https://doi.org/10.15218/ejnm.2025.19 Erbil j. nurs. midwifery, Vol. 8, No. (2), Nov 2025
Original Article

Quality of Life and Psychological Distress Among Patients with Multiple Sclerosis at Rizgary Teaching Hospital in Erbil City

Darbaz Karim Taha; *Department of Nursing, College of Nursing, Hawler Medical University, Erbil, Kurdistan Region, Iraq.* (Correspondence: darbaz.taha@hmu.edu.krd)
Abdulqader Hussein Hamad; *Department of Nursing, College of Nursing, Hawler Medical University, Erbil, Kurdistan Region, Iraq.*

ABSTRACT

Background and objectives: Multiple sclerosis is a chronic neurological condition that impacts both physical health and psychological well-being. The objective of this study is to assess the quality of life and psychological distress in multiple sclerosis patients at Rizgary Teaching Hospital in Erbil City, Iraq.

Methods: A quantitative descriptive cross-sectional study was conducted at the Rizgary Teaching Hospital-Multiple Sclerosis Center in Erbil City. 159 patients diagnosed with multiple sclerosis were recruited in the study to assess the quality of life and the prevalence of psychological distress among multiple sclerosis patients. Data collection was conducted by face-to-face interviews, data analysis was performed using SPSS version 28, and data collecting occurred from November 15, 2024, until February 15, 2025.

Results: The study revealed that patients with multiple sclerosis demonstrated a moderate to favourable quality of life, with physical health recording the lowest mean score (59.03 ± 14.28). Anxiety was observed in 34% while depression was in 22%. Gender, employment, and education were significant factors correlated with anxiety and depression. Psychological distress exhibited an inverse correlation with quality of life.

Conclusion: The findings of this study reported moderate to favourable quality of life, with physical health most affected. A significant proportion of patients reported high levels of psychological distress, including symptoms of anxiety and depression, which negatively impacted their overall well-being. Sociodemographic variables such as gender, education level, and duration of illness were found to have an influence on both quality of life and psychological distress levels.

Keywords: Multiple Sclerosis; Quality of Life; Psychological Distress; Anxiety; Depression.

Received: 26/04/2025 *Accepted: 05/07/2025* *Published: 30/11/2025*

INTRODUCTION

MS is a chronic and progressive neurological disorder that significantly affects not only physical functioning but also emotional and psychological well-being [1]. Understanding the quality of life (QoL) and psychological distress in individuals with multiple sclerosis (MS) is crucial for several reasons. Evaluating QoL provides critical insights into how patients perceive their health and overall satisfaction with life, which can significantly influence treatment adherence and health outcomes [2]. Moreover, psychological distress, including symptoms of anxiety and depression, is prevalent among patients with MS and has the potential to exacerbate physical symptoms, leading to a further decline in health status [3]. The interplay between physical symptoms, psychological factors, and the level of social support can exacerbate feelings of distress and diminish quality of life [4]. Investigating the quality of life (QoL) and psychological distress among individuals diagnosed with multiple sclerosis (MS) is essential due to the complex, interconnected impacts of MS on both physical and mental health. Research consistently demonstrates that MS patients face increased psychological distress, including depression and anxiety, which often exacerbates their physical symptoms and contributes to a further decline in QoL [5]. Studies have been consistent in showing that MS patients are at high risk for psychological distress in forms that would include depression and anxiety, thus worsening their physical symptoms and leading to an even reduced quality of life [6]. Despite these findings, there is limited research on the specific experiences of MS patients in diverse cultural settings, such as Erbil. This gap is significant because localized studies can inform contextually relevant healthcare interventions that align with cultural, social, and economic factors unique to specific populations. This study aims to address this gap by evaluating QoL and psychological distress in MS patients at Rizgari Teaching Hospital in Erbil, providing insights to develop targeted support strategies that could enhance well-being and clinical outcomes for MS patients in this region.

