Assessment Of Knowledge About Diabetes Mellitus And Self-Management Among Patients Attending Two Teaching Hospitals In Ogun State

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Abstract

Inadequate self-management of diabetes has been a great concern due to its negative effect on the health and wellbeing of diabetic patients. Knowledge about diabetes mellitus and self-management has been low. The study assessed knowledge about diabetes mellitus and self-management among patients attending two teaching hospitals in Ogun State. Descriptive design was utilized. Populations were 110 and 90 patients attending Olabisi Onabanjo Teaching hospital and Babcock University Teaching Hospital respectively obtained from two weeks clinic record. Sample size was determined using total enumeration method. Researchers-designed questionnaire was used to collect data. More respondents in Olabisi Onabanjo Teaching hospital and Babcock University Teaching Hospital had high knowledge 79(97%),69(87%) about diabetes mellitus and low 39(48%) to moderate 45(57%) knowledge about prevention of diabetes respectively. There was significant difference in knowledge about dietary modification, lifestyle modification and glucose monitoring among respondents (p=0.000, p=0.000, p=0.000). There was no significant difference in knowledge about physical activity and pharmacological therapy among respondents (p=0.875, p=0.013). Knowledge about diabetes is moderate. Knowledge about dietary modification, lifestyle modification, glucose monitoring and pharmacological therapy among respondents is significantly different while knowledge about physical activity among respondents is not significantly different. More awareness should be created about diabetes self-management to improve patients' knowledge.

Keywords: *Assessment, Descriptive study, Diabetes mellitus, Knowledge, Self-management*

I. INTRODUCTION

Inadequate self-management of diabetes has led to a serious burden among the diabetic patients, their family and the society at large. Diabetes mellitus is a metabolic disease in which the blood glucose level is above normal level over an extended periods [1]. [2] stated that diabetes mellitus is a chronic illness requiring a lifetime self-management behaviors. Because diet, physical activity, physical and emotional stress affect diabetic control, patients must learn daily self-care skills to prevent acute fluctuations in blood glucose and they must also incorporate into their lifestyle many preventive behaviors for avoidance of long-term diabetic complications. Furthermore, diabetic patients must become knowledgeable about nutrition, medication effects and side effects, exercise, disease progression, prevention strategies, blood glucose monitoring techniques, and medication adjustment. In addition, they must learn the skills associated with monitoring and managing diabetes and must incorporate many new activities into their daily routines.

Estimated that 171 million people suffer from diabetes mellitus in the world and it is more prevalent in developed countries [1]. Furthermore, there are about 20.8 million people living with diabetes in United States. Mortality associated with diabetes mellitus and its complications was estimated to be 4.6 million [3]. Knowledge about diabetes mellitus and its self-management among diabetic patient has been inadequate and this has resulted in increasing complications such as leg ulcer, hypertension, blindness, renal failure and neuropathy [4].

Study reported that the knowledge of diabetes and its self-management among patients has been poor especially in under-developed and developing countries with increasing cost of care [4]. Glycemic control at the suboptimal level among diabetic

patients has been on the increase with increasing complications and cost of care. Self-management knowledge among diabetics 'patients has been poor and this has been linked with increasing complications such as visual impairment, kidney failure and cardiovascular disease [5]. This may be attributed to inadequate knowledge regarding diabetes mellitus self-management.

[6] stated that diabetes Mellitus has significantly contributed to the reduction of life expectancy by 15 years and have increased heart disease incidence by four times worldwide. Furthermore, in Nigeria, diabetes mellitus contributes to morbidity and mortality by 30 %. In Nigeria, up to 73% of diabetic outpatients have inadequate knowledge regarding diabetes mellitus self-management despite exposure to trainings and health education on diabetes self-management [6].

Study conducted on assessment of diabetes knowledge in India on knowledge about diabetes mellitus and its self-management among diabetic patients concluded that level of diabetes mellitus knowledge among diabetic patients is inadequate [7]. A study on knowledge about diabetes and its self-management among diabetic patients in Calabar, Nigeria revealed that knowledge about diabetes and its management among patient is inadequate [6]. Likewise, researchers through clinical experience have observed poor glycemic control and increasing complications of diabetes mellitus among diabetic patient through clinical attendance which may be due to inadequate knowledge about diabetes mellitus self-management. Hence, the study assessed knowledge about diabetes mellitus self-management among diabetic patients attending outpatient clinic in two teaching hospitals in Ogun State.

II. MATERIALS AND METHODS

A. Research Design

Descriptive research design was utilized to assess knowledge about diabetes mellitus self-management among diabetic patients attending outpatient clinic in two teaching hospitals in Ogun State.

