

A Cross-Sectional Study to Assess the Quality of Life in Patients with Type 2 Diabetes Mellitus

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Abstract

Introduction: Type 2 diabetes mellitus is a chronic disorder that affects the Quality of Life (QoL) of patients. The objective of the present study is to assess the health related Quality of Life of patients with type 2 diabetes mellitus.

Method: This was a cross-sectional study of 140 type 2 diabetes mellitus patients, attending the diabetic clinic of a Tertiary care centre in Rajasthan, North India. Patients with type 2 diabetes mellitus between the age group of 25-75 were included in the study and data was collected using pre-designed questionnaire. The QoL of patients were assessed using SF 36V2 questionnaire along with the socio-demographic profile. The data was analysed using appropriate descriptive and inferential statistics using SPSS.

Result: The mean age of subjects was 56±11.6 years and the mean duration of diabetes mellitus was 10.9±8.3 years. 47.9% of patients were overweight and 20.7% were obese. The mean HbA1c (glycosylated haemoglobin) was 8.3±1.5%. The patients with type 2 diabetes had significantly lower scores in all domains of QoL. Males had higher QoL scores than females and the difference was found to be statistically significant ($p<0.05$).

Conclusion: This study finding indicates that QoL of patients with type 2 diabetes mellitus is relatively poor. Diabetes mellitus significantly affects the QoL especially in females. Therefore much attention must be paid to identify and implement measures for achieving better management of diabetes mellitus and ultimately improving the QoL of patients with type 2 diabetes mellitus.

Keywords: Diabetes, Quality of Life.

Access this article online	
Quick Response Code:	Website: www.innovativepublication.com
	DOI: 10.5958/2394-6776.2016.00012.6

Introduction

The incidence of type 2 diabetes mellitus is becoming a global challenge with all the negative repercussions in terms of morbidity and mortality¹. Diabetes mellitus is one of the most prevalent chronic disease in the world and the incidence of diabetes has reached epidemic proportions in developing countries. India is currently experiencing an epidemic of type 2 diabetes mellitus and has the largest number of diabetic patients². It is often referred to as the diabetic capital of the world. International Diabetes Federation (IDF) 2013 report reveals that the total number of diabetic subjects in India is 62.4 million³.

Diabetes is a chronic, demanding disease associated with physical and psychological disability and these may impair the quality of life (QoL) of patients. QoL is a multidimensional construct incorporating an individual's subjective perception of physical, emotional and social well-being including both a cognitive component (satisfaction) and an emotional component (happiness)⁴.

Many studies have reported that duration of diabetes, co-morbidities, diabetes complications and patient's knowledge on self-care may influence the health related quality of life of patients with type 2 diabetes mellitus⁵⁻⁷. The main aim of the treatment of diabetes is to prevent diabetes complications and improve the Health Related Quality of Life (HRQoL) of patients with diabetes⁸. The improvement in QoL reduces the social, financial and psychological burden related to diabetes. The aim of the present study is to assess the QoL of patients with type 2 diabetes mellitus.

Material & Method

This cross-sectional study was conducted in the diabetic clinic of a multispeciality teaching, tertiary care centre in Jaipur, Rajasthan, North India. This hospital receives referrals from different districts across Rajasthan and from neighbouring states. Sample size was calculated using the formula Z^2pq/e^2 with 5% allowable error and considering 9% prevalence and the sample size came out to be 131 which was rounded off to 140 for carrying out the present study. A total of 140 type2 diabetic patients above 25 years and on treatment for diabetes for at least 1 year attending the diabetic clinic were included in the study. Patients having gestational diabetes and type 1 diabetes mellitus were excluded from the study. After obtaining informed consent from the patient, socio-demographic and clinical data were recorded in a pre-designed questionnaire.

Health related QoL was measured using a standardized questionnaire of SF 36 V2.

The questionnaire has 8 domains. Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE) and Mental Health (MH).

This is summed up as Physical Component Score (PCS) which combines PF, RP, BP and GH. And Mental Component Score (MCS) which combines VT, SF, RE and MH. These domains were scored on a scale of 0-100, 0 is indicating the worst possible status and 100, the best possible score⁹. The collected data were entered into Microsoft excel and loaded into SPSS (version 11) for analysis. To conduct this the present study, ethical committee clearance was obtained from the Institutional Ethics Committee, NIMS Medical College, Jaipur, Rajasthan and written informed consent was obtained from the study participants.