METHOD

A quantitative descriptive cross-sectional study was designed to evaluate the quality of life and prevalence of psychological distress among patients with multiple sclerosis. The study was conducted at the Rizgary Teaching Hospital in Erbil City, Iraq. The study was carried out between the period of October 2024 and February 2025. The target populations include patients diagnosed with multiple sclerosis attending Rizgary Teaching Hospital. The convenience sampling method was used to recruit participants. The sample size was determined using Araoye's single-proportion formula $n = (Z^2pq) / d^2$, where Z is the 95% confidence standard normal deviate (1.96), p the expected proportion (set to 0.50 to maximize variance and yield a conservative/'worst-case' sample), $q = 1 - p$, and d the desired absolute precision; we selected $d = 0.0777$ to target an acceptable ±7.77% margin of error at 95% CI that balances statistical precision with the practical constraints of recruitment and resources (a common practice when the true p is unknown and when planning within a feasible clinic sample), which leads to $n = (1.96^2 \times 0.50 \times 0.50) / (0.0777^2) = 159.08 \approx 159$ patients [7]. The required sample size is approximately 159 participants. Patients older than 18 years old, of both genders who were diagnosed with MS by the MS clinic committee and showed interest in participating were included. Newly diagnosed patients who first visit the MS clinic, patients diagnosed with other neurological

Conditions, and patients with compromised physical conditions preventing effective participation. Prior to data collection, formal permission was obtained from the ethics committee at the College of Nursing, Hawler Medical University. Moreover, the candidate provided informal consent for participation in the study after the researcher's assurance of confidentiality, anonymity, and the participants' autonomy. Formal administration was also secured from the Ministry of Health (General Directorate of Health) Administrative Arrangement of Rizgary Teaching Hospital / Erbil Government. A direct interview utilizing a questionnaire was administered to participants following the acquisition of their verbal agreement. The questionnaire consists of demographic variables. This includes age, gender, and residential area. Occupational status is also assessed. Marital status is evaluated with options including single, married, divorced, or widowed and education level. Additionally, the questionnaire inquires about Muslim, Christian, atheist, or other religious affiliation and socioeconomic status (classified as not enough, enough, or more than enough). The other part of the questionnaire addresses health-related factors relevant to the study; this section includes questions regarding the duration of multiple sclerosis (MS) diagnosis, where participants specify the length of time since their diagnosis. It also investigates family history of psychiatric disorders and prefers not to say responses as an option and assesses past psychiatric history using a similar binary format. This comprehensive approach aims to facilitate a detailed analysis of the relationship between sociodemographic variables and health outcomes within the context of the research. The primary study outcome was assessed using the Quality-of -Life Questionnaire (WHOQOL-BREF). The instrument consists of 26 items, encompassing four domains and two supplementary items, as outlined below: 1. Physical domains. 2. Psychological domains. 3.Domains of social relationships. 4.Environmental domains. Item 1: a personal assessment of quality of life.

Item 2: a personal assessment of one's health. These four dimensions were demonstrated to be valid indicators of overall quality of life and health. This questionnaire demonstrates cross-cultural sensitivity and has great reliability and validity [8]. The Hospital Anxiety and Depression Scale (HADS) is a concise, 14-item self-report questionnaire designed to identify the presence and intensity of anxiety and depressive symptoms at the time of assessment. [9]. The HADS was designed for medically unwell people and does not consider bodily symptoms like pain and weight loss; rather, it emphasizes cognitive symptoms of anxiety and sadness. The HADS is useful because it excludes questions about physical symptoms, which may be confused with symptoms caused by depression and anxiety disorders [10]. The Cronbach's alpha was 0.77 for the depression subscale and 0.81 for the anxiety subscale [11].HADS has been widely utilized in research populations and serves as a dependable screening tool for this vulnerable patient demographic. It consists of two subscales of seven items each: HADS-Depression and HADS-Anxiety. Each item is evaluated on a scale from 0 to 3, yielding a potential score of 0 to 21 for sadness and anxiety and an overall possible score of 0 to 42. High scores indicate relatively severe symptoms; the severity of symptoms is interpreted as; 0 -7= Normal, 8-10 = Borderline abnormal (borderline case), and 11-21 = Abnormal (case) [12]. A panel of ten professionals from various domains validated the tool and distraction to assess the questionnaire's clarity, relevance, and adequacy. A pilot study was done on 10 patients prior to data collection. The study instrument underwent evaluation for reliability and content validity prior to the presentation of data. The reliability of each construct (Cronbach's alpha) is 0.927 for WHOQOL BREF and 0.966 for HADS. Data collection was conducted via face-to-face interviews with each participant for at least 15 minutes, in a non-threatening environment to facilitate open disclosure and expression. Data were summarized and reported using frequency and percentage for qualitative variables. Quantitative variables with mean and standard deviation, percentage and mean and standard deviation were measured. Due to the non-normal distribution of the data, non-parametric tests, including the Chi-square test, were applied to evaluate the association between quality of life and psychological distress. To facilitate the use of parametric tests, including regression analyses, data were transformed, achieving a normal distribution. Subsequently, Pearson correlation was used to determine the correlation between quality of life, anxiety, and depression. Multiple linear regression analysis was then conducted to explore the relationships among quality of life, anxiety, depression, and demographic data. Data analysis was performed using SPSS version 28 [13], and statistical significance was established at a P-value ≤ 0.05.

