

# Assessment of sexual life and social life in people with multiple sclerosis

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Original article

## Abstract

**Introduction:** Multiple sclerosis is a debilitating condition that affects the central nervous system and is most common in young people. Over time, the relapses associated with the disease can cause damage, and within ten years of onset, half of patients may experience progressive symptoms. Unfortunately, once a patient enters a progressive stage, there is no longer any improvement or remission, though some patients may experience a longer period of stability.

**Objectives:** The goal of this study is to examine the relationship between social and sexual life in patients with multiple sclerosis, considering the progressive nature of the disease, the fluctuating psychological impact, and the impact on their reproductive abilities.

**Methods:** The study utilized the Multiple Sclerosis Quality of Life Questionnaire to assess the participants. This questionnaire measures quality of life by asking generic and specific questions related to multiple sclerosis, with a total of 18 items addressing specific needs such as fatigue, cognitive function, sexual function, daily activities, social interaction, and more.

**Results:** The results indicated that most women with multiple sclerosis reported decreased lubrication, while men's main concern was satisfying their partner. The majority of participants reported being neither satisfied nor dissatisfied with their sexual and social life. The frequency of sexual dysfunction was found to be higher in women with multiple sclerosis compared to the general population, with decreased libido being the most commonly reported issue. Individuals with primary progressive multiple sclerosis were found to have significantly increased problems with sexual function.

**Conclusion:** This study found a correlation between social and sexual life for individuals with multiple sclerosis. As their social life worsened, their sexual life and reproductive capacity were also negatively impacted.

## Abbreviations

MS – Multiple Sclerosis  
MSQOL – Multiple Sclerosis Quality of Life  
CIS – Clinical Isolated Syndrome

NS – Central Nervous System  
RR – Relapsing-Remitting  
SP – Secondary-Progressive

## Keywords

- multiple sclerosis
- rehabilitation
- assessment
- socialization
- sexual life

## Contribution

- A – the preparation of the research project
- B – the assembly of data for the research undertaken
- C – the conducting of statistical analysis
- D – interpretation of results
- E – manuscript preparation
- F – literature review
- G – revising the manuscript

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## Introduction

Demyelination is the breaking down of the protective coating around nerve fibers, known as the myelin sheath. This process is caused by inflammation and destruction, causing the exposed axon to disrupt the normal transmission of nerve impulses. This leads to neurological symptoms. At first, the axons themselves are preserved, but over time, some axonal loss may occur, especially in large, long-standing plaques. In multiple sclerosis, lesions form as a result of perivascular inflammation, loss of myelin and oligodendrocytes, and an increase in astroglia. Although limited remyelination occurs, it is not enough to fully repair the damage. The traditional view of MS involves four stages of evolution of focal inflammation. The first stage is characterized by the accumulation of inflammatory cells, such as lymphocytes and monocytes, around the veins of the central nervous system. This inflammation is enough to block the normal flow of nerve impulses. Next, active destruction of the oligodendrocyte and myelin sheath takes place due to contact with macrophages and microglia.<sup>1</sup>

This is followed by a depletion of oligodendrocytes in which exposed axons are seen within the lesion. Finally, the lesion heals with scar formation, dependent on astrocyte reactivity, creating hardened plaques (sclerosis) from which the disease derives its name.

The most common areas affected by multiple sclerosis are along the gray matter border in the cerebellum, the periventricular region, the white matter of the cerebellum, the optic nerves, and the cervical target from the spinal cord and brainstem. However, the disease can impact any part of the central nervous system. Historically, multiple sclerosis was thought of as a disease of the white matter, but recent advancements in imaging and postmortem research have shown that lesions can also occur in the cortical gray matter, especially in progressive forms of the disease. In areas where the myelin has been stripped away, nerve conduction is significantly slowed, while conduction in the unaffected parts of the axon remains normal. This conduction block along partially demyelinated axons is the main cause of symptoms like muscle weakness and body stiffness.<sup>2,3</sup>

