ORIGINAL RESEARCH

Assessment of medication knowledge among adults with Diabetes mellitus in a Nigerian Teaching Hospital

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Abstract

Background: Previous research had suggested a relationship between patients' knowledge of their medications and their adherence to treatment instructions.

Objective: To assess medication knowledge among adults with diabetes mellitus at the Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu, Ogun State.

Methods: This was a cross sectional study of 152 adults with either Type-1 or Type-2 diabetes mellitus *attending* the Diabetes Clinic of the OOUTH. A two-part questionnaire was used to collect data on demography and knowledge of their medications.

Results: Out of the one hundred and fifty two respondents, 60.5% were females and majority, (50.7%) fell within the 60-79 years age group. Majority (76.3%) of the patients reported very good medication knowledge, 32% and 46.1% knew the names and number of all the drugs they were taking respectively. Majority (96.1%) were aware they were receiving treatment for diabetes mellitus. The pharmacist was rated as the main information provider by 38.8% while 50.7% were not satisfied with their level of glycaemic control. Although 32.2% agreed that the information made available to them was sufficient, 71.1% preferred medication instructions in both written and verbal forms.

Conclusions: The present study revealed the need for adequate and appropriate information for patients receiving care for diabetes mellitus to enable them engage in effective self-care management of their ailment.

Key words: *Diabetes mellitus, Patient information, Medication knowledge, Patient satisfaction*

Introduction

The non-communicable diseases, such as diabetes mellitus, are increasing the disease burden of people living in sub-Saharan Africa. [1, 2] Diabetes mellitus is a metabolic disorder causing disability and death among people of various age groups across the globe. The prevalence of diabetes in African communities is increasing with the ageing population and lifestyle changes which encourage sedentary living. [3]

Diabetes, being a chronic disease, has the tendency to adversely affect the quality of life. Patient education is important for optimal treatment of diabetes mellitus. Education on medication may impart knowledge that could empower patients to actively participate in decision taking processes regarding their health. Patient education has been found to result in better self-management of ailments as well as improved adherence to medications. [4,5] Findings from previous studies [6,7] have suggested a significant association between patients' knowledge of their medications and adherence to medications. Since the management of diabetes mellitus is a long-term process, it is important that patients with diabetes mellitus be acquainted with the

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appropriate knowledge of the ailment to enhance compliance with medications and instructions for life-style modifications.

The aim of the present study was to assess the level of medication knowledge among adult patients receiving care for diabetes mellitus at the Teaching Hospital, Sagamu, Ogun state.

Methods

Study location
The study was carried out at the Endocrinology (Diabetes) Clinic of the Olabisi Onabanjo University Teaching Hospital (OOUTH), Sagamu, Ogun State, Nigeria. The hospital, established on the 1ˢᵗ January, 1986, provides high quality healthcare services to the people of Ogun State in particular and Nigeria as a whole. It provides opportunities and services geared towards patient-centred interaction between health workers and the patients. The diabetic clinic runs weekly (on Tuesdays) and this is complemented with appropriate in-patient care facilities.

Study design
This was a cross-sectional study carried out between February and July, 2014. This study included 152 patients aged 18 years or more and receiving medications for diabetes mellitus at the Diabetes Clinic of the hospital. The subjects were requested to score themselves on a scale of 0% to 100% on their general knowledge of medications. Scores between 0% and 30% indicated poor knowledge, 91-100% indicated excellent knowledge while the remaining score groups were interpreted as shown in Table IIa. In the next stage of the survey, the specific types of medication knowledge the patients were expected to know were listed out for assessment.

Inclusion criteria
Patients diagnosed with diabetes mellitus, aged 18years and above, attending the Diabetic Clinic during the period of study, coherent and alert were included in the study.

Exclusion criteria
The exclusion criteria included confused state or inability to communicate, age less than 18 years and duration of diabetes care less than six months.

Ethical consideration
All the procedures in this study were carried out according to the research protocol earlier approved by the Ethical Committee of the OOUTH, Sagamu, Ogun state, Nigeria. Written informed consent was obtained from the respondents prior to the commencement of the survey. Confidentiality was ensured by excluding the names of respondents from the questionnaire.