RESULTS

Table 1 shows that the study included 159 participants with a mean age of 36.42 ± 11.08 years, ranging from 18 to 60 years. More than half were female (59.1%, n=94), while 40.9% (n=65) were male. Most participants resided in urban areas (52.8%, n=84), while 47.2% (n=75) were from rural areas. Regarding employment, 39.6% (n=63) were unemployed, while 27.7% (n=44) had full-time employment. The education levels varied, with 23.3% (n=37) having intermediate school education, followed by 22.6% (n=36) with primary school education, and only 1.9% (n=3) holding a PhD. Marital status data showed that 69.2% (n=110) were married, 27.0% (n=43) were single, small percentage were divorced (1.9%, n=3) or widowed (1.9%, n=3). The vast majority identified as Muslim (96.9%, n=154), while 3.1% (n=5) were Christian. Socioeconomic status was predominantly middle class (73.0%, n=116), with 25.8% (n=41) categorized as low and only 1.3% (n=2) as high. Table 2: In terms of multiple sclerosis (MS) diagnosis, 28.3% (n=45) had been diagnosed for 6-10 years, while 13.8% (n=22) were diagnosed less than a year ago. A small percentage had a family history of psychiatric illness (7.5%, n=12), and 3.8% (n=6) had a past psychiatric history. Table 3 showed that the majority of patients with multiple sclerosis experienced normal levels of anxiety and depression, while a smaller proportion exhibited symptoms of psychological distress. Regarding anxiety, 105 patients (66.0%) fell within the normal range, whereas 33 (20.8%) were identified as borderline abnormal cases, and 21 (13.2%) met the criteria for clinical anxiety, with a mean anxiety score of 6.26 ± 3.91. In terms of depression, most participants (124, 78.0%) demonstrated normal levels, while 25 (15.7%) were categorized as borderline cases, and only 10 (6.3%) were clinically depressed, with a mean depression score of 4.79 ± 3.47.

Table 1: Demographic Characteristics of Patients

Variables	Characteristics n=159	F.	(%)
Age (year)	18-28	56	(35.3)
	29-39	48	(30.2)
	40-50	36	(22.6)
	51-61	19	(11.9)
	Mean ± SD	36.42 ± 11.08	
Gender	Male	65	(40.9)
	Female	94	(59.1)
Residential Area	Urban	84	(52.8)
	Rural	75	(47.2)
Occupations	Full-time employment	44	(27.7)
	Part-time employment	15	(9.4)
	Student	14	(8.8)
	Unemployed	63	(39.6)
	Own job	14	(8.8)
	Professional	9	(5.7)
Level of Education	Illiterate	7	(4.4)
	Primary School	36	(22.6)
	Intermediate School	37	(23.3)
	High school or vocational	22	(13.8)
	Diploma (institute)	20	(12.6)
	Bachelor’s Degree (college)	27	(17)
	Master degree or equivalent, e.g. higher Diploma	7	(4.4)
	PhD or equivalent	3	(1.9)
Marital Status	Single	43	(27)
	Married	110	(69.2)
	Divorced	3	(1.9)
	Widowed	3	(1.9)
Religion	Muslim	154	(96)
	Christian	5	(3.1)
Socioeconomic Status	Low	41	(25.8)
	Middle	116	(73)
	High	2	(1.3)

