AREAS OF DIABETES KNOWLEDGE NEEDS AMONG TYPE 2 DIABETICS IN AN URBAN PRIMARY CARE SETTING

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ABSTRACT

Background: *Knowledge is the greatest weapon in the fight against diabetes mellitus. Information can help people assess their risk of diabetes, motivate them to seek proper treatment and care, and inspire them to take charge of their disease.*

Objective: *This study set out to find out the diabetes educational needs of adult type 2 diabetics receiving care in a primary care setting.*

Methods: *The study was a survey of two hundred consenting type 2 diabetics receiving care at the general outpatient department of Bingham University Teaching Hospital. Socio-demographic, clinical and diabetes knowledge score data were obtained with standardized questionnaires from all the study participants. The data was collated and analysed using SPSS (Statistical Package for Social Sciences) software 17.0. Results were presented as statistical means and frequencies.*

Results: *Overall, 41(28.9%) passed the diabetes knowledge test. The need for education about target blood glucose was identified by 59% of the study group, dietary choices in 53% of the study group, the need for education on foot care was identified by 42% of the entire study group, and the need for education about weight loss identified in 39% of the study group.*

Conclusion: *The findings of this study identified knowledge of target blood glucose levels as the greatest educational need of type 2 diabetics studied. It also showed a poor knowledge of diabetes in the study group.*

Key words: *Type 2 Diabetes, Knowledge Needs, Primary Care .*

Introduction

Diabetes is now emerging as an epidemic of the 21st Century that threatens to overwhelm the

health care system of developing countries in the near future.[1] The International Diabetes Federation 2015 country rankings of Diabetes place the adult prevalence in Nigeria at 2.3%.[2] A survey done in rural South-western Nigeria placed the prevalence at 2.5%, while in another study done in urban Port Harcourt, the crude and standardized prevalence rates of type 2 diabetes were 6.8 and 7.9% respectively.[3, 4] In a survey by Puepet among urban adults in Jos metropolis the prevalence of diabetes was found to be 3.1%.[5]

Type 2 diabetes is a common and costly chronic disease which is associated with significant premature mortality and morbidity. Sadly, the majority of people with diabetes in developing countries are within the productive age range of 45 to 64 years.[6] Although patient education is an integral component of diabetes care, there remain uncertainties regarding the effectiveness of different methods and modes of education.[7]

The concept of therapeutic patient education was first introduced to medical practice through the pioneering work of Jean-Phillipe Assal, a Swiss doctor and educationalist.[8] It aims to provide a more holistic approach to patient care while ensuring that the knowledge, skills and attitudes necessary to achieve effective self-management (or mastery) of a long-term condition are delivered to the patient.[8] In the case of Type 1 diabetes a German diabetologist, Michael Berger, and his group in Düsseldorf first operationalised this concept through the development of an "Insulin Treatment and Teaching Programme" in the late 1970's. They demonstrated through randomised controlled trials that this

approach was associated with improved glycaemic control with no increase in rates of severe hypoglycaemia.[9] Current evidence suggests that diabetes education has an overall beneficial impact on health and psychosocial outcomes.[9]

Measurement of knowledge as an outcome of diabetes patients' education programme has been carried out using knowledge tests for decades.[10-11] For proper patient care, a planned education programme is needed and this should first start with a valid evaluation of the educational needs and an assessment of the degree of patients' knowledge.[12]

The provision of education and information forms a major part of chronic disease management. People with chronic disease who receive education are presumed to be in a better position to take responsibility for their own health, participate in their own health care and management, and thus maximize their health outcomes. [13]

Diabetes education, that is effective and appropriate to individuals' needs, can enable them to make positive lifestyle changes resulting in improved life expectancy and quality of life.[14]

It is important when planning diabetes educational programmes, that individual's requirements

are considered and provided for.

This study assessed the diabetes educational needs of type 2 diabetics receiving care in the primary care unit of an urban tertiary hospital.

METHODS:

Approval to conduct the study was sought from the Hospital Research and Ethics Committee.

The study was conducted at a 200 bed tertiary hospital that provides healthcare for patients from Northern and central Nigeria.

The out-patient clinics run daily attending to an average of 500 patients weekly, out of which 50 are diabetic.

The inclusion criteria consisted of:

1. Adult diabetics as from 18 years of age and above as at last birthday who consent to the study.

2. Patients with confirmed diagnosis of type 2 diabetes mellitus based on hospital records of fasting blood glucose measurement

A medium length 3 part questionnaire was administered by the investigators, using face to face interview approach for the purpose of history taking

and assessment of the diabetes knowledge score. The modified Michigan Diabetes Research and Training Centre's Brief Diabetes Knowledge Test questionnaire, designed to assess patient knowledge on diabetes was self-administered. There were a total of thirteen multiple choice questions assessing key areas of diabetes knowledge. The test was created for type 1 or type 2 diabetes mellitus patients. The questions were aligned and modified to the basic diabetes knowledge test, a version of the Michigan Diabetes Research and Training Centre's Brief Diabetes Knowledge Test.[15] The test covers knowledge of glucose level awareness, symptoms and treatment of hypoglycaemia, diabetic diet, knowledge of related and non-related morbidities to diabetes, exercise and foot care.

