MENTAL HEALTH OF PRIMARY CARE ATTENDEES IN KOTA KINABALU, SABAH

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ABSTRACT

This PhD thesis aims to investigate the mental health problems, care and service among the government clinics in Sabah, Malaysia, focusing on one of the most densely populated districts of Kota Kinabalu.

Background behind undertaking of this project was based on existing epidemiological facts and studies from Sabah and peninsular Malaysia is presented. The lack of adequate mental health services, mental health research, poverty, immigration and other specific issues that are discussed in the literature review.

This is a cross-sectional, general health clinic-based study among primary care attendees in the Kota Kinabalu district of Sabah.

Aim: The study was designed to determine the prevalence of common mental disorders among primary care attendees in Kota Kinabalu and to identify the associated factors. It also determined the treatment gap, disability and perceived need for psychiatric treatment and care and mental health service utilization among primary care attendees with probable common mental disorder.

Method: Simple random sampling method was used to select patients at three government general outpatient clinics. A total of four hundred and eighty-one patients were invited to participate. Four hundred and thirty agreed and fifty-one patients (10.6%) refused. Respondents were further interviewed by trained interviewers using a standard proforma to obtain socio-demographic data and clinical profile, Patient Health Questionnaire (PHQ), Work and Social Adjustment Scale (WSAS), General Practitioner User Perceived Need Questionnaire and Mental Health Service Utilization Questionnaire.
Results: The prevalence of common mental disorders among primary care attendees were 52.1%, with 224 out of 430 respondents having a probable common mental disorder. This was higher than the previous two studies done in West Malaysia, where the prevalence of mental disorder in the primary care setting was found to be 24.7% and 26.7% respectively. Ninety-five respondents (22.1%) had more than one psychiatric diagnosis. Using univariate analysis: young age, female, monthly income less than RM1000 (1AUD=RM2.97), unemployment, student, secondary/tertiary education and recent stressors were all significantly associated with common mental disorder (PHQ positive). Using a logistic regression method, five factors were significantly predictive of common mental disorders. These were young age (18-29 years of age), female gender, higher education, income less than RM1000 and history of being physically or sexually victimized.

Two hundred and nineteen (97.8%) out of two hundred and twenty-four respondents with common mental disorder had some form of disability. One hundred and sixty-three (72.8%) were slightly disabled, thirty-seven respondents (16.5%) were moderately disabled and nineteen (8.5%) were severely disabled.

There was a significant and consistent positive association between the moderate disability and co-morbid common mental disorder in nearly all items of disability. The severely disabled group was shown to have a positive association with co-morbidity in two of five items of disability. These were private leisure activities and family relationship.

Two hundred and five, out of two hundred and twenty-four respondents with a common mental disorder were not receiving any treatment. This was a treatment gap of 91.5%. Twenty-four respondents sought help from a traditional healer, twelve went to other professional mental health services and only three were seen by psychiatrist. Only four patients had been admitted to a psychiatric ward.

The most sought out mental health services in this population were counselling (49.1%) and mental health information (41.1%). The least common mental health service provided was for medication (20.5%). The most common reason given for not accessing mental health services or treatment was “I preferred to manage myself the problem”.

iii
**Conclusions:** The project has identified high prevalence of mental common mental disorders, a wide treatment gap and a high level of perceived unmet need in primary care clinics around Kota Kinabalu. Based on the results recommendations are made for mental health service improvements in the clinics, which serve a multi-cultural society.
DECLARATION

This is to certify that

i) the thesis comprises only my original work towards the Doctor of Philosophy, except where indicated in the preface;

ii) due acknowledgement has been made in the text to all other material used;

iii) the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices

Signature

Ahmad Faris bin Abdullah

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DEDICATION

I feel compelled to write this thesis as a moral duty to tell the story of how mental health issues are dealt in this part of the world. Although we are sophisticated and modern in our infrastructures and technology, we remain backward in humanity and mental health.

I need to rise above my own difficulties, shortcomings and remind myself of the higher purpose of this beginning.

I dedicate this thesis to my late grandfather Haji Zainuddin bin Mahmud who morally instilled within me a love for knowledge.

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CHAPTER 1.  INTRODUCTION

This PhD thesis aims to investigate objectively the mental health issues facing the majority lower socioeconomic population in Sabah, Malaysia, focusing exclusively on one of its most densely populated districts of Kota Kinabalu. It will present and compare current data available from Sabah and peninsular Malaysia regarding mental health epidemiology and service utilization. The lack of adequate mental health services, mental health research, and other specific issues that are faced by the primarily indigenous community in Sabah will be explained in detail.

Since Malaysia established independence in 1957, there have been only a small number of mental health studies and publications from the state of Sabah; 2.5% of the total indexed publications in Malaysia since independence. Sabah only participated in three Malaysian National Health Surveys (described in detail in the next section): The Second Malaysian National Health Morbidity Survey (1996), the Third Malaysian National Health Morbidity Survey (2006) and the National Health Morbidity Survey (2015). These are population-based prevalence studies that failed to initiate any actionable information for mental health services in primary care. (See Section 2.1 for details of lack of mental health research in Sabah)

In terms of mental health services, the deinstitutionalization effort in Sabah has mainly focused on following-up and treating patients with the more serious mental illnesses in the community. Many patients who are suffering from common mental disorders are left unnoticed. These patients do not utilize the services provided by the mental institution unless they are severely ill. Many of them attend government health clinics. However, common mental disorders that are only mild or moderate are either not detected or misdiagnosed and are not referred for further specialized help.
In the state of Sabah, mental health service in primary health care (PHC) is inadequately understood. This research project is the first to attempt to understand the magnitude of the problems, the consequent effects of the current low level of utilization and the perceived need of services by the public. With an inadequate amount of reliable data existing on primary care prevalence and health care utilization rates, local health care planners are unable to accurately estimate the real needs of this population.

A cross-sectional health clinic-based study of primary health care service was designed to examine the factors that influence mental health utilization in Kota Kinabalu, Sabah. Government public health clinics were chosen as the setting for this study because it is a potential platform to deliver an efficient mental health service. However, at present, the primary health clinics are not effectively used to screen and manage mental health problems. This study was conducted because it was believed that there were prevailing mental health issues and disabilities among people visiting the primary health clinics which were not detected, and needs were not being met.

The majority of psychiatric disorder and functional disability associated with it, can be seen at the primary care level with 20% of primary care patients have diagnosable common mental disorders[1]. According to two studies done in West Malaysia, the prevalence rate of psychiatric morbidity in a primary care setting was 24.7 [2] and 26.7% [3] respectively. There are many studies from developed countries that showed mental disorder can be treated at a relatively low cost within the primary care setting. Early detection and treatment may reduce the impact of the disability associated with mental disorder. In Malaysia, primary care has mainly been concerned with maternal and child health, infectious disease and other non-communicable diseases. The role of primary care in treating mental disorders only started to be discussed in the past one or two decades [4].

Sabah, one of the two states in East Malaysia has a diverse population background with predominantly (48.5%) indigenous population [5]. Sabah has existing issues such as poverty, a large immigrant population, lack of mental health resources[6] and lack of mental health research [7]. The prevalence rate of psychiatric morbidity in primary care has still not being reported.
Governmental health clinic attendees are a specialized sub-population with more complicated physical illnesses and from a low to middle socioeconomic class. The physical diseases and social challenges naturally make the clinic attendees more vulnerable to common mental disorders. It is important to appreciate the effect of common mental disorders on people already troubled by their physical diseases. Therefore, it is interesting to assess whether this specialized sub-population share the same prevalence rate of mental disorders as the general population or if they have a higher prevalence rate.

The data on mental health service utilization and needs of patients in primary care settings may be useful and relevant to the state public health department. The findings of the research may guide the department in prioritizing mental health services in the government public health clinics. This study will also compliment the prevalence study by the Second Malaysia National Health Morbidity Survey and Third Malaysia National Health Morbidity Survey for Sabah population [8-10].

SECTION 1.1. INTRODUCTION TO SABAH

Sabah, “The Land Below the Wind” is unique in terms of the cross-border relationship between Malaysia, Philippines and Indonesia. The State of Sabah consists of five Divisions: Tawau, Sandakan, Kudat, West Coast and Interior. The Divisions are further sub-divided into twenty-four administrative districts. Tongod, with an area of 10,054 square kilometres, is the largest district in Sabah while Kota Kinabalu, with an area of 351 square kilometres, is the smallest district.

Although the national language of Malaysia is Malay language, Sabah has 32 different ethnicities with 50 different languages and more than 90 different dialects spoken; including Kadazans, Bajaus, Muruts, Kedayans, Iranuns, Sulus, Hakkas (Chinese), Brunei Malays, Malays and others that reflect the population evolution over many generations. The federal government of Malaysia has officially recognized 28 ethnic groups as “the children of the soil” or Bumiputras.
Currently the population of Sabah is 3,206,742 as of the last census in 2010, with indigenous groups apparently making up 61.2 percent of the total population[11] Based on this 2010 Census of Population and Housing, the three major groups of Kadazandusun, Murut and Bajau as well as ‘Other Bumiputra numbered 1.6 million or 50% of the total population [11].

Current Socioeconomic Status & Urban-Rural Poverty

Sabah was once a major timber exporter. It was a proud, rich state with a GDP second to Selangor among the 14 states in Malaysia [12, 13]. But with the depletion of natural forests and conservation efforts to save the rainforest areas, palm oil has emerged as an alternative sustainable resource. Other agricultural products include rubber and cocoa. Tourism is the second largest contributor to the economy.