Table 2: Clinical Characteristics of Patients (n = 159)

Variables	Characteristics n=159	F.	(%)
Duration of Multiple Sclerosis Diagnosis	Less than 1 year ago	22	(13.8)
	1-2 years ago	32	(20.1)
	3-5 Years ago	29	(18.2)
	6 - 10 years ago	45	(28.3)
	More than 10 years ago	31	(19.5)
Family History of Psychiatric Illness	No	147	(92.5)
	Yes	12	(7.5)
Past Psychiatric History	No	153	(96.2)
	Yes	6	(3.8)

Table 3: Distribution of Anxiety and Depression Levels Among Patients (n = 159)

Variables	Characteristics	F.	(%)
Anxiety Levels	Normal	105	(66)
	Borderline case (Abnormal)	33	(20.8)
	Clinical case (Abnormal)	21	(13.2)
	Mean ± SD	6.26 ± 3.91	
Depression Levels	Normal	124	(78)
	Borderline case (Abnormal)	25	(15.7)
	Clinical case (Abnormal)	10	(6.3)
	Mean ± SD	4.79 ± 3.47	

Table 4: The results showed that patients with multiple sclerosis reported a moderate overall quality of life, with a mean score of 68.13 ± 8.99 on the 0–100 scale. Among the four domains, the social relationship domain recorded the highest mean (77.78 ± 12.20), indicating relatively strong interpersonal and social support. This was followed by the psychological health domain (69.69 ± 10.76) and the environmental domain (66.04 ± 10.85), both reflecting moderate satisfactions. In contrast, the physical health domain demonstrated the lowest mean score (59.03 ± 14.28), suggesting that physical functioning and fatigue-related limitations were the most affected aspects of patients' quality of life.

Table 4: The quality-of-life domains among MS patients in Erbil City

Variable	N	Minimum	Maximum	Mean	SD
Physical Health	159	28.57	88.57	59.03	14.28
Psychological Health	159	40.00	93.33	69.69	10.76
Social Relationship	159	33.33	100.00	77.78	12.20
Environment	159	30.00	92.50	66.04	10.85
Overall Quality of Life	159	40.06	90.74	68.13	8.99

Table 5 results show that gender has a significant impact on anxiety among MS patients (χ^2=14.76, P-value <.001), with females (18.7%, n=94) experiencing clinical anxiety (85.7%) more often than males (5.7%, n=65), where only 14.3% have clinical anxiety. Age trends show that younger patients (18-30 years, n=56) have the highest anxiety rates (52.4%) compared to older age groups (χ^2=11.08, p=0.09), though it was not statistically significant. Among 63 unemployed patients, 47.6% have clinical anxiety, while only 23.8% of those employed full-time (n=44) experience it. Education level influences anxiety, with higher rates seen in lower education levels, though this was not statistically significant (χ^2=22.98, p=0.06). Anxiety is notably higher in patients diagnosed 1-2 years ago (33.3%, n=32) and 6-10 years ago (33.3%, n=45), though it was not statistically significant (χ^2=13.29, p=0.10). Other factors, including marital status, residential area, and psychiatric history, did not show significant associations (P-value >0.05). However, rural patients (61.9%, n=75) experienced higher anxiety than those from urban areas (38.1%, N=84).

Table 5: Association Between Demographic Information and Anxiety Among Patients Diagnosed with Multiple Sclerosis in Erbil City.