The Michigan Diabetes Knowledge Test is appropriate for testing diabetes knowledge in adults, and was found to have a reliability score of 0.7 and 0.71 from two different Michigan populations.[11] It was translated and retested in Malaysia where the Cronbach's alpha was found to be 0.702.[11]

The patients who pass the test were defined as those who achieved greater than 50% in the knowledge based part of the questionnaire i.e. patients answering 7 or more questions correctly out of the total 13.

RESULTS:

SOCIODEMOGRAPHIC CHARACTERISTICS OF STUDY PARTICIPANTS

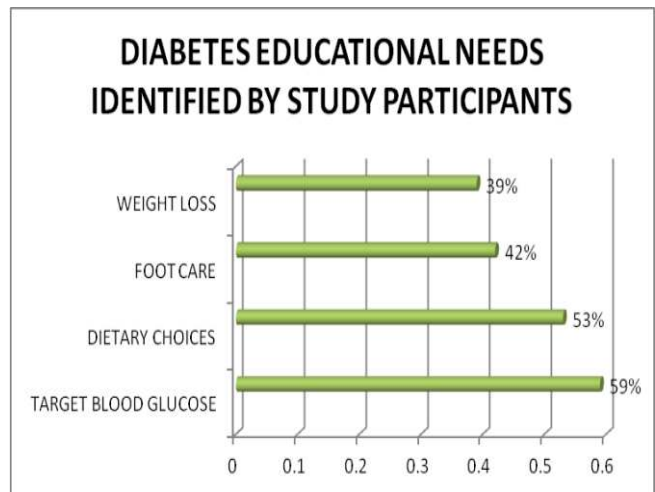| Variable	Number	Percentage
Age Groups		
11-20	2	1
21-30	4	2
31-40	24	12
41-50	58	29
51-60	66	33
61-70	46	23
Total	200	100
Gender		
Female	113	56.5
Male	87	43.5
Total	200	100
Marital Status		
Single	8	4
Married	155	77.5
Divorced	4	2
Separated	3	1.5
Widow/Widower	30	15
Occupational Groups		
Professionals	2	1
Unskilled Artisans	82	41
Skilled Artisans	87	43.5
Students	9	4.5
Retirees	20	10
Total	200	100
Duration Of Diabetes		
< 1 Year	8	4
1-5	76	38
6-10	43	21.5
11-15	23	11.5
16-20	19	9.5
21-25	17	8.5
26-30	14	7
Total	200	100
Family History Of Diabetes		
Yes	71	35.5
No	129	64.5
Total	200	100

Table 2 shows the diabetes knowledge test status of the study group. Of the two hundred subjects surveyed, 132 (66%) failed the diabetes knowledge test, whereas only 68 (34%) passed.

Table2: DIABETES KNOWLEDGE TEST STATUS OF STUDY PARTICIPANTS

Knowledge status	N	(%)	
Failed	132	66	
Passed	68	34	
Total	200	100	

The need for education about target blood glucose was identified by 59% of the study group, followed by the need for information on dietary choices in 53% of the study group. Other details are in Figure 1.

Figure 1: AREAS OF DIABETES KNOWLEDGE NEEDS OF STUDY PARTICIPANTS

DISCUSSION

Most of the study population were >50 years old (56%), female (56.5%) and married (77.5%). The majority (84.5%) belonged to the artisanal class. This demographic composition is similar to that of similar studies done in our environment.[16]

The largest cluster (38%) had been diagnosed with diabetes between 1-5 years, with a clear majority (62%) diagnosed diabetic for a duration of 6 to 30 years. This indicates that the duration of living with diabetes does not translate to adequate knowledge of the condition.

Diabetes knowledge based on the DKT was low in this cohort with only 34% passing the test. This is similar to findings from other studies generally indicating poor diabetes knowledge among patients receiving care.[16-17]

The need for education about target blood glucose was identified by 59% of the study group, followed by the need for information on dietary choices in 53% of the study group. The need for education on foot care was identified by 42% of the study group, and the need for education about weight loss identified in 39% of the study group.

This implies that before diabetes education is administered, it is important to identify the specific areas highlighted by the target population, so that the information provided is appropriate in meeting the educational needs of the group(s) of interest.

A similar study used telephone interviews to determine the diabetes-related information and education needs among people with diabetes.[14] Amongst the 33.5% of the study population who admitted to needing information about diabetes, 12.3% of these people indicated their need for education on dietary choices, closely followed by education on the long term complications of diabetes whereas education on exercise and fitness was ranked the lowest need.[14]

This finding differs slightly from the findings of our study where the need for information about target blood glucose levels was ranked the highest. This difference can be attributed to the difference in the two populations studied. Whereas our study population consisted of adult type 2 diabetics of African origin, the other study consisted of diabetics of European origin.

The Investigators in a study carried out in Zimbabwe determined a generally low level of diabetes knowledge using the DKT. [18] Further analysis of item questions where there was a distinct knowledge deficit, defined as DKT item answers with incorrect responses >50%, revealed that the major knowledge gaps were in the areas related to appropriate diet, insulin use and glycaemic control. This contrasts with our finding of glyacemic control as the main educational gap. This might imply that within the overall educational needs for Diabetes Self-Management Education, practitioners would need to identify particular concerns for their patient population so that educational programmes can be more appropriately targeted.

Conclusion

This study determined a generally low level of diabetes knowledge and identified glyacemic control as the major educational need for type 2 diabetics in our setting. There is a need for further studies involving larger sample sizes to provide more information which would aid prepare tailored diabetes education.

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