Journal of Medicine, Physiology and Biophysics
ISSN 2422-8427 An International Peer-reviewed Journal
Vol.33, 2017

Knowledge and practices related to diabetes mellitus among adults with diabetes in Ahiara Ahiazu Mbaise, Imo State, Nigeria.

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ABSTRACT

Background

Diabetes mellitus (DM) among Nigerians and the world is on the increase because of lifestyles, diet, population ageing, unhealthy and obesity. Knowledge about DM and appropriate practices related to DM are vital in its proper management. This work is carried out to assess the knowledge and practices related to DM among adults with diabetes in Ahiara Ahiazu Mbaise aged 40 years and older with DM. The research was carried out in four government health care facilities in Ahiara Ahiazu Mbaise. This was a health facility-based cross-sectional quantitative study. **Methods**: Structured interviews were used to obtain information which included socio-demographic profiles as well as knowledge about diabetes mellitus (DM). The total number of the participants was 200 which comprises 150 (75.0%) women and 50 (25.0%) Men aged 40–90 years (mean and standard deviation of 61.5 ± 10.49 years). Many (67.5%) were not aware of the types of DM and only 32.4% knew the type of DM they had. Many knew about the importance of special diet (65.5%) and physical activity (42.5%) in DM management; however, only 38.0% knew about the importance of losing weight. Many (79.0%) followed a special diet as advised, only 38.0% always tried to lose weight, and 48.3% engaged in physical activity. **Conclusion**: The knowledge and practices related to DM among the participants were fair hence, suggesting the need for programmes on diabetes mellitus (DM) awareness in this population.

Introduction

Diabetes mellitus is a metabolic disorder of carbohydrate where there are disturbances in the oxidation and utilization of glucose due to malfunction of the beta islets of Langerhans which is responsible for the production of insulin that converts glucose to glycogen (WHO, 2010).

Diabetes mellitus is a complex, chronic disease. It is a condition characterized by an elevation of the level of glucose in the blood. Insulin, a hormone produced by the pancreas, controls the blood glucose level by regulating the production and storage of

glucose. In diabetes there may be a decrease in the body's ability to respond to insulin or a decrease in the insulin produced by the pancreas which leads to abnormalities in the metabolism of carbohydrates, proteins and fats. The resulting hyperglycaemia may lead to acute metabolic complications including ketoacidosis and in the long term contributes to chronic micro-vascular complications (Dixon *et al*., 2012).

The two major types of DM are Type 1 (insulin dependent) DM and Type 2 (non-insulin dependent) DM. Type 1 DM (T1DM) is characterised by an autoimmune destruction of beta cells, which leads to absolute insulin deficiency and dependence on insulin injections for survival. Type 2 DM (T2DM) results from insulin resistance and relative insulin deficiency. T2DM is the most common form of DM and can be controlled through healthy diet, physical activity, losing excess weight, and oral medication. Gestational DM occurs only during pregnancy and is a risk factor for T2DM after pregnancy (Lushen *et al.,* 2007). Other specific types of DM may result from causes such as genetic defects in beta cell function, insulin action, pancreatic diseases, and drug- or chemical-induced DM (such as with HIV medication) (Wild *et al*.,2004).

The prevalence of DM continues to increase worldwide, with developing countries being the most affected. Globally, the number of adults with DM aged 20–79 years was estimated as 387 million (8.3%) in 2013, and future projections indicate that the number could reach 592 million (10.1%) by 2035, with 77% of them living in low-and middle-income countries. In the African continent the number of adults (20–79 years) with DM was estimated as 21.5 million (5.1%) in 2014 and is expected to reach 41.5 million by 2035(Clarke *et al.,* 2006). In Nigeria, the number of adults (20–79 years) with DM was estimated as 3.5 million 2012 and will almost double by 2035 if appropriate measures are not taken to prevent further proliferation of this Population ageing, unhealthy diet, obesity, and sedentary lifestyles have been implicated as the causes of the global increase in the prevalence of DM, especially T2DM(Okonta *et al.,* 2014).Knowledge is the greatest weapon in the fight against DM. It is therefore important that people with DM and their family members understand the basic facts, such as the type they have, signs and symptoms, treatments, preventive measures, and the importance of maintaining good glycaemic control. Well-informed people would be motivated to assess their risk for the disease, seek proper treatment and care, and take charge of their disease(Phylips *et al*.,2012) Knowledge about DM and its complications could also assist in the early detection of the disease and reduce the incidence of its complications. This would further encourage the individuals to be cautious about the disease and to seriously

