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Depression, Sexual Function and Sexual Quality of Life in Iranian Women with Multiple Sclerosis (MS)

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ABSTRACT

Background & Objective: Women with multiple sclerosis (MS) suffer from a wide range of complications. The present study was conducted with aim to compare sexual dysfunction (SD), depression, and sexual quality of life in women with MS and women without MS.

Materials & Methods: This cross-sectional study was conducted on 54 women with MS and 108 women without MS in Sina hospital affiliated to Tehran University of Medical Sciences in 2019.

All participants were asked to fill valid and reliable versions of BDI (Beck Depression Inventory), FSFI (Female Sexual Function Index), and SQOL (sexual quality of life) questionnaires. Data were analyzed using SPSS software (version 23). P<0.05 was considered statistically significant.

Results: The two groups of women with MS and those without MS were significantly different regarding the mean scores for BDI, SQOL, and orgasm and satisfaction domains of FSFI. Sexual quality of life (SQOL) had a significant positive correlation with FSFI (r=0.568, P<0.001) and a significant negative correlation with BDI scores (r=-0.528, P<0.001). Considering SQOL as a dependent variable and age, education level, marriage duration, husband's age, and BDI and FSFI scores as independent variables, linear regression analysis showed that education level, BDI score, and FSFI score were independent predictors of SQOL in all participants; while among MS patients, only BDI and FSFI were significant predictors of SQOL.

Conclusion: Sexual quality of life and sexual function should be considered in women with MS, and depression should be assessed and treated as a possible risk factor.

Keywords: Multiple Sclerosis, Sexual Function, Depression, Iran

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1. Introduction

Multiple Sclerosis is an auto-immune disease characterized by the central nervous system demyelination (1). The exact etiology of MS is unknown, but both genetic and environmental factors are effective in development of the disease. MS is more prevalent in women, so that about two-thirds of people with MS are women of childbearing age (2-4).

MS can influence on different aspects of MS patients' lives, such as mental, physical, sexual, social, and occupational aspects (1). Sexual dysfunction (SD) is one of the major problems that patients usually complain about it; however, it may be ignored, especially in developing countries such as Iran. The prevalence of SD in patients with MS is reported as 40-80% (2, 5).

The most common symptoms of sexual dysfunction are loss of desire and genital sensation, anorgasmia or hyporgasmia, and reduction of vaginal lubrication (5). Sexual quality of life can be affected in different diseases other than multiple sclerosis such as polycystic ovary syndrome (PCOS) and cervical cancer (6, 7). Previous studies demonstrated that the neurological, psychological, physical, and cultural dimensions of sexual life are impaired in women with MS. Sexual dysfunction could impair the quality of life and even lead to divorce and family failure (2, 8).

Several studies have evaluated sexual function in Iranian women with multiple sclerosis, however, there is no report regarding the sexual quality of life in these women. The present study was conducted with aim to compare sexual dysfunction, depression, and sexual quality of life in women with MS and those without MS.

2. Materials and Methods

This cross-sectional study was conducted in Sina hospital affiliated to Tehran University of Medical Sciences between July and September 2019. Inclusion criteria for the patient group were married women, age 18-50 years, MS diagnosis for at least 6 months, no relapses during the last month, no use of anti-depression drugs, and no other chronic diseases. Inclusion criteria for controls were healthy married women aged 18-50 years, no anti-depression drug usage, and no chronic diseases. They were selected from hospital staff and the relatives of the patients.

Informed consent forms were obtained from the subjects. All participants were asked to fill the valid and reliable versions of BDI (Beck Depression Inventory), FSFI (Female Sexual Function Index), and SQOL (sexual quality of life) questionnaires.

BDI includes 21 questions, each with a score scale of 0 to 3. Higher BDI scores show more severe depression (BDI scores 0-9: not-depressed, 10-18: mild depression, 19-29: moderate, and >29: severe depression) **(9)**.

