



## Research Article

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### EVALUATION OF QUALITY OF LIFE IN INDIVIDUALS WITH TYPE 2 DIABETES (MADHUMEHA)

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#### ABSTRACT

Now-a-days there is an increasing predominance of chronic disorders and increasing number of people lives with chronic diseases that can adversely affect their HRQOL (Health related quality of life). Quality of life is very important in diabetic patients. The methods are to assess the Quality of life (QOL) in the patients of Madhumeha; a case-control study was carried on 600 individuals at OPD, IPD and Central Laboratory of NIA, Bombay wala hospital, Satellite hospital, NIA camp sites in Jaipur and its periphery. Out of 600 individuals, 300 were cases of Madhumeha (diabetics) and 300 were controls (non-diabetics). They were screened by laboratory investigations (FBS, PPBS and RBS) at the central laboratory of NIA and with the help of Glucometer for the knowledge of their blood sugar level. The quality of life in diabetic patients (cases) and non-diabetic patients (controls) were assessed using the Short Form Health-Related Quality-of-Life Questionnaire (SF-36). The Results are in this study, the mean of quality of life score in 'physical functioning', 'role physical', 'vitality', 'role emotional', 'social functioning', 'mental health' domains were significantly different between case and control groups except 'bodily pain' and 'general health' domains. The survey study concluded that Madhumeha (type 2 diabetes) hampers the QOL of patients as compared with general population. Thus, there is need of holistic care of a diabetic patient with equal importance to physical, mental and social wellbeing.

**Keywords:** Quality of life; Madhumeha; SF-36; Physical functioning, Bodily Pain

#### INTRODUCTION

Ayurveda is an ancient science of healing. Ayurveda is derived from two Sanskrit words: "ayus" meaning life and "vid" meaning knowledge. "The science of life", Ayurveda is much concerned with enhancing the quality of life and the prevention of ill-health as it is with treatment of disease. This ancient science deals with not only longevity but also with maintaining good healthy body and mind. The concept of health is well elaborated in Ayurvedic classics.

Now-a-days there is an increasing predominance of chronic disorders and increasing number of people live with chronic diseases that can adversely affect their HRQOL (Health related quality of life). In general, chronic diseases are slow in progression, long in duration, and they require medical treatment. The majorities of chronic diseases hold the potential to worsen the overall health of patients by limiting their capacity to live well, limit the functional status, productivity and HRQOL and are a major contributor to health care costs. Among these diseases are cancer, heart diseases, stroke, diabetes, HIV, bowel diseases, renal disease and diseases of central nervous system.

Devins *et al.* (1983), claim that chronic disease disrupts an individual's life and that this disruption may be interpreted in terms of its impact on well-being, or QOL. Psychosocial well-being is compromised by two limitations: by reducing positively reinforcing outcomes of participating in valued activities and feelings of personal control and by limiting the ability to obtain positive outcomes or avoid negative ones. They have further

suggested that this impact can be assessed in terms of QOL domains.<sup>1</sup>

The estimation of the relative impact of chronic diseases on HRQOL is necessary to better plan and distribution resources for research, training and health care, to further promote living well with chronic diseases. Consequently, collaboration among different sciences could produce better treatment outcomes for people living with chronic disease, especially those who are in greatest need. An integrated framework, such as the biopsychosocial model, for healthcare would be built on a single guiding principle: that the aim of addressing the physical, social and psychological aspects of chronic disease is to help patients with chronic diseases and the whole population, to live well, regardless of the chronic disease or an individual's own current state of health.<sup>2</sup>

The most widely used generic measure of quality of life in studies of people with diabetes is the Medical Outcomes Study (MOS) Short-Form-General Health Survey (SF-36). Many studies have used this instrument.<sup>3,4</sup>

The MOS instrument includes physical, social and role functioning scales to capture behavioral dysfunction caused by health problems. Measure of mental health, perception of overall health and pain intensity reflect more subjective components of health and general well-being. The SF-36 questionnaire; which concentrate on the respondents' experiences, feelings, beliefs, perceptions and convictions concerning their health-related quality of life during the past four weeks, consists of closed-ended structured questions. These questions relate specifically to eight

quality of life indicators and two summary measures that revolve around both physical and mental health. The closed-ended questions of the SF-36 questionnaire compel respondents to select their responses from a set of possible answers compiled by Ware and Sherbourne (1992).<sup>5</sup> These questions comply with the methodological guideline for closed-ended questions.<sup>6</sup> In this study, we have assessed the impact of HRQOL in Madhumeha (diabetes 2) by using SF-36 questionnaire.