consider recommendations about prevention of DM (Nathan *et al.,* 2009).A lot of researches in different countries have reported that the majority of the participants had poor knowledge about DM, while some believe that DM is caused by excessive sugar intake. However, some studies reported good DM knowledge (Long *et al.,* 1994). Also, some studies reported poor practices regarding blood glucose monitoring, eye examinations, diet, and exercise and losing weight in the management of DM, whereas others reported good practices regarding exercise, diet, and taking medication as prescribed (Ayele *et al.,* 2012).

METHODOLOGY

Research Design

The research design used in this study was a descriptive method. Knowledge and practices related to diabetes mellitus among adults with diabetes in Ahiara Ahiazu Mbaise, Imo State, Nigeria.

Study Area

This study was carried out in Ahiara Ahiazu Mbaise, Imo State, Nigeria.

Target Population

The population included those in Ahiara Ahiazu of both sexes with DM, aged 40 years and older, receiving DM treatment from the targeted health care facilities. All those who were recruited participated in the study. Convenience sampling was used to select participants from the targeted facilities. This sampling method is one of the non-probability sampling methods, which involves the use of the most conveniently available people as study participants. The advantages of this method include ease of recruitment, easier monitoring and follow-up, generally good response rates, and retention of sample member. The calculated sample size was 200.

Data collection

Structured interviews were used to collect information, which included socio-demographic data and knowledge about diabetes mellitus and its ocular complications. The interview schedule included questions about the types of diabetes mellitus, the

duration, compliance to treatment, and treatment, the place where blood glucose is checked, and when they checked their blood glucose last.

Method of data analysis

The data collected were retrieved and were analysed using descriptive statistics and presented in tables and percentage.

Ethical consideration

Approval to conduct the study was sought and obtained from the health authorities in the community. Before embarking upon this project, personal consent of the individuals interviewed were sought and obtained before administering the questionnaire. Data collected were held in strict confidence.

Results

From the 200 participants in this research work, 150 (75.0%) were women and 50 (25.0%) were men. Their ages ranged from 40–90 years (mean and SD = 61.5 ± 10.49 years). More than half (55.0%) of the participants were married, whereas 20.0, 15.0 and 10.0%, respectively, were widowed, single, and divorced.

Almost 40% of the participants reported that they have had DM for less than 5 years and 25% for 5-10years, 20% for 11-15 years and 15% reported having had the disease for more than 15 years. More than two thirds (67.5%) did not know the type they had; 18.5% reported having type 2, and 12.0% reported having type 1. (Table 3). Majority (85.0%) of the participants last checked their blood glucose less than 1 month prior to the interview (Table 4).

Table1: Socio-demographic data of the study population

Table 1: Socio-Demographic data of respondents

Socio-demographic characteristics	Variables	Frequency	Percentage
Gender	Male	50	25.0
	Female	150	75.0
Age of respondents	40-44	13	6.5
	45-49	12	6,0
	50-54	35	17.5
	55-59	30	15.0
	≥ 60	110	55.0
Marital Status			
	Married	110	55.0
	Widow	40	20.0
	Single	30	15.0
	Divorced	20	10.0
Educational qualifications			
	Tertiary	12	6.0
	Secondary	58	29.0
	Primary	90	45.0
	No formal education	40	20.0
Occupation			
	Pensioners'	128	64.0
	Professionals	8	4.0
	Labourers	20	10.0
	Self-employed	4	2.0
	Unemployed	40	20.0

Table 2: The duration of DM among the participants

Years with DM	Number	%
1 – 5	80	40.0
5 - 10	50	25.0
11– 15	40	20.0
> 15	30	15.0

Table 3: The number of types of DM known and percentage of the participants.

