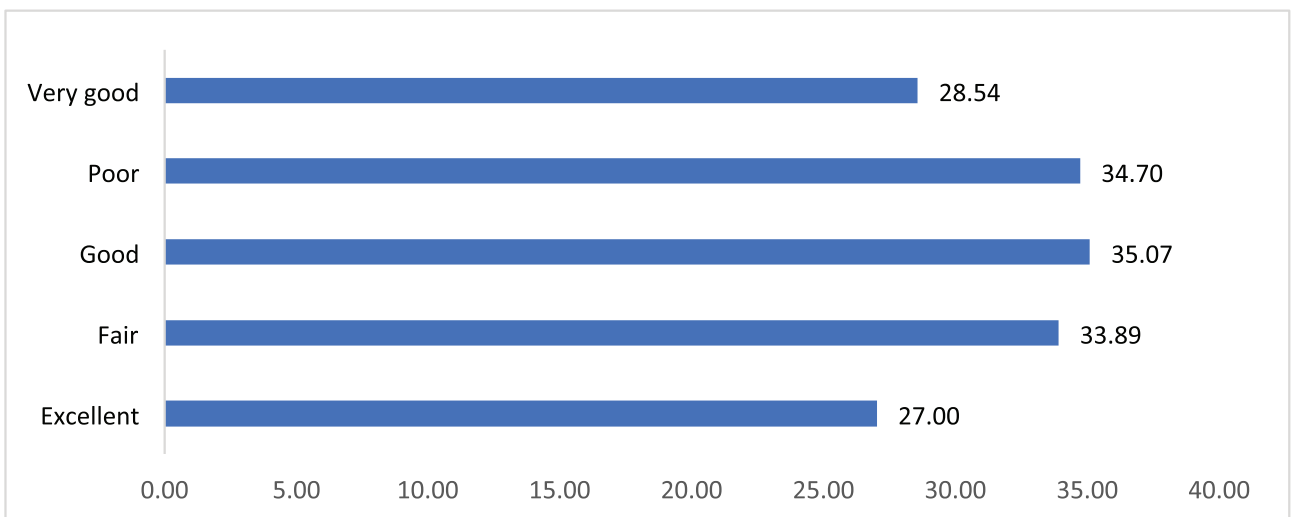


Figure 3. Quality of life and average age of the participants.

Table 1. Sample characteristics.

Variable		Frequency (%)
Income	Sufficient and spared	41 (43.2)
	Sufficient and not spared	32 (33.7)
	Insufficient and not spared	20 (21.1)
	Borrowed	2 (2.1)
Gender	Male	25 (26.3)
	Female	70 (73.7)
General health status	Excellent	14 (14.7)
	Very good	35 (36.8)
	Good	27 (28.4)
	Fair	9 (9.5)
	Poor	10 (10.5)

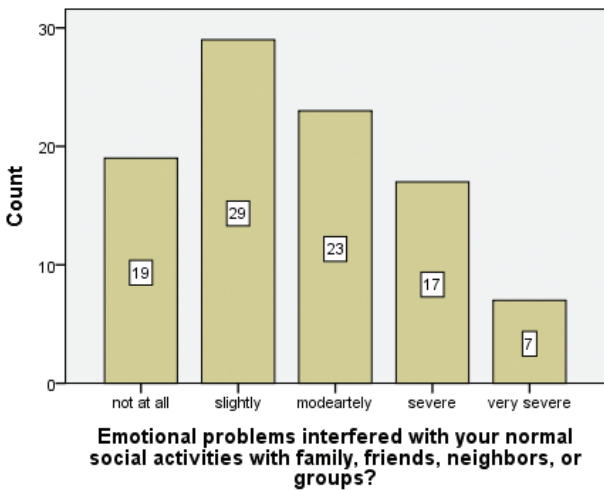


Figure 4. Emotional issues of the participants impeding with their normal social activities.

Table 2. General health status of the participants.

Variable		Frequency (%)
Had difficulty performing the work or other activities (for example, it took extra effort)	Yes	61 (64.2)
	No	34 (35.8)
Emotional problems interfered with your normal social activities with family, friends, neighbors, or groups?	Not at all	19 (20.0)
	Slightly	29 (30.5)
	Moderately	23 (24.2)
	Severe	17 (17.9)
	Very severe	7 (7.4)
General health status	All of the time	23 (24.2)
	Most of the time	20 (21.1)
	A good bit of the time	12 (12.6)
	Some of the time	29 (30.5)
	A little bit of the time	8 (8.4)
	None of the time	3 (3.2)

means that MS affects both genders almost equally (Table 4).

