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COMPARISON OF QUALITY OF LIFE IN PATIENTS WITH DIABETES MELLITUS TREATED WITH ORAL HYPOGLYCEMICS AND INSULIN

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ABSTRACT

Background: Diabetes is a chronic disease in etiology and occurs when the pancreas does not produce enough amount of insulin or when there is resistance towards its action on the body. The aim of present study was to evaluate factors affecting quality of life among patients diagnosed with type-2 diabetes mellitus and taking treatment with insulin and oral hypoglycemic drugs. **Material & Methods:** 200 patients who were diagnosed with type-2 diabetes mellitus and taking either insulin or oral hypoglycemics drugs for at least 12 weeks who were attending outpatient department enrolled for present study by simple random sampling. Written informed consent was taken from each study participant. Patients who had chronic illness other than diabetes and patients who were being treated by both insulin and oral hypoglycemics drugs were excluded from the study. **Results:** About 68% of the patients who were on insulin while 76% of the patients who were on oral hypoglycemics had satisfactory quality of life. The cut off value was being 87.5 i.e. the 50% of total possible mean score value. On the basis of mean quality of life score among study participants it was found that mean quality of life score values among patients on oral hypoglycemic drugs was 115.3 and mean quality of life score values among patients on insulin was 105.9. This difference was statistically non-significant (P value >0.05). **Conclusion:** We concluded from the present study that patients who were on oral hypoglycemics had satisfactory quality of life in compared to the patients on insulin therapy. The poor quality of life scores was significantly (P value <0.05) associated with lower socioeconomic status, lesser physical activity and lesser education, duration of illness and positive family history.

Key words: diabetes mellitus, quality of life, oral hypoglycemic drugs.

INTRODUCTION:

In 2014, WHO reports that 8.5% of adults who aged 18 years or above had diagnosed with diabetes. In 2016, WHO reports that diabetes was the directly responsible for 1.6 million mortality occurred worldwide. It was estimated that by the year 2030 diabetes will became seventh leading cause of mortality worldwide **(1)**. Diabetes is a chronic disease in etiology and occurs when the pancreas does not produce enough amount of insulin or when there is resistance towards its action on the body **(2)**. In India, the prevalence of diabetes is increasing and imposing challenges on health care infrastructure of the country **(3)**. The prevalence of non-communicable diseases is increasing compared to communicable diseases. Among the non-communicable diseases, diabetes mellitus is rapidly increasing globally and affecting all the age groups **(4)**.

According to the WHO reports stated that there is a considerable burden of psychiatric morbidity among all ages **(5)**. Worldwide, there are various programs

initiated to increase awareness and linking people to the health care services focusing on mental health. All of these programs are bases up on firm research and focused on mental health services which are efficient, effective, sustainable and replicable in different set-up globally **(6)**. The overall disease burden of mental health and behavioral disorders were reported in various community-based cross-sectional epidemiological studies in India, which report that the overall prevalence of psychiatric diseases were ranging from 10% to 20% **(7)**.

We conducted present study to evaluate the quality of life among patients diagnosed with type-2 diabetes mellitus and taking treatment with insulin and oral hypoglycemic drugs. The aim of present study was to evaluate factors affecting quality of life among patients diagnosed with type-2 diabetes mellitus and taking treatment with insulin and oral hypoglycemic drugs.

MATERIALS & METHODS

The present cross-sectional prospective study was conducted at Pacific Medical Collage & Hospital, Udaipur. Study duration was one year from Sept 2014 to Aug 2015. Sample size of 200 was calculated at confidence interval of 95% and acceptable margin of error of 10% with the 95% study power. 200 patients who were diagnosed with type-2 diabetes mellitus and taking either insulin or oral hypoglycemics drugs for at least 12 weeks who were attending outpatient department enrolled for present study by simple random sampling. Written informed consent was taken from each study participant. Patients who had chronic illness other than diabetes and patients who were being treated by both insulin and oral hypoglycemics drugs were excluded from the study.

Data was collected by a pretested questionnaire format to evaluate and record the sociodemographic data. The general physical and clinical examination was followed by mental health and psychiatric morbidity evaluation. Quality of life evaluation was done by using a pretested Performa have domains related to due physical health, general health, physical endurance, symptom frequency, treatment satisfaction, mental health, financial worries and diet advice satisfaction. All of these domains had high internal consistency (Cronbach's alpha of 0.894). The strength of the questionnaire was enhanced by the standard likert scale. Hence, the questionnaire was valid and sensitive tool for the assessment of quality of life in diabetic patients. We further devide the subjects into based upon having good and poor quality of life by the 50% of maximum possible score taken as cut off value. Data analysis was carried out using SPSS v22. All tests were done at alpha (level significance) of 5%; means a significant association present if p value was less than 0.05.

RESULTS

In the present study, we enrolled 200 diagnosed patients with type 2 diabetes mellitus from the outpatient department on the basis of laboratory diagnosis. Most of the study participants 150 (75%) were belonged to the group of oral hypoglycemic drugs and 50 (25%) were belonged to the group of insulin recipients. The mean age of study participants was 44.5 years. Out of the total 136 (68%) were males and 64 (32%) were females. 68 (34%) of the study participants were from nuclear families and 132 (66%) were from joint families. On the basis of positive family history 76 (38%) of study participants had positive family history. (Table 1)

Table 1: Distribution of study participants on the basis of sociodemographic data.