Variable	No	%
Type 1 DM	24	12.0
Type 11 DM	37	18.5
Others	4	2.0
No type known	135	67.5

Table 4: The last time of blood glucose check-up, number of participants and percentage (%)

Last Check-up	No	%
< 1 week	7	3.5
< 1 month	170	85.0
< 6 months	20	10.0
< 1 year	0	0
≥ 1 year	3	1.5
Total	**200**	**100**

Table 5: The distribution of participants according to compliance to physical activity.

Compliance to physical activity	No	%
Yes, always	80	42.5
Yes,but not always	75	37.5
Do not lose weight at all	45	22.5

Table 6: The distribution of participants according to their compliance to losing weight.

Compliance to losing weight	No	%
Yes, always	76	38.0
Yes, but not always	82	41.0
Do not lose weight at all	42	21.0

Discussion

DM is one of the most common causes of morbidity and mortality worldwide. Because of lack of knowledge about this disease, many diabetic patients suffer from its complications. In this study, women were more prevalent than men, a finding that is consistent with reports from other studies (Mashige *et al.*, 2008).

Many of the participants in this study were in the older age group which is in line with the findings of Onakpoye *et al.*, 2010.The high proportion in the older age group (≥ 60 years) in the present study suggests that older people in rural areas are more likely to utilise the government health services than the younger age groups. It also supports the view that the prevalence of DM increases with age (Wild *et al*., 2004). The higher proportion of married participants than the other marital status categories is consistent with a previous report, as well as the population census. In agreement with previous studies, many of the participants in the present study were pensioners (Almaska *et al.*, 2013). The high percentage of pensioners may be because almost 70% of the participants in these studies were 50 years and older. That many (45.0%) of the participants in this study had only primary education, whereas only a

few had tertiary education, agrees with a report from a previous study (Okonta *et al.*, 2014). The smaller proportion of those who have had DM for more than 15 years than those who have had the disease for less than 5 years is in agreement with findings from a previous study (Mashiga *et al*., 2008). A lot of studies have shown that appropriate lifestyle changes may help to prevent or delay the unset of type 11 diabetes in high-risk individuals. Special diet, exercises, diet plus exercise, and weight loss result in a significant reduction in the incidence of type 11 diabetes mellitus (Long *et al.*, 2004). These lifestyle changes are generally recommended for use in combination with the medical treatment (insulin injection, oral medication, or both), as was the case in this study's participants. The explanation for the recommendation is probably because lifestyle changes alone fail to achieve or maintain the metabolic goals because of failure in losing weight, regaining weight, disease progression, or a combination of factors (Pan *et al*., 2007). Moreover, the practices regarding losing weight were considered poor with only 38.0% reporting that they were always trying to lose weight. These findings are consistent with those from previous studies (Ahmad *et al.*, 2013). The practices regarding physical activity were also considered poor, and 42.5% reporting that they always engaged in physical activity. These findings are consistent with those from previous studies (Perera *et al.*, 2013).

Recommendations

Based on the findings in this research, it is recommended that a population-based study be conducted to evaluate the knowledge and practices related to diabetes mellitus (DM) in this community. If the research reveals poor knowledge and practices related to this condition DM hence, awareness-raising campaigns should be initiated to educate people on the types of DM, signs and symptoms, treatments, and the importance of lifestyle changes in the prevention and management of diabetes mellitus (DM).

Conclusion

This research revealed that the knowledge about diabetes mellitus (DM) types and losing weight in DM management among the participants was not encouraging and inadequate. Irrespective of the fact that many participants had good knowledge about the importance of special diet and physical exercises in DM management, their practices regarding losing weight, physical exercises, eye examinations, and glucose monitoring were poor. There may

be lack of patient education regarding DM and its management in Ahiara Ahiazu or due to illiteracy.

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