FACTORS AFFECTING NON-COMPLIANCE TO TREATMENT REGIMEN AMONG DIABETIC PATIENTS IN A SECONDARY HEALTH FACILITY IN ONDO STATE, NIGERIA

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ABSTRACT

The increasing global prevalence of diabetes has become a public health issue. Therapeutic non-compliance leads to treatment failure thus making management of diabetes serious concerns for clients and care providers. The study examines factors affecting the non-compliance to treatment regimens among diabetic patients attending medical out-patient department using Ondo Specialist Hospital, Akure, South-Western Nigeria as case study. Descriptive cross-sectional design was used for this study. One hundred (100) diabetic patients were selected using the random sampling technique. Data was collected using questionnaire with a reliability coefficient of 0.81. Data collected were analyzed using Statistical Package for Social Sciences (SPSS) version 21 presented in frequencies, percentages and tables. Test of association was utilized with P = 0.05 level of significance. The result of this study shows that majority of participant are within the age range of 60-80 years with mean age being 70 years. Standard deviation is ±17.42, majority of the respondents are female and are married with tertiary education. Majority of the respondents are Christians and Yoruba. The study reveals that the respondents are knowledgeable about diabetes mellitus and the factors affecting non-compliance to therapeutic regimen by diabetic patients are lack of support from family/ relatives, inability to replace drugs due to financial problem, replacing strips due to cost, attitude of health workers, financial constraints in meeting up with hospital appointment and cost of maintaining diet. We therefore suggest that governmental and non-governmental organizations should support clients managing patients with this illness/condition to promote compliance.

Keywords: Non-Compliance, Treatment Regime, Diabetic patient, Diabetes mellitus

INTRODUCTION

The increasing global prevalence of diabetes has become a public health issue. According to International Diabetes Federation, there are 87.6 million people affected by diabetes in the South East Asian (SEA) region in 2019 and it is estimated to rise to 153 million by 2045 (IDF Atlas 2019). In Nigeria, International Diabetes Federation [IDF] (2015) reports an estimation of about 1.702,900 million diabetic cases, same on the increasing trend (International Diabetes Federation, 2016) with different types of complications such as peripheral vascular disease, retinopathy, kidney disease, neuropathy, diabetic ulcers and encephalopathy. A poor and inadequately controlled blood glucose in Type 2 diabetics cause several acute and chronic complications, some of which are irreversible. Diabetes mellitus is a chronic disease, which occurs when the pancreas does not produce enough insulin, or when the body cannot effectively use insulin it produces. This leads to an increased concentration of glucose in the

blood (Manobharathi, Kalyani, John & Arulmani, 2017).

The success of long-term maintenance therapy for diabetes mellitus depends largely upon the patient's compliance with a therapeutic plan (Adejoh,2014). Patients' non-adherence to therapeutic strategies is a serious concern that poses a great challenge to the successful delivery of healthcare. This is widespread and has been reported from all over the world (Sankar, Lipska, Mini, Sama & Thankappan, 2013). Compliance with a prescribed therapeutic regimen is a complex health behaviour and can reduce morbidity or mortality of chronic illness where information provided to the patient increases their knowledge and understanding of the risk factors for their illness and teaches preventive behaviours like exercises, smoking cessation, dietary changes, medication, stress management, foot care and ophthalmological check-ups (Anderson, Vanfsness & Connell, 2002; Evans & Haynes, 2013).

Several factors such as educational status, as well as, occupation of patients are significant in the daily compliance with prescribed regimen in chronic conditions like diabetic mellitus. Improving patient compliance should, therefore, be of particular interest to all health care providers in health institutions (Muhammad, Jibril & Dauda, 2016) Divya, et al. (2015), identified factors such as illiteracy, economic problems affecting their inability to purchase the prescribed medications, lack of information on prescribed medications, not being aware of the importance of regular medications, not visiting physician regularly and not following advice on diet are the major ones affecting non-adherence. Despite several approaches and strategies taken to solve the problem of non-compliance of client to diabetic treatment, yet diabetes still remains a public health challenge. Mohammad et al. (2016) posit that most clients with diabetes mellitus came back for re-admission soon after they are discharged from the hospital; such clients usually come back with complications (e.g. hyperglycaemic coma) which mainly result from non-compliance with their treatment regimens.

This makes diabetes mellitus one of the most common causes of hospitalization as evidenced in University of Maiduguri Teaching Hospital, Borno State. Abdulazeez et al. (2014) also assess the level of non-compliance of diabetic clients to their treatment regimen in the outpatient clinic of the university of Ilorin teaching hospital Nigeria and observe that about one third or more of patients have poor compliance with prescribed medications. This is also identified in this study as a major factor influencing the spread of diabetes in South-Western Nigeria.