Discussion

This study showed that the life of MS patients was affected by their condition. The study noted that some of the problems associated with MS were that the patients had to reduce the amount of time they used in their activities. This was due to their inability to do much work like other people. The patients often feel exhausted and depressed due to their conditions, which in turn make them feel tired and ineffective. These findings are similar with a study conducted [18] on whether physical activity during adulthood is associated with MS. It was found that MS reduces physical activity as a response to sub-clinical MS.

Some of the symptoms associated with MS include fatigue, headache, eye-related problems, pain (especially in one hand), tremor, and leg issues. The study also showed that the patients were likely to experience other problems that might arise because of their health statuses, such as paralysis, depression, epilepsy, and mental problems such as forgetfulness. This is in agreement with a study conducted on MS in children [19] where children with MS were found to have frequent and severe relapses.

Some of the risk factors related to MS were that it is more likely to affect women than men. People from the arctic regions have higher chances of suffering from the disease versus those from tropical regions due to differences in climate. Race is also a factor; white people from northern European countries are more likely to be affected by MS than those from Asia and Africa. A study on sex and gender [20] found that MS was universally more prevalent in women than men.

Table 3. Association between poor lifestyle (affected) and signs of an affected life.

Variable		Frequency (%)	p-value
Did you feel worn out?	All the time	24.4	0.000 ^a
	Most of the time	21.2	
	A good bit of the time	12.6	
	Some of the time	30.5	
	A little bit of the time	8.4%	
	None of the time	3.2%	
Have you felt downhearted and blue?	All the time	13.7	0.000 ^a
	Most of the time	23.2	
	A good bit of the time	10.5	
	Some of the time	25.3	
	A little bit of the time	12.6	
	None of the time	14.7	
Have you felt down in the dumps that nothing could cheer you up?	All the time	3.2	0.000 ^a
	Most of the time	29.5	
	A good bit of the time	10.5	
	Some of the time	34.7	
	A little bit of the time	7.4	
	None of the time	14.7	

^aStatistically significant.

Table 4. Student's t-test.

	f value	Significance	t-value	difference	Significance
Equal variances assumed	0.417	0.52	-0.42	93	0.966
Equal variances not assumed			-0.4	39.378	0.968

Being that the survey was conducted online, some limitations were encountered that were mostly related to uncooperative respondents. It was not easy to control the way the participants responded to the questions. This led to some incomplete information from the respondents. There was also an age-related problem: the survey was meant for participants aged 18 years and above, but we accidentally collected responses from subjects as young as 13 years old.

Conclusion

Generally, this study showed that MS affects the lifestyle of the patients mainly via challenges in executing work. The patients were forced to do less work than normal people.

This study showed that patients' lifestyle was affected greatly by the disease and problems related to MS had changed their lifestyles.

List of Abbreviations

- CNS Central nervous system
- MRI Magnetic resonance imaging
- MS Multiple sclerosis
- PPMS Primary progressive multiple sclerosis

- RRMS Relapsing-remitting form multiple sclerosis
- SPMS Secondary progressive multiple sclerosis

Conflict of interest

The authors declare that there is no conflict of interest regarding the publication of this article.

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None.

Consent to participate

Informed consent was signed by all the participants.

Ethical approval

Ethical approval was granted by the Research Committee, Unaizah College of Medicine and Medical Sciences, Qassim University, via letter number 19-11-07, dated: 5/5/2020.

