A CROSS-SECTINAL STUDY ON THE LEVEL OF KNOWLEDGE, ATTITUDE AND PRACTICE ON DIABETES MELLITUS AMONG POPULATION AGED 18 YEARS OLD AND ABOVE IN RUMAH BASEH, BAWANG ASSAN, SIBU FROM 25TH MAY UNTIL 7TH AUGUST 2009

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DECLARATION

We declare that this research originates from our own effort, except for certain facts and citations with which the sources have been clearly listed in the bibliography.

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ABSTRACT

Diabetes mellitus is now recognized as an escalating non communicable disease at phenomenal scale in which WHO estimated that the number of diabetics will increase to as high as 366 million people by 2030. In order to cope with the levitating prevalence of diabetes mellitus in Malaysia, level of knowledge and awareness among the population should be assessed and appropriate interventions should be employed. The purpose of this study was to identify the level of knowledge, attitude and practice concerning diabetes mellitus among the community of Rumah Baseh, Bawang Assan, Sibu. Results obtained were then implemented to conduct an intervention beneficial to the community in order to establish effective prevention as well as promote early diagnosis and good diabetic control. Data collection was done via questionnaire based interview with the aid of set of questions constructed on basic information of the respondents, their knowledge on diabetes mellitus, attitude towards the disease and practices done. The sample populations are those above 18 years of age. Data collected are analyzed with parametric & nonparametric tests. The majority of the respondents are non-diabetic. Although, their knowledge on the disease was not satisfactory as there were only 54% of respondents with good knowledge, their attitude was very good indeed with 61%. However, total score for practice was very unsatisfactory with 72% of the respondents showed poor practice. There was significant relationship between total knowledge score and household income (p=0.013) as well as level of education (p=0.046). However, there was no significant relationship noted between total level of attitude and practice with any socio demographic factors. There was also significant positive correlation between the respondents’ level of knowledge and attitude (p<0.05). In conclusion, there is great need for intervention particularly focusing on aspects of knowledge and practice concerning diabetes mellitus in aim to ensure healthy lifestyle among the community to prevent this multi-factorial disease.
ABSTRAK

Penyakit kencing manis dikenali sebagai penyakit tidak berjangkit yang semakin meningkat di mana WHO menjangkakan bilangan pesakit penyakit kencing manis akan meningkat sebanyak 366 juta pada tahun 2030. Dengan itu, bagi mengawal peningkatan bilangan pesakit kencing manis di Malaysia, tahap pengetahuan dan kesedaran tentang penyakit ini hendaklah dinilai dan intervensi yang sesuai hendaklah dijalankan. Tujuan kajian ini dijalankan adalah untuk mengenalpasti tahap pengetahuan, sikap dan amalan berkenaan dengan penyakit kencing manis dalam kalangan komuniti di Rumah Baseh, Bawang Assan, Sibu. Berdasarkan keputusan yang diperolehi, intervensi bersesuaian akan dilaksanakan bertujuan untuk memastikan pencegahan efektif sekali gus mempromosi tentang diagnosis awal dan kawalan penyakit kencing manis yang baik. Kumpulan data telah dilakukan melalui borang soal selidik berdasarkan perbualan dengan bantuan soalan tentang maklumat asas responden, pengetahuan tentang penyakit kencing manis, sikap terhadap dan amalan yang dilakukan bagi mencegah penyakit ini. Populasi sampel adalah responden berumur atas 18 tahun. Data yang telah dikumpul akan dianalisa menggunakan ujian parametrik dan bukan parametrik. Kebanyakan responden bukan kalangan pesakit kencing manis. Justeru itu, pengetahuan mereka tentang penyakit kencing manis adalah kurang memuaskan, hanya 54% responden mempunyai pengetahuan yang bagus tentang penyakit ini, manakala sikap mereka terhadap penyakit kencing manis adalah bagus iaitu 61%. Walau bagaimanapun, jumlah skor untuk amalan adalah sangat tidak memuaskan, 72% responden menunjukkan amalan yang tidak bagus. Terdapat signifikan hubungan antara keseluruhan skor tentang pengetahuan dengan pendapatan isi rumah (p=0.013) dan tahap akademik (p=0.046). Walau bagaimanapun, tiada signifikan hubungan antara keseluruhan skor tentang sikap dan amalan dengan mana-mana faktor demografi. Terdapat positif signifikas hubung kait antara tahap pengetahuan dan sikap (p<0.05). Konklusinya, terdapat keperluan untuk memfokuskan tentang aspek pengetahuan dan amalan mengenai penyakit kencing manis semasa intervensi untuk memastikan gaya hidup yang sihat kalangan komuniti untuk mencegah penyakit ini.
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CHAPTER 1
INTRODUCTION AND LITERATURE REVIEW

1. INTRODUCTION AND BACKGROUND INFORMATION

1.1 INTRODUCTION

Diabetes mellitus is a growing concern in Malaysia and one of the most important non-communicable diseases in the world. Rising trend in the prevalence of diabetes mellitus globally are due to many factors such as population growth, increasing prevalence of obesity and physical inactivity. According to World Health Organization (WHO), the prevalence of diabetes mellitus worldwide in the year of 2000 was 171 million and it is estimated that by 2030, the number can increase to as high as 366 million people. International Diabetes Federation (IDF) predicts similar increase by 2025. The South East Asia Region would have an estimated diabetes mellitus prevalence of 7.5% (81.6 million) and impaired glucose tolerance test prevalence of 13.5% affecting 120.5 million people (IDF Diabetes Atlas 2003).

