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To Study the Dietary and Lifestyle Modification on Prediabetic Patients

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Abstract: ***This study uses convenient sampling and primary data to examine the impact of Diet and lifestyle changes on prediabetic patients. Based on their pre-existing blood reports, participants were chosen and enrolled in the study. Personalized meal plans with an emphasis on balanced nutrition, less refined sugar and carbohydrate intake, and more whole grains, fruits, and vegetables given to the respondent. Respondent were also urged to incorporate frequent physical activity according to their preferences and fitness levels. Self-reported questionnaires, food diaries, physical activity logs, and recurring clinician evaluations were used to collect data in order to track changes in body mass index (BMI), blood glucose levels, and other health indicators. Significant gains in individual's BMI, glycaemic management, and general well-being were shown by statistical studies. Participants notably reported higher levels of energy and improved quality of life, proving the viability and advantages of non-pharmacological therapies in the management of prediabetes. The study emphasizes how important customized, all-encompassing strategies are for managing prediabetes and preventing diabetes. These results offer useful information to help legislators and healthcare professionals create and carry out successful preventative initiatives.***
Keywords: Prediabetes, Diabetes, Dietary modification, lifestyle, Glycemic control.

I. INTRODUCTION

Prediabetes is defined as a condition in which people have higher blood glucose than normal levels but not high enough for a diagnosis of clear-cut diabetes. In the US, 79 million adults have Prediabetes, a prevalence approximately 3 times that of diabetes.[1]
According to the American diabetes Association, the diagnostic criteria for the people with Prediabetes is an elevated fasting plasma glucose level (100-125mg/dl), a Glycosylated haemoglobin (Hba1c) value of 5.7 % to 6.4 %, or an elevated plasma glucose level after an oral glucose tolerance test(140-199mg/dl).[2]
A systematic review of various studies confirms a strong, continuous association between Glycosylated haemoglobin test *i.e.*, HbA1c.[3]
According to American Diabetic Association expert panel, about 70% individuals with Prediabetes will eventually have diabetes in their later life. As per current trends continue, 1 in every 3 adults will have diabetes by 2050.Changes in lifestyle such as weight loss (7% of body weight) and moderate level physical activity (150minutes per week) helpful in reducing the risk of Diabetes by as much as 58%.[4]
If the peoples with Prediabetes didn't changes lifestyle, then most of them will have type 2 diabetes mellitus in near future or within the next 10 years of diagnosis, according to the national institute of Diabetes and digestive and kidney diseases. There is no specific diet plan for the patients with Prediabetes. However, a diet chart which is given to diabetic patients or diabetic diet is appropriate for individuals affected by Prediabetes. This include reducing the intake of sweetened beverages, high- sugar foods, refined, processed foods, Fatty meats and Alcoholic beverages. However, the Continued intake of healthy sucrose of Carbohydrates such as fruits, whole Grain and Vegetables is encouraged.[5]

A. Objective

1) To study the changes in blood sugar levels (FBG, OGTT, HbA1c).
2) To find out the changes in Body weight.

II. MATERIAL AND METHOD

A. Population and Sample

This study was conducted on 100 prediabetic patients. Convenience sampling technique were used for collection of data. To collect sample, Private Clinic of Ranchi District was selected. A questionnaire was prepared to collect related information from respondents. The age range of the respondent was varied from 18 to 45 years.

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B. Data and Source of Data

Primary data was collected for present study. Prediabetic patients from private clinic were selected as respondent. It Represent about 70% of Prediabetic population of the city. Respondent were interviewed on OPD area. Anthropometric measurement was recorded height in Centimeter, measuring with the help of height scale having readings in centimeter as well as in inches, present weight in kg, with the help of digital weighing machine or pre diagnosis weight in kg (Asked them to recall), with the help of weight and height of respondent, BMI was calculated by following formula: -

BMI= Weight (in kg)/ Height (m^2)

The blood parameter was collected from the existing laboratory reports of the patients. Data was collected and observed after 3 months and further result were declared on the basis of improvement in the level of blood sugar level and body weight.

