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ASSESSMENT AND UPGRADING THE QUALITY OF LIFE (QOL) IN TYPE II DIABETES MELLITUS PATIENTS USING WHO QOL – BREF SCALE IN A TERTIARY CARE TEACHING HOSPITAL, KADAPA

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ABSTRACT

Introduction: Type-2 diabetes is a progressive and demanding disease with serious and long-term consequences which decrease the quality of life. The quality of life is important measure of outcome in chronic diseases, this includes physical and mental health perceptions including socio-economic status. This study is to access the quality of life among type-2 diabetic patients by using anthropometry, blood investigations, questionnaires of WHO QOL-BREF scale and monitor, upgrade the quality of life by providing counselling on life style changes, diet etc. **Methods:** A questionnaire based prospective interventional study was conducted for a period of 6months among 51 Type-2 diabetes patients in a tertiary care center. A pretested and structured questionnaire was used to obtain the information on socio-demographic data, diabetic history. Quality of life assessed by WHO QOL-BREF scale. Statistical analysis was carried out by graph pad prism version 8.3.0. Repeated measures one-way ANOVA was used as a statistical method. **Results:** This study reveals that the values were reduced and statistically significant in FBS, PPBS and BMI from baseline to the final follow-up. FBS levels shows the p value is statistically significant in 4-20 transformed scores, while in 0-100 the p value shows statistically not significant. **Conclusion:** Quality of life among type 2 diabetes needs improvement with proper treatment regimens ensuring good glycaemic control. Education on self-control had more impact on controlling the condition and improved the quality of life.

KEYWORDS: Type 2 diabetes, questionnaire study, Intervention, WHO QOL BREF scale.

INTRODUCTION

The definition of type 2 diabetes mellitus, previously termed noninsulin-dependent diabetes mellitus, was recently modified by the American Diabetes Association.[1] The relative importance of defects in insulin secretion or in the peripheral action of the hormone in the occurrence of DM2 has been and will continue to be cause for discussion. DM2 comprises 80% to 90% of all cases of DM. This is the most common form of diabetes mellitus and is highly associated with a family history of diabetes, older age, obesity and lack of exercise.[2] Pancreas makes a hormone called insulin. It helps your cells turn glucose from the food you eat into energy. People with type 2 diabetes make insulin, but their cells don't use it as well as they should.[3]

ASSESSMENT SCALE

WHO – QOL BREF SCALE

World Health Organization Quality of Life Questionnaire (WHOQOL-BREF) to assess quality of life. The four domains of the WHOQOL-BREF are

1. **Physical Health** The factors include activities of daily living Dependence on medicinal substances and medical aids Energy and fatigue Mobility Pain and discomfort Sleep and rest Work Capacity.[4]
2. **Psychological (E.g. Self-Esteem),** Bodily image and appearance Negative feelings Positive feelings Self-esteem Spirituality / Religion / Personal beliefs Thinking, learning, memory and concentration.[5]
3. **Social Relationships (E.g. Social Support)**, Personal relationships Social support Sexual activity.[6]
4. **Environment (E.G. Freedom, Physical Safety).** Financial resources Freedom, physical safety and security Health and social care: accessibility and quality Home environment Opportunities for acquiring new information and skills Participation in and opportunities for recreation / leisure activities Physical environment (pollution / noise / traffic / climate) Transport.[7]

Quality of life is defined as individuals' perceptions 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. Questions should appear in the order in which they appear in the example WHOQOL-BREF provided within this document, with instructions and headers unchanged. Questions are grouped by response format. The equivalent numbering of questions between the WHOQOL-BREF and the WHOQOL-100 is given in the example version of the WHOQOL-BREF to enable easy comparison between responses to items on the two versions.[8]

There are three reasons for this

1) To control for item order effects which could occur and change item meaning.
2) The WHOQOL-BREF represents an agreed upon core set of international items.
3) The WHOQOL-BREF is likely to be used where quality of life is amongst one of several parameters being assessed.

Assessment of parameters

Obesity- BMI, Waist circumference -Body mass index (BMI) is a statistical measure of the weight of a person scaled according to height. Body mass index is defined as the individual's body weight divided by the square of his/her height.[9]

Measurement of height -The subject stands on a flat surface, at a right angle to the vertical board of the stadiometer.The medial borders of the feet are at an angle of 60 degrees.The measurement is taken to the nearest 1mm.[9]

Measurement of weight-The subject is instructed to maintain a stable position while the measurement is taken.The measurement is taken to the nearest 0.1 kg.

