

Attitude and Knowledge of Foot Care Amongst Diabetic Patients Attending Clinics In Two Hospitals In Delta State Of Nigeria

¹Otene CI. (FWACS, FICS), ¹Odatuwa-Omagbemi DO. (FMCS, FICS),
¹Enemudo RET. (FWACS, FICS), ²Elachi IC (FWACS), ³Anizor CO (MBBS,
MWACP), ⁴Egwuterai JE. (FWACS), ⁵Omoraka F. (FWACP), ³Odonmeta BA
(FMCP),

¹Surgery Department, Delta State University, Abraka, Delta State, Nigeria.

²Department of Surgery, Benue State University, Markudi, Benue state, Nigeria.

³Internal Medicine Department, Delta State University Teaching Hospital, Oghara, Delta State, Nigeria.

⁴Orthopaedic Surgery Department, Central Hospital, Sapele, Delta State, Nigeria.

⁵Internal Medicine Department, Central Hospital, Sapele, Delta State, Nigeria.

Correspondence: Dr Otene C. I.

Surgery Department, Delta State University, Abraka, Delta State, Nigeria. Email address: oteneclat@yahoo.com

ABSTRACT

BACKGROUND: Patients suffering from diabetes mellitus may develop a number of complications involving the limbs especially the lower limbs. The most important limb problems, clinically are ulceration, gangrene and Charcot neuropathy. Appropriate knowledge and care of the limbs can prevent a number of these complications.

OBJECTIVE: This study therefore aims to assess the attitude and knowledge of foot care amongst diabetic patients attending clinics in two hospitals in Delta State, Nigeria.

MATERIALS AND METHODS: One hundred and seven diabetic patients responded to self-administered questions of a semi-structured questionnaire which collected information on socio-demographic data, their perceptions of their need for personal foot-care, mitigation of further complications, and acceptance of amputation if need be.

RESULTS: Doctors and hospitals were the more likely source of information on diabetes care and complications (54.2%). Foot ulcers were the most common complications of diabetes stated by respondents (57.9%). Most respondents knew diabetics needed special care for their feet (77.6%) but the majority (60.8%) were not sure if the development of foot conditions as complications of diabetes could be prevented. Only 11.2% of them were sure they would accept an amputation of a limb as a treatment option. Although there was a general apathy towards acceptance of amputation, willingness improved with their perception rating.

CONCLUSION: Diabetic patients are not very aware of the complications of diabetes from our survey especially diabetic foot ulcer which can deteriorate to necessitate amputation which many of the patients are clearly not willing to accept as a management option.

Key Words: Diabetes, Foot care, Knowledge, Attitude.

I. Introduction

The need for patients with diabetes mellitus to pay special attention to care of their feet cannot be overemphasized, as this will greatly reduce the morbidity arising from foot problems in diabetics. The diabetic foot can present with many different problems, but the most important clinically are ulceration, amputation, and Charcot neuropathy. Foot ulceration develops in approximately 15% of patients with diabetes and foot disorders are a leading cause of hospitalisation among such patients.¹⁻³

Eighty-five percent (85%) of lower limb amputations in patients with diabetes are preceded by foot ulceration, suggesting that prevention and appropriate management are of paramount importance.^{4,5} Ulceration is caused by several factors acting together, in particular neuropathy.⁶ The symptoms of diabetic neuropathy vary. Often these symptoms are slight at first and since most damages occur over a period of years, mild cases may go unnoticed. Peripheral neuropathy results in loss of protective sensation of pain, autonomic dysfunction, sympathetic denervation, dry skin, and warm feet.⁷

The reasons for poor outcomes of foot complications in various less developed countries are due to many factors which include lack of awareness among patients and health care providers, non-existent or limited podiatry services, poor access to health care facilities, delay in seeking timely medical care, poor referral of

health care providers for specialist treatment, lack of concept of a team approach for the treatment of the complicated foot, absence of training programmes for health care providers and lack of quality assurance programmes.⁸

The incidence of lower extremity amputation as a consequence of diabetes is considered to be a key indicator of the quality of foot care provided.⁹ One of the goals established by The International Working Group on the Diabetic Foot and endorsed by the International Diabetes Federation (IDF) to reduce the amputation rate worldwide, is to inform people with diabetes of the measures they can take to prevent foot complications.¹⁰

With the increasing number of foot complications and poor outcomes of treatment as reported by previous studies including those cited in the references above, this study therefore aims to assess the attitude and knowledge of foot care amongst diabetic patients attending clinics in two hospitals in delta state of Nigeria with a view to offering appropriate advice to the patients and subsequently improving the level of foot care in diabetics in the study region and beyond.

