

Assessment Of Health Related Quality Of Life Among Patients With Multiple Sclerosis At Minia University Hospital

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Abstract

Background: Multiple sclerosis (MS) is the most common autoimmune disease affecting the central nervous system (CNS). It is a demyelinating disease of the central nervous system, which leads to impaired cognitive, motor and sensory functions. **Aim:** The study aimed to assess health related quality of life among patients with multiple sclerosis at Minia University Hospital. **Design:** Descriptive research design. **Sample:** A convenience sample consists of 60 patients with multiple sclerosis. **Settings:** The present study was conducted at out patient's neuropsychiatric clinic at Minia university hospital. **Tools:** Data were collected by two tools; the first tool: Personal Data; the second tool: Multiple Sclerosis Quality of Life (MSQOL) structured interviewing questionnaire. **Results:** The current study shows that the mean age was 33 ± 7.7 years and two-thirds of them were females, also, 50% of sample has fair quality of life. There are highly statistically significant difference between overall quality scores and physical health, role limitations due to physical problems, role limitations due to emotional problems, pain, emotional well-being, energy, social function, cognitive function and health distress. **Conclusion:** The current study concluded that there was significant impairment in quality of life for multiple sclerosis patients, in addition that multiple sclerosis patients suffer from impairment in their quality of life among all domains. **Recommendations:** Perform a continuous health assessment and observation to the multiple sclerosis patients (health status, emotional status, skin integrity, pain sensation, and balance and movement ability).

Keywords: Health, Multiple Sclerosis, Quality of Life.

Introduction

Multiple Sclerosis (MS) is a disease of the central nervous system that results in demyelination of the nerve fibers. As a consequence, there is deterioration in the health of people with the disorder, particularly in areas associated with responses dependent upon functioning of the central nervous system. Depending upon the site of the demyelination, there may be deterioration in the cognitive or emotional functioning or in the level of mobility. Because the progress of the disease is unpredictable, the illness results in a wide range of levels of disability, and the sufferer is uncertain about the future course of the illness. (Temmerman et al., 2022)

Multiple Sclerosis is categorized as an autoimmune disease and medically defined as a demyelinating disease of the nervous system in which myelin sheath of neurons is damaged. A myelin sheath is a fatty cover surrounding the neurons, that is, electrons are being transmitted through the neuron. This sheath manages the transmission space of electrons across neurons, so if this sheath got damaged, or destroyed, the nerve impulses get slower or do not transmit at all, leading to disrupted communication between the brain and other parts of the body. (Abd El Hamid et al., 2020)

The cause of multiple sclerosis is unknown. It is consider an autoimmune disease which the body's immune system attacks the central nervous system. Early exposure to some types of viruses or other infections has been linked to MS, but the evidence is mixed. While not a genetic disease, MS can be caused by genetic causes (i.e., a destruction caused by the human immune system) MS is not contagious. (Baranzini & Oksenberg, 2017)

Multiple sclerosis is classified into fifth categories, each one describing a particular pattern of how the disease progresses, the prognosis for the patient the frequency of the

attacks, and the patient's condition between attacks. These fifth categories are benign; relapsing-remitting; primary-progressive; secondary progressive, and; progressive-relapsing. (Shabany et al., 2021)

People with MS typically develop symptoms in their late 20s; Symptoms of MS are unpredictable and vary greatly from person to person, and from time to time in the same person. Multiple Sclerosis can cause symptoms such as extreme fatigue, lack of coordination, weakness, tingling, impaired sensation, vision problems, bladder problems, and cognitive impairment and mood changes. They may initially have partial recovery, but over time develop progressive disability (Olek, 2021)

The diagnosis of MS is based on the clinical features of the attacks including the history and examination findings. The guiding principle of the diagnosis is that of dissemination in time (DIT) and dissemination in space (DIS). There is no single diagnostic laboratory test for multiple sclerosis. Blood tests are done to rule out other causes for various neurological symptoms. The diagnoses is based on the clinical findings supported by investigations. (Ford, 2020)