III. RESULT AND DISCUSSION

The data obtained by standard questionnaire asked by 100 respondents. It was found that almost all the respondent has same eating patterns i.e., intake of refined foods, fast foods and irregular eating patterns as well as no physical activity and that leads to obesity in them and after modification in their lifestyle and dietary patterns many changes are seen. The blood parameter was improved. The level of fasting blood glucose, Oral Glucose tolerance test and Glycosylated haemoglobin test all got improved. There was improvement in body weight.

The percentages of improvement are calculated by the formula: -

Number of observation / Total number of observation X 100

The following parameter are calculated below by the above formula:

S. No	Parameter	Improvement in the no. of outcome out of 100 respondents		Improvement Percentages(%) of outcome	
		Before (without counselling)	After 3 months (with counselling)	Before	After 3 months
1.	FBG	35	80	35%	80%
2.	OGTT	20	76	20%	76%
3.	HbA1c	56	90	56%	90%
4.	Body weight	40	84	40%	84%

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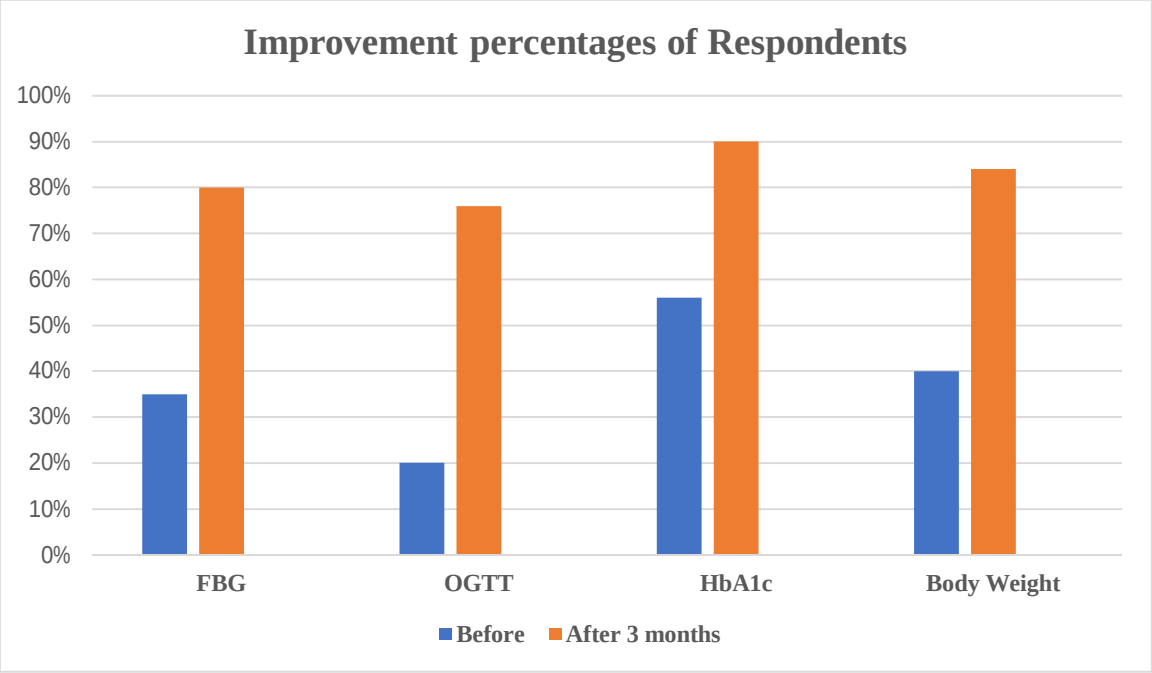


Table 1. Above table shows the Percentage of improvement with different blood parameter (FBG, OGTT, HbA1c) and body weight after modification in dietary and lifestyle pattern.

IV. CONCLUSION

The present study was carried out with the objective to check the changes in FBG, OGTT and HbA1c of the respondent as well as the improvement in body weight. Almost 100 respondents were taken from the age group of 18 to 45 years to carry out this study. They were selected from Ranchi town by using structured questionnaires data was collected. It is concluded that change in dietary and lifestyle pattern can reverse high glucose level to normoglycemia or normal level in the peoples with Prediabetes.

