Global Journal of Arts, Humanities and Social Sciences

Vol.7, No.1, pp.15-30, January 2019

Published by European Centre for Research Training and Development UK (www.eajournals.org)

ASSESSMENT OF KNOWLEDGE OF DRUG AND DIETARY REGIMEN AMONG DIABETIC CLIENT IN ENDOCRINOLOGY CLINIC AT FEDERAL MEDICAL CENTRE IDO-EKITI, EKITI STATE NIGERIA

Catherine O. Adeleye[1], Toyin E. Adeleye[2] and Kikelomo Joseph[3]

[1]Lecturer, Department of Nursing Science, Ekiti State University, Ado Ekiti, Ekiti State.
[3]Department of Medicine, Ekiti State University Teaching Hospital, Ado Ekiti, Ekiti State
[3]Federal Teaching Hospital, Ido Ekiti, Ekiti State

ABSTRACT: *The study focused on assessment of knowledge base on dietary and drug regimen in diabetes mellitus management among patients attending Endocrinology Clinic at Federal Teaching Hospital, Ido-Ekiti in Ekiti State, Nigeria. It identified factors associated with poor adherence/compliance to treatment and relationship between demographic data and knowledge of drug and dietary regimen. Cross-sectional descriptive design was employed using a semi structured interviewer administered questionnaire to gather information from 120 clients. Simple random sampling technique (balloting type) was used to select clients. Data analysis was done using SPSS version 20 and hypotheses tested using Chi-Square, while P value was set at <0.05. The results of the study showed that majority of the respondents were above age 40. The knowledge of clients on dietary and drug regimen was on the average (50% & 45.8% respectively). Factors that affected adherence to drug treatment were high cost of antidiabetic drugs and the idea of taking drugs for life. There was a significant relationship between gender and knowledge of drug but no significant relationship between gender and knowledge of dietary regimen. Conclusion was that clients had average knowledge of drug and diet regimen and high cost of drugs affected compliance/adherence. Therefore Nigerian government should subsidize antidiabetic agents, while nurses and other medical personnel should educate clients on treatment regimen.*

KEYWORDS: Knowledge, Drug, Diet Regimen, Diabetic Mellitus

INTRODUCTION

Background to the Study

The International Diabetes Federation (IDF) (2015) estimated the global prevalence of diabetes to be 151 million in 2000 and 285 million in 2010. The IDF reported that 366 million people had diabetes in 2011, and this prevalence is expected to rise to 552 million by 2030. Diabetes mellitus occurs throughout the world, but is more common (especially type 2) in the more developed countries. Diabetes mellitus affects an estimated 29.1 million people in the United States, of whom 7 million people remain undiagnosed, and is the 7th leading cause of death (IDF, 2015). The greatest increase in prevalence is, however, occurring in low and middle-income countries including Asia and Africa, where most patients will probably be found by 2030 (IDF, 2015). The increase in incidence in developing countries follows the trend of urbanization and lifestyle changes, including increasingly sedentary lifestyles, less

physically demanding work and the global nutrition transition, marked by increased intake of foods that are high energy-dense but nutrient-poor (Beckett, Schepers and Gordon, 2015). Prevalence of diabetes is higher in Canadian men (7.2%) than the women (6.4%) (Beckett, Schepers and Gordon, 2015)

Between 1995 and 2025, the number of the adult population affected by diabetes mellitus in developing countries is projected to grow by 170%, from 84 to 228 million people (World Health Organization (WHO) 2016). The prevalence of diabetes in some African countries is among the highest in the world. The cause of this high prevalence is the result of the many social and economic changes that have occurred in the majority African nations in the last three decades.

