

An Empirical Study on Assessment of Knowledge on Diabetes Mellitus, Medication Usage and Complications for Type 2 Diabetic Patients At Kafue General Hospital, Zambia

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Abstract: The research articles is to measure the knowledge on Diabetes, medication usage and its complications for type 2 diabetic patients at the Kafue General Hospital. 50 patients with Diabetes mellitus type 2 were taken in this research. The paper was used by Random sampling method. A cross-sectional and descriptive study was taken on the diabetic type 2 patients. 50 questionnaires were administered to the diabetic type 2 patients to assess their knowledge on Diabetes type 2, its medication usage and complications. The research paper analyzed data using SPSS 16.0. The level of knowledge of the patients were asked through the questions about on symptoms of hypoglycemia, type of medication taken and to take their medicine in concerns to food as well as complications of type 2 Diabetes mellitus. Knowledge about hypoglycemia was considered to be adequate if the patient could correctly identify eating sugary foods as an action to take when the patient's blood sugar level had gone low. The information about diabetes was more patients with requirement, which are covers history of diabetes in families, who are length of diagnosis and who are with type 2 diabetic problems. The present research has shown that type 2 Diabetic patient's diabetic patients in the area under study had a poor level of knowledge about complications, management of hypoglycemia, consumption of alcohol in relation to medication and the regular checkup of blood sugar.

Keywords: blood sugar, Diabetes, medication, patients.

I. INTRODUCTION

Generally, diabetes mellitus refers to the condition of metabolic that the human body forms insufficient insulin to the range of human blood glucose or the insulin forms is not able to use effectively in the body. It can also be defined as a severe, chronic disease, i.e., to ensure either when the pancreas produces insufficient insulin (whereas the human body are made hormone that regulates blood glucose), or when the human body does not successfully use the insulin it produces. Raised blood glucose has a general effect of human body's uncontrolled diabetes and may over time, to affect the serious damaging of the human heart, kidneys, nerves, eyes and blood vessels (International Diabetes Federation (IDF), 2013).

The diabetes mellitus (DM) of Type 2 is a chronic metabolic disorder where the incidence is gradually improving (Rupert R A. Bourne *et al.*, 2013). The diabetes mellitus of type 2 (previously stated that as NIDDM) is common above the age of 40. In diabetes of type 2, to preserve the pancreas of a certain capability to form insulin however it is not adequate to the human body necessary and otherwise, the human body are unaffected to the insulin and the patients are concerned oral hypoglycemic agents and insulin (International Diabetes Federation (IDF), 2009).

II. BACKGROUND OF STUDY

Zambia is one of the 32 countries of the international diabetic federation African region (International Diabetic Federation (IDF), 2013). The increasing prevalence of type 2 diabetes mellitus in Zambia is a problem. It was estimated that among the 45,767 Zambians, 34.5% were living with type 2 Diabetes mellitus (Sarah Lou Bailey *et al.*, 2016). There were 222,000 cases of type 2 Diabetes mellitus in Zambia in 2017 (International Diabetes Federation (IDF), 2017). As a result of this tendency, it is rapid becoming an epidemic in some parts of the country with the different numbers of people who are affected to expect the double in the following decade due to increase in ageing population, thereby newly added of existing burden to providers of healthcare, specifically in unwell developed countries (International Diabetes Federation (IDF), 2013). The huge number of cases being stated at the Kafue General Hospital, a total of 14400 (0.3%) had type 2 Diabetes mellitus in 2019. At the Kafue General Hospital, through the using of glucometer reading the diabetes mellitus is diagnosed.

III. LITERATURE REVIEW

This paper explored the knowledge on Diabetes, medication usage and its complications in type 2 diabetic patients at the Kafue General Hospital, Zambia. American Diabetes Association - ADA, approached in which certain causes of Diabetes like Age and sex, Genetic susceptibility, Gestational diabetes, Obesity (Vittorio Baseviet *et al.*, 2011). The statement of Effective tactics is offered to prevent type 2 diabetes and to avoid the difficulties and early death that where the results from all kinds of diabetes.

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This may include rules and practice crosswise entire populations and within definite settings (workplace, home, school) that contribute to good health for everyone, irrespective of whether they have diabetes, such as exercise frequently, controlling blood pressure, avoid smoking, eating healthily and lipids (International Diabetes Federation (IDF),2013).

Management of diabetes using drugs (World Health Organization (WHO), 2014). The Diabetes patients are used to manage by help of medicines that can either be: Insulin injection and Oral blood sugar lowering tablets.