Research questions

1) What is respondents' level of knowledge about diabetes mellitus?
2) What are the factors contributing to patient's non-compliance to diabetes mellitus?

METHODOLOGY

The study adopts descriptive research design for this study. This study was carried out in Medical Out-Patient Department of State Specialist Hospital, Akure. It is a government owned hospital that provides secondary level of care. The target population are the diabetic patients attending Medical Out-Patient Department of State Specialist Hospital, Akure. Total population of respondents is 133. One hundred (100) respondents were selected using Taro Yamane (1967) from the existing population of 133 diabetic patients. 100 **r**espondents were selected using random sampling techniques. Only clients that were at the medical outpatient clinic were recruited to participate in the study.

The instrument used for the study was a self-developed structured questionnaire consisting of 31 items. The questionnaire was divided into two (2) sections A and B. Section A consists of demographical information, while section B is made up of 23 questions. The instrument was given to expert for content, construct and face validity. Reliability coefficient was established by test-retest method with reliability coefficient of 0.81. Data was analyzed using the Statistical Package for Social Sciences (SPSS) software Version 21. Ethical approval was taken from State Specialist Hospital, Akure ethical review committee. Consent was obtained from the authority of the selected hospital, the staff in the Medical outpatient department and the respondents.

RESULT

As presented in Table 1, out of 100 respondents, 56% are females, 44% are males. Majority of the respondents 56% are between 60 and 80 years, while 10% are above 80years. Majority of the respondents 85% of the respondents are Christians and 15% are Muslims. Most of the respondents 77% are married while 12% and 11% are widowed and single respectively. Most respondents have tertiary education 52%, 25% primary education while 23% have secondary education. Majority of the respondents 30% are artisans, 37% are retirees, 22% are civil servants while 11% are of other occupations. 97% of the respondents are from Yoruba tribe, 2% are Igbos, while none is from Hausa tribe. 21% of the respondents earn between 10,000 and 20,000 monthly while 34% earn between 20,000 - 40,000 and 45% earn between 40,000 and above. This study observed that the sociodemographic characteristics of respondents. Study revealed that majority of respondents are within the age of 60 to 80years, majority ae Christians and married. Further findings showed that majority of the respondents had tertiary education, majority are retirees and Yoruba by tribe also earn between 40,000 and above.

TABLE I:
Socio-Ddemographic Characteristics of the Participants

Variable	Category	Frequency	Percentage
Age	20-40 years	10	10%
	40-60 years	24	24%
	60-80 years	56	56%
	>80 years	10	10%
Sex	Male	44	44%
	Female	56	56%
Religion	Christianity	85	85%
	Islamic	15	15%
Marital status	Single	11	11%
	Married	77	77%
	Widow	11	11%
	Widower	1	1%
Educational status	Primary	25	25%
	Secondary	23	23%
	Tertiary	52	52%
Occupation	civil servant	22	22%
	artisan	30	30%
	retiree	37	37%
	others	11	11%
Ethnicity	Yoruba	97	97%
	Igbo	2	2%
	Hausa	1	1%
Monthly income	10,000-20,000	21	21%
	20,000-40,000	34	34%
	40,000 and above	45	45%

Research question 1

What is respondents' level of knowledge about diabetes mellitus?

As presented in Table 2, many respondents, 90% know that diabetes mellitus is high blood sugar, 64% of the respondents understood that exercise can not cause diabetes mellitus while same percentage of respondents (18%) understand that it can be hereditary and believe that high sugar intake can result in diabetes mellitus respectively. However, majority of the respondents 77% understand that excessive thirst, hunger and frequent micturition are signs and symptoms of diabetes mellitus. This is an indication that the respondents are knowledgeable about diabetes mellitus.

TABLE 2:
Knowledge of Respondents About Diabetes Mellitus

Variable		N	%
Diabetes mellitus is high blood sugar	Yes	90	90
	No	10	10
Diabetes mellitus is a disease of the elders	Yes	20	20
	No	80	80
The following are causes of diabetes mellitus except	Heredity	18	18
	High sugar intake	18	18
	Exercise	64	64
Signs and symptoms of diabetes mellitus include:	Excessive thirst		
	Excessive hunger	2	2
	Frequent micturition	2	2
		19	19
	All of the above	77	77

Research question 2

What are the factors contributing to patient's non-compliance to diabetes mellitus?

As presented in Table 3, all the factors highlighted in this study are responsible for non-compliance to therapeutic regimen in a secondary health facility in Ondo State, Nigeria. These factors include: lack of support from family/ relatives, inability to replace drugs due to financial problem, inability to replace strips due to cost, attitude of health workers, financial constraints in meeting up with hospital appointment and cost of maintaining diet.