The onset of multiple sclerosis affects 80–85% of patients with subclinical neurological symptoms that can be multifocal or anatomical and discrete. This type of onset is commonly referred to as Clinically Isolated Syndrome (CIS). In patients with CIS, 20% experience lesions involving the optic nerve, 45% present with a range of signs and symptoms, 10% present with brainstem syndrome, and 25% present with multifocal abnormalities. The predictability of the onset does not

differ based on whether it's endofocal or multifocal, but patients tend to have a longer period before their second episode if their first presentation was optic neuritis. After the appearance of CIS, 70% of patients experience further attacks of worsening symptoms that eventually decrease in severity until the next attack, entering the Relapsing-Remitting (RR) phase.<sup>4</sup>

The progression of multiple sclerosis varies from person to person. About 20–30% of patients remain active in their work, even 20–25 years after the onset of the disease, with minimal cognitive impairment. However, frequent relapses and chronic progressive forms of the disease can develop, leading to the secondary progressive phase (SP). The age at which patients enter the SP phase is not dependent on the initial course of the disease. Only a small portion of patients (about 10%) experience a benign course of the disease, with further episodes being delayed for 5–10 years and with minimal symptoms during each episode. This benign course is significantly associated with female patients, a younger age of symptom onset, and the absence of motor symptoms at clinical presentations.<sup>5</sup>

Autonomic involvement occurs in most patients with multiple sclerosis. Bladder symptoms are more common in women than in men. Impotence it may predominate in men. Sphincter control may be lost or damaged. Disinhibition causes urgency and frequency which leads to incontinence. Bowel incontinence may also be present.

Sexual dysfunction is a common issue among individuals with chronic medical conditions, including multiple sclerosis. Both men and women with multiple sclerosis are affected, with common symptoms being erectile dysfunction, ejaculatory dysfunction, decreased libido, and anorgasmia in men and various physical symptoms, such as fatigue, muscle weakness, menstrual problems, bladder and bowel pain and incontinence, in women. The exact cause of sexual dysfunction in multiple sclerosis is not clear, but is thought to be a combination of factors such as damage to the spinal cord, psychological factors, medication side effects, and physical symptoms. In research, it has been found that a higher proportion of women with multiple sclerosis experience sexual dysfunction, suggesting that the issue is a complex and multi-faceted problem.<sup>6,7</sup>

Rehabilitation plays an important role in the management of multiple sclerosis (MS) by addressing physical, cognitive, and emotional symptoms associated with the disease. Despite not being able to reverse the underlying neurological impairment, rehabilitation can improve mobility, dexterity, balance, fatigue, and bladder control, as well as enhance overall quality of life. Rehabilitation can be especially beneficial in the

relapsing-remitting phase of MS, where it can help manage symptoms during and after relapses. However, rehabilitation should be considered a continuous process throughout the course of the disease and should be performed by trained professionals in specialized centers or in the community.<sup>8-10</sup>

## Methodology

The MSQOL 54 questionnaire is designed to assess the impact of multiple sclerosis on a person's quality of life by asking questions about various aspects that are relevant to people with multiple sclerosis. The questionnaire is comprised of 18 items, divided into 12 different subscales, which allow for a comprehensive evaluation of different aspects of quality of life, including physical function, movement limitation, emotionality, pain, energy, social function, cognitive function, overall quality of life, and sexual function. The questionnaire is a valuable tool for healthcare professionals to assess the effects of multiple sclerosis on a person's life and to determine the areas that require intervention or support. The data for the international respondents was collected using different methods such as through Google Form tools, an interview via Skype, and in-person interviews for the respondents in Macedonia. The data was processed using modern SPSS statistical analysis. The study had a time frame of 1 year and 4 months (January 1, 2020 – April 16, 2021). Some respondents were excluded from answering questions about sexual and social life due to sensitivity reasons and age or physical limitations. 637 women and 119 men answered the sex life questions, with a total of 756 respondents for social and sex life questions, but the number varied for the social life questions.

## Results

The results began with an examination of sexual function and the resulting problems, which, depending on the type of multiple sclerosis, are shown in Tables 1-7.

