

# QUALITY OF LIFE AND MENTAL STATUS OF PATIENTS WITH MULTIPLE SCLEROSIS-CITY OF MOSUL\_IRAQ

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Life; Multiple; Mental; Sclerosis; States; Quality.

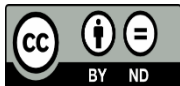
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**ABSTRACT**

This study was conducted as a descriptive study to determine the quality of life (QoL), mental states and affecting factors in Multiple Sclerosis (MS) patients receiving treatment in an Ibn Sina Teaching hospital, City of Mosul, Iraq. The sample of the study consisted of 100 patients with MS diagnosed in Ibn-Sina teaching Hospital, City of Mosul, Iraq; who were being treated in the Neurology Diseases Clinic and were followed up in the outpatient clinic and accepted to participate in the study. "Short Form SF-36" and General Health Questionnaire -12 were used as data collection tools. In the analysis of the data, descriptive statistics, independent groups t test, Mann Whitney U test were used. 64.6% of the patients participating in the study were women, 64.4% were married, 44.4% were not working. 11.1% of the patients had a family history of MS and 13.3% were using assistive devices. It was determined that 26.8% of the patients had a high risk of experiencing mental problems. The mean score of the General Health Questionnaire-12 scale of the patients using assistive devices was significantly higher ( $p < 0.05$ ). According to the results of the study, it was determined that the QoL of MS patients was low and the mental status of nearly half of the patients was not good.

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## 1. INTRODUCTION

Multiple Sclerosis (MS) is a chronic disease of the central nervous system (CNS) that causes physical disability, mostly affects the young population, and progresses with attacks and remissions [1], [2]. Although its prevalence varies depending on geographical features, it is stated that the prevalence of MS in the world is up to 300/100,000 [3], [4]. Studies on the epidemiology of MS are still underway in our country and it is estimated that it may be 30-40/100.000 [4]. There are many problems that can develop and be observed in patients with MS over time. Common problems; excretory problems, sexual problems, swallowing problems, cognitive problems, movement problems, fatigue, balance problems, spasm, susceptibility to trauma, sleep problems, pain, depression, and anxiety [5]. It is stated that these problems are mostly of psychological origin and decrease the Quality of Life (QoL) of the patients. Only by knowing about behavioral, mental, and social aspects can improvements in the QoL of MS patients be achieved. For this reason, learning about the QoL of MS patients is useful for public health officials and policymakers since it will assist with making policies and putting interventions in place to improve the QoL of MS patients.

The researchers sought to understand how disease severity, affect patients' overall quality of life in MS.

## **2. METHODS**

A descriptive study was completed in Ibn Sina Teaching Hospital at the City of Mosul-Iraq between January 2020 and December 2020. A convenience sampling method was used in the study, which included 100 patients over the age of 18 who were treated in the Neurology Diseases Clinic of Ibn Sina teaching Hospital. Patients with a pre-diagnosis of MS who came to the outpatient clinic were not included in the study. The dependent variables of the study are the score averages of “Short Form (SF-36) QoL” and “General Health Questionnaire-12 (GHQ-12)”. The independent variables are the demographic characteristics of the patient and the characteristics of the disease (drug use, assistive device use). As data collection tools, a questionnaire form created by the researcher through a comprehensive review of literature, “Short Form SF-36” QoL Scale, and General Health Questionnaire – 12 has been used. The questionnaire form consisted of 15 questions in total, including the characteristics of the patient and the disease: Gender, age, education level, marital status, child status, employment status, income level. The characteristics of the disease consist of information including a family history of MS, the drugs used, the route of administration of the drugs used, the frequency of using the drug, the use of assistive devices in daily living activities, the presence of disease findings affecting their life activities, and when they were diagnosed with MS. The SF-36 scale, which was developed by Ware in 1987 (Ware, 2004) was used to evaluate the QoL of the participants in the study. In this scale, which examines health in eight components, high scores indicate a better level in health. As the name suggests, the scale consists of 36 items and these provide the measurement of 8 dimensions: physical function, social function, role limitations due to physical problems, role limitations due to emotional problems, mental health, energy/vitality, pain and general perception of health. Scoring is made over 100 points in the SF-36 scale, and the scores vary between 0 and 100 points for each component. High scores on this scale indicate a better level of health, while low scores indicate deterioration in health. In the validity and reliability study of the scale, Cronbach's Alpha values for sub-dimensions range from 0.79 to 0.99 [6]. In this study, the Cronbach's Alpha value was determined as 0.89. General Health Questionnaire (GHQ-12) that Developed by David Goldberg from Manchester University in 1972, is a self-filled screening test created to detect mental problems encountered in the community and in non-psychiatric clinical settings. It is aimed to be a short, easy-to-administer test and to detect the kind of disorders that will prompt the person to apply to a clinic other than psychiatry despite having a mental problem. Its validity and reliability were reported by a previous study [7]. In this study, a 12-question form was used. Each question consists of four ratings ranging from “less than usual” to “more than usual”. In GHQ12, the total score is between 0 and 12 according to the GHQ type scoring method. Obtained values indicate risk groups. The scores of individuals over 12 items show that they have low, medium, and high risk for mental problems. Those who score less than 2 on the scale have low risk, those who score between 2-3 have medium risk, and those who score 4 or more have high risk. High scores require individuals to be evaluated psychologically (depression, anxiety). The scale's Cronbach's Alpha value is 0.787 (Kılıç, 1996). In this study, the Cronbach Alpha value was determined as 0.924.