In Malaysia, the number of people with diabetes mellitus also steadily increased over the years with an estimate of 0.65% in 1960, to 2% in 1982, while complication rates and associated diseases amongst diabetics are significantly high (Ooyub et al., 2004). In 2000, there were 942 000 diabetics in Malaysian and by 2030, the prevalence are expected to increase to 2.48 million (WHO). Current Malaysian population that was updated in 5 September 2008 is 27.73 million (Department of Statistics Malaysia, 2008).

The 3rd National Health and Morbidity Survey (NHMS) done in 2006 estimated that more than 10% of Malaysian population aged more than 30 years old were diabetics compared to only 8.2% in 1996. It was found that the highest prevalence according to age were people between the age of 60-64 years old, while according to ethnicity, Malays...
recorded the highest, followed by Chinese, and according to state, Negeri Sembilan had the highest number of diabetics while Sabah recorded the lowest.

As one of the most common non communicable disease worldwide, its complications have been more concerning in association to improve the life expectancy. World Health Organization (WHO) estimated 3.8 million deaths of world population are attributable to diabetes mellitus and it is the fourth leading cause of global death by disease. Cardiovascular disease is one of the important complications of diabetes mellitus and it is the major cause of death in diabetes mellitus, accounting for some 50% of all diabetes fatalities, and much disability (Diabetes Atlas, Third Edition, International Diabetes Federation, 2007).

The 3rd National Health and Morbidity Survey (NHMS) done in 2006 estimated that 4.3% of the diabetic population in Malaysia has had amputation, 3.4% had episodes of strokes and 1.6% is required to go for dialysis as the result of diabetes mellitus complications.

### 1.2 BACKGROUND INFORMATION

Sibu is the third largest division in Sarawak after Kuching and Miri with a total area of 8,278.3 square kilometers. The size of the population in Sibu division according to the year 2000 population census was 257,300 people. The population consists mainly Iban, Chinese, Malay and Melanau.

Rumah Baseh is located in Bawang Assan which is in the north part of Sibu division. Bawang Assan is situated 50 kilometers from Sibu town and can be reached in approximately 30 minutes by car. In addition, Bawang Assan can also be accessed by river. According to the year 2000 population census, Bawang Assan houses 4,225 people. There are 12 longhouses in Bawang Assan and all are occupied by the Iban community.
Bawang Assan is well developed with basic amenities such as chlorinated water supply from Sibu Water Board and electricity from the Sarawak Electric Supply Company (SESCO). There are nine primary schools, one secondary school, a library with internet connection, a service church and a clinic in Bawang Assan. The clinic is served by seven staffs consisting of two assistant medical officers, two community nurses, two assistant health officers and a driver.

Rumah Basch, situated along the Bawang Assan River, consists of 64 doors and is occupied by 247 villagers, all of whom are Iban Christians of Methodist denomination. The long house is provided with basic amenities such as clean water supply, electricity, and solar phone network coverage. Most of the long house occupants work at the nearby sawmill, while some are farmers and fishermen.

The common diseases which are prevalent within the community are skin and subcutaneous diseases, hypertension, diabetes mellitus, and respiratory diseases. The most recent outbreak was dysentery, diarrhea and vomiting.
2. LITERATURE REVIEW

Diabetes mellitus is known over the world to be an endocrinological disorder that affects the bodies' metabolism of sugar, but its specific cause is still not fully determined. Even so, Ishak et al (2002) explained that diabetes mellitus is a multifactorial disease caused by inherited and/or acquired deficiency in the production of insulin by the pancreas or by the ineffectiveness of the insulin produced, as explained by.

It is a syndrome that is characterized by excessive urination coupled with increased thirst and appetite. Diabetics may also suffer from generalised body weakness and skin problems. Another symptom is the slow healing of wounds. Other symptoms include sudden vision changes, numbness of hands and feet, and an increased predisposition to get infections.

There are many factors that pose as risks for developing diabetes mellitus. WHO attributes this to ageing and growth, obesity, unhealthy diets and the sedentary lifestyles associated with urbanization and industrialization (Ishak et al., 2002). It is also stated that the increased incidence of type 2 diabetes mellitus is strongly influenced by the prevalence of two major risk factors, which are obesity and physical inactivity.

Meanwhile, type 1 diabetes mellitus is said to have a hereditary connection. According to Morran et al (2008), genetic analyses of type 1 diabetes mellitus have linked human leukocyte antigen, specifically class II alleles, to susceptibility to disease onset. Even so, it is said that environmental factors play a role. Environmental catalysts include various possible factors, such as viral infections, although the evidence linking infections with type 1 diabetes mellitus remains inconclusive (Morran et al., 2008).

