

Knowledge and Practice of Self-Care Among Type 2 Diabetes Patients Attending University of Ilorin Teaching Hospital, Ilorin, Nigeria

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Abstract

Diabetes is one of the major causes of morbidity and mortality and it has a significant impact on the patients' quality of life, productivity and involves enormous health costs for virtually every society. The objective of this study is to assess knowledge and practice of Self-care among Type 2 diabetes patients attending University of Ilorin Teaching Hospital, Ilorin (UITH) Nigeria. This study is a descriptive research design in which purposive sampling technique was used to select a sample of 165 diagnosed Type 2 diabetes patients attended to at UITH. Data was collected using structured self-designed questionnaires and analyzed was done using Statistical Package for Social Science (SPSS) version 21. The study revealed that most respondents were within mean age of 35 years and majority of them have average knowledge about diabetes and its causes. However, their knowledge level about the disease does not reflect the practice of self-care and quite significant number of them did not comply with diabetes treatment regimen. This study concluded that there is significant relationship between age and practice of self-care among Type 2 diabetic patients and significant relationship also exist between self-care practices and re-admission, attended to in UITH. Based on the conclusion of this study, we recommended that health education on patient care practices should be encouraged in health institutions and strict adherence to diabetic treatment regimen should also be emphasized during patients' visit to clinics following the discharge.

Keywords: Diabetes Mellitus; Self-Care Practices; Diabetes Treatment Regimen; Type 2 Diabetes Patient Knowledge; Practice.

Introduction

Diabetes mellitus is one of most prevalent and significant metabolic diseases that has a deleterious impact on the patients' quality of life, productivity and involves enormous health costs for virtually every society. According to World Health Organization (WHO; 2005) statistics, the growing population could make the prevalence of diabetes rise from 4% in 1995 to 5.4% in 2025. The total number of patients afflicted with diabetes is expected to reach 6 million victims in 2030 and the number of people with type 2 diabetes will continue to rise in Africa. The International Diabetes Federation indicated a global estimate of more than 371 million people living with diabetes in 2012, with a prevalence of 8.3%. Half of these people are not even aware that they are diabetic. In developing countries, one in twenty adult deaths is diabetes-related, with Africa having the highest mortality rate due to diabetes. Complications due to diabetes are implicated in disability, increased cost of care, reduced quality of life and death. Most of these medical problems can however, be prevented with proper self-care, as emphasized in the standard treatment guidelines of Nigeria (Smeltzer, Bare, Hinkle and Cheever 2010).

There are several factors that interfere with understanding of the disease, medication and self-care among diabetes patients. Studies show that the risk of non-compliance is very high among patients who are illiterate as most of them cannot read and understand basic written medical instructions (Martin, Williams, Haskard, Dimatteo 2006). The increase in severity of diabetes every year has been linked to patient's lack of knowledge and practice of proper self-care. Consequently, poor knowledge of self-care can cause poor long-term metabolic control which may lead to the development of diabetic complications such as retinopathy, nephropathy, neuropathy, and atherosclerotic changes. The cost and affordability of drugs are compelling problems since many of the anti-diabetic medications cost are high, and they are not readily available too. This according to Kalyango, Owino, and Nambuya (2008), has been considered as one of the major barriers to adherence, it has been minimized by provision of free drugs to patients when in the hospital. Evidence has now demonstrated that changes in diet and physical activity can prevent or delay diabetes and its complications (American Diabetes Association 2009). Dietary management is based on individualized diet plan depending on patient's caloric requirement, weight, age, activity and previous dietary intake. Following a daily meal plan with the right amount of carbohydrate (50-60%),