B. Population

The population were 120 diabetic patients obtained from two weeks clinic attendance record in outpatient unit of Olabisi Onabanjo Teaching hospital,Sagamu and 100 diabetic patients obtained from two weeks record of clinic attendance in the outpatient unit of Babcock University Teaching hospital,Ilisan –Remo Ogun State. Individuals diagnosed of diabetes mellitus not less than six month before data collection and individuals willing

to participate in the study were included while individuals critical ill and debilitated were excluded. Those with severe complications such as blindness were also excluded.

C. Sample Size and Sampling technique

Total enumeration method was utilized to include 80 respondents attending outpatient clinic in Olabisi Onabanjo University Teaching Hospital Sagamu, Ogun State and 79 respondents attending outpatient clinic in Babcock University Teaching Hospital, Ilishan-Remo, Ogun state obtained from two weeks clinic attendance record.

D. Instrumentation

The instrument for data collection was a researchers-designed questionnaire. The questionnaire was divided into 8 sections. Section A consisted of socio-demographic variables of the respondents which had 4 items. Section B consisted of 8 questions to test knowledge of respondents about complications of diabetes mellitus. Section C consisted of 9 questions to test knowledge of respondents about prevention of complications of diabetes mellitus. Section D consisted of 8 questions to test knowledge of respondents about dietary modification. Section E consisted of 10 questions to test knowledge of respondents about lifestyle modification. Section F consisted of 10 questions to test knowledge of respondents about glucose monitoring. Section G consisted of 8 questions to test knowledge of respondents about physical activity. Section H consisted of 9 questions to test knowledge of respondents about pharmacological therapy. Knowledge score of respondents below 30% was categorized as low knowledge level, knowledge score between 30 to 70% was categorized as moderate knowledge level while knowledge score above 70% was categorized as high knowledge level.

E. Procedure for Data Collection

An introductory letter was obtained from the Babcock University School of Nursing and taken to the management of Olabisi Onabanjo University Teaching Hospital in Sagamu, Ogun State and Babcock University Teaching Hospital to obtain an approval to carry out the study in the settings. The head of unit in the outpatient clinics was met from whom the clinic record of attendance was obtained and respondents were recruited for the study. The respondents were informed about the objectives, course and potential benefits of taking part in the study. Consent was obtained from the respondents and questionnaire was administered to respondents on clinic days. Researchers stayed with the respondents throughout the period of completing the questionnaire to ensure no assistance that may interfere with the result. Internet access and reference materials were not allowed during the

process of data collection. The questionnaires were checked for proper filling and retrieved from the respondents.

F. Method of data analysis

Data gathered from respondents were processed using Statistical Package for Social Science (SPSS) version 23. Frequency tables were made and data were expressed on it. Two research questions were answered using descriptive statistics while five hypotheses were tested using inferential statistics of Pearson correlation at 0.05 level of significance.

G. Ethical Consideration

Ethical approval was obtained from Babcock University Health Research Committee (BUHREC) and permission was obtained from the management of Olabisi Onabanjo University Teaching Hospital in Sagamu and Babcock University Teaching Hospital in Ilishan-Remo, Ogun State.

III. RESULTS
TABLE 1

Socio-demographic variable	Respondents	Babcock University Teaching Hospital Frequency (%) n= 79	Olabisi Onabanjo University Teaching Hospital Frequency (%) n-80
Gender	Male	33(41.8)	32(39.5)
	Female	46(58.2)	49(60.5)
Marital Status	Married	50(63.3)	49(60.5)
	Single	16(20.3)	25(30.9)
	Divorced	5(6.3)	2(2.5)
	Widowed	8(10.1)	4(4.9)
	Separated	-	1(1.2)
	Others	-	-
Religion	Christianity	39(49.4)	42(51.9)
	Islam	32(40.5)	36(44.4)
	Traditional	7(8.9)	3(3.7)
	Others	1(1.3)	-
Age	20-24years	7(8.9)	7(8.6)
	25-29years	4(5.1)	12(14.8)
	30-34years	5(6.3)	3(3.7)
	35-39years	10(12.7)	10(12.3)
	40-44years	5(6.3)	5(6.2)
	45-49years	4(5.1)	6(7.4)
	50-54years	25(31.6)	20(24.7)
	Others	19(24.1)	18(22.2)
Level of Education	Primary	7(8.9)	10(12.3)
	Secondary	17(21.5)	15(18.5)
	NCE	18(22.8)	7(8.6)
	Diploma	11(13.9)	15(18.5)
	Tertiary	26(32.9)	34(42)

Socio-demographic information of respondents

Table 1 shows that more respondents 46(58.2%) in Babcock Universrity Teaching Hospital were females while more respondents 49(60.5%) in Olabisi Onabanjo University Teaching Hospital were females. More respondents 50(63.3%) in Babcock University Teaching Hospital were married while more respondents 49(60.5%) in Olabisi Onabanjo University Teaching Hospital were married. More respondents 39(49.4%) in Babcock University Teaching Hospital were Christians while more respondents 42(51.9%) in Olabisi Onabanjo University Teaching Hospital were Christians. More respondents 25(31.6%) in Babcock University Teaching Hospital were within age 50-54years while more respondents 20(24.7%) in Olabisi Onabanjo University Teaching Hospital were within age 50-54years. More respondents 26(32.9%) in Babcock University Teaching Hospital had tertiary level of education while more respondents 34(42%) in Olabisi Onabanjo University Teaching Hospital were had tertiary level of education.