Currently, there is no definite cure for MS. However, immunomodulation and anti-inflammatory agents can diminish its progression and decrease some of the pathological symptoms. Immunomodulating agents including interferon beta and glatiramer acetate are used in non-symptomatic MS, RRMS, and SPMS. These agents can lessen some of the MS symptoms by inhibition of immune cell activation, decrease of pro inflammatory cytokines production, matrix metalloproteinase activity reduction, induction of anti-inflammatory cytokine secretion. (Ioos & Gallicchio, 2020)

Multiple sclerosis can diminish quality of life by interfering with the ability to work, pursue leisure activities,

and carry on usual life roles. Symptoms that affect QOL may include impaired mobility, fatigue, depression, pain, spasticity, cognitive impairment, sexual dysfunction, bowel and bladder dysfunction, vision and hearing problems, seizures, swallowing and breathing difficulties. (Mortensen & Rasmusse, 2017)

Nurse practitioners in primary care settings are on the first line to recognize motor, sensory, and cognitive deficits that may help establish a diagnosis of MS. While referral to a neurologist is often made, patients with chronic illnesses such as MS often return to the primary care setting for management. In their multi-faceted roles of administrators, educators, collaborators, consultants, investigators and advocates, nurse practitioners are in a position to help identify and manage relapses, symptoms and treatment-related side effects that all can affect the course of the disease(W H O, 2017)

For the person with MS, the community nurse role incorporates all these elements, but also includes the recognition of relapse and exacerbation of MS, as well as ongoing monitoring of active treatment. As a non-specialist in MS, the community nurse should discuss a diagnosis of relapse with a specialist MS practitioner to plan the appropriate intervention. (Nembhard et al., 2020)

Significance of the Research:

The World Health Organization estimates that globally, more than 2.5 million people are affected by multiple sclerosis (MS). With the global population growing reaching 7.8 billion (10 October 2020)—it is estimated to reach 8.5 billion by 2030. The incidence and onset of MS in young adults is expected to rise exponentially, with an estimate of 2.3 million people living with MS globally. (Vasso & John, 2020)

In Egypt in 2016, there were 2□221□188 prevalent cases of multiple sclerosis (95% uncertainty interval (2□033□866–2□436□858) globally, which corresponded to a 10.4% (9.1 to 11.8) increase in the age-standardized prevalence since 1990. sclerosis in 2020 1.41% or 14.1 per 100000 or 14.1 per 1000 other neurological diseases. (Wallin et al., 2019)

Multiple sclerosis is typically diagnosed in young, active people between 20 and 40 years of age. Therefore, the multiple sclerosis may hinder ability to maintain studies and work. According to the Global MS Employment Report 2016, 43% of unemployed people with MS quit their employment in the first 3□years after diagnosis and 62% stated that fatigue was the main reason. In addition, MS will require caregiving due to disability progression, mostly provided by informal caregivers, such as partners or other relatives. (Renner et al., 2020)

Indirect costs of MS include costs of reduced employment or unemployment, assistive equipment, disability related home modifications, and paid and unpaid personal care. Although direct medical costs predominate in the earlier stages of MS, indirect costs of productivity loss are responsible for higher costs later. (Wiesel, 2020)

Multiple Sclerosis causes neurological changes that typically have negative impact on a number of life domains including social functioning, employment, finances, and standards of living, which can then lead to reduced social participation. Several domains of social participation have been found to be limited in persons with MS, including, recreation and leisure, community life, employment, and

intimate relationships restriction in participation in social activities can cause limitations in one's work and social life. (Carley& Bustelo,2019)

Research Questions:

- What is the effect of MS on quality of life of patient?
- What is the relation between socio demographic variables and quality of life?

SUBJECT and METHOD

Study Design

Descriptive research design was be used to fullfill the aim of this study.