FSFI has 19 questions, including six domains (desire, arousal, lubrication, orgasm, satisfaction, and pain). Lower scores show more sexual dysfunction. The cut-off points of 26.55 is used to determine sexual dysfunction **(10)**.

SQOL includes 18 questions, each containing a six-point scale answer (completely agree to completely disagree); higher total scores show higher quality of life **(11)**.

Data were analyzed using SPSS software (version 23) (SPSS Inc., Chicago, IL, USA). Results were presented as mean ± SD and frequencies. The independent sample t-test was applied to compare continuous variables, and the Pearson X2 test and Fisher's exact test were used for the assessment of categorical variables. Linear regression analysis and correlation coefficient were also conducted. $P<0.05$ was considered statistically significant.

3. Results

Overall, 162 individuals participated in this study (54 women with MS as cases and 108 women without MS as controls). The characteristics of cases and controls were presented in Table 1.

Table 1. The comparison of characteristics in cases and controls.

Quantitative variable	Case group Mean	Control group Mean
Age	35.7±7.7	33.1±7.1
Years of education	11.5±3.9	13.3±3.8
Duration of disease	6.75±5.6	-
Duration of marriage	14.28±9.8	11.3±8
Husband's age	41±8.9	37.9±8.5
Qualitative variable	Case group No. (%)	Control group No. (%)
Type of MS **RRMS** **PPMS** **SPMS**	 48 (29.6%) 2 (1.2%) 4 (2.5%)	-

The mean scores of BDI, SQOL, and FSFI orgasm and satisfaction domains were significantly different between the case and control groups (Table 2).

Table 2. Mean BDI, SQOL, FSFI and its domains in cases and controls.

Variable	Case group	Control group	P value
BDI	17.8±11	13.1±9.2	0.009
Mild depression	12(23.5%)	46(42.6%)	
Moderate depression	16(31.4%)	16(14.8%)	0.001
Severe depression	9(17.6%)	5(4.6%)	
SQOL	78.2±21	84.8±18.9	0.045
FSFI	24±6.6	25.7±7.4	0.168
Desire	3.6±1.13	3.7±1.2	0.443
Arousal	3.6±1.4	3.9±1.4	0.259
Lubrication	4.2±1.4	4.4±1.5	0.459
Orgasm	3.9±1.6	4.5±1.5	0.032
Satisfaction	4.2±1.3	4.7±1.3	0.041
Pain	4.1±1.8	4.2±1.4	0.642

SQOL score had a significant positive correlation with FSFI (r=0.568, P<0.001) and a significant negative correlation with BDI score (r=-0.528, P<0.001). The correlation between FSFI and BDI scores was also significantly negative (r=-0.325, P<0.001).

According to the total FSFI cut-off point (26.55), 77 participants (47.5%) had sexual dysfunction (53.7% of cases and 44.4% of controls) (P=0.168).

Considering SQOL score as a dependent variable, and age, education level, marriage duration, husband's age, and BDI and FSFI scores as independent variables, linear regression analysis showed that education level, BDI score, and FSFI score were independent predictors of SQOL in all participants (Table 3).

Table 3. Linear regression analysis among all participants, considering SQOL score as dependent and age, education level, duration of marriage, husband's age, BDI score, and FSFI score as independent variables.

Variables	B	P value
Age	-0.307	0.450
Duration of marriage	0.112	0.684
Husband's age	0.036	0.913
FSFI	1.203	0.000
BDI	-0.672	0.000
Years of education	0.813	0.017

Also in MS patients, considering SQOL score as a dependent variable and age, education level, marriage duration, husband's age, duration of the disease, type of MS, BDI score, and FSFI score as independent variables, linear regression analysis showed BDI and FSFI scores as independent predictors of SQOL (Table 4).

Table 4. Linear regression analysis among MS patients, considering SQOL score as dependent and age, education, duration of marriage, husband's age, duration of the disease, type of MS, BDI score, and FSFI score as independent variables.

