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Assessment of Diabetic Patients in a Tertiary Hospital on Knowledge, Practice of and Attitude to Lifestyle Modifications

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ABSTRACT

Objective*:* To assessed the types 2 diabetic patient's knowledge, the practice of, and attitude to lifestyle modification at University College Hospital (UCH), Ibadan.

Methods: A cross-sectional descriptive study of types- 2 diabetic patients at the Medical outpatient clinic in UCH was done with a validated structured 48 item self-administered questionnaire that measured the socio-demographics, knowledge, practice of and attitude to lifestyle modifications. A purposive sampling of 99 consenting patients out of 103 determined with Yaro Tamane formulae was done. Data were entered into SPSS v. 21 for descriptive and inferential analysis.

Results*:* About 59.6% of respondents were within ≥60 years age range, and 68.7% of them were females. Many (51.5%) of them had tertiary education qualifications. On knowledge of symptoms, the majority 78 (78.8%) had good knowledge and 21(21.2%) had poor knowledge of diabetes mellitus. While 64 (64.6%) respondents had a good attitude and 35(35.4%) had a poor attitude towards lifestyle modification. Besides, a vast majority (94.9%) reported that lifestyle modification helps attain normal blood glucose levels, preserves life, assuage symptoms, and avert extended complications. The respondents tend to strongly agree to have a good practice of lifestyle modification with a weighted mean of 3.76 to 4.69 on a 5point scale.

Conclusion*:* The majority of the respondents had good knowledge, the practice of and attitude to lifestyle modification which can help patients in altering long-term habits, eating or physical activity, and maintaining these practices as part of the management of the disorder.

Keywords: knowledge, the practice of, attitude to, lifestyle modification, type 2 diabetic patients.

INTRODUCTION

Diabetes mellitus presents as metabolic syndrome that is characterized by chronic hyperglycaemia, due to absolute or relative lack or reduced effectiveness of circulating insulin and it remains a crippling global health issue today [1]. This disorder presents with different degrees of insulin defiance and diminished insulin secretion as well as elevated production of glucose [2].

About 5-10% of all diabetes presents with Type 1 DM while type 2 the commonest form makes up for 90-

95% of all conditions. The high risk is older age, the family account of diabetes, obesity, and lack of physical exercise; as the origin is multifactorial, likely genetically based with behavioral components [3]. In Africa, the prevalence of type 2 diabetes mellitus patients was about 20 million in 2013 which is projected to multiply by 2035 [4, 5].

In the sub-Saharan region, diabetes as a disease has great significance and Nigeria is most affected. This condition reduces life expectancy and quality of life of patients with more burden on them and their families are affected because most of the patients are incapable to access quality health care [6].

The management of diabetics essentially involves self-management education with lifestyle modification as well as setting goals for the glucose level. A study in Kenya done in 1982, found few (28%) patients with good attitudes about lifestyle modification; poor dietary practice (75%); and lack of regular exercise was 72% by respondents [7]. Thus, there had been an inadequate knowledge, attitude, and practice towards healthy lifestyles by many patients [8]. Currently, the major element in diabetic management is dietary modification, moderate physical exercises like brisk walking, and good adherence to medication which will enhance glycaemic control [9]. Therefore, the study aimed at the assessment of diabetic patients on knowledge, the practice of, and attitude to lifestyle modifications in UCH, Ibadan.

METHODS

The study was carried out in University College Hospital (UCH), Ibadan, one of the premier tertiary health institutions in Nigeria with over 56 service and clinical departments. A 48 item self-structured questionnaire was designed to collect data and was divided into four sections. Section A was on socio-demographic characteristics, Section B was on knowledge of lifestyle modification among type 2 diabetic patients, Section C was used to assess the attitude of lifestyle modification, and Section D was used to investigate the practice of lifestyle modification among type 2 diabetic patients.