II. Materials & Methods

This study was carried out at Central Hospital, Sapele and Delta State University Teaching Hospital, Oghara, both in Delta State of Nigeria.

One hundred and seven diabetic patients responded to self-administered questions of a semi-structured questionnaire in a descriptive cross-sectional survey. The questionnaire collected information on socio-demographic data, their perceptions of their need for personal care, mitigation of further complications, and acceptance of amputation if need be.

Their perception score was computed by aggregating correct responses to 17 points on care and complications of Diabetes Mellitus. Each correct response attracted one point.

The maximum score obtained was 13 while the minimum was zero. A score of 9 and above was rated ‘**Good Perception**’, a score of 5 – 8 was rated ‘**Fair Perception**’, while a score of 4 and below were rated ‘**Poor Perception**’.

Statistical Package for Social Sciences (SPSS) for windows, version 20 (SPSS Inc; Chicago Illinois) software was used for data analysis.

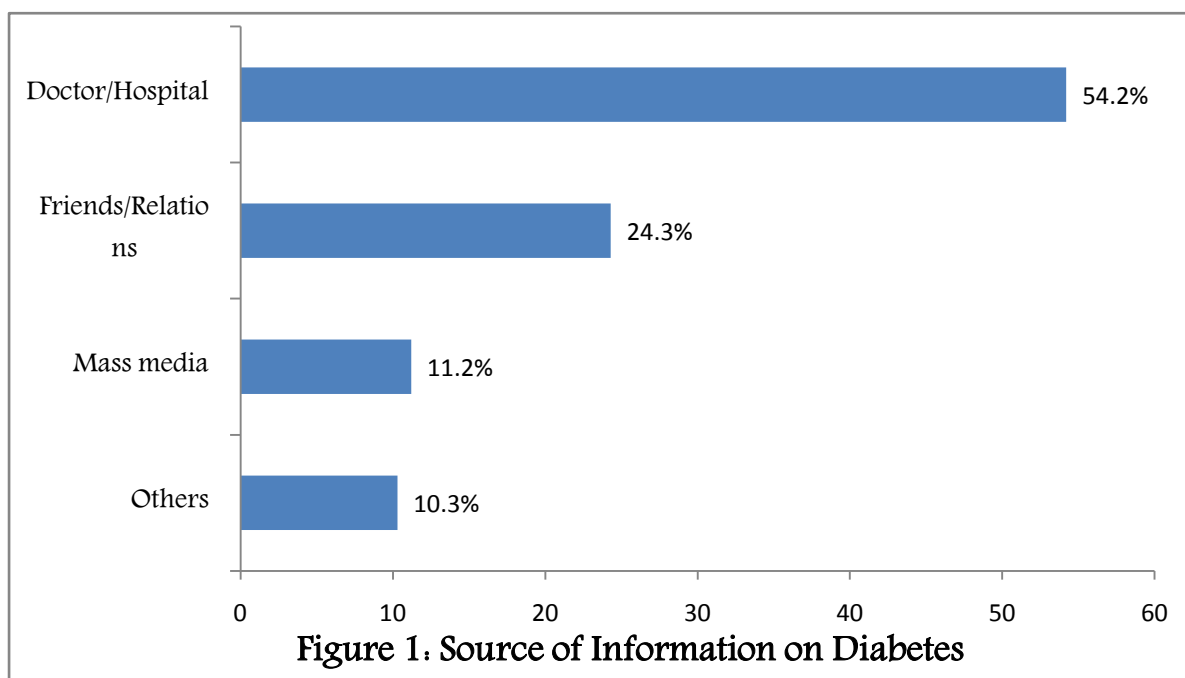
III. Results

Table 1: Socio-demographic profile of respondents, N = 107

Variable	Categories	Frequency	(%)
Sex	Male	59	(55.1)
	Female	48	(44.9)
Age Groups	<25yrs	3	(2.8)
	25-34yrs	4	(3.7)
	35-44yrs	9	(8.4)
	45-54yrs	33	(30.8)
	55-64yrs	26	(24.3)
	65yrs & above	32	(29.9)
Marital Status	Single	8	(7.5)
	Married	81	(75.7)
	Divorced	6	(5.6)
	Widowed	12	(11.2)
Religion	Christianity	100	(93.5)
	Others*	7	(6.5)
Employment Status	Government/Private Employer	34	(31.8)
	Self Employed	42	(39.3)
	Unemployed	4	(3.7)
	Retired	13	(12.1)
	NA	14	(13.1)
Tribe	Urhobo	64	(59.8)
	Isoko/Ijaw	10	(9.3)
	Itsekiri	8	(7.5)
	Aniocha/Ika	6	(5.6)
	Igbo	6	(5.6)
	Yoruba	3	(2.8)
	Others [§]	10	(9.3)

Others* include Muslims, Pagans, ...; Others[§] include Hausas, Igala, ...

The respondents were a higher proportion of males, 59 (55.1%) and were mostly persons above 45 years of age, 91 (85.0%). Most of them were Christians, 100 (93.5%) and married, 81 (75.7%).



Others include: Teachers, Religious leaders

Doctors and hospitals were the more likely source of information on diabetes care and complications, 54.2%. The next most important source was friends and relations, 24.2%.

Table 2: Time of awareness versus time of diagnosis of diabetes mellitus, N = 107

Age groups	Frequency (%)	
	First heard	First diagnosed
0-4yrs	16 (15.0)	26 (24.3)
5-9yrs	18 (16.8)	22 (20.6)
10-14yrs	18 (16.8)	20 (18.7)
15-19yrs	23 (21.5)	15 (14.0)
20-24yrs	14 (13.1)	11 (10.3)
25yrs & Above	12 (11.2)	5 (4.7)
Did not indicate	6 (5.6)	8 (7.5)
$\chi^2 = 8.098, df = 6, p = 0.231$		

There was no significant difference between the time when respondents recalled they became aware of diabetes and its complications, and when they got diagnosed for diabetes themselves; $p = 0.231$.