Study Setting

The study was conducted at out patients neuropsychiatric clinic at Minia university hospital, The selected hospital was located on the western bank of the Nile River and facing of the upper bridge on the Nile south of Minia city and the only multiple sclerosis clinic in Minia governorate, Egypt, it provide a wide range of health care services for urban and rural populations from near and far districts in Minia governorate. The clinic works one day a week for multiple sclerosis patients (Monday from 9Am to 2Pm) and other days for other neuropsychiatric disease.

Sample:

A convenience sampling technique was used. In the current study the participants have multiple sclerosis who attending neuropsychiatric clinic at Minia University Hospital, who visited the clinic during the study period from April to September 2021.

Data Collection Tools:

A structured interviewing questionnaire was designed by the investigator after extensive reviewing of the related literature. The questionnaire was divided in to two tools covering the following:

Tool (): Personal Data questionair.

This tool was devided into two parts:

Part 1: Demographic characteristics:

It covered data related to patient demographic characteristics as age, gender, residence, educational level, occupation, marital status and type of family.

Part 2: Medical history:

It covered data related to patient medical as family history, type of MS, duration of disease, presence of chronic disease, presence of other autoimmune disease.

Tool: Multiple Sclerosis Quality of Life (MSQOL) scale:

Adapted by (Vickrey et al., 1995) and modified by the investigator, it was used to assess health related quality of life toward patients with multiple sclerosis disease. It contained (fourty eight) 49 items were divided in to (12) subscales. Items for each subscal as follow: physical health (10 items); role limitations due to physical problems (4 items); role limitations due to emotional problems(3 items); pain (3 items); emotional well-being (5 items); energy (5 items); health perceptions (5 items); social function(3 items); cognitive function (4 items); health distress(4 items); overall

quality of life (2 items) and change in health (one item). Investigator Modifications were removing 5 questions related to sexual function and patient satisfaction with his sexual function.

Dimension	No of items	Items
Physical Health	10	3,4,5,6,7,8,9,10,11,12
Role limitations due to physical problems	4	13.14.15.16
Role limitations due to emotional problems	3	17,18,19
Pain	3	21,22,47
Emotional well-being	5	2 4,25,26,28,30
Energy	5	2 3,27,29,31,32
Health Perceptions	5	1,34,35,36,37
Social function	3	20,33,46
Cognitive function	4	42,43,44,45
Health distress	4	38,39,40,41
Change in health	1	2
Overall quality of life	2	48,49
Total	49	

Scoring system:

The response to each dimension summed from 100, depending on the distribution of the grades of each dimension. These scores were summed and converted into a percent score. (Ochoa et al., 2019)

It was classified into 3 categories:

- Poor quality if score < 60%.
- Fair quality if score 60 – 75%.
- Good quality if score > 75 %.

Validity

The content validity for the tool was performed based on expert review. The questionnaire was evaluated by one community health nursing experts, one public health and preventive medicine experts and three medical surgical nursing experts for content coverage, wording, length, format, and overall appearance. Modifications were made based on expert comments and recommendations, including rephrasing some sentences and rearrangement of some sentences.

Reliability:

Internal consistency of interview questionnaire was assessed with the Cronbach's alpha coefficient. Cronbach's alpha coefficient of 0.00 indicates no reliability and a coefficient of 1.00 indicates perfect reliability. However, a reliability coefficient of 0.70 is acceptable. Cronbach's alpha for reliability testing was performed for each tool and the results were as represented in table (A).

Table (A): Cronbach's alpha for Overall quality of life tool:

Tool title	Cronbach's Alpha
Overall quality of life	0.89

Pilot study:

The questionnaire was pre-tested by six participants (10%) before the actual work began to test the clarity of the tools and to estimate the time required to fill the sheets after obtaining permission from the director of Minia university hospital. There were no modifications done in the study tools based on the pilot study; 10% of the sample were included to total study sample.