The questionnaire critically scrutinized and validated by the researchers were pretested on 10 types 2 diabetic patients, necessary corrections were made and effected, for face and content validity. The reliability of the questionnaire was determined and a Cronbach alpha coefficient of 0.78 was obtained. The pretested data was not added to the final result.

Sample size: The sample size was determined with Yaro Tamane formulae, with the estimated population of 138 types 2 diabetic patients that were receiving treatment in the medical out-patient clinic in UCH, Ibadan, and 5% margin of error. The calculated sample size was 103, however, only 99 respondents participated. Purposive sampling of all type 2 diabetic patients who gave their consent was done.

Ethical approval: The study was approved by the UI/UCH Institutional Review Committee with the number, UI/UCH IRC UI/EC/18/0443. Patient informed consent was obtained and confidentiality was assured.

Inclusion Criteria: Type 2 diabetic patients who gave their consent to participate and were currently receiving treatments in UCH, Ibadan, when this study was conducted.

Exclusion criteria: Type 2 diabetic patients who refused to participate and sign an informed consent, and those who were not currently receiving treatment in UCH, Ibadan, when this study was conducted.

Data analysis: The self - administered validated questionnaire took about 12-15 minutes to fill, the respondent that were not literate were assisted by trained research assistants. Data were sorted and inputted into the statistical package for the social sciences (SPSS) version 20 for descriptive and inferential statistics. Also, the Likert scale was assigned numeric values of 5 to 1. Strongly agreed =5, Agree =4, undecided =3, Disagree =2, and strongly disagree =1 to report a single average response for each variable.

RESULTS

The respondents' age ranged from 30 to above 60 years, and the majority (59.6%) were above 60 years, 31(31.3%) of the respondents were males, while 68(68.7%) were females. The majority (77.8%) of them were married, on educational qualifications, half (51.5%) had tertiary education as their highest educational qualifications as seen in Table **1**.

In Table **2**, about 91(91.9%) of the respondents reported diabetes mellitus as non-communicable disease, while 94(94.9%) of the respondents reported that diabetes mellitus is an abnormal increase in the

blood sugar level. For knowledge score, those with 50% and above were scored as good knowledge, while those with lesser scores had poor knowledge as seen in Figure **1**. Thus, the majority 78(78.8%) had good knowledge and 21(21.2%) had poor knowledge of diabetes mellitus. Also, 98.0% reported that change in their way of life is important in the control of their condition.

Table 1. Socio-demographic Characteristics (N = 99).

Variables		Frequency	Percentage
Age group (years)	30 to 39	6	6.1
	40 to 49	7	7.1
	50 to 59	27	27.3
	≥60	59	59.6
Sex	Male	31	31.3
	Female	68	68.7
Marital Status	Single	2	2.0
	Married	77	77.8
	Widowed	20	20.2
Ethnicity	Yoruba	91	91.9
	Igbo	5	5.1
	Hausa	1	1.0
	Others	2	2.0
Religion	Christianity	56	56.6
	Islam	43	43.4
Educational qualification	No formal education	13	13.1
	Quranic	4	4.0
	Primary	15	15.2
	Secondary	15	15.2
	Tertiary	51	51.5
	Others	1	1.0
Occupation	Unemployed	4	4.0
	Farmer	2	2.0
	Trading/business	37	37.4
	Artisan	4	4.0
	Civil servant	16	16.2
	Student	1	1.0
	Self-employed	12	12.1
	Others	23	23.2
Monthly income in naira (₦)	<₦20,000	24	24.2
	₦ 20,000 to 39,000	27	27.3
	₦ 40,000 to 59,999	12	12.1
	₦ 60,000 to ₦ 79,999	7	7.1
	N80,000 to 99,999	2	2.0
	≥ ₦ 100,000	17	17.2
	No response	10	10.1

Table 2. Respondents' knowledge.

