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Original Research Article

Attitude and factors affecting compliance to diabetes mellitus management among clinic attendees at Jericho Specialist Hospital, Ibadan

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ABSTRACT

Background: The need to understand factors influencing non-compliance with the treatment of Diabetes Mellitus (DM) will go a long way in addressing the issue in Nigeria. However, this study was aimed at assessing the attitude of diabetic patients and factors affecting their level of compliance to the management of DM among clinic attendees at Jericho Specialist Hospital, Ibadan, Nigeria.
Methods: This study employed a descriptive cross-sectional study using a two-stage sampling technique. A pre-tested semi-structured questionnaire was used to obtain information on two hundred and twenty respondents. The attitude was scored on a 5-point scale where <3 and >3 were categorized as negative and positive attitudes respectively. Data were analyzed with SPSS version 21 using descriptive statistics.
Results: Mean age of respondents was 49.7±10.3 years and 27.8% were male. Some (32.1%) of the respondents had a negative attitude towards the management of DM. Many 66.5%) disagreed to not bother about the outcome of their disease because they know they will get over it, 100.0% disagreed that the impact of diabetes on their lifestyle is negligible, and 65.6% agreed that they did not like people to know about their status. Amidst all the factors influencing compliance to the management of diabetes among patients with DM, drugs ranked highest with 98.1% followed by frustration due to long treatment and being tempted by inappropriate foods and drinks accounting for 83.5% and 81.1% respectively.
Conclusions: There was generally a good attitude on diabetes management. However, there is a need for special programs to encourage compliance by the government.

Keywords: Diabetes mellitus, Attitude, Treatment compliance

INTRODUCTION

Diabetes mellitus (DM) is one of the major fast-growing non-communicable diseases (NCD) threats to global public health. Trends in the incidence of diabetes indicate a disproportionate increase in developing countries due to current rapid demographic transitions from traditional to more westernized and urbanized lifestyles.[1] Diabetes is an increasingly important condition globally. It was forecasted that Between 2010 and 2030 there will be a 69.0% increase in numbers of adults with diabetes in developing countries, and a 20% increase in developed ones.[2] Diabetes is a chronic medical condition manifesting as a result of the inability of the pancreas to produce sufficient insulin or defective insulin usage by the body which is rapidly contributing to the disease and

death worldwide with the majority of the global burden of the disease felt at the developing countries which are unfortunately already suffering from communicable diseases such as HIV/AIDS, Hepatitis B and Cholera.[3,4] It is a chronic disease in which long term medical attention is needed to limit both the development of its devastating complications and to manage these complications when they occur. The development and acceleration of diabetic complications are due to patient's non-compliance to treatment that leads to the insufficiency of metabolic control.[5,6] However, diabetes mellitus patients need more discipline in their compliance with drugs daily.

Medication compliance is found highly correlated with attitudes towards medication.[7] Treatment failure is commonly believed to be due to non-compliance.[5] Hence, addressing the menace of diabetes mellitus requires rigid compliance to the regimen and also involves the patient, family, friends, the nurses, the medical practitioners and the government relentless combined efforts. The factors contributing to poor medication compliance are many and these include those that have to do with the patient (example- ignorance and lack of involvement in the treatment decision-making process), those that are related to health care providers such as; complex drug prescription, communication barriers, ineffective communication of information about counter effects and provision of care by more than one physician), and those that are related to health care systems include; limitations in terms of office visit time, limited access to care and lack of health information machinery and equipment.[8-10]

The rising prevalence of the disease negatively influences the long-term cost of therapy because the use of anti-diabetic drugs in the management of diabetes mellitus is for a lifetime of the patients from the time of diagnosis with other manifesting co-morbidities (Abdulganiyu and Tayo, 2014).[11] Since diabetes mellitus is associated with the complication that influences many organ systems, it may have a great effect on the patient's quality of life.[7] The complications ultimately lead to an increase in health care visits and costs.[12] The need to understand factors influencing non-compliance with treatment among patients with diabetes in clinical practice will go a long way in addressing the issue of non-compliance in Nigeria where economic recession and inaccessible healthcare facilities might have led to the increased occurrence of non-compliance among patients.[13] However, this study was aimed at assessing the attitude of diabetic patients and factors affecting their level of compliance to the management of diabetes mellitus among clinic attendees at Jericho Specialist Hospital, Ibadan.