protein (10-20%), fat (20-30%), dietary cholesterol less than 300mg/day and modifying calories to achieve and maintain a modest weight loss is one of the most important steps one should take to manage type 2 diabetes (Smeltzer *et al.* 2010). For effective management of diabetes, patients must be actively involved in their care and this requires performance of many complex self-care behaviour including lifestyle modifications (such as dietary control, regular exercise and psychosocial coping skills) and medical self-care (medication use and Self-Monitoring of Blood Glucose (SMBG)). Most importantly, adequate self-care needs to persist over time if it is going to lessen complications and prolong life. More than 95% of the treatment in type 2 diabetes is carried out by the patients themselves. The medical team has less control on patients between the visits more so that this disease requires specific life-long self-care behavior. Self-care is an active and practical process guided by the patient, and aims for improved physical conditions or maintaining healthcare through such 'actions as a diet, physical exercise, monitoring blood sugar and searching for preventive healthcare or therapeutic services and applying the prescribed therapies to such diseases and disorders as diabetes. The majority of research indicated that diabetes self-care helps to control patients' blood sugar which in turn leads to better healthcare results. Dorothea Orem's theory (1971), includes three related concepts: self-care, self-care deficit and nursing systems. However, this study adopted Self-care construct which is based on four concepts: self-care, self-care agency, self-care requisites, and therapeutic self-care demand. The latter category which includes seeking for health care assistance, carrying out prescribed therapies, and learning to live with the effects of illness or treatment was most appropriate to this study, hence, the adoption of health deviation requisites that require diabetes patient self-care. In University of Ilorin Teaching Hospital, most of the discharged patients were readmitted because of their failure to comply with or adhere to self-care regimens and hospital appointment. Some complained that their failure to keep the self-care practices was due to the nature and cost of treatments. Based on the implications associated with failure of client's compliance to self-care and management regimens, this study examined the determinants of self-care among diabetes patients attending University of Ilorin Teaching Hospital, Ilorin.

Research Questions

- i- What is the knowledge level of type 2 diabetes mellitus patients about self-care in UITH?
- ii- What is the willingness of self-care practices among patients diagnosed of type 2 diabetes patients in UITH?
- iii- What are the self-care strategies adopted by the type 2 diabetes patients attending UITH?
- iv- What are factors that determine type 2 diabetes patient compliance to self-care in UITH?

Hypothesis

- H₀¹ There is no significant relationship between self-care and age of Type 2 Diabetes patient in UITH
 H₀² There is no significant relationship between self-care and re-admission of Type 2 Diabetes patient in UITH

Materials and Methods

Descriptive research design was adopted in this study to determine self-care practices among diabetic patients attending University of Ilorin Teaching Hospital, Ilorin, Nigeria. This research conducted among 165 diagnosed of Type 2 diabetic mellitus (T2DM) patients attending UITH, Ilorin Kwara State. The 165 T2DM patients were sampled out of total diabetic patient admitted or attending Diabetic Clinic in UITH. Fisher's method was used to determine the sample size. A researcher designed self-administered questionnaire was used to obtain information from the patients based on their demographic characteristics, knowledge and willingness to comply with diabetic treatment and factors that influence their compliances with treatment regimen. The face and content validity of the instrument was established based on the study objectives. The reliability of the instrument was determined by test-retest of the instrument administered on 10 respondents in University of Ilorin clinic; the result of the pilot study was found to be reliable at 0.68 confident intervals. Following the approval given by the UITH ethical review committee and the respondents, the instrument was administered on 165 by the researchers. The respondents were met during clinic days Tuesday and Thursdays. Enough time was given to respondents to fill the questionnaires which were retrieved within the period of one week- three days. The completed

questionnaires were analyzed using Statistical Package for Social Sciences and results presented using descriptive statistics in form of percentage, and bar chart and inferential statistics in form of chi square.

Results

This result shows that respondents mean age was 35 years with larger number of them been at fifty and above years of age diagnosed of diabetes mellitus for the first time.

