

A Cross-Sectional Study Of Diabetes Patients' Quality Of Life At Tamil Nadu's Tertiary Care Hospitals

Dr.Nilofur banu

community medicine, vijaya hospital, vadapalani

ABSTRACT

Background: Diabetes is a chronic condition that significantly affects individuals' quality of life. This cross-sectional study aimed to assess the quality of life of diabetes patients at Tamil Nadu's tertiary care hospitals.

Methods: A total of 260 diabetes patients aged 20 years and above, receiving treatment for at least 3 months, were included in the study. Data on personal details, treatment history, clinical history, and quality of life were collected using a pre-designed, pretested semi-structured interview schedule. The MOS SF-36 v2 (Tamil version) questionnaire was used to measure the patients' quality of life, comprising eight domains.

Results: The majority of study subjects had a normal nutritional status (84.23%) and a waist/hip ratio indicating no risk (68.4%). The duration of diabetes was greater than 10 years for 77.31% of the participants. There was a statistically significant association between the duration of diabetes and the clinical profile of the study subjects. In terms of quality of life, women had lower scores than men in domains such as general health, vitality, and mental health. The presence of comorbidities was associated with lower SF-36 scores.

Conclusion: The study highlights the importance of considering mental health aspects and gender-specific challenges in managing diabetes and improving the quality of life for patients. Healthcare professionals should address these factors and provide comprehensive care. Further research should explore the impact of diabetes-related complications, such as foot ulcers, on mental health and overall quality of life in diabetic patients.

Keywords: Diabetes, quality of life, cross-sectional study, tertiary care hospitals, SF-36 questionnaire.

INTRODUCTION:

Diabetes is a condition that lasts for a long time and is characterised by excessive levels of glucose in the blood as well as a disruption in the metabolism of proteins and fats. The glucose level in the blood rises because it is unable to be digested in the cells, either because the pancreas is not producing enough insulin or because the cells are unable to make effective use of the insulin that is being generated. There are three primary forms of diabetes, which are as follows: Type 1, in which the pancreas does not produce insulin; Type 2, in which the body cells become resistant to the action of the insulin that is being produced, and over time, the production of insulin progressively decreases; and Gestational diabetes, which occurs during pregnancy and can cause some complications during the pregnancy and at birth, and also increases the risk of type 2 diabetes in the mother and obesity in the offspring.^[1] The ever-increasing disease burden caused by diabetes mellitus around the world is a serious public health concern because it places unsustainable demands on individuals, their care takers, health systems, and society as a whole. According to the most recent projections, the global prevalence of diabetes was 425 million individuals in 2017, and it is anticipated that this number will climb to 629 million by the year 2045. This is made worse by the worldwide increase in the incidence of obesity and unhealthy behaviours such as bad diets and a lack of physical activity.^[2] The improvement of one's quality of life should be considered an important health result in its own right and should be the end goal of any and all health interventions.^[3] According to a cross-sectional questionnaire based study it was concluded that Independent risk factors for the component scores of the SF-36 score were found to include age, living in a rural setting, being retired, having a lower level of education and a low socioeconomic status, as well as having diabetes complications such as angina pectoris, heart failure, diabetes nephropathy, and diabetes retinopathy. While taking into consideration the findings, medical professionals should be aware not only of the clinical parameters of diabetic patients, such

as their educational level and employment position, but also of the clinical parameters of the patients themselves.^[4] Chronic complications of diabetes are produced in great part by HG-induced cellular and molecular deterioration of neuronal and vascular structure and function. These complications can be life-threatening. The oxidative stress that is caused by HG is a significant factor in the progression of diabetic problems over the long run.^[5] Neuropathy and angiopathy caused on by diabetes may, in turn, cause problems with the operation of cells, tissues, and organ systems.^[6] In our study we conducted a hospital based cross-sectional study using a generic instrument to measure the quality of life, study the clinical profiles and socio-demographic factors affecting diabetic patients aged 20 years and above.