All procedures performed in studies involving human participants were in accordance with the ethical standards of the institutional and/or national research committee and with the 1964 Helsinki declaration and its later amendments including informed consent and confidentiality of all personal information. Also, the Ethics committee of the Mosul University has approved the research with ethical Number: IRB. (CCRME-Med-19-24) on 24/10/2019.

## **3. Statistical Analysis**

SPSS 25.0 package program was used to calculate the data. In the analysis of the data, descriptive statistics, the significance test of the difference between the two means (t-test in independent groups), Mann Whitney

-U test were used.

#### 4. RESULTS

According to the results of the study, it was found that the age of less than 40 years recorded 70%, while those over 40 years old reached 30%. The current study showed that gender has high differences between women (65%) and men (35%).

On the same trend, the unmarried patient has a 62% higher incidence than the married 38%.

The current study also showed a slight increase in the incidence of the disease among workers 56% and 44% for unemployed patients. 64.6% of patients participating in the study were determined to have more than one complaint, 80.0% were tired, 44.4% had balance problems, 35.6% had pain, 20.0% had sexual problems, 17.8% had intestinal problems and 8.9% reported difficulty swallowing. (Table 1). In the study, the lowest mean score for the SF 36 QoL scale was in the pain sub-dimension ( $28.89 \pm 27.07$ ), and the highest mean score was in the mental role sub-dimension ( $\pm 45.84$ ). The mean patients' physical health summary score was 41.74 ( $\pm 6.35$ ), the mean mental health summary score was 37.62 ( $\pm 6.92$ ), and the mean GHQ-12 score was 2.69 ( $\pm 3.66$ ) (Table 2).

However, a statistically significant difference was found between the mean sub-dimension of the physical role of the SF-36 QoL scale according to patients' work status ( $p < 0.05$ ) (Table 3).

**Table 1: Disease-Related Characteristics and Problems of the Patients (n=100)**

Family History of MS	No.	%
• Yes	12	12
• No	88	88
<b>Drug Use Status</b>	No	%
• Yes	87	87
• No	13	13
<b>Use of Assistive Devices</b>	No	%
• No	87	87
• Yes	13	13
<b>Problems Experienced</b>	No	%
• None	16	16
• One complaint	20	20
• multiple complaints	64	64
<b>Fatigue</b>	No	%
• No	80	80
• Yes	20	20
<b>Pain</b>	No	%
• No	20	20
• Yes	80	80
<b>Bladder Disorders</b>	No	%
• No	65	65
• Yes	35	35
<b>Bowel Problems</b>	No	%
• No	83	83
• Yes	17	17
<b>Balance Disorders</b>	No	%
• No	56	56
• Yes	44	44
<b>Swallowing Difficulty</b>		

• No	91	91
• Yes	9	9
<b>Sexual Issues</b>	No	%
• No	80	80
• Yes	20	20

**Table 2:** Distribution of the “SF-36 QoL Scale” and GSA-12 Scale Scores of the Patients

QoL Scale	Min	Max	$\bar{x} \pm SS$
Physical Function	0	100	57.12± 33.71
Physical Role	0	100	52.98 ±45.2
Pain	0	90	27.99± 28.4
General health	34	85	56.4 ±10.5
Vitality	19	70	53.9± 8.4
Social Function	0	87.5	45.6 ±14.2
Mental Role	0	100	61.1 ±43.1
Health Functioning	15	80	54.20± 11.2
Physical Health Summary Score	53	59.4	42.66 ± 6.1
Mental Health Summary Score	51	54.8	36.8± 5.4

(QoL: Quality of life Min: Minimum; Max; Maximum  $\bar{x}$ : Arithmetic Mean; SS: summation of square)

**Table 3:** Comparison of the Mean Scores of the SF-36 QoL Scale Sub-Dimensions According to the Demographic Characteristics of the Patients.

