



ASSESSMENT OF QUALITY OF LIFE IN PATIENTS WITH DIABETES USING WHOQOL-BREF SCALE IN A TERTIARY CARE TEACHING HOSPITAL

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Abstract

Background: Every diabetic patient's life is different, and the many regulations the disease forces them to abide by leave them feeling psychologically overburdened. Additionally, a number of significant issues that have a negative impact on the familial, social, and economic status of these patients include job loss, frequent hospitalization, increased demand for medical and patient care, indirect costs associated with early death, decreased social and familial interactions, and worsening lifestyle.

Objectives: To assess the quality of life in patients with Diabetes. To educate/counsel the patient care regarding diseases and their complications, life-style modifications, medicines, diet restrictions in managing disease conditions.

Methodology: The prospective observational and intervention study was conducted for both hospitalized inpatients as outpatients in Department of Medicine and surgery, Rajah Muthaih Medical College Hospital, Annamalai University which is a 1350 bedded tertiary care teaching hospital. Total number of samples included for this study was 143 patients using 95% confident intervals.

Results: There was significant reduction in fasting blood sugar for all the three regimen users. The changes in the Fasting Blood Sugar FBS and Post Prandial Blood Sugar PPBS in each visit are as follows. Both genders had particularly low scores in the physical health with the smallest difference between groups, it indicating the bad physical conditions affecting HRQoL of diabetic patients in a similar way.

Conclusion: According to the results of this investigation, the Quality Of Life QOL score improved after treatment compared to the pre-intervention study. The prevention of problems from diabetes can be greatly aided by lifestyle changes such as weight loss, altered eating patterns, quitting smoking, drinking less alcohol, and increased physical activity.

Keywords: Diabetes, WHOQOL-BREF, Quality of life, Patient counseling

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1. Introduction

The rising trends are caused by ageing, obesity, physical inactivity, genetic predisposition, rural-to urban migration, and family history, and every fifth diabetic in the globe is an Indian [Gholami, A, et.al.2013,]. Every diabetic patient's life is different, and the many regulations the disease forces them to abide by leave them feeling psychologically overburdened. Additionally, a number of significant issues that have a negative impact on the familial, social, and economic status of these patients include job loss, frequent hospitalization, increased demand for medical and patient care, indirect costs associated with early death, decreased social and familial interactions, and worsening lifestyle. Assessing quality of life and elements associated to it can help to raise the QoL of diabetic patients. The quality of life (QoL) of patients in this particular area and the factors impacting it may differ from other patients due to the unique geographical and cultural characteristics of this region. Therefore, it is advantageous to evaluate patients' QoL using a short, valid questionnaire that can be finished quickly [Zareipour M, et.al.2017,]. The ultimate purpose of national and international health systems is to prevent disease and promote health, particularly by focusing on extending life expectancy and improving quality of life. "Quality of life" refers to a person's perspective of their place in life in relation to their objectives, expectations, standards, and worries as well as the culture and value systems in which they live (WHOQOL-1996). A high quality of life is seen as an important health result and is the ultimate therapeutic objective in the treatment of chronic illnesses. Regardless of gender, patients with diabetes have a reduction in their overall quality of life (QOL). Patients with diabetes mellitus complications have a wide range of lifestyle issues. The general well-being, life satisfaction, physical health, as well as positive and negative feelings about one's life and illness state, were all assessed using the quality-of-life metric. This questionnaire is frequently used since it covers a wide range of subjective QOL factors [Mata AR et.al.2017,]. Physical and psychological health, social relationships, and environment are the four dimensions of the WHOQOL-BREF. Multiple questions from each domain are taken into account while calculating the domain score for each domain. The WHOQOL-BREF adds two items to measure rated QOL and Satisfaction with Health in addition to its four dimensions. Age, gender, disease duration, comorbidities, personal habits, family history, obesity factors, and socioeconomic position of the patients were all taken into account while evaluating QOL. Additionally, adherence metrics were used to

evaluate these QOLs. Nowadays, QOL is a crucial technique for assessing the results of clinical and interventional investigations [Gholami et al., 2013].

Aim

The aim of this study is to assess the quality of life associated with Diabetes, Patients.

Objectives

- ✓ To assess the quality of life in patients with Diabetes.
- ✓ To educate/counsel the patient care regarding diseases and their complications, life style modifications, medicines, diet restrictions in managing disease conditions.
- ✓

2. Methodology

Study Design

The prospective observational and interventional study

Study Site

This study was conducted for both hospitalized inpatients as outpatients in Department of Medicine, which is 1350 bedded tertiary care teaching hospital.