It can be lead all types of diabetes are complicating in several parts of the human body and it can increase the complete risk of dying earlier. Possible issues of complicating that may containing lever damage, vision loss, leg amputation, kidney failure, strokes and heart attack, etc. In pregnancy type of the human body is unwell to controlling diabetes the results that to risk of fetal death and other complications also (World Health Organization (WHO), 2016).

The paper expresses that improving dietary habits, managing weight, keeping active and using Medication is compulsory to help control risk factors like diabetes, high cholesterol, triglyceride

Levels and high blood pressure reduces the overall chance of developing CVDs (Reis, *et al.* 2011).

In the cases of insulin, it has injected on the knowledge sites, different way of injecting insulin, different way of insulin mixing and the insulin were stored with some consideration (Hamer, *et al.*, 2013).

The diminishing of metformin, results that the formation of glucose and improving the level of usage of glucose. In the case of converts insulin glucose to glycogen for storage. Those thesedications of diabetes support to retainthe low level of blood glucose. It is essential for all kinds of patients to understand the way of medications. Moreover, the human body werewasconsuming alcohol results to decrease the level of blood glucose and insists the danger signs of hypoglycemia. Therefore, it is more essential to omit binge drinking and to take proper food while taking to consuming alcohol (Michler Bishop F and Jose Luis Rodriquez Orjuela, 2018).

IV.STATEMENT OF THE PROBLEM

- Diabetes is a significant public health problem in Zambia. Diabetes has been termed an epidemic and its prevalence has skyrocketed (Sarah Lou Bailey *et al.*, 2016).
- Diabetes and its difficulties are substantial reasons of morbidity and mortality, and contribute radically to health care costs (International Diabetes Federation (IDF), 2013).
- Diabetes mellitus is the important cause of kidney failure, foot amputation and blindness (International Diabetes Federation (IDF), 2013).
- The type 2 diabetes mellitus epidemic has certainly taken its toll on the Kafue population.
- It is typical for diabetes mellitus to be asymptomatic for extended periods of time, during which microvascular complications can develop (International Diabetes Federation (IDF), 2009) and to limit the chances of

grave complications, diabetes mellitus must be treated in a timely manner.

- Therefore, this study was designed to assess the knowledge of patients on type 2 Diabetes mellitus, it's medication usage and complications at the Kafue General Hospital.

V.OBJECTIVES OF THE STUDY

5.1 General Objectives

- To understand the information about diabetic patients in relationstotheir conditions, use of medicineandproblems.

5.2 Specific Objectives

- To judge the information about diabetes in overall with reference to diabetes as a medicine usage, disorder and complications of diabetes.
- To examine the facts in relationsto the patients of socio-demographic characteristics.
- To assess awareness of Type 2 Diabetic patients in terms of complications and medication usage at the Kafue General Hospital.

VI.RESTATING THE RESEARCH QUESTIONS

- a) What is Diabetes Mellitus?
- b) Where can insulin be injected?
- c) How often do you check your blood sugar levels?
- d) When should you take your Diabetes medicine in related of foods?

VII.RESEARCH METHODOLOGY

7.1 Scope of the Study.

The study was carried out at Kafue level 2 General Hospital in Kafue District.

7.2Research design

A cross-sectional and descriptive survey research methods were used. Data collection was done using structured questionnaires during the period of June 2019 to August 2019.

7.3 Target Population

The study target was50 type 2 Diabetic mellitus patients.

7.4 Sample Method

The research paper covers with a random sampling method with used to select a sample size of 50 type 2 Diabetic patients.

7.5 Sample Size

Where the research is contains that the sample size was 50 type 2 Diabetic patients of both gender above the age of 18 years diagnosed with Diabetes type 2.

7.6 Data collection tools

- Questionnaires

7.7 Data Analysis

The statistical package for social sciences (SPSS) software package was used to analyse and enter the data.



VIII.RESULTS AND DATA ANALYSIS

8.1 Gender of the respondents

The study indicates that out of the sample size of 50, 26 (52 percentages) were female and 24 (48percentages) were male.

8.2 Age of the respondents

The age of the respondents who participated in the study. Those with the age of 18-29years were 6 (12 percentages) while those with the age of 30-39years were 22(44 percentages) and 40 and above years were 22(44 percentages).

8.3 Patient's Marital Status

11(22 percentages) of the type 2 Diabetes patients were single, 27(54 percentages) of them were married while 12(24 percentages) of the respondents fell under the category of others which meant that they were either on separated or divorced.

8.4 Patient's Educational Level

The study indicates that 14 percentage of the patients had primary qualification, 26 percentage of the patients had secondary qualification while 60 percentages of the patients had Tertiary qualification.

8.5 Patient's Employment Level

27(54 percentages) of the type 2 Diabetic patients said yes, they were working, 12(24 percentages) of the patients living with type 2 Diabetes mellitus said no (they were not working) and 11(22 percentages) were either doing business, farming or retired.