The care of diabetes involves some changes in lifestyle, including dietary habits and regular intake of medications. (Khattab, Abolfotouh, Khan, Humaidi and AlKaldi, 2009) Successful management of diabetes relies on patients' self-care. (Lai, Chie and Lew-Ting. 2007) Compliance is a key element in health care and affects all of its areas (Chatterjee 2006). The degree of patients' compliance/adherence to diabetes self-care is the extent to which patients carry out the set of daily activities recommended to them by a health care professional as a means of managing their diabetes. These include dietary style, exercise, taking medication, monitoring of blood glucose, foot care, as well as the timing and integration of all of these activities (Khattab, et al, 2009).

There is growing evidence that preventing and/or delaying the onset of diabetes mellitus is a viable option, by modifying our lifestyle such as increased physical activity, loss of weight, reducing alcohol intake, stop smoking and eating balanced diet can decrease the incidence of diabetes complications significantly (Mohammed, et al, 2010). Thus, increasing public awareness regarding modifiable diabetes risk factors and healthy lifestyle and developing strategies to identify and manage at risk populations, are among the various possible mechanisms being used to stem the present epidemic of diabetes in many parts of the world. It is widely accepted that many problems, previously thought of as primarily medical intervention are in fact more approximately disentangled by changing individual and social attitudes and behaviors (WHO, 2016). The ultimate aim of any prescribed medical therapy is to achieve certain desired outcomes in the patients concerned. These desired outcomes are part and parcel of the objectives in the management of the diseases or conditions. However, despite all the best intention and efforts on the part of the healthcare professionals, those outcomes might not be achievable if the patients are non-compliant to medication and diet due to poor knowledge. This shortfall may also have serious and detrimental effects from the perspective of disease management.

Statement of the Problem

According to WHO (2015), studies have shown that there has been a progressive increase in the prevalence of diabetes in Nigeria and the burden is expected to increase even further. There are 1.71 million people living with diabetes in Nigeria and this figure is projected to reach 4.84 million by the year 2030. Current prevalence rate estimates of diabetes in Nigeria have been tagged at 25% compared to its 2.2% rate in 2003. Diabetes mellitus and its complications impose significant economic consequences on individuals, families, health systems and countries (WHO, 2015).

The prevalence of diabetes mellitus tends to increase in the coming years as a result of an ageing global population, urbanization, rising prevalence of obesity and sedentary lifestyles. It is estimated that developing countries will bear the brunt of diabetes mellitus to the extent of 77% of the global burden in the 21st century as a result of population growth, ageing, unhealthy diets, obesity and sedentary lifestyles (Donovan, Peter, Mchityre and David, 2011) In a study carried out by Maina, Ndegwa and Muchemi (2011) among community members in four provinces in Kenya, there were 29% with a good knowledge of signs and symptoms of diabetes while 71% of respondents had poor knowledge of what diabetes is. Only 26% could correctly identify the probable causes of diabetes; 26% of the respondents could identify complications of diabetes, and 73% had very little or no knowledge of complications of diabetes (Maina, et al, 2011). Sometimes, slight symptoms that these patients could take care of at home bring them back to the hospital for medical checks. A good number of them, however, report to the hospital with severe complications, like gangrene that may lead to amputation and possible premature death, without any knowledge of the relationship between diabetes and gangrene (Jacauerlin and Dunbar - Jacob, 2007).

The questions that readily come to mind are; what do these diabetic patients know about the management and control of diabetes? What do they know about the diabetes process? Do they know about self-care? (That is their responsibilities in the management/control)? Do they know what is best for them in terms of food? Answers to these questions prompted this study. Hence this research tried to assess the knowledge of diabetic patients on drug and dietary regimen in the management of Diabetes Mellitus.

Objectives of the Study

To assess the knowledge of patients on drug and dietary regimen in the management of diabetes mellitus

To identify factors associated with poor adherence to treatment regimen

To identified the relationship between gender and knowledge of drug and dietary regimen

Significance of the Study

The result of the research will be useful in formulating policy on the compliance of client to drug and dietary regimen at the diabetic clinic. It will reduce the alarming incidence of complications due to non-compliance to treatment regimen. The outcome of the study shall also contribute to existing knowledge in planning nursing care and health education program for patients with diabetes mellitus.

