ASSESSMENT OF QUALITY OF LIFE AND MODULATING THE DIET AND DRUG INTERVENTIONS A PARADIGM SHIFT

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Objectives

We evaluated Quality of Life (QOL) parameter for the care of people with diabetes.

Methods

We conducted a prospective study and evaluated QOL using QOL Instrument for Indian Diabetes (QOLID) patient's questionnaire, comprising 8 domains, 34 items, in 369 consecutive patients as a single point assessment tool. We calculated percentage score for each domain and mean value formed basis for calculation of weighted score. Descriptive statistics was used for analysis.

Results

369 patients were administered the QOLID (173 males, 196 females). Mean age was 59 years (range 19- 81, SD ± 11, 95% CI 58 to 60). Mean HbA1c was 8.1 % (range 5.3-16, SD ± 1.6, 95% CI 7.9 to 8.3). Notably, 278 patients had HbA1c ≥ 7. 26%. 91 patients had HbA1c <7. Mean duration of diabetes was 11 years (range 0.2 -40, SD ± 7.8, 95% CI 10 to 12). Mean duration of follow up since first visit was 25 months (range 1-44, SD ± 12, 95% CI 24 to 27). Mean number of visits were 7.7 (range 1-25, SD ± 3.7, 95% CI 7.4 to 8.1). 89.7 % (n=331) were exclusively on OHA, 26 patients were both on OHA and insulin and only 12 patients were exclusively on lifestyle modification.

Introduction

Diabetes is one of the lifestyle oriented, metabolic diseases characterized by decreased insulin sensitivity and hyperglycemia ultimately causing aberrant glucose homeostasis. Diabetes management strategies has been recommended in several guidelines aims at controlling the triumvirate of FPG, PPG, and HbA1c, which are conventionally referred as glycemic triad.[6]

The American Diabetes Association recommends targeting HbA1c levels to < 180 mg/dl (10.0 mmol/l) in order to achieve better glycemic control.[7] However, "one size fits all" concept is NOT suitable for the management of diabetes and therefore individualized treatment based on the patient's status is recommended.[7] Several studies have suggested the quintessential need for a paradigm shift to incorporate glycemic variability and quality of life in the holistic diabetes control regimen.[8]

Recent advances in the field of diabetology incited a further leap to diabetes management and added two more dimensions - glycemic variability (GV) and quality of life (QOL) - to already existing glycemic triad and the composite of these 5 elements is now identified as Glycemic Pentad (fig1.).[5]

Of late quality of life (QOL) has emerged as an important parameter in the general disease management routine. WHO defines quality of life as: '...individuals' perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns? It is a broad ranging concept affected in a complex way by the person's physical health, psychological state, level of independence, social relationships, personal beliefs and their relationship to salient features of their environment'."

QOL is a multidimensional construct,



Fig 1: Glycemic Pentad

incorporating an individual's subjective perception of physical, emotional, and social wellbeing. [1] It includes both a cognitive component (satisfaction) and an emotional component (happiness)[1]. In general, QOL is low in diabetes patients and it is positively correlated with duration of the disease.[2] Past research on QOL in diabetes has revealed that patients desired to improve the way they feel.[3]Complications associated with diabetes affects the QOL of patients.[4] Moreover, acute and bothersome side effects and lifestyle restrictions prevent the patients from motivating to comply with the treatment even though it promises long-term benefits.[3]Therefore therapeutic policies should aim at reducing thecomplications and also improve treatment adherence and compliance.

Objective

Quality of Life (QOL), a representation of the patient's view is a vital tool for the care of

diabetics. The objective of the study was to evaluate Quality of Life (QOL) parameter for the care of people with diabetes.

Methods

We conducted a prospective study and evaluated QOL using QOL Instrument for Indian Diabetes (QOLID). QOLID is a reliable, valid and sensitive tool for the assessment of diabetes specific quality of life in Indian.[9] The questionnaire represents a quality of life tool covering health related quality of life (HRQOL) and diabetes-specific quality of life (DSQOL) developed and validated in India using standard methodology. The QOILD tool has All domains and items with high internal consistency (Cronbach's alpha of 0.894)[9]

The questionnaire consists of 34 items covering eight domains which comprehensively cover aspects of quality of life namely: role limitations due physical health, physical endurance, general health, treatment satisfaction, symptom frequency, financial worries, mental health, and diet advice satisfaction.