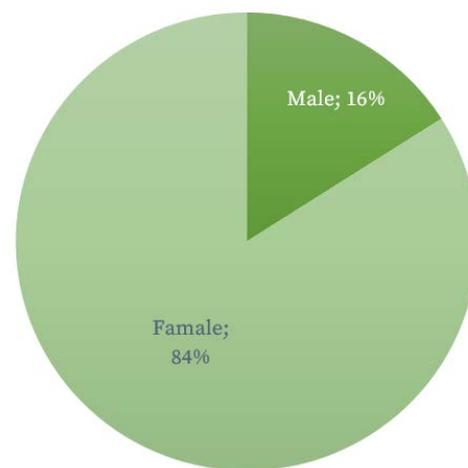


Figure 1. Gender of respondents

In this study, 756 individuals participated, with 637 of them being women (84%) and 119 (16%) being men (Figure 1). However, the number of respondents varies in different charts, as some were not obliged to answer questions related to sexual and social life, leading to different sample sizes for each question. Individuals under the age of 18 were excluded from answering questions about sexual life, but were included in questions about socialization. The connection or relationship between sexual and social life was not evaluated for these participants.

Table 1. Sexual function among respondents

Sexual function	Not a problem		Small problem		Big problem		SD	V
	f	%	f	%	f	%		
<b>Woman</b>								
Decreased sexual interest	203	32	205	32	229	36	11.81	139.55
Inadequate lubrication	278	44	187	29	173	27	46.54	2166.88
Difficulty during orgasm	255	41	168	26	211	33	35.51	1261.55
Partner satisfaction	398	63	134	21	105	16	131.81	17376.22

Sexual function	Not a problem		Small problem		Big problem		SD	V
	f	%	f	%	f	%		
Man								
Decreased sexual interest	42	35	34	30	42	35	3.77	14.22
Difficulty during orgasm	40	34	25	21	54	45	11.84	140.22
Partner satisfaction	44	37	34	29	40	34	4.10	16.88

This scientific paper analyzed the sexual function of individuals with multiple sclerosis. It addressed the sexual problems faced by the respondents, which may have a negative impact on their private lives. Some respondents chose not to answer these questions due to their age. Overall, the data showed that a significant number of women reported decreased sexual interest (36%), while 63% reported no difficulty satisfying their partner. In comparison, men reported that decreased sexual interest was not a major issue, but rather, erectile difficulties (45%) were the main concern.

It is stated that a bar chart was created to investigate the relationship between the social and sexual life of the respondents in the study. The chart shows a lower percentage of people being satisfied in their sexual function, compared to their social life. In terms of social life, there is a higher percentage of people reporting “a little” difficulty with social interaction, but a smaller percentage reporting “not at all.”

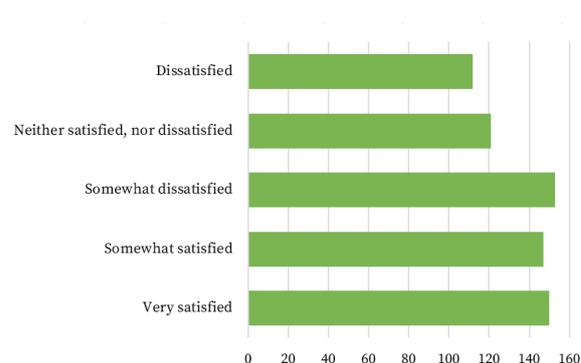


Figure 2. Relationship between sexual and social life in people with multiple sclerosis

This study found that there is a significant relationship between the type of multiple sclerosis and the sexual life of the respondents, as indicated by a *p*-value of 0.036. The results showed that respondents with primary-progressive multiple sclerosis were significantly

Table 2. Relationship between sexual function and the type of multiple sclerosis

In general, how satisfied are you with your sexual function?	Primary-progressive	Relapsing-remitting	Secondary-progressive	Total
Dissatisfied	28	89	22	139
	29.5%	19.3%	25.9%	21.7%
Neither satisfied nor dissatisfied	21	96	24	141
	27.4%	21.6%	17.6%	22.0%
Somewhat dissatisfied	11	97	12	120
	11.6%	21.0%	14.1%	18.7%
Very satisfied	9	80	12	101
	9.5%	17.3%	14.1%	15.7%

less satisfied with their sexual life compared to those with other types of multiple sclerosis, with the highest satisfaction being reported among those with relapsing-remitting multiple sclerosis (17.3%). This suggests that the type of multiple sclerosis may impact the sexual life of individuals living with the condition