Research instrument
A two-part questionnaire was used to collect data about the demographic profile and knowledge of medications. The questionnaire was administered during the clinic sessions and retrieved from the participant the same day.

Data management
The data were analysed using the Statistical Package for Social Sciences (SPSS) version 16.0. The responses to questions on medication knowledge were scored such that the least score depicts poor medication knowledge while highest score represents excellent knowledge. Descriptive statistics was used to analyze patients' demographic data and medication knowledge. Chi-squared tests were applied as appropriate. The level of statistical significance was defined as $p<0.05$.

Results

Socio-demographics of respondents

Out of the one hundred and fifty two respondents, 60.5% were females. The majority (50.7%) were aged between 60 years and 79 years, 87.5% were married, 37.5% had primary education and 39.5% were traders as shown in Table I.

Medication knowledge of diabetic patients

The majority (76.3%) of the patients reported very good medication knowledge, 32% were aware of the names of all the drugs they were taking and 36.8% correctly identified some of the drugs.

In Table IIa, close to half (46.1%)of the respondents knew the exact number of drugs they were taking while 59.2% and 69.1% knew the duration of therapy and dosage of their medications respectively. The majority (96.1%) of the participants knew they were receiving treatment for diabetes mellitus, whereas 78.3% and 2%indicated high blood pressure and malaria respectively as additional ailments. The pharmacist (38.8%) was rated by the participants as the main provider of medication information; 32.2% agreed that the information made available to them were sufficient while 50.7% were not satisfied with their level of glycaemic control level. Majority (71.1%) preferred medication instructions to be made available in both written and verbal forms while 53.9% needed information on how to improve their health (Table IIb).

Discussion

Female preponderance in diabetes mellitus as observed in the present study agreed with the findings in a previous study. [8] This may be possibly be ascribed to females' more willingness to seek health care as compared to men who may not always have such attitude due to pressure of work. The respondents in the present study were mainly low income earners with primary educational qualification.

Table I: Sociodemographic characteristics of respondents

Characteristics	Classification	Frequencies	Percentages
Sex	Male	60	39.5
	Female	92	60.5
Age Groups (Years)	18-39	4	2.6
	40-59	61	40.1
	60-79	77	50.7
Marital status	Married	133	87.5
	Single	2	1.3
	Divorced	3	2.0
	Widowed	14	9.2
Educational qualification	None	24	15.8
	Primary	57	37.5
	Secondary	44	28.9
	Tertiary	27	17.8
Occupation	Civil servant	5	3.3
	Trader	60	39.5
	Teacher	13	8.6
	Businessmen	16	10.5
	Retiree	21	13.8
	Unemployed	37	24.3

The present study found that almost all the participants knew their exact diagnosis, a better result when compared to a previous one[9] which reported that about 20% of patients, irrespective of age, did not understand the nature of their illness nor the therapy before leaving the out-patient clinic. In a study, [10] only about 70% of the patients knew the diagnosis of their diseases while 40% could recall the names of their drugs. According to the Diabetes Jigsaw Report, about 60% of people with diabetes did not actually have an understanding of their diagnosis. [11] In the present study, the proportions of respondents who affirmed they knew the names of the medications they were taking (32%) and the side-effects (22%) were lower than figures (40% and 26% respectively) reported in a previous study.[10]

Obviously, knowledge of the identity of medications may limit confusions and wastages when patients go for drug dispensing or purchase. Without a sound knowledge of side effects, patients may regard such unwanted effects as symptoms of another disease and this may prompt further health care-seeking or purchase of over-the-counter medications to address the symptoms.