Data collection procedure:

- An official letter was granted from the Nursing Faculty Dean at Minia University, Ethical Committee, and Nursing Faculty at Minia University.
- The scales were adopted, and translated into Arabic; then collect the jury approval for the scales to collect data of the study.
- Written approvals were obtained from the directors of (Minia University Hospital after explaining the purpose of the study.
- After obtaining the permission, the investigator began to introduce her to the patients nursing staff then, explained the nature, aim of the study.
- The investigator prepared a poster about multiple sclerosis disease which focused on methods of treatment, prevention of complication and rehabilitation.
- Then the reliability of the scales was done.
- The investigator attended to out patient clinic at Monday every week, waiting patients until coming and examined by clinic doctors after that introduced myself for them and rationale of my working, taking acceptance of them to participate with me
- The scales were distributed to all patients. Scales were administered directly and supervised by the investigator.
- Patients were given from 20 minutes to 30 minutes to answer the scale. The investigator answers any questions that patients need.
- The actual field work started from the beginning of April 2021 to the end of October 2021 for collecting data.
- The investigator scheduled the visits to outpatient neuropsychiatric clinic at Minia university hospital based on schedule of work. Data was collected one day per week, at the investigator were interviewed the participants according to the schedules of each out patient clinics, the investigator spent 20-30 minutes with each participant and (2-3) participants were interviewed per day.
- After patients filled the questionnaire, the investigator provides a poster for them, discusses it with them and answers any questions.

Ethical consideration:

Written initial approval was obtained from the research ethics committee of the Faculty of Nursing, Minia University. Oral informed consent was obtained from participants after explaining the nature and benefits of the study. Each assessment sheet was coded and participants' names didn't appear on the sheets for the purpose of privacy and confidentiality. Participants were assured that they could withdraw at any time from the current study without any effect on their treatment. The investigator was interviewed with participants and collected data from them. Measures were taken to protect participants' ethical rights.

Statistical Analysis:

Data were analyzed using the statistical package for social science (SPSS) version 20. Numerical data were expressed as mean and SD. Quantitative data were expressed as frequency and percentage. Relations between different

numerical variables were tested using the using chi square test. Pearson coerrelation was used to measure the relationships between various numerical variables. Statistically significant level was considered when the p-value was less than 0.05.

Results

Table (1): Distribution of the studied subjects according to their demographic characteristics (n=60)

Variables	N	%
Age		
- 20 – 30 yrs.	33	55.0
- 31 - 40 yrs.	16	26.7
- 41-50 yrs.	9	15.0
- > 50 yrs.	2	3.3
Mean ± SD	31±7.7	
Gender		
-Male	16	26.7
-Female	44	73.3
Residence		
- Rural	20	33.3
- Urban	40	66.7
Educational level		
-Illiterate	7	11.7
- Read and write	6	10.0
-Secondary	15	25.0
-University or higher	32	53.3
Occupation		
- Employee	18	30.0
- Unemployed	42	70.0
Marital status		
- Single	20	33.3
- Married	39	65.0
- Divorced	1	1.7
Type of family		
- Nuclear	45	75.0
- Extended	15	25.0

Table (1) clears that, 55 % of study sample their age ranged from 20-30 years, 3.3 % their age more than 50 years old, 73.3% of study sample are females but 26.7% are male. Regarding their education 53.3% of them are university or high education, 10% are able to read and write, but 11.7% are illiterate. In addition 70 % are unemployed while 30% are employee. Also 65% of study sample are married, 33.3% are single, 66.7% are from urban area but 33.3% are from rural area. Regarding type of family 75% of sample have nuclear family, but 25% lived in extended family.

Table (2): Distribution of the study subjects according to their medical history (n=60)

Variables	N	%
family history		
-Yes	6	10.0
- No	54	90.0
Type of multiple sclerosis:		
- Relapsing Remitting	53	88.3
- Primary progressive	1	1.7
- Progressive relapsing	6	10.0
Duration of disease :		
-< One year	15	25.0
- > One year	45	75.0
presence of any chronic diseases		
- Yes	0	00.0
- No	60	100.0
- presence of any other autoimmune disease?		
-Yes	0	00.0
-No	60	100.0

Table (2) shows that, 90% of study subject's have no family history but 10% have family history of disease. Regarding Type of MS 88.3% has relapsing remitting, 10% have Progressive relapsing and 1.7% have primary progressive. Regarding the duration of disease 75% of study sample has less than one year and 25% has more than one year. In addition 100% of study subjects don't suffer from any chronic diseases and autoimmune disease.

