Diabetic Mellitus in Opd of Central Hospital Nampula

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Abstract

OBJECTIVE—The goal of this study was to estimate the prevalence of diabetes and complications of the number of people of all ages with diabetes those got attended in OPD of Diabetes of Hospital central Nampula.

RESEARCH DESIGN AND METHODS—Data on diabetes prevalence limited 24 patient randomly selected of OPD of central Hospital Nampula. Patients were taken information regarding Identification, history & physical examinations. There were used results of Investigations of hematological, biochemistry etc, Radiologic examination if needed, Monofilament test, Tunic fork, ophthalmoscope, blood pressure apparatus, Glucometer.

RESULTS— During evolution of patient of OPD of Diabetes in Central Hospital Nampula found, DM 1 was less than 15 years of age group and DM 2 start from age 31 and picks age 46 to 60 years. There was male sex had higher % of DM it also related to culture as male was more sedentary life style did manual work and women were used to do house work which taken physical work. There were profession which involved life style sedentary, high calories intake, rich in economy professors and student, Urbanization also was one factor which responsible for development of Diabetes. There were most common complication Diabetic Neuropathy and impotency but less common Diabetic Retinopathy and Nephropathy.

CONCLUSIONS—Which suggest improvement of facility of diagnosis various complication, education of patient availability of drugs, adherence of treatment, awareness of general population and professional regarding Diabetes mellitus in Nampula.

Keywords: DM1, DM2, BP, OPD, GDM, AMODIA

1. Introduction

The incidence of diabetes, especially type 2, is rapidly growing in the world. In 1985, an estimated 30 million people suffered with this chronic disease, which, by the end of 2006, had increased to 230 million, representing 6% of the world population. Of this number, 80% is found in the developing world.[Beran et al., 2006,2] It is estimated that, during the next 35 years, diabetic world -wise prevalence will reach 25%, with India being the hardest hit. For a long time, Africa was considered safe from many of the diseases that are called "diseases of affluence," which plague the Western world. Similarly, there was a time when Africa was thought to be a continent, relatively free of diabetes mellitus illnesses. Today, however, diabetes is very uncommon in Africa, a situation that seemed to have remained virtually static until the 1990s and more recently.[3–6] Indeed, from 1959 to the mid-1980s, medical statistics showed that the prevalence rate of diabetes in Africa was equal to or less then 1.4%, with the exception of South Africa, where the rate was estimated to be as high as 3.6% in 2001. (Deeb et al., 1994, Savage et al., 1994, McLartyet et al., 1994) But, by 1994, the continent-wise prevalence of diabetes mellitus stood at 3 million and was then predicted to double or triple by the year 2010. (Beran et al., 2005,2006) Approximately, 7.1 million Africans were said to be suffering from diabetes at the end of 2000, a figure that was expected to rise to 18.6 million by 2030 (Yudkin, J S, et al., 2009)As more data were made available worldwide, scientists found that the adult population of Indian descent, Africans on the continent, and their descendants in the Diaspora, and whites living in Africa, especially in South Africa and Tanzania, had the highest diabetes prevalence,

respectively.[Beran et al., 2005,[13,14] A few years ago, the rate of diabetes mellitus among Africans appears to have been 1%–6%; among the Caribbeans of African-descent, 10%–13% and among African Americans, 12%–15%, which is high. Interestingly, the white population in Africa has shown in the past either higher than or comparable rates to those of European whites, hovering between 6% and 10%.[15,16] The majority of the African diabetes is of type 2 (70%–90%),with only 25% showing the complications of type 1 diabetes.[16–18] Of course, despite the alarm worldwide, the situation on the continent and elsewhere among people of African descent is worsening as we write.