Table 1: Knowledge of Respondents about Diabetes and its causes

Variable	Responses	Frequency	Percent
Have you ever heard of the word Diabetes?	Yes	160	100.0
	No	0	0.0
If yes, what is your source of information?	Doctor	78	48.8
	Nurse	19	11.9
	Health attendant	33	20.6
	Social media	15	9.4
	School	9	5.6
	Others	6	3.8
	Total	160	100.0
	Excess Sugar in the body	64	40.0
What do you understand by the word Diabetes?	Sugar in urine	70	43.8
	Lack of insulin in the body	16	10.0
	No response	10	6.2
	Total	160	100.0
Are these Causes of diabetes? Eating too much Sugar and other sweet foods causes diabetes	Yes	137	85.6
	No	13	8.1
	Don't know	10	6.3
Eating too much Carbohydrates causes diabetes	Total	160	100.0
	Yes	111	69.4
	No	35	21.9
	Don't Know	14	8.8
At what age were you first diagnosed of Diabetes?	Total	160	100.0
	<20 year	5	3.1
	21-30	30	18.8
	31-40	24	15.0
	41-50	44	27.5
	51 and above	57	35.6
What type of Diabetes were you diagnosed of	Total	160	100.0
	Type 1	26	16.2
	Type 2	134	83.8
What type of Drug recommended for you to used	Total	160	100.0
	Insulin	22	13.8
	Oral drugs	127	79.3
	No response	11	6.9
	Total	160	100.0

Source: Study Survey (2019)

Results in Table 1 show that all respondents are aware of the diabetes and about 49% of them got information about the conditions through their doctors. About eighty four percent of them were diagnosed of Type 2 diabetes from which 79.3% were placed on oral medication respectively. An average number of them affirmed that a fasting blood sugar level of 120 is considered high while, (48.1%) and 57.5% agreed that high blood glucose level can be responsible for kidney damage in the body. The table also

shows that greater number (98.1%) of respondents opined that the main causes of diabetes is ineffective use of insulin by the body and failure of kidneys to keep sugar out of the urine (61.9%), while some agreed that eating too much sugar, high carbohydrates foods can result into diabetes compared with other causes. Average number of the respondents opined that children of Type 2 diabetes have higher chances of becoming diabetic in future.

Table 2: Practice of Self-care among Diabetic Patients' in UITH

Variable	Responses	Frequency	Percentage
Do you engage on the following self-care practice?	Strongly Agree	107	66.9
	Agreed	25	15.6
	Strongly Disagreed	4	2.5
	Disagreed	24	15.0
I take Diabetic Drugs Regularly	Total	160	100.0
	Strongly Agree	76	47.5
	Agreed	60	37.5
	Strongly Disagreed	18	11.3
I consider drug and diet as important in my treatment of diabetes	Disagreed	6	3.8
	Total	160	100.0
	Strongly Agree	74	46.3
	Agreed	44	27.5
I could not take my drugs due to its unavailability and cost	Strongly Disagreed	28	17.5
	Disagreed	14	8.8
	Total	160	100.0
	Strongly Agree	82	51.3
I take care of my personal hygiene	Agreed	28	17.5
	Strongly Disagreed	34	21.2
	Disagreed	16	10.0
	Total	160	100.0
I take care of any wounds I have	Strongly Agree	77	48.1
	Agreed	38	23.8
	Strongly Disagreed	35	21.9
	Disagreed	10	6.2
	Total	160	100.0

Source: Study Survey (2019)

Results in Table 2 show that majority of respondents claimed to have carried out one form of self-care or the other especially on the following self-care activities, 66.9% take their diabetic drugs regularly, almost equal number 47.5% consider drug and diet to be important in their treatment but 46.3% claimed they could not take their medication due to high cost and unavailability. More than half (51.3%) of the respondents agreed that they take care of their personal hygiene and wound (48.1%) respectively.

Table 3: Factors that influence compliance to prescribed treatment

Variable	Responses	Frequency	Percentage
Non-Compliance with prescribed treatment	Strongly Agree	84	52.5
	Agreed	35	21.9
	Strongly Disagreed	31	19.4
	Disagreed	10	6.3
	Total	160	100.0
Diabetic drug is taken only when the blood sugar is high	Strongly Agree	68	42.5
	Agreed	66	41.3
	Strongly Disagreed	18	11.3
	Disagreed	8	5.0
	Total	160	100.0
Poor Knowledge of important of drug and diet in the treatment of diabetes	Strongly Agree	86	53.8
	Agreed	37	23.1
	Strongly Disagreed	33	20.6
	Disagreed	4	2.5
	Total	160	100.0
Unaffordability of drug affects the compliance with treatment regimen	Strongly Agree	76	47.5
	Agreed	34	21.3
	Strongly Disagreed	43	26.9
	Disagreed	7	4.4
	Total	160	100.0

Source: Study Survey (2019)

Results in Table 3 show various factor that influenced respondents' level of compliance to diabetes treatment regimen, principal among factors are non-compliance with prescribed treatment (52.5%) and poor knowledge about importance of prescribed drug and diet (53.8%) as against cost of drugs.

