Influence of Sociodemographic and Clinical Characteristics on Sexual Function Domains of Health Related Quality of Life in Multiple Sclerosis Patients

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ABSTRACT

Background: Multiple sclerosis is a progressive inflammatory disease of the central nervous system. Problems with sexual functions are common features of multiple sclerosis and important factor that contribute to the quality of life among affected persons. Objective: The aim of the study was to evaluate the influence of sociodemographic and clinical characteristics on sexual functions domains of health related quality of life (HRQOL) in multiple sclerosis patients. Methods: This study included 100 MS patients treated at the Department of Neurology, Clinical Center University of Sarajevo. Inclusion criteria were an Expanded Disability Status Scale score between 1.0 and 6.5, age between 18 and 65 years, stable disease on enrollment. HRQOL was evaluated by the Multiple Sclerosis Quality of Life-54 questionnaire. Mann-Whitney and Kruskal-Wallis test were used for comparisons between sociodemographic and clinical characteristics and HRQOL scores. Results: Out of 60% of patients reported to have sexual dysfunction, and 55% were female patients. Younger patients had statistical significant higher median value of sexual function score (91.68 vs. 58.28, p=0.001) and satisfaction with sexual life scores (62.5 vs 37.5 , p =0.019) comparing to older patients. Employed patients also showed statistical significant higher median value of sexual function score (82 vs. 66.7, p=0.003) comparing to unemployed patients and also statistically significant higher median scores considering satisfaction with sexual life among employed patients (p=0.001).

Conclusion: Aging, dysability and progression are major factors that contribute to lower sexual function scores and satisfaction with sexual life among multiple sclerosis patients. Although women reported sexual problems more often then men, impact of these problems on quality of life are similar in men and women with MS.

Keywords: Multiple sclerosis, quality of life (QOL), sexual functions.

1. BACKGROUND

Multiple sclerosis (MS) is the most common neurological disease in young adults. It is a chronic and progressive immune mediated inflammatory disease of the central nervous system. MS may present different neurological symptoms with progression that leads to loss of physical and cognitive functions. Problems with sexual functions are the common features of multiple sclerosis and important factor that contribute to the quality of life among affected persons (1). According to the World Health Organization (WHO) definition, sexual dysfunction (SD) is a syndrome that includes absence or loss of libido, sexual anxiety and sexual enjoyment,
failure of genital response, erectile dysfunction (ED) in men, vaginal dryness or reduction and absence of vaginal lubricating secretions in women, orgasm disorder, premature ejaculation, vaginismus, and dyspareunia (2). Sexual dysfunctions (SD) in MS patients have different causes and complex etiology (3). Physical impairment, psychological factors, and drug-related adverse effects increase the prevalence of sexual dysfunctions (4). Problems with sexual functions can develop at different stages of multiple sclerosis. They may be presented even at an early stage of the disease with a growing prevalence (5). Complex interactions between physiological, psychological and social factors underline the etiology of these problems (6). Sexual dysfunction in MS may occur primary as a result of demyelinating lesions of the neurologic pathways responsible for sensation or sexual response (7). Secondary sexual dysfunctions are results of indirect changes in sexual functions due to MS symptoms, such as fatigue or spasticity (8). Tertiary sexual dysfunctions are consequences of biopsychosocial problems of MS individuals (9). There are many manifestations caused by multiple sclerosis that interfere with sexual activity and sexual satisfaction. Impaired sexual functioning may lead further to isolation, embarrassment, social anxiety, loss of confidence or motivation, poor self-esteem, and depression, causing lowering overall well-being and quality of life (10). It is well known that persons with MS have lower QOL even when comparing with persons with other chronic diseases and sexual function is one of the important factors that can lead to such results (11, 12). Also, multiple sclerosis is disease that affects mostly younger adults between ages 20 and 40 years, at the time when person is normally sexual active and makes important personal decisions in establishing intimate relationships and planning families. As a result, problem in sexual function may cause great burden and influence poorer quality of life. Sexual function is a component of quality of life that affects not only the individual’s quality of life, but also the partner’s (13). One study even suggests that SD has a larger negative influence on health-related quality of life than physical disability alone (3). Sexual dysfunction is associated with psychological and relational problems experienced by patients, including lower self-esteem, with approximately 60% of patients changing the manner they perceived themselves after the diagnosis of MS (14). Although sexual dysfunctions are very often present during the multiple sclerosis disease course, high percentage of patients, especially women do not report such problems to their therapists (15). On the other side, clinicians also may underestimate patient symptoms in up to 40% of cases (16). SD remains substantially underdiagnosed in people with MS for various reasons (17). One of the reasons might be the fact that the communication about sexuality is not part of routine care (18). It is estimated that up to 90% of MS patients have never discussed their sexuality with their treating neurologist (19, 20). Investigations on possible risk factors for sexual dysfunctions and their impact on quality of life in multiple sclerosis patients can help in identifying patients who might have benefits from screening for sexual dysfunctions and improving quality of life.