**Table 3.** Impact on health and emotional problems in common social interactions with family, friends, neighbors or another group of people

Responses	f	%
Not at all	103	14
A little	194	26
Moderately	207	27
A lot	169	22
Extremely much	83	11

It can be concluded from Table 3 that most of the respondents (about 50%) have moderate difficulties in social interaction due to health and emotional problems. A smaller portion of the respondents reported having extremely many problems affecting their social interaction. The standard deviation (SD) is 51.07, indicating that there is a certain degree of variability in the respondents' answers

**Table 4.** Reduced working hours depending on the type of multiple sclerosis

Type of multiple sclerosis	Yes	No	Total
Primarily-progressive	18	80	98
	7.9%	18.4%	14.8%
Relapse-remitting type	204	271	475
	89.9%	62.3%	71.8%
Secondary-progressive type	5	84	89
	2.2%	19.3%	13.4%
Total	227	435	662
	100.0%	100.0%	100.0%

The results of the  $\chi^2$ -tests of independence showed a significant relationship between the type of multiple sclerosis and problems at work. The Tables 4–6 indicate that people with primary-progressive and secondary progressive types of multiple sclerosis are more likely to experience problems at work compared to those with relapsing-remitting type of multiple sclerosis. The

$\chi^2$ -statistic values ranged from 42 to 66, with a  $p$ -value of 0.000, suggesting a strong dependence between the type of multiple sclerosis and work problems.

**Table 5.** Reduction of activities under the influence of the type of multiple sclerosis

Type of multiple sclerosis	Yes	No	Total
Primarily-progressive	3	95	98
	2.4%	17.7%	14.8%
Relapse-remitting type	120	355	475
	95.2%	66.2%	71.8%
Secondary-progressive type	3	86	89
	2.4%	16%	13.4%
Total	126	536	662
	100.0%	100.0%	100.0%

**Table 6.** Difficulty performing work duties or other activities of daily living related to the type of multiple sclerosis

Type of multiple sclerosis	Yes	No	Total
Primarily-progressive	15	83	98
	7.1%	18.4%	14.8%
Relapse-remitting type	190	285	475
	89.6%	63.3%	71.8%
Secondary-progressive type	7	82	89
	3.3%	18.2%	13.4%
Total	212	450	662
	100.0%	100.0%	100.0%

**Table 7.** Impact of health or emotional problems on the social activities of the respondents (visiting friends, relatives, etc)

Responses	f	%
All the time	126	17
Most of the time	249	33
Only a small part of the time	256	34
Not at all	125	16

Table 7 presents the data on the influence of health and emotional problems on the social activities of the respondents. It can be seen that 33% of the respondents stated that they have problems most of the time that impact their social activities, while 34% of them stated

that they have problems only a small part of the time. On the other hand, 17% of the respondents stated that they have problems all the time, and 16% stated that they have no influence on their social activities. The standard deviation for this data is 63.52, and the variance is 4035.5.

## Discussion

The results of the study described in this paper support the need for special education and rehabilitation for multiple sclerosis patients, particularly for those with the primary-progressive and secondary-progressive forms of the disease. The results indicate that these patients are more likely to experience problems with sexual life, work, and social activities. Providing education and rehabilitation services can help improve quality of life for these individuals and help them better manage the challenges they face. Further research is needed to determine the most effective ways to provide education and rehabilitation services to multiple sclerosis patients and to evaluate the impact of these services on patients' well-being.<sup>11-13</sup>

In conclusion, the results of this study indicate that there is a strong correlation between the type of multiple sclerosis and the respondents' sexual and social life, as well as their ability to work. Respondents with primary-progressive and secondary-progressive multiple sclerosis were found to have a higher likelihood of having difficulties in these areas compared to those with relapsing-remitting multiple sclerosis. The degree of disability, as assessed by the EDSS scale, was found to significantly affect the respondents' social life, work, and sexual function, with a higher degree of disability leading to a greater dependence on another person. Pain was also found to have a significant impact on social and emotional activity, with higher levels of pain leading to less social interaction. These findings highlight the need for further research in this field, as well as the need for rehabilitation and support programs for people with multiple sclerosis.<sup>14-16</sup>

## Conclusion

According to research on labor production, the literature on multiple sclerosis is very scarce, and so is research on cause which is about a condition that is so diverse (multiple) in which the beginning and end symptoms can vary significantly in intensity. According to the received results, a large part of patients are not familiar with the problems brought by multiple

sclerosis in terms of socialization and mobility itself, sexual function and reproduction.

