

## Evaluation of Quality of Life in Type II Diabetes Mellitus Patients using Diabetes Scale of Quality of Life (DSQOL) in Tertiary care teaching hospital

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### ABSTRACT

Type 2 diabetes mellitus (T2DM) can influence on the quality of life (QoL). This study was aimed to evaluate the factors determining the QoL in T2DM patients. It is a prospective observational study which was conducted in a tertiary care teaching hospital for a period of 6 months. Participants met inclusion criteria were volunteered. The sociodemographic and clinical characteristics were documented in the self-designed perfunctory. The QoL was assessed by DSQOL.

Out of 100 T2DM patients, 60% were within age group of 40-60. The physical factors such as exercise, diet and sleep were assessed in terms of QoL of the diabetic patients. The participants satisfied with flexibility in their diet before intervention was found to be 84% moderately dissatisfied and 72% moderately satisfied after intervention. The participants satisfied with their sleep before intervention was found to be 84% neithersatisfied nor dissatisfied and 84% very satisfied after intervention. The participants satisfiedwith the time of exercising before intervention was found to be 58% moderately dissatisfied and 64% very satisfied after intervention.

Diabetes can leads Diabetes distress, which shares some traits of stress, depression and anxiety even in their leisure time (Intellectual factors). 52% Participants satisfied with their work, school and household activities before intervention moderately dissatisfied but 45% moderately satisfied after intervention. 60% Participants satisfiedwith engaging any other activities even in their leisure time before interventionmoderately dissatisfied and 50% moderately satisfied after intervention. Observing the Emotional factors, 84%Participants satisfied with the burden of their diabetes placing on their family before intervention neither dissatisfied nor satisfied and 84% very satisfied

after intervention. Uncontrolled Diabetes can disturb the wellbeing, to check thiseffects social factors were noted. 64% Participants not satisfied with their social relationship and friendships before intervention and 60% moderately satisfied after intervention.

The study concludes that QOLin T2DM patients before intervention was low which indicate that clinical pharmacist intervention can play a crucial role to improve the quality of life in T2DM. Further studies are certainly needed for better data generation at national level.

**KEYWORDS:** Type II Diabetes Mellitus, Quality of Life (QOL)

### I. INTRODUCTION

<sup>[1]</sup>The quality of life (QoL) in widespread is declining in diabetic patients regardless of the gender. The patients with difficulty in diabetes mellitus suffer from a variety ofrigorous problems. Viz. it affects the renal system by causing micro- and macro vascular such as nephropathy, loss of vision, heart problems, erectile dysfunction, and peripheral neuropathies affecting the QoL.

<sup>[2]</sup>Ageing can cause decrease QOL. <sup>[2]</sup>The QoL is very dominant because it is a capable tool to anticipate an individual's competence to cope up with the disease and maintain long-term health and security. Diabetes Scale of QoL evaluates the relative burden of an intensive diabetes treatment regimen, this instrument remains the most widely used instrument for the assessment for the diabetic specific health related quality of life. Lower values on the DSQOL have been found to be associated with more frequent and severe long-term complications and with glycemic control.

### II. MATERIALS AND METHODS

**STUDY DESIGN:** A prospective cross-sectional study toEvaluate Quality of Life in Type II

Diabetes Mellitus Patients using Diabetes Scale of Quality of Life (DSQOL) in Tertiary care teaching hospital

**STUDY SITE:** The study was conducted in the Tertiary Care Teaching Hospital, Mangalore.

**STUDY DURATION:** The study was conducted for a duration of 6 months from January 2021 to June 2021.

**STUDY METHOD:** Data collection form, Patient information leaflet and DSQOL Scale

**SAMPLE SIZE:** The study was limited for a sample of 100 based on the time schedule allotted for the project including further circumstances.

**ETHICAL CLEARANCE:** The study protocol was approved by the Institutional Ethics Committee[IEC]. (Ref.No:SIEC/SIMS and RC/2021/03/05)

#### STUDY CRITERIA

**Inclusion Criteria:** Patients selected were above the age of 18 years and taking medications for Type II Diabetes Mellitus during the period of the study.

**Exclusion Criteria:** Patients who are below the age of 18 years and patients of either pregnant or lactating category.

#### SOURCE OF DATA

Data(s) for the study were collected using data collection form from the patients and patient case

files form the General Medicine Department and Endocrinology Department.

