Treatment compliance and retention in care among out-patient clients in a tertiary health institution in plateau state North Central Nigeria

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Abstract

Background: Compliance with prescribed treatment and retention in care are key components in the management of chronic diseases which is vital in averting the long term complications that could arise from such conditions. Failure to comply with treatment recommendations is often associated with poor retention in care. In view of this, this study was conducted to determine the level of treatment compliance and retention in care among patients with hypertension and diabetes in Jos University Teaching Hospital.

Methods: This was a cross sectional study conducted among 290 eligible respondents between September and November 2017 using quantitative method of data collection. SPSS version 20 was used for data analysis with adjusted odds ratio and 95% confidence interval used as point and interval estimates while p-value of 0.05 was considered statistically significant.

Results: The mean age of the respondents was 54.5±13.1 years with 43.8% of the respondents found to have satisfactorily complied with prescribed treatment while 117 (40.3%) were uninterruptedly retained in care within the last 6 months' clinic appointments prior to the study.

Conclusions: This study has demonstrated the levels of compliance with treatment and retention in care bringing to bear the need to provide structured interventions targeted at attaining improvement in compliance with treatment and retention in care among individuals on long term care.

Keywords

Diabetes; Hypertension; Retention in care; Treatment compliance

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INTRODUCTION

Compliance with prescribed treatment is the extent to which a patient correctly follows medical advice as it relates to medications, self-care, self-directed exercises and life style modification among others.[1] Evaluation of treatment compliance could be through the use of biological markers, clinical assessment, interviews, prescription renewals and pill counting systems and administration of structured data collection instructurment.[2,3] Although there is no gold standard allowing an accurate measurement of compliance, a client is said to be non-compliant when he/she fails to adhere to treatment recommendations made by the healthcare provider.[2,4] Failure to comply with treatment recommendations is often associated with poor retention in care especially among those with long term treatable non-communicable diseases (NCDs) such as hypertension and diabetes.[5] As at 2015 NCDs accounted for 39.5 million of the 56.4 million deaths globally and is predicted to cause of 7 out of every 10 deaths in developing countries by the year 2020.[6,7] Compliance with prescribed treatment and retention in care are key components in the management of chronic diseases which is vital in averting the long term complications that could arise from such conditions.[8–10] In view of the projections of continuous increase in the prevalence of hypertension, diabetes mellitus and other NCDs with its attendant morbidity and mortality.[11,12] It became imperative to study level of treatment compliance and retention in care among patients with hypertension and diabetes in Jos university teaching hospital so as to gain evidence based insight into what is currently obtainable from the perspective of the end users.

METHODS

This study was conducted at the Cardiology and Endocrinology Outpatient Units of Jos University Teaching Hospital (JUTH). The Cardiology and Endocrinology Outpatient Clinics hold every Tuesday of the week. JUTH is one of the three tertiary health institutions in Plateau state with an estimated bed capacity of 500 located in the Lamingo area of Jos North Local Government.[13] The institution has several service delivery outlets which includes: General Out- patient Department, Family health clinic. Emergency Paediatric Unit, Paediatric Out-Patient Department, Ante-natal Care, Family Planning, Obstetric Care unit. Gynaecology Emergency unit. Accident and Emergency Unit, Medical Out-Patient Department, Surgical Out-Patient Department and Intensive Care Unit, among others.[13]

Study population

The study population comprised of hypertensive and diabetic patients aged 18 years and above attending the cardiology and endocrinology clinics in the medical outpatient department of JUTH over a 3 month period of September to November 2017.

Study design

This was a cross sectional study designed to assess the level of compliance and retention in care among hypertensive and diabetic patients accessing treatment in the cardiology and endocrinology outpatient clinics of JUTH.

Sample size estimation

The sample size for this study was determined using the appropriate sample size determination formula for a cross sectional study.[14] Where n is the minimum sample size, Z is the standard normal deviate at 95% confidence interval (1.96), q is the complementary probability (1-p), d is the precision of the study set at 0.05 and p is the proportion of respondents from a previous similar study who complied with prescribed medications 77.5% (0.775).[15] This gave a minimum sample size of 290 after addition of 5% to cater for non, poor and incomplete responses.

Inclusion criteria

All patients registered and booked for clinic appointments in both cardiology and endocrinology clinics of the medical out-patient department (MOPD) 18 years and above who had been attending the clinics for a period of 12 month and more were included in the study following the receipt of their consent for participation. While patients with visual and speech impairment that will require a third party involvement were excluded from the study. This was done to ensure that information obtained was volunteered by the patients and as such representative of the patient's personal opinions within the context of the study objective.

