A CROSS-SECTIONAL STUDY ON THE LEVEL OF KNOWLEDGE AND ATTITUDE ON DIABETES MELLITUS AMONG THE POPULATION OF 20 YEARS AND ABOVE IN KAMPUNG SUSUR JAMBU INDAH, SARIKEI FROM 15TH FEBRUARY TO 11TH APRIL 2008

4TH YEAR MEDICAL STUDENTS
COMMUNITY MEDICINE AND PUBLIC HEALTH POSTING MDP40110
GROUP 4

Research done by:

Nor Azura binti Abu (12566)
Suria Prakash a/l Murthy (13056)
Majorie Ensayan ak Junting (12312)
Azrine bin Aziz (9841)
Mohammad Dasril bin Anas (12395)
Noor Arinna binti Jaddil (12526)
Goh Soo Ning (11963)
Roshafiza Jaffar @ Harun (12838)
Amila Sariati Mahd Shukry (11622)
Mohd Aminuddin bin Ab. Ghani (10493)
Erenna Khairan binti Md Saleh (11877)
Felix Liau Yee Fan (11927)
Poon Tuck Choy (12775)
Fann Rui Jeat (11900)
Isnani binti Sutiman (12036)
Ong Wee Leen (12746)
Yam Wai Cheong (13226)
A cross-sectional study on the level of knowledge and attitude on diabetes mellitus among the population of 20 years and above in Kampung Susur Jambu Indah, Sarikei from 15th February to 11th April 2008

4th Year Medical Students
Community Medicine and Public Health Posting MDP 40110
Group 4

Research done by:

DECLARATION

We, the research team members whose name appears herein below hereby declare that this research is our own original work with the exception of quotations of the works in which the sources had been stated in bibliography

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Ong Wee Leen (12746)
Yam Wai Cheong (13226)
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ABSTRACT

Knowledge and attitude of diabetes mellitus are important because it plays a major role in the prevention of this disease. Thus it is crucial to study these aspects in order to know the gaps among the sampled population.

The objective of this research is to study the level of knowledge and attitude regarding diabetes among the sampled population aged 20 years and above of Taman Susur Jambu Indah, Sarkei from 15th February until 11th April 2008.

A cross-sectional study was done on a sampled population of 268 respondents chosen by universal sampling. Data collection was conducted by using an questionnaire guided interview. Data entry and analyses were done using SPSS version 13.0, with parametric tests including ANOVA, chi-square test, independent ‘t’ test, Fisher exact test and Pearson’s correlation test, and non-parametric tests including Mann-Whitney test and Kruskal-Wallis test.

Based on the results, the total score of knowledge was 94.78% with a mean score of 23.95. There was significant correlation between level of knowledge and level of education, household income and family history of diabetes (p<0.05). On the other hand, there was no significant relationship between level of knowledge with age and gender (p>0.05). Overall percentage of positive attitudes among the respondents was very high, 99.25%. There was positive correlation between level of attitude with the level of education (p<0.05). Conversely, there were negative relationship between level of attitude with age, gender, family history of diabetes and household income (p>0.05).

In conclusion, influence on knowledge and attitude is multifactorial. The better level of knowledge will reflect the better level of attitude. However, the attitude level is almost perfect in the sampled population compare to level of knowledge which showed that there was no attitudinal problem. So the intervention programme will mainly focus on increasing the level of knowledge of respondent toward diabetes.
ABSTRAK

Pengetahuan dan sikap mengenai kencing manis memainkan peranan utama terhadap pencegahan penyakit ini. Oleh yang demikian, adalah amat penting untuk mengkaji aspek-aspek tersebut bagi mengenalpasti jurang terhadap penyakit ini di dalam populasi penduduk.


Berdasarkan keputusan mengenai tahap pengetahuan, seramai 94.78% responden didapati mempunyai pengetahuan yang baik dengan purata skor sebanyak 23.95. Terdapat hubung kait yang jelas di antara tahap pengetahuan dengan tahap pendidikan, pendapatan isi rumah dan sejarah keluarga menghidap diabetes(p<0.05). Sementara itu, tidak terdapat hubung kait yang jelas di antara tahap pengetahuan dengan umur dan jantina. Secara keseluruhannya, peratusan sikap responden adalah sangat tinggi iaitu 99.25%. Terdapat hubung kait di antara tahap sikap dengan tahap pendidikan (p<0.05) responden. Akan tetapi, tiada hubung kait yang positif di antara tahap sikap dengan umur, jantina, sejarah keluarga yang menghidap kencing manis dan pendapatan isi rumah (p>0.05).