#### STUDY METHOD

##### Preparation of Informed Consent Form:

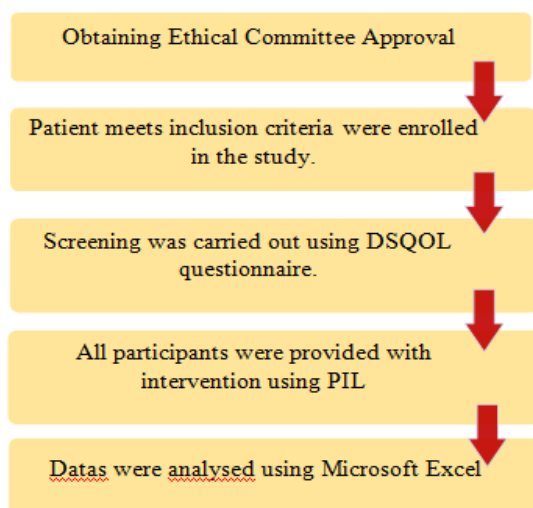
Informed consent form was prepared in English, Malayalam and Kannada and same were used. Prior to the selection of subjects, the consent form was orally explained to the participants before filling it and non-verbally by taking help of caregiver (when needed) and staffs who are well known to the patients and made them understood. In the study, only the contributors desired to fill ICF were included.

##### Intervention Study:

The same participants participated at pre- and post-test. Pre-test was considered as before intervention and post-test as after intervention. During intervention diabetic education was given by using Patient Information Leaflet. DSQOL was used to screened before and after intervention to evaluate the QoL.

**Data(s) Collection:**Data(s) was collected using data collection form and standard questionnaire (DSQOL) aid of through direct interaction with the patient.

#### OPERATIONAL MODALITY



### III. RESULTS

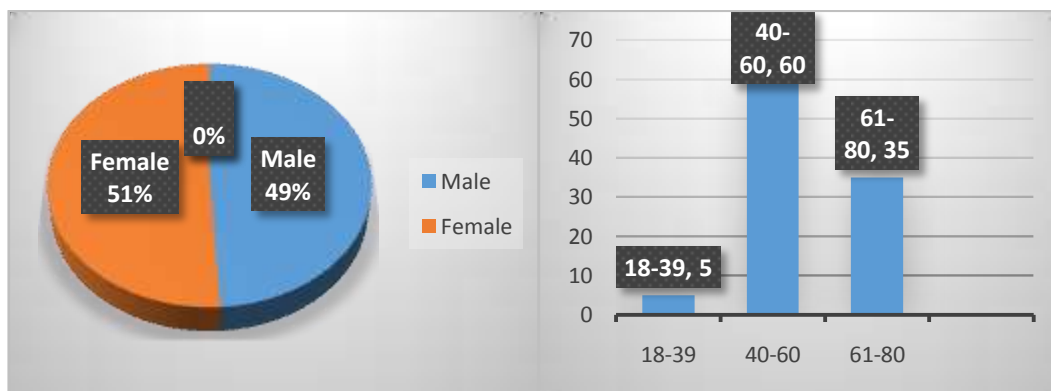
#### DEMOGRAPHIC DETAILS OF THE STUDY PARTICIPANTS

In the study a total of 100 patients was volunteered. 49% of participants were males and 51% were females. The highest percentage of age

group was 40-60 years (60%) followed by 61-80 (35%) and age group of 30-39(5%). Of the total, 98% of the patient has a BMI ranging from 18.5-24.9 which is normal or healthy weight and 2% of the participants accounts for overweight (25.0-29.9).

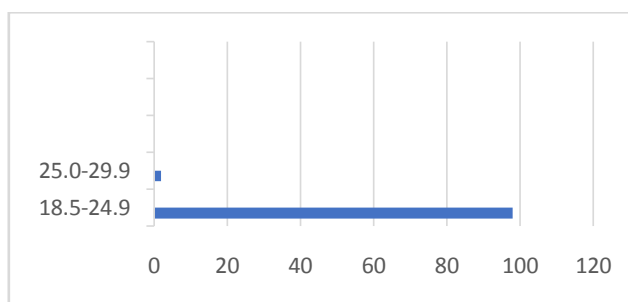
**Table:1 Demographic details of the study participants**