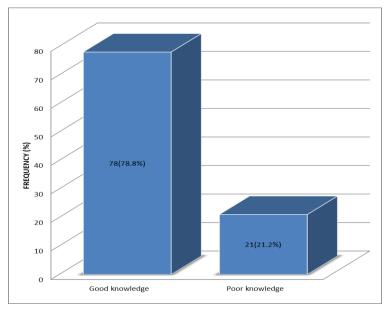| Respondents' Knowledge (n=99)	Yes (%)	No (%)
Is diabetes mellitus a non-communicable disease?	91(91.9)	8(8.1)
Is diabetes mellitus is an unusual elevation of the blood sugar level?	94(94.9)	5(5.1)
Diabetes mellitus demands special self-management behaviors throughout a lifetime.	96(97.0)	3(3.0)
Change in my way of life is important in the management of my condition.	97(98.0)	2(2.0)
Poor management of diabetes mellitus leads to rapid disease progression.	95(96.0)	4(4.0)
Lifestyle modification is a life-long remedy and treatment for people with diabetes mellitus.	91(91.9)	8(8.1)
Diabetic patients can achieve good glycaemic control by informed dietary modification, suitable physical exercise, stark adherence to medication, and other instructions.	97(98.0)	2(2.0)
You know that diabetic patients are at risk of dying from diabetic disorder if they do not properly manage the disease.	97(98.0)	2(2.0)
You know that keeping track of glucose levels in the blood helps in the care of the disorder.	95(96.0)	4(4.0)
You know that diabetes mellitus can be inherited from parents to their children.	87(87.9)	12(12.1)
You know that incessant tobacco smoking and alcohol consumption is part of the risk factors in diabetes mellitus disorder.	92(92.9)	7(7.1)
You know that advancing in age boosts the risk of having diabetes mellitus.	74(74.7)	25(25.3)
You know that patient with diabetes mellitus passes urine frequently at night.	95(96.0)	4(4.0)
You know that patients with diabetes mellitus experiences thirst and dehydration.	92(92.9)	7(7.1)
You know that diabetes mellitus can lead to dizziness and tiredness.	95(96.0)	4(4.0)
You know that diabetes mellitus disorder can be prevented.	95(96.0)	4(4.0)

Figure 1. Summary of respondents' knowledge.

Table 3. Respondents' attitude.

Respondents' attitude (n=99)	Weighted mean
Change in my way of life with regards to my treatment has improved my health.	4.55
Patients who change their diet and eat more fiber have the chance of living longer.	4.49
I am consistent in the timing of my meals and snacks.	4.08
I have achieved good glycaemic/sugar control by informed dietary modification, suitable physical exercise, stark adherence to medication, and other instructions.	4.53
A healthy diet, regular exercise, keeping track of blood glucose levels, and body weight are very vital in the care of diabetes mellitus.	4.66
Lifestyle modification helps to attain normal blood glucose levels, preserve life, relieve symptoms, and hinder long term type 2 diabetic complications.	4.57
Lifestyle modification also involves proper bathing, drying, and lubricating the feet, wearing shoes that are not too tight, and trimming toenails straight across.	4.58
I do regular exercise which reduces blood glucose levels.	4.34
The dietary demands for patients with diabetes mellitus are often swayed by socio-economic level, religious and cultural convictions.	4.14
Controlling blood glucose with suitable medications such as insulin has the prospect of being the most effective blood-glucose-lowering remedy.	4.39
Diabetes mellitus can be prevented.	4.14

Strongly Disagree=5, Agree=4, Undecided=3, Disagree= 2 and Strongly disagree = 1

Table 4. Respondents' practice.