THEORETICAL FRAMEWORK

The Health Belief Model

The health belief model (HBM) was developed by Hochbaum and colleagues in the 1950s and influenced by health education and communication of schools of thought. There are three major premises that comprise the HBM: individual perceptions, modifying factors, and

likelihood of action (Bastable, 2006; Hochbaum, 1958; Phuanukoonnon, Brough, & Bryan, 2006; Glanz, Marcus and Rimer, 2007). Individual perceptions refer to the patient's perception of susceptibility and severity of the disease. Modifying factors include knowledge base, as well as demographics and social and psychological variables. Likelihood of action is based on the perceived barriers and benefits of the situation. These premises influence the likelihood of the acceptance and application of health behaviors by the patient (Bastable, 2006; Hochbaum, 1958; Phuanukoonnon, Brough, & Bryan, 2006; Glanz, Marcus and Rimer, 2007).

A patient with Diabetes Mellitus may perceive the illness as minor when it has not affected their life styles and daily activities. Their previous and present knowledge of Diabetes Mellitus; its cause, course and outcome will also go a long way in determining the health behavior. Furthermore, barriers to effective management include the readiness of the patient to acquire knowledge and accept teachings on the condition. These are what Nurses must put into consideration when caring for people with Diabetes Mellitus.

Hypotheses

Ho 1: There is no relationship between gender and knowledge of drug and dietary regimen

Ho 2: There is no relationship between age and knowledge of drug and diet treatment regimen.

METHOD

Research Design

This study utilized a descriptive, cross-sectional research design to obtain information diabetic mellitus attending endocrinology clinic at Federal Teaching Hospital, Ido-Ekiti, Ekiti State

Study Setting

The study was conducted at Federal Teaching Hospital, Ido-Ekiti in Ido-Osi Local Government area which is located in Ekiti State Nigeria, on coordinates $5^{0}10^{1}$ to $5^{0}11^{1}$N (Longitude) $6^{0}5^{1}$East (latitude). The Local Government Area occupies 71km² (27.4sqm) land space. According to National Population Commission, 2006, the 11 wards have a combined population of 106,586. It has its headquarters and secretariat at Ido-Ekiti.The inhabitants of this area are of multi-ethnic background with the Yoruba as the dominant group while a sizeable proportion of the population consists of Igbos and Hausas. The major occupation are farming and trading. Other residents are civil servants and artisans.

Target Population

The target population was all clients with Diabetic Mellitus (DM) attending endocrinology clinic in Federal Teaching Hospital, Ido-Ekiti in Ido-osi Local Government Area, Ekiti State, Nigeria

Sample Size Calculation

Sample size was calculated based on the numbers of DM patients that previously attended the clinic in the previous six months, an average was found and the total was 150. It was estimated using the Computer Program for Epidemiologists (PEPI), version 3.01, employing the sample size formula for estimation of proportions as described by Armitage and Berry.

Sample size (n) $= P(1-P)Z^2/d^2$

Where n = minimum sample size

P= crude estimate of true proportion in the population. (150)

Z= standard normal variant corresponding to level of confidence at 95% confidence level and for a 2-tailed test Z =1.96

d= maximal allowable difference from true proportion; this was accepted at 5% 0.05.

The sample size (n) of 109 was obtained.

However, to take care of those that may be lost due to non- submission of questionnaire and to permit robust analysis, the sample size was increased to 120.

Sampling Method

A simple random sampling technique of balloting type was used to select clients' attending the endocrinology clinic at Federal Teaching Hospital Ido-Ekiti with a diagnosis of Diabetic mellitus. The data collection took about ten (10) Thursday's clinic days (10 weeks) to get 120 respondents. All diabetic patients that have been previously diagnosed, and are attending clinic regularly were selected, and their names was written down so that they will not be reselected on another clinic day. Those that declined consent were excluded from participation.