2. OBJECTIVE

The aim of the study was to evaluate the influence of sociodemographic and clinical characteristics on sexual functions domains of health related quality of life (HRQOL) in multiple sclerosis patients.

3. PATIENTS AND METHODS

Participants

This study included 100 patients with multiple sclerosis treated at the Department of Neurology, Clinical Center University of Sarajevo. Patients included in the study satisfied the following criteria: clinically definite diagnosis of MS (21), Expanded Disability Status Scale (EDSS) score between 1.0 and 6.5 (22), 18 years of age or older and were able to give written informed consent. Exclusion criteria were cognitive deterioration (Mini Mental Status Test Score <26) (23) and presence of any acute somatic or neurological disease. This was an independent, observational, cross-sectional study.

Procedure and ethical considerations

The Ethics Committee of the Clinical Center University of Sarajevo gave ethical consent to perform the study after evaluating protocol. Each patient gave informed written consent to use the results obtained for publication before enrollment.

Measures

Patients reported their QoL using a self-administered questionnaire. We used the disease-specific Multiple Sclerosis Quality of Life-54 (MSQoL-54), developed by Vickrey et al. (24), that had been translated and culturally adapted to the local language (25). This questionnaire consists of 18 MS-specific dimensions and ratings for overall QoL (MS-18 module), in addition to the generic QoL features of the Short-Form 36-Item Health Survey Questionnaire (SF-36) (26) to obtain the MSQoL in reference to the following domains: physical health composite score (PHCS), mental health composite score (MHCS), physical function (PF), role limitation-physical (RP), emotional wellbeing (EWB), mental health (MH), role limitation-emotional (RE), bodily pain (BP), energy (EN), health perception (HP), social function (SF), change in health (CH), health distress (HD), cognitive function (CF), sexual function (SxF), satisfaction with sexual function (SxS), and overall quality of life (QoL). The MSQoL-54 item results are transformed linearly to 0–100 scores, and final scores are calculated by averaging items within the scales.

Statistical analyses

Statistical analyses were performed for patients satisfying all the inclusion criteria. Demographic parameters and other baseline characteristics have been summarised. The Linkert method was adopted to assemble MSQoL-54 scale scores and the raw scores were transformed into 0-100 scales. Mann-Witney and Kruskal Wallis tests were used for comparisons between sociodemographic and clinical characteristics and QoL scores.

4. RESULTS

Out of 69% of patients included in the study were female. The mean age of patients at enrolment was 39.88+/−10.05 years, and 64% of patients were married. The mean disease duration at enrolment was 9.59+/−7.30 years. 72%
had relapsing-remitting MS at the time of enrolment, 25% had secondary progressive type and only 3% of patients had primary progressive type of disease. The mean EDSS score of all patients was 3.57 +/- 1.73. 67% of patients had a high school degree, 23% had a college degree while only 10% had primary education. 38% of patients were employed, 6% were students, 25% of patients were unemployed and 31% retired. 60% of patients reported to have sexual dysfunction, while 15% did not respond to questions regarding sexual function. Among patients reporting sexual dysfunction 55% were female patients. Younger patients had statistical significant higher median value of sexual function score (91.68 vs. 58.28, p=0.001) comparing to older patients with statistically significant higher median scores considering satisfaction with sexual life among younger patients (62.5 vs 37.5, p =0.019). Employed patients also showed statistical significant higher median value of sexual function score (82 vs. 66.7, p=0.003) comparing to unemployed patients and also statistically significant higher median scores considering satisfaction with sexual life among employed patients (p=0.001). There were no differences in sexual functions scores considering gender, marital status and education. Patients with higher level of disability, progressive type of disease, more relapses and longer duration of disease had statistical significant lower median value of sexual function score (Table 1). They also had statistical significant lower median value of satisfaction with sexual life scores, except for disease duration (Table 2).

5. DISCUSSION

In the present study 60% of patients reported to have sexual dysfunction, which is in correlation with high prevalence of sexual dysfunction in MS patients reported in other studies. Recent study reported prevalence of sexual dysfunction in 70.3% MS patients (1). Other studies showed similar results such as 82.5%, 63.5%, 87.1%, 55.6% and 27.27% respectively (27, 28, 29, 30, 31). 13% did not respond to questions regarding sexual function in the present study. Among patients reporting sexual dysfunction 55% were female which is in correlation with reported results that sexual dysfunction due to MS is more prevalent in women than men (31). Some studies reported the prevalence of sexual dysfunction in women as 55%, 66% and 87.1% respectively (32, 35, 27). One study showed that women with MS have at least one sexual dysfunction more frequently than men and the percentage of women with at least one sexual problem exceeds 70% (34, 35). The main sexual problems of women with MS include the loss of libido, problem with orgasm and vaginal lubrication and the loss of genital sensation are the most often reported sexual problem (36). In the present study there were no differences in MSQOL -54 sexual functions scores considering gender and marital status. Other studies mostly reported higher scores of MSQOL-54 in the married women with MS and SD compared to those without SD in all the dimensions, except for role limitation due to mental problems and change in health (1). Two studies reported a negative and significant relationship between most dimensions of MSQOL (such as physical health, role limitation due to physical problems, social function and cognitive function) and sexual dysfunction (11, 37). Other studies also found a significant negative correlation between physical and mental dimensions of MSQOL and sexual function problems (3, 38). Considering marital status results from other studies are different. While some studies found inverse correlation between and duration of marriage and sexual dysfunction (27), others did not observe such relationships (39). Different result could be explained by different psychosocial and cultural issues

