

# KNOWLEDGE OF NUTRITIONAL INFLUENCES IN PREVENTION OF DIABETES AMONG ADULTS IN OWERRI MUNICIPALITY OF IMO STATE, NIGERIA

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## ABSTRACT

*The study focused on knowledge of nutritional influences in prevention of diabetes among adults in Owerri Municipality. Three hundred adults from Owerri Municipal served as sample for the study. Self developed validated questionnaire with 0.81 reliability was the instrument for the study and the data was analyzed with percentage and chi-square ( $\chi^2$ ). The result of the study showed that knowledge of nutritional influences in diabetes prevention differs significantly among male and female adults in Owerri Municipality. There was also a significance difference in knowledge of nutritional influences in prevention of diabetes among male and female adults of different ages and educational qualifications in Owerri municipal. Part of the recommendations was that, the Ministry of Education should introduce nutrition education in primary, secondary and tertiary schools through well planned curriculum. Also, ministry of health through print and mass media should educate the masses on nutritional influences in diabetes and other diseases prevention.*

**Keywords:** *Nutritional influence, prevention, knowledge, diabetes, adults*

## INTRODUCTION

The term "diabetes mellitus" comes from a Greek word meaning "to siphon" and a Latin word meaning "sweet like honey" The most obvious signs of diabetes is excessive urination and weight loss. Diabetes is a non- communicable disease which was defined by World Health Organization as a state of chronic hyperglycemia, that is, excessive sugar in the blood. It is produced by various factors which could be genetic or nutritional (Ewuzie, 2006). The insulin hormone secreted by the beta cell in the pancreas is the principal regulator of the blood sugar concentration. When this hormone is not produced effectively, the blood sugar concentration rises, thus causing diabetes (Garza, 1998). Diabetes has been called "a disorder of the very engine of life", when the body cannot metabolize glucose, a number of chemicals can break down, sometimes with life threatening consequences (Awake, 2003).

According to Sears (2010), diabetes is rapidly emerging as a global health care problem that threatens to reach pandemic level by 2030. The number of people with diabetes worldwide is projected to increase from 171million in 2000 to 366 million by 2030. He went further to state that this increase will be most noticeable in

developing countries, where the number of people with diabetes is expected to increase from 84 million to 228 million. Sears (2010) quoting WHO (1992) said, Southeast Asia, and the Western Pacific region are at the forefront of the current diabetic epidemic, with India and China facing the greatest challenges. In these countries, the incidence and prevalence of type 2 diabetes among children are also increasing at an alarming rate, with potentially devastating consequences. According to Noumana (2010), nutrition is one of the most important risk factors associated with diabetes. There is a general conception among diabetic patients that if they are not taking sugar or any sweet things then it will help them to manage their sugar rates and have a control on the disease. This concept is far away from truth as only restriction of sugar and sweet things will not help to have control on diabetes.

Having a sugar is obviously not good for diabetic patients but having a strict control on other nutrition items is also a must thing for diabetic patients. The total amount of calories that a diabetic patient takes is also very important. A diabetic patient should have a balanced nutrition, pacing the food to prevent hypoglycemia is very important. Nutrition according to Anderson (2005), is the science dealing with knowledge of food substance called nutrients and the investigation of processes through which organisms take in and utilize nutrients for growth, repair, energy and general health. It also means the process by which living organisms receive and make use of certain substances that are necessary to its life and good health (Ewuzie, 2004). Diet is the key to diabetic treatment, and control of the diet should always be the first treatment offered to non-insulin diabetic patients before drugs are considered. The diet would include a lot of fibrous foods like cactus leaves, carrots, whole wheat, fruits and vegetables. Proper diet is vital in the overall control of diabetes mellitus (Ewuzie, 1998). Eliminating sugar (sucrose and glucose) lowers blood glucose concentration in both insulin and non-insulin dependent diabetic patients (Scott, 1993).

Brundtland (2001) stated that nutrition is a cornerstone that affects and defines the health of all. It paved the way for us to grow, develop, work, play, resist infection and aspire to the realization of our fullest potentials as individuals and society. Nutritional influence is the ability of nutrition to produce an effect. Humans require food substances to supply the component necessary to build tissue, to repair tissues as they wear out and die, to keep them in good working conditions and to supply fuel for health and energy. Personal meal plan should be developed to help one attain appropriate blood sugar and blood fat levels. The diet should be planned with adequate calories to achieve and maintain a healthy body weight and should be moderate in protein, carbohydrate and low in fat, particularly saturated fat and cholesterol. Carbohydrate intake should be kept consistent from day to day, it should be planned carefully to maintain good control of blood sugar. Furthermore, Diabetic control and complication Trial Research Group (1998) suggested a healthy diabetic diet to include carbohydrate from fruits and vegetables, whole grains and low-fat milk. Diet, medication and physical activities must be balanced appropriately to prevent hypoglycemia (low blood sugar) as well as hyperglycemia (high blood sugar).