Instrument for Data collection

A semi structured questionnaire was utilized for the study. It consisted of closed and open ended questions, organized into sections A to D.

Section A contain the demographic characteristics with 7 items

Section B: feature items on knowledge on dietary regimen. It contained six questions with 2 point options of "Yes and No" for five of the questions and 3 options for the sixth question.

Section C: contain questions on knowledge on drug regimen. Five questions were asked in this sections with 4 having 2 options of "Yes and No" and one having 3 point options.

Section D: contain factors affecting adherence to treatment. This section had eight questions with 5 points option each of: Strongly agree, Agree, Disagree, Strongly disagree and Undecided.

Validity of the instrument

Face Validity and Content validity was employed. The instrument was presented to a specialist in diabetic researcher studies for approval regarding the suitability and appropriateness of the items. He assessed the content and any unclear or ambiguous questions were modified before it was administered on the respondents. A statistician also reviewed the instrument and correction implemented before administration.

Reliability of the instrument

The reliability of the instrument was achieved through pilot study; the Cronbach's Alpha value was 8.13 which proved that the instrument reliable.

Procedure for Data Collection

The research instrument was an interviewer administered questionnaire targeted to clients with Diabetic mellitus attending endocrinology clinic at Federal Medical Centre Ido-Ekiti. The researcher explained about the study and emphasized the fact that does not involve any invasive procedure. Respondents were also informed that they were free to refuse participation without any consequence. Verbal consent obtained before the administration of the questionnaire. Filled questionnaires were collected on the spot.

Ethical Consideration:

Permission for study was obtained from the Research and Ethical Committee of the Hospital. Participants were required to give a verbal consent to participate in the study as there was no invasive procedure involved. The reluctance of the respondents to discuss potentially sensitive matters was eliminated by assuring the participants of the confidentiality of the information provided which is purely for research purpose.

Data Analysis:

The number of questionnaires that were properly filled (120) was analyzed using the PC, SPSS software version 20. Discrete variables were presented using frequency tables, while, test of association was conducted using chi-square. P value was set at <0.05 level of significance.

RESULT

Table 1: Socio-Demographic Variables

VARIABLES	FREQUENCY	PERCENTAGE (%)
Age		
21 to 30	**14**	**11.7**
31 to 40	**36**	**30.0**
41 to 50	**44**	**36.7**
51 to 60 and above	**26**	**21.6**
Gender		
Male	**51**	**42.5**
Female	**69**	**57.5**
Marital Status		
Single	4	3.3
Married	88	73.3
Divorced	5	4.2
Widow	23	19.2
Ethnicity		
Yoruba	115	95.8
Igbo	3	2.5
Hausa	2	1.7
Religion		
Christianity	98	81.7
Islam	17	14.2
Traditional	5	4.2
Educational status		
No formal Education	6	5.0
Primary	25	20.8
Secondary	37	30.8
Tertiary	52	43.3
Employment status		
Civil servant	68	56.7
Trading	38	31.7
Farming	8	6.7
Unemployed	6	5.0

In table 1 above, 11.7% (14) of the respondents were between age 21 to 30years, 30% were of age 31 to 40 years, 44 were aged 41 to 50 years while 26 of them were between 51 to 60 years and above. 42.5% of the respondents were male while 57.5% (69) were female. 73.3% of them were married, while 3.3% were single, 4.2% were divorced and 23 of them were widow or widower. 95.8% were of Yoruba ethnic group, while 2.5% were of Igbo origin and 1.7% was Hausa. 81.7% of the respondents were Christians, 14.2% were Muslim and only 3 of them were traditionalist. In determining their educational status, 6 of the respondents had no formal education, 25 had only primary education, and 37 had secondary education while 52 had tertiary education. Determining

their employment status 56.7% of them were Civil servant, 31.7% were Traders, 6.7% were farmers while 6 (5%) of them were unemployed.

