

## NUTRITION COUNSELING ON THE ESSENCE OF MANAGEMENT OF DIABETIC OUT-PATIENTS IN ONDO WEST LOCAL GOVERNMENT AREA, ONDO STATE, NIGERIA

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### ABSTRACT

*Diabetes Mellitus (DM), commonly referred to as a disorder of carbohydrate, fat and protein metabolism that results in high blood glucose, which if uncontrolled can lead to long-term vascular damage and dysfunction. This research was carried out to examine the management of out-patient diabetics in Ondo West Local Government Area of Ondo State. Descriptive survey design was adopted with a total sample of one hundred and fifty (150) diabetics and thirty (30) medical practitioners in Ondo West Local Government Area. The research instrument was a structured close-ended questionnaire on the patients' attitudes to management procedure of diabetes mellitus and management techniques used by medical practitioners. Data collected were analysed descriptively. Findings revealed that the attitude of patients determine the success in the effective management of diabetes. Nutrition advice on the kinds of food to eat to control the health challenges and prevent negative effects of prolonged treatment of the disease was discussed. It was recommended that patients of diabetes mellitus should increase the rate of compliance to dietary regimen. Diabetic patients should monitor their blood sugar level concentration to avoid the risk of diabetic complications. Government was advised to subsidize the cost of drugs and make them readily available and within reach so as to reduce non-compliance with diabetes regimen.*

**Keywords:** *Diabetics, regimen, out-patients, diabetes management*

### INTRODUCTION

The world today is filled with many illnesses and sicknesses that pose a valid threat to people's well-being. Many people in the society suffer from one disease or the other and these diseases cause people who suffer from them to die prematurely. Examples of such diseases are cholera, malaria, liver and kidney dysfunctions, diabetes mellitus, fever and cancer of different organs in the body. Diabetes Mellitus (DM), commonly referred to as "diabetes" is a disorder of carbohydrate, fat and protein metabolism that results in high blood glucose, other metabolic disturbances and if uncontrolled, may bring about vascular damage and dysfunction (Shrivastava, Shrivastava, & Ramasamy, 2013). To gain insight into the holistic management of diabetes it is essential to have a good understanding of the core concepts involved.

Diabetes is a common, costly and challenging chronic condition with no satisfactory cure at present. It is a complex group of diseases with a variety of causes. People with diabetes have high blood glucose, also called high blood sugar or hyperglycemia (Nathan, Buse & Davidson,

2009). It is also a disorder of metabolism (the way the body uses digested food for energy). The digestive track breaks down carbohydrates (sugars and starches found in many foods) into glucose, a form of sugar that enters the bloodstream. With the help of the hormone insulin, cells throughout the body absorb glucose and use it for energy. Diabetes develops when the body does not make use of enough insulin or is not able to use insulin effectively or both. Insulin is made in the pancreas, an organ located behind the stomach. The pancreas contains clusters of cells called Islets. Beta cells within the islets make insulin and release it into the blood (Akingbohunge, 2015).

Most cases of diabetes are classified into two major types which are type I and type II (Kaveeshwar & Cornwall, 2014). Although people who develop diabetes may complain of classic symptoms, most do not. Many people do not know they have diabetes, they continue to feel relatively well despite an underlying cardiovascular risk. Uncontrolled diabetes can result in complications, however, diabetes is controllable (Bani, 2015). Control can and should be achieved and maintained in the community, using three cornerstones of treatment together with regular checking of outcomes. Good communication is vital and will give, that person, the best chance of achieving confident self-care. However, many strange and mythical conceptions are associated with the condition. Successful management of diabetes can be achieved but there must be a change in patient's way of thinking. This can be achieved through a continuous process of conscious and contemplative self-review (Perera, De Silva, & Perera, 2013).

The causes of diabetes vary depending on a person's genetic make-up, family, ethnicity, health and environmental factors. There is no common diabetes causal factor that fits every type of diabetes. For instance, the cause of type I diabetes vary considerably from the cause of gestational diabetes. Similarly, the causes of type II diabetes are distinct from the cause of type I diabetes (Kampmann, 2015). Type I diabetes is caused by immune system destroying the cells in the pancreas that make insulin. This causes diabetes by leaving the body enough insulin not to function normally. This is called an autoimmune reaction or autoimmune cause; because the body is attacking itself (Kampmann, 2015). Viral or bacterial infection, chemical toxins within food and unidentified component causing autoimmune reaction may also trigger type I diabetes. Type II diabetes is usually caused by man, the most over whelming factor is a family history of type II diabetes. There are varieties of risk factors for type II diabetes, any or all of which increase the chance of developing the condition. These include obesity, living a sedentary lifestyle, increasing age, bad diet, pregnancy and illness.