CHARACTERISTICS		NUMBER	PERCENTAGE (%)
GENDER	Male	49	49
	Female	51	51
AGE (IN YEARS)	18-39	5	5
	40-60	60	60
	61-80	35	35
BMI	18.5-24.9	98	98
	25.0-29.9	2	2



**Figure:1 Gender**

**Figure: 2 Agedistribution**



**Figure: 3 Body mass index (BMI)**

#### PHYSICAL FACTORS (Exercise, Diet, Sleep)

The major factor concerns physical symptoms and lifestyle changes resulting from the demands of the diabetes regimen. Finally, QoL is influenced by various factors viz physical factors and lifestyle since diabetes regimen demands that when patients are forced to limit their activities in order to manage their diabetes effectively, quality of life is lightly to be affected. The participants with

flexibility in their diet before intervention was found to be 84% (moderately dissatisfied) and 72% (moderately satisfied) after intervention. The participants with their sleep before intervention was found to be 84% neither dissatisfied nor satisfied and 84% very satisfied after intervention. The participants with the time of exercising before intervention was found to be 58% moderately

dissatisfied and 64% very satisfied after intervention.

VARIABLE	CONSTANT	BEFORE INTERVENTION(%)	AFTER INTERVENTION (%)
How satisfied are you with the flexibility you have in your diet?	a. Very satisfied	3	14
	b. Moderately satisfied	3	72
	c. Neither	10	14
	d. Moderately dissatisfied	84	0
	e. Very dissatisfied	0	0
How satisfied are you with your sleep?	a. Very satisfied	0	84
	b. Moderately satisfied	0	16
	c. Neither	84	0
	d. Moderately dissatisfied	4	0
	e. Very dissatisfied	12	0
How satisfied are you with the time you spend exercising?	a. Very satisfied	0	64
	b. Moderately satisfied	0	30
	c. Neither	40	6
	d. Moderately dissatisfied	58	0
	e. Very dissatisfied	2	0

Table :2 Physical factors

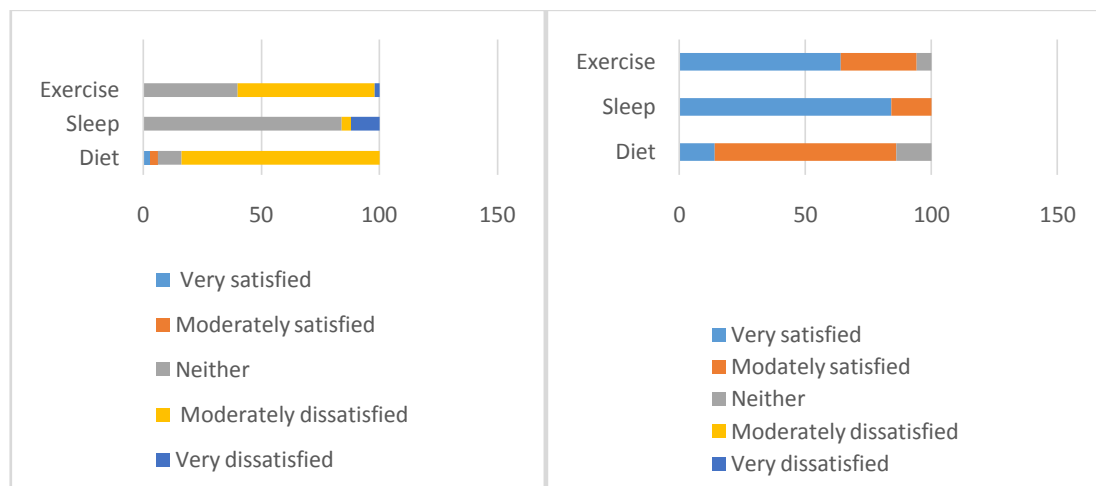


Figure:4. Physical Factors (Before Intervention) Figure:5 Physical Factors (After Intervention)