Respondents' practice (n=99)	Weighted mean
I do check my blood glucose level regularly to determine when and where changes are needed.	4.64
I have been coming to the clinic for medical check-ups.	4.69
I do simple and physical dynamic exercises like brisk walking for 30-50 minutes daily.	4.27
I follow a controlled plan diet (I have a meal plan which is suitable for my lifestyle modification).	4.37
I eat at least 3 times daily with needed snacks.	3.76
I do monitor my body weight regularly.	4.23
I do control my blood glucose by eating a good diet.	4.41
I do proper bathing, drying, and lubricating my feet, wearing shoes that are not too tight, and trimming my toenails regularly.	4.56
Daily, I carefully inspect my feet for redness, blisters, fissures, calluses, ulcerations, and changes in skin temperature.	4.15
My regular keeping with hospital appointments has helped me in my blood glucose level control.	4.63

Strongly Disagree=5, Agree=4, Undecided=3, Disagree= 2 and Strongly disagree = 1

Also, in Table **3** almost all the respondents strongly agree that diabetes mellitus requires special self-management behaviours for a lifetime. About 97(98.0%) respondents were aware that they were being treated for diabetes, while 70 (70.7%) of the respondents have a comorbidity, out of these majority (80.0%) have hypertension, and 10.0% have high cholesterol.

For the attitude score, respondents with 50% and above were categorized as a good attitude, while those with lesser scores as poor attitude. Therefore,

many 64(64.6%) respondents had a good attitude to lifestyle modification, and 35(35.4%) had a poor attitude towards lifestyle modification. Generally, respondent attitude towards lifestyle modification and self-care management tended to strongly agree to most of the questions asked on the change in the way of life to treatment to improve their health, eating a healthy diet, foot management, doing regular exercise and strict adherence to medication; this gave a weighted mean of 4.08 to 4.58 on a 5-point scale that assessed their attitude as seen table 3.

On the practice of lifestyle modification, the vast majority (91.9%) of the respondents reported that they do check their blood glucose level consistently, 96% of them visit the clinic for medical check-ups while 83.8% do simple and suitable physical exercises such as brisk walking for thirty to 50 minutes daily. The respondents tend to strongly agree to have a good practice of lifestyle modification with a weighted mean of 3.76 to 4.69 on a 5point scale as seen in Table **4**.

DISCUSSION

The study unveiled that the great number of respondents reported that diabetes mellitus is an abnormal increase of the blood sugar level, and this agrees with the findings of Fauci *et al* (2012), who observed that type 2 DM is characterized by variable degrees of insulin resistance, diminished insulin secretion, and increased glucose production [2].

The majority of diabetes mellitus patients reported frequent urination at night and is inconsonant with studies that diabetes mellitus clinical diagnosis is indicated by the presence of symptoms such as polyuria, polydipsia, and unexplained weight loss [2,10].

Also, respondents had a good attitude and practice of lifestyle modification that is similar to the study where a high percentage (98%) of patients had an average score on attitude and lifestyle modification practices [3]. The bulk of respondents opined that lifestyle modification helps to attain normal blood glucose level, preserve life, alleviate symptoms and prevent long term type 2 diabetic complications which agrees that therapeutic goal for diabetes management is to achieve normal blood glucose level, preserve life, assuage symptoms and avert extended complications [11].

Also, many respondents reported achieving good glycaemic control by strict adherence to medication and informed dietary modification this supports the findings that dietary control is a key foundation in the achievement of good glycaemic regulation in Diabetic Mellitus [12].

It was also reported eating at least 3 times daily with needed snacks and a good diet which helps regulation of the respondent's blood glucose. This agrees with ADA (2011) that to control blood glucose levels, a diabetic patient should eat meals and snacks at regular intervals daily, try not to do without or delay meals, and with regular blood glucose level measurement to ascertain the required modification [13].

Moreover, the vast majority said that lifestyle modification helps them to achieve normal blood glucose levels, thus a lifetime of special self-management behaviors is essential because poor management of diabetes mellitus leads to rapid disease progression. In this study, the majority had good knowledge of diabetes mellitus, which is in contrast to the study in India where 83.3% had poor knowledge [14].

CONCLUSION

The study found the majority of diabetic patients at UCH, had good knowledge, attitude and practice towards their lifestyle modification helps patients in altering long-term habits, eating or physical activity, and maintaining these practices as part of the management of the disorder. Therefore, a concerted effort by all healthcare practitioners in ensuring optimal care for persons with type 2 diabetes mellitus is achievable in Nigeria.

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