Original Article

Quality of Life among Type II Diabetes Mellitus Patients Using the Modified Diabetes Quality of Life (MDQOL-17): An Observational Study

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Abstract:

Background: Diabetes mellitus (DM) is a chronic disorder that requires constant management. To achieve good metabolic control and avoid acute and chronic complications, the patient must follow a diet plan, up their physical activity, and take medication. A growing amount of research on the impact of diabetes on health-related quality of life. Patient health, complications, and attitude all have an effect on health-related quality life of either directly or indirectly. **Aim:** To find out which aspects of life are commonly affected among patients with Diabetes using MDQoL-17 scale. **Methodology:** 100 patients with Diabetes Mellitus type II participated in the study. Patients with associated comorbid conditions were excluded. MDQoL-17 Scale was then administered on the patients. The entire inquiry was delivered in a language that the patient could understand, and their responses were recorded on the scale. Each domain's percentage of the overall score was computed. **Results:** According to the answer to the affirmative question number 4, which indicates daily activity, more patients in this study engaged in daily activities that improved their quality of life (75%) than did not. According to the results of negative question 16 (which implies financial stress), (56%) of the patients had this problem, making it difficult for them to receive the appropriate care. **Conclusion:** Study concludes that specific aspects of QOL that has been found affected than other after diabetes are Physical, Role Physical, Role Emotional, Social and General Health. Resolution of the factors associated with these aspects will help to improve the quality of life in these patients

Key words: Diabetic Mellitus, MDQOL-17 Questionnaire, Quality of life

Introduction:

Diabetes mellitus (DM) is a chronic disorder that requires constant management. Diabetes affected 422 million people in 2014, up from 108 million in 19809.[1] In comparison to high-income countries; prevalence has been increasing more quickly in low- and middle- income nations. Diabetes-related premature mortality increased by 5% between 2000 and 2016.[2] With an expected 1.5 million deaths directly related to the disease in 2019, diabetes was the tenth most common cause of death. According to the etiological classification of diabetes, there are two types: Both type 1 diabetes (IDDM) and type 2 diabetes (NIDDM) can range from primarily insulin resistance to relative insulin resistance due to beta-cell loss, which typically results in absolute insulin insufficiency.[3]

DM raises a person's chance of acquiring both micro vascular and macro vascular problems, which is cause for concern. Over time, cardiovascular, neurological, and immune system issues might result from excessive blood sugar levels. Weight, Fat Distribution, Inactivity, Family History, Race and Ethnicity are risk factors for type 2 diabetes. Age, blood lipid levels, Prediabetes, risks associated with pregnancy, and polycystic ovary syndrome.[4] The phrase Quality of Life (QoL) is used to evaluate a patient's ability to function, physiological health, social health, and general sense of wellbeing.

A growing corpus of evidence details the negative consequences of diabetes on health- related quality of life (HRQoL).[5] Multiple aspects of HRQoL, such as physical, role, social, cognitive, and sexual functioning, emotional and well-being, pain and health perceptions or discomfort, are affected by the illness, its consequences, therapies, and patient attitudes. Self-rated health is a major predictor in patients with older onset diabetes.[6]

It is acknowledged that diabetes is a condition that negatively affects quality of life (QOL), regardless of age or etiology.[7] The patient may experience bio-psychosocial consequences as a result of finding it difficult to adapt to lifestyle changes.[8] MDQoL-17 questionnaire is newer outcome measure to assess QOL. It was created and validated by Acharya et al. (2014) in 2010 in the regional South Indian languages of Kannada and English. It includes 17 questions that are specifically related to diabetes and 8 concepts for physical, social functioning, role limitation due to personal emotional issues, psychological impact, energy /fatigue, bodily asses the QoL in type II diabetes mellitus patients with and without complications. The range of scores is 0 to 100, with 0 representing the lowest score.[9]

It helps to gain a better understanding of the patients' viewpoint on the illness and how the illness affects their QoL. The QoL is crucial because it is a potent instrument for predicting an individual's capacity to manage the condition and maintain long-term health and well-being.[10] It also assist in comparing the effects of various treatment regimens on patient satisfaction and well-being.

Hence, the modified diabetes quality of life (MDQOL-17) was used in the study to determine the quality of life among type II diabetes mellitus patients.

Methodology: Observational study was conducted. After receiving the Ethical Committee's approval, the study was launched and total 100 samples with type Diabetes II were recruited during the course of the study's six- month period using the Convenient

Sampling method. Study was conducted at Dr. Vikhe Patil Memorial Hospital, Ahmednagar, Maharashtra, India. Both male and female participants which were older than 18 years were included in the study. A data collection sheet was created with demographic information like Name, Age, Gender, Diabetes Duration, and additional conditions associated to Diabetes including Weakness, Fatigue, Burning Sensation, and Pain in Limb.

The patient who is a part of the study received a thorough explanation along with MDQoL- 17 Scale. The entire inquiry was delivered in a language that the patient could understand, and their response was recorded on the scale. We learned which domain is more affected by knowing how each domain on the scale scored differently. We now know which domain is most affected in diabetes patients based on the percentage total score of each domain that was determined. As a result, it has enabled us to focus more on the impacted domain.