Diabetic nephropathy accounts for the majority of end stage renal disease for many years to come. At least half of new dialysis patients since 2002 were suffering from
diabetes mellitus. The 3rd National Health and Morbidity Survey, Malaysia 2006 showed that the prevalence of diabetes mellitus has risen from 8.3% to 14.9% ten years earlier (16th Report of the Malaysian Dialysis and Transplant Registry 2008). Diabetic nephropathy is one of the common diabetic complications. Survey by Malaysia National Renal Registry showed an increasing number of diabetic patients who required dialysis from 40% in 1999, 44% in 2000, 45% in 2001 and 47% in 2002 (Shafie et al., 2004).

Diabetic retinopathy is the leading cause of blindness. Several studies were done and showed that increased glucose in blood is associated with increased risk of incidence and progression of diabetic retinopathy and finally lead to impaired vision (Shafie et al., 2004).

Diabetes mellitus can contribute to serious health complications and death. Systemic complications associated with diabetes mellitus are like heart disease, stroke, retinopathy, nephropathy, neuropathy, foot ulcer, periodontal infection, ketoacidosis and hyperosmolar coma. In 2006, diabetes mellitus was the seventh leading cause of death in the United State. A relative perspective on a daily basis indicates that 4,100 people are diagnosed with diabetes mellitus, of which 230 will be amputated, 120 people will progress to end stage renal disease, 55 people will go blind, and 810 will die (Ann et al., 2008).

Early prevention should be taken in order to reduce microvascular and macrovascular complications as well as to reduce morbidity and mortality caused by these complications. A cross sectional study which was done by Centers for Disease Control and Prevention showed that the prevalence of the obesity and diabetes mellitus continues to increase in the United State making health intervention programs are very useful to improve the practice of physical activity and healthy diet in the communities
The Diabetes Prevention Program Research Group conclude that, lifestyle modifications and adherences with drugs for diabetes mellitus both reduced the incidence of diabetes mellitus in those at high risk but the lifestyle modification was more effective than drugs.

Cigarette smoking itself leaves greater bad impact on the smoker. For diabetic patient who smokes, they suffer greater health complications which are more likely to develop into microvascular and macrovascular diseases including retinopathy, nephropathy and cardiovascular diseases (Plotnikoff R.C et al., 2007). Smoking, lack of exercise and high alcohol consumption lead to rapid rises in this non communicable disease, even after body weight modification (Frank B.H et al., 2001). The effective management of diabetes mellitus relies on consistent preventive and clinical intervention, including efforts to detect diabetes mellitus, promotion of effective self management, reduce the incidence of complications, and increase the coping skills of people with diabetes mellitus and its related conditions (Shafie et al., 2004).

Treatment comprises of non pharmacological method such as diet, exercise, lifestyle adjustments, self-care measures and pharmacological method with oral hypoglycemic agents and insulin injection. Negative perceptions regarding treatment of diabetes mellitus still existed among general population. A study done by Rafique (2006) in Karachi showed that the respondents believed on traditional remedies as treatment of diabetes mellitus in which 25% of them believe the regular use of bitter-gourd could cure diabetes mellitus.

Assessment regarding treatment of the diabetes mellitus showed varied level of knowledge in different studies among the general population. Study done by Kamel et al, (1999) found that 82.3% of the respondents in Egypt had poor knowledge on treatment
aspect. The level of knowledge on treatment of diabetes mellitus among Singaporeans showed that 76.7% of the respondents had good knowledge (Tham et al., 2004). Cultural beliefs also played an important role towards seeking treatment of diabetes mellitus. Most of the urban white population of Appalachian in West Virginia considered diabetes mellitus as a burdensome disease and a fearful condition with severe complications. The fear was stated as a reason to avoid seeing physicians (Tessaro et al., 2005).

Sufficient knowledge on diabetes mellitus without proper attitude is not adequate as attitude plays a role in preventing diabetes mellitus and its complications because diabetes mellitus is not just a clinical disease for which people receive treatment in a medical setting, but also an illness that patients themselves must be responsible for managing on a daily basis (Benjamin et al., 2006). A positive attitude towards coping with diabetes mellitus is crucial with regards to its early detection and diagnosis. People will not usually seek medical attention for the detection and diagnosis of diabetes mellitus until signs and symptoms start to be apparent, while some people are worried that they may be a burden to their family members once they are diagnosed of having diabetes mellitus (Tessaro et al., 2005). Studies revealed that the difference in people’s attitude towards seeking early diagnosis and treatment of diabetes mellitus was influenced by socioeconomic factors. The people of West Virginia demonstrated different behavioral approaches to cope with diabetes mellitus were due to poverty leading to limited resources and access to health educational programs and health care services (Tessaro et al., 2005).

One of the most important factors that affect the patient’s attitude toward seeking treatment for the diabetes mellitus is the management cost. Depression is another factor that influences the patient’s attitude in treatment of diabetes mellitus which can be