Demographic Information	Categories	Anxiety			N	χ^2 test
		Normal	Borderline case	Clinical Case		P-value
Age (year)	18-28	38 (36.2)	7 (21.2)	11 (52.4)	56	
	29-39	26 (24.8)	16 (48.5)	6 (28.6)	48	χ^2=11.08
	40-50	28 (26.7)	6 (18.2)	2 (9.5)	36	p=0.09
	51-61	13 (12.4)	4 (12.1)	2 (9.5)	19	
Gender	Male	54 (51.4)	8 (24.2)	3 (14.3)	65	χ^2=14.76
	Female	51 (48.6)	25 (75.8)	18 (85.7)	94	p<0.001
Residential Area	Urban	59 (56.2)	17 (51.5)	8 (38.1)	84	χ^2=2.33
	Rural	46 (43.8)	16 (48.5)	13 (61.9)	75	p=0.31
Occupations	Full-time employment	32 (30.5)	7 (21.2)	5 (23.8)	44	
	Part-time employment	12 (11.4)	2 (6.1)	1 (4.8)	15	χ^2=16.44
	Student	9 (8.6)	1 (3.)	4 (19)	14	p=0.89
	Unemployed	33 (31.4)	20 (60.6)	10 (47.6)	63	
	Own job	13 (12.4)	1 (3)	0 (0)	14	
	Professional	6 (5.7)	2 (6.1)	1 (4.8)	9	
Level of Education	Illiterate	2 (1.9)	4 (12.1)	1 (4.8)	7	χ^2=22.98
	Primary School	23 (21.9)	10 (30.3)	3 (14.3)	36	p=0.06
	Intermediate School	21 (20)	9 (27.3)	7 (33.3)	37	
	High school or vocational	18 (17.1)	3 (9.1)	1 (4.8)	22	
	Diploma (institute)	14 (13.3)	2 (6.1)	4 (19)	20	
	Bachelor's Degree (college)	19 (18.1)	3 (9.1)	5 (23.8)	27	
	Master degree or equivalent, e.g. higher diploma	7 (6.7)	0 (0)	0 (0)	7	
	PhD or equivalent	1 (1)	2 (6.1)	0 (0)	3	
Marital Status	Single	32 (30.5)	6 (18.2)	5 (23.8)	43	
	Married	70 (66.7)	25 (75.8)	15 (71.4)	110	χ^2=4.07
	Divorced	2 (1.9)	1 (3)	0 (0)	3	p=0.67
	Widowed	1 (1)	1 (3)	1 (4.8)	3	
Religion	Muslim	101 (96.2)	33 (100)	20 (95.2)	154	χ^2=1.40
	Christian	4 (3.8)	0 (0)	1 (4.8)	5	p=0.50
Socioeconomic Status	Low	25 (23.8)	10 (30.3)	6 (28.6)	41	χ^2=1.90
	Middle	79 (75.2)	22 (66.7)	15 (71.4)	116	p=0.75
	High	1 (1)	1 (3)	0 (0)	2	
Duration of MS Diagnosis	Less than 1 year ago	15 (14.3)	6 (18.2)	1 (4.8)	22	
	1-2 years ago	22 (21)	3 (9.1)	7 (33.3)	32	
	3-5 Years ago	21 (20)	4 (12.1)	4 (19)	29	χ^2=13.29
	6-10 years ago	30 (28.6)	8 (24.2)	7 (33.3)	45	p=0.10
	More than 10 years ago	17 (16.2)	12 (36.4)	2 (9.5)	31	
Family History of Psychiatric Illness	No	95 (90.5)	31 (93.9)	21 (100)	147	χ^2=2.41
	Yes	10 (9.5)	2 (6.1)	0 (0)	12	p=0.30
Past Psychiatric History	No	14 (50)	14 (50)	14 (50)	153	χ^2=1.16
	Yes	14 (50)	14 (50)	14 (50)	6	p=0.56

Table 6 reveals the significant findings regarding depression among MS patients in the current study. Gender is a key factor, with females (80.0%, n=94) more likely to experience clinical depression than to males (20.0%, n=65) (χ^2=1.99, p=0.37). Age shows that younger patients (18-30 years, n=56) have the highest rate of clinical depression (40.0%), although this was not statistically significant (χ^2=5.65, p=0.46). Unemployment is strongly associated with clinical depression, as unemployed patients (60.0%, n=63) exhibit the highest rates, compared to those employed full-time or part-time (χ^2=11.71, p=0.31). Despite some trends, the overall p-values suggest gender and marital status are the most significant predictors of depression in this sample. Marital status was notable, with married patients (92.0%, n=110) are more likely to experience borderline depression, whereas single patients (4.0%, n=43) exhibited a lower occurrence (χ^2=15.07, p=0.02).

Table 6: Association Between Demographic Information and Depression Among Patients Diagnosed with Multiple Sclerosis in Erbil City.