H_{01} : There is no significant relationship between age and practice of self-care among Type 2 diabetic patients in UITH

Table 4: Relationship between age and practice of self-care among Diabetic patients in UITH

Variable	Responses	Self-Care Practices			Total	X^2	P-Value	Df	Remark
		Poor	Average	Good					
Age	15-20	2	3	0	5	16.171 ^a	.013	6	Significant Ho Rejected
	20-25	0	4	11	15				
	25-30	2	24	25	51				
	30 and above	8	44	37	89				
	Total	12	75	73	160				

Source: Study Survey (2019)

Results in Table 4 show that there is a significant relationship between age and practice of self-care among diabetic patients with $p\text{-value}=0.013 < 0.05$. Since the $p\text{-value}$ is less than the significance value (0.05), the null hypothesis is therefore rejected.

H_{02} : There is no significant relationship between self-care practices and re-admission of Diabetic patient in UITH

Table 5: Relationship between self-care practices and re-admission of Diabetes patient in UITH

Table 5: Relationship between self-care practices and re-admission of Diabetes patient in UITH											
Variable	Responses		Self-care			Total	Chi-Square	X ²	P-Value	Df	Remark
			poor	average	Good						
How well do you carry out a diabetic self-care	Never		3	0	0	3	20.373 ^a		0.003	8	Significant Ho Rejected
	Almost Never		11	7	3	21					
	Sometimes		2	31	33	66					
	Fairly Often		0	17	17	34					
	Very Often		0	16	20	36					
Total			12	75	73	160					

Source: Study Survey (2019)
Results in Table 5, showed that

Source: Study Survey (2019)

Results in Table 5 show that there is a significant relationship between self-care practices and re-admission of Diabetes patient in UITH with $p\text{-value}=0.003 < 0.05$. Hence, the null hypothesis is rejected.

Discussion

This study was conducted to assess the determinants of knowledge and practice of self-care among type 2 diabetes patients attending University of Ilorin teaching hospital, Ilorin, Nigeria. The study revealed that majority of respondents whose mean age was 35 years of age were males. This finding was in agreement with Apeh (2012) who observed that diabetes mellitus is an emerging epidemic disease that frequently affected aged between 35 and 64 and in the same vein American Diabetes Association reported that due to increased obesity and inactivity among young adults, type 2 diabetes is now seen among children and young adults. Most of the respondents got their first information about diabetes status from their doctors as majority of them were diagnosed Type 2 diabetes, this implies that most diabetes patient attending University of Ilorin Teaching hospital are Type 2 diabetes. This study revealed high knowledge of respondents about diabetes and its causes thus explained that taken of high carbohydrates foods causes diabetes compared with eating other classes of foods, however, ineffective use of insulin by the body and failure of kidneys to keep sugar out of the system are viewed as the main causes of diabetes mellitus. It can be deduced from the above that, the respondents' high knowledge about the causes of diabetes could be linked to the fact that greater number of them had tertiary education. The study posited that despite the high level of knowledge of respondents about the diabetes and various causes of diabetes mellitus, quite significant number of them could not comply with their treatment regimen. This finding supports the work of Chutiyaamin and Umar (2016) and Nahla, Saeid, Sunny, Ebtisam, Fatihey (2010) who argued that there is no significant relationship between various aspects of compliance and the demographic characteristics of the clients such as age and gender but discovered that the level of knowledge of patients diagnosed of diabetes mellitus is increased with the improvement of the patient's level of knowledge about diabetes mellitus. Contrary to this study finding, studies in Saudi Arabia and Nigeria observed that almost half of their respondents had low knowledge level about diabetes Al-Maskari et al. (2013) and Adejoh, (2014). This study posited that despite the high level of knowledge of respondents about the diabetes and various causes of diabetes mellitus, quite significant number of them could not comply with their treatment regimen.