Sampling technique

A multistage sampling technique was used to select respondents for this study. In the first stage, cardiology and endocrinology outpatient clinics were selected from the list of 8 specialist care outpatient clinics within the MOPD of JUTH using simple random sampling technique by balloting. Following which proportion to size technique was used to obtain the number of patients (196) to be sampled from the cardiology clinic by dividing the total number of patients who met the inclusion criteria booked for cardiology clinic for the study period (377) by total number of patients who met inclusion criteria booked for both cardiology and endocrinology clinics (557) for the study period multiplied by the sample size of 290. Similarly, technique was applied to determine the number of patients (94) to be sampled from the endocrinology clinic by dividing the total number of patients who met the inclusion criteria booked for endocrinology clinic for the study period (180) divided by total number of patients (557) who met the inclusion booked for cardiology and endocrinology clinics for the study period multiplied by the sample size of 290. Thereafter, the booking registers for the two clinics respectively for the study period were used to allocate numbers to all the patients in ascending order forming the sampling frame from which computer generated table of random number without replacement was used to select 196 out of 377 and 94 out of 180 patients booked for clinic visits in cardiology and endocrinology units respectively. These patients were then sampled on their respective clinic days.

Data collection

Semi-structured, interviewer-administered questionnaire adapted from a similar study was used to collect data from the respondents on socio-demographic characteristics, compliance with treatment and retention in care.[15] The questionnaire was translated to Hausa, which was the language understood by most of the respondents and back translated to English language

to ensure that its content was retained and preserved. Three research assistants were trained on the content and method of administration of questionnaire prior to the commencement of the study by the principal researcher. The data collection instrument was pretested in the infectious disease out-patient clinic of JUTH to address ambiguity in the questions and estimate administration time for proper planning for data collection. Ethical clearance was sought and obtained from Jos University Teaching Hospital institutional health research ethical committee. Written and verbal informed consents were obtained from all the respondents with confidentiality and anonymity of their responses assured and maintained.

Grading of response

Compliance with treatment was adjudged satisfactory if respondent had not missed any of his or her prescribed medications within the last one week prior to the assessment in addition to provision of positive response of adherence to health promoting instructions provided by the attending physicians as well as affirmation of non usage of unprescribed medications as adjunct to treatment. Furthermore, retention in care was adjudged satisfactory if the respondents had attained satisfactory level of compliance with treatment in addition to attaining uninterrupted clinic attendance for 6 months prior to the study with the exception of cases of hospitalization for the same disease condition (s) during the appointment period.

Data analysis

The data obtained were processed and analyzed using SPSS version 20 where socio-demographic characteristics of the respondents were expressed in frequency and percentage. Mean ±standard deviation were used as summary indices for age of the respondents, adjusted odds ratio was used as point estimates in the logistic regression model while 95% confidence interval was used as the interval estimate. A probability value of less than 0.05 was considered statistically significant in this study.

RESULTS

The mean age of the respondents was 54.5±13.1 years with about a third younger than 50 years of age. The sex distribution showed that majority (71.7%) of the respondent were females while 211 (71.3%) had attained some levels of education. Slightly above half (55.9%) of them had no steady monthly income while 214 (78.3%) resided within Jos metropolis where the hospital is located. With regards to the medical conditions of the respondents, 159 (55.2%) were hypertensive, 39 (13.4%) were diabetic and 91 (31.4%) had both hypertension and diabetes with the median duration of 10 years on treatment for their medical conditions (Table 1).

Assessment of consistency with intake of prescribed medications revealed that 90 (31.0%) had missed their medication at least once with the last 1 week of the study while a few (11.0%) admitted to use of unprescribed medications as adjunct to their prescribed medications. On the issue on number of prescribed medications the respondents were currently on, 180 (62.1%) of the respondents were on four of more medications at a time. In the last 6 months prior to this study, about a third (33.8%) of the study participants had missed at least one clinic appointment while fewer (11.0%) of them had missed at least one

prescribed clinic appointment 3 months prior to the study. Enquiry into available of treatment reminder system revealed that 233 (76.8%) had none in place. The level of compliance with treatment in this study was found to be satisfactory among 127 (43.8%) of the respondents while 117 (40.3%) were uninterruptedly retained in care within the last 6 month's clinic appointments prior to the study (Table 2).

On the factors influencing retention in care in this study, satisfactory level of compliance with prescribed medications had statistically significant influence with the odds of being retained in care among those who complied with prescribed medications being 28 times the odds of those who did not attain satisfactory level of compliance with prescribed medications (95% CI = 13.111-60.449; p<0.001). Furthermore, the odds of being retained in care among those who did not use unprescribed medications as adjuncts to treatment was 2.7 times the odds of those who used unprescribed medications (95% CI = 1.113-6.518; p = 0.025) provided all other factors in model were held constant (Table 3).

