

Quality of Life in Patients with Type-II Diabetes

Iram Majeed, Muhammad Afzal, Sana Sehar, Syed Amir Gilani, Muhammad Mahboob Alam

ABSTRACT

Background: Diabetes is considered as one of the significant health problem. In the past few decades, there is progressive increase in the diabetes related complications. Diabetes substantially affects the Quality of life (QOL) causing impairment in all functioning aspects of patients due to complications arising thereof. **Objective:** Objective of this study was to evaluate the quality of life (QOL) in patients with type-II diabetes. **Study Design:** Cross-sectional study. **Settings:** Tertiary Health Care Center, Lahore-Pakistan. **Duration:** Six months from 27-09-2018 to 26-03-2019. **Methodology:** The study was done among 180 diabetic patients diagnosed with type-II diabetes at a tertiary health care setting through convenient sampling technique. Quality of life in type-II diabetics was evaluated through a World Health Organization D-39 Questionnaire. **Results:** Findings of the study were depicting the mean QOL score of type-II diabetics as 51.8. Score of various domains indicating the QOL in type-II diabetics was classified as 55% in physical, 47% in psychological, 55% in social and 50% in environmental domain of QOL. Overall domain wise scoring revealed an average QOL. **Conclusion:** Type-II diabetes significantly affects the quality of life in physical domain along with psychological domain. QOL is badly affected in type-II diabetic patients. Diabetes has an adverse influence on all the aspects of life in affected patient. There is a need to address the quality of life in diabetics for better physical and psychological outcomes.

Keywords: Quality of Life, Type-II diabetes mellitus, Physical domain, Complications.

Corresponding Author

Submitted for Publication: 19-06-2019

Accepted for Publication: 30-07-2019

IRAM MAJEED, Lecturer, Lahore School of Nursing, The University of Lahore-Pakistan.

Contact / Email: +92 309-8370962, iram.majeed@lsn.uol.edu.pk

Citation: Majeed I, Afzal M, Sehar S, Gilani SA, Alam MM. Quality of Life in Patients with Type-II Diabetes. APMC 2019;13(3):209-12.

INTRODUCTION

World Health Organization (WHO) defines diabetes, as a chronic illness that occurs when pancreas doesn't prepare enough insulin or when the body can't adequately utilize the insulin. Insulin is a hormone responsible for maintaining adequate blood glucose level. Hyperglycemia or raised blood sugar results in uncontrolled diabetes.¹ From community point of view, diabetes is considered as one of significant health problem. In the past few decades, there is progressive increase in the diabetes related complications.² Quality of life is considered as an important construct as an individual think according to one's own cultural patterns and customs based on culture related value system, life targets, cultural opportunities and credentials.³

Diabetes substantially effect QOL causing impairment in all functioning aspects of patient. Other aspect of QOL like physical, social and psychological are influenced greatly as a result of diabetes.⁴ In Pakistan, prevalence of diabetes is estimated to 6.9% or roughly 7 million populations. Approximately, 3 million cases supposed undiagnosed. In 2015, Diabetes was considered as 4th major non communicable disease-causing mortality as evidenced by 86,364 deaths.⁵ As a chronic incapacitating illness, diabetes necessitates the need for proper checkup of patients to evaluate the QOL. Complexities related with diabetes influence all body systems and result in increased death rate. In chronic illness the only outcome to control the illness is through QOL in patients who are considered as important tool to lead the life and prevent morbidities.⁶ Clinically, to build a trustable patient and caregiver relationship, it is mandatory to carryout regular evaluation of QOL in diabetes affected individuals. Routine assessment helps to monitor disease status, to identify early complication of disease and to observe the result of treatment regimen disease.

In Pakistan, 15% of diabetics suffer from foot complications. Peripheral arterial disease (PAD) is a common complication ascribed to diabetes; it could prompt the development of diabetic foot. Compared to non-

diabetics, diabetics have four-fold increase risk to develop peripheral arterial disease (PAD) and could result in foot ulcers leading to amputation.⁷

QOL is closely linked with Diabetes as this disease significantly affects a persons' life quality. Impact of illness is evident in various aspects of QOL. Diabetes demolishes a persons' life by impairing dietary habits, causing nutritional deficiencies, disturbing self-concept and thinking process. Feelings of being a diabetic mentally upset a person resulting in social isolation and poor relations. Diabetes leads towards various malfunctions in body & permanent disorders.⁸

Type-II Diabetes has an effect on psychological functioning and quality of life of patients. Malfunctioning and poor quality of life is associated with further complications and co morbidities. There is need to modify the behaviors through comprehensive management programmers to enhance QOL of diabetic patients. Morbidity and mortality resulting from chronic diseases like type-II diabetes significantly emphasize the need to address the disease on the part of health professionals. As researches prove the negative consequences related to the quality of life in type-II diabetes.⁹

Type-II diabetics are exposed to various life events as a result of its effect on health. These healths related effects worsen a persons' life quality. Studies depict negative outcomes of type-II diabetes on health quality. Onsets of complications further deteriorate a persons' health and impairs the life quality. Effects of diabetes could be combated by maintaining proper bodily functions, improved self-concept and better relationships. There is need to emphasize on its outcomes by health care providers due to increasing rate of its complications.

