Research Article

# The role of different dietary intakes in health outcomes of individuals with diabetes in Pakistani environment

## Kamran Kareem[1], Sultan Ahmad[2] and Usman Warraich[3]

[1].MedicalOfficer at Rural Health Center Qadirabad, Dera Ghazi Khan
[2].MedicalOfficer at Rural Health Center Qadirabad, Dera Ghazi Khan
[3].Medical Officer at Rural Health Center QadirPurawan, Multan

**Corresponding author:**Dr Kamran Kareem, Medical Officer at Rural Health Center Qadirabad, Dera Ghazi Khan, Pakistan
**Tel:** 0092-333- 8581368. **E-mail:**kamu6714@gmail.com
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## ABSTRACT

**Introduction:** Diabetes is a major cause of mortality globally, and it has been estimated that 400 million people worldwide will suffer from it by 2030. Factors to be considered incorporate the metabolic status of the patient (e.g., lipid profile, renal capacity) and additionally food inclinations. **Objective of study:** Our study objective is to find the role of different dietary intakes especially protein in health outcomes of individuals who is suffering from diabetes in Pakistani environment.
**Study design:** The study was conducted at Rural Health Center Qadirabad, Dera Ghazi Khan. This area of Pakistan is considered to be the less aware area regarding awareness of diabetes. This study was conducted during October 2017 to February 2018. There was 200 patients which was visit the health center during this time period. **Results:** Results of current research shows that dietary intake has direct effect on diseases person. High intake of carbohydrate and protein increased the blood sugar level.
**Conclusion:**It is concluded that dietary intake has direct effect on type 2 diabetes patients. Healthy eating pattern may lead towards the control of this diseases otherwise the condition get worse. And healthy eating pattern include balanced carbohydrate, protein and fats and theses are associated with plasma glucose level.

**Key words:** Disease, diabetes, patients, dietary, carbohydrate

## INTRODUCTION

Diabetes is a major cause of mortality globally, and it has been estimated that 400 million people worldwide will suffer from it by 2030. Despite the fact that hereditary qualities seems to assume an essential part in the advancement of diabetes, examine recommends that dietary decisions driven by natural and financial components are of critical significance. Amazing eating regimens assume an essential part in diabetes avoidance.[1] Suitable dietary adherence can enhance insulin affectability and glycemic control, and consequently add to way of life change and general personal satisfaction. Nonetheless, past research recommends that dietary adherence is seemingly

among the most troublesome foundations of diabetes administration.[2] Higher HEI scores demonstrate nearer adherence to current dietary rules for singular food and supplement gatherings. For the sufficiency segments, for example, vegetables and natural product, a higher score demonstrates higher utilization. Dietary proposals depend on the useful effects of devouring products of the soil and expressly stress their constructive outcomes of decreasing corpulence and certain sorts of growths. The last three segments of the HEI incorporate refined grains, sodium, and discharge (calories from strong fats, liquor, and included sugars) and a higher score demonstrates bring down utilization.[3,4]

The 2013 American Diabetes Association (ADA) standards of care prescribe an individualized way to deal with basic leadership as to protein admission and dietary macronutrient composition.[3] Factors to be considered incorporate the metabolic status of the patient (e.g., lipid profile, renal capacity) and additionally food inclinations.[5] With regards to diabetes, the monetary moderateness (e.g., food security), availability, and agreeableness (e.g., food culture) have been talked about as potential boundaries to meeting and adherence to prescribed dietary rules.[6]

The eating routine wellbeing behavior of diabetes patients and techniques to conquer potential obstructions to adherence to prescribed dietary rules are key general wellbeing and diabetes wellbeing concern. In this manner, there is have to measure the connection between eat less quality, corpulence, and diabetes.[7]

## BACKGROUND OF THE STUDY

Basically our aim of study is to find the role of daily dietary intake for those patients who is suffering from diabetes. Diabetes is considered to be one of the most common disease in Pakistan. Almost every 4th individual is suffering from this disease, but the environment of Pakistan does not allow the people to control their sugar level in daily routine.

The reason is that because we are habitual of eating a lot of protein and fat in our daily diet.

## Objectives of the study

Our study objective is to find the role of different dietary intakes especially protein in health outcomes of individuals who is suffering from diabetes in Pakistani environment.

