



Assessment of Treatment Satisfaction amongst Health Insured and Uninsured Diabetic Patients' in a Tertiary Hospital, Benin City

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Abstract

There is increasing prevalence of diabetes in Nigeria. Diabetes is associated with complications resulting in high morbidity and mortality as a result of which patients' usually pay regular visit throughout their life time. Patient satisfaction is the extent to which the patients feel that their needs and expectations are being met by the service provided. The study aimed to assess treatment satisfaction amongst insured and uninsured diabetes patients. The study is a cross-sectional study which was carried out in Consultant Outpatient Department (COPD), University of Benin Teaching Hospital, Benin City. Treatment satisfaction was assessed using a Diabetes Treatment Satisfaction Questionnaire. Data were collected and analysed using SPSS version 20. A total of 100 diabetic patients were interviewed in the study; 71.9% and 80.3% of the uninsured and insured diabetics were very satisfied with treatment. Majority (80.6%) of NHIS enrollee were willing to continue with the present medication. In a regression analysis, duration of illness and use of herbal medications were found to be significantly associated with treatment satisfaction with p-value <0.05, with odd ratio (OR)=3.866 (95% CI=1.305-11.449) and (OR)=0.377 (95% CI=0.138-1.029) among the uninsured diabetics, age was found to be significantly associated with treatment satisfaction with p-value <0.05, with odd ratio (OR)=23.739 (95% CI=1.102-511.526) in the NHIS enrollee. More than half of the diabetic patients were very satisfied with treatment. The duration of illness and age are associated with satisfaction of diabetes treatment.

Key word,: diabetes mellitus, prevalence, treatment satisfaction and health insurance scheme.

Introduction

Diabetes mellitus (DM) is one of the major non-communicable diseases with an increasing prevalence in both the developed and the developing world (Wilds, *et al* 2004). It occurs due to inadequate production of insulin, or as a result of ineffective utilisation of insulin by the body, thereby leading to an increased concentration of glucose in the blood. Diabetes if not detected and controlled on time can result to high morbidity and mortality. Reports have shown that over 5 million are affected by the disease in Africa and the number is expected to increase to 15 million by 2025 (IDF, 2006). The Non-communicable Disease Expert Committee of the FMOH in national survey in 1992 recorded a prevalence of 2.2% (WHO, 2005). There is a scarcity of prevalence data on type 2 DM in Nigeria and what little evidence available showed crude prevalence rates of 2.2% and 6.8% in 1997 and 2003 respectively (Akinkugbe O, 1997 and Nyenwe, *et al* 2003). Because of the associated complications and comorbidities (Adisa, *et al* 2009), diabetes remains one of the costliest diseases to manage.

Patient with diabetes have to pay repeated visit to primary health care clinics, usually for the rest of their lives, these patients are usually more difficult to satisfy (Laurence, *et al* 2010). Patient are inclined to make the best of their current treatment and only become aware of its drawback only when they can compare it with something better (Bradley C, 1997). Previous research documented an improving patients' satisfaction relationship with an increasing likelihood to returning to a given health care provider and increased adherence toward medication (Singh J, 1990). Research focused on patient as an immediate condition in order to reach desirable clinical outcomes.

Although the National Health Insurance Scheme (NHIS) have been launched in the country, the program is only accessible to some of the Civil Servants in public sector and very few in the private sector. Majority of the Nigeria

population are unemployed and as such are not entitled to health insurance coverage. Financial hardship in diabetes care can be removed by subsidising diabetes treatment. NHIS provides less than 5 per cent coverage to the total population of Nigeria. Since the assessment of patients' satisfaction is an essential issue, as a measure of quality healthcare that patients received and in identifying potential areas for enhancing the content of diabetic care provided by the physicians, this study aimed to assess diabetic patients' treatment satisfaction amongst health insured and uninsured.

Method

Setting

The study was carried out in Consultant Outpatient Department (COPD), University of Benin Teaching Hospital (UBTH), Benin city, Edo state Nigeria. The centre was chosen because of its peculiarities, it offers wide range of quality of services at affordable prices. University of Benin Teaching Hospital (UBTH) is located on Ugbowo road a few kilometres from residential areas. UBTH have over 500 bed facilities with Clinicians of specialty in various field of the profession and has about 20 Pharmacist. Apart from the specialised healthcare services rendered to patients, it also serves centres for training and research for healthcare professionals. Drugs prescribed in this hospital are dispensed in the hospital pharmacy and instances where drugs are not available patients are advised to purchase them in community pharmacies.