Diabetes in Mozambique

Data from a population based study in 2005 found a prevalence of diabetes in the Mozambican population aged 25 to 64 years of age was 3.8%. (24) This would mean that there would be a total of 271,088 people with Type 2 diabetes in Mozambique. This same study found that the prevalence of overweight individuals was 30.1% and 10.2% for urban and rural areas respectively. Obesity rates, one of the main risk factors for Type 2 diabetes, of 11.5% in urban areas and of 2.6% in rural areas was found. Estimates from the IDF show a prevalence of diabetes in 2003 of 3.1% with a projected increase to 3.6% in 2025. (6) In Mozambique the IDF estimates that there are 500 prevalent cases of Type 1 diabetes in children aged from 0-14. (6)

In Nampula Central Hospital was the only facility that provided adequate diabetes care. Three General Hospitals in the vicinity of Nampula had the basic tools for diagnosis, but lacked the staff and insulin so referred their patients to the Central Hospital. No care was provided at health centers. In Lichinga the change has been the most dramatic as in 2003 there was no specialized care for people with diabetes with a serious lack of staff and training. This meant that patients needed to travel to Nampula even Maputo to receive adequate care.

2. Materials and Method

After review at available literature, It was decided to carry out an opinion survey of patient were being attendant in OPD of Hospital Central Nampula. A questionnaire was developed based on patient of Diabetes and its complication during study.

Informational discussions with staff and permission of director of hospital carried

out this study. There were 24 patient of Diabetes randomly selected to represent different categories of presentation of this diseases. There were various principle variables used which help to detects factor of risk, complication of Diabetes.

The survey was carried out half part filled by patient nontechnical and rest part of medical technical part filled by nurse or doctor.

Analysis of Data according to variable Age, sex, city of leaving professional, exam physical of patient, complication, treatment taken, laboratory analysis blood sugar were carried out.

Age: Patient divided into age groups. Example 0-15 years, 15-30 years, with interval of 15 years. **Sex**: Patient male and female group.

Profession: Type of profession patient to be inform.

City/District/Village: Patient to be informed.

History of Diabetes and its duration and other important parameters asked. **Examination Physical** general and specific on systems to find out complication **Treatment**: Diet, exercise, type of ant diabetics etc

Material –Data in form of patient information were collected in Diabetes

OPD of central Hospital Nampula. Patients were taken information regarding Identification, history & physical examinations. There were used results of Investigations of hematological, biochemistry etc, Radiologic examination if needed, Monofilament test, Tunic fork, ophthalmoscope, blood pressure apparatus, Glucometer etc.

3. Results and Discussion

About 95 percent of people with diabetes have type 2. People can develop type 2.

There was taken randomized 24 patient in OPD of Diabetes in Central Hospital Nampula which was evaluated basis of type of Diabetes with different demographic, finding of physical examination, laboratory finding and type of complication, type of treatment, adherence of treatment and other general factor if affects in controlling Diabetes.

As this graph is shows that most common DM type 2 in age group 46 to 60, then more common in 31 to 45 years and least after 75 age group of patient. The DM type 1 more common in) to 15 age group of patient, consider by children developing type 1 diabetes in early childhood (<10 years of age) have the first signs of islet autoimmunity very early in life, with the majority by 2 years of age (Ziegler et al.,1999).Evidence says Type 2 diabetes, formerly called adult-onset diabetes, is the most common type of diabetes. Diabetes at any age, even during childhood. However, this type of diabetes develops most often in middle-aged and older people. People who are overweight and inactive are also more likely to develop type 2 diabetes.(21)..