Waist circumference-Waist circumference is the simplest and most common way to measure "abdominal obesity". Women – High risk 0.85 – 1.7, Low risk (< 0.85). Men – High risk 0.95 -1.9, Low risk (< 0.95).[10]

METHODS

This questionnaire based prospective observational study was carried out at the department of general medicine and the subjects were collected from the both in-patients and out-patients department of general medicine at government general hospital RIMS. Kadapa during the period of 6 months. A total 51 subjects were studied completely recruited and studied by using the baseline laboratory parameters (RBS,FBS,PPBS,BMI) and the quality of life had been estimated by using WHO quality of life had estimated by using WHO quality of life questionnaire (WHO QOL -BREF) scale at baseline and during the follow-up for 3 months (30days interval).A statistical analysis was done by using MS-EXCEL, and ANOVA with GRAPH PAD PRISM and statistical analysis was performed to find statistical significance.

RESULTS

In this study, the study sample enrolled 65 patients with a followed period of one year. They were in total 36 male patients (55.38%) and 29 female patients (44.62%). The mean age of males was 54.08 ± 9.48 years and mean age of females was 55.17±9.20 years.Most patients belonged to the age group of 56-65years were 28 (43.07%). The waist circumference of males <90, >90 cm was 18, 18 members and females <80,>80 cm were 16, 13 members respectively. 60 members (92.30%) were diabetes with hypertension and 5 members (7.70%) were diabetes with other than hypertension.

Due to absence of patients during their follow-ups, this study included 51 among 65 patients. The blood glucose levels (RBS, FBS, and PPBS), BMI, Quality of life was measured among all patients.

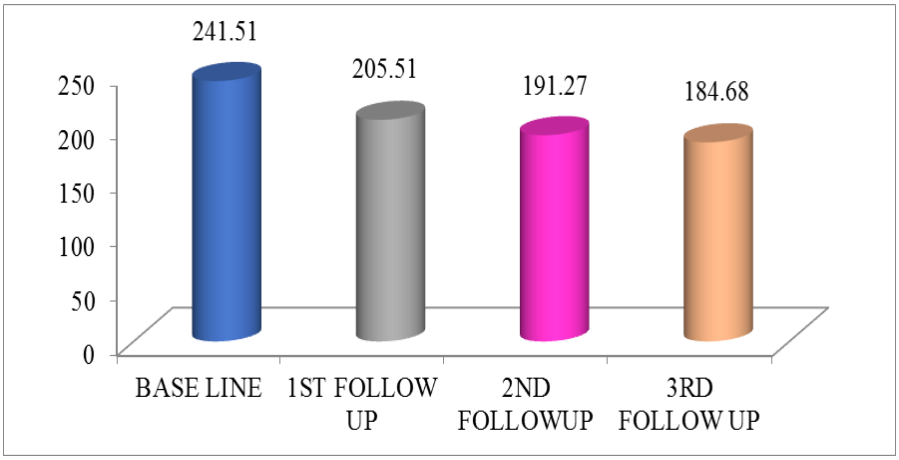

Figure 1: Average value of RBS (mg/dl).

The average value of RBS at baseline is 241.51, 1st follow up is 205.51, 2nd follow up is 191.27 and 3rd follow up 184.68.

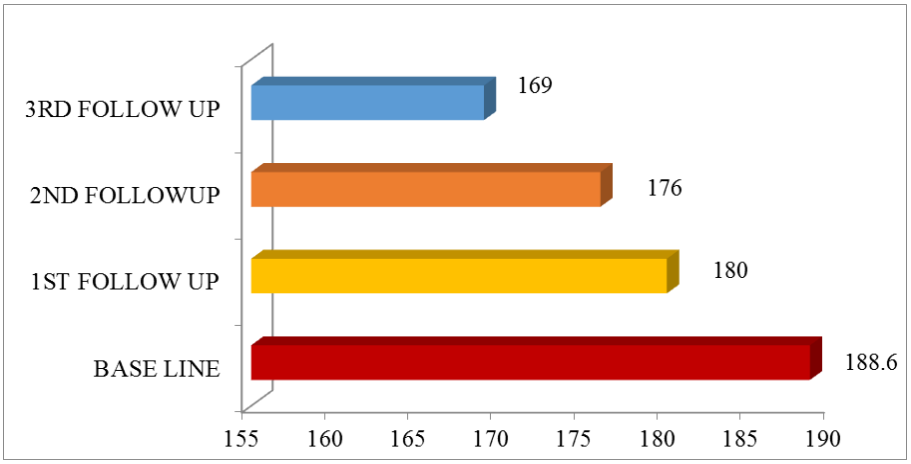

Figure: 2. Average values of FBS (mg/dl).