Variables	B	P value
Age	-0.989	0.202
Duration of marriage	0.198	0.693
Husband's age	0.209	0.710
FSFI	1.032	0.016

Variables	B	P value
BDI	-0.840	0.001
Years of education	1.084	0.128
Duration of disease	0.135	0.764
Type of MS	6.294	0.170

4. Discussion

To the best of our knowledge, this was the first study designed to compare sexual dysfunction, depression, and sexual quality of life between women with and without MS. The results of the present study showed significantly lower mean SQOL score (84.8 vs. 78.2), higher BDI score (17.8 vs. 13.1), and higher major depression in women with MS than in those without MS. Moreover, the rate of sexual dysfunction (SD) was higher in women with MS than in those without MS (53.7% vs. 44.4%), although this rate was lower than the rate previously reported in Iran by Ghajarzadeh et al (66%) **(1)**.

According to the study conducted by Direkvand-Moghadam et al **(12)** 75.9% of healthy Iranian women suffer from sexual dysfunction. A lack of awareness of Iranian women regarding sexual pleasure and formal training on sexual function may lead to the high prevalence of female sexual dysfunction **(12)**.

Mohammadi et al **(13)** in their study considered the cut-off point 28 and found that 55.3% of Iranian MS women had SD. Konstantinidis et al **(14)** study on 248 Greek women with MS showed SD in 64.5% of the participants. Other studies showed SD in 37.7% of Italian women with MS, and 44.5% of German women with MS (15, 16). The frequency of SD among women with MS was reported as 27% in a Polish study, while it was 95.2% in a Turkish study **(17, 18)**. These different frequencies might be due to different sample sizes or different cut-off points. In a systematic review conducted by Zhao et al **(19)** the risk of SD in women with MS was 1.87-fold of that in those without MS.

In the present study, BDI had a negative correlation with SQOL, while it has a positive correlation with FSFI. The regression analysis also showed that in both groups, BDI and FSFI scores were as independent predictors of SQOL (BDI: negative, FSFI: positive predictor).

In a study by Alehashemi et al **(2)**, only orgasm score differed significantly between cases and controls, but Ghajarzadeh et al **(1)** found considerable differences in all domains of FSFI score. In the current study, orgasm and satisfaction domains were significantly lower in women with MS than in women without MS.

Previously, long disease duration was considered as an important factor for SD **(20)**, while according to the results of the present study, it was not a predictor of SQOL.

Different factors could affect sexual function in women with MS, including depression, duration of the disease, urological complications, hormonal imbalance, sensory dysfunction, and adverse effects of medications **(21-23)**. Near half of patients with MS complain about major depression, which remains unrecognized in most cases and interferes with their functions **(24, 25)**.

Voiding dysfunction could be another contributor to SD. In a previous study, SD was reported in 91% of women with MS with detrusor overactivity and in 66% of those without it **(15)**.

Since MS occurs mostly in the third and fourth decades of life, it should be considered in women with MS, especially those in reproductive age. It could arise at any time during the MS course and influence marital relationships and quality of life **(14, 15, 26)**. In developing countries such as Iran, most patients underestimate their sexual problems. Careful consideration should be done by physicians. In the current study, patients with sexual dysfunction and depression were referred to as psychiatrists.

Our study had some limitations. First, it was conducted in a tertiary hospital. Second, other complications, such as avoiding dysfunction were not assessed. To overcome these limitations, larger multi centric studies to evaluate all sexual dysfunction should be carried out.

5. Conclusion

Sexual quality of life and sexual function should be considered in women with MS. Depression should be assessed and treated as a possible risk factor.

6. Declarations

Acknowledgments

Not applicable.

Ethical Considerations

All participants filled out informed consent and the study had been approved by ethics committee of TUMS.

Authors' Contributions

A.M.: Study conception, data gathering, article writing. M.G.: Data analysis, article writing. F.D.T.: data gathering, article writing. A.A.: Study design, article writing, article editing.

Conflict of Interest

The authors declare no conflict of interest.

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