Currently, Sabah is the poorest state in Malaysia with the highest poverty rate in the country. It contains more than one third of Malaysia’s total lowest income households. In 2004, some 24% of Sabah’s households were living below the national poverty line. According to the Malaysia National Economic Planning Unit in 2002, Sabah also has the highest level of hard core poverty, at 6.5%, with the poverty line for household income of Sabah is RM690/month (AUD 11/day) and the hard core poverty line is defined as half of it, which is RM345/month (AUD 5/day)[14]. This is six times greater than that in Sarawak. Among the poorest of the poor are the rural dwellers who live on the margins of Sabah’s forest, rivers and waterfronths [15].

With the ever-growing socio-economic opportunities in the urban areas, people have abandoned the less developed rural areas, producing a shift out of the traditional rural poverty offset by increasing the urban poverty. Currently the population of Kota Kinabalu (which is considered a much more urbanized district) is estimated to be 462,963 [11], is approximately 14% of the total population of Sabah. The percentage of urban dwellers in Sabah has increased over the years. For example, in 2005, 49.5% of Sabahan reside in urban areas as compared to Kelantan (33.4%) and Sarawak (49.2%). These percentages have increased more than twice since the 1970s [15].

Poverty both in urban and rural areas is a major social issue in the state. It is almost becoming an intergenerational cycle of suffering. However, the impact of poverty and social impoverishment on mental health in different settings has not received much attention.
History
Sabah’s history is linked to that of the proud maritime Sulu Archipelago. The past socio-economic and political landscape, in particularly from the 16\textsuperscript{th} to 19\textsuperscript{th} century, was influenced by the British East India Company, Malay-Muslim Sultanates (Brunei & Sulu), Chinese trade relations and the Spanish-Sulu-British relationship. For a long time, Sabah has been a destination for the Malays immigrating from Southern Philippines and Indonesia.

This intricate relationship between these forces and the local populations had shaped Sabah’s socio-demographic landscape with unique settlements that integrated the Indigenous Malay (Sulu, Bajaus, Brunei) groups and Chinese to the local indigenous people (Kadazandusuns, Muruts, Orang Sungai and others).

Immigrants and indigenous groups
The complexities of psychosocial issues in Sabah are compounded by the issue of illegal migration from neighbouring countries. As mentioned earlier, migration from the Sulu Archipelago and Brunei Sultanate to Sabah has a very long history. The earliest migrants to Sabah, from the Sulu Archipelago arrived in the late fifteenth century when the Spanish pushed southwards towards Sulu and Tawi-Tawi in the Southern Philippines. The second wave of migration is associated with the Mindanao insurgency in the Philippines when thousands of Suluk and Bajau fled the war-torn Southern Province in their small wooden boats (kumpits) [16]. The third migration phase was the post-1978, after the peace agreement between the Philippine government and the Moro National Liberation Front (MNLF). These groups of migrants were considered by the local Sabahan as economic migrants seeking a better life rather than as political refugees [16]. In addition to these waves of migration, immigration from Indonesia has also contributed to diversity in Sabah. Indonesian workers entered Sabah illegally from South Sulawesi and East Flores in East Nusa Tenggara seeking economic security and escaping natural calamities and for family reasons [17].
The State Population census in 1970 did not record non-citizenship composition of the population; however in the 2005 census, 24.8% of the population was recorded as non-citizens[5]. This staggering statistic has contributed to the growing number of urban poverty areas, better known locally as ‘Kampung Air’ or ‘Kampung Setinggan’. These are water villages, where the immigrants erect their stilted houses on the shores, along the waterfronts. These water villages are clearly visible to people who visit the Kota Kinabalu City and other towns in Sabah.

It is noted that immigrants have reduced access to health, education, legal, social services and frequently received lesser wages. State agencies such as public hospitals, schools and the government Islamic agency (MUIS) monitor the status of migration of those who approach them for help. Provisions are yet to be made for stateless children [18]. Feelings of loss of economic resources to immigrants, have fuelled Sabahans’ claims of reduced rights in comparison to the Bumiputras in Peninsular Malaysia [16]. There is constant underlying disappointment and conflict between the local indigenous and immigrant groups.

Kadazandusuns and the Muruts, who at one time formed the largest ethnic group in the state, feel they have become foreigners in their own land [16]. For instance, lack of a birth certificate due to inaccessibility in the interior leaves many indigenous people unable to exercise their voting rights. On the contrary, illegal immigrants can become a part of the electoral process in the host state by acquiring documentary citizenship [16].

SECTION 1.2. THE MENTAL HEALTH SYSTEM IN SABAH

Sabah faces unique challenges in comparison to peninsular Malaysia. The population of Sabah is characterized by cultural diversity, a high poverty rate, high numbers of immigrants and a lower educational level. A large indigenous population resides in geographically inaccessible areas [15] with many remote communities isolated by the vast tropical rainforest.

Infectious diseases and the prevention of lifestyle related physical diseases are still the major public health priorities. Infectious diseases like Dengue Fever, Malaria, Typhoid and Tuberculosis remain the main focus of health resources. Mental health promotion has been included in an expansion of health promotion initiatives [5]. However, lack of manpower and financial constraints have limited the mental health initiative in the unit.
This study is important to make the State Health Department and the local authority to realize that the people are not only facing the problems of infectious diseases but also under threat of modern stressful living in the form of common mental disorder. It is important to ensure mental health of people at all level of socio-economy, indigenous or immigrants are well. This is important to create healthy, harmonious and wellbeing of the population. Without this general wellbeing, mentally healthy people, the result of this is still disabling and impact of the function and the productivity of the population.

The most important challenges in conducting this study were to convince and acquire the consent of the local authorities; government health clinics and state health department. This is understood because of the overcrowded clinics and to ensure that the work flow in the clinics are not disturbed and the confidentiality and privacy of patients is maintained. These were overcome through negotiation and obtaining the local ethics approval. (See Section 4.2)

Another issue or challenge in conducting this study is to obtain the cooperation and interest of the clinic attendees. Majority of the attendees are preoccupied with their physical illnesses and procedures in the clinic. In order to have any cooperation from respondents the interview needed to be simple and short in duration. This was overcome through anticipation of the issue during a pilot study (see Section 4.3) and administering simple questionnaires (see Section 4.3).

We also suspected some apprehension and reluctance on the part of clinic attendees especially the indigenous rural people and immigrant attendees. This mindset is quite understandable knowing the social marginalization, social isolation and the ongoing political, social and economic rivalry that happen between them.

**Organization of mental health services**

Although decentralization has been a significant part of the psychiatric agenda since 1997 in Malaysia, implementation in the state of Sabah has moved at a very slow pace, due to a lack of coordination between the State Public Health Department and psychiatric services.
Decentralization efforts in Sabah have thus far only focused on reducing the number of beds in the psychiatric hospital from 1,000 beds to a more manageable 300 bed. There is one psychiatric hospital that also acts as a referral centre for the region and caters for a population of 3.1 million. Only three government hospitals out of 23 hospitals have psychiatric services including the Main State Psychiatric Hospital, Hospital Mesra Bukit Padang. Besides catering for mostly involuntary admissions of patients with serious mental disorders, Hospital Mesra Bukit Padang provides other community residential services including a forensic unit and a drug detoxification unit [19].

The state also has its own drug rehabilitation centre under the Ministry of Internal Affairs to cater for long term admissions for drug rehabilitation, mainly amphetamine abuse and dependence[20]. These are predominantly mandated patients and the facility is often over populated.[20]

In order to seek outpatient psychiatric treatment, patients must be referred to Hospital Mesra Bukit Padang or to the visiting psychiatrist from Hospital Mesra Bukit Padang at the various district hospitals. For rural people, this means they must arrange transportation to bring their sick relatives from remote areas, out of the thick jungle and across rivers to the larger district hospitals to obtain the required referral. The smaller local health clinics are not equipped to accept psychiatric emergency cases and will only administer follow-up treatment for stable patients.

**Mental health outpatient facilities**

Outpatient clinics exclusively for people with mental illnesses are only available in the psychiatric hospital and the large specialist hospitals, Bukit Padang Hospital, General Hospital Queen Elizabeth and Sandakan Hospital. Psychiatrists and medical officers are assigned to psychiatry departments to provide services at such clinics.

The other smaller non-specialized hospitals rely on minimally trained medical assistants and nurses who run the mental health clinics. The psychiatrists and medical officers from Kota Kinabalu visit these clinics either monthly, two monthly or three monthly [21].
In 2005, 77% of 13,733 out-patient attendees at the Hospital Mesra Bukit Padang had a primary diagnosis of a psychotic disorder [19]. In the same year, 18731 patients presented to out-patient clinics at the other 23 hospitals around Sabah [19]. The majority of which also had a primary diagnosis of a psychotic disorder. The highest peripheral clinic attendance is in Outpatient Clinic Hospital Dutches of Kent, Sandakan (4506 attendances) [19]. It is worthwhile to note that in 2005, only 397 patients with psychiatric illness attended the outpatient clinic at the General Hospital Queen Elizabeth, Kota Kinabalu, the biggest public hospital in the state [19].

**Day treatment facilities**

Mental health day treatment facilities are only available at Hospital Mesra Bukit Padang. It caters for patients with psychotic disorders in remission and children with various learning disabilities.

The community mental health services remain centralized around Hospital Mesra Bukit Padang located in Kota Kinabalu. Effort to develop a psychosocial rehabilitation centre, for example in Kuala Penyu have not progressed as originally planned. One of the main barriers to such reform is the lack of leadership either from the psychiatric department or public health department. There is also a lack of a mental health outreach program in the public health setting.

**Mental health in primary care**

At the state level, the coordination, promotion and planning for mental health comes under the purview of the Non-infectious Disease Unit. This unit also caters for other life–style diseases, for example Diabetes and Hypertension. Mental health receives relatively little priority.