In the year 2009 it was estimated that there were 171 million people in the world with diabetes and this was projected to increase to 366 million by 2030 (WHO, 2013). This increase in prevalence is expected to be more in the Middle Eastern crescent, Sub-Saharan Africa and India (WHO, 2013). In Africa, the estimated prevalence of diabetes is 1% in rural areas, up to 7% in urban Sub-Saharan Africa, and between 8-13% in more developed areas such as South Africa and in population of Indian origin (WHO, 2013). The prevalence in Nigeria varies from 0.65% in rural Mangu (North) to 11% in urban Lagos (South) and data from the World Health

Organisation (WHO) suggests that Nigeria has the greatest number of people living with diabetes in Africa.

Akinkugbe (1997) in his national survey of non-communicable diseases in Nigeria documented the national prevalence of diabetes (age-adjusted) to be 2.2% with male: female section ration of 1:1 and a significant increase in prevalence with age. Thus, below the age of 45 years, crude prevalence in male was 1.6% and 1.9% in female, rising to 5.4% in males and 5.6% in females after the age of 45 years reflecting a threefold increase in each gender. The same survey estimated that not less than 1% of Nigerians were likely to be diabetic with only 225,000 being aware of their condition and about 198,000 receiving treatment. The above figures were most probably higher because Nigerians below the age of 15 years were not included in the survey and results were not available for some states due to technical and logistic reasons (Folayemi, 2015). Since diabetes has no cure, those who have it have to learn to live with and manage it well to avoid complications. If diabetes is not well managed, it can cause death. Diabetes is deadly because it is associated with various types of complications. In the younger people, excess unused insulin in the body can lead to coma. This is because excess sugar in the body draws water away from the cells and makes the cells flabby, makes the person dehydrated, increase acid in the body and then it affects the heart, liver and practically every other organ of the body. Diabetes is usually managed and not treated. To manage diabetes, proper medications as well as a healthy lifestyle are important. Diabetic patients need to eat farm-fresh foods and avoid processed foods. This will improve the chances of getting healthy nutrition. Anybody living with diabetes (especially type II) may be able to control the symptoms by losing weight, following a healthy diet, engaging in exercise and monitoring blood glucose levels. People with type I diabetes require insulin; people with type II diabetes can be treated with oral medication, but may also require insulin, blood pressure control and foot care. Other cost saving interventions include screening and treatment for retinopathy (which causes blindness) and blood lipid control (to regulate cholesterol levels).

## STATEMENT OF THE PROBLEM

In the society today, diabetes is one of the major medical disorders affecting the health of the young and the old and can lead to an untimely death if not properly managed. The dietary pattern and consumption of sugary food items particularly among youths who rather take soft drinks, eat flavoured meals and excessive intake of alcoholic drinks coupled with the non-involvement in regular exercises play major roles in increasing the risk of having diabetes mellitus whose symptoms include frequent urination, excessive sweating and eventual heart problems which often lead to death if not properly managed. Problems associated with diabetes mellitus (DM) can be minimized by early diagnosis and proper management. The primary aim of management of DM is to delay the macro and micro vascular complications by achieving optimal glycaemic control. This involves lifestyle modification, including regular exercise, healthy diet, weight loss, and drug therapy. Therefore, health literacy is an integral part of the diabetes management. Patients with good knowledge on diabetes and its complications seek proper treatment and care, and take charge of their health and vice versa. This study therefore

examined the knowledge of diabetic out-patients on the management of diabetes in Ondo West Local Government Area of Ondo State for purpose of adequate nutrition counselling.

### OBJECTIVES OF THE STUDY

The study

1. examined the procedures of managing diabetes embarked on in Ondo West Local Government Area
2. investigated the patients' attitudes to the procedures of managing Diabetes Mellitus
3. examined the prospects of the management procedures

### RESEARCH QUESTIONS

The following research questions were formulated to chart a direction for the study

1. What are the procedures of managing diabetes embarked on in Ondo West Local Government Area?
2. What are the patients' attitudes to the procedures of managing Diabetes Mellitus?
3. What are the prospects of the management procedures?

### RESEARCH HYPOTHESES

- Medical practitioners' responses on the prospects of management procedures of diabetes mellitus.
- Patients' responses on the prospects of management procedures of diabetes mellitus.