## METHODOLOGY OF THE STUDY

The study was conducted at Rural Health Center Qadirabad, Dera Ghazi Khan. This area of Pakistan is considered to be the less aware area regarding awareness of diabetes. This study was conducted during October 2017 to February 2018. There was 200 patients which was visit the health center during this time period.

We assess the nutritional and economic health of patients by asking some survey questions. From the large pool of data we select health status, diet quality, lifestyle, food culture, food security, and demographic information of the selected patients. The economic and health status describe the level of awareness regarding disease. The collected data were analyzed using SPSS software (version 17). The results are presented as a mean with 95% confidence interval limits or standard deviations. The significant value for $P < .05$ was accepted as statistically significant.

## ANALYSIS AND RESULTS

The data was collected from 200 male and females patients who visit the health care center. The analysis of the data shows that diabetes is more common in females as compared to males.

The reason is that because women have different conditions and working environment as compared to males (Table 01 and figure 01).

**Table 01:** Distribution of patients based on gender

| Sr.No | Gender | |
|-------|--------|------|
| 01 | Male | 20 |
| 02 | Female | 180 |

**Figure 1:** Graphicl representation of respondants
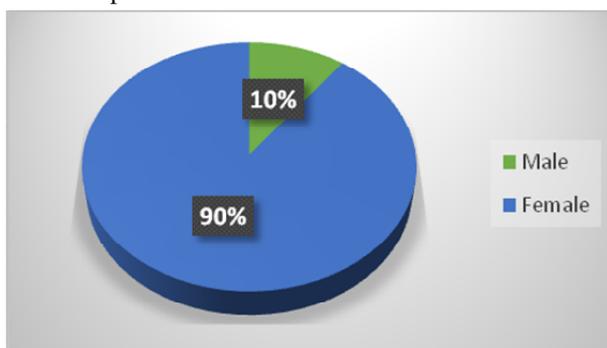


We also collect the basic characteristics of patients and compared these values with normal values. So we can find that diseases person have more blood pressure value as compared to normal. People who suffer from diabetes also suffer from high blood pressure problem (Table 2a).

**Table 02 (a):** Basic characteristics of patients

| | |
|---|---|
| Diseases age | 35±5 |
| Poor class | 49% |
| Middle class | 40% |
| Upper class | 10.7% |
| educated | 11.7% |
| Illiterate | 55% |
| Active life style | 25% |
| Normal life style | 67% |

Table 2(b) explains the demographical conditions of the patients. This table explains the co-efficient and standard error values. The level of confidence interval is 90 and 95 in this table for the significant value.

**Table 02 (b):** Demographic characteristics and history of patients

| Variables | Co-efficient | SE |
|---|---|---|
| Blood pressure | 0.048 | 0.35 |
| Healthy eating index (HEI) | −0.059 | 0.05 |
| Smoker | 0.060 | 0.80 |
| Food security | 0.106 | 0.12 |
| Drinker | -0.343 | 0.08 |
| Belong to city area | 0.057 | 0.01 |
| Belong to rural area | 0.59 | 0.70 |
| BMI | 0.5460.24 | |

**Indicate significance at the 99, 95, and 90% level.**

Table 03 explains the relationship between dietary intake, BMI and diet quality among diabetic patients. It shows that people consume more protein and fat as compared to carbohydrates. Due to this reason they may suffer from other diseases parallel to diabetes.

**Table 03 (a):** Relationship between supplement intake, BMI, and diet quality among diabetes patients.

| Variables | Co-efficient | SE |
|---|---|---|
| **Dietary supplements** | | |
| Carbohydrate | 0.019 | 0.03 |
| Protein | 0.061 | 0.08 |
| Amino acid | 0.106 | 0.19 |
| Fat | 0.434 | 0.02 |
| lipids | 0.057 | 0.01 |
| **Body Mass Index** | | |
| BMI of diseased person | 0.29 | 0.07 |