Kesimpulannya, terdapat pelbagai faktor yang mempengaruhi pengetahuan dan sikap individu mengenai kencing manis. Tahap pengetahuan yang tinggi menggambarkan tahap sikap yang baik. Walau bagaimanapun tahap sikap responden dalam kajian ini adalah sangat baik. Ini menunjukkan tiada masalah sikap di dalam populasi penduduk ini. Oleh yang demikian, program intervensi akan memberi tumpuan untuk meningkatkan tahap pengetahuan responden terhadap penyakit kencing manis.
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CHAPTER 1

INTRODUCTION

&

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CHAPTER 1
INTRODUCTION AND BACKGROUND INFORMATION

1.1 INTRODUCTION

Diabetes mellitus is a condition in which there is chronically raised blood glucose concentration. It is caused by absolute or relative lack of hormone insulin – that is, insulin is not being produced by the pancreas, or there is insufficient insulin or insulin action for the body’s need (William & Pickup, 2004).

Therefore, there are two main forms of diabetes. Type I diabetes (formerly called insulin-dependent) is primarily due to autoimmune-mediated destruction of pancreatic beta cells resulting in absolute insulin deficiency. Type II diabetes mellitus (formerly called non-insulin-dependent) is characterized by insulin resistance or abnormal insulin secretion, or both, either of which may predominate, and accounts for more than 90% of cases globally (Pradeepa & Mohan, 2006).

Diabetes causes about 5% of all deaths globally each year (World Health Organization (WHO), 2008a). Diabetic deaths are likely to increase by more than 50% in the next 10 years without urgent action (WHO, 2008a). Worldwide prevalence of diabetes was 171,000,000 in year 2000) and is estimated to be 366,000,000 in year 2030 (WHO, 2008b). Study done by King et al. (1998) estimated that the prevalence of adult diabetes more than 20 years old in the world will rise from 4.0% in 1995 to 5.4% in 2025. The major increment will occur in developing countries which is 170% increment from 84 million (year 1995) to 228 million peoples (year 2025). Therefore, more than 75% of
diabetic population will reside in developing countries by the year of 2025. Although figures regarding global burden of diabetes from different studies may differ, increasing global prevalence and deaths due to diabetes is a definite trend.

In our local setting, it is observed that the number of people with diabetes is increasing while complication rates and associated diseases amongst diabetics are significantly high. National Health & Morbidity Surveys (NHMS) showed an increase in adult diabetes in Peninsular Malaysia from 6.3 % in 1986 to 8.8 % in 1996. The prevalence of diabetes among Malaysian adults above 30 years of age has been estimated at 8.3 % (Ministry of Health (MOH), 2006). Study by Shafie et al. (2004) also shows that there are approximately 8 diabetics in every 100 adults in Malaysia. Another 4.3 % suffers from impaired glucose tolerance which puts them at risk of developing full blown diabetes later on. Admissions for diabetes into Ministry of Health hospitals had also risen by about 80 percent over the past decade, from 21,872 admissions in 1995 to 39,358 in 2004 (MOH, 2006).

The effective management of diabetes rests on the consistent application of preventive and clinical interventions, including efforts to detect diabetes, promote effective self-management, reduce the incidence of complications, and increase the coping skills of people with diabetes and related conditions (Shafie et al., 2004).

With the threat of rising prevalence, direct costs of treating diabetics are expected to escalate. Nabilal et al. (2003) discovered that in an outpatient setting in Malaysia, Combined Provider and Patients’ cost (direct cost) per diabetic patient per year was RM 241.19, with the provider taking on RM 185.97 and the patient putting up with RM 55.22. Direct cost (combined provider and patients’ cost) per diabetic patient visit was RM
53.03, with provider supporting RM 40.89, and patient paying an amount of RM 12.14.