The state has 6 family physicians posted at the various health clinics. These family physicians are trained in psychiatry and are able to manage common mental disorders in the health clinics.

Psychiatrists from Hospital Mesra Bukit Padang and the local university conduct regular advanced training in psychiatry for medical officers, general practitioners, nurses and medical assistants as part of their continuous medical education. The state also regularly organized the biannual State Mental Health Conference since 1998.
Human resources

Since 2012, there are eighteen psychiatrists serving in the State of Sabah. This is an increased, compare to less than ten psychiatrists before 2008. There are thirteen psychiatrists in the government hospitals, three psychiatrists in the Universiti Malaysia Sabah and two private psychiatrists to cater for the entire population of 3.1 million people in Sabah (0.5 psychiatrist per 100,000 population).[21]. In terms of ratio of psychiatrists, Sabah has only managed to satisfy that for low income countries as outlined by the World Health Organization.

There are 70-80 nurses and medical assistants posted exclusively for mental health. Only 20-30 are trained in psychiatry. The majority of which are based in the psychiatric hospital. There is one clinical psychologist based in the local university. One medical social worker, a counsellor and a psychologist based in Hospital Mesra Bukit Padang.

The lack of adequate manpower is especially felt in the specialized disciplines, such as clinical psychologists, community psychiatric nurses, social workers, occupational therapists and speech therapists. None of the health districts have a designated psychiatrist to provide leadership to their mental health program. This has hampered the provision of continuity of care.

Some of the issues that have contributed to this failure in provision of community mental health care have been clearly outlined by Jamaiyah [4] in 2000. Resistance and lack of knowledge from primary care personnel, lack of man power in the mental health field, psychiatrists’ focus on an ‘illness approach’ rather than a public health agenda, lack of data banks and an information flow system that allows a smooth flow of data between specialized centre, hospitals and primary care are some of the issues.
Financing and utilization of mental health services

The national mental health expenditure is 3% (2005) of the total ministry of health annual budget. Most of the state’s mental health budget is channelled to Hospital Mesra Bukit Padang. In 2005, the hospital received about RM 12 million (1.7% of state health budget) from the government to run the hospital and psychiatric program. About RM 1.8 million was used to purchase atypical anti-psychotic drugs, RM 125,000 for typical antipsychotics and RM 246,000 for anti-depressants. The hospital provides free treatment to all patients with minimal follow-up fees. Patients at the periphery may get typical anti-psychotics and other medications at the smaller district hospitals. However, for more expensive and newer medications, they must be referred to the larger government hospitals.

Patients in larger towns may get access to treatment from a private psychiatrist or general practitioners. For one consultation, the patient is required to pay RM 50 (MMA) for specialist consultation fees and minimum RM 50 for a monthly supply of medications. 24.9% of the Sabahan population fall below the poverty line (in 1992, the official poverty line was a monthly household income of RM 252.36). Hence, the cost of treatment for a patient could easily be a quarter or one third of his or her monthly household income.

SECTION 1.3. PERSONAL REFLECTION

As a psychiatrist, I had the opportunity of working for five years in the only mental institution in Sabah. Besides working within the institution, one of my many duties was to visit the psychiatric outpatient clinics all over Sabah in rotation. During these many rotations I came to realize that there were more ‘silent sufferers’ whom were largely misunderstood.

Just to quote one such incidence, a middle-aged lady was referred by the nurse who manned the out-patient clinic. The lady was labelled ‘fussy’, ‘a nuisance’ as she kept coming to the outpatient clinic or the emergency room with a range of complaints from breathing difficulties, severe chest pain, fainting, hysterical and fear of dying.
She was diagnosed as having psychosis. She was quite frequently given intramuscular injection of Haloperidol to ‘calm’ her down by the attending doctors. When she was interviewed, she presented with combination of panic and depressive symptoms. To make matters worse she also had to cope with the extrapyramidal side effects such as rigidity and gross tremors of the Haloperidol. Later, it was discovered that she and her children were physically and psychologically traumatized by a drunken, unemployed husband. This was just one of the many cases I and many other doctors came across in the outpatient clinic.

This is just one of many cases where a common mental disorder with obvious precipitating factors is dismissed as having serious mental illness or psychosis. The state health department conducted a regular update for front line staff at government clinics. However, without active collaboration, supervision and upgrade skills training, the staffs are not adequately able to detect and handle common mental disorder.

Many of the primary care clinics have very limited resources or essential resources are unavailable. For example, the lack of counsellors and limited range of psychotropic drugs is having a negative effect to the patient management. In one of the primary care clinics in Kota Kinabalu, the psychotropic drugs available are only Amitriptyline, Sertraline and Risperidone. These drugs are also categorized under the Dangerous Drug Act with strict access only by specialists. Many of the mental health primary care clinics are staffed by junior doctors or medical assistants who cannot prescribe these medicines. Patients seen in the clinic are usually follow-up cases discharged and referred back to primary care from the psychiatric ward. Newly diagnosed cases usually need to be seen by a visiting psychiatrist or referred to the specialist psychiatric clinic at the mental hospital.

Local people have many names for their common mental disorders and tend to minimize it as stress or spiritual problems. Panic disorders are called ‘Darah Gemuruh’ (boiling blood/panicky state). Obsessive Compulsive Disorder as ‘Was Was’ (whispering doubts). There are also other labels coined like ‘Mulau’ (madness) or ‘Buatan Orang’ (being charmed).

In my personal observation common mental disorders are common in the primary care and are probably frequently dismissed and misdiagnosed with patients not getting the appropriate mental health help they badly need.
SECTION 1.4.  THE STRUCTURE OF THE THESIS

Brief explanation of each chapter of the thesis.

Chapter 1 The introduction chapter elaborates the background of the population and the state of the mental health system in Sabah. It gives general ideas and explains the reasons for conducting the study in Sabah and choosing the government primary care clinics as the setting. It concludes with the structure of the thesis.

Chapter 2. The literature review chapter is divided into 5 sections. The first section explains the lack of mental health research in Sabah even in comparison to West Malaysia. The review of mental health publications in Malaysia and Sabah, shows that mental health research in primary care is not a priority. In the context of Sabah, there had been no previous study on mental health in primary care. To our knowledge this is the first study of mental health in primary care in Sabah.

The second section discusses about the community prevalence and primary care services in low and middle-income countries.

Section three introduces the common mental disorders and explains the important factors thought to be associated with common mental disorder in the context of Sabah.

Section four discusses the treatment gap and determinants of mental health service utilization examined in this study. It also summarizes mental health service publications in Southeast Asia, presents the current findings on disability in Malaysia and emphasizes the importance of perceived need in this study.

Section five discuss briefly on disability and self-perceived need of care.

Chapter 3 presents the theoretical framework of this study, and the rationale for conducting the study at the primary care clinics in Sabah and for measuring disabilities and perceived need of care. It presents the specific research objectives and the hypotheses to be tested.
Chapter 4 explains the study design, ethical consideration and approval, data collection, study variables, instruments and the method of analysis of all 6 research objectives and related hypothesis.

Chapter 5. The first 2 sections report the characteristics of the respondents and refusals. The remaining sections report the findings in relation to each of the 6 objectives and related hypothesis.

Chapter 6. The discussion chapter begins with a summary of the main findings. It explains the prevalence findings, social determinants of common mental disorder, discusses findings on the treatment gap, perceived need and underutilization of mental health services. It also discusses the association between disability, poverty and mental disorders. Lastly, it discusses the factors influencing mental health service utilization. It also identifies the limitations of and strength of the study.

Chapter 7. This chapter concludes with the most important findings of high treatment gap and high unmet needs and the need for a new approach for mental health in primary care clinics in Kota Kinabalu. It also makes recommendations to improve the mental health system in Sabah through research and improving service practices.
SECTION 2.1. MALAYSIA AND SABAH MENTAL HEALTH RESEARCH

In terms of mental health research publication, the world appears to be divided into two. A higher number of publications are generated from more developed countries, with low and middle income countries generating lower publication numbers [23, 24]. World Health Organization has emphasized this, as an important issue which needs to be resolved [25].

The importance of mental health and mental disorders as public health issues has been evident to Malaysian academicians for quite some time. There have been several epidemiological studies done in Malaysia focusing on psychiatric morbidity, mental health policy and profile, cultural beliefs, psychiatric services and rare syndromes conducted by the academic institutions that can be traced back to the 1960s [26-34]. Within Malaysia, authorities and experts may have to reconcile the gaps between region and states, especially between East (consists of 2 states, Sabah and Sarawak) and Peninsular Malaysia/West Malaysia (Appendix 26-Malaysia Map), to generate more mental health research and publications that represent Malaysia as a nation. Thus far, the mental health research initiative in Malaysia has been carried out mainly by the Ministry of Health and among the universities primarily based in Peninsular or West Malaysia.

Brief Review of Mental Health Research Topics in Malaysia

In an effort to examine the trend and themes of mental health research in Malaysia, we attempted to trace 144 indexed mental health articles from the 1960s to the present day cited in widely accessible databases (e.g., Pubmed, Web of Science (ISI), Medline, and PsycInfo). These publications had given much insight into the psychiatric and mental health system available to the Malaysian population in general.

Out of 144 articles, 121 were traced and appraised. The articles covered areas such as: history or country profile, policy and regulation, prevalence study, psychiatric morbidity and burden of diseases, risk and protective factors, community perception and behaviour, clinical management, health service delivery, ethno-sensitive diagnostic tools, family and community involvement, anthropological and sociological issues, phenomenology and psychiatric education.
The most studied niche area was prevalence, psychiatric morbidity and burden (34.7%) (Table 2-2-1). Psychiatry and mental health has also attracted multi-disciplinary researchers, especially in the last 8 years prior to this study. For example, besides contribution from psychiatric departments in the established universities, there are contribution from Department of Psychology and Counselling, Public Health, Anthropology and Sociology, Nursing, Medicine Department and Psychiatric Hospitals. The most encouraging is the increased research participation from Non-Psychiatric Departments as the main authors.