**Aim and objective**

To assess the Quality of life (QOL) in the patients of Madhumeha (diabetes 2) using Short Form Health-Related Quality-of-Life Questionnaire (SF-36).

**MATERIAL AND METHODS**

**Study Design**

**Case-Control study**

To assess the Quality of life (QOL) in the patients of Madhumeha, a case-control study was carried on 600 individuals at OPD, IPD and Central Laboratory of NIA, Bombay wala hospital, Satellite

hospital, NIA camp sites in Jaipur and its periphery after taking written informed consent from subjects. Out of 600 individuals, 300 were cases of Madhumeha (diabetics) and 300 were control (non-diabetics). They were screened by laboratory investigations (FBS, PPBS and RBS) at the central laboratory of NIA and with the help of Glucometer for the knowledge of their blood sugar level. The study has been carried out as per International conference of Harmonization-Good Clinical Practices Guidelines (ICH-GCP) or as per Declaration of Helsinki guidelines.

The quality of life in diabetic patients (cases) and non-diabetic patients (control) were assessed using the Short Form Health-Related Quality-of-Life Questionnaire (SF-36). The SF 36 is a quality of life scoring system with 36 items and 8 domains. Each question score is between 0 (minimum) to 100 (maximum). Higher score demonstrated better quality of life.

**RESULTS**

The quality of life in diabetic patients (cases) and non-diabetic patients (control) was assessed using the Short Form Health-Related Quality-of-Life Questionnaire (SF-36) and statistical analysis of QOL (Quality of life) between cases and control was done by Mann-Whitney “U” test.

**“Physical Functioning” Domain**

**Table 1: Comparison of “Physical Functioning” (SF-36 domain) in cases (diabetic) and control (non-diabetic)**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	49.75	300	9.52	0.5497	48.000	1067.5	< 0.0001
Controls	86.20	300	6.87	0.3968	90.000		

The mean ± standard deviation of quality of life score in “physical functioning domain” in cases and controls were 49.75 ± 9.52 and 86.20 ± 6.87 respectively. There was extremely significant difference (P < 0.0001) between cases and control in physical functioning domain.

**“Role Limitation due to Physical Health” Domain**

**Table 2: Comparison of “Role Limitation due to Physical Health” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	50.03	300	9.95	0.5745	48.000	992	< 0.0001
Controls	86.96	300	5.02	0.2898	90.000		

The mean ± standard deviation of quality of life score in “Role Limitation due to Physical Health” domain in cases and controls were 50.03 ± 9.95 and 86.96 ± 5.02 respectively. There was extremely significant difference (P < 0.0001) between cases and control in Role Limitation due to Physical Health domain.

**“Bodily Pain” Domain**

**Table 3: Comparison of “Bodily Pain” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	75.77	300	20.63	1.191	77.500	41233	0.0719
Controls	76.883	300	11.60	0.6696	72.500		

The mean ± standard deviation of quality of life score in “Bodily Pain” domain in cases and controls were 75.775 ± 20.63 and 76.88 ± 11.60 respectively. There was no quite significant difference (P = 0.0719) between cases and control in bodily pain domain.

**“General Health” Domain**

**Table 4: Comparison of “General Health” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	67.48	300	12.34	0.7128	70.000	42018	0.1476
Controls	70.25	300	7.71	0.4449	70.000		

The mean ± standard deviation of quality of life score in “General Health” domain in cases and controls were 67.48 ± 12.34 and 70.25 ± 7.71 respectively. There was no significant difference (P = 0.1476) between cases and control in general health domain.

**“Energy” Domain**

**Table 5: Comparison of “Energy” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	41.60	300	14.58	0.8416	40.00	6024.5	< 0.0001
Controls	76.67	300	16.065	0.9275	70.00		

The mean ± standard deviation of quality of life score in “Energy” domain in cases and controls were 41.60 ± 14.58 and 76.67 ± 16.065 respectively. There was extremely significant difference (P < 0.0001) between cases and control in “Energy” domain.