METHODS

Study design

A descriptive cross-sectional study design was used with the aid of a semi-structured questionnaire to obtain information from the respondents.

Study site

The setting for the study was Jericho Specialist Hospital, Ibadan. The hospital is operative under Oyo State Hospital Management Board which was established in 1987. The hospital is strategically located at Magazine Road, in the city of Ibadan which is the largest city in the West African sub-region. The hospital was formally for residential officers during the colonial era and was later converted to Jericho General Hospital, which was then subsequently converted to Jericho Specialist Hospital. The hospital admits and treats all medical and surgical cases except paediatric cases. The hospital has 32-bed spaces, 178 members of staff, and it is headed by a hospital consultant. The hospital runs various clinics and it is opened throughout the year for consultation.

Study population

The study population for the study were adults 18 years and above attending the medical outpatient clinic of the Jericho Specialist Hospital, Ibadan and living with diabetes mellitus for more than six months since diagnosis.

Inclusion criteria

The respondents who were included in this study were diabetic patients from the age of 18 and above who attends Jericho Hospital Ibadan for healthcare.

Exclusion criteria

Clients who had been living with diabetes mellitus for less than six months since diagnosis were excluded from the study.

Sample size

The sample size for this study was calculated using Yamane (1967) sample size calculation.

Sample size n= N

1+N (e)2

Where

n= required sample size

N= the population of the diabetic patients at Jericho Specialist Hospital

e= degree of error tolerance at 5%

therefore n= 400

1+400(0.05)2

n= 400

2 = 200

Attrition of 10% = 10x 200 =20

100

Therefore total sample size will be 200 + 20 = 220

Sampling technique

A 2-stage sampling technique was used to select respondents for this study.

Stage 1

The respondents were stratified by gender. The records revealed that the ratio of males to females was 1:3. So the proportion of females and males selected was based on the aforementioned ratios.

State 2

Systematic random sampling was then used in selecting respondents who chose to participate in the study using the list of males and females in the hospital register who were at the clinic on the day of the interview as sampling frames.

Method for data collection

A semi-structured questionnaire was used for data collection. This was developed jointly with the researchers and was used to collect information on the respondent's socio-demographic characteristics, the attitude of diabetic patients, and factors affecting their level of compliance to the management of diabetes mellitus.

Validity of instrument

The instrument (questionnaire) was given to an expert in the field of diabetic management for review, verification and modification. The draft questionnaire was then back-translated into the Yoruba Language (the language spoken by most people in the study area) by someone with a Masters Degree who is versed in both English and Yoruba languages. The Yoruba version was then given to another person equally with a Masters Degree who is versed in both Yoruba and English languages to translate back to English languages.

Reliability of instrument

The test re-test copies of the instruments were pre-tested among 10% of the total sample size (220) which amounted to 22 participants in total. The data was then subjected to Cronbach Alpha statistical test. Cronbach's alpha is a measure of internal consistency, to know how relevant the instrument is to addressing the set objectives of the study. The pre-test Chronbach alpha is a test used to demonstrate the levels of the correlation coefficiency of an instrument. A Chronbach alpha greater than 0.50 is said to be reliable, and the closer the value of the reliability test is to 1, the more reliable the instrument. After the draft instrument pre-test, the necessary modification and adjustments were made before proceeding to conduct the main data collection.

Procedure for data collection

A proposal was written to the ethical committee for approval to carry out the study. Following corrections and approval by the ethical committee, a letter from the school with an attached approved proposal was then submitted to the Chief Consultant in charge of Jericho Specialist Hospital, Ibadan, before assessing the target population for data collection. The consent of the population was obtained before data collection which held in March, 2019.

Data analysis and management

All completed questionnaires were checked for completeness and consistencies of variables. The questionnaire used was manually sorted out before the information is supplied. It was then entered into the computer and then Statistical Product for Service Solution (SPSS) version 25 was used for the analysis of the data collected. The data collected were subjected to descriptive and inferential statistics. Descriptive statistics were used to analyze the attitude of diabetic patients and factors affecting their level of compliance to the management of diabetes mellitus. The attitude was scored on a 5-point scale where <3 and >3 was categorized as negative and positive attitudes respectively.