Table 2-2-1 Showing the research priority areas and disorders studied in Malaysia 1960-2008

<table>
<thead>
<tr>
<th>NIH 9th Malaysia Plan priority areas &amp; additional topics (n= 121)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevalence, co-morbidity &amp; burden of disease</td>
<td>42</td>
<td>34.7</td>
</tr>
<tr>
<td>Risk &amp; protective factors</td>
<td>8</td>
<td>6.6</td>
</tr>
<tr>
<td>Community perception &amp; behaviour</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>Clinical management</td>
<td>5</td>
<td>4.1</td>
</tr>
<tr>
<td>Health service delivery</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>Ethno-sensitive diagnostic tools</td>
<td>7</td>
<td>5.8</td>
</tr>
<tr>
<td>Family &amp; community involvement strategies</td>
<td>3</td>
<td>2.5</td>
</tr>
<tr>
<td>History or country profile</td>
<td>6</td>
<td>5.0</td>
</tr>
<tr>
<td>Policy &amp; regulation</td>
<td>12</td>
<td>9.9</td>
</tr>
<tr>
<td>Anthropology &amp; sociological issues</td>
<td>11</td>
<td>9.1</td>
</tr>
<tr>
<td>phenomenology</td>
<td>9</td>
<td>7.4</td>
</tr>
<tr>
<td>Psychiatric education</td>
<td>4</td>
<td>3.3</td>
</tr>
<tr>
<td>Total</td>
<td>121</td>
<td>100</td>
</tr>
</tbody>
</table>

Kleinman’s suggested priority areas (n=121)

| Culturally informed topics                                    | 53        | 43.8    |
| Evaluate service in primary care                              | 14        | 11.6    |
| Evaluate community based psychiatric rehabilitation program    | 6         | 5.0     |
There are various psychiatry or mental health topics that have been published in the last 15 years coming from Malaysia. There are many disorders and issues that were studied. Among the most common psychiatric disorders and issues studied were schizophrenia, Malaysian policy and profile, attitude and behaviour of caregivers and staff, overall psychiatric disorders, and child and adolescent psychiatric disorders. On the other hand, the least commonly studied areas were common mental disorders, mental health in primary care, liaison psychiatry, culture-bound syndrome, geriatric related disorders, pregnancy related disorders, and women’s issues, substance abuse, psychiatric curriculum, and suicide.

Quantitative method was the most popular method of study design (58.7%). Other methods that were used include qualitative method (6.6%), case study (4.1%), and clinical trial (2.5%).

From these studies, it was discovered that mental health as a concept is understood or perceived differently among the various ethnic and religious communities [35-37]. Furthermore, with modernization, urbanization, migration, slow implementation of Community Mental Health Programme and poverty issues in certain states, more mental health research is required to meet the growing demands and challenges of the changing modern society of Malaysia.

Most studies in Malaysia have focused on the peninsular Malaysia population which is predominantly made up of three races: Malay, Chinese, and Indian. Apart from a few studies from Sarawak (one of the two states in East Malaysia) [38-40], prior to the undertaking of this project there was no local epidemiological study reported on Sabah population mental health. Most of the data from Sabah included as a part of the national mental health survey failed to provide a detailed analysis of the different ethnic groups in Sabah. This is even though Sabah is the second largest state in terms of population.
There were three research articles that address the changing pattern of family relationships in the Kadazandusun indigenous people, and an anthropological study on domestic violence among Kadazandusun [41-43]. These papers probe the lifestyle and address social issues of one of the main indigenous groups of Sabah but did not make any connection to mental disorders and mental health. Another study done in Sabah had looked at the relationship between cultural beliefs and serious mental disorders[44]. The study highlighted the different cultural beliefs of the Sabah population towards Schizophrenia. However, the convenient opportunistic sampling did not capture the other indigenous groups [44]. These three indexed mental health related articles from the state of Sabah contributed to only 2.5% articles published from Malaysia.

Since 2011, there had been a steady growth of publications and mental health related researches in the state of Sabah, especially from the Universiti Malaysia Sabah [45, 46].

**National Mental Health Surveys**

### 2.1.1.1. National Health Morbidity Survey II, 1996

Several national level studies have been carried out by the Ministry of Health to identify the prevalence rate of mental disorders and mental health problems in the nation. The Second Malaysian National Health Morbidity Survey (NHMS II, 1996) revealed that 10.7% of Malaysian adults (age 16-65 years) and 13% of children have mental health problems, reflecting the seriousness of the mental health issue [47]. This meant that 1 in every 10 Malaysian (about 1.5 million) adults and about 1 in every 6 children may have had mental health problems at any time. The most common issues were anxiety and depression [48].

The NHMS II 1996, a priority research project of the Seventh Malaysia Plan was conducted with the objective to provide community-based data for the Ministry of Health to review health programme strategies and activities. It was carried out with the hope of providing information to decision makers to focus on the utilization and barriers to health care in Malaysia. It also marked the first time psychiatric morbidity was reported in a national project [49].
The overall response rate for the NHMS II, 1996: psychiatric morbidity survey was 84% with a total of 30,114 respondents. The prevalence was measured using the General Health Questionnaire-12 (GHQ-12) with a cut-off score of 2/3. There was no significant difference between the prevalence in urban and rural areas and the prevalence between states. The prevalence was higher in the states of Sabah (13.9%), Federal Territory of Kuala Lumpur (13.2%), Pahang (13.1%) and Terengganu (13.1%). Penang scored the lowest prevalence at 6.1% [47].

Prevalence by ethnic group was not significantly different. However, the prevalence was highest amongst Indians (17.7%) and was significantly higher as compared to Malay (8.1%) and Chinese (10.6%). The prevalence was significantly higher for non-Malaysians (18.4%) compared to Malaysian (10.4%). The age distribution follows a J-pattern with higher prevalence rate amongst the youngest and the oldest. The prevalence among the divorced (29.2%) and widowed (21.3%) was significantly higher than singles (11.1%) and married people (8.7%) [48].

For socioeconomic factors, the prevalence by educational status and household income was significantly different. For educational status, the highest prevalence rate was amongst those with no education (23.1%) and the lowest was amongst those with tertiary level education group (3.4%). The prevalence by household income was highest amongst those who earned less than RM 400 per month (16.7%) and lowest in the income group between RM3,000 and RM3,999 [48].

The prevalence rate of psychiatric morbidity was also significantly higher among those with associated physical illnesses such as Asthma, Cancer, Physical Disabilities and Diabetes Mellitus. It was surprising that there was no difference in prevalence between the urban and rural populations. However, on closer examination, it was noted that less developed states such as Sabah, Kelantan, Terengganu and Pahang appeared to have a higher prevalence than the urban areas of more highly developed states, with the exception of the Federal Territory of Kuala Lumpur [47].
2.1.1.2. National Health Morbidity Survey III, 2006 [50]

In 2006, the Ministry of Health conducted the Third National Health Morbidity Survey (NHMS III, 2006). Instead of using the General Health Questionnaire-12 (GHQ12), the NHMS III used the expanded version of GHQ; General Health Questionnaire-28. A total of 22,153 (61%) out of 36,519 eligible respondents completed the questionnaire. The overall adjusted prevalence rate of psychiatric morbidity for the country was 11.2% and the overall prevalence for children and adolescents was 20.3%. A higher prevalence was noted among the elderly, 16-19 years of age group, widowed, single, divorcees, people with no education and the lowest income group. These findings were consistent with the findings in NHMS II, 1996.

There were, however, quite several different findings in the later survey. The NHMS III, 2006 found that urban residents (12.6%) had higher prevalence rates than their counterparts in rural areas (8.5%), whereas in NHMS II 1996 there was no significant difference between urban and rural populations. The prevalence rate among the states also changed. The highest prevalence rates in NHMS III were Negeri Sembilan (21.1%), Johor (15.9%), Perak (15.5%) and Penang (14.7%). It is worth noting, that these states were the ones with established mental health institutions. These findings were grossly different to the findings in NHMS II 1996, whereby Penang had the lowest prevalence and Sabah had the highest. Currently, according to NHMS III 2006 Sabah (7.9%), Kelantan (4.4%), Terengganu (5.2%) and Sarawak (9.1%) had among the lowest prevalence rate. These were all the states that had high prevalence rate in 1996.

The findings could be accepted alongside the current trend towards urbanization and changes in the socioeconomic landscape in Malaysia. However, it could also be explained by the methodological limitations and flaws in the NMHS III, 2006. For example, the different questionnaires used different cut-off points and showed a poor response rate in the NHMS III (61%) as compared to NHMS II (84%). The respondents in NHMS III were required to fill and submit the questionnaires in contrast to the NHMS II where the respondents were interviewed. The selection of all members of the selected households may also give rise to over-sampling and redundancy in the data collected.
Different cut-off points or scores in the screening tools may give rise to different findings. Goldberg noted that the cut-off scores vary from country to country, with higher thresholds being associated with higher rates of both single and multiple diagnoses [51].

