Original Article

Impact of Duration of Diabetes Mellitus on Patients' Quality of Life, A Cross Sectional Survey

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Abstract

Objective: To determine the effect of duration of disease on physical functioning among patients with diabetes mellitus

Methods: In this cross sectional survey, 200 diabetic patients visiting Arif Memorial Teaching Hospital and Jinnah Hospital, Lahore were asked to fill the questionnaires. Probability, consecutive sampling technique was used. The data was entered and analyzed using SPSS version 21. Different domains of SF 36 were computed and presented in the form of Mean ± Standard Deviation. SF 36 scores were stratified according to duration of disease and analyzed using ANOVA. P-value of ≤0.05 was considered as significant.

Results: Among the patients 66(33.0%) patients had diabetes from less than 5 years, 67(33.5%) patients had diabetes from 5 to 15 years and 67(33.5%) patients were suffering from diabetes more than 15 years. Average Physical Functioning score was 44.98±31.07, Pain score was 53.15±8.26, Physical Health score was 45.43±20.19 and Overall quality of life score was 53.20±14.83.

Conclusion: The diabetes mellitus has mild effects on the patient's quality of life if duration is less than 5 years, has moderately effects the quality of life if duration is in between 5 to 15 years and has severely effects the patient's life if it progress to more than 15 years of life

Key Terms: Diabetes Mellitus, Quality Of Life

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Introduction

Diabetes is derived from Greek, means "to pass through" later Mellitus was added due to sugary flavour of patients' urine. Diabetes mellitus was first reported in 1500BC by the Egyptians as "too great emptying of urine". Later Indian Physicians named it as "Honey urine" due to ants' attraction toward diabetic patients urine[1] Diabetes mellitus is a non communicable disease categorised in three types; Type I (Insulin dependent), Type II (Non-insulin dependent) and Gestational diabetes. According to international diabetes federation 90% of all cases reported type II. Continuous hyperglycaemia is associated with micro-vascular complications.[2]

In 1953 Samuel Ordway and Fairfield Osborn are considered to be the first to use term "quality of life". According to the WHO definition, the quality of life is broad ranging concept which affects the person's life in a very complex way by attack on their physical status psychological status and social status.[3] Diabetes affects the person's quality of life and also influence treatment adherence.[4] Health related quality of life includes the patient's physical condition, pain, emotions, psychological states such as anxiety depression and social relationships.[5] Depression and diabetes were major impairments of quality of life. Quality of life was remarkably impaired by sexual dysfunction in both male and female.[4] It's been observed that with passage of time diabetic peripheral neuropathy starts which affects the lower limb functioning.[6]

Eduardo Lusa Cadore & Mikel Izquierdo in 2015 conducted a review research and studied articles from 1980 to 2015 related to impact of diabetes on older patient's quality of life as diabetes reduced their muscle mass, muscle strength and muscle quality. The beneficial effects of resistance and endurance exercises were observed. It was found that resistance training exercises improved muscle strength, power and functional capa-

city in elders whereas endurance training improved cardiovascular functions. [7]

The prevalence of diabetes is increasing day by day. It is expected that the number of patients will increase from 285 million to 439 million by 2030.[2] The rationale of this study is to find out how much quality of life is affects with the advancement of diabetes. In study I'll examine the association between diabetes conditions and health related quality of life in Lahore and focused on diabetes status including social factors and duration of diabetes.

Subjects and Methods

In this cross sectional questionnaire study, using Probability consecutive sampling, 200 more than 40 years aged people with diagnosed Type 2 diabetes mellitus were asked to fill questionnaire. Participants were divided into three different groups according to the duration of disease. Quality of life and General health status was assessed using the Short Form 36(SF-36) questionnaire instrument. Data was collected from various hospitals of Lahore. Written consent form was signed by the patients Questionnaire was briefed to patients, filled by them and collected. Data was analysed Using SPSS version 21 quantitative variables was presented using Mean, Standard Deviation and Histogram. Categorical variables were presented as Frequencies, percentages, cross tabulation, bar charts and pie chart.

RESULTS

Half (100) were male and half (100) were female.