Age and ethnicity are the two main no modifiable risk factors of diabetes in Africa. Glucose intolerance in Sub-Saharan Africa, as in other regions of the world, increases with age in both men and women however, published studies lack uniformity on the age range in which the prevalence of diabetes is observed. According to King, Aubert, and Herman (1998), in most developed communities the peak of occurrence falls in the age group of 65 years or older, whereas in developing countries it is in the age group 45 to 64, and in Sub-Saharan Africa it is in the age groups 20 to 44 and 45 to 64 years. Yet data from 12 other studies from Sub-Saharan Africa indicate two peak age ranges of 45 to 64 and older than 65 years.
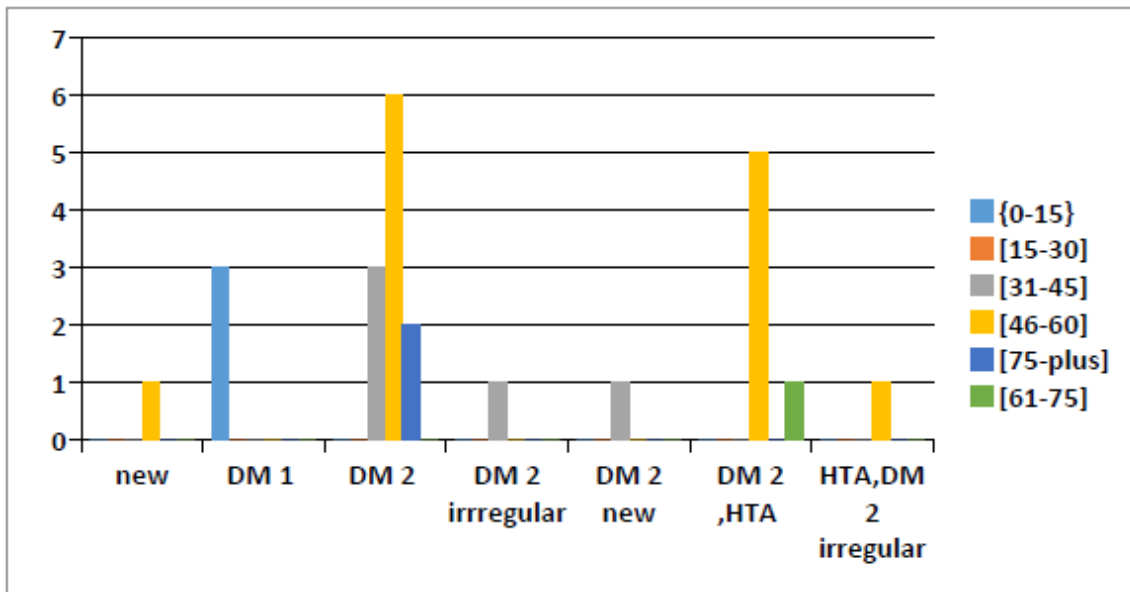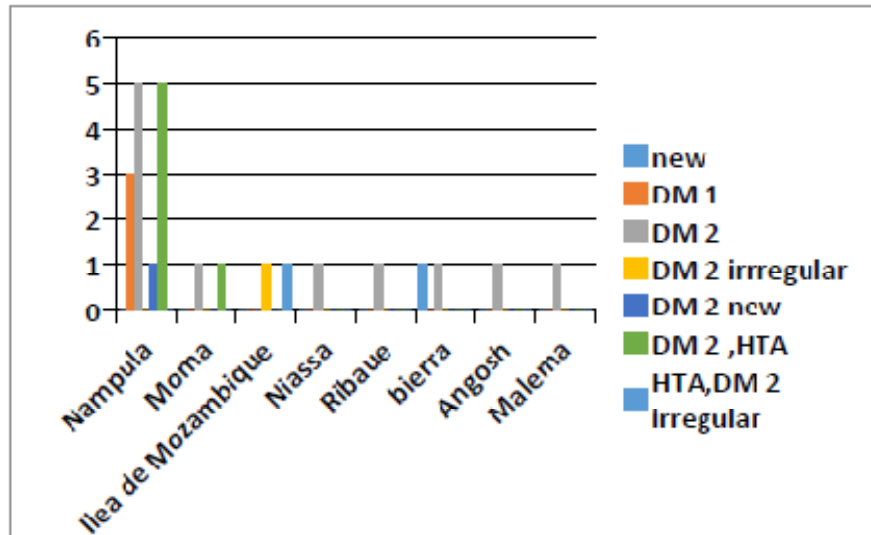