Quality of life (QOL) is an essential part of health outcomes for diabetes patients. Life quality is significant result of healthcare activities & affected by complications related to diabetes, illnesses resulting from this chronic condition and health cost paid to treat the disease as it causes financial burden on individual. Life quality also decreases with onset of morbidities as a direct relationship. There is dire need of strict monitoring and proper interventions to combat the

disease. Diabetes demolishes a persons' life by impairing all aspects of life quality. Feelings of being a diabetic mentally upset a person resulting in social isolation and poor relations. Hence, the study was conducted to evaluate the Quality of Life in patients with Type-II diabetes.

METHODOLOGY

Study Design: A cross sectional study.

Settings: Tertiary Health Care Center, Lahore-Pakistan.

Duration: Six months from 27-09-2018 to 26-03-2019.

Sample Technique: Convenient sampling technique was used.

Sample Size: 180 patients.

Inclusion Criteria: Patients having definitive diagnosis of type-II diabetes mellitus for more than six months.

Exclusion Criteria:

Method: Target population was type-II diabetic patients attending the endocrinology unit at tertiary health care center of Lahore. A sample size of 180 was obtained after considering the prevalence of diabetes in Pakistan¹⁰ as 10.22%. Sample size was calculated using the formula: $N=4pq/L2$. $N = 146$ with 5% permissible error. Expecting 20% Noncompliance, the total sample size = $146+30 = 176$ diabetic patients ≈ 180 patients. Questionnaire was adopted from WHO D39 scale for diabetes.

RESULTS

Out of 180 patients, majority 85 (42.7%) participants belonged to the age group 36-40 years while 38 (21.1%) were of age group 25-30 years and 57 (31.7%) patients were in the age group of 30-35 years. Gender wise distribution a male predominance was observed involving 111 (61.7%) males and 69 (38.3%) females. Results showed that 103 (57.2%) participant smoke cigarette while 42.8% were non-smoker. History of alcohol intake was reported in 23 (12.8%) diabetics while 157(87.2%) cases were not using alcohol. Only 49 (27.2%) diabetics exercise regularly while 131 (78.8%) don't have physical activity. Family history of diabetes was positive in 54 (30%) cases while 126 (70%) have no family history of diabetes. Table-1 depicts the demographic profile of study participants.

Table 1: Demographics of study subjects

Variables / Categories	Type-II Diabetics	
	Frequency	Percentage
Age groups (Years)		
25-30	38	21.1
30-35	57	31.7
36-40	85	47.2
Gender	Frequency	Percentage
Male	111	61.7
Female	69	38.3
History of cigarette smoking		
Present	103	57.2
Absent	77	42.7
History of alcohol intake		
Present	23	12.8
Absent	157	87.2
Regular Exercise		
Present	49	27.2
Absent	131	72.8
Family history of diabetes		
Present	54	30
Absent	126	70

An average quality of Life was found in (56.7%) case of type-II diabetic. Only 32.8% of type-II diabetics had graded good QOL overall, while 10.5% graded QOL as bad, and results were statistically significant. Table 2 shows the overall score related to QOL of type-II diabetics.

Table 2: Overall perceptions of Type-II Diabetics about QOL

Overall QOL	Type-II diabetics	p-value
Bad	19 (10.5)	0.008
Average	102 (56.7)	
Good	59 (32.8)	

Domain wise QOL among study participants gave poor results. In physical domain of QOL, the mean score was very low and a significant association was found ($p < 0.005$), as shown in Table 3.

Table 3: Scoring of QOL in Patients with Type-II diabetes

Domain	Type-II diabetics	p-value
Physical	58.84 (18.43)	0.003
Psychological	58.20 (18.83)	0.094
Social	63.20 (20.89)	0.725
Environmental	50.95 (12.31)	0.629
Total	57.80 (15.53)	0.609

Scoring related to QOL was further elaborated by taking the domain mean score and dividing with the group into those having score more and less than the mean. Therefore, QOL was categorized as good and poor as shown in Table 4. About 55.3% diabetics have good QOL in physical domain and this association was statistically significant. In psychological domain only 47.1% participants showed good QOL while in social domain 52.9% showed poor QOL.