Ethical consideration

Ethical approval was obtained from the Oyo State Ethical Review Committee and following the approval, a letter was written to the Chief Consultant in charge of Jericho Specialist Hospital, Ibadan, to obtain permission to collect data. The approved letter was then taken to the medical outpatient department and each respondent was informed about the study and its objectives while assuring the respondents of the confidentiality of the information given. Consent was obtained from the respondents and they were told that they have the right to refuse participation without coercion. All data collected from the participants were kept confidential and were used for research purposes only. The participants of this study gained knowledge on how to comply with the management of diabetes mellitus. The identified challenges of compliance will be communicated to the appropriate authorities for subsequent interventions. The participants were not exposed to any form of harm or injury during the research process. The participants were informed about the right to decide if they want to be part of the study or not and the freedom to withdraw their participation at any point during the study.

RESULTS

Socio-demographic characteristics

The mean age of respondents was 49.7±10.3 years, many (72.2%) were female as against 59 (27.8%) that were male. More than half of the respondents (58.0%) were Christians while Islam accounted for 41.0%. Other religions as identified in this study represented 0.9%. The findings also show that almost all the respondents (97.6%) were Yoruba and the predominant religion was Christianity (58.0%).

Table 1: Socio-demographic characteristics.

Socio-demographic characteristics	Frequency (212)	Percentage (%)
Age group (years)		
<30	3	1.4
30-39	32	15.1
40-49	77	36.3
50-59	64	30.2
60-69	28	13.2
≥70	8	3.8
Sex		
Male	59	27.8
Female	153	72.2
Religion		
Christianity	123	58.0
Islam	87	41.0
Others	2	0.9
Tribe		
Yoruba	207	97.6
Igbo	1	0.5
Others	4	1.9
Marital status		
Single	7	3.3
Married	177	83.5
Separated	11	5.2
Widowed	16	7.5
Others	1	0.5
Level of education		
Primary	54	25.5
Secondary	64	30.2
Tertiary	79	37.3
Others	15	7.1

Respondents' background characteristics

Table 2 depicts the background characteristics of the respondents. Considering respondents occupation trading ranked the highest with 36.9%, followed by business and civil servant accounting for 22.0% and 23.1% respectively. More so, in respect of the monthly income, #20000-#50000 ranked highest with 37.3% followed by #10000-#20000 representing 20.8%.

Table 2: Respondent's background characteristics.

Background Characteristics	Frequency	Percentage (%)
Occupation		
Business	47	22.2
Civil servant	49	23.1
House wife	4	1.9
Trader	78	36.8
Teachers	11	5.2
Others	23	10.8
Respondents' monthly income		
N5,000-N10,000	21	9.9
N10,000-N20,000	44	20.8
N20,000-N50,000	79	37.3
N50,000-N100,000	26	12.3
N100,000 and above	22	10.4
Others	20	9.4

Table 3: Attitude towards management of diabetes mellitus (n=212).

Respondents' attitude	Agreed n (%)	Disagreed n (%)	Undecided n (%)
I am responsible for taking my diabetes mellitus medications.	204 (96.2)	8 (3.8)	0 (0.0)
I am not bothered about the outcome of my disease because I know I will get over it.	69 (32.5)	141 (66.5)	1 (0.5)
The impact of diabetes on my lifestyle is negligible.	0 (0.0)	212 (100.0)	0 (0.0)
Usually, I don't like people to know much about my status.	139 (65.6)	73 (34.4)	0 (0.0)
I prefer to relate with other patients who have a similar diagnosis than relating generally in the hospital.	134 (63.2)	78 (36.8)	0 (0.0)

Attitude towards management of diabetes mellitus

Some (32.1% of the respondents had a negative attitude towards the management of diabetes mellitus. The majority (96.2%) felt responsible for taking their diabetes mellitus medications accounted. Many (66.5%) disagreed with not being bothered about the outcome of their disease because they know they will get over it. All

(100.0%) the respondents also disagreed that the impact of diabetes on their lifestyle was negligible and 65.6% agreed that they don't like people to know about their status which many (63.2% agreed that they prefer to relate with other patients who have a similar diagnosis than relating generally in hospital (Table 3). Figure 1 below shows the overall attitude of respondents towards management of diabetes mellitus.