8.6 Patient's Income Level

The number of the respondents who earned K3000-K6000 were 20(40 percentages), those who earned K6000 and above were 5(10 percentages) and those who fell under the category of others were 25(50 percentages).

8.7 Knowledge on definition of Diabetes mellitus

The respondents of 19 (38percentages) said that Diabetes mellitus are theconsequences of consuming too much sugar, 24 respondents which represented 48percentagesaid that Diabetes mellitus is as a result of having more quantity of sugar in the human blood since of absence of insulin and 7 (14 percentages) did not know what was meant by Diabetes mellitus.

8.8 Patient's knowledge on length of diagnosis

15(30 percentages) of the respondents were diagnosed with type 2 Diabetes mellitus at the age of 18-29years, 30(60 percentages) of them were diagnosed at the age of 30-39years and 5(10 percentages) at the age of 40 years and above.

8.9 Knowledge on Symptoms of Diabetes

28 percentages of the type 2 diabetes had moderately adequate knowledge, 20 percentages had insufficientinformation and 26 percentageshadsufficientinformationabout the symptoms of Diabetes.

8.10 Knowledge about treatment or control of Diabetes mellitus

The respondents of 14 percentages of patients (7) had moderately necessary knowledge on the treatment of Diabetes mellitus and 72percentage (36) had adequate knowledge in the control of Diabetes mellitus. 14 percentages (7) did not know whether Diabetes can be treated or controlled.

8.11 Knowledge at Blood sugar level check up.

30 percentages of the patients had adequate knowledge on when to check their blood sugar levels, 36 percentage said they checked their blood sugar levels on a weekly basis and 34 percentage fell under the category of others.

8.12 Knowledge of fasting blood sugar level

14 percentages (7) of patients had moderate adequate knowledge of fasting blood sugar level, 46 percentage(23) of patients had adequate knowledge and 40 percentage (20) had inadequate knowledge of the blood sugar levels when fasting.

8.13 Knowledge at normal blood sugar level

58percentages (29) patients showed adequate knowledge on the normal blood sugar level, 26 percentage (13) had moderately adequate knowledge and 16percentage (8) of them had inadequate knowledge ofthe normal blood sugar levels in humans.

8.14 Knowledge offactors increasing Type 2 Diabetes Mellitus

14 type 2 Diabetic patients had inadequate knowledge about their condition (28percentage), 24 (48percentage) patients had adequate knowledge and 12 (24percentage) patients had moderately adequate knowledge of the factors which increase the chances of type 2 Diabetes mellitus.

8.15 Knowledge of the action to take during Hypoglycemia

40percentages(20) had adequate knowledge on what action to take when their blood sugar levels had gone down, 18percentage(9) had inadequate knowledge of the action to take while 42percentages(21) had moderately adequate knowledge on what to do when their blood sugar levels had gone down or low (hypoglycemia).

8.16 Knowledge on Regular eye check up

32 type 2 Diabetic patients said yes, they have their eyes checked regularly, 5 said no to having their eyes checked regularly and 13 patients were not sure whether they needed to have a regular eye check up or not.

8.17 Knowledge on care when cutting toe nails

50percentages of the type 2 Diabetic patients said yes care should be taken, 12percentage said uncare needs to be reserved when toe nails cutting. 38percentages were not sure whether care is needed or not.

8.18 Slow Wound Healing

52percentages of the respondents said that wounds heal slowly in type 2 Diabetic patients and 8percentage of the patients said that wounds do not heal slowly. 40percentagesare unsure eitherwoundssettlegradually or not in type 2 Diabetic patients.

8.19 Type of medication

36percentages of the type 2 Diabetic patients were taking Glibenclamide, 17(34percentage) were on metformin and 30percentage of them were on insulin.

8.20 Knowledge of food intake during Medication

22percentages(11) said that they took their medication before food, 60percentage(30) said that they took their medication after food while 18percentages(9) said anytime since they take their medication daily.

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8.21 Knowledge on Alcohol consumption during medication

15 respondents said yes they can take alcohol during their medication, 31 type 2 Diabetic patients said no to alcohol consumption during their medication while 4 of the respondents were not too sure.

8.22 Knowledge on site of insulin injection

40percentages of the type 2 Diabetes mellitus patients had adequate knowledge on the site of insulin injection, 32percentages had inadequate knowledge on the site of insulin injection while 28percentages had moderate adequate knowledge on the site of insulin injection.

8.23 Knowledge of storage of insulin

70percentages of the Diabetic patients had adequate knowledge of the storage of insulin, 6percentage of the patients had not sufficient knowledge and 24percentages of patients had little or no knowledge of insulin storage.