Health care providers skilled in nutrition and management of diabetic such as certified diabetes educators, and registered dieticians, can serve as resource persons providing guidance on the nutrition and life style changes that are needed to optimize quality of life for a person with diabetes (Schlierf and Kohlmeiers, 2005). Knowledge is the awareness and understanding of facts, truths or information gained in the form of learning or through introspection. Ewuzie (2006) noted that, knowledge is the most important requirement for effective health and illness behaviour. Knowledge could be positive or negative, favourable or unfavourable. Positive or favourable knowledge towards nutritional influences in the prevention of diabetes can spur adults towards seeking for such information that could help one prevent diabetes and maintain healthy life. Knowledge of nutritional influences on diabetes prevention would go a long way to help adults adjust their taste, colour, or their personal choice of food, for the nutritive value and diabetes prevention possibilities. This would invariably combat the number of cases and drastically reduces the number of deaths as a result of this dreaded illness.

An adult is a fully grown person who is legally responsible for his or her actions and who is old enough to be considered legally responsible. Adulthood is a period between adolescence and old age. Ejifugha (2003) classified adulthood into early adult entry (18-24 years), young adult (25-39years), middle adulthood (40-59years), older adult (60-74) and old age (75years and above). Ejifugha (2003) explained that adulthood is an age in which an individual starts thinking of prevention, and regular check-up. Middle aged adults fall within the age bracket of 35-55 years. Adults in Owerri municipal just like every other adult in Nigeria and beyond needs to be conscious of this silent killer (diabetes) and understand how to protect themselves from this challenging health problem in the 21st century. From the foregoing, this study is focused on knowledge of nutritional influences in prevention of diabetes among adults in Owerri Municipality.

Nutrition plays an important role in diabetes prevention. This is because if one needs an adequate diet regimen whether or not one has been diagnosed of diabetes, he or she would conveniently control and prevent its manifestation. Those who are susceptible to diabetes can avoid showing any sign of this disease simply by eating balanced recommended diet. There is a glaring evidence of alarming increase in the number of cases and deaths resulting from diabetes in Nigeria in particular and the world in general. The disease can develop at any age, but the incidence is highest between the ages of 40 to 70 years. Men reach their greatest incidence at slightly younger age of 51 years than women at 55 years (Garza, 1998). According to Medical Report from Federal Medical Centre, Owerri, a total of 641 cases of diabetes were diagnosed in 2005. With this alarming number of cases in Owerri Municipal, there is the need to ascertain knowledge of adults in Owerri Municipal as regards nutritional influences in prevention of diabetes, since nutrition is a predisposing factor to diabetes (Brundland, 2001). The main purpose of this study is to determine the knowledge of nutritional influences in prevention of diabetes among adults in Owerri Municipal. However, the study is also set to achieve such objectives as:

- Determine if there is any difference in knowledge of nutritional influences in prevention of diabetes among male and female adults in Owerri Municipality.
- Determine if the knowledge of nutritional influences in diabetes prevention among adults in Owerri Municipality is influenced by gender.
- Determine if the knowledge of nutritional influences in diabetes prevention among adults in Owerri Municipality is influenced by age.
- Determine if the knowledge of nutritional influences in diabetes prevention among adults in Owerri Municipality is influenced by educational qualification.

To achieve these, the following hypotheses were formulated:

**H<sub>01</sub>:** There is no significant difference in knowledge of nutritional influence in prevention of diabetes among adults of different ages and gender in Owerri Municipality.

**H<sub>02</sub>:** There is no significance deference in knowledge of nutritional influence in prevention of diabetes among adults of different educational qualifications in Owerri Municipality.

## **METHODOLOGY**

The descriptive survey research design was used for this study. The population for this study comprises adults in Owerri Municipality. A total sample of three hundred middle-aged adults was used for this study. Stratified sampling technique was used to select five wards out of the eleven wards in Owerri Municipality. In each of these five wards sixty respondents were selected randomly to form the three hundred sample size for the study. It should be noted that each of the wards has almost the same population size. Self developed validated questionnaire with 0.81 reliability was the instrument for data collection and the data was analyzed with percentage, while chi-square statistic was employed to test the hypotheses formulated for the study.

## **RESULTS AND DISCUSSION**

On the gender of the respondents, 52.3% were males while 47.3% were females. On the age of the respondents 46% were between the ages of 35-44 years 54% were between 45 to 55 years. On the educational qualification of the respondents 14% had FSLC, 52.3% had WAEC NECO NABTEB and GCE, While 33.7% had OND, HND, NCE, BA. BSc, B.Ed and above.