In centres where the discriminatory power of the GHQ is the lowest, it is necessary to use low threshold as a way of ensuring that sensitivity is protected, but the positive predictive value of the GHQ is then lower. A few methods were suggested to overcome this problem; using the mean GHQ score G [51], median GHQ score [52], and Receiver Operating Characteristic (ROC)[53] analysis. Stratum-specific Likelihood Ratios (SSLR) is another method proposed by Furukawa et al to better interpret diagnostic information than an optimal cut-off score[54]. In the Singapore national mental health survey 1996, the authority had used ethnic specific cut-off scores, which were determined by receiver operating characteristic (ROC) analysis [53]. For example, the Malays used a 5/6 cut-off score, Chinese 4/5 cut-off score and Indians 5/6 cut-off score.

The overall prevalence rate appears rather low compared to that in most countries as noted in the National Health Morbidity Survey Report (10.7% versus rates of 18-31%) [48]. This could be partly due to the screening instrument that screens only the common mental disorders and omits disorders such as psychosis, substance abuse disorders and personality disorders. However, the prevalence rates of common mental disorders are comparable to other Asia Pacific Countries like Taiwan, Hong Kong, South Korea and Thailand (1.1% to 19.9%) [55]. The method of allowing respondents to fill in and submit the questionnaire independently may also have contributed to the higher non-response rate (39%). This in the end may have contributed to the omission of a significant number of GHQ positive cases especially among the least educated and impoverished groups.

Both the NHMS II and III were unable to arrive at their objective to inform the health authority and decision makers regarding mental health services utilization and barriers to mental health care in Malaysia because of the nature of the survey that only focused on prevalence finding. Both the NHMS II and III had not reviewed the public perception and utilization of mental health services.
2.1.1.3. **National Health Morbidity Survey 2015 [8]**

The prevalence of mental health problems among adults showed an increasing trend; increased from 10.7% in 1996 to 29.2% in 2015. This survey showed that females, younger adults, and adults from low income families, seems to be at risk of mental health problems [8].

For the purpose of analysis and comparison with NHMS 1996, score of 3 and above were considered as a case or having mental health problem in the NHMS 2015. However, there was a difference in the methodology between NHMS 1996 and 2015, whereby in the year 1996, GHQ12 was administered as either self-administered or read-out by interviewer.

By state, the prevalence was highest in Sabah and Wilayah Persekutuan Labuan [42.9%], followed by Wilayah Persekutuan Kuala Lumpur [39.8%], and Kelantan [39.1%]. There was no significant difference in the prevalence by locality.

Mental health problems were found to be highest among ‘Other Bumiputras’ (other indigenous) [41.1%], followed by ‘Other minorities’ [33.2%]. The category of ‘Other Bumiputra’ includes the indigenous population of Sabah and Sarawak as well as the *orang Asli* (original people) of West Malaysia. This category includes more than 100 culturally and religiously diverse ethnic groups and including all in the same category means that it is difficult to know whether the sampling was representative. By occupation, the prevalence was lowest among government/semi-government employees [2.6%]. This survey also noted that adults from low household income families were having higher prevalence of mental health problems as compared to higher income families.

Overall, this survey had validated the rising trend of mental health problems in Malaysia that was shown earlier in 1996. Now, it appears to be three times higher than it was 30 years ago.
Other National Mental Health Studies

The Malaysian Burden of Disease Study conducted by The Public Health Institute of the Ministry of Health in 2004 [8, 50] showed that mental disorders contributed to 8.6% of the disease burden in Malaysia (ranking fourth) and that unipolar depression contributed to 3.6% of disease burden, ranking fifth as a single disease [8, 50]. The top ten causes of disability adjusted life years (DALY) lost among males aged 15 -29 years includes: drug abuse (6.3%, ranked second), depression (5.7%, ranked third) and schizophrenia (4%, ranked fifth). In females the top causes of DALYs lost include: depression at 18.3% (ranked first), schizophrenia at 7% (ranked second), anxiety disorders, 6.7% (ranked fourth), bipolar disorders, 4.7% (ranked sixth) [8, 47].

The Mental Health Research Working group had identified a few key or niche areas that Malaysia should embark on such as prevalence study and psychiatric epidemiology. These were still the two most prominent niche areas highlighted in that report [49].

SECTION 2.2. RESEARCH ON PREVALENCE OF COMMON MENTAL DISORDERS IN OTHER LOWER AND MIDDLE-INCOME COUNTRIES

Community Prevalence

A review of 11 community based studies, from developing countries, reported a median prevalence rate of common mental disorders varied from 20% to 30% [56]. There was also one study from Kenya [57], which reported a prevalence rate of between rural (26%) and urban (30.5%) of primary care attendees. In another review of prevalence of common mental disorders in developing countries, that included eight African countries, India, Pakistan, Indonesia and Taiwan, it was reported that the community prevalence ranged from 18.3% to 50.0% [58].

A systematic review [59] of 174 surveys from both high income countries and low and middle income countries reported a variabilities in the prevalence rates between surveys and regions. It was also found that south East Asian countries had reported lower prevalence rates compare other regions of the world. Overall the review reported twelve-month prevalence rate of 17.6% and lifetime prevalence rate of 29.2% [59].
An extensive systematic review [60] of the global prevalence trend anxiety and depression reported that the point prevalence for anxiety and depression remain unchanged between 1990 and 2010. However, the overall number of cases increased by 36%. This is consistent with the increased in a population growth and changed in ages of people. It was also reported that 70% of GHQ studies found a significant increase in psychological distress overtime [60].

**Primary care studies**

Among developing countries, the prevalence of common mental disorders in primary care ranged from 18.3% [61] to 50.0% [62]. Using a specifically designed Vietnamese Depression Scale it was reported that 8.4% of primary care attendees in Ho Chi Minh city had clinical depression [63]. This is higher than previous population-based study done at the same city. There is variability in reporting prevalence rate of common mental disorder.

In a primary care based study 2014 [64] at the northern province of Sri Lanka using PHQ9, it was reported prevalence of major depression of 4.5% and mild depression of 13.3%. this was notably higher than previously reported of 2.6% in the 2007[64]

High income countries reported high prevalence rate of common mental disorder in the primary care. A large primary care based study in Spain [65] reported 53.6% out of 7936 clinic attendees had common mental disorder. The most prevalent were affective (35.8%), anxiety (25.6%), and somatoform (28.8%) disorders. Another 30.3% of the patients had co-morbid common mental disorder [65].

**SECTION 2.3. FACTORS INFLUENCING COMMON MENTAL DISORDERS**

**Definition of Common Mental Disorder**

The World Health Organization classified common mental disorders into mood, stress related, and anxiety disorders; psychoactive substance use; physiological disorders; developmental disorders; organic disorders and psychotic disorders. This classification gives broader groups of mental disorders and more attention to the more common neurotic disorders, while schizophrenia and other psychoses are classified according to their course [66].
Mental health issues, psychological problems and symptoms are common in the community. However, not all can be classified as having psychiatric disorders or common mental disorders. Only those with a constellation of symptoms that satisfy the criteria, are distressed and have impairments will be considered to have common mental disorder.

About 30% of people suffer from fatigue and 50% of the general population has, at any one time, suffered from worries, tiredness and sleepless nights [66]. In 1993, World Bank estimated that mental health problems produced 8% of the global burden of disease, rates higher than common infectious diseases and lifestyle related medical conditions [67]. Therefore, it is apt that the term common mental disorders be coined to describe these common mental health problems that have a major effect on the population.

There is a huge body of work that describes primary care as a viable secondary prevention to psychiatric Goldberg-Huxley model of the pathway to psychiatric care is an important approach. He framed a model that involved five levels that illustrated the movement of individuals with mental illness seeking professional help from the community to the hospital[68]. Goldberg stressed the importance of primary care as the first of four filters that eventually allows an individual to access psychiatric or mental health services [68].

Since then, the World Health Organization has re-emphasized the importance of the role of primary care in providing mental health services [69]. Mental health services in primary care has been defined as “the provision of basic preventive and curative of mental health care at the first point of contact of entry into health care system” [70].

**Socioeconomic, literacy and educational status**

Studies of the association between socioeconomic status and mental disorders has a long history, one early example being the 1939 Chicago Study conducted by Faris and Dunham [71]. These researchers reported an association between admission for Schizophrenia and living in deprived neighbourhoods. Later studies on the association between mental disorders and socioeconomic status generally support these observations [72-75].
Common mental disorder is a term to denote mild forms of neurotic disorders composed of symptoms of depression and anxiety. Several large population surveys, such as The Epidemiological Catchment Area Study and The National Comorbidity Survey in America [76], The British Psychiatric Morbidity Survey [77], and The Dutch Nemesis Survey [78], all showed a significant association between socioeconomic indicators and the common mental disorders. However, there are studies that show a negative association between socioeconomic status and mental disorders [50, 51].

Developing countries have been suffering from massive social changes brought about by rapid urbanization, modernization, and economic restructuring. Although these have brought benefits such as higher standards of living for individuals, the resulting disruption in cultural practices, social routines and “traditional” work and family roles have been accompanied by increased in rates of alcoholism, drug abuse and suicide. Violence against women and children and abandonment of the aged have become sizable problems in many areas [79]. There are many social factors that have been shown to have associations with mental disorders in general.

There is substantial evidence from developed countries that lower socioeconomic status (SES) is associated with increased occurrence of mental illness, and growing interest in the role of social support and social capital in mental health. However, there are few data on social determinants of mental health from low- and middle-income nations. These data demonstrate persistent associations between levels of SES, social capital and psychological distress in South Africa [74].

A review of English-language journals published since 1990 [56] and three global mental health reports identified 11 community studies on the association between poverty and common mental disorders in six low- and middle-income countries. Most studies showed an association between indicators of poverty and the risk of mental disorders, the most consistent association being with low levels of education and weak association with income levels.