Sociodemographic variables		Patients (%)
Mean Age (years)		44.5 years
Sex	Male	136 (68%)
	Female	64 (32%)
Family type	Nuclear	68 (34%)
	Joint	132 (66%)
Mean duration of illness		7.2 years
Family history	Present	76 (38%)

In the present study, on the basis of mean blood glucose levels among study participants it was found that mean fasting blood glucose levels among patients on oral hypoglycemic drugs was 120.1 mg/dl and mean fasting blood glucose levels among patients on insulin was 136 mg/dl. This difference was statistically significant (P value <0.05). The mean post-prandial blood glucose levels among patients on oral hypoglycemic drugs was 192.5 mg/dl and mean post-prandial blood glucose levels among patients on

oral hypoglycemic drugs was 186.4 mg/dl. This difference was statistically significant (P value <0.05). (Table 2)

Table 2: Distribution of study participants on the basis of blood glucose levels.

Blood glucose levels		Mean value (mg/dl)	p value
Fasting	Patients on insulin	136	<0.05
	Patients on oral hypoglycemics	120.1	
Post-prandial	Patients on insulin	186.4	<0.05
	Patients on oral hypoglycemics	192.5	

In the present study, on the basis of quality of life scores among study participants it was found that About 68% of the patients who were on insulin while 76% of the patients who were on oral hypoglycemics had satisfactory quality of life. The cut off value was being 87.5 i.e. the 50% of total possible mean score value. On the basis of mean quality of life score among study participants it was found that mean quality of life score values among patients on oral hypoglycemic drugs was 115.3 and mean quality of life score values among patients on insulin was 105.9. This difference was statistically non-significant (P value >0.05). (Table 3)

Table 3: Distribution of study participants on the basis of quality of life scores.

Quality of life score	Mean score of patients taking insulin	Mean score of patients taking oral hypoglycemics	p-value
Role limitation due to physical health	20	20.7	>0.05
Physical endurance	19.9	19.6	>0.05
General health	8.2	10.1	>0.05
Treatment satisfaction	10.8	13.5	>0.05
Symptom botherness	9.9	11.4	>0.05
Financial worries	11.3	12.6	>0.05
Emotional/mental health	15.7	16.5	>0.05
Diet satisfaction	10.1	10.9	>0.05
Total Score	105.9	115.3	>0.05

DISCUSSION

In the present study, we enrolled 200 diagnosed patients with type 2 diabetes mellitus from the outpatient department on the basis of laboratory diagnosis. Most of the study participants 150 (75%) were belonged to the group of oral hypoglycemic drugs and 50 (25%) were belonged to the group of insulin recipients. The mean age of study participants was 44.5 years. Out of the total 136 (68%) were males and 64 (32%) were females. 68 (34%) of the study participants were from nuclear families and 132 (66%) were from joint families. On the basis of positive family history 76 (38%) of study participants had positive family history. Similar results were obtained in a study conducted by Gautam Y et al among patients of diabetes mellitus for the assessment of quality of life and it was found that female gender had poor quality of life in comparison to male gender. They found that poor quality of life scores were significantly (P value <0.05) associated with lower socioeconomic status, lesser physical activity and lesser education **(8)**. Similar results were obtained in a

study conducted by Huang M et al among patients of diabetes mellitus for the assessment of quality of life and it was found that female gender had poor quality of life in comparison to male gender. They found that poor quality of life scores were significantly (P value <0.05) associated with lower socioeconomic status **(9)**. Similar results were obtained in a study conducted by Garratt A et al among patients of diabetes mellitus for the assessment of quality of life and it was found that poor quality of life scores were significantly (P value<0.05) associated with lower socioeconomic status and female gender **(10)**.

In the present study, on the basis of mean blood glucose levels among study participants it was found that mean fasting blood glucose levels among patients on oral hypoglycemic drugs was 120.1 mg/dl and mean fasting blood glucose levels among patients on insulin was 136 mg/dl. This difference was statistically significant (P value <0.05). The mean post-prandial blood glucose levels among patients on oral hypoglycemic drugs was 192.5 mg/dl and mean post-prandial blood glucose levels among patients on oral hypoglycemic drugs was 186.4 mg/dl. This difference was statistically significant (P value <0.05). Similar results were obtained in a study conducted by Davis T et al among patients of type 2 diabetes mellitus for the assessment of quality of life with insulin therapy **(11)**. Similar results were obtained in a study conducted by Leahy J et al among patients of type 2 diabetes mellitus for the assessment of quality of life with insulin therapy **(12)**. Similar results were obtained in a study conducted by Mori Y et al among patients of type 2 diabetes mellitus for the assessment of quality of life with oral hypoglycemic drugs **(13)**.

In the present study, on the basis of quality of life scores among study participants it was found that About 68% of the patients who were on insulin while 76% of the patients who were on oral hypoglycemics had satisfactory quality of life. The cut off value was being 87.5 i.e. the 50% of total possible mean score value. On the basis of mean quality of life score among study participants it was found that mean quality of life score values among patients on oral hypoglycemic drugs was 115.3 and mean quality of life score values among patients on insulin was 105.9. This difference was statistically non-significant (P value >0.05). Similar results were obtained in a study conducted by Nagpal J et al among patients of type 2 diabetes mellitus for the assessment of quality of life and reported 8 domains and 34 items for assessment of the quality of life among patients with diabetes mellitus **(14)**. Similar results were obtained in a study conducted by Fal A et al among patients of type 2 diabetes mellitus for the assessment of quality of life and reported the patients who were on oral hypoglycemics had satisfactory quality of life **(15)**.

CONCLUSION

we concluded from the present study that patients who were on oral hypoglycemics had satisfactory quality of life in compared to the patients on insulin therapy. The poor quality of life scores were significantly (P value <0.05) associated with lower socioeconomic status, lesser physical activity and lesser education, duration of illness and positive family history.

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