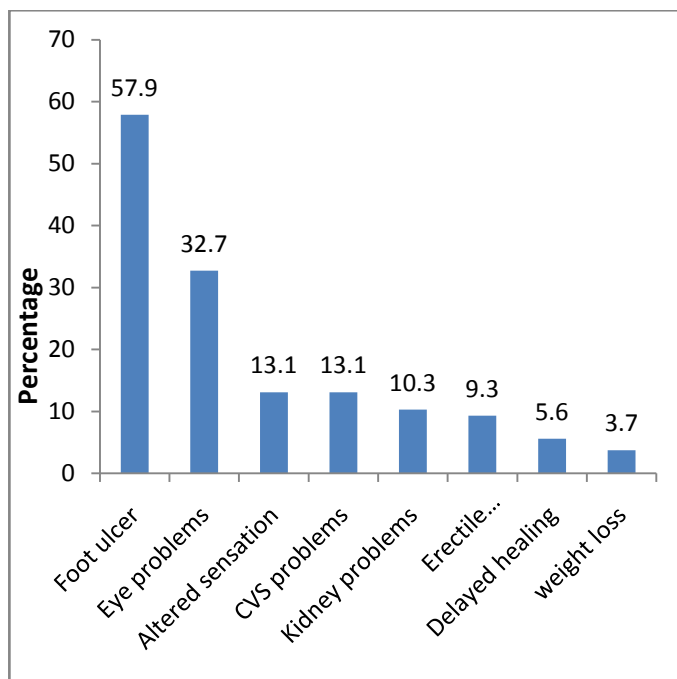


Figure 2a: Complications of diabetes stated by respondents

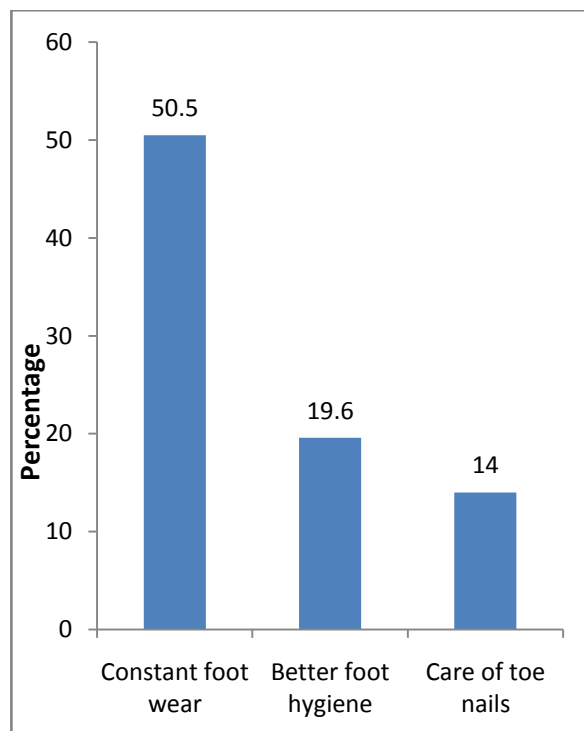


Figure 2b: Knowledge of foot care in diabetics

Foot ulcers were the most common complications of diabetes stated by respondents, 57.9%; and eye problems were also commonly stated, 32.7%.

For knowledge of foot care, putting on constant foot wear was the most common foot care strategy stated by respondents, 50.5%

Table 3: Respondents’ perception of diabetes prevention and care of complications

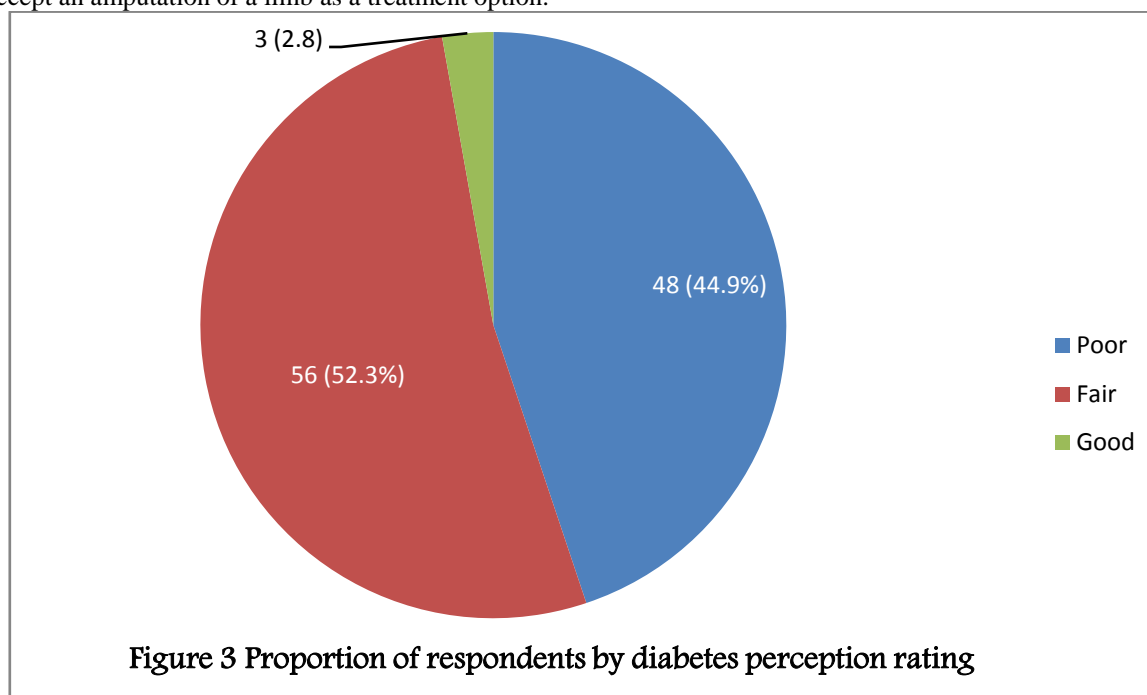
Variable	Categories	Frequency	(%)
Who could suffer from diabetes	Anyone	81	(75.7)
	Rich people	6	(5.6)
	Others (poor, farmers, predisposed)	4	(3.7)
	Not Sure	16	(15.0)
Diabetes is associated with complications	Yes	90	(84.1)
	No	11	(10.3)
	Not sure	6	(5.6)
Diabetes can be cured completely	Yes	38	(35.5)
	No	56	(52.3)
	Not sure	13	(12.2)
Aware of need for special care of feet	Yes	83	(77.6)
	No	16	(14.9)
	Not sure	8	(7.5)
Foot conditions could have been prevented	Yes	41	(38.3)
	No	1	(0.9)
	Not sure	65	(60.8)
Accept amputation as treatment option	Yes	12	(11.2)
	No	19	(17.8)
	Not sure	61	(57.0)
	No answer	15	(14.0)