Sex and Relation to Diabetes

This study showed predominant of male in DM type 1 and also in DM type 2.There is evidences of past study which showed: It is often assumed that there is little or no sex bias within either Type I (insulin-dependent) or Type II (non-insulin-dependent) diabetes mellitus. This review considers evidence that sex effects of interest and importance are

present in both forms of the disease.
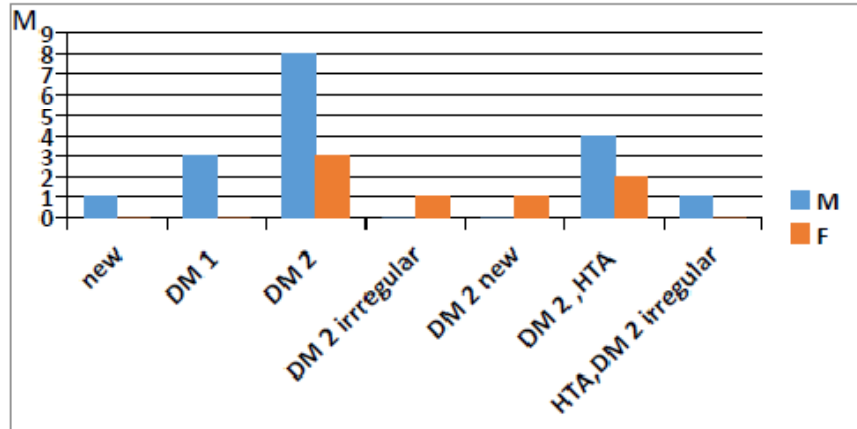
## City Nampula and its Districts Relation to Diabetes (Urban and Rural Area)

This finding sagest that urban population more risk of Diabetes as compare to the rural Population due to life style, as evidenced tells A number of lifestyle factors are known to be important to the development of type 2 diabetes, including obesity and overweight (defined by a body mass index of greater than 25), lack of physical activity, poor diet, Stress, and urbanization. (Abdullah et al., 2010)

BMI and Relation to Diabetes

This study revealed that higher BMI in DM type 2 and hypertension and less BMI in DM type 1. Other studies considers as before development of diabetes, there was a progressive rise in weight, and after diagnosis, there was a tendency toward weight loss.

Weight-loss interventions in individuals with diabetes will need to account for this tendency if they are to successfully modify the course of the disease. Weight gain in early adulthood is related to a higher risk and earlier onset of type 2 diabetes than is weight gain between 40 and 55 y of age. (Anja Schienkiewitz et al., 2006)
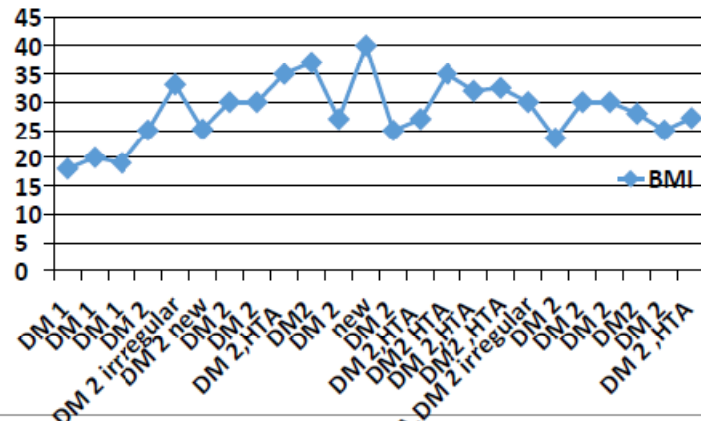
Complication of Diabetes

Complication of Diabetes with graphes and Table	
Neuropathy periphery	33%
Neuropathy periphery, inf urinary	16.66%
Impotence	4.16%
Impotency, Diabetic Neuropathy	29.16%
Others complications	16.66%