The average value of FBS at baseline is 188.6, 1st follow up is 180, 2nd follow up is 176 and 3rd follow up 169.

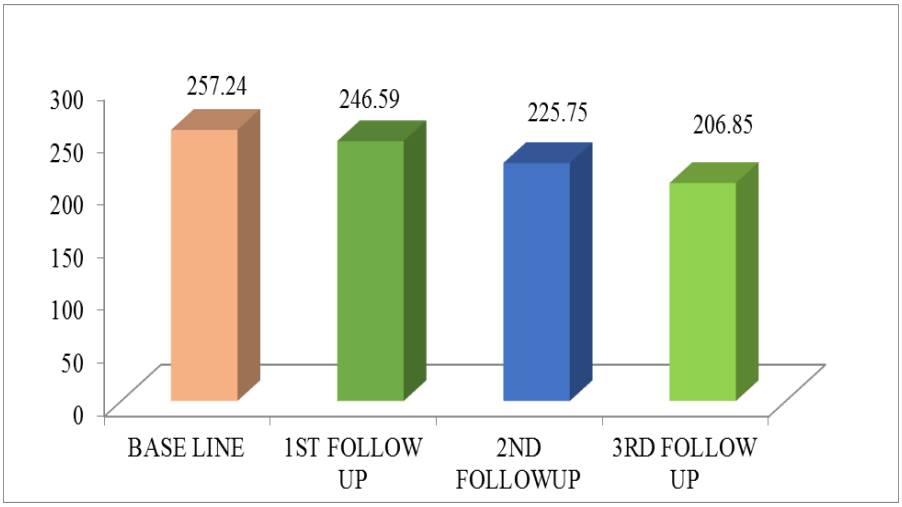

Figure: 3. Average values of PPBS (mg/dl).

The average value of PPBS at baseline is 257.24, 1st follow up is 246.59, 2nd follow up is 225.75 and 3rd follow up 206.85.

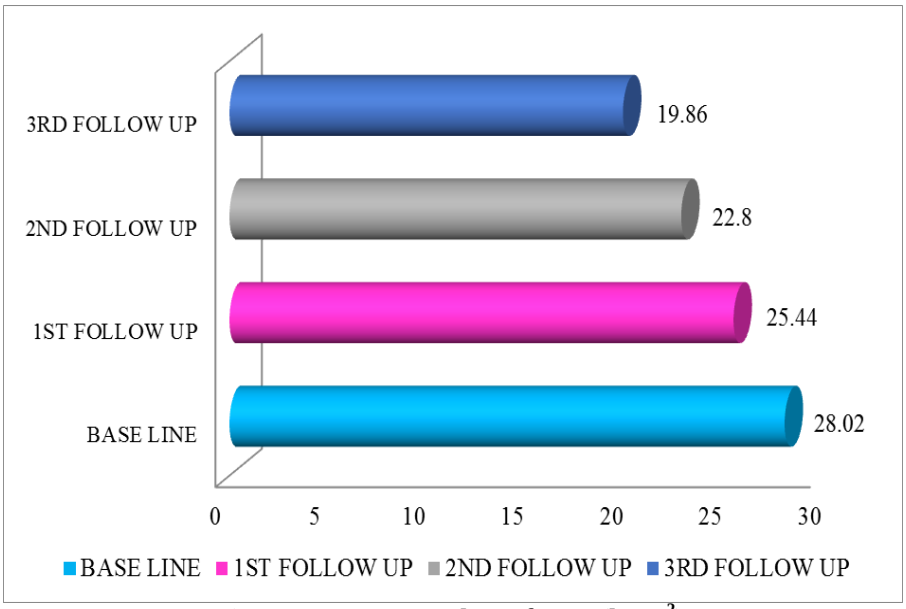

Figure: 4. Average values of BMI (kg/m^2).

The average value of BMI at baseline is 28.02, 1st follow up is 25.44, 2nd follow up is 22.8 and 3rd follow up 19.86.