Most respondents stated that anyone could suffer diabetes, 81 (75.7%) and more of them knew diabetes to be associated with complications, 90 (84.1%).

Over a third of them, 38 (35.5%) still felt diabetes could be cured completely.

Most respondents knew diabetics needed special care for their feet, 83 (77.6%) but the majority, 65 (60.8%) were not sure if the development of foot conditions as complications of diabetes could be prevented.

Although, they were not sure if foot conditions could be prevented, only 11.2% of them were sure they would accept an amputation of a limb as a treatment option.



An aggregate of their individual perception scores, showed only 3 (2.8%) had a good perception of diabetes complications and care. The majority, 52.3% had a fair knowledge.

Table 4: Perception scores for diabetes care and complications versus potential correlates

Variable	Categories	Perception Rating Frequency (%)			Total
		Poor	Fair	Good	
		n = 48	n = 56	n = 3	N = 107
Sex	Male	30 (50.8)	27 (45.8)	2 (3.4)	59 (100.0)
	Female	18 (37.5)	29 (60.4)	1 (2.1)	48 (100.0)
		$X^2 = 2.298, df = 2, p = 0.317$			
Time since diagnosed diabetic (years)	0 – 9	21 (42.8)	26 (53.1)	2 (4.1)	49 (100.0)
	10 – 19	17 (47.2)	19 (52.8)	0 (0.0)	36 (100.0)
	≥ 20	6 (33.3)	11 (61.1)	1 (5.6)	18 (100.0)
		$X^2 = 3.386, df = 4, p = 0.495$			
	NA	4 (100.0)	0 (0.0)	0 (0.0)	4 (100.0)

NA: data not available, *Likelihood ratio chi-square

Perception of diabetes did not vary significantly with sex of respondents, $p = 0.317$; although about half of the males, 50.8% had a poor perception rating compared to just over a third, 37.5% of the females. There was no significant association between length of time since diagnosis and perception rating for diabetes complications and care. Persons with a good rating were the lowest proportion in all groups.

Table 5: Respondents willingness to accept amputation versus perception rating

Variable	Categories	Perception Rating Frequency (%)			
		Poor	Fair	Good	Total
		n = 48	n = 56	n = 3	N = 107
Willingness to accept amputation as treatment option	Yes	2 (4.2)	9 (16.1)	1 (33.3)	12 (11.2)
	No	6 (12.5)	11 (19.6)	2 (66.7)	19 (17.8)
	Other	31 (64.6)	30 (53.6)	0 (0.0)	61 (57.0)
	NA	9 (18.8)	6 (10.7)	0 (0.0)	15 (14.0)

NA: data not available, *Likelihood ratio chi-square, other refers to

Perception rating had an effect on willingness to accept amputation as treatment option. Although there was a general apathy towards acceptance of amputation, willingness improved with their perception rating.