A cross-sectional survey in Brazil [80] that was conducted among 683 adults suggested that poor education and low income was independently associated with common mental disorders. Univariate associations with occupation, housing and possession of household appliances could be understood in part by their association with poor education.
Data from the 1997 Australian National Mental Health Survey and Wellbeing [81] suggested there is increasing gradients from high to low level of education and occupational status which were significantly evident for affective disorders and anxiety disorders in both men and women. The findings suggested social causation of mental disorders.

**Female gender and exposure to violence**

Women are at a greater risk of developing mental disorders such as depression, somatoform, anxious or eating disorders, as well as suicidal behaviour [82-84]. Furthermore, women with mental illness are more stigmatized, have less access to care and suffer from a worse social outcome. Culture-related risk factors such as education, work, sexuality, marriage, and infertility, which significantly contribute to triggering mental disorders in females, and can worsen their course and outcome [82].

Seventy percent of the world’s 1.2 billion people who live in poverty are women, often with dependent children. Many women must combine paid work with agricultural work and family responsibilities, leading to chronic exhaustion and poor health. Work inequities, including lower salaries for equal work, working informally or on contract without safety protection, lower minimum wage or lack of job security are detrimental to women’s mental health. Factors such as discrimination, harassment and bias also have a negative impact on women’s mental health [85].

A cross-sectional survey of a total of 3000 women in Goa, India found the prevalence of common mental disorders of 6.6% with mixed anxiety-depressive disorder as the most common diagnosis (64.8%). Factors independently associated with the risk for common mental disorder were factors indicative of gender disadvantage, particularly sexual violence by the husband, being widowed or separated, having low autonomy in decision making and having low levels of support from one's family [75].

Gender based violence, especially among women had also been documented in Sabah. A detailed and long-term anthropological research study among rural Kadazans [42], traced the social history of domestic violence in one Sabah village. In more than 30 per cent of the households, there were women who had a history of spousal abuse during their lifetimes.
Alcohol and substance abuse disorder

Although heroin has traditionally been the main drug of abuse, Malaysia has experienced a rising epidemic of amphetamine-type stimulant (ATS) abuse since 2000. Methamphetamine is available in tablet form (called ‘pil kuda’) and crystallised form (syabu or ice). In Borneo, methamphetamine has been identified as a critical public health problem[48].

In 2004, 18.2% of drug arrests were due to amphetamines, compared to 8.7% in 2003. Notably, new registrations for ATS use doubled between 2003 and 2004, while there was no increase in registrations for ecstasy use. The heroin and methamphetamine epidemics have created severe burdens on Malaysia and the Malaysian economy, including the high cost of compulsory drug rehabilitation (with high relapse rates), loss of productivity and costs associated with crime and social and family disruption [20].

An overview of mental health and alcohol use in developing countries [86] showed that mental disorders are common and although the overall use of alcohol at the population level is relatively low, with a high abstention rate, drinking patterns among those who do drink are often hazardous or harmful. The consumption of alcohol is heavily gendered and is characterized by a high proportion of hazardous drinking among men. Hazardous drinkers not only consume large amounts of alcohol, but also do so in high-risk patterns, such as drinking alone and binge drinking. Hazardous drinking is associated with depression and anxiety disorders as well as suicide and domestic violence.

Each year, Malaysians spent around RM 2 billion on alcohol. This is four-fold of the annual budget allocated to health services. The human development report of 1991 ranked Malaysia as one of the largest consumers of liquor in comparison to other developing countries. Malaysia reported 6.3 litre/capita consumption compared to Singapore 1.7 litre/capita and Thailand 0.6 litre/capita for the period of 1980-1985 [48].

Globally, harmful use of alcohol causes approximately 3.3 million deaths every year and 5.1% of the global burden of diseases attributable to alcohol use[87]. The public health objective on alcohol of the World Health Organization (WHO) is to reduce the health burden caused by the harmful use of alcohol and thereby to save lives, reduce disease and prevent injuries[87].
The second National Health Morbidity Survey (NHMS) [47] reported the prevalence of current drinkers at 23% in the non-Muslim population, the majority being Chinese. The most commonly consumed alcohol in the country according to the Consumer Association of Penang are beer, toddy (local brew) and samsu (local brew), while NHMS reported beer, stout, lager or ale. In Sabah and Sarawak, a homemade rice wine known as ‘tapai’ is widely consumed especially during harvesting festivals.

The prevalence of alcohol use in Malaysia was still lower than other countries in the Western Pacific Region. There was no significant change to the pattern of drinking except for a slight increase in the prevalence of current drinker from 11.1% in 2006 to 11.6% in 2011[50]. Though the prevalence was considered low, the National Health and Morbidity Survey 2015 showed among the current drinkers, the proportion who reported engaging in binge drinking was 50.2 %[8]. It means the prevalence of both binge drinking and heavy episodic drinking were increased among the current drinkers. Identifying the groups at risk is an essential step towards enabling intervention and education for the targeted groups.

The prevalence of binge drinking for 18 years and above was 5.0%, and its proportion among the current drinkers was 59.4%. While the prevalence of heavy episodic drinking for 18 years old and above was 0.9%, its proportion among the current drinkers was 10.8%.

Current drinkers aged 18 years old and above who practiced binge drinking were more common in rural areas at 69.6%, higher among males 64.0% and Malays at 87.0% and those between 20-24 years old (65.4%) and 25-29 years old (65.4%). By ethnic the highest prevalence rate on current drinker was among the other indigenous group at 21.6%. prevalence rate of probable alcohol dependence was low at 1.8%, but prevalence of risky drinking pattern was high at 28.4%[8].

For the purposes of this study only alcohol abuse is examined because amphetamine abuse is under the purview of a different ministry. It may require more time to get the permission and cooperation to carry out research related to this subject.
SECTION 2.4. TREATMENT GAP AND MENTAL HEALTH SERVICE UTILISATION

Treatment Gap

In general the definition of treatment gap is the proportion of number of people with disease but not on treatment. This has been referred to as the “treatment gap” in mental disorder is defined as the difference between the number of people with mental health disorders and the number of those people who are able to access appropriate services [88].

A WHO review of 37 studies worldwide showed that the proportion of people who are untreated for particular disorders is as follows: schizophrenia 32%, depression 56%, dysthymia 56%, bipolar disorder 50%, panic disorder 56%, generalised anxiety disorder 58%, obsessive compulsive disorder 57%, and alcohol abuse and dependence 78%. This clearly showed that there were relatively more people with common mental disorder that were not treated compared to the serious mentally ill [88, 89]. Wang et al [90] reported in a multinational study that lower and middle income countries have a higher treatment gap than higher income countries, at approximately 73-89% for people with severe disorders.

Factors for Mental Health Service Utilisation

This is a brief discussion regarding the possible factors that describe health service utilization for common mental disorders. According to Andersen and Newman’s framework [91, 92], the factors that influence health service use can be classified into one of three broad categories: societal, health system, and individual.

Societal determinants are comprised mainly of technology and norms. The health system includes health related services and goods, such as physician care, hospital care, dental care, and drugs. Both these factors will not be in the scope of this study for administrative and approval related reasons.
The individual determinant, the third category, is the focus of this study (Figure 2). Need factors, such as perceived health status, illness level or established diagnoses, are among the most important factors in determining whether a person seeks help. Enabling factors are family or community level characteristics that facilitate or inhibit the ease in which help is obtained. Examples of enabling factors include income level, community resources, accessibility, time constraints, and/or proximity to help.

Predisposing factors, defined as predetermined characteristics of a person that influence their decision to seek health services, such as gender, age and race these are factors which are thought to influence a person’s tendency to use the mental health services before the need for those services arise. Perceived need is also a predictor of service utilization [93]. The relationship between need and service use may differ for different groups in society. It may not be a straightforward relationship.

Because of the strong negative correlation between age and physical health, age is a predictor of general health service use [92]. However, contradicting evidence exists for age as a predictor for mental health service use. Shapiro reported in an American study of three catchment areas that the elderly tend to have low mental health service utilization [94]. In another American study research no relationship between age compare to psychiatric distress in utilization of mental health service [95].

Gender is one of the most studied determinants of health care utilization. Compared to men, women are more likely to visit the GP for symptoms of common mental disorder [96], and have more visits to mental hospitals and mental health outpatient clinics. One possible explanation is that women are more at ease than men when discussing their emotions and have better mental health awareness.
The relationship between mental health service use and race/ethnicity is complex. One American study [95] examined patterns of mental health service use among the African Americans and the Caucasians groups in poverty areas. They found that members of minority groups were more likely than Caucasians to use mental health services in low-poverty areas. Overall, the results of this study suggest that minority groups have higher utilization than non-minority groups. On the other hand, another American study [97] that examined mental health service in communities with higher income concluded that Caucasian people were more likely to use services than African-American.

Enabling factors also include those that support or undermine a person’s decision to seek services, such as income level and community resources. Many studies have identified a relationship between various socioeconomic indicators and service use.

Income is another factor that is widely studied as enabling factors for mental health services care and utilization. However, it is complex and differs from countries and health care systems. In a review of 3 countries (United States, Canada and Netherland) population based survey [98] looking at association between income and use of mental health services, reported significant differences among countries in the association between income and sector of mental health care treatment. In the United States, income is positively related to treatment being received in the specialty sector. However, it does not follow linear association in the Netherlands and Ontario.