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References

1. Karussis D. The diagnosis of multiple sclerosis and the various related demyelinating syndromes: a critical review. *J Autoimmun.* 2014;48–49:134–42. <https://doi.org/10.1016/j.jaut.2014.01.022>
2. Tiwari S, Lapierre J, Ojha CR, Martins K, Parira T, Dutta RK, et al. Signaling pathways and therapeutic perspectives related to environmental factors associated with multiple sclerosis. *J Neurosci Res.* 2018;96(12):1831–46. <https://doi.org/10.1002/jnr.24322>
3. Gelfand JM. Multiple sclerosis: diagnosis, differential diagnosis, and clinical presentation. *Handb Clin Neurol.* 2014;122:269–90. <https://doi.org/10.1016/B978-0-444-52001-2.00011-X>
4. Katz Sand I. Classification, diagnosis, and differential diagnosis of multiple sclerosis. *Curr Opin Neurol.* 2015;28(3):193–205. <https://doi.org/10.1097/WCO.0000000000000206>
5. Yamout BI, Alroughani R. Multiple sclerosis. *Semin Neurol.* 2018;38(2):212–25. <https://doi.org/10.1055/s-0038-1649502>
6. Laakso SM, Viitala M, Kuusisto H, Sarasoja T, Hartikainen P, Atula S, et al. Multiple sclerosis in Finland 2018-data from the national register. *Acta Neurol Scand.* 2019;140(5):303–11. <https://doi.org/10.1111/ane.13145>
7. Al Jumah M, Bunyan R, Al Otaibi H, Al Towaijri G, Karim A, Al Malik Y, et al. Rising prevalence of multiple sclerosis in Saudi Arabia, a descriptive study. *BMC Neurol.* 2020;20(1):49. <https://doi.org/10.1186/s12883-020-1629-3>
8. Battaglia MA, Bezzini D. Estimated prevalence of multiple sclerosis in Italy in 2015. *Neurol Sci.* 2017;38(3):473–9. <https://doi.org/10.1007/s10072-016-2801-9>
9. Elíasdóttir Ó, Kjartansson Ó, Olafsson E. Prevalence of multiple sclerosis in Iceland. *Neuroepidemiology.* 2018;51(1–2):50–6. <https://doi.org/10.1159/000489472>
10. Marrie RA, Cohen J, Stuve O, Trojano M, Sørensen PS, Reingold S, et al. A systematic review of the incidence and prevalence of comorbidity in multiple sclerosis: overview. *Mult Scler.* 2015;21(3):263–81. <https://doi.org/10.1177/1352458514564491>
11. Chen JJ, Carletti F, Young V, Mckean D, Quaghebeur G. MRI differential diagnosis of suspected multiple sclerosis. *Clin Radiol.* 2016;71(9):815–27. <https://doi.org/10.1016/j.crad.2016.05.010>
12. Rosiak K, Zagożdżon P. Quality of life and social support in patients with multiple sclerosis. *Psychiatr Pol.* 2017;51(5):923–35. <https://doi.org/10.12740/PP/64709>
13. Chen K, Fan Y, Hu R, Yang T, Li K. Impact of depression, fatigue and disability on quality of life in Chinese patients with multiple sclerosis. *Stress Health.* 2013;29(2):108–12. <https://doi.org/10.1002/smi.2432>
14. Kidd T, Carey N, Mold F, Westwood S, Miklaucich M, Konstantara E, et al. A systematic review of the effectiveness of self-management interventions in people with multiple sclerosis at improving depression, anxiety and quality of life. *PLoS One.* 2017;12(10):e0185931. <https://doi.org/10.1371/journal.pone.0185931>
15. Hermann BP, Vickrey B, Hays RD, Cramer J, Devinsky O, Meador K, et al. A comparison of health-related quality of life in patients with epilepsy, diabetes and multiple sclerosis. *Epilepsy Res.* 1996;25(2):113–8. [https://doi.org/10.1016/0920-1211\(96\)00024-1](https://doi.org/10.1016/0920-1211(96)00024-1)
16. Hyarat SY, Subih M, Rayan A, Salami I, Harb A. Health related quality of life among patients with multiple sclerosis: the role of psychosocial adjustment to illness. *Arch Psychiatr Nurs.* 2019;33(1):11–6. <https://doi.org/10.1016/j.apnu.2018.08.006>
17. Alphonsus KB, Su Y, D'Arcy C. The effect of exercise, yoga and physiotherapy on the quality of life of people with multiple sclerosis: systematic review and meta-analysis. *Complement Ther Med.* 2019;43:188–95. <https://doi.org/10.1016/j.ctim.2019.02.010>
18. Dorans KS, Massa J, Chitnis T, Ascherio A, Munger KL. Physical activity and the incidence of multiple sclerosis. *Neurology.* 2016;87(17):1770–6. <https://doi.org/10.1212/WNL.0000000000003260>
19. Inaloo S, Haghbin S. Multiple sclerosis in children. *Iran J Child Neurol.* 2013;7(2):1–10.
20. Harbo HF, Gold R, Tintoré M. Sex and gender issues in multiple sclerosis. *Ther Adv Neurol Disord.* 2013;6(4):237–48. <https://doi.org/10.1177/1756285613488434>