World health organization quality of life questionnaire (BREF scale)
Transformed scores for 4-20

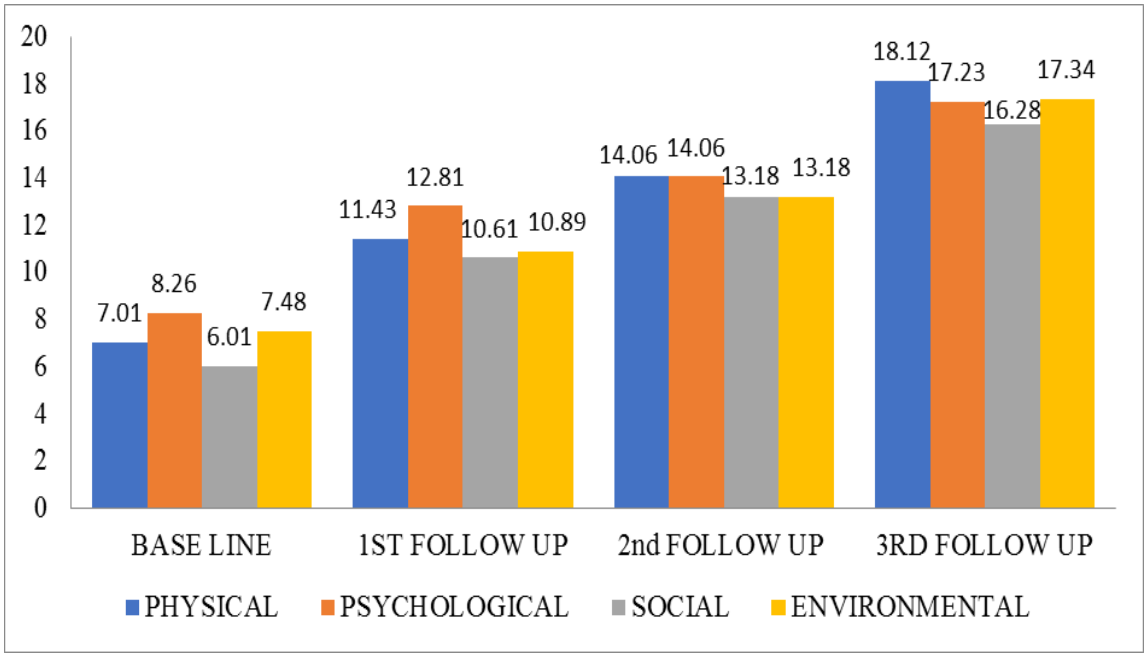

Figure 5: Average scores of 4-20.

The average 4-20 transformed scores for physical, psychological, social, and environmental domains at baseline is 7.01, 11.43, 14.06, 18.12, for 1st follow up is 8.26, 12.81, 14.06, 17.23 for 2nd follow up is 6.01, 10.61, 13.18, 16.28 and for 3rd follow up is 7.48, 10.89, 13.18, 17.34 respectively.