The QOLID questionnaire was administration by the diabetes educators to 369 consecutive patients with type 2 diabetes visiting a specialty diabetes center in Mumbai In addition to the question some baseline information including age, education, employment status, duration of visit to center, number of visit to the center and treatment for diabetes were recorded. Further their HBA1C, blood pressure, height, weight and BMI were also noted.

Statistical analysis

Descriptive statistics was used for analysis. Percentage score for each domain and mean value formed basis for calculation of weighted score.

QOL QUESTIONNARE (PLEASE CIRCLE THE RIGHT OPTION)

NAME _____ PT. ID : _____

DATE OF BIRTH : _____ PH.NO. _____

DIABETES SINCE _____ YEARS

STUDENT	BUSINESS/FULL TIME JOB	RETIRED	HOUSEWIFE

Instruction DATE : _____

The following assessment asks how you feel about the impact of diabetes on your quality of life. Your response will help us find ways for improving diabetes care. If you are unsure about which response to give to a question, please choose the one that appears to be the most appropriate. We would request you to attempt to answer all questions.

Role Limitation Due to Physical Health

1. How often do you miss your work because of your diabetes?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

2. A person with diabetes has the requirement of adhering to a schedule for eating and taking regular medication. How often does this affect your work?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

3. How often does diabetes affect your efficiency at work?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

4. How often do you find diabetes limiting your social life?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

5. To what extent do you avoid traveling (business tour, holiday, general outings) because of your diabetes?

A lot	Highly	Little	Very little	Not at all
1	2	3	4	5

6.Compared to others of your age are your social activities(visiting friends/partying) limited because of your diabetes?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

Physical Endurance

An important part of understanding your general health and well being has to do with your ability to perform various activities.Thus for the following questions please indicate if your health has limited your activities in following areas in the past three months. Please tick any one option.

1. How often in last three months has your overall health problems limited the kind of vigorous activities you can do like lifting heavy bags/objects, running, skipping, jumping.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

2. How often in last three months has your overall health problems limited the kind of activities you can do like moving a table, carrying groceries or utensils.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

3. How often in last three months has your overall health problems limited you from walking uphill or climbing 1-2 floors.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

4. How often in last three months has your overall health problems limited you from walking 1-2 km at a stretch.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

5. How often in last three months has your overall health problems limited you from bending, squatting, or turning.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

6. How often in last three months has your overall health problems limited you from eating, dressing, bathing, or using the toilet.

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

General Health

1. In general would you say your health is.

Poor	Fair	Good	Very good	Excellent
1	2	3	4	5

2. How well are you able to concentrate in everything like working, driving, reading etc?

Not at all	A little	moderate	Very much	An extreme amount
1	2	3	4	5

3. How many times in the past three months have you had fatigue/ felt very tired?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

Treatment Satisfaction

The following set of questions would enable us to know how satisfied are you with your treatment for diabetes. Please tick any one option.

1. How satisfied are you with your current diabetes treatment?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

2. How satisfied are you with amount of time it takes to manage your diabetes?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

3. How satisfied are you with the amount of time you spend getting regular checkups in 3 months)?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

4. A person with diabetes needs to exercise for 35-45 min, 4 times a week. Keeping this in mind how satisfied are you with the time you spend exercising?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

Symptom Botherness

1. How many times in the past three months have you had thirst/dry mouth?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

2. How many times in the past three months have you felt excessive hunger?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

3. How many times in the past three months have you had frequent urination related to diabetes management?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

Financial Worries

The following set of questions will help us know how your diabetes has affected your or your family's finances. Please tick any one option....

1. What do you think about the cost involved in your management of diabetes?

Very expensive	little expensive	reasonable	not at all expensive	
1	2	3	4	

2. To what extent has your priority of expenditure shifted towards diabetes management?

A lot	Highly	Little	Very little	Not at all
1	2	3	4	5

3. To what extent has your family budget got affected by the expenses elated to the management of diabetes?

A lot	Highly	Little	Very little	Not at all
1	2	3	4	5

4. To what extent has your diabetes limited your expenditure on other aspects of life (movies, outings, parties etc)?

A lot	Highly	Little	Very little	Not at all
1	2	3	4	5

Emotional/Mental Health

1. How satisfied are you with yourself?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

2. How satisfied are you with your personal relationships (family, friends, relatives)

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

3. How satisfied are you with the emotional support you get from your friends and family?

Very dissatisfied	moderately dissatisfied	Neither satisfied nor dissatisfied	moderately satisfied	Very satisfied
1	2	3	4	5

4. How often are you discouraged by your health problems?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

5. All people want to fulfill certain roles and lead their lives in a purposeful manner. To what extent do you feel that you have been able to lead your life in the same way?