Table 2: Knowledge on Dietary Regimen

LEVEL OF KNOWLEDGE	FREQUENCY	PERCENTAGE (%)
Good knowledge	60	50.0
Average knowledge	36	30.0
Poor perception	24	20.0
Total	120	100

In determining the knowledge of respondents on Dietary regimen in Diabetes mellitus, 5 questions were asked and graded. Those that answered correctly were given '2' marks for each questions and '1' mark for each wrong response. The highest possible mark was ''10'' and the lowest possible mark was ''5''. Those that scored 5 and 6 marks were said to have poor knowledge, while those that scored 7 and 8 were grouped as having average knowledge and scorers of 9 to 10 were said to have good knowledge of Diabetic dietary regimen.

In the table above, 36 (30.0%) of the respondents had average knowledge of Dietary regimen, 60 (50.0%) had good knowledge while 24(20.0%) of the respondents had poor knowledge of dietary regimen of people with Diabetic mellitus.

Table 3: Knowledge on Drug Regimen

LEVEL OF KNOWLEDGE	FREQUENCY	PERCENTAGE (%)
Good knowledge	45	37.5
Average knowledge	55	45.8
Poor knowledge	20	16.7
Total	120	100

In determining the knowledge of respondents on Drug regimen in Diabetes mellitus, 5 questions were asked and graded. Those that answered correctly were given '2' marks for each questions and '1' mark for each wrong response. The highest possible mark was ''10'' and the lowest possible mark was ''5''. Those that scored 5 and 6 marks were said to have poor knowledge, while those that scored 7 and 8 were grouped as having average knowledge and scorers of 9 to 10 were said to have good knowledge of Diabetic dietary regimen.

In table 3 above, 55 (45.8%) of the respondents had average knowledge of Drug regimen, 45 (37.5%) had good knowledge while 20(16.7%) of the respondents had poor knowledge of drug regimen for people with Diabetic mellitus.

Table 4: Factors Affecting Adherence to Treatment

	Level of agreement				
	Strongly Agree (%)	**Agree (%)**	**Disagree (%)**	**Strongly Disagree (%)**	**Undecided (%)**
Adherence factors					
Diabetic diet are not easy to comply with	110 (91.7)	7 (5.8)	2 (1.7)	1 (0.8)	0 (0.0)
Recommended diets are different from family diet	100 (83.3)	12 (10.0)	5 (4.2)	2 (1.7)	1 (0.8)
There is limited variety of food that can be taken	98 (81.7)	8 (6.7)	7 (5.8)	5 (4.2)	2 (1.7)
Diabetic drugs are expensive	113 (94.2)	4 (3.3)	3 (2.5)	0 (0)	0 (0)
Life time intake of drugs affects compliance	113 (94.2)	5 (4.2)	2(1.7)	0 (0)	0 (0)
Time taken to prepare diabetic diet is much	90 (75.0)	8 (6.7)	11 (9.2)	7 (5.8)	4 (3.3)
Diabetic food and Drugs are not readily available.	97(80.8)	13(10.8)	5 (4.2)	3 (2.5)	2 (1.7)
There is no complication from non adherence to treatment	30 (25.0)	9(7.5)	15 (12.5)	66 (55.0)	0 (0)

From table 4 above, majority of respondents agree with the named factor affecting adherence to treatment by clients with Diabetes mellitus, the highest was seen in the factors "Diabetic drugs are expensive and Life time intake of drugs affects compliance" where 113 (94.2%) each. None of the respondents was undecided.

The lowest was seen in the question "There is no complication from non adherence to treatment;" here 25% of respondents strongly agreed, while only 7.5% agreed, 12.5% disagreed and 55% strongly disagreed while none was undecided.