| Clinical characteristics | Sexual function (MSQOL-54 domain*) | p   |
|--------------------------|-----------------------------------|-----|
| EDSS**                   | <=3,5                             | 95.84 (75.03-100.00) | <0.001. |
|                          | >4,0                             | 41.49 (33.50-66.70)  |       |
| Disease type             | Relapsing-remitting               | 91.66 (58.29-100.00) | <0.001 |
|                          | Progressive                       | 41.49 (33.50-66.68)  |       |
| Number of relapses       | <=2                              | 100.00 (83.25-100.00) | <0.001 |
|                          | >2                               | 66.70 (33.50-91.66)  |       |
| Disease durations (years) | <10                             | 83.35 (58.29-100.00) |       |
|                          | >=10                             | 66.70 (33.50-91.66)  | 0.11  |

Table 1. Sexual function scores (MSQOL-54) according to EDSS, disease type, number of relapses and disease duration. * Multiple Sclerosis Quality of Life questionnaire-54, **Expanded Dysability Status Scale

| Clinical characteristics | Satisfaction with sexual life (MSQOL-54 domain*) | p   |
|--------------------------|-----------------------------------------------|-----|
| EDSS**                   | <=3,5                                         | 75.00 (50.00-75.00) | <0.001 |
|                          | >4,0                                          | 50.00 (25.00-50.00) |       |
| Disease type             | Relapsing-remitting                           | 50.00 (25.00-75.00) | <0.001 |
|                          | Progressive                                    | 37.50 (25.00-50.00) |       |
| Number of relapses       | <=2                                           | 75.00 (50.00-75.00) | <0.001 |
|                          | >2                                            | 50.00 (43.75-50.00) |       |
| Disease durations (years) | <10                                           | 50.00 (50.00-75.00) |       |
|                          | >=10                                          | 50.00 (25.00-50.00) | NS    |

Table 2. Satisfaction with sexual life (MSQOL-54) according to EDSS, disease type, number of relapses and disease duration. * Multiple Sclerosis Quality of Life questionnaire-54, **Expanded Dysability Status Scale
that can interfere with sexual feelings and sexual response. No significant differences were observed in terms of sexual function considering education in the present study. These results are similar to the results of other studies (39, 40). Still, some studies reported the correlation of education and sexual function in MS patients (30, 32). These results may be explained by differences in perception of sexuality depending on educational level. Younger patients reported significant better scores of sexual function and satisfaction with sexual life in the present study. These results are in correlation with the results of other studies that report significant inverse correlation between age and sexual functions in MS patients (1, 35, 41). Other studies also reported older age as a prognostic factor that increases the risk of sexual disorders in women with MS (6, 31, 32, 35, 42). Still, there are studies that did not show relationships between age and sexual functions (32, 33). Different results could be explained by the facts that even normal aging brings life transitions that can create opportunities for older adults to redefine the meaning of sexuality and intimacy. For persons with MS these challenges are even bigger because of physical disability and unpredictable disease course. Employment status showed positive correlation with sexual functions scores in this study, which is in correlation with the results of other study (31). These results could be explained by better physical and mental condition and higher overall satisfaction with life among employed patients. Patients with higher level of disability, progressive type of disease, more relapses and longer duration of disease significant lower all sexual function scores and satisfaction with sexual life scores, except for disease duration. Sexual dysfunction is highly correlated with the severity of neurological impairment. About 80% of patients with an EDSS score >4.0 have sexual dysfunction (43). Other studies also reported significant negative correlation between the EDSS score and sexual function scores (1, 6, 33, 34, 39, 44, 45). One study showed that the risk of sexual dysfunctions are three time higher in progressive type compared to relapsing-remitting type of multiple sclerosis (52). Another study also observed correlation between sexual dysfunction and the progressive type of the disease, similar as the present study (46). Still, many other studies did not show significant difference between sexual function and the clinical course of the disease (29, 20). Different results might be explain by influence of other factors such as age and level of disability in the group of patients with different disease course. Patients with longer disease duration has significant lower sexual function scores. The result are similar to the result of other studies (30, 34, 39). These results might be explained by aging, increasing of disability level and conversion to progressive disease type.

6. CONCLUSION

Aging, disability and progression are major factors that contribute to lower sexual function scores and satisfaction with sexual life among multiple sclerosis patients. Although women reported sexual problems more often then men, impact of these problems on quality of life are similar in men and women with MS. It is very important to initiate discussion of potential problems in sexual function with MS patients in order to allow earlier diagnosis and treatment. Further investigations considering another factors that are predictors of quality of life considering sexual function in MS are needed.

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