TABLE 3
One sample T-test of Factors Responsible for Non-Compliance to Therapeutic Regimen

Variable			SD	t-value	Sig.
Lack of support from family relatives	Sample mean Population mean	6.00 14.02	0.15	5.87	0.001*
Inability to replace drugs due to financial problem	Sample mean Population mean	6.00 18.22	0.63	9.94	0.005*
Inability to replace strips due to cost	Sample mean Population mean	6.00 14.69	0.50	15.35	.000*
Attitude of health workers	Sample mean Population mean	6.00 13.89	0.34	11.87	0.009*
Financial constraints in meeting up with hospital appointment	Sample mean Population mean	6.00 14.92	0.33	9.09	0.004*
Cost of maintaining diet	Sample mean Population mean	6.00 15.93	0.39	14.45	.000*

**Significant at 0.05 level; df = 437; critical t-value = 1.96*

DISCUSSION

This study determines the factors affecting the non-compliance to treatment regimens among diabetic patients attending medical out-patient department of Ondo Specialist Hospital, Akure, South-Western Nigeria. 100 respondents were selected for this study. The result of the demographic characteristics shows that majority of the respondents are within the ages of 60-80 years and are females. Majority of the respondents are Christians and married. Findings further reveals that the majority of the respondents have tertiary educational and they are majorly retirees. Majority are Yoruba and earn N40,000 and above per month.

Our study indicates that the respondents are knowledgeable about diabetes mellitus as it is demonstrated by more than half of the respondents who define diabetes mellitus correctly and are able to identify causes and major sign of diabetes mellitus. This is consistent with Muhammad and Dauda's (2016) study that quite a high percentage of the respondents are knowledgeable about diabetes mellitus. This study also supports the study by Fatma, *et al*. (2014) which states that levels of knowledge is comparatively better with the majority (>75%) having either moderate or good knowledge with regard to the pathophysiology of diabetes, 87% are aware that diabetes is a disease characterized by elevated blood sugar. However, this study is in contrast with a study by Adeojo (2014) who in his study reveals that almost half of the respondents have low diabetes knowledge.

Our study reveals that lack of support from family/relatives is a factor affecting the non-

compliance to treatment regimens among diabetic patients. This study is in accordance with Mahmmad, et al (2016) observation that lack of family support is a major factor responsible for non-compliance with diabetes treatment regimens. This study is also similar to the findings of the study done in Michigan; USA which reveals that parental support is related to compliance among patients with diabetes mellitus. McNamara, Reid, Freedland, Righi and Geffken (2012) observe that the support includes encouragement and parents' participation in the regimen plan like exercise activity and financial support.

This study reveals that attitude of health workers is a factor affecting the non-compliance to treatment regimens among diabetic patients. We observe that the health personnel sometimes do not treat patients or clients well and that the health workers may be rude, harsh and sometimes abuse patients. Also, inability to replace drugs and strips due to financial problem and financial constraints in meeting up with hospital appointment are factors affecting the non-compliance to treatment regimens among diabetic patients This is synonymous to a study carried out in U.S.A. by Santhosh, Ujinappa and Nagendra (2013) that the major factor associated with non-compliance is financial constraint of the patients to procure drugs. This is also in consistence with Tiv, et al.'s (2012) opinion that poor adherence is significantly associated with financial difficulties as well as a number of social factors such as taking the medications alone, a need for information, and lack of family or social support. Cost of diet regimen is found to be a factor of non-compliance to diet modification in this study. This contradicts Opara's (2014) view that cost of diet is not a factor influencing non-compliance.

Implications for Nursing Practice

This study has shown that there are many factors contributing to non-compliance to therapeutic regimens among diabetic clients. It is therefore important that all nurses in clinical practice take cognizance of these factors when planning care for diabetic patients. Nurses should collaborate with governmental and non-governmental organizations that can give financial assistance to clients of low socio-economic status. They can also advocate to the government to provide free or subsidized drugs to diabetic patents.

CONCLUSION AND RECOMMENDATIONS

Non-compliance to therapeutic regimen among diabetic patients has become a health issue and it resulted in poor glycaemic control. This study has identified factors contributing to non-compliance; therefore, necessary measures should be taken to enhance compliance. Based on the information gathered from this study, the following recommendations are made to ensure compliance with therapeutic regimen.

There is the need for the encouragement of patients' compliance through conduct of educational and training programs. The education program should be directed towards treatment duration and the consequences of defaulting as this will improve patients' compliance in order to promote sound practice in the management of the disease. The government should provide free or subsidized diabetic drugs to the citizens in order to reduce the hardship faced by the less privileged clients. Nurses, dieticians and social welfare workers should try as much as possible to link the less privileged clients to Non-Governmental Organizations and philanthropic organizations for help. Patients' family members should be encouraged to participate in clients' care during the period of visit to the clinic and importance of family support should be clearly explained as well. More research studies should be conducted on similar topic in different settings in order to identify additional factors responsible for non-compliance with diabetic treatment regimens.

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