**Mental health service research in South East Asia**

Most of the research on mental health service utilisation had been conducted in higher income countries[99]. Researchers conducted in South East Asia have shown similar factors to be important. Mental health service and system research had received low priority in South East Asia countries [100]. There are few articles that could be traced in a topic of mental health service utilization in Southeast Asia. Most of the research conducted has focused on concepts, beliefs about mental illness, country profiles and mental health literacy [44, 101, 102]. Since 1990s there are a number of South East Asian countries conducted national epidemiological studies with different diagnostic criteria [55]. Malaysia had included mental health in its regular epidemiological studies, National Health Morbidity Survey.
In a Singapore survey of attitude of people towards mental health service, it was reported an estimated 37% of respondent would seek professional help if they experienced mental problems [53]. It was also reported that the general practitioners are the preferred source of help for mental health issues. The Malays and respondents with high GHQ score were more inclined to use mental health services.

Thailand had seen reforms and transformation in its mental health system since 1940s, from mental hospital to the integration to primary care and community. Multi-disciplinary trained mental health team members also had increased in tandem to translate the Thailand mental health policy. Although the data of the outcomes of all these efforts are limited, the system to monitor the outcome had been in placed [103].

In Indonesia, the government had adopted a three principle (prevention, treatment, rehabilitation) as a foundation for the comprehensive mental health care system since the 1960s [104]. It had gradually improved but faced with many challenges.

World Psychiatric Association task force action plan 2008-2011 [105] reported that not all the southeast Asian countries have mental health policy, legislation or national mental health programme. It was also reported that traditional values, strong family involvement, stigma, traditional healers and complementary medicine still dominate the help seeking behaviour of the population. The report also made recommendations to integrate care within the general health care system, prioritize target groups, strengthen leadership in policy making, and devise effective funding and economic incentives [105]. In a Cambodian study, it was reported that patients with chronic physical diseases and mental health problems tend sought out traditional helps [106].

Besides the progress made in epidemiological studies and increased number of research and publications in Malaysia, mental health professionals have not made a major impact in primary care setting [107]. Most of the new initiatives are based in west Malaysia and the bigger cities.
SECTION 2.5. DISABILITY AND PERCEIVED NEED

Ministry of Health Malaysia (MOH) of Malaysia, recognized disability as a major health issue and has incorporated Plan of Action (POA) for Person with Disabilities (PWDs) 2011-2020 to be in line with PWD Act 2008 and the Convention on the Right of Person with Disability (CRPD) 2007 [8].

Malaysia National Health Morbidity Survey (NHMS) 2015 [108] reported prevalence of disability in Malaysia is four times higher than previously reported. It measured 6 domains of disabilities (seeing, hearing, walking, cognition, self-care and communication). However, the 6 domains studied mainly focus on physical disabilities rather than mental health disabilities.

The prevalence was reported as 11.8%. Previously estimated prevalence rate in 2004 with similar definition of disability was only 3.1%. The survey also showed that those at risk of having disability in Malaysia were those of older ethnic minority, low level of education, and having mental health problems.

Sabah & Wilayah Persekutuan Labuan had the highest prevalence of disability in remembering at 17.43%, followed by Sarawak at 11.31% and Wilayah Persekutuan Kuala Lumpur at 10.77%. The prevalence was higher in rural areas at 10.11% compared to urban areas at 8.09%. Females had higher prevalence in mild difficulty in remembering at 9.25%. By ethnic group, the prevalence of difficulty in remembering was highest among other indigenous group 15.43%[8].

The American National Comorbidity Survey 1990-1992 [109] reported mood disorders, comorbid mood and anxiety disorders, and mental disorders associated with disability or were strong predictors of perceived need. It was also reported that positive attitude toward mental health help-seeking, physical conditions, marital loss, female gender, younger age group (15-24 years) have positive correlation with perceived need of professional help.

Another American Study [110] using a representative phone survey of 9585 adults reported less than 37% of individuals with mental disorder perceived a need for treatment. Women, the young and middle aged, the better educated, those with greater emotional support, and greater psychiatric morbidity were more likely to perceive need for mental health services.
The Australian National Survey of Mental Health and Wellbeing, 1997 [93] reported a substantial majority of people who are significantly disabled by mental health problems are among those with perceived need for mental health services. Disability has a strong positive association with perceived need. It was also reported that perceived need increased among female gender, people having co-morbidity and middle aged.

Meadows et al [111] reported in the 1997 Australian National Epidemiological survey that eighty-four percent of people with a mental disorder consulted a GP in the year prior to survey, but only 29% consulted in relation to a mental health problem. Many people with mental health problems attend primary care clinics without presenting these problems to their physicians. Although perceived needs for medication are rated as well met, counselling services are still unmet.

In the Australian context psychiatric help and information is well received by the public, but disparity between need and care is still observed [112]. For example, most people (76.7%) found psychiatric information helpful [112] Treatment has moved away from the emphasis only on the medication only into social skills training and social domains. For example, there is initiative in the nursing undergraduate curriculum focusing on mental health first aid [113] For Malaysia this is still far from the reach of society.
CHAPTER 3. STUDY RATIONALE

SECTION 3.1. THEORETICAL FRAMEWORK OF THE STUDY

The conceptual framework of this study is inspired by two models. One model focused on the possible treatment gap or prospects of patients with common mental disorders not detected or referred to the appropriate mental health service system.

The first part of this study determined the prevalence of patients who had diagnosable common mental disorders in the primary care setting and how many among them were not detected, treated or referred for professional mental health treatment and care.

The Golberg and Huxley model [68, 114] of pathway to psychiatric care illustrates how the primary care clinics can play an important role in detecting, treating and referring appropriate patients to the more specialized mental health services. Primary care can be a focal point or a link between the community and specialized mental health services. Early identification of people with common mental disorders can prevent deterioration of mental health hence requiring more serious and complicated intervention and treatment at a later stage. Hence, this may prevent a desperate direct bypassing of severe, more disabled and more complicated mental disorders at a later stage. Although the original model was intended to show and focus on the lack of detection and referral for people with severe forms of mental illness in primary care, it is also relevant for patients with common mental disorders [68] This study will look at situations in primary care, using a diagnostic screening tool to assess the number of patients with common mental disorders who are not detected or filtered at level 2 and level 3. There are 5 levels, community, probable patients in primary care setting, primary care patients detected, mental health services and psychiatric hospital. There are four filtering process or stages. At the Level 1 community, illness behaviours act as first filtering process. Level 2 is the primary care setting, where adult Patients seek help from family physicians after experiencing an episode of mental disorder, as the second filter. While at the level 3 patients detected at the primary care may be treated by family physicians or referred to the mental health services, as the third filter. The fourth filter deals with the psychiatric admission. This is usually for referral to the specialist mental health services or psychiatric hospital.
It is not the intention of this study to trace the whole pathway to care for patients with common mental disorders in this setting but rather to show evidence that patients not detected and allowed to pass through the system contribute to treatment gap and have considerable disabilities that are ignored (see Figure 1 Goldberg’s model of pathway to psychiatric care).

Figure 1 Goldberg’s model of pathway to psychiatric care
The second model is loosely inspired by Andersen and Newman’s model of mental health service utilization. This is an attempt to understand the background of patients who use mental health services available at the primary care clinics and referral.
This study examined some predisposing factors and individual determinants of usage of mental health service based on Andersen and Newman’s model [115] (see Figure 2 Showing model of individual determinants of mental health service utilization, based on Andersen and Newman [92].
Andrews et al [116] reported, in the Australian National Mental Health Survey, that comorbidity of common mental disorders such as anxiety and depression is high. They found an association between comorbidity and disability. In Andrews’ analysis, clinical guidelines and mental health care are not equipped to screen and manage co-morbidity cases going through the system. This thesis examines the association between co-morbidity, poverty and disability in anticipation of the occurrence of multiple common mental disorders in government clinics that are a focus of visits for low and middle-class society with chronic medical illnesses.

This study also examines the relationship between social factors and perceived needs for mental health services and its utilization. This study also shows how health care utilization is associated with patients’ social factors such as age, gender and the chronic medical ailments.

Besides knowing about the problems and the effects, knowledge about patients’ perception of the need to acquire professional help is an important perspective for the planners to understand. Having this knowledge will allow the clinic managers to design and overcome the shortcomings of the service provided. In a multi-ethnic and multi-cultural society, it is important to design mental health services that are preferred by the patients. At the same time knowing the social factors that determine the usage of mental health services will be as useful as knowledge about patients’ perceptions.

This study not only focusses on prevalence, but also makes associations and connections with some of the more important social risk factors for common mental disorders (see Figure 3 Showing common mental disorder determinants. The risk factors are largely grouped into sociodemographic factors and recent stressors. It is relevant to elicit the social determinants of common mental disorders in this population, in order for the family physicians and clinic managers are able to strategically identify vulnerable groups and offer standardized screening for common mental disorders. This information will enable managers to delegate some of the common tasks such as screening, mental health promotion and education to the non-doctor health personnel.
Being the first such project conducted in these busy clinics, this study provides an initial understanding of some factors that may be associated. However, with limited duration and resources it is difficult to examine deeper the association, or the various confounding factors involved. Factors cannot be generalized beyond the scope of the study to become cause and effect assumptions’. However, the associated factors are useful as predicting factors for the vulnerable groups who visit these government clinics.

The fact is, the state of Sabah has the greatest number of people living below the poverty line and the highest prevalence of psychiatric morbidity among the states as documented by both NHMS 1996[48] and NHMS 2015 [8]. Two out of five people may have some form of mental health problem or disorder in the general population of Sabah [8] Based on the national surveys, the facts are consistent that mental health problems and disorders are important public health issues in the state. Therefore, it is timely to assess the prevalence of common mental disorders and the mental health services and care available to the public at the primary health care level
SECTION 3.2. RATIONALE FOR CONDUCTING THIS STUDY IN SABAH

The lack of mental health research studies and publications from the state of Sabah; since independence is consistent with the slow progress noted in the improvement of mental health service. Sabah only participated in three Malaysian National Health Surveys (described in detail in Section 2.1): The Second Malaysian National Health Morbidity Survey (1996), the Third Malaysian National Health Morbidity Survey (2006) and the National Health Morbidity Survey (2015). These are population-based prevalence studies that failed to initiate any actionable information for mental health services in primary care.
In terms of mental health services, mental health specialists have mainly focused on following-up and treating patients with the more serious mental illnesses in the mental hospital. Many patients who are suffering from common mental disorders are left unnoticed. These patients do not utilize the services provided by the mental institution unless they are severely ill. Many of them attend government health clinics. However, common mental disorders that are only mild or moderate are either not detected or misdiagnosed and are not referred for further specialized help.