Study design and population

The study is a cross-sectional design and comprises of outpatients insured and uninsured diabetes patients diagnosed not later than 6 (six) months and at least taking one or more medications. Inclusion criteria's were consented diabetes patients on scheduled visits to the clinic, conscious and without major complications. Prior to commencement

of the study, administrative approval was obtained from the management of the hospital.

Data collection and instrument

Data collection was done using questionnaire that comprise of two sections; Section A is to collect social demographic data such as: gender, age, education, marital status, religion, employment, income, duration of illness, NHIS status and duration of NHIS. Section B consist Diabetes Treatment Satisfaction Questionnaire (DTSQ) (Bradly, *et al* 1990 and Bradley C, 1994), that contains eight questions concerned with the treatment of diabetic patient and experiences for the past few weeks. The scores for DTSQ range from, 6 = “very satisfied” to 0 = “very dissatisfied” respectively.

Data analysis

Data collected were entered into Microsoft excel, double-checked and thereafter transported to Statistical Package for Social Science (SPSS) version 20 for statistical analysis. Analysis was descriptive and inferential. Satisfaction was determined using a dichotomous data with satisfied patients =1 and unsatisfied patients = 0. Logistic regression was done to determine association of patient variables to diabetes treatment satisfaction.

Results

A total of 100 diabetic patients were interviewed in the study; 64 respondents in NON-NHIS while 36 respondents were in NHIS. About half of them (59.4% and 55.6%) in NON-NHIS and in NHIS were of age greater than 60years. More than half (62.5%) of the respondent were female in NON-NHIS. Majority (90.4% and 94.5%) had formal education in both uninsured and insured diabetes patients respectively, while 9.4% and 5.6% in NON-NHIS and NHIS respectively had no formal education. More than half (66.7%) of the respondents in NHIS had managed the illness between 1-5years. About one-quarter (39.7%) of the uninsured diabetics had used herbal medicines along with their anti-diabetes medications. See table 1.

Table 2 shows the level of treatment of satisfaction of treatment. 71.9% and 80.3% in NON-NHIS and NHIS respectively were very satisfied with treatment, with 68.8% and 80.6% willing to continue with the present medication. Majority (94.4%) of the insured patients had a satisfactory understanding of diabetes and were willing to recommend treatment with someone else with diabetes. 45.2% and 41.7% of the studied participants in both NON-NHIS and NHIS respectively recently had their blood sugar level unacceptably high. In a dichotomous data to assess the overall level of satisfaction with treatment of diabetes, most (87.5%) of the health insured diabetes patients reported satisfied with their treatment.

The factors associated with patient satisfaction among diabetic patients in NON-NHIS and NHIS are as shown in Table 3 and 4.

In a regression analysis, duration of illness was found to be significantly associated with treatment satisfaction with p-value <0.05, with odd ratio (OR) =3.866 (95% CI=1.305-11.449). This result shows that the higher the duration of illness the less likely are patients satisfied with treatment. The use of herbal medicines along with other anti-diabetes medications was also found to be associated significantly with treatment satisfaction. Although there were positive odds of satisfaction with treatment among other patients' characteristics such as: age, satisfaction with diabetes treatment were however not significant as p-value were >0.05.