Table IIa: Medication knowledge of the study participants

Variables	Frequencies	Percentages
Level of medication knowledge		
31 50% (Fair)	1	0.7
51-70% (Good)	11	7.2
71-90% (Very good)	116	76.3
91-100% (Excellent)	24	15.8
General knowledge about medications being taken		
Names of all the drugs	48	31.5
Names of some of the drugs	56	36.8
Number of drugs	70	46.1
Dosage of drug	105	69.1
Frequency of taking drugs	78	51.3
Duration of treatment	90	59.2
Side/adverse effects of drugs	33	21.7
Identification of the diseases being treated*		
Malaria	3	2.0
High blood pressure	119	78.3
Arthritis	97	63.8
Diabetes	146	96.1

*Some patients gave multiple responses

In the present study, 69.1% knew the correct dosage of their medications and 51.3% could tell the time to take their medications; this observation was similar to the finding in a previous study,[12] which reported 56% and 68% respectively. The knowledge of patients about dosage and frequency of medication is essential for favourable outcomes in the treatment of chronic diseases. In a previous study,[13] it was reported that 20% of discharged patients had no adequate understanding of their medication and this made them to revisit the emergency department within one month of discharge. An earlier report[14] suggested that non-compliance

with therapy resulted from insufficient medication knowledge and patients who did not know what drugs they were taking nor the timings may not also know their side effects or how to handle them. With the influx of many drugs from the industries into the market, it is essential for health care workers, especially the pharmacists, to improve on their communication with patients with regards to medication information. Without adequate information, the risk of non-adherence to medication is high. [15]The degree of satisfaction with the level of glycaemic control in the present study was low when compared with the findings in a previous research. [16]Good glycaemic control could be an indication of favourable outcomes and this may be a reflection of adherence to medication, and by extension, adequate patients' knowledge about medications.

Table IIb: Participants' assessment of the sources and contents of patient information

Variables	Frequencies	Percentages
Provider of information on medication		
Doctors	23	15.1
Pharmacists	59	38.8
Other para medicals	3	2.0
Doctors and pharmacists	67	44.1
Degree of satisfaction with level of glycaemic control		
Very satisfied	8	5.3
Satisfied		26.3
Not satisfied	77	50.7
Very unsatisfied	27	17.7
Adequacy of the information provided		
Sufficient	49	32.2
Not sufficient		26.3
Don't know	63	41.4
Preferred form of medication instructions		
Written	34	22.4
Verbal	10	6.6
Written + Verbal	108	71.1
Areas requiring more information		
Better understanding of the disease	32	21.1
How to take the prescribed drugs	38	25.0
How to improve general health	82	53.9

The patients in the present study received information on medication mostly from both doctors and pharmacists (44.1%) while the pharmacists and doctors were separately rated by 38.8% and 15.1% of the participants respectively. In a previous study, the doctors were rated as the main source of information by 29%, the pharmacists by 9% and both by 40%. [10] Another study [16] reported that nurses were the main providers of medication instructions. In the present study, about 32% of patients claimed they had sufficient information but Williams *et al* in 2007[16] reported that 65% of respondents were satisfied with the medication instructions received.

The percentage of respondents who had information about possible side/adverse effects in the present study was found to be lower than the rate reported in a study by O'Connell and Johnson in 1992. [17]The proportion of the respondents in the present study, who showed preference for both verbal and written medication instructions, was comparable to the findings in some previous studies. [10,18] Another study [19] found only 35% of their patients with diabetes could recall receiving the information received about their treatment mainly in the verbal form. The type and consistency of information made available to patients is very important because it can influence adherence to medication. [20] Many patients craved additional information on various health concerns ranging from improvement of their health to knowing more of their disease as well as how to take their drugs. This necessitates effective educational programmes to enable patients engage in an effective self-care management. In addition, clinical pharmacists need to focus patient's education on the improvement of adherence, knowledge of side effects as well as of their medication. [21] Burge *et al*, [22] suggested that providers should seek opportunities to build the confidence of patients and enhance their satisfaction through patient education and counselling and this is the one of such numerous opportunities.

Conclusion

The study revealed the need for adequate and appropriate information for the patients with diabetes mellitus to enable them engage in effective self-care management of their ailment. Such information must be consistent and be conveyed in a form or medium best understood by the patients. The rating given the pharmacists in terms of provision of information on medications information may be attributed to paying less attention to patients' medication needs in the areas of both education and counselling.

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