Patient selection / eligibility criteria Inclusion criteria

- ✓ Patients admitted to the hospital with diabetes from both genders.
- ✓ Hospitalized patients with diabetes followed as outpatients.
- ✓ Patients with associated complications related to diabetes.
- ✓ Patients who are willing to cooperate.

Exclusion criteria

- ✓ Patients with pregnancy.
- ✓ Patients with drug abuse or addict.
- ✓ Patients who are not willing to participate or cooperate.
- ✓ Patients with mentally ill.

Methods/Tools used

To assess the quality of life in patients by using WHOQOL-BREF Scale.

Sample size determination

Total number of samples included for this study was 143 patients using 95% confident intervals.

Statistical analysis

- ✓ QOL- scores was calculated on the basis

of WHO-QOL BREF scale. There are four domains to estimate quality of life such as physical, social, psychological and environmental health. Domain scores in WHOQOL –BREF were scored as raw score and transformed score. Quality of life was used to assess the general well-being, satisfaction of life, physical health, positive and negative feelings about their life and disease state

✓ Raw scores are used to measure the quality of life in patients later it was converted into transformed score. At first the scoring range with 4-20 and then it transformed into 0-100 for every individual domain.

✓ High scores indicate that good quality of life and low scores indicate that poor quality of life. And finally, the domain scores were presented by using mean and standard deviation and compared with different variables.

✓ The significance of quality of life was calculated by using one-way anova and STD, mean of various domains were calculated by using descriptive analysis.

✓ This questionnaire has been widely used as it captures many subjective aspects of QOL.

Ethical considerations

This study was ethically approved by Institutional Human Ethical Committee (IHEC/0300/2017) of Rajah Muthiah Medical College Hospital (RMMCH), Annamalai University, Annamalai Nagar, Tamilnadu.

3. Results

The current study is aimed to assess the QoL in Diabetic patients in a tertiary care hospital. The present study showed that WHOQoL was significantly lower for diabetic patients and seen significant differences in the physical health and psychological domains and smaller differences in social relationships and environment domains in this study females were higher in number than males with 52.45%. The patients with age group of 41 to 60 were mostly affected with diabetes with 48.95%. It clearly indicates increased age affects the quality of life. In this study the average duration of patients with diabetes was between 6 to 10 years with 44.75%. 75% of the patients were known case of diabetes and 25% of the patients were newly diagnosed. Next to that there was a significant difference between Diabetes and its complications between all of the domains of the WHOQoL-BREF. The fasting blood sugar for insulin users also followed the same pattern. Statistically significant at $p < 0.05$ when domain characteristics of second follow up of respective groups was compared with first follow up parameters. There was significant reduction in fasting blood sugar for all the three regimen users. The changes in the FBS and PPBS in each visit are as follows (mg/dl \pm SD).

Table.1. Demographic status

Demographic variables		
Total		
	No's	(%)
Gender		
Males	68	47.54
Females	75	52.45
Age		
Less than 40	29	20.27
41 - 60	70	48.95
61 - 70	39	27.28
>70	05	3.50
History		
Newly diagnosed	36	25.20
Known case	107	74.80
Duration		
1 – 5 years	32	22.40
6 – 10 years	64	44.75

11 – 20 years	47	32.85
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Table.2. Quality of life (Diabetes)