Majority of respondents practiced one form of self-care or the other especially on taken of diabetic medication, exercise regularly and care for wounds resulting from the complication of the disease. This corroborate findings of the American Diabetes Association (2009) report that exercising on a regular basis helps increase insulin sensitivity so the muscles are better able to use any available insulin to take up glucose during and after activity. This study observed the willingness of diabetic patient to practice self-care as most of them considered drug and diet as an important aspect of their care hence, they take the prescribed drugs regularly. These findings support the work of Connor, (2003) who opined that behavioral interventions are more successful if they adopt ideas of informed choice and the acquisition of skills for self-management (If diabetes-associated morbidity and mortality are to be reduced, establishing sustainable mechanisms to achieve good diabetic care is essential. This study identified several factors that influenced respondents' level of compliance to diabetes self-care, principal among factors are non-compliance with prescribed treatment and poor knowledge about importance of prescribed drug and diet as well as high cost of diabetes drugs. Studies have supported this assertion especially studies conducted by Kalyango, Owino and Nambuya (2008) and American Diabetes Association (2009). However, study conducted by Chutiyaamin, Umar and Dauda in 2016, concluded in the Contrary that there was no significant relationship exist between cost of drug and compliance to diabetic treatment regimen among diabetes patients among diabetes patient in Maiduguri teaching hospital. These views implied probably that diabetes patient who participated in this study have higher educational exposure than those involved in the study at Maiduguri teaching hospital. This study shows that age determined practice of diabetes patient self-care, probably because Type 2 diabetes patients are adults whose lifestyle involves high consumption of carbohydrate with limited aerobic exercises make them susceptible high risk of developing diabetes. The relationship between diabetes self-care practices and patient re-admission, this study opined that there is a significant relationship between self-care practices and re-admission of Diabetes patient in UIH this finding implies that with diabetes consistent in self-care practices the patient blood glucose level and likelihood of complications arise from non-compliance to treatment regimen will be checked, hence reducing the reoccurrence of high blood sugar level and persistent re-admission among the patient.

Conclusions

Nurses are the closest health workers to the patients and in the best position to enlighten and give appropriate education and counseling to clients especially diabetes patients on the matters that affect their health. This finding will help nurses to reduce the prevalence and complications of diabetes among patients and avoid burden diabetes placed on many patients who do not have adequate knowledge about self-care and avoiding several risk factors. Nurses will encourage diabetes patient by way of teaching to improve their knowledge on self-care strategies so as to take measures to prevent and seek medical attention and modify their unhealthy lifestyle as early as possible. It also enables the nurses to know the factors responsible for re admission of diabetic patient and take necessary measures to avoid them. At a routine visit by any patient to the hospital, the nurses should include blood glucose test as part of their routine assessment and if any patient is found to be diabetic or at risk for diabetes, health education and counseling on the relevant lifestyle modification should be given. This study concluded that despite adequate knowledge level of the diabetes patients about self-care practices, the gap still remains on the actual practice of the self-care practices to which will reduce the chances of developing complication and improve healthy living. Also, there is significant relationship between age of the patient and self-care practices as well as relationship do exist between self-care practices and re-admission respectively.

Recommendations

Base on the conclusions, the following recommendations were made:

- (i) University of Ilorin Teaching Hospital and other Health institutions should encourage health education practices during diabetes clinic visit.
- (ii) Strict adherence to diabetic treatment regimen should be emphasized to the patients by the nurses
- (iii) There should be training of nurses and other health workers on diet and other lifestyle modifications necessary for prevention of and complications of diabetes.
- (iv) Provision of well-equipped health facilities that are accessible and affordable by the masses especially the diabetes patient to reduce complications and episode of re-admission into health institutions.

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