Factors influencing compliance to management of diabetes among patients with diabetes mellitus

Amidst all the factors, drugs (injection or tablets) ranked highest with 98.1% followed by frustration due to long treatment and being tempted by inappropriate foods and drinks accounting for 83.5% and 81.1% respectively.

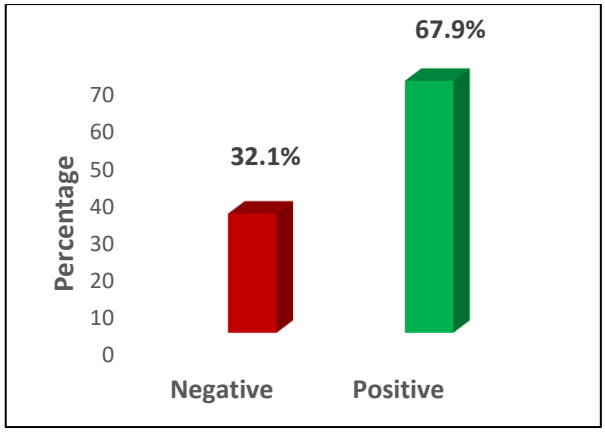

Figure 1: Overall attitude rating.

Table 4: Factors influencing compliance to management of diabetes among patients with diabetes mellitus (n=212).

Factors influencing compliance to the management of diabetes	Yes		No	
The following keeps you from complying with the management of diabetes	**Freq**	**%**	**Freq**	**%**
Drug (injection or tablets)	208	98.1	4	1.9
Inability to replace drugs due to cost/financial problem	125	59.0	87	41.0
Do you sometimes forget to take your diabetic drugs	155	73.1	57	26.9
Fear of drug side effects like weight gain	13	6.1	199	93.9
Frustration due to the long duration of treatment	177	83.5	35	16.5
No family member available to remind or assist me	14	6.6	198	93.4
Self-monitoring of glucose				
Don't have any machine for the check	79	37.3	133	62.7
Have the machine but cannot use it	10	4.7	202	95.3
Fear of pricking myself	147	69.3	65	30.7
Could not replace the strip due to cost	42	19.8	170	80.2
Difficulty in reading and interpreting the result of the check	33	15.6	179	84.4
Health workers attitude, they do not show interest in my own Records	4	1.9	208	98.1
Diet				
Diet is costly for the family to maintain	86	40.6	126	59.4
My type of diet is causing conflict in my house	69	32.5	143	67.5
Tempted by favourite foods and drinks	172	81.1	40	18.9
Inappropriate food offered by friends/relations	63	29.7	149	70.3
Difficulty estimating desired quantity	84	39.6	128	60.4
Nobody around to prepare food at regular times	16	7.5	196	92.5
Keeping Appointment				
Distance is much	87	41.0	125	59.0
Could not due to cost of transportation	45	21.2	167	78.8
The attitude of healthcare workers has been discouraging	15	7.1	197	92.9
Appointments are not commenced on time at the clinic	63	29.7	149	70.3
No family member to accompany me	10	4.7	202	95.3

Meanwhile, 59.0% of the respondents reported their inability to replace drugs due to cost/financial problems while 73.0% reported that they sometimes forget to take their diabetic drugs.

Only 6.1% of the respondents mentioned fear of drug side effects like weight gain. Other factors highlighted by the respondents include the fact that no family member was available to remind or assist them with their drugs (6.6%), they don't have a machine for the check (37.3%) even though 4.7% of the respondents reported that they have the machine but they do not know how to use it. Distance, cost of transportation and discouraging attitude of healthcare workers accounted for 41.0%, 21.2% and 7.1% respectively (Table 4).