In concert with the effort to implement effective management of diabetes in Malaysia, several KAP studies on diabetes mellitus have been done locally. Ambigapathy et al. (2003) reported among 100 patients attending Klinik Kesihatan Seri Manjung that respondents were generally well informed regarding diabetes mellitus and generally portray positive attitude. However, there is a gap between the attitude and practice on diabetes mellitus. Community Residency Programme (2005) reported among 198 respondents of 4 rural villages in Alor Gajah that knowledge and attitude regarding diabetes is generally good despite the lacking of specific knowledge on diagnosis and management of the disease.

1.2 BACKGROUND INFORMATION

Sarawak is located in Borneo Island and the largest state in Malaysia which covers an area of 124,449.51 km², equaling to 37% of total Malaysia land area. It consists of 11 divisions namely Kuching which is also the capital city, followed by Samarahan, Sri Aman, Betong, Sarakei, Sibu, Mukah, Kapit, Bintulu, and Limbang (Wikipedia, 2008). Number of populations in Sarawak is 2.31 million (year 2005). The crude birth rate is 20,300 and the crude death rate is 4,100 (year 2004). There are more than 40 ethnic groups in the state which are distinct from one another by language, culture and lifestyle. The predominant ethnics in Sarawak are Iban (30%), Chinese (29%) and Malay (21%). Other ethnics are Melanau, Bidayuh, Orang Ulu, Kayan, Kelabit, Kenyah and Penan (Sarawak Electronic Government, 2008).
The study is conducted in Sarikei division. From the resources of Pejabat Residen Sarikei (2006), Sarikei is the second smallest divisions in Sarawak with the total area of 4332.4 km². The total population is 121,628 (year 2000) consisting of 60,384 females (49.6%) and 61,244 males (50.4%). The ethnic groups vary from Iban (50.46%), Chinese (28.96%), Malay (10.63%), Melanau (9.32%), Bidayuh (0.35%) and others (0.82%).

For this research, Taman Susur Jambu Indah has been selected based on several criteria: accessibility, acceptability of the community and multi-ethnicity. It is located 5 km from Sarikei town and can be easily accessed within 10 minutes of driving. There are 150 houses and the total population is 869 consisting of Chinese, Malay, Iban, Melanau and Orang Ulu. The head of the community is Mr. Bohan Kree. Most of the residents are working either in public or private sectors. The housing estate is equipped with basic amenities such as public telephone, electricity (SESCO), water from JKR, tarred road, proper latrine system, kindergarten, and football field.
CHAPTER II

PROBLEM STATEMENT,
LITERATURE REVIEW
&
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CHAPTER II
PROBLEM STATEMENT, LITERATURE REVIEW AND
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2.1 PROBLEM STATEMENT

Many studies regarding knowledge and attitude of diabetes in population in Peninsular Malaysia have been conducted. However, similar study in Sarawak is still lacking. Information obtained from the medical assistant in Klinik Kesihatan Sarakei further revealed that there are currently 1,669 diabetic patients receiving treatment at Klinik Kesihatan Sarakei and diabetes mellitus is one of the commonest health problems in Sarakei division. Though diabetes mellitus is also a prevalent health problem in Sarawak, the level of knowledge and attitude of local population towards diabetes mellitus are still unknown. Therefore, we wish to conduct a study on knowledge and attitude towards diabetes mellitus on the population in the pre-chosen housing estate (Taman Susur Jambu Indah) in Sarakei Division. The result of the study may serve as a reference for future study in Sarawak.

Subsequently, suitable intervention programme based on the result of the pre-intervention survey will be carried out. Diabetes education, with consequent improvements in knowledge, attitudes and skills, leads to better control of the disease and is widely accepted to be an integral part of comprehensive diabetes care (Rafique et al., 2006). Thus, we believe that by conducting the study and intervention programme in Taman Susur Jambu Indah can help to improve their knowledge and attitude on diabetes mellitus and hence a better prevention and control of the disease.
2.2 LITERATURE REVIEW

Diabetes mellitus is a syndrome characterized by disordered metabolism and inappropriately high blood sugar (hyperglycaemia) resulting from either low levels of the hormone insulin or from abnormal resistance to insulin's effects coupled with inadequate levels of insulin secretion to compensate (Tierney et al., 2002). Whereas World Health Organization (WHO) (1999), defined diabetes mellitus as a metabolic disorder of multiple etiology characterized chronic hyperglycemic with disturbances of carbohydrate, fat and protein metabolism resulting from defects in insulin secretion, insulin action or both.