Table 4: Categories based on QOL scores

Domain	Type-II Diabetics		p-value
	Poor	Good	
Physical	80 (44.7)	100 (55.3)	0.006
Psychological	95 (52.9)	85 (47.1)	0.357
Social	80 (44.7)	100(55.3)	1.00
Environmental	100 (55.3)	80 (44.7)	0.639
Total	89 (49.5)	91 (50.5)	0.123

DISCUSSION

Smoking is a big cause for the vascular complications. Research elaborates the concept of diabetic complication on the basis of cigarette smoking. As it is observed that cigarette smoking increases the risk for high blood pressure which interact further to raise the chances for diabetic complications like heart disease and stroke.¹¹ Results of the present study diagnosed 57.2% (103) of diabetics were smoker.

As compared to a study conducted in 2016 by Adriaanse et al¹² the smoker's rate was high involving 41.6% diabetics used to smoke

cigarettes. One important significant factor to control diabetes is physical activity/exercise as exercise is closely linked with diabetes control by improving the level of body insulin. A well-planned exercise schedule helps to manage diabetic complications by reducing the weight and lowering intolerance of glucose.¹³

It was found in present study that only 27.2% type-II diabetics exercise and have physical activity. Although exercise is a vital intervention to control diabetes. A study conducted to assess the impact of type-II diabetes on QOL showed negative effects. Finding depicted strong relationships in physical and psychological domain as compared to social and environmental in type-II diabetics. Domains of QOL are indirectly related with diabetic complications. As complications increase, QOL decreases.¹⁴ Results of study depict considerably low score in environmental domain of QOL which suggest the ill effects of environment on life quality of type-II diabetics. Similar results were found in study of Garg et al.¹⁵ Depicting mean score much lower in environment domain than other domains of QOL. In another study, findings show lower scores in environmental domain than other QOL domains.¹⁶

Domain wise QOL among study participants gave poor results. In physical domain of QOL, the mean score was very low and a significant association was found ($p < 0.005$). As in each domain i.e. physical domain results were 58.84% of the patients revealed good QOL, psychological QOL was good in 58.20% cases whereas 63.20% diabetics revealed good social QOL and environmental QOL was good in 50.95% diabetics. A similar study conducted in 2017 by Prajapati et al¹⁷ presented domain wise result to show QOL as good physical QOL 63%, good psychological QOL 69%, 27% good social QOL and 85% good environmental QOL. In this study, a lower score in environmental domain was observed in type-II diabetics.

Findings of the study showed poor quality of life in type-II diabetics. QOL further worsen as complications increase. Poor quality of life in all domains showed strong negative effect of type-II diabetes on QOL. Score for quality of life was lower in physical domain than others. The results of this study were similar to those conducted by Prasanth et al,¹⁸ Meo et al¹⁹ and Masood et al.²⁰ Findings also showed that quality of life is poor in type-II diabetics as compared to the patients having type-I diabetes. These finding are in line with those of Shoukat et al²¹ in a local study recently conducted at Lahore, Pakistan showing significant association of the Quality of life with complications of type-II diabetes.

CONCLUSION

Quality of life is essential part of health outcomes for patients of diabetes. Type-II diabetics significantly affect QOL in physical domain & psychological domain. Diabetes has an adverse influence on all aspects of life quality in diabetics. This study has shown that the physical domain of QOL was significantly affected in type-II diabetics. There is dire need to address QOL in diabetics for better physical, social and psychological outcomes.

LIMITATIONS OF THE STUDY:

Considering the different educational level of respondents, we used face-to-face interview, which may lead to social desirability bias and could overestimate the result. An ample of factors are likely to influence the QOL of the participants included in this study, for instance loss of relatives due to death, trauma and other factors, which may cause depression and contribute to impaired QOL. Study was conducted in one setting so generalizability of findings will be challenging.

SUGGESTIONS

We would like to suggest the following recommendations:

- With the ever-increasing rate of urbanization around the world. It is essential to raise awareness about diabetes and its escalating complications around the world
- To develop training programs for diabetes management that focus on the preventive aspect and screening of complications rather than glycemic control and symptomatic treatment only.

CONFLICT OF INTEREST

There is no conflict of interest in this study.

ACKNOWLEDGEMENT


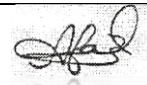

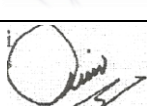
We would like to thank The University of Lahore for providing a platform to conduct such type of studies. We would also like to thank participants for providing us valuable information.