Demographic features	Physical Function		Physical Role		Pain		General Health Perception		Vitality		Social Function		Mental Role		Mental Function	
	U	P	U	P	U	P	U	P	U	P	U	P	U	P	U	P
<b>Age</b>	203	0.05*	166.4	0.161	205.4	0.7	14.5	0.3	161.4	0.16	174.4 2	0.3	185.4 0	0.4	177.40	0.232
<b>Gender</b>	177	2.1	206.4	0.05*	152.4	0.9	213.4	0.6	197.4	0.4	214.0	0.8	216.4 0	0.7	204.60	0.474
<b>Marital status</b>	186	0.245	20.4	0.487	174.1	0.2	158.6	0.2	209.0	0.05*	185.4	0.2	20.3. 1	0.05*	213.45	0.652
<b>Working Status</b>	185	0.122	166.4	0.035	20.6. 4	0.3	164.7	0.05	234.1	0.3	25.6	0.9	23.60	0.2	193.45	0.157
<b>Child Status</b>	132	0.001 *	187.0	0.261	204.3	0.5*	181.4 0	0.3	212.5	0.8	167.2	0.01*	185.6	0.3	194.6	0.372

(U: The Mann-Whitney test statistic: Probability; \*: significant)

**Table 4:** Distribution of General Health Questionnaire-12 scores According to Some Characteristics of the Patients

Demographic features	N	Mean	SS	U*	P
Age					
40	70	2.46	3.64	220.00	0.841
40	30	3.12	3.87		
Gender	N	Mean	SS	U*	P
Men	35	3.14	4.15	204.00	0.364
Women	65	1.87	3.4		
Marital status	N	Mean	SS	U*	P

Married	38	2.51	3.65	2.6.00	0.487
Unmarried	62	3.20	3.92		
Job	N	Mean	SS	U*	P
Employee	56	3.24	3.54	233.00	0.05*
Unemployed	44	2.56	4.14		
Child Status	N	Mean	SS	U*	P
Yes	37	3.31	3.18	95.00	0.131
No	63	3.45	3.87		
Drug Use Status	N	Mean	SS	U*	P
Uses	87	2.74	3.77	45.00	0.348
not using	13	3.10	4.17		
Use of Assistive Devices	N	Mean	SS	U*	P
not using	87	7.1	4.66	48.00	0.001*
Uses	13	2.4	3.04		

(SS: Sum of squares; U: The Mann-Whitney test statistic; Probability; \*: significant)

## 5. DISCUSSION

A great attention has been given to the concept of quality of life in people with multiple sclerosis. While current study is very young, early studies in this area began appearing in the literature in the early 1990s. Because the illness is progressive and debilitating, quality of life is greatly diminished. The goal of this research was to use the Arabic version of the SF-36 to evaluate the effect of different MS symptoms to health population-based normative samples. In this research, we looked at the connection between the MS mental status and two other measures of cognitive performance to see whether there was any correlation. We weren't interested in comparing the overall quality of life to a control group, but rather in the connection between measures of cognitive function and motor function and quality of life in general. In the present study, it was determined that most of the patients participating in the study had more than one complaint, 80.0 % fatigue, 44.4 % balance problems, 35.6 % pain, 20.0 % sexual problems, 17.8 % bowel problems and 8.9 % stated that he had difficulty swallowing. In the literature, 75-87 % of MS patients complained of fatigue. Two-thirds of these patients cited fatigue as one of the three worst symptoms of their disease. Fatigue in MS is more common than the fatigue seen in healthy adults or individuals with other diseases and affects daily living activities more [8]. Similar to this study, in another study, fatigue was reported to be among the problems frequently stated at a rate of 22.0%. It was stated that balance symptoms negatively affect the QoL [9], [10]. Fatigue, pain, and balance problems are common in the study, which is an expected result in line with the literature. In the study, the lowest mean score of the SF 36 QoL Scale was in the pain sub-dimension (28.89±27.07), and the highest mean score was in the mental role sub-dimension (60.00±45.84). The mean physical health summary score of the patients was 41.74 (±6.35), the mean mental health summary score was 37.62 (±6.92), and the mean GHQ-12 score was 2.69 (±3.66). Considering the highest scores that can be obtained from the SF-36 and GHQ-12 scales, it is seen that the average scores obtained are not at the desired level. Studies have clearly emphasized that the physical and mental health, social life, vitality and general health of MS patients are affected [11], [12]. In contrast to this study, in a previous study, the pain, vitality, social function and mental function mean scores were reported to be higher, while the physical role, physical function, general health and mental role mean scores were reported to be lower [13].