Demographic transition combined with urbanization and industrialization has resulted in drastic change in lifestyles globally. Therefore, there is a change in disease pattern from communicable diseases to non-communicable or life-style related diseases like diabetes (Mohan et al., 2005). According to report by World Health Organization in 2000, diabetes affects 171,000,000 people and estimates diabetics will reach 366,000,000 people in 2030 (World Health Organization, 2000). Some factors that are contributing to increasing global prevalence of diabetes and persistence of diabetic problem are urbanization, and increasing prevalence of obesity and physical inactivity (Ding et al., 2006). The impact of these changes is more felt in developing countries because of their more rapid rate of growth (Mohan et al., 2005). In fact, two-thirds of the world’s diabetic people live in developing world, predominantly in Asia (Pradeepa & Mohan, 2006). Today, there are nearly 1.2 million people in Malaysia who have diabetes: estimated
117,600 people (98%) are type 2 diabetics and estimated 24,000 people (2%) are type 1 diabetics (Malaysian Diabetes Association, 2007). The increasing trend of prevalence is a burden for us in term of economic aspect, because diabetes mellitus is a costly condition by virtue of its high per person cost (Selby et al., 1997). It is estimated that diabetes accounts for between 5-10% nation's health budget (Fauziah & Suhaiza, 2004), because annual costs of providing care were 2.4 times greater for diabetics members than for nondiabetic group (Suhaiza et al., 2004).

The classical symptoms of diabetes such as thirst, polyuria, nocturia and rapid weight loss are prominent in type 1 diabetes, but are often absent in patient with type 2 diabetes, many of whom are asymptomatic or have non specific complaints such as chronic fatigue or malaise (Kumar & Clark, 2002). This can be supported by study done by Shafie et al. (2004) which showed that most people were not aware that they have diabetes. The symptoms of Type II diabetes are so mild that patients who are fortunate to be diagnosed early do not see a need for long term therapy (Wee et al., 2002). Study by Irene et al. (2005) also revealed that the inability to recognize symptoms of diabetes was cited as a major barrier to early detection and diagnosis and the participants generally perceived that if there were no recognizable symptoms, there was no need to go to a doctor or to think they were at risk. Most participants with diabetes never recognized symptoms before diagnosis and were diagnosed when under care for another health problem or on a routine visit.
Several risk factors for diabetes have been identified in various studies. The highest proportion of risk factor is hypertension (Zainal Arifin et al., 2005). According to Ilhan et al. (2002), the presence of diabetes and impaired glucose tolerance (IGT) were higher among those with hypertension compared to those with normotensive subjects. Other than that, hypercholesterolaemia also has been recognized as one of the risk factors. According to a study done by Al-Mahmood et al. (2005), insulin sensitivity of subjects with isolated hypercholesterolemia is lower than normolipidemic subjects, and their B cells have to work more to compensate for the lowered insulin sensitivity; therefore isolated hypercholesterolemia subjects may develop insulin resistance syndrome in the future and should be treated. Apart from that, study by Wee et al. (2002) shows that sedentary lifestyle and obesity are two important contributors to increasing prevalence of diabetes. Strong familial aggregation, higher insulin levels, lifestyle changes (especially physical inactivity due to industrialization and urbanization), and adoption of a low-fiber, high-fat diet have been largely responsible for the increasing prevalence rates of obesity leading to type II diabetes and associated complications in Asian populations (Pradeepa & Mohan, 2006). A cohort studies done in Scotland from 1976 until 2004 shows that overweight and obesity account for a major proportion of diabetes mellitus (Hart et al., 2007). In fact, facts from National Health and Morbidity Survey 2 (NHMS 2) showed that the prevalence of obesity was 4.4% and of overweight was 16.6% in Malaysia; amongst those with diabetes mellitus, 18.8% were either obese or overweight showing that that the rise in the prevalence of diabetes is due to a rise in the prevalence of obesity (Mafauzy, 2006). However, obesity is not a definite cause of diabetes mellitus, but it has association with diabetes since both of them underlie the