**Table 1:** Knowledge of nutritional influence in prevention of diabetes.

	<b>Knowledgeable</b>	<b>Not Knowledgeable</b>	<b>Total</b>
	67	233	300
	83	217	300
	73	227	300
	68	232	300
	151	149	300
	93	207	300
	120	180	300
	113	187	300
	143	157	300
	98	202	300
Total	1009	1991	3000
%age	33.63%	66.37%	100%

On table one above show that out of the total respondents 33.63% had knowledge of nutritional influences in the prevention of diabetes while 66.37% of the total respondents had no knowledge of the nutritional influences in the prevention of diabetes. This shows that adults in Owerri Municipal had no knowledge of nutritional influences in the prevention of diabetes.

**Table 2:** Chi- square ( $\chi^2$ ) table on knowledge level of the respondents by their gender.

<b>Gender</b>	<b>Knowledge</b>	<b>Not knowledgeable</b>	<b>Total</b>
Male	108 (36%)	49 (16.3%)	157 (52.3%)
Female	56 (18.7%)	87 (29%)	143 (47.7%)
Total	164 (54.7%)	136 (45.3%)	300 (100%)

Calculated value = 24.03, table value = 3.841, df = 1 p < 0.05

On table 2 above, the calculated chi-square = 24.03, and is greater than table value of 3.841 I df, at 0.05 level of significance. Thus giving the researchers the basis to rejecting the null hypothesis which stated that, there is no significant difference in knowledge of nutritional influence in prevention of diabetes between male and female adults in Owerri Municipal. This is in line with the views of Garza (1998) and Ewuzie (1998) that knowledge of nutrition could be attributed to gender difference.

**Table 3:** Chi- square x2 table on knowledge of the respondent by their age.

<b>Age</b>	<b>Knowledge</b>	<b>Not knowledgeable</b>	<b>Total</b>
35-44 yrs	66 (22%)	72 (24%)	138 (46%)
45-55 yrs	98 (32.7%)	64 (21.3%)	162 (54%)
Total	164 (54.7%)	136 (45.3%)	300 (100%)

Calculated value = 25.58, table value = 3.841 df=1, p < 0.05.

On table 3 above, the calculated value is 25.58 and it is greater than the table value of 3.841, df, at 0.05 level of significance. This therefore, gave the basis for the researchers to reject the null hypothesis which stated that, there is no significant difference in knowledge of nutritional influence in prevention of diabetes among adults of different ages in Owerri Municipal. This is in line with the findings of Anderson (2005) who stated that, age is a factor which impedes knowledge and that

objective of knowledge anchors on difference between ages. Ewuzie (1998) agreed that the incidence of diabetes is highest between the ages 40-70 years.

**Table 4:** Chi-square table on knowledge of nutritional influence in prevention of diabetes among adults of different educational qualifications in Owerri Municipality.

<b>Educational Qualification</b>	<b>Knowledgeable</b>	<b>Not knowledgeable</b>	<b>Total</b>
FSLC	12 (4%)	30 (10%)	42 (14%)
WAEC, NECO, NABTEB, GCE	88 (29.3%)	69 (23%)	157 (52.3%)
OND, HND, NCE, B.A, BSc,			
N.ED and above	64 (21.3%)	37 (12.3%)	101 (33.7%)
Total	164 (54.7%)	136 (45.3%)	300 (100%)

Cal. value = 258.98, table value = 5.991. df = 2, p < 0.05

On table 4 above the chi-square calculated value is 358.98 which is greater than the table value of 5.991 at 2df, at 0.05 level of significance. This therefore, gave the researchers the basis to reject the null hypothesis which stated that, there is no significant difference in knowledge of nutritional influence in prevention of diabetes among adults of different educational qualification in Owerri Municipality. This shows that there is a significant difference in knowledge of nutritional influence in the prevention of diabetes among adults of different educational qualifications in Owerri Municipality. This supports the view that education is one of the factors that go a long way to change how people react to certain issues. According to Beisel (1996), treatment of diabetes without systematic self management education can be regarded as sub-standard and unethical care. Adults who are educated are more exposed to knowledge of nutrition than those who are not educated.

### **CONCLUSION AND RECOMMENDATIONS**

There is no gainsaying the fact that diabetes among our populace is increasing at an alarming rate, with its potentially devastating consequences. The influence of Nutrition in diseases prevention, control and treatment cannot be over emphasized and hence is highly recommended by Nutrition experts. Based on the outcome of this study therefore, the following recommendations were made.

1. Non-Governmental Organizations should organize workshop for rural and urban residents in which diets for diabetic can be taught. For example diet with lots of fibrous food like cactus leave, carrot, whole wheat, fruits and vegetables should be emphasized.
2. The Ministry of Education should plan curriculum for nutrition education in primary, secondary and tertiary institutions and mandate its teaching at all level of education.
3. Nutrition department should be established in the Local Government Areas for grassroots nutrition education.
4. The Ministry of Health through print and mass media should take it as a point of duty to educate the masses on nutritional influences in diabetes and other illness prevention.

5. Researches should be sponsored by government, non governmental organizations, health agencies and World Health Organization on nutritional influences in illness prevention.

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