REFERENCES

1. World health statistics 2016: monitoring health for the SDGs sustainable development goals: World Health Organization.
2. Standards of medical care in diabetes—2015 abridged for primary care providers. Clinical diabetes: a publication of the American Diabetes Association. 2015;33(2):97.
3. World health statistics 2015: monitoring health for the SDGs sustainable development goals: World Health Organization.
4. Basit A, Riaz M, Fawwad A. Improving diabetes care in developing countries: The example of Pakistan. *Diabetes Res Clin Pract.* 2015;107(2):224-32.
5. Atiq MA. Epidemiology of Non-Communicable Diseases in Pakistan: Are We on The Right Track? *Pak J Medi and Dentistry.* 2018;6(4):52-6.
6. Echouffo-Tcheugui JB, Niiranen TJ, McCabe EL, Jain M, Vasan RS, Larson MG, Cheng S. Lifetime Prevalence and Prognosis of Pre-diabetes without Progression to Diabetes. *Diabetes Care.* 2018;41(7):117-8.
7. Ali Z, Ahmed SM, Bhutto AR, Chaudhry A, Munir S. Peripheral artery disease in type-II diabetes. *J Coll Physicians Surg Pak.* 2012;22(11):686-9.
8. Colberg SR, Sigal RJ, Fernhall B, Regensteiner JG, Blissmer BJ et al. Exercise and type 2 diabetes: The American College of Sports Medicine and the American Diabetes Association: joint position statement. *Diabetes Care.* 2010;33(12):147-67.
9. Alipour M, Salehi I, Soufi FG. Effect of exercise on diabetes-induced oxidative stress in the rat hippocampus. *Iranian Red Crescent Med J.* 2012;14(4):222-8.
10. Somappa HK, Venkatesha M, Prasad R. Quality of life assessment among type 2 diabetic patients in rural tertiary centre. *Int J Med Sci Public Health.* 2014;3:415-7.
11. Raghavendra N, Viveki RG, Gadgade A. An observational study to assess the health-related quality of life of type 2 diabetes mellitus patients attending a tertiary care hospital, Belgravia. *Int J Comm Medicine and Public Health.* 2017;4(9):3347-53.
12. Adriaanse MC, Drewes HW, van der Heide I, Struijs JN, Baan CA. The impact of co morbid chronic conditions on quality of life in type 2 diabetes patients. *Quality of Life Research.* 2016;25(1):175-82.
13. Tavakkoli L, Dehghan A. Compare the quality of life in type 2 diabetic patients with healthy individuals (application of WHOQOL-BREF). *Zahedan J Res in Med Sci.* 2017;19(2):5882.
14. Sepulveda E, Poinhos R, Constante M, Pais-Ribeiro J, Freitas P, Carvalho D. Health-related quality of life in type 1 and type 2

- diabetic patients in a Portuguese central public hospital. Diabetes, metabolic syndrome and obesity: targets and therapy. 2015;8:219-26.
15. Garg S, Paul B, Dasgupta A, & Maharana SP. Assessment of self-care activities: A study among type 2 diabetic patients in a rural area of West Bengal. Int J Med Sci Public Health. 2017;6(7):1173-8.
 16. Mahesh V, Latha K, Muninarayana C, Ravishankar S. Quality of life in diabetic subjects with respect to metabolic syndrome: a case control study. Int J Med Sci Public Health. 2016;3(9):2393-6.
 17. Prajapati VB, Blake R, Acharya LD, Seshadri S. Assessment of quality of life in type-II diabetic patients using the modified diabetes quality of life (MDQoL)-17 questionnaire. Brazilian J Pharm Sci. 2017;53(4):1-9.
 18. Prasanth G, Yogananda R, Sree NS. Assessment of quality of life in adult diabetic patients: pharmacological therapy and non-pharmacological therapy. 2018;7(7):747-58.
 19. Meo SA, Zia I, Bukhari IA, Arain SA. Type 2 diabetes mellitus in Pakistan: Current prevalence and future forecast. J Pak Med Assoc. 2016;66(12):1637-42
 20. Masood A, Rashid S, Musarat R. Quality of Life as Predictor of Psychological Well-being, Self-care and Psychosocial Adjustment in Patients with Type-II Diabetes after Initial Unilateral Minor Amputation. J Liaquat Uni Med Health Sci. 2016;15(04):183-90.
 21. Shoukat F, Tanveer F, Shahid S, Ahmad A, Gilani SA. Effects of diabetes associated complications on quality of life in patients with type 2 diabetes. RMJ. 2019;44(1):28-31.

AUTHORSHIP AND CONTRIBUTION DECLARATION

AUTHORS	Contribution to The Paper	Signatures
Iram Majeed Lecturer, Lahore School of Nursing, The University of Lahore	Study design, Data collection, Manuscript writing and statistical analysis	
Muhammad Afzal Associate Professor / Principal, Lahore School of Nursing, The University of Lahore	Literature review, Preparation of Results, Reference writing	
Sana Sehar Assistant Professor, Lahore School of Nursing, The University of Lahore	Data Compilation & tabulation of results Discussion writing	
Dr. Syed Amir Gilani Dean, Faculty of Allied Health Sciences The University of Lahore	Guidance & Support for research	
Dr. Muhammad Mahboob Alam Associate Professor, Medicine ABWA Medical College, Faisalabad	Critical Review, Proof Reading	