Table (3): Means and Standard deviation of MS quality of life domains among Study Subjects (n=60)

MS Quality of Life Domains		Means ±SD
1)	Physical health	21.7± 5.7
2	Role limitations due to physical problems	5.2±1.9
3	Role limitations due to emotional problems	4.1±1.5
4	Pain	9.2±3.6
5	Emotional well-being	16.7±3.5
6	Energy	16.2±3
7	Health perceptions	15.8±2.7
8	Social function	7.2±3.6
9	Cognitive function	14.7±5.4
10	Health distress	13.7±5.1
11	Overall quality of life	3.4±1.2
12	Change in health	10.9±2.5

Table (3) depicts that the mean score of MS quality of life domains as following 21.7± 5.7 for physical health domain, 5.2±1.9 for role limitations due to physical problems, 4.1±1.5 for role limitations due to emotional problems, 9.2±3.6 for pain, 16.7±3.5 for emotional well-Being, 16.2±3 for energy, 15.8±2.7 for health perceptions, 7.2±3.6 for social function, 14.7±5.4 for cognitive function, 13.7±5.1 for health distress, 3.4±1.2 for overall quality of life and 10.9±2.5 for change in health.

Table (4): Relation between over all quality of life and demographic characteristics

Sex	Over all Quality of life N=60)				P. value
	Fair		Poor		
	N	%	N	%	
Male	9	56.0	7	44.0	X ² =39.9 P.30
Femal	31	38.6	13	61.4	
Age					X ² =92.6 P 0.8
20 – 30 yrs.	17	51.5	16	48.5	
- 31 - 40 yrs.	9	56.0	7	44.0	
- 41-50 yrs.	3	33.3	6	66.7	
- > 50 yrs	2	100	0	00.0	
Residence					X ² =34.1 0.6
- Rural	11	55.0	9	45.0	
- Urban	20	50.0	20	50.0	
Education :					X ² =134.1 0.06
-Illiterate	3	42.8	4	56.2	
- Read and write	2	33.3	4	66.7	
-Secondary	7	46.6	8	53.4	
-University or higher	19	59.3	13	40.7	
Occupation					X ² =35.1 0.5
- Employee	8	44.4	10	55.6	
- Unemployed	23	54.7	19	45.3	

N.B p-value <0.05).

Table (4) illustrates there are no a statistically significant difference between overall quality scores and demographic characteristics of the study subject's.

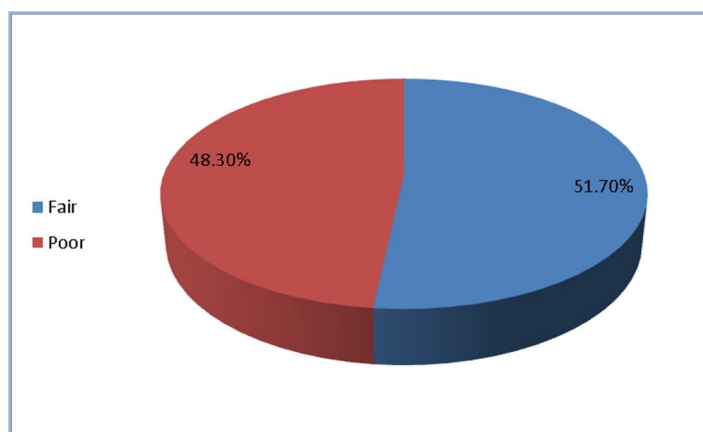


Figure (1): Distribution of study subjects regarding overall quality of life scores (n=60)

Figure (1), illustrates 51.7% of study subjects have faire quality of life, but 48.3% of subjects have poor quality of life.