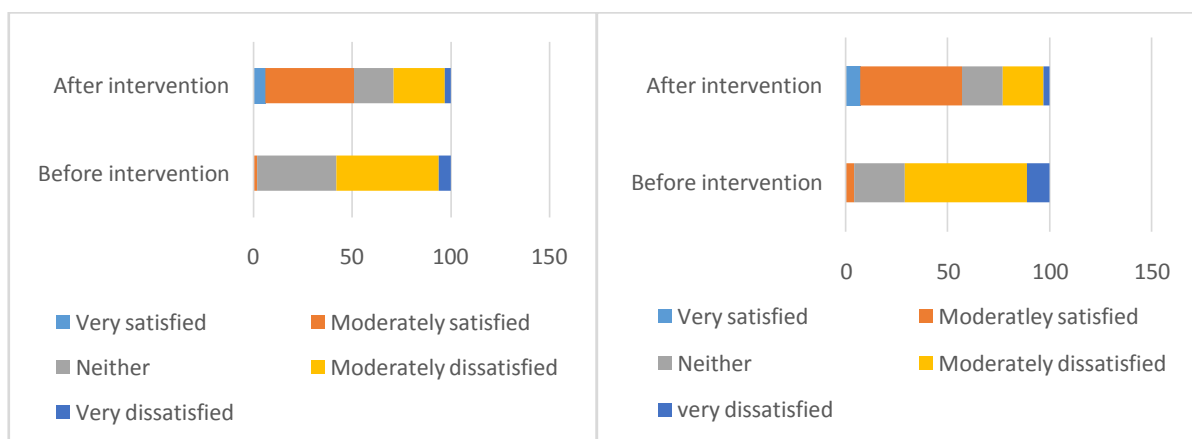
**Intellectual factors (Engaging in activities, Leisure time)**

The demands of diabetes care can have a vigorous impact on mood, both short term and long term. Many patients may become chronically frustrated, discouraged, enraged with a disease that often does not seem to respond to their best effort. The participants satisfied with their work,

school and household activities before intervention was found to be 52% (moderately dissatisfied) and 45% (moderately satisfied) after intervention. The participants satisfied with engaging any other activities even in their leisure time before intervention was found to be 60% (moderately dissatisfied) and 50% (moderately satisfied) after intervention.

**Table No:3. Intellectual factors (Engaging in activities, Leisure time)**

VARIABLE	CONSTANT	BEFORE INTERVENTION(%)	AFTER INTERVENTION(%)
How satisfied are you with your work, school and household activities?	a. Very satisfied	0	6
	b. Moderately satisfied	2	45
	c. Neither	40	20
	d. Moderately dissatisfied	52	26
	e. Very dissatisfied	6	3
How satisfied are you with your leisure time?	a. Very satisfied	0	7
	b. Moderately satisfied	4	50
	c. Neither	25	20
	d. Moderately dissatisfied	60	20
	e. Very dissatisfied	11	3



**Figure:5 Intellectual Factors(Engaging in activities) Figure No:6 Intellectual Factors (leisure time)**

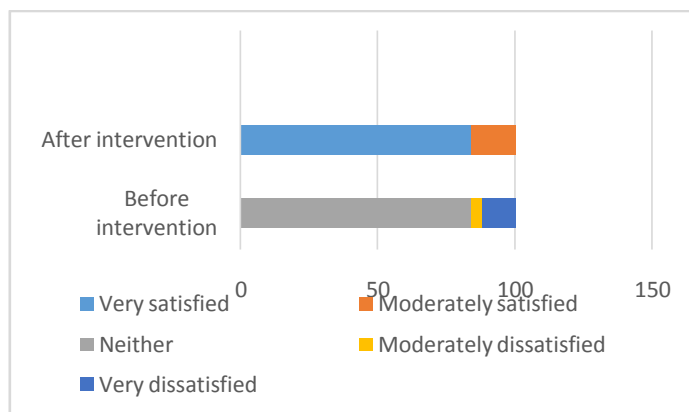
**Emotional factors (Burden on family)**

It can be tough, emotional struggle to find a way to include diabetes in one's life and to confront the sense of mortality that diabetes may represent. The participants satisfied with the burden

of their diabetes placing on their family before intervention was found to be 84% (neither dissatisfied nor satisfied) and 84% (very satisfied) after intervention.