DISCUSSION

The mean age of respondents was 49.7±10.3 years which is expected as it falls within labour force years in line with the demographics of the study area. The majority of the respondents were females, which was similar to a study by Manobharathi, Kalyani, and John to assess the frequency of therapeutic compliance and factors associated with therapeutic non-compliance; where the majority were females.[14] Moreover, the majority of respondents were married, and this agrees with the findings of Teklay, Hussien and Tesfaye in their study on the non-adherence and associated factors among diabetic patients, where it was reported that the majority of respondents were married.[15]

The study revealed that the vast majority of the respondents claimed that they are responsible for taking their diabetes mellitus medications. This could be attributed to the fact that effective management of diabetes is associated with lower morbidity, death rate and health care utilization, and hence, reducing the cost and burden to the government and the community.[16] The study reflected that majority claimed that they prefer to relate with other patients who have a similar diagnosis than relating generally; and this corroborates the findings of Kassahun et al, who reported that chronic disorder such as diabetes requires patients to consistently maintain recommended self-management behaviours, the availability of functional support (interpersonal relationship with family, friends and healthcare providers) as well as the social network is crucial to patients practising their self-management behaviours.[17]

It was noted in the study that only a few of the respondents claimed that there are no family members available to remind or assist them; and thus patients need support to bring about changes in their lifestyle habits (diet control, physical activity, blood glucose monitoring, etc.). Goetz et al reported that social support (functional and structural) is perceived to be hopeful in bringing these changes and thus in giving a chance to the patients to better control their diabetes.[18]

Concerning the factors influencing compliance to the management of diabetes among patients with diabetes mellitus, respondents identified some of these factors and these include fear of drug side effects like weight gain, the attitude of healthcare workers has been discouraging, appointments are not commenced on time at the clinic, among others. These corroborate the assertions of numerous researchers who reported that the factors contributing to poor medication compliance are many and include those that have to do with the patient (example-ignorance and lack of involvement in the treatment decision-making process); those that are related to health care providers such as complex drug prescription, communication barriers, ineffective communication of information about counter effects and provision of care by more than one physician); and those that are related to health care systems include limitations in terms of office visit time, limited access to care and lack of health information machinery and equipment.[8]

The study reflected that many sometimes forget to take their diabetic drugs. This agrees with the findings of Manobharathi et al, who reported that non-compliance to the management of diabetes is common among the older age group patients which are mainly because of 'forgetfulness'.[14] In a similar study conducted by Medi et al it was reported that challenging factors like forgetfulness are attributed to poor adherence to anti-diabetic.[19] It was noted in the study that inability to replace drugs due to cost/financial problem is a factor influencing compliance to the management of diabetes. This concurs with the findings of Fasanmade et al which argued that in Nigeria, financial constraints to compliance is a big problem as the majority of patients and relatives cannot afford their drugs and are not covered by any insurance.[20] Also, another study conducted by Abebe et al reported that when the patient feels that the cost of therapy is a financial burden, the compliance with therapy will be threatened, causing low adherence.[21]

The present study identified dietary factors influencing compliance to the management of diabetes among patients with diabetes mellitus. These include such factors as high cost of diet, the conflict caused by the diet in the family, temptation to eat favourite but unhealthy foods and drinks, inappropriate food offered by friends/relations, difficulty in estimating desired quantity, and absence of persons to prepare food at regular times. These corroborate a review by Sapkola et al, who reported that amidst the complexity of diabetes management, remaining compliant to treatment recommendations such as adjustment of food intake may be a challenge.[22] In a similar study conducted by Attyia et al on compliance of diabetic patients with the prescribed clinical regimen, they reported the various types of non-compliance and these included dietary or exercise non -compliance in which the patient failed to follow the diet and exercise recommendations, as well as appointment non -compliance where the patient fails to show up at the clinic for the scheduled check-up.[23]

CONCLUSION

The study showed that many of the respondents had a good attitude towards the management of diabetes mellitus, as almost all the respondents agreed they are responsible for taking their medications and agreed the impact of the disease on their lifestyle is not negligible at all. Also, some of the factors influencing their compliance to management include forgetting to take their drugs, fear of pricking themselves, temptation by their favourite foods and drinks. Family physicians should therefore provide proper health education to their patients and enforce their attitude, practice and compliance. In addition, a concerted effort should be put in place by all healthcare professionals and stakeholders in ensuring that optimal care for persons with Diabetes Mellitus (DM) is attainable in Nigeria.

Limitations of the study

Only the diabetic patients attending the medical outpatient clinic of the Jericho specialist hospital, Ibadan, Oyo State were used for the study and the small sample size of two-hundred and twelve was used in carrying out this research because only a single facility was used, hence the result cannot be generalized.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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