Transformed scores for 0-100

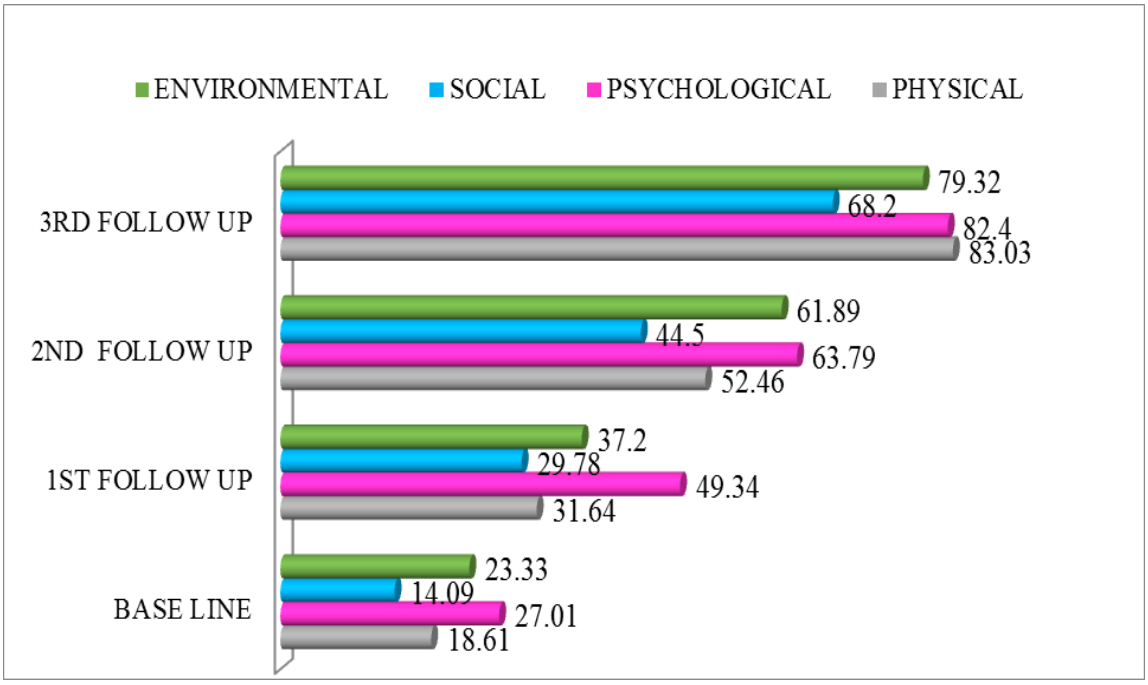

Figure 6: Average scores of 0-100.

The average 0-100 transformed scores for physical, psychological, social, and environmental domains at baseline is 18.61, 31.64, 52.46, 83.03, for 1st follow up is 27.01, 49.34, 63.79, 82.04 for 2nd follow up is 14.09, 29.79, 44.5, 68.2 and for 3rd follow up is 23.33, 37.20, 61.89, 79.32 respectively.

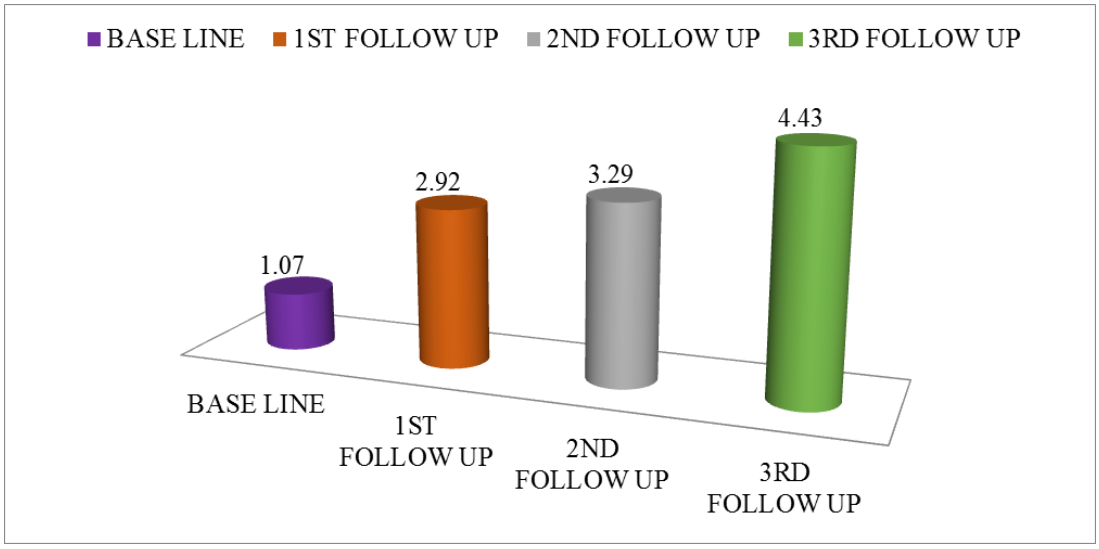

Figure 7: Average scores of overall life.

The average score of overall life for base line is 1.07, for 1st follow up is 2.92, for 2nd follow up is 3.29, and for 3rd follow up is 4.43.