Table 1: *Descriptive Statistics*

	Minimum	Maximum	Mean ± S.D
Physical. Functioning	0.00	100.00	44.98±31.07
Pain	3.00	87.50	53.15±8.26
Physical Health	3.25	84.38	45.43±20.19
SF.36	18.25	81.25	53.20±14.83

Among the patients 66(33.0%) patients had diabetes for less than 5 years. 67(33.5%) patients had diabetes for 5 to 15 years and 67(33.5%) patients had suffering from diabetes more than 15 years of their lives.

The above table shows the Mean of SF36 were 60.71± 13.99 for the patients who had diabetes for less than 5 years. The patients who suffered from diabetes from 5 to 15 years of their lives the Mean of SF36 were 52.75 ±13.14. Those patients who had diabetes for greater than 15 years the Mean of SF36 were 46.26±13.87. According to duration of disease mean score of physical

Table 2: *Analysis of Variance Regarding Duration of Disease*

	<5	5-15	>15
Physical Functioning	63.41±29.05	45.60±28.13*	26.19±24.29*
Role Limitation due to Physical Health	75.38±41.49	61.99±47.88*	43.66±48.72*
Role of Limitation due to Emotional Problem	68.18±45.45	56.76±49.19	43.28±48.21*
Energy/Fatigue	36.97±16.57	30.37±13.69*	37.16±12.80
Emotional Wellbeing	63.45±15.69	59.52±15.76	63.76±14.20
Social Functioning	92.99±16.43	91.65±18.02	87.87±22.82
Pain	54.70±8.08	52.51±9.26*	52.28±7.21*
General Health	30.61±22.69	23.58±18.72	15.90±16.79*
Physical Health	56.02±17.91	45.92±18.67*	34.51±18.20*
Mental Health	65.40±14.41	59.58±15.54*	58.02±15.77*
SF 36	60.71±13.99	52.75±13.13*	46.26±13.87*

*Significant mean difference from <5 years

functioning (p-value <0.001), Role Limitation due to Physical Health (p-value 0.001), Role of Limitation due to Emotional Problem (p-value 0.012), Energy/ Fatigue (p-value 0.009), Pain (p-value <0.001), General Health (p-value 0.010), Physical Health (p-value <0.001), Mental Health (p-value <0.001) and overall SF 36 (p-value <0.001) was statistically significant (Table 2) Mean difference regarding duration of disease was not statistically significant in Emotional Wellbeing (p-value 0.202), and Social Functioning (p-value 0.677)

Discussion

Diabetes is the increasingly growing metabolic threat of our contemporary era. It is well established that the prevalence of diabetes has increased in the developed and developing countries during the last four decades. That is a result of the abundance of food, the consequent change of our dietary habits and the lack of exercise. Progression of diabetes, and especially poor glycemic control, leads to numerous potentially life threatening complications. The reality is that diabetes influences patients' lives.

The study shows that diabetes mellitus has negative effects on patient's quality of life, mostly on their physical activities as compared to their social activities. And the effects of diabetes or complications of this is increased with the passage of time. It effects mild when disease is less than 5 years and most if it exceeds more than 15 years.

The mere presence of diabetes deteriorates a person's quality of life. According to United States Centers for Disease Control and Prevention (CDC) QoL is a multi-dimensional concept that includes evaluations of both positive and negative aspects of a person's life.[1] In other study it was shown that Diabetes may impact on health-related quality of life (HRQOL). The aim of this population-based study was to confirm this influence. Study conducted in Japan using Sf-36 questionnaire to explore the effect of diabetes on patient's quality of life shown that this disease had negative impact on their lives.(Issa and Baiyewu, 2006)

Recommendation And Limitation

The study has following limitations

1. History of controlled diabetes was not assessed. HbA1c test should be considered in future researches to identify the controlled and uncontrolled hyperglycaemia.
2. Socioeconomic status was not assessed.

Conclusion

The diabetes mellitus has mild effects on the patient's quality of life if duration is less than 5 years, has mode-rately effects the quality of life if duration is in between 5 to 15 years and has severely effects the patient's life if it progress to more than 15 years of life.

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It's a pity that most of Pakistani professors are teaching books written in 80s or 90s. They must write their books and share their knowledge & personal experiences.

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