METHODOLOGY: Materials and Methods

Study area

We carried out this hospital-based cross-sectional study among the patients who are all admitted in vijaya hospital which is located at vadapalani. The study was carried out from January 2022 to December 2022.

Study unit

Patients aged 20 years and above, and on treatment for diabetes for at least 3 months, were included in the study. Patients having gestational diabetes and major psychiatric disorders were excluded from the study as these have been identified as potential confounding factors.

Sampling unit

Patients registered on the day of interview were selected using systematic random sampling. On an average, 3–5 respondents were interviewed per clinic per day; clinics were held 2 days a week.

Sample size

Two hundred and sixty subjects were finally included in the study (calculated through convenience sampling were 260).

Study instrument

A predesigned, pretested semi structured interview schedule was used. Informed consent was taken for interviewing subjects. The prospects of this study for improving understanding of diabetes was explained to the participants. The response rate was 97%. At interview, we collected data on personal details, treatment history, and relevant clinical history. This was followed by a general physical and systemic examination. A standardized questionnaire, viz the MOS SF-36 v2 (tamil version), was used to measure QOL of diabetic patients. This questionnaire has eight domains, viz Physical Functioning (PF), Role Physical (RP), Bodily Pain (BP), General Health (GH), Vitality (VT), Social Functioning (SF), Role Emotional (RE), and Mental Health (MH). These domains were scored on a scale of 0–100, '0' indicating the worst possible status and '100' the best possible status. The scoring manual of Ware *et al.*⁽¹¹⁾ was used for calculating scores. Data entry was done in SPSS, version 12, followed. Thereafter, raw scale scores were deduced and were finally transformed to a scale of 0–100.

RESULTS:

Table1: Clinical profile of study subjects

	Male	%	female	%	total	%	P value
Variables							
Nutritional status (as per BMI)							0.283
Normal	73	80.23	146	86.39	219	84.23	
Overweight and obese	11	12.09	17	10.06	28	10.77	
Underweight	07	77.69	6	3.55	13	5.00	
Waist/Hip ratio (WHR)							0.9
No risk(< 0.95 M; <0.85 F)	63	69	115	68	178	68.4	
Risk present(> 0.95 M; >0.85 F)	28	31	54	32	82	31.6	
Duration of diabetes							0.025*

<1 year	- 9	9.89	3	1.78	12	4.62	
1-5 year	10	10.99	18	10.65	28	10.77	
5-10 year	5	5.49	14	8.28	19	7.31	
>10 year	67	73.63	134	79.29	201	77.31	
Comorbidity*							0.434
Absent	46	50.55	94	55.62	140	53.85	
Present	45	49.45	75	44.38	120	46.15	

Here variables such as Nutritional status, Waist/Hip ratio and Duration of diabetes are given. In these variables the total % of Nutritional status has 84.23% normal, 10.77% Overweight and obese and Underweight 5.00%, The duration of diabetes total % is <1 year-4.62%, 1-5 year-10.77, 5-10 year-7.31, >10 year-77.3. The total % of presence and absence of co-morbidities are 53.85% present and 46.15% absent. Among all these variables Duration of Diabetics is statistically significant associated with the clinical profile of study subjects.

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

Sl		Male	Female	t value	P value
1	Physical functioning	46.75 ± 28.89	46.2 ± 25.15	0.155	0.873
2	Role Physical	43.13 ± 26.31	48.55 ± 26.40	1.58	0.115
3	Role emotional	50.02 ± 26.45	46.18 ± 26.56	1.11	0.267
4	Body pain	44.72 ± 25.87	47.94 ± 26.86	0.934	0.351
5	General Health	50.44 ± 27.50	43.42 ± 23.96	2.13	0.03*
6	Vitality	52.58 ± 25.94	43.39 ± 25.52	2.75	0.006*
7	Social functioning	52.66 ± 27.00	46.32 ± 28.23	0.95	0.08
8	Mental Health	51.28 ± 23.81	44.93 ± 25.70	1.95	0.05*