8.24 Knowledge of whether insulin can be mixed or not

20percentages of the respondents said yes, insulin can be mixed, 40% said no it can not be mixed and 40percentages did not know whether insulin can be mixed or not.

8.25 Source of information

8 type 2 Diabetic patients got the information in regards to their condition from friends, 12 got from family members, 15 got from doctors, 6 from magazines, 3 from TV and Radio while 5 of the patients got from the pharmacists.

IX. DISCUSSION OF THE FINDINGS

The study showed that more females 26(52%) than males 24(48%) participated in the study. The complete information was related among the females and males. At the Kafue General Hospital, each patient is treated fairly by gender classification. Hence, the patients were received related knowledge from concerned health professions.

The entire concerned of diabetes patient information are illness, its to consume medicines and difficulties were not inadequate. A few percentage of the diabetes patients 7(14%) were inadequate information of diabetes type 2 mellitus. These are the reasons were the human are faced diabetes problems. Hence, the team are properly informed to keep health care of human by health professionals. Next, the patients are involved in understanding the status of type 2 diabetes mellitus. Maximum patients 19(38%) were selected the right terms of diabetes mellitus. Many of the diabetes patients are symptoms identified of type 2 mellitus; moreover the diabetes patients are well experienced in symptoms. Maximum diabetes patients are 29(58%) to understand the blood glucose are normal level. This could to understand regularly for their levels of blood glucose.

The fair number of patients 24(48%) were able to know overweight as a danger factor of emerging type 2 diabetes mellitus. 40% of the type 2 Diabetes mellitus patients said that eating sugary foods was the best action to take during hypoglycemia. In terms of medication intake 18(36%) patients were on Glibenclamide, 17(34%) of them were on metformin while 15 (30%) patients were taking insulin.

It was shocking to state that 70% of the diabetic patients did not know the knowledge of the name of their diabetic medicine. Some of the few reasons that the diabetic patients are not reading the label of the medicine and also confusion

for related name of diabetic medicine. Even the pharmacist center also not to say the name of medicine for diabetics. Whereas 30 percentages of diabetics patients have knowledge about the diabetics medicine name. The understanding of diabetic patients 62percentages(31) are isolating signs of hypoglycemia and the necessary process to take in case of hypoglycemia are fair. There are some reason for understand on through diabetic patient's experiences. In cases of hypoglycemia patients, they have a fair understanding that the diabetic patients are taken necessary or sufficient corrective measures. The diabetic patient's (10) 20percentages understand about the set of vaccinating and the insulin storage are 70%. For those who did not know whether insulin can be mixed (40%) and those who did not know whether insulin can be mixed was (40%). The questions could insist the relation of level of education and knowledge scores. The diabetic patients of tertiary level of education in studied region had good knowledge about type 2 diabetes mellitus, its medicines and difficulties are related diabetic patients with primary or secondary level of education in study areas. In the case of tertiary level of education where the diabetic patients could have good knowledge about difficulties and medicines on through pamphlets and booklets. The cases of positive family history were seemed to guidance regarding the diabetes knowledge or information. In some cases some of the negative family was having a poor understanding about the related information. Moreover, the positive family history were gradually to increase the knowledge and awareness in this study. The research paper was to find the relationship between patient's knowledge and diagnosis to accumulate their sickness. At the time, the diabetic patients were identified to avoid chances of difficulties than to contact health care specialist. Thus, the diabetic patients could understand the knowledge of the seriousness of complication on through this study.

X. CONCLUSION

The research paper covers diabetic patient's knowledge of type 2 diabetic patients at the Kafue General Hospital is few. This had known in terms of understanding the complication of type 2 Diabetes mellitus in terms of management of hypoglycemia and patient's knowledge of alcohol and medication as well as the regular blood sugar level check up. The diabetic patients had fair understanding about the risk factors of diabetes patients, normal blood sugar levels, Length of diagnosis, regular eye check up, careful when wounding toe nails (50 percent), 54 percent of the respondents are working and the family history of diabetes and patient's level of education had a positive relationship with the diabetic patients' information scores. The various recommendations about diabetic patients education awareness programme will help for further discussion and suggestion.



RECOMMENDATION

The future studies on a much related knowledge, but with a large scope and maximum sample size should be done to future related content leading to type 2 Diabetes mellitus in relation to the level of patient knowledge. The research is also recommended to improve awareness about self-care behaviours towards avoiding risk. In the case of pharmacy outpatients diabetics should keep a periodical check-list chart and following proper intake medicine. Increasing the number of charts displayed in Kafue General Hospital eg. The charts should insist normal blood glucose levels in every frequent patients visiting places.

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