VARIABLE	CONSTANT	BEFORE INTERVENTION(%)	AFTER INTERVENTION(%)
How satisfied are you with the burden your diabetes is placing on your family?	a. Very satisfied	0	84
	b. Moderately satisfied	0	16
	c. Neither	84	0
	d. Moderately dissatisfied	4	0
	e. Very dissatisfied	12	0

**Table:4. Emotional factors (Burden on family)**



**Figure :7. Emotional factors (Burden on family)**

**SOCIAL FACTORS (Social Relationship and Friends)**

The basic presence of diabetes can influence the quantity and quality of patients relationships. To assess this dimension, evaluation might to focus on a patients

perceived emotional distress due to diabetes related social situations. The participants satisfied with their social relationship and friendships before intervention was found to be 64% (neither satisfied nor dissatisfied) and 60% (moderately satisfied) after intervention.

**Table:5. Social factors (Social Relationship and Friends)**

VARIABLE	CONSTANT	BEFORE INTERVENTION (%)	AFTER INTERVENTION (%)
How satisfied are you with your social relationships and friendships?	a. Very satisfied	4	5
	b. Moderately satisfied	28	60
	c. Neither	64	32
	d. Moderately dissatisfied	4	3
	e. Very dissatisfied	2	0

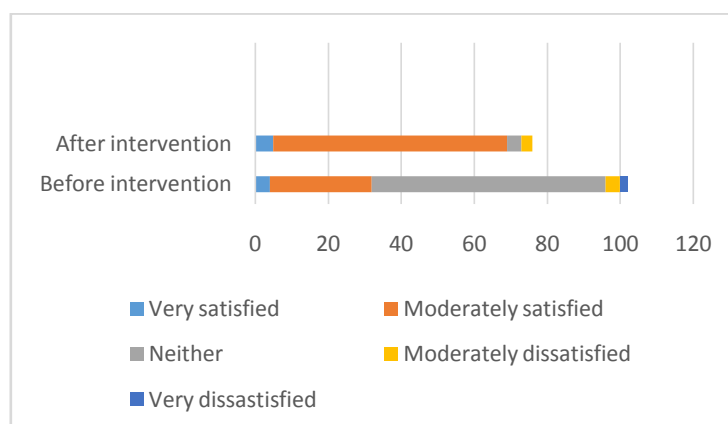


Figure : 8. SOCIAL FACTORS (Social Relationship and Friends)

#### IV. DISCUSSION:

<sup>[1]</sup> The present study was conducted to evaluate the QoL in T2DM by using DSQOL scale. The DSQOL Measure was introduced in the Diabetes control and complications.<sup>[3]</sup>The scope was to assess four dimensions of diabetes impact: Satisfaction, treatment impact, anxiety for complications and social issues. <sup>[4]</sup>The scale is suitable to distinguish between patients with divergent treatment and dietary regimens and to determine social unfairness.<sup>[6]</sup> For patients with T2DM, integrating diet, exercise, medications, and often unappreciated challenge, since a good QoL is the ultimate goal when treating chronic disease such as diabetes. <sup>[7]</sup> The Diabetes Scale of Quality of Life (DSQOL) was originally 15 item instrument that measured five theoretical domains such as Physical, Intellectual, Emotional, Social and mental wellbeing. The study showed that demographics and selected diabetes- related factors are significant predictors of the changes in DSQOL.

<sup>[8]</sup> Patient Information Leaflet (PIL) is an educational element to hand down patient education concerning a disease, medications and for important patients outcomes. <sup>[9,10]</sup> PIL was found to be sufficient in improving Quality of Life in diabetes patients.<sup>[11]</sup> evaluation of diabetes care, it is necessary to determine the impact of diabetes on QoLthe present study utilized PIL for education intervention.

The results of the study indicate that the patients who were provided after intervention described comprehensive outstanding diabetes related QoL. The study shows the significance of QoL with the help of DSQOL which shows better patient adaptation to the T2DM.<sup>[12]</sup>Various factors such as Physical factors, Intellectual factors, Emotional factors and Social factors showed that

QoL was poorbefore intervention and improved after intervention.

#### V. CONCLUSION

The study results concluded that Intervention care plays a vital role in the quality of life in type II Diabetes Mellitus patients and it is identified by using Diabetes Scale of Quality of Life (DSQOL) with the help of 4 factors such as Physical factors, Intellectual factors, Emotional factors and Social factors showed that Quality of Life was low before intervention. Awareness regarding Quality of life provide better diabetic education and knowledge to control and treat diabetes at right time and can reduce the risk factors and the chances to develop complications and thus reduce morbidity and mortality.

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