Table 5: Gender versus Knowledge of Drug Regimen

GENDER	**Knowledge On Drug Regimen**			**Total**	**Df**	**X^2**	**P Value**
	Good knowledge	Average knowledge	Poor knowledge				
Male	20	23	8	51	1	0.02	5.42
Female	25	32	12	69			
Total	45	55	20	120			

In table 5 above, there is significant relationship between gender of respondents and Knowledge of drug regimen. As chi square is less than 0.05. Using pearson's chi-square. It can be concluded that female are more knowledgeable

Table 6: Gender Versus Knowledge of Dietary Regimen

	KNOWLEDGE ON DIETARY REGIMEN			**Total**	**Df**	**X^2**	**P value**
GENDER	Good knowledge	average knowledge	Poor knowledge				
Male	26	20	5	51	8	0.54	3.34
Female	34	16	19	69			
Total	60	36	24	120			

In table 6 above, there is no significant relationship between gender of respondents and Knowledge of dietary regimen, as chi square is greater than 0.05.

Table 7: Assessment of the Association between Age and Knowledge on Drug Regimen

Age	**Knowledge on drug regimen**				
	Good knowledge	**Average knowledge**	**Poor knowledge**	**Total**	
21-30	5	5	4	14	
31-40	17	15	4	36	χ^2=13.92
41-50	27	8	9	44	p=0.002
51-60 +	11	8	7	26	
Total	60	36	24	120	

In table 7 above shows that there is significant relationship between age of respondents and Knowledge of drug regimen, as chi square is lesser than 0.05, Using Pearson's chi square. It can be concluded that middle age group are more knowledgeable

Table 8: Assessment of the Association between Age and Knowledge on Dietary Regimen

Age	Knowledge on dietary regimen				
	Good knowledge	**Average knowledge**	**Poor knowledge**	**Total**	
21-30	4	6	4	14	
31-40	14	19	3	36	χ^2=6.46
41-50	18	19	7	44	p=0.04
51-60 +	9	11	6	26	
Total	45	55	20	120	

From table 8, there is significant relationship between age of respondents and Knowledge of dietary regimen, as chi square is lesser than 0.05, using Pearson's chi square. It can be concluded that middle age group are more knowledgeable.

Table 9: Suggested Measures to Improve the Knowledge of Diabetic Patients on Diet and Drug Regimen

SUGGESIONS	FREQUENCY	PERCENTAGE
Media organizations should take responsibility for educating people on drug and dietary regimen in Diabetes mellitus	30	25
Health practitioner should always allocate time to educate individuals with Diabetic Mellitus.	23	19.2
Pharmacists and Nutritionists should be involved in community enlightment campaign on Diabetes mellitus	21	17.5

Diabetic food and drugs should be made available , affordable and accessible for the people	24	20
Families should be ready at all times to support members with diabetic mellitus	10	8.3
Cost of hospital services should be reduced especially for Diabetic patients.	12	10
TOTAL	120	100

From table 9 above, respondents suggested ways to improve the knowledge of diabetic patients on diet and drug regimen. 25% suggested that Media organizations should take responsibility for educating people on drug and dietary regimen in Diabetes mellitus, while 19.2% suggested that Health practitioner should always allocate time to educate individuals with Diabetic Mellitus. Pharmacists and Nutritionists should be involved in community enlightment campaign on Diabetes mellitus, Diabetic food and drugs should be made available , affordable and accessible for the people, Families should be ready at all times to support members with diabetic mellitus, Cost of hospital services should be reduced especially for Diabetic patients were suggested by 17.5%, 20%, 8.3%, and 10% respectively.

Discussion of Findings

The demographic data shows that most of the respondents (36.7%) were between age 41 and 50years, and According to Ellekjaer, Holmen, Indredavik, and Terent, (2009), advanced age is one of the most significant risk factors for most chronic non-communicable diseases. The respondents were more of females (58%), married (73.3%) and Christians (81.7%). 43.3% had tertiary education, while 56.7% were Civil servants.