In another study, it was found that QoL scores in patients with MS were lower than in healthy individuals and those with another chronic medical-neurological disease [14]. The results obtained from the study showed that the QoL of the patients was low. At the same time, getting a low score from the pain sub-dimension depends on the severity of the pain in the daily life of the patient. In the study, no statistically significant difference was found between the sub-dimensions of the SF-36 QoL scale according to the age, gender, and marital status of the patients ( $p>0.05$ ). However, a statistically significant difference was found between the

physical role sub-dimension mean score of the SF-36 QoL scale according to the working status of the patients ( $p < 0.05$ ). In this case, we can say that working patients can perform physical activities. Unlike this study, did not find a significant difference between the QoL of actively working and non-active working patients as a result of their study [15]. A significant difference was found between the physical function sub-dimension mean scores of the SF-36 QoL scale of the patients according to the status of having children ( $p < 0.05$ ). It is observed that patients who do not have children score higher. Therefore, the high scores of the patients who do not have children suggest that they can devote more time to their work and daily activities. It may be an indication that you will have difficulties in performing your activities. Scores on the GHQ-12 scale indicate that patients are at risk for mental problems. In the study, it was determined that 57.8% of the patients had low risk, 15.5% had medium risk, and 26.8% had high risk. In a study, using GSA-12, it is stated that the rate of depression varies between 16-48% of MS patients [16]. In the study of the rate of depression was found to be 45.7% [17]. However, in the study conducted it was stated that 13 of 23 MS patients had moderate/high level of depression [18]. In another study [19], depression was found in 19.5% of MS patients. Considering that almost half of the patients are at moderate or high risk in the results obtained, the necessity of closely monitoring the patients by nurses and evaluating them in terms of psychiatric diagnosis emerges. In the study, the mean GHQ-12 scale score was 3.07 ( $\pm 3.97$ ) in patients over 40 years of age, 3.10 ( $\pm 4.07$ ) in females, 3.19 ( $\pm 4.01$ ) in singles, 2.90 ( $\pm 3.92$ ) in unemployed patients, 2.41 ( $\pm 3.93$ ) in non-drug users 3.00 ( $\pm 4.05$ ) and 7.00 ( $\pm 4.52$ ) for those using assistive devices. There was no significant difference between the mean GHQ-12 scale scores according to age, gender, marital status, employment status, child status, and drug use ( $p > 0.05$ ) (Table 5). Like this study, no significant difference was found between age and depression in the previous studies [20]. In another set of studies, the age was not found to be associated with depression [21].

However, with the advancement of age, physical and mental functions are negatively affected. A statistically significant relationship was reported between gender and depression in a previous study [22]. In another study conducted in Norway, the depression level of patients was evaluated, and similar to this study, no significant difference was found between gender and depression status [23]. Found that the rate of depression is higher in men than in women [24]. When the literature was examined, it was seen that the relationship between gender and depression differed in the study results. This can be explained by the differences in the scales used and cultural values. Similar to this study; in another study, no statistically significant difference was found between marital status and depression. In addition, it has also been reported that marital status does not affect mental status [25]. It is stated in the literature that both income decreases, and expenses increase due to health expenditures [26]. In this study, the mean GHQ-12 score of the patients who did not work was higher. MS disease affects young adults more. Young patients must leave their jobs due to the problems that arise due to the disease, they cannot be productive, the increasing cost due to the disease increases the burden of the family and causes the feeling of guilt in the patients to come to the fore. In addition, a significant difference was found between the mean GHQ-12 scale scores of patients using assistive devices compared to patients not using assistive devices ( $p < 0.05$ ) (Table 4). Using assistive devices while doing their daily activities may have caused them to feel inadequate and have mental problems.

## 6. Conclusion

It has been observed that the most common problems experienced by patients due to MS are fatigue, imbalances, and pain. It was also determined that the patients got the lowest score in the pain sub-dimension among the quality-of-life sub-dimensions. Nurses should consider the patient's expression to evaluate fatigue both in the hospital environment and in the care of the patient at home. The criteria including changes in vital signs, difficulties experienced during daily activities such as walking and climbing stairs should be considered for the individuals in coping with fatigue, pain, and balance problems.

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Informed Consent: Written and verbal consent of patients was obtained before participating the study.

Peer-Review: The author will comply with the editor's decision on this matter.

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