TABLE 2
Knowledge about complication of diabetes mellitus

	N	Mean	Standard Deviation	Category Frequency (%)		
				Low	Moderate	High
Babcock University Teaching Hospital	79	7.228	2.142	6(8)	4(5)	69(87)
Olabisi Onabanjo University Teaching Hospital	81	7.803	0.679	1(1)	2(2)	79(97)

Table 2 shows that majority 69(87%) of respondents in Babcock University Teaching Hospital in Ilishan-Remo had high knowledge level about complications of diabetes mellitus while majority 79(97%) of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu had high knowledge level about complications of diabetes mellitus. Mean knowledge score of respondents in Babcock University Teaching Hospital in Ilishan-Remo is 7.228 while standard deviation is 2.142. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 7.803 while standard deviation is 0.678.

TABLE 3
Knowledge about complication of diabetes mellitus

Responde nts	N	Mean	Stand ard Devia tion	Category Frequency (%)		
				Low	Mode rate	High
Babcock Universit y Teaching Hospital	79	3.620	1.284	29(3 7	45(57	5(6)
Olabisi Onabanjo Universit y Teaching Hospital	81	3.494	1.079	39(4 8	4(5)	38(47

Table 3 shows that more respondents 45(57%) in Babcock University Teaching Hospital in Ilishan Remo had moderate knowledge level about prevention of complications of diabetes mellitus while 39(48%) of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu had low knowledge level about prevention of complications of diabetes mellitus.Mean knowledge score of respondents in Babcock University Teaching Hospital in Ilishan Remo is3.620 while standard deviation is 1.284. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 3.494 while standard deviation is 1.097.

TABLE 4
Knowledge about dietary modification

Respondent	N	Mean	Stan dard Devi ation	Mean Differ ence	t-value	p-value
Babcock University Teaching Hospital	79	7.253	2.163	0.426	1.662	0.000
Olabisi Onabanjo University Teaching Hospital	81	7.679	0.722		1.679	

Table 4 shows that mean knowledge score of respondents about dietary modification in Babcock University Teaching Hospital in Ilishan-Remo is 7.253 while standard deviation is 2.163. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 7.679 while standard deviation is 0.722. The table reveals that there is significant difference in knowledge about dietary modification among diabetic patients in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital (p=0.000).

TABLE 5
Knowledge about lifestyle modification

Responde nts	N	Mean	Stand ard Deviat ion	Mean Differ ence	t-value	p-value
Babcock Universit y Teaching Hospital	79	7.228	2.142	0.575	2.276	0.00 0
Olabisi Onabanj o Universit y Teaching Hospital	81	7.803	0.679		2.299	

Table 5 shows that mean knowledge score of respondents about lifestyle modification in Babcock University Teaching Hospital in Ilishan-Remo is 7.228 while standard deviation is 2.142. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 7.803 while standard deviation is 0.679. The table revealed that there is significant difference in knowledge about dietary modification among diabetic patients in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital (p=0.000).

TABLE 6
Knowledge about glucose monitoring

Responde nts	N	Mean	Stand ard Deviat ion	Mean differe nce	t-value	p-value
Babcock Universit y Teaching Hospital	79	8.329	0.828	0.461	4.447	0.000
Olabisi Onabanjo Universit y Teaching Hospital	81	8.790	0.410		4.481	

Table 6 shows that mean knowledge score of respondents about glucose monitoring in Babcock University Teaching Hospital in Ilishan-Remo is 8.329 while standard deviation is 0.828. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 8.790 while standard deviation is 0.410. The table revealed that there is significant difference in knowledge about glucose monitoring among diabetic patients in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital (p=0.000).

TABLE 7
Knowledge about physical activity

Respondents	N	Mean	Standard Deviation	Mean Difference	t-value	p-value
Babcock University Teaching Hospital	79	5.798	0.405	1.005	15.788	0.875
Olabisi Onabanjo University Teaching Hospital	81	6.803	0.401		15.790	

Table 7 shows that mean knowledge score of respondents about physical activity in Babcock University Teaching Hospital in Ilishan-Remo is 5.798 while standard deviation is 0.405. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 6.803 while standard deviation is 0.401. The table revealed that there is significant difference in knowledge about physical activity among diabetic patients in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital (p=0.875).