Domain				
Characteristics	Physical Health	Physiological Health	Social relationship	Environmental Health
	Mean ±SD	Mean ±SD	Mean ±SD	Mean ±SD
Gender wise				
Males	33.4±11.5	31.02±9.1	31.5±10.6	34.77±10.9
Females	34.6±12.5	31.9±10.8	30.3±10.2	32.1±9.1
Age wise				
Less than40	36.5±13.6	34.75±9.8	34.27±11.8	35.68±11.6
41-60	34.91±12.1	31.75±9.8	30±9.9	32.9±9.2
61-70	31.02±9.2	28.71±9.1	30.38±9.8	31.51±8.9
71-75	31.4±15.7	31.2±15.6	27.6±10.4	41.2±9.6
Duration wise				
1-5 years	29.9±8.03	33.7±10.7	34.2±12.2	39.3±9.16
6-10 years	33.7±10.7	32.3±10.4	28.5±8.15	33.7±10.7
11-20 years	24.7±6.54	26.7±8.35	28.1±10.10	32.4±9.71
Comorbidities wise				
Diabetic foot	32.6±9.49	33.1±11.05	33.2±10.5	34.03±10.8
Dyslipidemia	31.3±11.78	34.7±11.01	33.2±11.6	26.4±8.21
Ketoacidosis	40.83±13.50	33.28±11.69	32.33±13.17	29.67±9.53
UTI	31.73±11.40	26.40±8.21	27.93±9.04	29.60±10.09
Thyroid	54.00±6.70	27.38±6.59	36.00±16.12	32.88±6.66
Anemia	28.75±8.23	27.67±6.77	27.17±9.65	30.33±9.56
Asthma	35.20±7.32	31.40±9.96	30.00±9.27	31.40±9.96
Gastritis	40.75±8.13	34.50±8.26	23.50±3.0	40.75±8.13
Gout	28.00±4.23	22.00±4.23	22.00±4.23	31.50±9.12
Personal history				
Smoking	34.1±11.5	31±10.54	31.04±11.5	36.64±11.4
Alcohol	35.9±12.4	30.85±7.9	32.6±10.58	31.3±9.02
Tobacco	32.7±11.3	26.3±8.17	30.8±12.5	29.6±8.9
Smoking+ Alcohol	29.8±8.36	28.4±7.95	29.3±8.94	33±9.58
None	41.8±14.5	33.6±10.9	30.1±9.50	36.6±8.8
Family history				
Yes	34±12.01	30.5±9.45	30.2±9.96	31.9±9.30
No	35.3±12	33.1±11.1	31.7±11.3	33.6±9.54
Obesity				
Obese	33.7±12.1	29.9±9.4	33.2±11.3	33.9±10.3
Non -obese	34.3±11.7	33.4±10.4	29±9.25	33±9.4
Socio-economic status				
Upper class				
Upper middle class	33.2±9.5	30.1±10.4	31.2±9.53	32.2±10.7
Lower middle class	28.2±16.3	30.8±12.07	31±9.76	30.9±10.5

Upper lower class	36.2±3.5	36.8±7.98	32.08±10.5	33.9±9.5
Lower class	37.5±11.5	40.3±16.2	34.3±11.5	31.5±10.2

Table.3. Quality of life based on Adherence rates

Domains	Low adherence	Medium adherence	High adherence	p-value
Physical Health	31.96±9.96	34.74±12.59	35.70±12.98	p <0.05
Physiological Health	28.33±8.35	31.74±9.49	34.04±11.22	
Social relationship	32.64±11.82	30.34±8.90	29.51±10.25	
Environmental health	31.06±8.68	35.02±10.98	31.83±10.33	

Table .4. Quality of life based on Treatment

Domains	OHA users	Insulin users	OHA+Insulin users	p-value
Physical Health	31.96±9.96	34.74±12.59	35.70±12.98	p <0.05
Physiological Health	28.33±8.35	31.74±9.49	34.04±11.22	
Social relationship	32.64±11.82	30.34±8.90	29.51±10.25	
Environmental health	31.06±8.68	35.02±10.98	31.83±10.33	

Table .5. Assessment on quality of life of patients with pre and post intervention (Diabetes)

Domain characteristics		Baseline (Mean± SD)	Final follow up (Mean± SD)
	Q3- Pain		
	Q10- Energy		
	Q16- Sleep		
Physical Health:	Q15- Mobility	34.06±11.9	47.78±10.57*
	Q17- Activities		
	Q4-Medication		
	Q18-Work		
	Q5-Positive feelings		
	Q7-Thinking		
Physiological Health	Q19-Self esteem	31.52±10.03	44.47±10.99*
	Q11-Body image		
	Q26-Negative feelings		
	Q6-Spiruality		
Social relationship	Q20-Personal relations		
	Q22-Social support	30.90±10.41	46.36±11.38*
	Q21-Sex		
	Q8-Safety & security		
	Q9- Home situation		
	Q12-Finance		
	Q24-Health/social care		

Environmentalhealth	Q13-Information	33.41±9.82	48.87±9.39*
	Q14-Leisure		
	Q23-Physical		
	Q25-Transport		
	Q1-General QOL		
	Q2-General health		

*Statistically significant at $p < 0.05$ when domain characteristics of second follow up of respective groups was compared with first follow up parameters. There was significant reduction in fasting blood sugar for all the three regimen users. The changes in the FBS and PPBS in each visit are as follows (mg/dl ± SD).