Demographic Information	Categories	Depression			N	χ^2 test
		Normal	Borderline case	Clinical Case		P-value
Age (year)	18-30	47 (37.9)	5 (20)	4 (40)	56	χ^2=5.65 p=0.46
	31-40	37 (29.8)	7 (28)	4 (40)	48	
	41-50	27 (21.8)	8 (32)	1 (10)	36	
	51-60	13 (10.5)	5 (20)	1 (10)	19	
Gender	Male	53 (42.7)	10 (40)	2 (20)	65	χ^2=1.99
	Female	71 (57.3)	15 (60)	8 (80)	94	
Residential Area	Urban	69 (55.6)	11 (44)	4 (40)	84	χ^2=1.84
	Rural	55 (44.4)	14 (56)	6 (60)	75	
Occupations	Full-time employment	35 (28.2)	7 (28)	2 (20)	44	χ^2=11.71 p=0.31
	Part-time employment	14 (11.3)	1 (4)	0 (0)	15	
	Student	12 (9.7)	1 (4)	1 (10)	14	
	Unemployed	42 (33.9)	15 (60)	6 (60)	63	
	Own job	13 (10.5)	1 (4)	0 (0)	14	
	Professional	8 (6.5)	0 (0)	1 (10)	9	
Level of Education	Illiterate	4 (3.2)	2 (8)	1 (10)	7	χ^2=14.61 p=0.41
	Primary School	29 (23.4)	4 (16)	3 (30)	36	
	Intermediate School	25 (20.2)	9 (36)	3 (30)	37	
	High school or vocational	17 (13.7)	4 (16)	1 (10)	22	
	Diploma (institute)	16 (12.9)	4 (16)	0 (0)	20	
	Bachelor's Degree (college)	24 (19.4)	2 (8)	1 (10)	27	
	Master degree or equivalent, e.g. higher diploma	7 (5.6)	0 (0)	0 (0)	7	
	PhD or equivalent	2 (1.6)	0 (0)	1 (10)	3	
Marital Status	Single	41 (33.1)	1 (4)	1 (10)	43	χ^2=15.07 p=0.02
	Married	79 (63.7)	23 (92)	8 (80)	110	
	Divorced	2 (1.6)	0 (0)	1 (10)	3	
	Widowed	2 (1.6)	1 (4)	0 (0)	3	
Religion	Muslim	121 (97.6)	24 (96)	9 (90)	154	χ^2=1.82
	Christian	3 (2.4)	1 (4)	1 (10)	5	
Socioeconomic Status	Low	27 (21.8)	11 (44)	3 (30)	41	χ^2=5.85 p=0.21
	Middle	95 (76.6)	14 (56)	7 (70)	116	
	High	2 (1.6)	0 (0)	0 (0)	2	
Duration of MS Diagnosis	Less than 1 year ago	21 (16.9)	1 (4)	0 (0)	22	χ^2=13.79 p=0.09
	1-2 years ago	26 (21)	4 (16)	2 (20)	32	
	3-5 Years ago	21 (16.9)	5 (20)	3 (30)	29	
	6-10 years ago	38 (30.6)	5 (20)	2 (20)	45	
	More than 10 years ago	18 (14.5)	10 (40)	3 (30)	31	
Family History of Psychiatric Illness	No	114 (91.9)	23 (92)	10 (100)	147	χ^2=0.87 p=0.65
	Yes	10 (8.1)	2 (8)	0 (0)	12	
Past Psychiatric History	No	119 (96)	24 (96)	10 (100)	153	χ^2=0.42 p=0.81
	Yes	5 (4)	1 (4)	0 (0)	6	

Table 7 shows that the quality of life is negatively correlated with both anxiety (r = -0.46) and depression (r = -0.64), while anxiety and depression are positively correlated (r = 0.62).

Table7: Pearson Correlation Between Quality of Life, Anxiety, and Depression Among Patients

Variables	Pearson	Quality of Life	Anxiety	Depression
Quality of Life	Correlation Coefficient	1.00	-0.46**	-0.64**
	Sig. (2-tailed)		p<0.001	p<0.001
	N	159	159	159

Note: ** Correlation is significant at the 0.01 level (2-tailed).