Furthermore, there is a lack of laws that would protect people with multiple sclerosis in the educational process and in the workplace. The high level of knowledge of the disease and subsequent disability through one tool – manual for each newly diagnosed patient and its constant application will increase the self-confidence of the patient, and thus the disability and severe disability will be reduced, through the help of the persons for proper inclusion in the society in which they live.<sup>17,18</sup>

The results of this study support these findings, as it was shown that there is a significant relationship between the type of multiple sclerosis and the social and sexual life of the respondents, as well as the problems they face at work. Respondents with primary-progressive and secondary-progressive types of multiple sclerosis were more likely to face difficulties at work and have a lower satisfaction with their sexual life compared to those with relapsing-remitting type. Additionally, the degree of disability and pain greatly affects the social and emotional activity of these individuals. These findings highlight the need for increased support and resources for people with multiple sclerosis, including education, rehabilitation, and protection in the workplace. The lack of laws to protect people with multiple sclerosis can further decrease their quality of life, making it important to raise awareness and advocate for change.<sup>19-22</sup>

Regarding the analysis of the results at the international level, the difference between the users of the personal assistant and physiotherapist is huge. The biggest users of these services are the inhabitants of North, Central and South America, and the least in the Balkan countries. In Macedonia this type of help for people with multiple sclerosis is still in its infancy.<sup>23,24</sup>

It can be seen that respondents with primary-progressive type of multiple sclerosis are significantly dissatisfied with their sex life in contrast to the other types of multiple sclerosis, and those with relapsing-remitting type of multiple sclerosis are the most satisfied with 17.3%.

## Limitations of the study and future directions

The current study on the relationship between type of multiple sclerosis and problems at work was limited by the indirect nature of the data collection due to the ongoing pandemic. This posed a challenge for conducting direct observations and interviews with patients who have multiple sclerosis, as they are immunocompromised and need to be protected from the risks

associated with the pandemic. This indirect method of data collection, while practical and safe, limited the scope of the research and could have resulted in an incomplete picture of the impact of multiple sclerosis on the lives of patients. Direct observation and interaction with the subjects would have allowed for a more in-depth analysis of the various aspects of multiple sclerosis and its impact on socialization, work, and quality of life.

It is important to note that socialization is a critical factor for people with multiple sclerosis, as it can greatly impact their overall wellbeing. A lack of social interaction can lead to feelings of isolation and depression, which can further exacerbate the symptoms of multiple sclerosis. Therefore, further research is needed to better understand the impact of multiple sclerosis on the social lives of patients and how it can be mitigated.<sup>25</sup>

Additionally, it is also important to explore the impact of socio-economic factors such as education, income, and employment status on the socialization and quality of life of individuals with multiple sclerosis. As people with lower socio-economic status may face more difficulties in accessing medical care and support services, they may have more difficulty in maintaining a fulfilling social life and quality of life. This is an important aspect to consider, as it highlights the need for social policies and programs that address the needs of these individuals and support them in their daily lives. Furthermore, it would also be beneficial to analyze the role of social support networks, such as family, friends, and support groups, in the socialization and quality of life of individuals with multiple sclerosis. The provision of emotional and practical support can play a significant role in improving their quality of life, and it is essential to understand the importance of these support networks for individuals with multiple sclerosis.

Overall, further research on multiple sclerosis and its impact on socialization and quality of life is crucial to gain a better understanding of the challenges faced by individuals with this debilitating disease and to develop effective strategies to support them. The results of this study serve as a stepping stone towards future research and highlight the importance of addressing the socialization and quality of life of individuals with multiple sclerosis.<sup>26-28</sup>

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