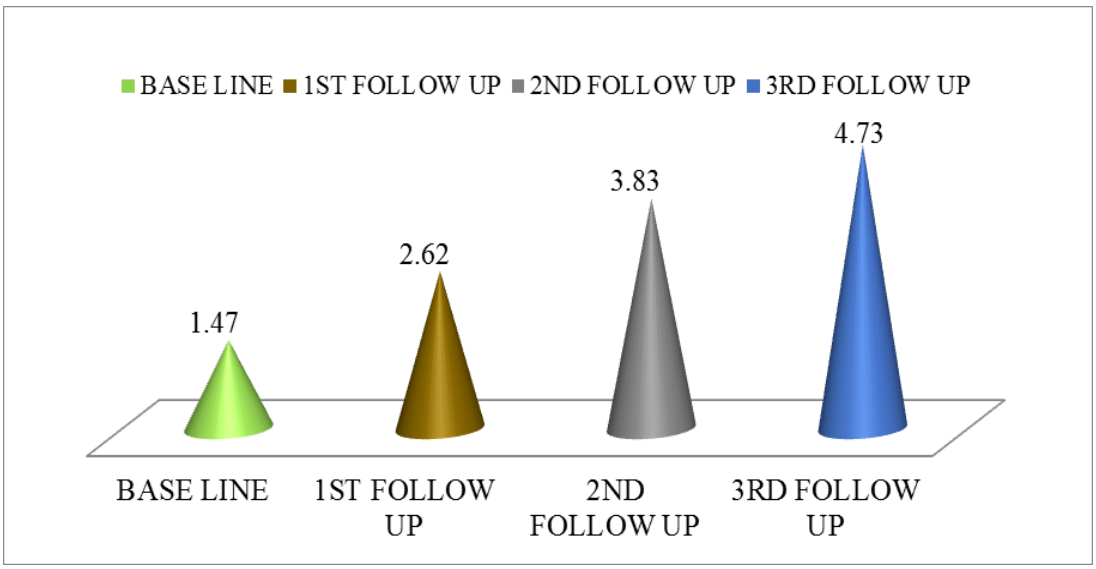

Figure 8: Average scores of overall health.

The average score of overall health for base line is 1.47, for 1st follow up is 2.62, for 2nd follow up is 3.83, and for 3rd follow up is 4.73.

DISCUSSION

In this study period, we found that the incidence rate is less due to patients were not admitted in the hospital which were comparable to the study done by Wild et al.The prevalence rate of diabetes was more in males 36 (55.38%) and the mean age of males was 54.08 ± 9.48 years which were comparable to the study done byEljedi et al. The majority of study subjects with in the age group of 56-65 years are more vulnerable to diabetic and quality of life which were comparable to the study done by Ali et al., in which the majority of the patients were males.

We found that diabetes with hypertension were decrease the quality of life compared to diabetic with other than hypertension such as CVA, retinopathy, ischemic heart disease etc. So, the quality of life is clearly affected by the comorbidities associated with type-2 diabetes which were comparable to the study done by Jiménez-Garcia et al.[10] Diabetes does impair the QoL of patients but not to a great extent. There is a need to specifically target and improve the QoL of patients and assessment should be routinely practised in diabetics which were comparable to the study done by Manjunath k et al.[10] In this study, the quality of life was assessed by using world health organisation quality of life questionnaire. It is recommended to address the quality of life among these patients in all domains. So, quality of life among diabetes needs improvement with proper treatment regimens ensuring good glycaemic control, this was similar to the observation from the study carried out by Acharya et al. In the present study, the results showed that significant

decrease in the average values of RBS, FBS, PPBS and BMI levels was observed in patients with type-2 diabetic patients from base line to 3rd follow up. These findings were similar to the observations from the study carried out by researchers.In the present study, the results showed that significant increase in the average values of 4-20, 0-100 transformed scores for physical, psychological, social and environmental domains and the average score of overall life and overall health was observed in patients with type-2 diabetic patients from base line to 3rd follow up. These findings were similar to the observations from the study carried out by researchers.The p values for RBS shows statistically significant p=0.0123, for PPBS the p value shows statistically significant p=0.0001, for BMI the p value shows statistically significant P=0.0010, for 4-20 transformed scores the p values shows statistically significant p=0.0516 and for FBS the p value shows statistically not significant p=0.0773, for 0-100 transformed scores the p values shows statistically not significant p=0.1064.

LIMITATIONS

This was a questionnaire based prospective observational study. The sample size was small and there were relatively high drop-outs. The WHO-QOL-BREF SCALE is designed to be self-administered but in this study the questionnaire was administered through face to face interviews. Further studies with larger number of subjects with application of modern sophisticated technology are required to give a conclusive decision.

CONCLUSION

In this study we concluded that, overall perception of study participants, their life and health perception were considered to have good quality of life. However glucose monitoring, lifestyle style changes, diet and comorbidities were associated with QoL of type-2diabetes. Quality of life among diabetes needs improvement with proper treatment regimens ensuring good glycaemic control. Thus the proper glycaemic control is necessary to prevent progression and occurrence of complications to maintain a better QoL in diabetics. Education on self-control had more impact on controlling the condition and improved the quality of life. So Clinical pharmacist involvement has a positive impact in creating continuous education programs and providing Patient information leaflets.

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