TABLE 8
Knowledge about pharmacological therapy

Respondents	N	Mean	Standard Deviation	Mean Difference	t-value	p-value
Babcock University Teaching Hospital	79	7.279	2.185	0.228	0.817	0.013
Olabisi Onabanjo University Teaching Hospital	81	7.506	1.185		0.823	

Table 8 shows that mean knowledge score of respondents about pharmacological therapy in Babcock University Teaching Hospital in Ilishan Remo is 7.279 while standard deviation is 2.185. Mean knowledge score of respondents in Olabisi Onabanjo University Teaching Hospital in Sagamu is 7.506 while standard deviation is 1.185. The table revealed that there is significant difference in knowledge about pharmacological therapy among diabetic patients in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital (p=0.013).

IV. DISCUSSION

More female diabetic patients visit outpatient clinic in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital due to increased possibility of occurrence in females. This finding disagrees with previous descriptive study conducted by [8] in which more respondents were male. More christian diabetic patients visit outpatient clinic in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital which is due to dominance of Christian patients in the communities where settings are located. This finding agrees with descriptive previous study conducted by [9] in which more respondents were christians. More diabetic patients between age 50-54years visit outpatient clinic in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital which is due to high possibility of occurrence with aging. This finding agrees with descriptive previous study conducted by [10] in which there were more respondents between age 50-54years.More diabetic patients with tertiary level of education visit outpatient clinic in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital which is due to poor lifestyle among the highly educated individuals. This finding agrees with descriptive previous study conducted by [10] in which there were more respondents with tertiary level of education.

Majority of respondents had high knowledge about complication of diabetes mellitus because of their access to internet information, teachings and health education during clinic visit. This finding disagrees with previous descriptive study conducted by [11] in which majority of the respondents had low knowledge about complication of diabetes mellitus.

More of respondents in Babcock University Teaching Hospital had moderate knowledge about prevention of complications of diabetes mellitus while more respondents in Olabisi Onabanjo University Teaching Hospital had low knowledge because of inadequate access to health education on prevention of complication of diabetes mellitus during clinic visit. This finding disagrees with previous descriptive study conducted by Jackson, Adibe, Okonta and Ukwe (2014) in which majority of respondents had high knowledge about prevention of complications of diabetes mellitus.

Significant difference in knowledge about dietary modification was found among respondents in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital due to the educational level of respondents in the two settings as well as the type of health education given to respondents in the two settings. This finding agrees with previous descriptive study conducted by Kakade, Mohanty and Rai (2016) in which there was significant difference in knowledge about dietary modification among respondents.

There was significant difference in knowledge about lifestyle modification among respondents in Olabisi Onabanjo University teaching hospital and

Babcock university teaching hospital due to the type of health education given to respondents in the two settings. This finding agrees with previous descriptive study conducted by Kakade, Mohanty and Rai (2016) in which there was significant difference in knowledge about lifestyle modification among respondents.

There was significant difference in knowledge about glucose monitoring among respondents in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital due to the respondents' level of education. This finding agrees with previous descriptive study conducted by Peraje, Kulkarni, Namratha and Kurunji (2016) in which there was significant difference in knowledge about glucose monitoring among respondents.

There was no significant difference in knowledge about physical activity among respondents in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital because of the type of health education on physical activity received by respondents in the two settings. This finding disagrees with previous descriptive study conducted by Peraje, Kulkarni, Namratha and Kurunji (2016) in which there was significant difference in knowledge about physical activity among respondents.

Significant difference in knowledge about pharmacological therapy was found among respondents in Olabisi Onabanjo University teaching hospital and Babcock university teaching hospital due to the educational level of respondents in the two settings as well as the type of health education given to respondents in the two settings. This finding agrees with previous descriptive study conducted by Kakade, Mohanty and Rai (2016) in which there was significant difference in knowledge about pharmacological therapy among respondents.

V. CONCLUSION

Based on findings of the study, more respondents in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital have high knowledge level about complications of diabetes mellitus while more respondents had moderate to low knowledge level about prevention of complications of diabetes mellitus in the two settings. Knowledge about dietary modification, lifestyle modification, glucose monitoring and pharmacological therapy among respondents in Babcock University Teaching Hospital and Olabisi Onabanjo UniversityTeaching Hospital is significantly different while knowledge about physical activity among respondents in Babcock University Teaching Hospital and Olabisi Onabanjo University Teaching Hospital is not significantly different. This shows that more awareness should be created to improve diabetes mellitus self-management and reduce complications that can result from inadequate diabetes mellitus self-management.

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