DISCUSSION

Compliance with prescribed treatment is essential in care as this plays significant role in attaining treatment control and recovery. In study slightly below half of the respondents were adjudged as having satisfactory level of treatment compliance which is in keeping with findings of other studies conducted in Nigeria.[15–19]

This synergy could be attributable to the fact chronic medical conditions require a lifelong commitment in addition to other factors such as the quality of information provided by health care giver regarding their medical conditions, the socio-cultural context orientation of the individual and their literacy levels. However, variation exists between the finding of this study and that of an Indian one which showed a relatively good level of compliance with prescribed treatment.[20] This observed variation could be due to the context in which compliance was assessed as well as the type of support the health delivery system in that area offers to those with chronic health conditions. Similarly, the level of retention in care was found to be low with less than half of the participants being satisfactorily retained in care within the period assessed in this study which synergizes with the findings of another study conducted in Malawi.[21] This could also be influenced by the level patients' commitment to attaining improved health care and in addition to the level of treatment reminder and support systems available to persons with chronic medical conditions particularly in contemporary African settings as well as the incessant industrial action that has plagued health institutions particularly in Nigeria. There are other available methods of assessment of compliance with treatment such as use of serum and urinary concentration of drags and biological markers which were beyond the scope of this study hence, it would be imperative for other studies to be conducted using other methods either solely or in combination so as to generate more evidence to addressing the problems of poor compliance and retention in care among those on long term care. Satisfactory level of compliance with prescribed treatment as well as non use of unprescribed medications as adjunct to treatment were found to significantly predict retention in care in this study. However, unlike this study, other studies found financial constraints, age, provider-patient communication gap, patients'

level of education, side effects of medications, absence of support group system and forgetfulness as some of the factors influencing level of retention in care.15,17,22–24

CONCLUSION

This study has demonstrated the levels of compliance with treatment and retention care bringing to bear the need to provide structured interventions targeted at attaining improvement in compliance with treatment and retention in care in order to significantly avert the long term complications associated with the these conditions as well as improving productivity among these individuals.

Acknowledgments

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Table 1:

Socio-demographic characteristics of the respondents.

Characteristics	Frequency	%
Age group (years)		
50	91	31.4
51 and above	199	68.6
Total	290	100.0
	Mean ±SD	
Mean age	54.5±13.1 years	
Sex		
Male	82	28.3
Female	208	71.7
Total	290	100.0
Main occupation		
Unemployed	64	22.1
Unskilled	120	41.4
Skilled	56	19.3
Retired	50	17.2
Total	290	100.0
Ever attended school		
Yes	211	72.8
No	79	27.2
Total	290	100.0
Marital status		
Single	10	3.4
Married	204	77.2
widowed	56	19.4
Total	290	100.0
Place of residence	214	
Within Jos	73.8	
Outside Jos	76	26.2
Total	290	100.0
Steady monthly income		
Yes	128	44.1
No	162	55.9
Total	290	100.0
Medical condition		
Diabetes only	39	13.4
Hypertension only	160	55.2
Both conditions	91	31.4

Characteristics	Frequency	%
Total	290	100.0
Duration on treatment (yrs.)	162	
<10	55.9	
10 and more	128	44.1
Total	290	100.0
Median duration (IQR) (yrs)	10(5-17)	

Table 2:

Level of compliance with treatment and retention in care.

Characteristics	Frequency	Percentage
Missed prescribed medication within the last 1 week		
Yes	90	31.0
No	200	69.0
Total	290	100.0
Use of unprescribed medications		
Yes	32	11.0
No	258	89.0
Total	290	100.0
Number of prescribed medication on		
3	110	37.9
4 or more	180	62.1
Total	290	100.0
Missed clinic appointment within the last three month		
Yes	32	11.0
No	258	89.0
Total	290	100.0
Missed clinic appointment within the last six month		
Yes	98	33.8
No	192	66.2
Total	290	100.0
Level of compliance with treatment		
Satisfactory	127	43.8
Non satisfactory	163	56.2
Total	290	100.0
Treatment reminder system		
Available	67	23.1
Not available	233	76.8
Total	290	100.0
Level of retention in care		
Satisfactory	117	40.3
Non satisfactory	113	59.7
Total	290	100.0

Table 3:

Multiple logistic regression of predictors of retention in care.

Factors	Odds ratio	95% confidence interval	P-value
Level of compliance with treatment			
Satisfactory	28.2	13.111-60.449	<0.001
Non satisfactory	1	-	-
Age group (years)			
>50 and above	1.7	0.854-3.545	0.127
50	1	-	-
Sex			
Male	1.4	0.677-2.771	0.381
Female	1	-	-
Medical condition			
Diabetes only	1.5	0.509-4.285	0.473
Hypertension only	0.7	0.323 - 1.329	0.241
Both	1	-	-
Steady Monthly Income			
Yes	1.3	0.687 - 2.411	0.431
No	1	-	-
Place of Residence			
Within Jos	0.8	0.374 – 1.523	0.432
Outside Jos	1	-	-
Use of unprescribed			
Not Use	2.7	1.113 – 6.518	0.025
Use	1	-	-
Treatment reminder/support			
Available	0.8	0.369 – 1.613	0.490
Not available	1	-	-
Number of prescribed medication on			
3	0.7	0.344 – 1.267	0.212
4 or more	1	-	-
Duration on treatment (years			
10 and more	1.1	0.565 – 2.027	0.835
<10	-	-	-