In determining the knowledge of respondents on Dietary regimen in Diabetes mellitus management, 50% had good knowledge, while 20% had poor knowledge of dietary regimen, others were on the average. The knowledge of respondents on Drug regimen in Diabetes, only few of the respondents had poor knowledge, a little below average (45.8%) had average knowledge, while, some had good knowledge of drug regimen for people with Diabetic mellitus. According to Dimatteo 2008, “for the successful attempts to improve patient compliance depend upon a set of key factors. These include realistic assessment of patient’s knowledge and understanding of the regimen, clear and effective communication between health professionals and their patients and the nurturance of trust in the therapeutic relationship”.

Another finding from this study is that majority of respondents agree with the certain factors affect adherence/compliance to treatment by clients with Diabetes mellitus, especially that “Diabetic drugs are expensive and Life time intake of drugs affects compliance”. According to Hajjar and Kotchen (2003; Jin, Sklar, Oh and Li, 2008) therapeutic adherence has a major effect on treatment outcomes and direct clinical consequences. Non- adherence is directly associated with poor treatment outcomes in patients with D.M. Poor adherence with dietary

and drug therapy is the most important reason for poorly controlled blood sugar level. According to them factors affecting adherence include: Financial cost of treatment, Preparation complexity of Duration of the preparation of the food and drug, degree of behavioral change required, taste of the diet, quantity of food to be taken, lack of accessibility of recommended diet etc. Many patients, who are well educated and know the implication of non-compliance to treatment are being incapacitated by expensive drugs (oral agents and insulin, as well as expensive therapeutic diet that D.M. involved) (Hajjar and Kotchen, 2003; Jin, et al, 2008). Smith (2012) stated that failure to adhere to treatment instruction has been estimated to be reason for 25% of all Australians hospitals administration leading to avoidable expenses

The study found a significant relationship between gender of respondents and their knowledge of drug regimen. However there was no significant relationship between gender of respondents and their knowledge of dietary regimen. It was concluded that Female are more knowledgeable on drug regimen than Male. From this study, there is significant relationship between age of respondents and knowledge of drug regimen. Also, there is significant relationship between age of respondents and Knowledge of dietary regimen. It was concluded that middle age group are more knowledgeable on dietary regimen than other age groups.

Respondents suggested measures to improve the knowledge of diabetic patients on diet and drug regimen which include; Media organizations should take responsibility for educating people on drug and dietary regimen in Diabetes mellitus, Health practitioner should always allocate time to educate individuals with Diabetic Mellitus., Pharmacists and Nutritionists should be involved in community enlightment campaign on Diabetes mellitus, Diabetic food and drugs should be made available , affordable and accessible for the people, Families should be ready at all times to support members with diabetic mellitus, Cost of hospital services should be reduced especially for Diabetic patients.

According to Dimatteo (2008), for the successful attempts to improve patient compliance depend upon a set of key factors. These include realistic assessment of patient's knowledge and understanding of the regimen, clear and effective communication between health professionals and their patients and the nurturance of trust in the therapeutic relationship.

Patients must be given the opportunity to tell the story of their unique illness experiences. Knowing the patient as a person allows the health professional to understand element that are crucial to the patients compliance, beliefs, attitudes, subjective norms, cultural context, social supports and emotional health challenges, particularly depression, physician - patient partnership are essential when choosing among various therapeutic options to maximize compliance. Mutual collaboration fosters greater patient satisfaction, reduces the risks of non adherence, and improves patients' health care outcomes (Smith, 2012).

Recommendations

- Based on the findings of this study, the following recommendations are made in order to improve the treatment of Diabetic clients.
- Efforts should be increased in educating diabetic client and the society as a whole on the importance of compliance to dietary and drug regimen.