The SF-36 scores by sex of study subjects are given with the following variables such as physical functioning, Role Physical, Role emotional, Body pain, General Health, Vitality, Social functioning, Mental Health. Among these, General Health, Vitality and Mental health are statistically significant for the study subjects in the distribution of SF-36 scores. No significant association was found in Physical functioning, Role Physical, Role emotional, Body pain, Social functioning. The SF-36 Health Survey was used to evaluate quality of life factors connected to health. The SF-36's eight multi-item scales' internal consistencies were estimated and found that No SF-36 multi-item scale score was substantially correlated with any indicators of glycemic control. The SF-36 ratings of subjects with more coexisting chronic illnesses were considerably lower.

Discussion

The clinical profile of the study subjects were assessed, the variables included are Nutritional status (as per BMI), Waist/Hip ratio, and Duration of diabetes. According to the clinical profile the overweight and underweight patients were majority in men. The duration of diabetes greater than 10 years has the maximum study subjects (77.31%) . In nutritional status normal were 84.23%, overweight and obese were 10.77% and underweight were 5%. Waist/hip ratio study subjects with no risk were 68.4% and presence of risk were 31.6% . Duration of diabetes less than 1 year was 4.62%, 1-5 years was 10.77%, 5-10 year was 8.28%, greater than 10 years were 77.31%. Presence of comorbidity was 46.15% and absence of comorbidity was 53.85%. The SF-36 score was used with eight variables: physical functioning, Role Physical, Role emotional, Body pain, General Health, Vitality, Social functioning, and Mental Health. In a study conducted with 335 patients with foot ulcers and diabetes Socio-demographic and clinical variables were recorded and health-related quality of life was evaluated using a generic HRQL questionnaire (SF-36) for all subjects, the SF-36 was used here as same as our study.^[6]

By comparing the overall Sf-36 scores of the study subjects except in role physical and body pain all other scores were less for women when compared to men. According to the findings of Wegeberg and colleagues, an elevated HbA1c level is a predictor of declining physical function and increasing levels of bodily pain. In addition to this, impaired glycemic levels may also results in a decline in the quality of life.^[7] In our study subjects without co-morbidities were 120 study participants (male and female) with 46.15% statistically

significant. The SF-36 Health Survey was used to evaluate quality of life factors connected to health. The SF-36's eight multi-item scales' internal consistencies were estimated and found that No SF-36 multi-item scale score was substantially correlated with any indicators of glycemic control. The SF-36 ratings of subjects with more coexisting chronic illnesses were considerably lower.^[8]

Expect the Role physical all other variables were having less value in women in our study as same as a Cross-sectional study at the Hematology Research Center of Shiraz University of Medical Sciences, in southern Iran. On two scales, pain ($P = 0.041$) and emotional role ($P = 0.009$), the women showed significantly lower scores than the men. Significant correlations were seen between poorer SF-36 scores and lower income, bad iron-chelating therapy compliance, and the presence of comorbidities.^[9]

The role emotional and mental health scores are less for female in our study, The researchers Goldney et.al., came to the conclusion that the quality of life of depressed diabetic patients is drastically diminished across all categories before pandemic.^[10]

The limitations in our study is we did not include information about foot ulcers in diabetic patients it was included in many studies and it helps in assessing the mental health of patients with and without foot ulcers because the factors of Physical Function, Bodily Pain, and General Health carry a greater negative weight in orthogonal coefficients during the process of computing the MCS score. This problem might be solved by using oblique scoring coefficients, although additional research is required to determine whether or not oblique, Patients diagnosed with diabetic foot disease have scores that appropriately reflect their mental health.^[11]

It is concluded that mental health greater reflects in quality of life in diabetic patients especially in women and body pain and role physical greatly influences the quality of life in men, so this has to be taken into important consideration in diabetic patients.

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