DIETARY MANAGEMENT OF DIABETES MELLITUS AMONG ADULTS ATTENDING BABCOCK UNIVERSITY TEACHING HOSPITAL, ILISAN-REMO OGUN STATE

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ABSTRACT

Diabetes mellitus is an un-contagious chronic disorder of carbohydrate metabolism and it is one of the biggest global public health problems: the prevalence is estimated to increase from 425 million people in 2017 to 629 million by 2045, with linked health, social, and economic costs. Diabetes is a chronic disease that affects approximately 26.9% of individuals aged 65 years and older. 1.9 million are diagnosed with diabetes every year, and an additional 7.0 million go undiagnosed and untreated. The main objective of the study was to examine the dietary management of diabetes mellitus among adults attending Babcock University Teaching Hospital. The study design was a cross sectional study conducted among adults attending Babcock University Teaching Hospital. The study utilized a purposive sampling technique, and a self-administered questionnaire was used to collect data among 100 respondents attending Endocrinology Clinic and they had a good knowledge of Diabetes Mellitus. There was a significant association between the age and the knowledge of Diabetes Mellitus among adults attending Babcock University Teaching Hospital (p=0.037). Significant association exist between the fasting blood glucose (p value= 0.003) and random blood sugar (p value= 0.021) and the knowledge of Diabetes Mellitus among respondents. The study revealed that, there is a significant relationship between the nutritional status and the dietary management practices of Diabetes Mellitus among respondents (r=0.329, p= 0.02). The study recommends that adults be encouraged to do regular random blood sugar tests.

INTRODUCTION

Diabetes mellitus is an un-contagious chronic disorder of carbohydrate metabolism (1). Diabetes is one of the biggest global public health problems: the prevalence is estimated to increase from 425 million people in 2017 to 629 million by 2045, with linked health, social, and economic costs (2). Mostly patients with diabetes mellitus have either type 1 diabetes (which is immune-mediated or idiopathic). Type 2 diabetes mellitus (formerly known

as non-insulin dependent diabetes mellitus). Dietary factors are of paramount importance in the management and prevention of type 2 diabetes. Diet is a leading contributor to morbidity and mortality worldwide according to the global burden of disease study carried out in 188 countries (3). Nutritional management is one of the cornerstones of the management of diabetes. Different countries and regions have widely varying cultures and socio-economic status that influence and dominate dietary habits (2).

Knowledge of appropriate diet and the understanding of healthy eating for the prevention and management of diabetes mellitus is very important. These include reducing the consumption of foods high in carbohydrates and less alcohol would be important in control of blood glucose levels and yield to better outcomes (3). Adequate diet for diabetic patients helps them to lead their daily lives same way as healthy people and to maintain a healthy body and prevent the occurrences of complications such as hyperlipidemia and hypertension (1). Diabetes mellitus is one of the most serious diseases affecting humanity. It has been projected that at least 34.2 million Africans will have diabetes by 2040, with a majority of them Africa's most populous country, Nigeria. Nutrition and diet remain a key player in the prevention and management of diabetes, and thus remains the main focus of healthcare professionals all over the world, in the management of diabetes and its related complications. (4)

MATERIAL AND METHOD

The Endocrinology Clinic is managed by the Department of Medicine of the Hospital. The Clinic is run once a week with patients coming in for their routine Endocrinology Clinic visit.

This research was carried out at Babcock University Teaching Hospital, Ilishan- Remo which is located in the South Western region of Nigeria among adults attending endocrinology clinic. A purposive sampling technique was adopted to select One hundred (100) respondents from endocrinology clinic. Both male and female participated in the study. The data was collected using a validated structured sectionalized questionnaire.

The questionnaire has information on personal data, socio-demographic characteristics, knowledge and dietary management of diabetics' mellitus, food intake pattern as well as 24-hour dietary recall. Portable anthropometric stadiometer was used to measure height (m) of the respondents and digital weighing scale was used to measure the weight in Kg and glucometer was to check the glucose level [5].

DATA ANALYSIS
The data generated was analyzed using SPSS version 20.0 and the results were expressed using descriptive statistics such as means, standard deviations, percentages and frequencies.

RESULTS AND DISCUSSION RESULTS
The socio-demographic status of the respondents is as shown in Table 1, there were male 57.0% and 43.0% female respondents. Age: 32% of the respondents were between the ages 31-45 and Most of the respondents are married (70.0%)

Table 1: Socio-demographic Characteristics of Respondents

Variables	Frequency	Percentage
Gender		
Male	57	57
Female	43	43
Age(years)		
18-30	20	20
31-45	32	32
46-60	24	24
>60	24	24
Marital status		
Single	12	12
Divorced	3	3
Married	70	70
Widowed	15	15

Table 2 shows Body Mass Index of the Respondents, 20% were underweight, 30% were overweight while 11% were obese and 39% had normal weight. BMI more than normal is associated with an increased risk of being diagnosed as having complications of diabetes mellitus [6].

Table 2: Body Mass Index of the Respondents

Variables	Frequency	Percentage
BMI (kg/m2)		
Underweight (below 18.5)	20	20
Healthy weight (18.5-24.9)	39	39
Overweight (25.0-29.9)	30	30
Obese (30 and above)	11	11

Table 3 below shows the knowledge of diabetes mellitus of the respondents, 98.0% respondents agree that diabetes mellitus is a disease characterized by high blood sugar, 2.0% disagree. 88% of the respondents have been told by their doctor that they have diabetes mellitus while 12.0% have not been told. 43.0% have family member or relative that has been diagnosed with diabetes mellitus while 57.0% have no family members diagnosed with diabetes mellitus and 58.1% of the respondents' father/mother has been diagnosed with diabetes mellitus. This agreed with the study by [7], that most patients have good knowledge of diabetes mellitus but most times, there is poor blood glucose control due to poor drug compliance It has been established that there is a low level of knowledge of effective dietary management practices among diabetes patients, and age is a major confounding factor of low knowledge [8]. Thus, it is important to examine the management of diabetes among adults.