Results

Out of 140 respondents, 70(50%) were males and 70(50%) were females. The mean age of the respondents was 56±11.6 years. 66.4% of respondents

were in the age group of 46-65 years. 57.1% of respondents had family history of diabetes mellitus. The most common co-morbidity was hypertension (52.2%) and dyslipidemia was present in 47.8% of respondents. The most common complication present was retinopathy (37.1%), followed by neuropathy (27.9%). 47.9% of the study subjects were overweight and 20.7% were obese. The overall BMI was 24.7±3.5 Kg/m² and HbA1c was 8.3±1.5 mg%. The mean duration of diabetes mellitus was 10.9±8.3 years. The baseline characteristics of study subjects are shown in Table 1.

QoL of patient is shown in Table 2. Out of the 8 domains in the SF 36V2 questionnaire, the most affected domains were role physical (RP) and role emotional (RE). The domains which were least affected were vitality (VT) and bodily pain (BP). Overall males had higher QoL score as compared to females. This difference was found to be statistically significant (p<0.05).

Table 1: Socio-demographic and Diabetic Profile

Mean Age (years)		54±11.4
Gender	Male	70 (50%)
	Female	70 (50%)
Marital Status	Married	131 (93.6%)
	Widowed	4 (2.9%)
	Separated	5 (3.5%)
Family Type	Nuclear	92 (65.7%)
	Extended	46 (32.9%)
	Joint	2 (1.4%)
Family History of Diabetes	Present	80 (57.1%)
	Absent	60 (42.9%)
Duration of Diabetes	<5 years	46 (32.9%)
	5-10 years	35 (25%)
	>10 years	59 (42.1%)
BMI	Normal	44 (31.4%)
	Over weight	67 (47.9%)
	Obese	29 (20.7%)
Co-morbidities	Hypertension	74 (52.2%)
	Dyslipidemia	66 (47.8%)
Diabetic complications	CAD	33 (23.6%)
	Neuropathy	39 (27.9%)
	Retinopathy	52 (37.1%)
	Nephropathy	11 (7.9%)
Mean HbA1c		8.3±1.5%
Mean Cholestrol		198.9±53 mg%
Mean FBS		147.3±56.6 mg%

Table 2: Distribution of SF 36 V2 domain scores by sex of study subjects

SF 36	Male	Female	Overall
PCS	43.97+6.99	37.58+9.15	40.78+8.72
MCS	37.98+11.23	34.40+10.77	36.19+11.11
Overall	40.59+7.52	36.22+10.40	38.40+9.55

Discussion

The present study was aimed to assess the HRQoL in patients with type 2 diabetes mellitus. This study showed that 66.4% of patients were between 45-65 years, which is consistent with the pattern of diabetes observed in developing countries¹⁰. The mean duration of diabetes in the present study was 10.9±8.3 years. Sundaram also reported a mean duration of 10.2±9.1 years in his study¹¹.

The mean BMI of study subjects was found to be 24.7±3.5. This finding was supported by study conducted by Oguntibiju, who reported that 62% of patients have a BMI greater than 25kg/m².¹²

The most common complication present in the respondents was retinopathy (37.1%). This finding is in line with the findings of Papadopoulos, who found that 23.6% patients suffer from retinopathy¹³.

The SF 36V2, commonly used in health service research in fairly simple and comprehensible. The overall SF 36V2 score was lower (36.22+10.84) in females than in males (40.59+7.52) and this difference is statistically significant ($p < 0.05$). Males had higher score than females in all domains except VT. Chittleborough et al reported better scores for males in all domain scores except in GH and VT¹⁴. Riaz et al also reported that mean scores of all domains of QoL were found to be significantly different between males and females¹⁵.

Diabetes is a lifelong disease requiring patient to continuously self-manage their disease to maintain HRQoL¹⁶. In this regard diabetes education should be a part of the management of diabetes, as improvement in HRQoL is the ultimate goal in the treatment of diabetes.

Conclusion

This study concluded that diabetes is associated with decreased level of QoL both in physical and mental health component. QoL is viewed as a critical outcome of disease treatment and control. With the emergence of non-communicable disease in developing countries, health care professionals should make use of opportunities in educating people with diabetes mellitus to maintain a good glycemic control of their diabetes.

Conflicts of Interest: None

Source of Support: Nil

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