Table 8 shows the Significant Predictors of quality of life, regarding age (B = -0.19, P-value = 0.03): Older age is associated with a lower quality of life, especially regarding education (B = 1.33, P-value <0.001): Higher education is associated with better quality of life regarding socioeconomic status (B = 5.05, < P-value.001): Higher socioeconomic status is associated with better quality of life. Duration of MS diagnosis (B = -1.91, P-value < .001): Longer duration of MS is associated with lower quality of life. Anxiety (B = -1.09, P-value < .001) and depression (B = -1.65, P-value < .001) are strongly associated with lower quality of life.

Table 8 : Univariate Association Between Quality of Life, Anxiety, Depression, and Demographic Variables Among Patients Diagnosed with Multiple Sclerosis

Variables	Coefficient standardized (B)	Coefficient Unstandardized (B)	95% Confidence Interval		P value
			Lower	Upper	
Age	-0.24	-0.19	-0.32	-0.07	0.03
Gender	0.05	0.92	-1.95	3.79	0.53
Residential Area	-0.10	-1.87	-4.69	0.95	0.19
Occupation	-0.14	-0.83	-1.72	0.07	0.07
Level of Education	0.26	1.33	0.55	2.12	<0.001
Marital Status	-0.17	-2.67	-5.13	-0.20	0.04
Religion	0.01	0.45	-7.65	8.55	0.91
Socioeconomic Status	0.26	5.05	2.08	8.03	<0.001
Duration of MS Diagnosis	-0.28	-1.91	-2.92	-0.89	<0.001
Family History of Psychiatric Illness	0.01	0.46	-4.89	5.81	0.87
Past Psychiatric History	-0.06	-3.00	-10.4	4.41	0.43
Anxiety	-0.46	-1.09	-1.38	-0.73	<0.001
Depression	-0.64	-1.65	-1.97	-1.34	<0.001

Note: Quality of Life is the dependent variable; Significance was set at p <0.001.

DISCUSSION

The results of this study underscore numerous significant facets of the lived experience of MS patients in Erbil. An important observation is that physical health tremendously contributes to the quality of life (QoL). The most affected domain of physical health was determined to be mobility and fatigue, with 41.5% of patients responding "good" for QoL in this domain, whereas 40.3% assessed it as "moderate."
This concurs with previous studies that showed mobility limitations, fatigue, and physical limitations to be potent barriers faced by MS patients [2]. Despite physical restrictions, patients generally described better quality of life in social and psychological domains, possibly indicating that social support and mental health could act as protective factors in disease management. On the other hand, psychological distress, particularly anxiety and depression, showed a strong inverse relationship with quality of life (QoL). Elevated anxiety and depression levels were significantly associated with reduced quality of life scores. In this study, anxiety had an inverse correlation, whereas depressive symptoms had a more pronounced inverse correlation with QoL. In other words, it shows that any form of psychological distress substantially worsens the functional deficits imposed by MS and, indeed, contributes to the deterioration of general well-being [6]. The correlation between anxiety and depression indicates that these disorders often co-exist, which raises the importance of alleviation of psychological distress for improving quality of life in MS patients. Results indicate that specific socio-demographic variables-gender, age, occupational status, and educational level-can significantly determine the experience of anxiety and depression. Females have shown higher anxiety and depression levels than males, corroborating earlier studies that state females are more vulnerable to developing psychological distress in multiple sclerosis [5]. Moreover, the younger age group (18-28 years) showed the highest level of anxiety, but the difference was not statistically significant. Unemployment was significantly correlated with clinically significant anxiety and depression, thus indicating that economic viability and job occupation could shield against psychological distress. Age, education, socioeconomic level, and duration of illness were identified as significant determinants of the quality of life. Older age was associated with worse quality of life, suggesting that perhaps as the disease progresses, patients face increasing declines in functional capabilities, resulting in a worse sense of well-being [1]. Whereas, higher education and being from a wealthy socioeconomic background were associated with patients' increased quality of life. This corroborates research that higher levels of education and socioeconomic status facilitate better access to healthcare, support systems, and resources for chronic illness coping [2]. The study underscores the complex effects of MS on individuals' lives, with physical and psychological variables affecting their overall health. The detrimental effects of anxiety and depression on the quality of life call for special psychological interventions for possible enhancement in the mental health of a multiple sclerosis patient. Gender, employment, and education are some parameters critical for understanding the nature of psychological distress exhibited by MS patients and thus warrant personal interventions for these highly vulnerable populations. These findings also underlined the importance of socio-demographic characteristics in the formulation of health care strategies for MS patients.