4. Discussion

The goal of the current study is to evaluate the quality of life for diabetic patients in a tertiary care facility. The current study shown that diabetic patients' WHOQoL was significantly lower and that there were notable disparities in the categories of physical health and psychological well-being as well as lesser variations in the domains of social interactions and environment [Kaveh MH et.al. 2018]. There were no significant differences between males and females in Quality of life for diabetic patients in this study. Both genders had particularly low scores in the physical health with the smallest difference between groups, it indicating the bad physical conditions affecting HRQoL of diabetic patients in a similar way [Murillo M et.al.2017.]. The physical health category had relatively low scores for both genders with the smallest difference between groups, which suggests that diabetic patients' poor physical health also negatively affects their HRQoL. This shows age is the major factor that affecting quality of life in patients with diabetes. There were no significant differences between four domains at age group of below 40 [Vivek Bhanubhai et al., 2017] made a similar observation in their study. And there was significant difference between age group of 41 to 60 and age group of 71 to 75 between four domains [Parkavi Rani P et.al.]. The main factor affecting individuals with diabetes' quality of life is age. In the age group under 40, there were no appreciable variations across the four domains. There was no significant difference in duration of disease between 1-5 years and 6-10 years. But there were Significant differences was seen between the patients who were above 10 years of duration. Duration of disease affects quality of life of patients with diabetes. In this study, most of patients with diabetes had duration of more than 10 years; their QoL score was very low when compared with duration of less than 10 years. [Vivek Bhanubhai Prajapati et al.,

2017] made a similar observation in their study. Significant differences between smokers who also drank alcohol and those who didn't were seen. Patients' quality of life is impacted, and this results in a low grade. Patients with diabetes who were obese or non-obese showed a substantial difference [Mata AR et.al. 2016]. The QoL scores of non-obese patients were marginally higher than those of obese patients. Lower middle class patients' QOL was poor, which has an impact on their ability to improve their quality of life. Any sickness must be treated and kept from spreading in order to be alleviated [Prajapati VB et.al 2018]. Age, gender, disease duration, socioeconomic status, personal habits, obesity status, adherence status, treatment effects, and access to healthcare are just a few of the variables that may have an impact on a patient's quality of life (QoL) if they have diabetes, hypertension, or diabetes with hypertension. Age was favorably correlated with symptom measures and strongly correlated with functioning scales, including physical functioning, role functioning, and cognitive functioning. Regarding addictive behaviors, tobacco non-users showed noticeably higher scores for physical functioning, role functioning, and overall quality of life compared to tobacco users, as well as a lower score for appetite loss. Similar to alcohol users, non-users showed superior physical, role, and cognitive functioning as well as fewer symptoms of discomfort, dyspnea, appetite loss, and diarrhea [Gholami, A et.al 2019]. Next to that there was a significant difference between Diabetes and its complications between all of the domains of the WHOQoL-BREF. [Zarajczyk M. et.al 2019.]. Additionally, it was discovered that the treatment had a considerable impact on a few QoL metrics. Reports from numerous research articles clearly demonstrated how raising blood pressure, controlling blood sugar, and avoiding problems can significantly lower costs and improve quality of life. In the study, it was discovered that the individuals' freedom to eat, drink, and engage in other activities was most frequently impacted. In addition, financial resources have a major impact on the patient's quality of life [Skevington SM et.al 2004]. The majority of the patients in this study were also affected by psychological variables such low self-confidence, dependence on others, physical appearance, negative attitudes about their lives,

and some religious beliefs. And a small percentage of people between the ages of 30 and 45 said that the stress they experience at work negatively impacts their sexual satisfaction and lowers their quality of life [Alshayban D et.al 2020]. During their first and second follow ups most of the patients had Normal blood glucose level when compared with hospital admission. [Mary H. Kalfoss et.al 2008]. Next to that, males were better in following regular diet control, exercises, taking drugs properly and care about their health when compared with females. But females reported that due to stress, family issues, depression, obese factors were main reasons for poor quality of life and irregular follow up [PorterME et.al. 2006].

5. Conclusion

According to the results of this investigation, the QOL score improved after treatment compared to the pre-intervention study. The prevention of problems from Diabetes can be greatly aided by lifestyle changes such as weight loss, altered eating patterns, quitting smoking, drinking less alcohol, and increased physical activity. The development of behavioral strategies to support these lifestyle alterations has received increased attention, although they are difficult to put into practice or keep up over the long term. According to the study, the patient's eating habits, freedom to consume alcohol, family life, self-confidence, dependence on others, physical appearance, money, motivation, and social life were the most often affected domains of the quality-of-life questionnaire.

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