If we see this group of patient more common complication are Peripheral Neuropathy and Impotency, The literature shows Neuropathy, or nerve damage, affects more than 60 percent of people with diabetes. The impact of nerve damage can range from slight inconvenience to major disability and even death. Diabetic neuropathy leads to loss of feeling and sometimes pain and weakness in the feet, legs, hands, and arms, and is the most common cause of amputations not caused by accident in the United States. In one type of neuropathy, known as autonomic neuropathy, high glucose levels injure the autonomic nervous system, which controls bodily functions such as breathing, circulation, urination, sexual function, temperature regulation, and digestion. Autonomic neuropathy may result in various types of digestive problems, diarrhea, erectile dysfunction, a rapid heartbeat, and low blood pressure (25).The escalating prevalence of type 1 and type 2 diabetes and their complications in Sub-Saharan Africa are a major drain on health resources in financially difficult circumstances, in addition to having a considerable physical and social impact on the individual and com
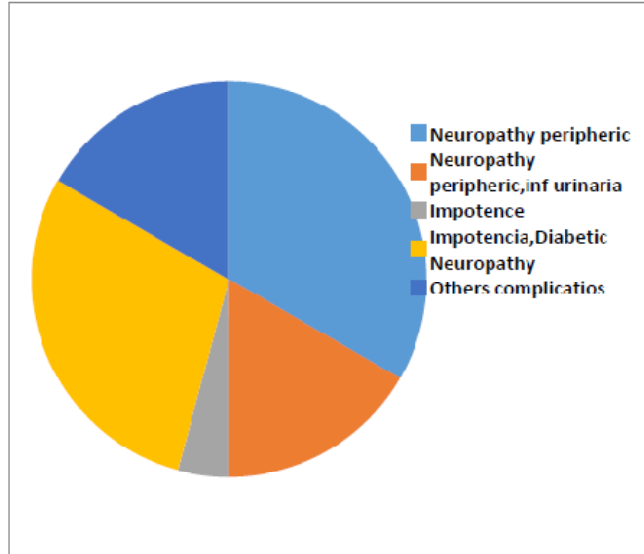
Diabetes and its Relation to Type of Profession

A number of lifestyle factors are known to be important to the development of Diabetes
Mellitus type 2including: obesity, physical activity, diet, stress, and urbanization (26) Excess
body fat underlies 64% of cases of diabetes in men and 77% of cases in women(Peter et al., 2005)
A number of dietary factors such as sugar sweetened drinks (Malik et al., 2010) and the type of
fat in the diet appear to play a role. (Risérus et al., 2009). This study also show profession and its
type related to sedentary life style example teacher and student are more affected as compares to
other professions.
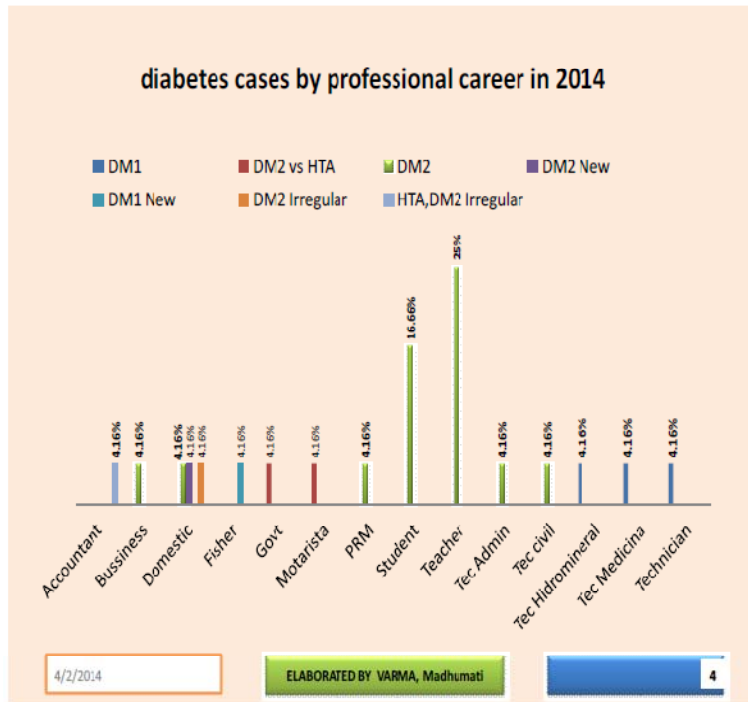
5. Summary