Table 1: Socio characteristics of the Respondent (N=100), Respondent N

Variables	Non-NHIS Diabetics n (%)	NHIS Diabetics n (%)
Gender		
Male	24 (37.5)	17 (47.2)
Female	40 (62.5)	19 (52.8)
Age(years)		
18-29	-	1 (2.8)
30-49	9 (14.1)	4 (11.1)
50-59	17 (26.6)	11(30.6)
>60	38 (59.4)	20 (55.6)
Education qualification		
Non -formal	6 (9.4)	2 (5.6)
Primary	22 (34.4)	13 (36.1)
Secondary	15 (23.4)	15 (41.7)
Tertiary	21 (32.8)	6 (16.7)
Marital status		
Single	2 (3.1)	2 (5.6)
Married	55 (85.9)	31 (86.1)
Divorced	4 (6.3)	-
Separated	3 (4.7)	3 (8.3)
Religion		
Traditional	3 (4.7)	-
Christians	58 (90.6)	28 (77.8)
Muslim	3 (4.7)	8 (22.2)
Others	-	-
Employment		
Unemployed	7 (10.9)	3 (8.3)
Employed	19 (29.7)	18 (50.0)
Self-employed	38 (59.4)	15 (41.7)
Income		
<20000	17 (26.6)	7 (19.4)
20000-39000	18 (28.1)	17 (47.2)
40000-59000	16 (25.0)	7 (19.4)
60000-79000	7 (10.9)	3 (8.3)
>79000	6 (9.4)	2 (5.6)
Duration of illness(years)		
<1	8 (12.5)	3 (8.3)
1. -5	31 (48.4)	24 (66.7)
6. - 10	13 (20.3)	6 (16.7)
>10	12 (18.8)	3 (8.3)
Duration of NHIS (years)		
1	-	17 (47.2)
2	-	9 (25.0)
3	-	4 (11.1)
4	-	4 (11.1)
6	-	1 (2.8)
8	-	1 (2.8)
Use of Herbal medicines		
Yes	25 (39.7)	5 (12.5)
No	39 (60.3)	31 (87.5)

Among the health insured diabetics, age was found to be significantly associated with treatment satisfaction with p-value <0.05, with odd ratio (OR) =23.739 (95% CI=1.102-511.526). Other patients' characteristics such as: religion, income and duration of illness were however not significantly associated with diabetes treatment satisfaction as p-values were >0.05.

Table 2: Treatment satisfaction amongst diabetic patients

Variables	Non-NHIS Diabetics n (%)	NHIS Diabetics n (%)
Satisfaction with treatment		
Very satisfied	46(71.9)	30(80.3)
Very dissatisfied	18(28.1)	6(16.7)
Blood sugar unacceptably high recently		
Most of the time	27(42.2)	15(41.7)
None of the time	37(57.8)	21(58.3)
Blood sugar unacceptably low recently		
Most of the time	3(4.7)	4(11.1)
None of the time	61(95.3)	32(88.9)
Convenient about treatment		
Very convenient	53(82.8)	32(88.9)
Very inconvenient	11(17.2)	4(11.1)
Flexibility about treatment		
Very flexible	45(70.3)	27(75.5)
Very inflexible	19(29.7)	9(25.0)
Satisfaction with understanding of diabetes		
Very satisfied	49(76.6)	34(94.4)
Very dissatisfied	15(23.4)	2(5.6)
Recommend ones treatment to someone else with diabetes		
Yes	44(68.8)	30(83.3)
No	20(31.3)	6(16.7)
Satisfaction to continue Present treatment		
Very satisfied	44(68.8)	29(80.6)
Very dissatisfied	20(31.3)	7(19.4)
Overall level of satisfaction		
Satisfied	39(60.3)	31(87.5)
Not Satisfied	25(39.7)	5(12.5)

Table 3: Factors associated with patient satisfaction on diabetes treatment amongst Non-NHIS Diabetics

Patient characteristics	Odd ratio	95% CI for Exp B		P-value
		Lower	Upper	
Age	1.906	0.734	4.951	0.185
Sex	2.880	0.703	11.796	0.141
Educational status	1.116	0.494	2.520	0.792
Marital status	0.610	0.178	2.092	0.432
Religion	1.262	0.137	11.636	0.838
Employment status	0.836	0.270	2.588	0.757
Income	0.824	0.425	1.598	0.568
Duration of illness	3.866	1.305	11.449	0.015*
Herbal medicine use	0.377	0.138	1.029	0.047*

Where * = significant at p -value < 0.05 , CI = confidence interval of 95%.

Table 4: Factors associated with patient satisfaction on diabetes treatment amongst Non-NHIS Diabetics

Patient characteristics	Odd ratio	95% CI for EXP B		p-value
		Lower	Upper	
Age	23.739	1.102	511.526	0.043*
Sex	0.24	0.000	3.767	0.143
Educational status	0.687	0.102	4.651	0.701
Marital status	0.267	0.37	1.947	0.193
Religion	9.827	0.031	3151.077	0.438
Employment status	0.545	0.021	14.433	0.716
Income	1.455	0.160	126.402	0.709
Duration of illness	1.182	0.398	3.507	0.377
Herbal medicine use	1.026	0.499	2.112	0.943

Where * = significant at p -value < 0.05 , CI = confidence interval of 95%.