IV. Discussion

Not surprisingly doctors and hospitals were the most likely source of information on diabetes care and complications with 54.2% of the patients thinking so. What is perhaps surprising is that nearly half of our patients are getting their information or education on the care and complications of diabetes from other sources. This is worrisome because a number of half-truths and outright untruths could emanate from some of these other sources which could be dangerous or hinder appropriate and adequate care of diabetic patients. The findings here are similar to the findings from a survey in Malta where it was observed that a significant number of the participants in their survey had not received prior foot care education especially from the primary health care facilities and had vascular insufficiency, abnormal neural function and deformities in the feet. They concluded from their study that foot care education in primary care is vital to reduce the incidence of diabetic foot complications.¹¹

Foot ulcers were the most common complications of diabetes stated by respondents (57.9%); and eye problems were the next commonly stated at 32.7%. Previous studies have also identified diabetic foot as the most common general cause of hospitalisation among patients suffering from diabetes.^{12, 13} Diabetic foot is defined by WHO as foot in diabetics with neurologic disorders, some degree of vascular involvement with or without metabolic complications of diabetes in lower extremity and prone to infection, scarring, with or without deep tissue damage.¹⁴

The prevalence of diabetic foot ulcer among diabetic patients in Arbaminch hospital, in South Ethiopia, was 14.8%.¹⁵ Some other studies have shown that 15% of diabetic patients will suffer from diabetic foot ulcer during their lifetime.¹⁶⁻²² The occurrence of diabetic foot ulcers mostly in males and middle aged subjects has also been reported by several researchers.²³⁻²⁵ In our survey, most of the respondents were males (51%) and most respondents were also in the middle age group of 45 years to 64 yrs.

For knowledge of foot care, putting on constant foot wear was the most common foot care strategy stated by respondents (50.5%) but a note of caution has to be added here because, ill-fitting foot wears could be as dangerous if not more dangerous than not putting on foot wears at all. This assertion is supported by the finding of Deribe B et al that...If all the factors are kept constant, diabetic patients using ill-fitting shoes were 12.2 times more likely to have foot ulcer as compared to those who do not use ill-fitting shoes.¹⁵

Happily, most respondents knew that anyone could suffer from diabetes mellitus (75.7%) and even more of them knew diabetes mellitus to be associated with complications (84.1%). Over a third of them however, (35.5%) still felt diabetes mellitus could be cured completely. In the same vein, a good number of respondents knew diabetics needed special care for their feet (77.6%) but sadly, an uncomfortably high percentage of respondents (60.8%) were not sure if the development of foot conditions as a complication of diabetes could be prevented.

Although, they were not sure if foot conditions could be prevented, only few (11.2%) of them were sure they would accept an amputation of a limb as a treatment option. However, an aggregate of their individual perception scores showed that even fewer (2.8%) of the respondents had a good perception of diabetes mellitus complications and care. The majority (52.3%) had a fair knowledge.

There was no significant association between length of time since diagnosis and perception rating for diabetes mellitus complications and care. Persons with a good rating were the lowest proportion in all groups. Perception rating had an effect on willingness to accept amputation as treatment option. Even though

there was a general apathy towards acceptance of amputation, willingness improved with their perception rating. This clearly showed that the better the patients understood the condition they were dealing with the more amenable they were to even radical methods of management such as amputation of affected limb(s).

V. Conclusion And Recommendations

Our diabetic patients are not very aware of the complications of diabetes mellitus especially diabetic foot ulcer which can deteriorate to necessitate amputation which many of the patients are clearly not willing to accept as a management option. However, better understanding of the progression and consequences of the disease can improve appreciation and acceptance of different modalities of care especially amputation of limb(s).

We strongly believe that like the researchers from Malta¹¹ there is a strong need to improve our primary health care services to include extensive education of diabetics early in the course of their disease on the care and complications of diabetes. Indeed all health care practitioners who come in contact with diabetics should make out time from their busy schedules to educate diabetics adequately and appropriately on possible complications and foot care of diabetes mellitus.

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