MDQoL-17 (Modified Diabetic Quality of Life-17) was used to see how QoL is affected in Diabetic 2 Patients. It is a scale that has that has 7 domains. Physical functioning, Role limitation due to physical health, Role limitation due to emotional, Energy Fatigue, Emotional well-being, Social functioning, General Health. It consists of 17 questionnaires that cover seven domains, including physical functioning, role limitations brought on by physical health issues, role limitations brought on by personal or emotional issues, emotional well-being, social functioning, energy/fatigue, and general health. A higher score indicates a healthier state of affairs. Scores range from 0 to 100, with 100 representing the highest attainable score. Scores show the proportion of the possible score that was actually obtained. For simplicity of comparison and analysis, the MDQoL-17 QoL score was reported as a percentage of the total QoL Score. Patients with a QoL score of more than 70 had a superior quality of life, those between 50 and 70 had a middling quality of life, and those under 50 had a subpar quality of life.[9]

Result:

Table 1: Demographic and Frequency distribution of patient's characteristics

Character		N=100
Gender	Male	58
	Female	42
Occupation	Housewife	12
	Shopkeeper	5
	Goldsmith	5
	Banker	41
	Teacher	7
	Farmer	30
Duration	1-5 years	84
	6-10 years	16
Addiction	Alcoholic	7
	Smoker	24
Body Mass Index	Under weight	22
	Normal	30
	Overweight	48
Complication	Sleep Disturbance	29
	Decreased energy level	15
	Tingling Sensation	26
	Swelling in limb	3
	Pain in Limb	14
	Amputation	3

Table 2: Describes Patient's responses (Positive and Negative) to questions of MDQOL

Question No	Total Scoring	Mean Value
Positive Responses		
1	3397	33.97
2	8200	82.00
4	10,100	101.00
7	3300	33.00
13	54,900	54.90
17	9137	91.37
Negative Responses		
16	9080	90.8
15	8982	89.82
14	9081	90.81
12	7800	78.00
11	6781	67.81
10	6400	64.00
9	7741	77.41
8	7643	76.43
6	6312	63.12
5	8131	81.31
3	6589	65.89

Discussion:

The objective of the current study is to evaluate the quality of life (QoL) of 100 diabetic patients who were evaluated in a tertiary care hospital. We discovered that diabetes patients generally had a negative effect on quality of life. The investigations of Gautam et al. (2009), found that diabetes had a negative impact on the patient's quality of life, provide evidence for this.[11] The majority of the study participants were men, which was in line with the findings of the study by Eljedi et al. (2006), in which men made up the majority of the patients.[12]

According to research of the global prevalence of diabetes by Wild et al. (2004), the majority of patients were between the ages of 40 and 65. This is consistent with the findings that most diabetics live in poor nations.[13] Additionally, we see that the QoL score significantly declines with aging. In a study where the QoL of diabetic patients was found to be diminished with age, Masoud et al. (2011) made a similar observation [14].

In our study, the majority of diabetes patients had histories longer than five years, and as a result, their QoL scores were lower than those of patients with shorter histories. Patients with a BMI of 18.4 kg/m or less had greater quality of life than those with a BMI of >25 kg/m.

Those with diabetes who did not have complications had a greater quality of life than those who did, and as the number of complications rose, the QoL score fell. Fatigue weight fluctuations, limb pain, and slow wound healing were the most frequently seen complications. Diabetic-related complications such as weariness, disturbed sleep, issues at work, low energy, issues in social life, limb pain, and slow wound healing considerably lower the QoL score.

Similar findings were made by Benbow et al. in 1998, who noted that patients who complained of fatigue and limb discomfort had poor quality of life.[15] In diabetes individuals, the physical functioning domain was most affected, and role restriction brought on by physical health also had a similar impact. Patients receiving insulin and OHA in combination therapy had greater quality of life scores than patients receiving simply insulin or oral nutrition.

These could be related to the fact that utilizing insulin and OHA in combination therapy improves glycemic control.

YKi-Jarvinen (2001) study found that the combination of insulin and OHA improved glucose management.[16] The presence of co- morbidity reduced QoL, and Jimenez-Garcia et al. (2008).[17] noted a similar finding in their study that co-morbidities were a predictor of low QoL. We also noted that hypertension (49%) was the co-morbidity with the highest prevalence. The research by Gautama et al. (2009) produced similar findings.[11] In our study, patients who engaged in physical activity on a daily basis, such as walking or running, were in better physical shape than those who did not. The same outcome was observed in the Prajapati V. B. et.al. (2018) study, which noted that more than 70% of all patients engaged in physical activity.[18] According to the answer to the affirmative question number 4, which indicates daily activity, more patients in this study engaged in daily activities that improved their quality of life (75%) than did not.

According to negative question 16 (indicating a financial load), which we saw in our survey, five percent of patients were dealing with this problem and were unable to get the treatment they needed. Similar findings were found by Prajapati V. B. et.al. (2018),[18] who found that patients with a stable financial situation were better able to access appropriate care and had greater quality of life than those who were unable to do so due to financial constraints. When compared to patients who were not addicted to anything, patients who were addicted to smoking or drinking were observed to have a lower quality of life.

Conclusion:

This study helps to identify specific aspects of quality of life that gets affects in the due course of diabetes. Resolution of the factors associated with these aspects will help to improve the quality of life in these patients.

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