Table (5): Correlation between overall quality of life score and ms quality of life domains (n=60)

MS Quality of Life Domains		r-value	P-Value
1)	Physical health	0.51	0.000**
2	Role limitations due to physical problems	0.43	0.001**
3	Role limitations due to emotional problems	0.429	0.001**
4	Pain	0.319	0.01**
5	Emotional well-being	0.549	0.000**
6	Energy	0.365	0.004**
7	Health perceptions	0.091	0.4
8	Social function	0.332	0.01**
9	Cognitive function	0.578	0.000**
10	Health distress	0.615	0.000**
11	Change in health		

N.B p-value <0.05).

Table (5) illustrates there are highly statistically significant difference between overall quality scores and physical health, role limitations due to physical problems, role Limitations Due To Emotional Problems, Pain, Emotional Well-Being, Energy, Social Function, Cognitive Function and Health Distress while there are no a statistically significant difference between overall quality scores and health Perceptions, change in health.

Table (6): Correlation between role limitations due to physical problems domain and ms quality of life sub domains (n=60)

Role	Limitations due to physical problems	r-value	P-Value
2	Physical health	.548	0.000**
3	Role limitations due to emotional problems	.881	0.000**
4	Pain	-.697-	0.000**
5	Emotional well-being	.077	0.5
6	Energy	.051	0.6
7	Health perceptions	-.132-	0.3
8	Social function	-.552-	0.000**
9	Cognitive function	.074	0.5
10	Health distress	.473	0.000**
11	Change in health	-.359-	0.005**

(N.B p-value <0.05)

Table (6) illustrates there are highly statistically significant difference between role limitations due to physical problems and physical health domain and role limitations due to physical problems, role limitations due to emotional problems, pain, social function, health distress and change in health while there are no a statistically significant difference between with emotional well-being, energy, health perceptions, cognitive function.

Table (7): Correlation between role limitations due to emotional problems domain and ms quality of life sub domains (n=60)

Limitations Due To Emotional Problems		r-value	P-Value
	Physical health	.482	0.000**
	Role Limitations due to physical problems	.881	0.000**
	Pain	-.610-	0.000**
	Emotional well-being	.102	0.4
	Energy	.053	0.6
	Health perceptions	-.204-	0.1
	Social function	-.562-	0.000**
	Cognitive function	.031	0.8
	Health distress	.553	0.000**
	Change in health	-.340-	0.008**

N.B p-value <0.05).

Table (7) illustrates there are highly statistically significant difference between role limitations due to emotional problems and physical health domain, role limitations due to physical problems, pain, social function, health distress and change in health while there are no a statistically significant difference between with emotional well-being, energy, health perceptions, cognitive function.

Discussion

The present study revealed that, the mean average age were calculated as thirty one year for the study group., the result were in agreement with Abdel Sayed., (2019) who study; Neuropsychiatric Manifestations of Multiple Sclerosis in Egyptian Patients and to understand their correlation with

the degree of clinical disability, in their study in Al-Azhar University Hospitals whose found that mean age is thirty two While the results were contradicted with the results of Green., (2017) who study; Which symptoms contribute the most to patients' perception of health in multiple sclerosis? at NYU Multiple Sclerosis Comprehensive Care Center in New York

and USA whose found that the mean average age were calculated as forty six years.

The investigator point of view, the main cause for this is unknown but it may be due to poor habits, unhealthy diet and more exposure infection; all of them have had impact and trigger immune system.

The study findings indicated that more than half of the studied samples were females. Study results agreed with Homayuni., (2021) Who's found that most of the study samples were females in his study; Explaining the facilitators of quality of life in patients with multiple sclerosis: a qualitative study in Isfahan MS Association..

From the investigator point of view this can be discussed as the immune system may be stimulated by sex steroid hormones during puberty, nulliparous women may have higher risk of MS than those who had several pregnancies and obesity rates are higher for women than men, Belly fate in particular is associated with increased inflammation.