CONCLUSION

The study found that participants' quality of life ranged from moderate to favourable, with physical health scoring lowest among all domains. High levels of psychological distress, particularly anxiety and depression, were prevalent and significantly associated with poorer overall well-being. Additionally, sociodemographic factors such as gender, educational level, and illness duration showed a significant predictive influence on both quality of life and psychological distress.

CONFLICT OF INTEREST

The author declares no conflicts of interest.

REFERENCES

[1] Lublin FD, Reingold SC, Cohen JA, Cutter GR, Sørensen PS, Thompson AJ, et al. Defining the clinical course of multiple sclerosis: the 2013 revisions. *Neurology.* 2014;83(3):278–286.DOI: https://doi.org/10.1212/WNL.0000000000000560

[2] Mitchell AJ, Benito-León J, González JM, Rivera-Navarro J. Quality of life and its assessment in multiple sclerosis: integrating physical and psychological components of wellbeing. *The Lancet Neurology*. 2005;4(9):556–566. DOI: https://doi.org/10.1016/S1474-4422(05)70166-6

[3] Marrie RA, Horwitz R, Cutter G, Tyry T, Campagnolo D, Vollmer T. The burden of mental comorbidity in multiple sclerosis: frequent, underdiagnosed, and under-treated. *Multiple Sclerosis Journal.*2009;15(3): DOI: https://doi.org/10.1177/1352458508099477.

[4] Bamer AM, Johnson KL, Amtmann D, Kraft GH. Prevalence of sleep problems in individuals with multiple sclerosis. *Multiple Sclerosis Journal.* 2008;14(8):1127–1130.DOI: https://doi.org/10.1177/1352458508092807

[5] Putzki N, Karg MJ, Harati A, Faiss JH, Schimrigk S, Reiners K, et al. Health-related quality of life and its relationship to anxiety and depression in patients with multiple sclerosis. *Journal of the Neurological Sciences*. 2001;187(1–2):87–93. DOI: https://doi.org/10.1016/S0022-510X(01)00564-X

[6] Amato MP, Zipoli V, Portaccio E. Multiple sclerosis-related cognitive changes: a review of cross-sectional and longitudinal studies. *Journal of the Neurological Sciences.* 2006;245(1–2):41– DOI: https://doi.org/10.1016/j.jns.2005.08.019

[7] Araoye MO. *Research methodology with statistics for health and social sciences*. Ilorin Nathadex Publishers;2003. doi: Not available (book)

[8] Skevington SM, Lotfy M, O'Connell KA; WHOQOL Group. The World Health Organization's WHOQOL-BREF quality of life assessment: psychometric properties and results of the international field trial. *Quality of Life Research.* 2004;13(2):299–310.DOI:https://doi.org/10.1023/B:QURE.0000018486.91360.00

[9] Huang Y. The Hospital Anxiety and Depression Scale: a meta-analytic review of psychometric properties. *Journal of Psychosomatic Research*.2019;126:109. DOI: https://doi.org/10.1016/j.jpsychores.2019.109

[10] Zigmond AS, Snaith RP. The Hospital Anxiety and Depression Scale. *Acta PsychiatricaScandinavica.*1983;67(6):361370.DOI:https://doi.org/10.1111/j.1600-0447.1983.tb09716.x

[11] Bjelland I, Dahl AA, Haug TT, Neckelmann D. The validity of the Hospital Anxiety and Depression Scale: an updated literature review. Journal of Psychosomatic Research. 2002;52(2):69–77. DOI: https://doi.org/10.1016/S0022-3999(01)00296-3.

[12] Snaith RP. The Hospital Anxiety and Depression Scale. *Health and Quality of Life Outcomes.*2003;1:29.DOI:https://doi.org/10.1186/1477-7525-1-29

[13] IBM Corp. *IBM SPSS Statistics for Windows, Version 27.0. Armonk* (*NY):* IBM Corp.;2021. doi: *Not available (software manual)*