To see characteristics of Diabetes Mellitus in OPD of Central Hospital Nampula, taken details of patient which showed DM type 1 between the age of 0-15 and DM type 2 age from 46 to 60 most common, in 31 to 45 years of age more common and least common after 75 age group of patient. According to King, Aubert, and Herman (1998), in most developed communities the peak of occurrence falls in the age group of 65 years or older, whereas in developing countries it is in the age group 45 to 64, and in Sub-Saharan Africa it is in the age groups 20 to 44 and 45 to 64 years. Yet data from 12 other studies from Sub-Saharan Africa indicate two peak age ranges of 45 to 64 and older than 65 years. Diabetes Mellitus both type more common in male sex compare to female in other word predominating male population which is may related to culture of this country sedentary life style of male, obesity among them. Men seem more susceptible than women to the consequences of indolence and obesity, possibly due to differences in insulin sensitivity and regional fat deposition. Women are, however, more likely to transmit Type II diabetes to their offspring. Understanding these experiments of nature might suggest ways of influencing the early course of both forms of the disease.(Gale A et al., 2001) There was more black compare to white which is not reality because white patient available 1-2 % but could not take this randomized sample and also white Indian, Pakistani or portages population generally do consultation in private clinics which was not seen in our study. A difference was found between Indians, blacks, and Caucasians in South Africa, where Indians had the highest predisposition and were followed by blacks and Caucasians (Levitt et al. 1999; Omar et al. 1994). In the Tanzanian study, the indigenous African population had lower diabetes prevalence than the migrant Asian group (1.1 percent as opposed to 9.1 to 7.1 percent) (McLarty et al. 1989; Ramaiya, Swai, McLarty, Bhopal, et al. 1991; Swai et al. 1990).The patient more common of city/urban area compare to district/rural area which shows in urban location transport available, good source of economy an rich calories diet, sedentary life style on computer or manual work in seating all of these affects development of Diabetes Mellitus. A number of lifestyle factors are known to be important to the development of type 2 diabetes, including obesity and overweight (defined by a body mass index of greater than 25), lack of physical activity, poor diet, stress, and urbanization. (Abdullah et al., 2010) There are same factors involved in type of profession which are more common teacher and student groups as they seat most of hour to study no exercise etc. Weight gain in early adulthood is related to a higher risk and earlier onset of type 2 diabetes than is weight gain between 40 and 55 y of age. (Anja Schienkiewitz et al., 2006) There seems to be a significant relationship between physical inactivity and diabetes and obesity (Sobngwi et al. 2002). There are most common complication are peripheral Neuropathy and impotency other complication like Diabetic nephropathy and Retinopathy. Also could tell because of non-availability of type of investigation to confirm diagnosis. The literature shows Neuropathy, or nerve damage, affects more than 60 percent of people with diabetes, These have been reviewed in two studies and include figures ranging from 9 to 16 percent for cataract, 7 to 52 percent for retinopathy,6 to 47 percent for neuropathy, 6 to 30 percent for nephropathy, and 1 to 5 percent for macroangiopathy (Mbanya and Sobngwi 2003; Rolfe 1997). Diabetic ketoacidosis is a common diabetic emergency in developing countries and carries with it relatively high mortality, ranging from 25 percent in Tanzania to 33 percent in Kenya. The major contributing factors to such high mortality are the chronic lack of availability of insulin, delays in seeking medical assistance by newly diagnosed type 1 patients presenting in ketoacidosis, mi diagnosis of diabetes, and poor health care in general and diabetic care in particular (Rwiza, Swai, and McLarty 1986).

There was evidence of 50 % patient had family history positive it indicate involvement of genetics. In general, if type 2 diabetes, the risk of child getting diabetes is 1 in 7 if were diagnosed before age 50 and 1 in 13 if diagnosed after age 50. Some scientists believe that a child's risk is greater when the parent with type 2 diabetes is the mother. If both partners have