Table 3: The Knowledge of Diabetes Mellitus among the Respondents

Variable	Frequency	Percentage
Diabetes mellitus is a disease characterized by high blood sugar?		
Yes	98	98
No	2	2
Have you been told by your doctor that you have diabetes mellitus?		
Yes	88	88

No	12	12
If yes, when was that?		
This year	12	13.6
1-3 years	44	50.0
4-8 years	18	20.5
>10 years	14	15.9
Are you compliant with your diabetic drugs?		
Yes	12	13.6
No	76	86.4
Which of the following manages your diabetes?		
Doctor	34	38.6
Nurse	21	23.9
Nutritionist	20	22.7
Exercise instructor	13	14.8
Do you have any family member or relative who has been diagnosed with diabetes mellitus?		
Yes	43	43
No	57	57
Who is this person to you?		
Uncle/aunty	7	16.2
Siblings	11	25.6
Father/mother	25	58.1
Do you have any associated medical conditions?		
Hypertension	30	30
Heart disease	26	26
Thyroid disorders	3	3
Kidney disease	10	10
Others	31	31
When last did you check your random blood sugar?		
1 hr. Ago	6	6
6 hrs. Ago	10	10
This week	43	43
Yesterday	16	16
Can't remember	25	25

Table 4 shows the dietary management of diabetes mellitus of the respondents, 88.0% diet is a central element in the management of diabetes mellitus while 12.0% did not believe. 81.0% agreed that their doctor suggest nutritional therapy to manage your diabetes mellitus while 19.0% disagreed.

98.0% of the respondents accepted that dietary management involves the avoidance of certain foods while 2.0% did not avoid any food. 95.0% of the respondents agreed that food containing high quantity of salt should be avoided in the management of diabetes mellitus while 5.0% while and 87.0% disagreed that food containing low carbohydrate should be avoided while 23.0% accepted food containing low carbohydrate should be not avoided. 89.0% agreed that dietary management aims at ensuring adequate weight control while 11.0% did not and 91.0% of the respondents accepted that dietary management provides adequate nutrients for healthy living while 9.0% did not accept. Dietary management provides adequate nutrients for healthy living this is in agreement with a study carried by [3] they revealed that a healthy eating pattern, regular physical activity, nutritional and drug therapy are the key components of diabetes management and diabetes mellitus is directly related to carbohydrate, lipid and protein metabolism [9], [8].

Table 4: Dietary Management of Diabetes Mellitus of the Respondents

Variables	Frequency	Percentage
Diet is central in the management of diabetes mellitus		
Yes	88	88
No	12	12
Did your doctor suggest nutritional therapy to manage your diabetes mellitus		
Yes	81	81
No	19	19
Dietary management involves the avoidance of certain foods		
Yes	98	98
No	2	2
Food containing high quantity of salt should be avoided in the management of diabetes mellitus		
Yes	95	95
No	5	5
Food containing low carbohydrate should be avoided		

Yes	23	23
No	87	87
Dietary management aims at ensuring adequate weight control		
Yes	89	89
No	11	11
Dietary management provides adequate nutrients for healthy living		
Yes	91	91
No	9	9

Table 5 shows the association between Age and the Knowledge of Diabetes Mellitus of the Respondents, there was a significant association between the age and the knowledge of diabetes mellitus among the respondents (p=0.037). This agrees with the study that the age that diabetes mellitus is most prevalent in people more than 30 years old [10].

Table 5: Association between Age and the Knowledge of Diabetes Mellitus of the Respondents

Variable	Good Knowledge of diabetes mellitus	Poor Knowledge of diabetes mellitus	Total	X^2	P value
Age distribution					
18-30 years	15(75.0%)	5(25.0%)	20(100.0%)	23.637	0.037
31-45-years	30(93.8%)	2(6.2%)	32(100.0 %)		
46-60 years	21(87.5%)	3(12.5%)	24(100.0%)		
Above 61 years	22(91.6%)	2(8.4%)	24(100.0%)		

P-value<0.05

Table 6 shows Relationship between Body Mass Index with Blood Glucose Levels of the Respondents, the random blood sugar was greater than 200mg/dl 64 (64.0%) and lesser than 200mg/dl 36 (36.0%). Most of the respondents are malnourished (especially over nourished) and only 9% of them have good fasting blood glucose and 36% of the respondents had blood glucose levels lesser than 200mg/dl and this suggests that there is a

significant relationship between body mass index of the respondents with optimal blood glucose levels [11],[12]. The study revealed that, there is a significant relationship between the body mass index and dietary management practices of the respondents (r=0.329, p= 0.02).

Table 6: Relationship between Body Mass Index with Blood Glucose Levels of the Respondents

Variables	Frequency	Percentage (%)
BMI (kg/m2)		
Underweight	20	20
Healthy weight	39	39
Overweight	30	30
Obese	11	11
Fasting blood glucose		
Normal	9	9
Prediabetes	22	22
Diabetes	69	69
Random blood glucose		
Greater than 200mg/dl	64	64
Less than 200mg/dl	36	36

CONCLUSIONS

There is a significant relationship between dietary management practices of diabetes mellitus and the nutritional status of the Respondents (r=0.329, p= 0.02). And also, significant association exist between the age and the knowledge of diabetes mellitus of the Respondents (p=0.037).

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