**“Social functioning” Domain**

**Table 6: Comparison of “Social functioning” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	64.92	300	18.18	1.050	62.50	12534	< 0.0001
Controls	90.83	300	11.35	0.6555	100.00		

The mean ± standard deviation of quality of life score in “Social functioning” domain in cases and controls were 64.92 ± 18.18 and 90.83 ± 11.35 respectively. There was extremely significant difference (P < 0.0001) between cases and control in “Social functioning” domain.

**“Role limitation due to Mental Health” Domain**

**Table 7: Comparison of “Role limitation due to Mental Health” in cases and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	56.44	300	35.95	2.076	66.67	22550	< 0.0001
Controls	87.45	300	16.18	0.9340	100.00		

The mean ± standard deviation of quality of life score in “Role limitation due to Mental Health” domain in cases and controls were 56.44 ± 35.95 and 87.45 ± 16.18 respectively. There was extremely significant difference (P < 0.0001) between cases and control in “Role limitation due to Mental Health” domain.

**“Mental Health” Domain**

**Table 8: Comparison of “Mental Health” in cases (Diabetic) and control**

Group	Mean	N	SD ±	SE ±	Median	Mann-Whitney U-statistic	P
Cases	53.40	300	21.16	1.222	52.000	14725	< 0.0001
Controls	82.08	300	17.18	0.9920	88.00		

The mean ± standard deviation of quality of life score in “Mental Health” domain in cases and controls were 53.40 ± 21.16 and 82.08 ± 17.18 respectively. There was extremely significant difference (P < 0.0001) between cases and control in “Mental Health” domain.

**DISCUSSION**

Quality of life is very important in diabetic patients. Absence of self-care, poor control of blood sugar and diabetic complications lead to decrease of quality of life.<sup>7</sup> Improving of diabetic patient's Quality of life decreases poor control of blood sugar, diabetic complications and burden of diabetes.<sup>8,9</sup> The most widely used generic measure of quality of life in studies of people with diabetes is the Medical Outcomes Study (MOS) Short-Form-General Health Survey (SF-36). The SF36, a short-form QOL scoring system with 36 items, is a self-administered questionnaire consists of 36 questions, 35 of which are compressed into eight multi-item scales. Many studies have used this instrument.<sup>10,11</sup> HRQOL (Health related quality of life) is a multidimensional construct that consists of at least three broad domains-physical, psychological and social functioning.

In this study, the mean of quality of life score in ‘physical functioning’, ‘role physical’, ‘vitality’, ‘role emotional’, ‘social functioning’ and ‘mental health’ domains were significantly different between case and control groups except ‘bodily pain’ and ‘general health’ domains. This study showed lower levels of QOL in diabetic patients in comparison with control group. This is in agreement with previous studies and may be related to complications of Diabetes mellitus, or numerous problems which diabetic patients encounter. The Mean ± SD of QOL score of 300 diabetic cases in ‘physical functioning’ was 49.75 ± 9.52, in ‘role physical’ it was 50.03 ± 9.95, in ‘vitality’ it was 41.60 ± 14.58, in ‘role emotional’ it was 56.44 ± 35.95, in ‘social functioning’ it

was 64.92 ± 18.18, in ‘mental health’ it was 53.40 ± 21.16, in ‘bodily pain’ it was 75.77 ± 20.63, in ‘general health’ it was 67.48 ± 12.34. This indicates that very low score in “physical functioning,” in “role physical” and in “vitality” because maximum patients were complaining of unable to perform vigorous activities and had feeling of tiredness. It may be due to poor glycaemic control and high BMI.

In our study, in both diabetic and nondiabetic groups, the relationship between QOL and all the scales except “general health” and “bodily pain” was significant. These scales were also significantly associated with QOL in the studies done by Mohammad Zeydi *et al*<sup>12</sup> and Hadi *et al*.<sup>13</sup>

So, lifestyle changes, motivational counseling, structured continuing education and support for diabetic patients might address some of these issues. Above results shows that Diabetes mellitus significantly affects the quality of life of patients. Thus, there is need of holistic care of a diabetic patient with equal importance to physical, mental and social wellbeing.

**CONCLUSION**

The survey study concluded that Madhumeha (type 2 diabetes) hampers the QOL of patients as compared with general population. So, it is necessary to focus on ‘physical functioning’, ‘role physical’, ‘vitality’, ‘role emotional’, ‘social functioning’ and ‘mental health’ domains to improve QOL of diabetic patients.

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