### METHODOLOGY

**Design:** The design that was used for this study was descriptive survey research design.

**Sampling and sampling techniques:** Out of all the hospitals (2 government-owned and 25 private registered hospitals) in Ondo West Local Government Area of Ondo State, 1 government hospital and 2 private hospitals were used. The hospitals were first stratified (by ownership) before one (1) was randomly selected in the government-owned hospitals and two (2) were randomly selected in the private registered hospitals.

A sample of one hundred and fifty (150) diabetic patients and thirty (30) medical practitioners were randomly selected in the hospitals used for the study. From the government-owned hospital, one hundred (100) diabetic patients and twenty-five (25) medical practitioners were selected while fifty (50) diabetic patients and five (5) medical practitioners were selected in the private hospitals. Selection of patients and medical practitioners were done randomly in each setting.

**Research instrument for data collection:** Close-ended questionnaire was used to elicit information from the respondents. There were two types of questionnaire. One was for the diabetic patients and the other for the medical practitioners. Each questionnaire was divided into two major sections. Section A of each questionnaire consisted of fixed response items on the personal data of respondents while section B consisted of fixed response items based on the specific objectives of the study. The research instruments were faced and content validated by

experts in food and nutrition as well as Food and Dietetics. Test-retest method was used to determine the level of precision and accuracy of the instruments. The instruments were trial tested on a set of diabetic patients and medical practitioners outside the sample size twice and the results were collated. Pearson Product Moment Correlation (PPMC) was used to determine the reliability of the instrument and reliability coefficient (r) of 0.821 and 0.820 were obtained respectively.

### Method of data analysis

The responses to the questionnaire items were collated and the mean ( $\bar{X}$ ) response of each item of the questionnaire was determined. The mean of the questionnaire items was used and interpreted based on the statistical real limits. A cut-off point (COP) was used to determine accepted or rejected items. The formula for attaining the cut-off point is totaling the nominal values divided by the number of nominal values. That is,

$$COP = \frac{4 + 3 + 2 + 1}{4} = \frac{10}{4} = 2.50$$

**Decision Rule:** Any mean of 2.50 and above was considered as agreed, while any mean below 2.50 was considered as disagreed.

## RESULTS

**Table I: Management of Diabetes Mellitus in Ondo West Local Government Area**

S/N	Management Procedures Embarked on in Ondo West Local Government Area of Ondo State	$\bar{X}$
1.	Healthy lifestyle with sensible and rational eating	2.70*
2.	Avoidance of sugar and sweetened food	1.50
3.	The use of insulin	3.10*
4.	Information from television and experts' directives.	3.30*
5.	Use of oral hypoglycemic agent	3.40*

\* mean greater than cut-off point (2.5) accepted as agreed

Table I revealed that the mean response on items 1, 3, 4 and 5 ranged from 2.70 to 3.40 and were greater than the cut-off point (2.5). Hence respondents agreed to the items statement.

**Table II: Patients' attitudes to management procedure of diabetes mellitus**

S/N	Patients' Attitudes to the Management Procedure of Diabetes Mellitus	$\bar{X}$
1.	Reports to the hospital for regular checkup on blood glucose level	3.10*
2.	Follow the advice of medical practitioners on the kind of food to eat.	3.40*
3.	The rising cost of medical treatment lead to non-compliance of diabetes regimen.	3.40*
4.	Takes drugs continuously and watch foods consumed.	3.00*
5.	Enjoy taking the recommended food by the dietician.	3.40*
6.	Maintains compliance to treatment despite poor communication with health care provider.	2.10
7.	Experienced reduction in the frequency of urination and excessive thirst for water.	3.00*
8.	Experienced reduced feeling of mild fatigue and blurred vision after drug administration.	3.00*

\* mean greater than cut-off point (2.5) accepted as agreed

Table II revealed that the mean response on items 1, 2, 3, 4, 5, 7 and 8 ranged from 3.00 to 3.40 and were greater than the cut-off point (2.5). Hence respondents agreed to the items statement.

**Table III: Medical practitioners' responses on the prospects of management procedures of diabetes mellitus**

S/N	Prospects of the management procedures of Diabetes Mellitus	$\bar{X}$
1.	There is no need to continue treatment because it is late	1.20
2.	Treatment should be abandoned due to the side effects of the drugs	1.60
3.	Inadequate understanding and knowledge contribute to complications from diabetes mellitus	3.50*
4.	Drugs are not readily available for treatment	1.80
5.	There are noticeable changes and improvement as a result of the drugs administered by the doctors	3.50*

\* mean greater than cut-off point (2.5) accepted as agreed

Table III revealed that the mean response on items 3 and 5 were 3.50 and was greater than the cut-off point (2.5). Hence respondents agreed to the items statement.