V. ACKNOWLEDGEMENT

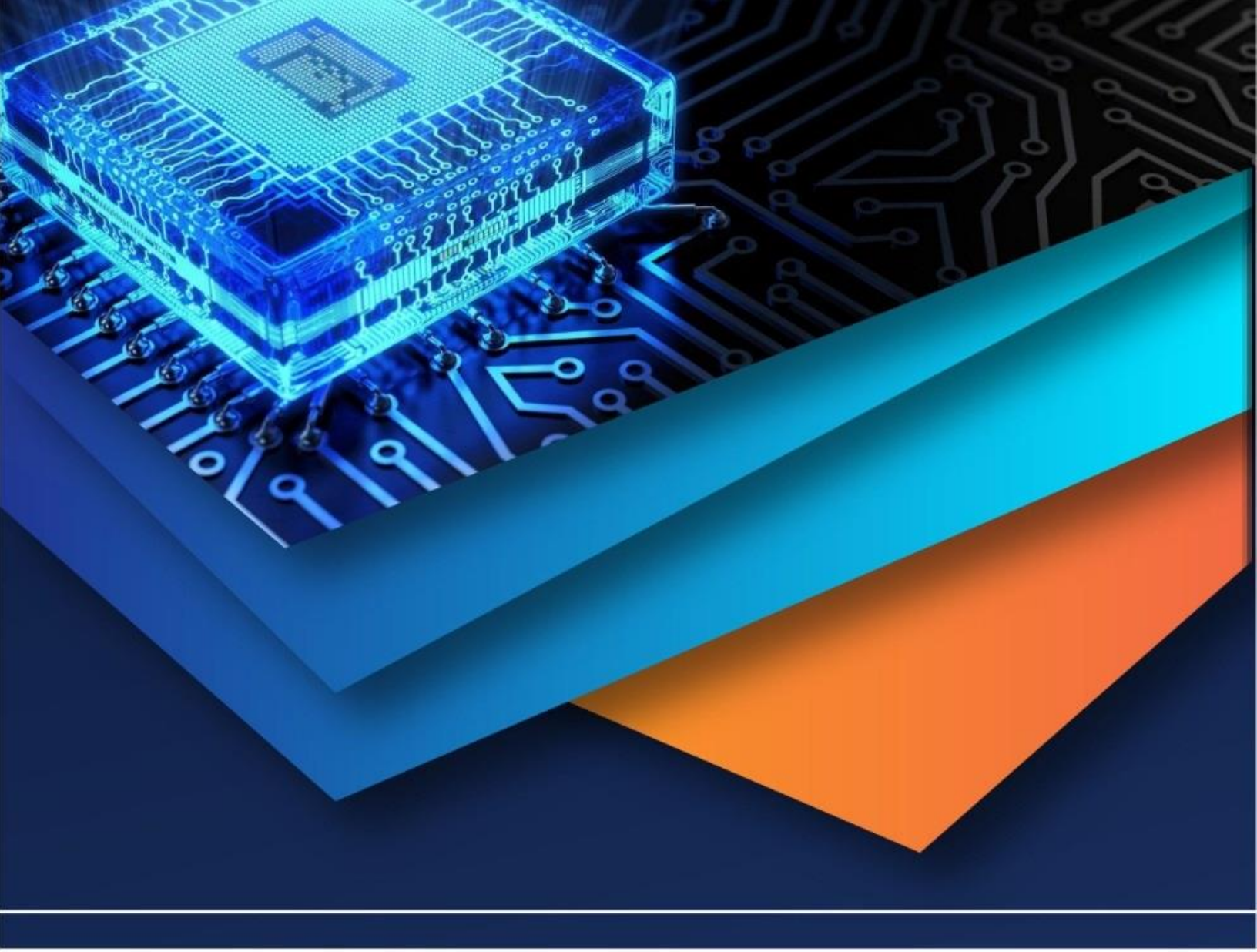
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