type 2 diabetes, child's risk is about 1 in 2.People with certain rare types of type 2 diabetes have different risks. If have the rare form called maturity-onset diabetes of the young (MODY), child has almost a 1-in-2 chance of getting it, too. If woman with type 1 diabetes and child was born before you were 25, your child's risk is 1 in 25; if child was born after you turned 25, child's risk is 1 in 100. Child's risk is doubled if developed diabetes before age 11. If both partner have type 1 diabetes, the risk is between 1 in 10 and 1 in 4 There is no correlation between duration of Diabetes and level of Diabetes as depends on various factors like ***Accessibility and affordability of medicines and care, Adherence issues,*** Adherence to care for Type 1 diabetes is most complicated due to balance between diet and insulin dosage, few of their patients also went to Traditional Healers. From interviews with people with diabetes it was found that 39% used traditional medicine in parallel with their "modern" treatment. The main reasons given for this was that people were often promised a cure for their diabetes, "When patients feel well they disappear". This was reflected in other discussions and also the irregular supplies that pharmacists said they needed. Education is given during the doctor's consultation, but it is questionable whether it is adapted to reality and individualized to the patient's situation, especially with regards to diet.

6. Conclusion

During evolution of patient of OPD of Diabetes in Central Hospital Nampula found, DM 1 was less than 15 years of age group and DM 2 start from age 31 and pick age 46 to 60 years. As we can see in various evidences in past our knowledge. There is male sex had higher % of DM it also related to culture as male are more sedentary life style do manual work and women do house work which take physical work. There were profession which involved life style sedentary, high calories intake, rich in economy professors and student, Urbanization also one factor which responsible for development of Diabetes.

There were most common complication Diabetic Neuropathy and impotency but less common Diabetic Retinopathy and Nephropathy. Which sagest improvement of facility of diagnosis various complication, education of patient availability of drugs, adherence of treatment, awareness of general population and professional regarding Diabetes mellitus.

Epidemiological data on diabetes mellitus in Sub-Saharan Africa are still limited. However, the prevalence and incidence of both type 1 and type 2 diabetes are increasing with the persistent rural-to-urban migration. Clearly, knowledge of the disease has increased since the 1990s; nevertheless, adoption of a Western lifestyle has greatly enhanced its development. The evidence shows that type 2 diabetes is a major cause of morbidity and mortality on the continent and that it is costly to manage diabetes and its complications. Given that the region still has a double and sometimes triple disease burden and that little priority is given to no communicable diseases like diabetes, and in the absence of a health care system adapted to this new reality and able to use costly therapeutic interventions, well-planned cost-effective methods of prevention and treatment and refined tools to assess health services and monitor progress are therefore required.

Limitation of the study

1. There are no availability of several basics investigation example HbA1c, Intolerance of glucose in laboratory, concept of postprandial sugar in laboratory, quality of result of Urine examination and also 24 hrs. proteinuria, Result confirmatory to type of Retinopathy by fund scope.
2. There is limitation of cooperation 10 % of patient for adherence of treatment, diet fallow, fallow traditional healer, irregular control.
3. There are less education regarding diseases.
4. There is patient load in consultation about 20-30 patient per consultation which could not give sufficient time to give for each patient.

5. No availability of basics drugs sometimes only Glibenclamide available all time sometime missing Metformin and Insulin in government pharmacy and patient poor for Adherence to treatment force to write medicine which available.
6. In private clinics there is not such limitation can ask analysis all type and ant diabetics except Glibenclamid and metformin can prescribe Amaryl, Gliclazid, Insulin Biphasic and Insulin pen and no problem to manage Diabetic patient but this study done for patient of Government hospital those have financial limitation.

7. Contribution to Knowledge

As study showed factor involved with Diabetes of like demographic parameter, complication and other factor can quantitative evaluated. But there are several general factor to control Diabetes like adherence of treatment, no availability of medicine because of cost. Other group of diseases involvement example HIV and its side effect of antiretroviral treatment. Patient false belief to go for treatment to traditional healer. There are non-availability of basic investigation example Blood sugar some time. There

is no facility to do HbA1c.There is poor quality of results of laboratory never give correct result for detect proteinuria to confirm Diabetic Nephropathy. There is no availability Nerve conduction velocity test to confirm Diabetic Neuropathy. There is few group of patient irregular fallow up. There is no proper Dietician consultation to take orientation for diet. There is only three consultation in week to see whole provincials so patient load too much, so lack of time to educate of patient properly. As study done in Sub-Saharan Africa and Mozambique also see same problem and findings.

Acknowledgments

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