**Table 03 (b):**Daily Consumption of Food Groups in Patients with Type 2 Diabetes According to Eating Patterns

| Food Groups (% of Total Caloric Intake) | Eating Patterns | | P Value |
|---|---|---|---|
| | Unhealthy (n = 100) | Healthy (n = 97) | |
| Whole carbohydrates | 0.0 (0.0–2.4) | 10.1 (3.5–17.5) | 0.001 |
| Fried foods | 1.5 (0.1–5.2) | 0.9 (0.0–4.3) | 0.450 |
| Dairy | 8.0 (3.9–11.7) | 11.0 (7.4–16.1) | 0.001 |
| Sweets and desserts | 3.2 (0.5–7.2) | 2.1 (0.3–4.7) | 0.032 |
| Red meat | 10.0 (6.1–13.6) | 11.4 (6.1–14.8) | 0.217 |
| Fish | 0.0 (0.0–0.1) | 0.0 (0.0–1.4) | 0.035 |
| Fruits | 12.4 (7.7–16.3) | 16.7 (12.5–21.6) | 0.001 |
| Vegetables | 2.3 (1.5–3.6) | 3.5 (2.5–5.7) | 0.001 |
| Vegetable oils | 2.2 (1.3–4.9) | 2.5 (0.6–4.6) | 0.218 |

## DISCUSSION

This study focuses on the investigating the linkage between diabetes, diet-health behavior, and health outcomes that are frequently discussed in the context of diabetes management, public health, and diet quality and BMI. It is realized that carbohydrates are the supplements that most influence blood glucose levels.[8] Be that as it may, up to now there is no agreement prove about the perfect measure of carbohydrate intake for individuals with diabetes. Truth be told, in the present investigation, the carbohydrate utilization did not vary between the unhealthy and healthy gathering.[9]The relationship between healthy eating pattern and glycemic control could be better clarified by the nature of carbohydrate intake than the measure of this macronutrient. In concurrence with this, we exhibited a higher utilization of entire carbohydrates, natural products, and vegetables in this gathering of patients.[10]As an outcome, these patients devoured diets with a lower glycemic record and glycemic stack esteems as contrasted and patients in the unhealthy eating pattern. Presently, diets with a low glycemic list have been related with enhanced glycemic control.[11,15] Another supplement likely identified with the best watched glycemic control in our investigation is dietary fiber. In like manner, in our patients in the healthy eating pattern, a higher aggregate, dissolvable, and insoluble fiber utilization was watched. It has just been exhibited that a high fiber intake was related with better glycemic control in patients with diabetes. In any case, up to now, the advantageous effects of fiber intake, particularly solvent fibers, couldn't be detached from the effects of glycemic list and glycemic stack in light of the fact that most foods that have a low glycemic file additionally have a high fiber content.[16]

On the other hand, the better lipid profile saw in patients in the healthy eating pattern, as contrasted and the unhealthy eating pattern, was, in any event incompletely, because of dietary fiber content. A useful fiber impact on the lipid profile with lessening of aggregate and LDL cholesterol and triglycerides had just been already settled.[17] In our investigation, a higher extent of patients in the healthy gathering (rich in fibers) had LDL cholesterol <100 mg/dL as contrasted and patients in the unhealthy gathering. This outcome couldn't be clarified by lipid-bringing down medications in light of the fact that the recurrence of medication clients was not distinctive in healthy and unhealthy gatherings, nor were BMI and the level of physical movement.[18] Fat utilization, alongside fiber intake, could have impacted the change of LDL cholesterol in a healthy eating pattern. The dietary cholesterol and the immersed unsaturated fat intake did not vary amongst healthy and unhealthy gatherings.[19] Be that as it may, the trans unsaturated fats intake was bring down in patients in the healthy gathering. Actually, this dietary component was at that point related with high LDL cholesterol levels.[20]

## CONCLUSION

It is concluded that dietary intake has direct effect on type 2 diabetes patients. Healthy eating pattern

may lead towards the control of this diseases otherwise the condition get worse. And healthy eating pattern include balanced carbohydrate, protein and fats and theses are associated with plasma glucose level.

**Author's contribution**

All the authors contributed equally. Dr. Kamran kareem Ahmad conceived of the presented idea and do all the lab work and carried out the experiment with other co-authors. Dr. Sultan Ahmed developed the theory and performed the computations. Dr. Usman supervised the findings of this work and Dr. Kamran and Dr. Usman developed the theoretical formalism, performed the analytic calculations and performed the numerical simulations. All the authors contributed to the final version of the manuscript.

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