- Health workers especially the physicians, nurse and nutritionist, social workers should educate diabetic patient on the importance implication and complication of non - compliance to both drug and dietary regimen.
- The family of diabetic clients should be deeply involved in the treatment so as to foster support.
- A basis should be created for the development of the knowledge of the community about Diabetes mellitus such as timely seminar, health talks at different working places and social gatherings.
- A wider research study on this topic should be carried out covering a wider range of population so that the findings of this study can be generalized.

REFERENCES

Beckett, R.D., Schepers, S.M., & Gordon, S.K., (2015). Risk of Diabetes Mellitus:.*doi: 10117/2050312115605518.e.* 30th September, 2015.

International Diabetes Federation (2015). Prevention of Diabetes Mellitus: Retrieved from *http://www.idf.org/prevention* on 13/3/2015

Chatterjee J. S., (2006). From compliance to concordance in diabetes: J Med Ethics. ;32:507–10. [PMC free article] [PubMed].

Diamateo, M. R., (2008). Factors influencing compliance to dietary regimen: http://www/c.d.gov/diabetes/pubs general. hhm 2008.

Donovan, Peter, J., Mchityre, & David, H., (2011). Risk Factors for Gestational Diabetes: Retrieved on 1/10/2016; Danaei, Finucane, Lu, Singh & Cowan, 2011.

Ellekjær, H; Holmen, J, Indredavik, B, Terent, A, (2009). "Epidemiology Of Stroke In Innherred, Norway, 1994 To 1996 : Incidence And 30-Day Case-Fatality Rate". *Stroke* **28**(11):21802184. Retrieved Jan, 22, 2009, from, Http://Stroke.Ahajournals.Org/Cgi/Content/ Abstract/Strokeaha%3b28/11/2180

Glanz, K., Lewis, EM., and Rimer, B.K. (Eds.), (2007) Health Behaviour and Health Education: *Theory, Research and Practice.* San Francisco: Jossey- Bass publishers 1997; retrieved August, 5, 2007

Jacauerlin Dunbar - Jacob, (2007). Supplement state of the science Diabetes self management" Models for changing Patient Behavoiur American Journal of Nursing Clinic 1007 topic: Diabetes and endocrine 107(6) pp 20 – 25

Jin, J., Sklar, G. E., Oh, V. M. S. and Li, S. C., (2008). Factors affecting therapeutic compliance: A review from the patient's perspective; Ther Clin Risk Manag. 2008 feb, 4 (1) 269-286; PMID:18728716

Khattab M; S; Abolfotouh M; A; Khan M; Y; Humaidi M; A; AlKaldi Y; M; (2009). Compliance and control of diabetes in a family practice setting, Saudi Arabia. East Mediterr Health J. ;5:755–65. [PubMed]

Lai W; A; Chie W; C; Lew-Ting C; Y; (2007). How diabetic patients' ideas of illness course affect non-adherent behaviour: A qualitative study. Br J Gen Pract. ;57:296–302. [PMC free article] [PubMed].

Maina, WK., Ndegwa, ZM, Njenga, EW. &Muchemi, EW (2011). .Knowledge, Attitude and Practices Related to Diabetes among Community Members in Kenya: *African Journal Diabetes Med*. 2011; 19: 15-18

Mohammed, S., Sulaiman, S., Ryed, B., Yahya, A., Mushtag, A., Shyman, S., Mustapha, A., & Samur, A., (2010). Knowledge and Perception of Diabetes Mellitus in Semi Urban Omare Population: *doi: 10117/2050312115605518.e.* 20th Dec, 2010.

Smith, T., (2012). Effect of Different fibre on glucose and lipid levels in Diabetic Subjects: Acta Med. Scand. Suppl 671:87-90

World Health Organization (2015). About Diabetes Mellitus: Retrieved on April 4, 2015 from *http://www.cdc.gov/diabetes/index.htm*

World health Organization (2016) A High Incidence of Diabetes Mellitus: Retrieved 15 Oct, 2016 from care.diabetesjournals.org/content/26/1