Discussion

The study revealed a more female population suffering from diabetes than males. More than half of the respondents were satisfied with treatment of diabetes. The high level of diabetes patients' satisfaction from our perspective may be due to close relationship between the healthcare professionals and the patients. The close communication between family doctor and patient allows a better knowledge of the condition of the patient and to place treatment in a context that permits comprehensive disease management. Age was significantly associated with satisfaction of diabetes treatment. Older patients greater than 60 years were more satisfied with diabetic treatment in NHIS. Age of the diabetic patient was a contradicting factor

in previous study, where it was shown that older patients were more satisfied with treatment (Ken, *et al* 2002). The results suggest that duration of illness was significantly associated with satisfaction of diabetes treatment in NON-NHIS enrollee that is as the duration of illness increases the more likely they are satisfied with treatment.

The respondents had unacceptably high blood sugar level most of the time in NON-NHIS and NHIS were 42.1% and 41.7% respectively, the more frequently perceived hyperglycaemia, the lower the treatment satisfaction., the study did not however find a significant association between hyperglycaemia and diabetes treatment satisfaction. The study did not however find a significant association between hyperglycaemia and diabetes treatment

satisfaction. The unacceptably high blood sugar level could be attributed to strike, affordability, and availability of the medications; forgetfulness, felt good and poor understanding about the illness. Duration of illness was significantly associated with treatment satisfaction. This is contrary to studies by Wredling *et al.* 1995, Hirschl *et al.*, 2000 and Redekop *et al.*, 2002; they found no significant association between satisfaction and the duration of the disease.

The results suggest that more than half of the study population had above primary level of education and are literate though not significant. A highly literate population is associated with better understanding of information on diabetes which improves patient satisfaction. This research population were mainly literate and capable of comprehending the significance of treatment of diabetes.

There was a positive correlation between income status and satisfaction with treatment, it was however not significant. Previous study posited that an increase in monthly income is more likely to be associated with increase satisfaction of diabetes treatment (Narayan, *et al* 2003). Nicolucci *et al.*, (2009) also found that satisfaction was lower among unemployed diabetic patients. Our study shows a much higher rate of employment and self-employed, but no association between satisfaction and income, which may be explained by the high number of patients with less income in our study.

Previous study found a higher treatment satisfaction to better quality of marital relationship (Trief, *et al* 2002. We did not address the quality of marital relationship, but we did find that majority of the respondents were married and were found to be more satisfied with treatment. This may be unconnected to the fact that married patients are likely to adhere to their medications than unmarried patients as they are better reminded of their medications by their partners, hence better clinical outcomes. This was found to be in accordance with a study Al-Faris *et al.*, 1996 but opposite to other studies who found that married patients were less satisfied (Tulker J, 2002 and Quintana J, 2006).

It was also found that about one-quarter of the uninsured diabetes patients had used herbal medicines along with their diabetes treatment, and this were found to be significantly associated treatment satisfaction. The significant consequences resulting from the use of herbal/dietary supplements with other medications is a potential for interactions between medications, herbal products and supplements. Unfortunately, many consumers of herbal products assume that because these products are "natural" they are also safe (Izzo and Ernst, 2009). However, there are a variety of case reports and clinical observations in literature documenting the occurrence of clinically significant interactions between herbs and medications (Hu, *et al* 2005).

Conclusion

The study reported a high level of treatment satisfaction among diabetes patients. The duration of illness use of herbal medicines and age are associated with patient satisfaction.

The study was conducted in a cross-sectional design, and the result of the study cannot be generalized due to limited population of those with diabetes. Other parameters that may interfere with treatment satisfaction, such as depression, anxiety, type of medications used, medication adherence and presence of complications, were not addressed in this study. The also relied upon the participants' self-reports and not upon objective clinical data, as a result of which satisfaction may have been overestimated.

Declarations

Acknowledgement

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Conflict of Interest

There is no conflict of interest associated with this work.

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