**Table IV: Patients' responses on the prospects of management procedures of diabetes mellitus**

S/N	Prospects of the management procedures of Diabetes Mellitus	$\bar{X}$
1.	Since I have been following the dietician's advice on what to eat and what not to eat, I have seen improvement in my health.	3.40*
2.	Whenever I use insulin/drug (oral hypoglycemic agent), I notice a clear difference.	2.90*
3.	The instruction given by the medical practitioner has helped to avoid complications so far.	3.60*
4.	I can do without urinating for up to 2 or 3 hours after following the management procedures given to me.	3.00*
5.	The level at which I sweat has not grossly reduced.	3.00*
6.	After I have discovered improvement in my health, I do not take my drugs as I should take them	2.00
7.	There are no improvement since I have been receiving treatment	1.80

\* mean greater than cut-off point (2.5) accepted as agreed

Table IV revealed that the mean response on items 1, 2, 3, 4 and 5 ranged from 2.90 to 3.40 and were greater than the cut-off point (2.5). Hence respondents agreed to the items statement.

## DISCUSSION

Diabetes mellitus (DM) is a non-communicable disease that cannot be cured but can be effectively managed. The management of diabetes mellitus however depends on the availability of drugs, trained medical personnel and means of creating awareness on the dangers of wrong or excessive intake of sugary food substances. The findings from the study as presented in Table I revealed that respondents agreed that healthy lifestyle with sensible and rational eating, the use of insulin, information from television and experts' directives and use of oral hypoglycemic agent were ways to managing diabetes mellitus. This has proved beyond doubts that respondents

had good knowledge of the management procedures of diabetes mellitus. This finding is along the same line with that of Bani (2015) who stated that DM patients in Kingdom of Saudi Arabia displayed good level of practices to DM specifically for the dietary regimen, weight reduction, and practice of exercise.

The knowledge of patients on the management procedures of DM correlates positively with their attitudes to the disease and management. Diabetes patients in the area of study were observed to report to the hospital for regular checkup on blood glucose level, follow the advice of medical practitioners on the kind of food to eat, took drugs continuously and watched foods consumed, enjoyed taking the recommended food by the dietician, experienced reduction in the frequency of urination and excessive thirst for water and experienced reduced feeling of mild fatigue and blurred vision after drug administration. However, it was also observed that the rising cost of medical treatment could lead to non-compliance of diabetes regimen among patients. Earlier studies have reported similar findings. For instance, Mohammed et al. (2018) reported that well over two-thirds of the patients sampled displayed positive attitude to the use of medications as prescribed by the doctor. Sangra, Nowreen and Sachdev (2016) also showed similar findings to this study.

With a good knowledge of DM management procedures and a positive attitude to the management of DM, a high prospect of effective management of diabetes mellitus is not unexpected. Findings from the study as indicated by medical practitioners revealed that complications from DM can only be triggered when patients do not have adequate understanding and knowledge of management procedures and proper administration of drugs and regimen. According to the responses of the patients in this, strict adherence to dietician's advice would bring about improvement in health condition, use of insulin/drug (oral hypoglycemic agent) will bring about clear difference in health, and instructions given by the medical practitioner would help avoid complications, reduce frequency of urination and reduce stress.

## CONCLUSION

Diabetes management depends on many factors such as drug therapy, physical exercise, diet, and other lifestyle changes. Health literacy is an integral part of the diabetes management and patients were quite aware of this. The level of awareness and positive attitude of patients to diabetes management procedures showed that the management of diabetes has high prospect in the area of study.

## RECOMMENDATIONS

Based on the findings of this study, the following were therefore recommended:

- i. There is need to educate patients with diabetes mellitus so as to increase the rate of compliance to dietary regimen
- ii. There is need for diabetic patients to ensure effective blood sugar monitoring which will help in avoiding the risk of diabetic complications
- iii. The government should subsidize the cost of drugs and also make the drugs readily available and within reach so as to reduce non-compliance of diabetes regimen

- iv. Since diabetes mellitus cannot be cured, patients should be encouraged to take drugs continuously and be mindful of their eating habits
- v. There is need for a healthy lifestyle, regular exercises and avoidance of sugar and sweetened food substances.

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