Not at all	A little	moderate	Very much	extreme amount
1	2	3	4	5

Diet Satisfaction

Diabetes demands a little modification in diet, thus the following set of questions would help us know how much satisfied you are with modifications in your diet. For participants who have been advised some dietary modification/COUNSELING)

1. How often do you feel because of your diabetes a restriction in choosing your food when eating out?

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

2. As you have diabetes, how much choice do you feel you have in eating your meals or snacks away from home e.g. if

No choice	Very little	little	enough	A lot
1	2	3	4	5

3. How often do you eat the food items that you shouldn't, in order to hide the fact that you are having diabetes

Always	Frequently	Often	Sometimes	Never
1	2	3	4	5

FOR CLINIC USE

HBA1C (%) BP(mmHg) ***Ht (cm):*** BMI (kg/m2) ***Wt. (kg):***

	Since how many years		Since how many years	
Hypertension		CKD		
Dyslipidemia		Liver cirrhosis		
Retinopathy		HypoThyroid		
Neuropathy		CAD		

Current diabetes treatment :

Only diet control + exercise	Only insulin	Only OHA	OHA + insulin

duration of visit:

NO. of visit since enrollment in conquer diabetes clinic : DATE of filling form:

Results

Three sixty nine subjects were successfully administered QOLID tool. Out of 369, 173 were males and 196 females. Mean age was 59 years (range 19- 81, SD ± 11, 95% CI 58 to 60). Mean HbA1c was 8.1 % (range 5.3-16, SD ± 1.6, 95% CI 7.9 to 8.3). Notably, 278 patients had HbA1c ≥ 7. 26%. 91 patients had HbA1c <7.

Mean duration of diabetes was 11 years (range 0.2 -40, SD ± 7.8, 95% CI 10 to 12). Mean duration of follow up since first visit was 25 months (range 1-44, SD ± 12, 95% CI 24 to 27). Mean number of visits were 7.7 (range 1-25, SD ± 3.7, 95% CI 7.4 to 8.1).

89.7 % (n=331) were exclusively on OHA, 26 patients were both on OHA and insulin and only 12 patients were exclusively on lifestyle modification.

Table1. Quantification of the Domain Scores and the Weighted Score

	Mean	± SD	Mini-mum	Maxi-mum	95% CI	% Score	Weighted Score
Physical Health (6)	27	3.5	13	30	27 to 27	90	1.11
Physical Endurance (6)	25	5.2	7	30	25 to 26	83.33	1.03
General Health (3)	11	2.2	3	15	10 to 11	73.33	0.90
Treatment Satisfaction (4)	17	2.8	5	20	16 to 17	85	1.05
Symptom Botherness (3)	13	2.1	3	15	12 to 13	86.66	1.07
Financial Worries (4)	14	3.2	4	19	13 to 14	70	0.86
Emotional/Mental Health (5)	21	2.8	9	25	21 to 21	84	1.04
Diet Satisfaction (3)	11	1.9	4	15	11 to 11	73.33	0.90
	Cumulative 139					Mean 80.70	

Discussion

The relatively higher mean age group as compared to other studies has helped us to target the screening and intervention for detection even at the younger age. Financial worries, diet satisfaction and general health are the three areas that were particularly identified that need specific attention to improvise the quality of life of these patients. International diabetes guidelines has mentioned the importance of QOL during the course of treatment.[7,10]

The American Diabetes Association (ADA) recommends using a patient centred communication style that incorporates active listening, elicits patient preferences and beliefs, and assesses literacy, numeracy, and financial barriers.[7]

They also suggest that a successful medical

evaluation depends on beneficial

Fig:2. General Health

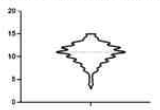


Fig:3. Diet Satisfaction

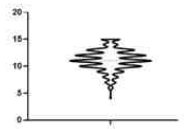
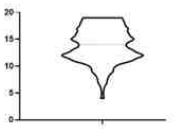


Fig:4. Financial Worries



interactions between the patient and the care team. QOL should be considered en route to achieve optimal glycaemia in a diabetes patient. Individualization of treatment based on patients' preferences, values, and goals is also recommended.

Conclusions

QOLID helped us to identify the need and modulate the diet and drug interventions. Financial worries, diet satisfaction and general health are the areas that need specific attention in priority to improve the quality of life. Patient centric QOL tool is useful to evaluate and guide for treatment interventions in patients with type 2 diabetes for their best outcome.

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