As regard, current study sample's occupation showed that the majority of study samples are highly educated, which farther have good impact on their knowledge and practices to dealing with disease. Results supported by by Abdel Sayed.,(2019) who study in Al-Azhar University Hospitals whose found that more than two thirds of study sample were highly educated.

The study findings indicated that more than half of the studied samples were married. As well this finding is supported by Rezapour., (2017) who study; The impact of disease characteristics on multiple sclerosis patients' quality of life at the Center for Special Diseases and Multiple Sclerosis Society of Shiraz in Iran. Which found that about two thirds of study sample were married.

From the investigator point of view the correlation may be due to hormonal disturbance and changes in BMI which on time increase risk for inflammation and immunity changes.

The current study revealed that more than two thirds of patients were unemployed .This result were in contrast with koziarska., (2018) who study; Prevalence and factors leading to unemployment in MS (multiple sclerosis) patients undergoing immunomodulatory treatment in Poland. In which number of unemployed patients were less than half of total sample.

From the investigator point of view these findings may be due to impact of disease on their physical ability to carry or lifting objects, on the other hand lack of mobility with time lead to worsen of their condition

Findings of the present study showed that, the majority of the studied sample has fair quality of life which reflect to what extent Quality of life (QOL) is becoming an increasingly important factor in the measurement of disease impact as well as an outcome measure in clinical trials. On the other hand, Almoaje., (2016) who study; Evaluation of the Knowledge, Source of Information and Quality of Life among Multiple Sclerosis Patients in Saudi Arabia, was with contradicted this finding in their study in Saudi Arabia, illustrated that the majority of patients had a quality of life between moderate to high.

It was noticed from the current study that there were no a statistically significant difference between overall quality scores and demographic characteristics of the study subject's. This finding is compatible with Strober., (2018) who study; Quality of life and psychological well-being in the

early stages of multiple sclerosis (MS): Importance of adopting a bio psychosocial model in Newark. That shown there were no differences with regard to age, gender, education, or disease duration between those with high QOL and those with low to average QOL.

Concerning the study sample, it was found that; there were no statistical significances differences between overall quality life score and duration of disease. Because disease progress not affected by aging but deteriorated based on immunity activation. This result had been agreed with study by Albuquerque., (2015) who study; quality of life of people with multiple sclerosis:clinical and psychosocial determinants in de coimbrain portugal. demonstrated the same.

Findings of the present study showed that, illustrates there are highly statistically significant difference between overall quality scores and physical health, role limitations due to physical problems, role limitations due to emotional problems, pain, emotional well-being, energy, cognitive function and health distress. this finding is compatible with Tabrizi and Radfar., (2015) who study; fatigue, sleep quality, and disability in relation to quality of life in multiple sclerosis in outpatient center in uremia, in northwestern Iran. Demonstrated the same.

Conclusion

According to the study findings, we concluded that multiple sclerosis patients suffer from an impairment in their quality of life among all domains. One third has difficulties in climbing stairs. Two thirds spent less time on work or other activities with others. More than have of patients suffer from emotional problems particularly depression and anxiety. One third has severe pain which interfere with their ability to practice their life normally. More than half of them became nervous almost of the time which effect on their ability to dealing and contact with others. More than one third report of general health condition became worse than one year ago.

Recommendations

Based on the findings of the present study, the following recommendations can be deduced:

For multiple sclerosis patients

- Provide health education sessions about new evidence in treatment and exercise had a positive effect on improvement of their condition
- Encourage the MS patients to follow up evidence guidelines that reduce the complication of MS.
- Share the MS patients, Family member and significant other in planning the care for diabetic patients; so that they can support and encourage them to manage their condition.
- Encourage the MS patients to follow up physiotherapy and psychotherapy sessions that help to improve their ability and quality of life

For community nursing

- Perform a continuous health assessment and observation to the multiple sclerosis patients (health status, emotional status, skin integrity, pain sensation, balance and movement ability).
- Organize in-service education programs for staff nurses and students regarding multiple sclerosis

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