This research project is the first to attempt to understand the magnitude of the problems, the consequent effects of the current low level of utilization and the perceived need of services by the public.

**SECTION 3.3. RATIONALE FOR CONDUCTING THE STUDY IN GOVERNMENT HEALTH CLINIC**

Governmental health clinic attendees are a specialized sub-population with more complicated physical illnesses and from a low to middle socioeconomic class. The physical diseases and social challenges naturally make the clinic attendees more vulnerable to common mental disorders. It is important to appreciate the effect of common mental disorders on people already troubled by their physical diseases. Therefore, it is interesting to assess whether this specialized sub-population share the same prevalence rate of mental disorders as the general population or if they have a higher prevalence rate. Furthermore, with an inadequate amount of reliable data existing on primary care prevalence and health care utilization rates, local health care planners are unable to accurately estimate the real needs of this population.

**SECTION 3.4. RATIONALE FOR MEASURING DISABILITIES AND PERCEIVED NEED**

As far as our knowledge, this is the first study in Sabah or East Malaysia that examined mental health disabilities and perceived need of care. Measuring the disabilities allows authorities to take serious action if it can be shown to be an issue. Data on perceived need of care helps the clinic managers to strategically devise an action plan and distribute resources appropriately based on needs.
SECTION 3.5. STUDY OBJECTIVES

Research objectives and hypotheses

1. Detailed literature search revealed a lack of information on studies pertaining to the epidemiological details of the extent of mental health problems faced by the population especially the specialized primary care setting. Secondly, role of primary care regarding the mental health is also lacking. Therefore, it was critical for this study to determine the prevalence of common mental disorder among primary care attendees in Kota Kinabalu.

**Hypothesis 1:** The prevalence of probable mental disorder among primary care attenders in KK will be 30-50%.

This figure is taken from countries with similar socio-economic challenges, such as India and few African countries, as discussed in (see Section 2.2).

2. It was also important in this fast-changing socio-economic landscape of Sabah, to identify the factors that were associated with an increased probability of common mental disorder. Identifying local social factors would allow for a development of local strategy and program for intervention.

**Hypothesis 2:** The following factors will be associated with significantly higher probability of mental disorder: Older age; Female gender; Poverty; Physical illness; more severe disability; Unemployment; and Indigenous ethnic group membership.

These factors have been shown to be related to common mental disorders in other low and middle-income countries (see Section 2.3).

3. There were many studies that reported association between co-morbid common mental disorders, disability and poverty. Since low socioeconomic is an important demographic profile for this state, it would be relevant to investigate whether there was an association between co-morbid common mental disorder, disability and poverty in this population.
Hypothesis 3: There will be a positive association between co-morbidity of mental disorder, severity of disability and extent of poverty.

Since the state of Sabah was reported to be the poorest in Malaysia it was important to explore the association between the extents of poverty, co-morbid common mental disorder and severity of disability (see Section 2.3 and Section 3.1).

4. Variations in reports made about treatment gaps in various states, and regions, made it crucial to determine the magnitude of the treatment gap, in primary care attendees with probable common mental disorders in this setting. In this study, treatment gap was defined as the proportion of those with probable common mental disorder who receive no psychiatric treatment or care.

Hypothesis 4: the treatment gap will be at least 75%

A treatment gap of more than 75% is common in lower and middle-income countries (see Section 2.4). This figure is also based on the clinical observations, mental health literacy and poor help seeking behaviour documented in this state and the current state of mental health services.

5. Besides treatment gap, patients’ perceptions of the relevancy of psychiatric treatment and care were also important to have a better perspective of mental health service in primary care. Therefore, this study investigated the perceived need for psychiatric treatment and care among primary care attendees with common mental disorder in this setting.

• Hypothesis 5.1: There will be a positive association between co-morbid mental disorder and perceived need for psychiatric treatment and care.

Based on previous studies it is hypothesized that primary care attendees with co-morbid mental disorders (respondents with more than one mental disorders) will score higher than those without comorbid mental disorder in each of the five domains perceived need of care (see Section 2.5)
6. **Hypothesis 5.2:** Among primary care attendees with probable mental disorder the following factors will be associated with a lower perceived need for psychiatric treatment and care: male gender, lower educational attainment; poverty; physical illness; more severe disability and indigenous ethnic group membership. This study also aimed to identify the determinants that affect the access of clients to psychiatric treatment and care.

- **Hypothesis 6:** The following factors will be associated with a higher probability of access to psychiatric treatment and care: younger age group; female gender; higher income; co-morbid physical illness; more severe disability; unemployment and indigenous ethnic group membership. (See Section 2.4)
CHAPTER 4. METHODS

This chapter reports on the methods applied in this study, recruitment of respondents, data collection process and the analysis. The process by which the study was conducted, the role of researcher, research assistants, ethical approvals and instruments used are described in detail.

SECTION 4.1. STUDY DESIGN

This is the first study done in the setting of the very busy government health clinics. A very high rate of patients’ turnover was noted in the overcrowded clinics with patients seen to be queuing up and, in a hurry, to complete their clinic visits. The approval of this study was also bound to strict rules and regulations of the Ministry of Health, specifically not to disrupt the services rendered to the patients. During the study period, psychiatric services were not an integral part of the services; possible cases were on referral basis. Taking into account all the issues above, the most feasible study design to best describes the mental health issues and services was considered to be a cross-sectional clinic-based epidemiological study. Cross-sectional design was chosen because this study design was to diagnose common mental disorders and determined the prevalence at a particular point of time [117].

Study Area/Site

The initial proposed study sites were five Government health clinics around the district of Kota Kinabalu. They were two integrated urban health clinics and three smaller suburban health clinics. The two integrated health clinics that were originally proposed were Luyang Integrated health clinic and Bandaran Integrated Health Clinic. The smaller suburban health clinics were Menggatal Health Clinic, Inanam Health Clinic and Telipok Health Clinic.

Unfortunately, only three out of the five government health clinics could be utilized for the study. Bandaran Integrated Health Clinic was excluded as it only provided antenatal health clinic and did not have an outpatient wing. Telipok Health Clinic was also excluded because it was under massive renovation.
Luyang Integrated Health clinic is a state government runs health clinic which is within the town of Kota Kinabalu. It caters to a population of 200,000 people. It is easily accessible by public transport and the main government health clinic for the district of Kota Kinabalu. It is also the busiest clinic. Although officially it only caters for the Kota Kinabalu district, there are many people from adjacent districts attending. Patients who were discharged from the wards or the specialist clinics in the general hospitals may be given a follow up appointment to the family physician or doctors in Luyang Integrated Health Clinic. This contributes to the overcrowding, which is a feature of this clinic nearly every day of the year.

Luyang Integrated Health Clinic provides general medical outpatient care, antenatal clinic, family medicine specialist clinic, Human Immunodeficiency Virus (HIV) clinic and smoking cessation clinic. However psychiatric services are offered only on referral basis. Other medical supporting services provided include pharmacy, radiography and small laboratory.

People who are suspected to have mental health problems will be referred to the psychiatric services nearby. The nearest psychiatric facilities are one kilometre away from the Luyang Integrated Health Clinic and four kilometres away from Health Clinic Bandaran. The average attendances in a month for both clinics are around 1,000 cases each. A family physician and four to five medical officers help to run each clinic. During each clinic day, a doctor may be seeing thirty to forty patients on an average.

The three suburban clinics are much smaller. Each clinic is to cater to a population less than 10,000 people. A senior staff nurse or sister helps to run the clinics. The clinics are visited by medical officers who run the antenatal clinic and provide minimal medical outpatient care. Average attendances in a month for the suburban clinics are estimated around 200 cases. Majority of the patients will be seeing a medical assistant on duty. A medical assistant is a qualified diploma level paramedic who has received two years training from the Ministry of Health. Only the complicated or difficult cases are seen by a visiting medical doctor. Since the clinics are situated at suburban areas, the patients attending these clinics are from homogenous background. Majority will be from the Non-Muslim and Muslim indigenous people of Sabah.
The Luyang Integrated Health Clinic conducted outpatient clinics on three days, each week. For the purpose of study visits, two out of three clinic days were selected in Luyang Integrated Health Clinic per week. Monday and Tuesday were selected for data collection in Luyang Integrated Health Clinic.

The suburban clinics conduct outpatient clinics twice a week. One clinic day was selected separately for each suburban clinic.

**Study Population and Period of Study:**

The study population was comprised of patients who attended and registered at the selected health clinics. After approval of the medical ethics committee from the University of Melbourne, the University Malaysia Sabah and the Ministry of Health the data collection commenced over a four-month period from the beginning of April 2010 to the end of July 2010.

**Selection of the study population**

Patients were selected according to the following inclusion and exclusion criteria

The inclusion criteria were:

1. Respondents aged between 18-65 years
2. Able to communicate in Malay or English.
3. They lived in the district of Kota Kinabalu for at least one year prior to interview

Exclusion criteria

1. Patient who could not communicate in Malay and/or English. It was estimated that around 5-10% of people visiting the clinics may not be able to converse in or understand Malay and/or English.
Sample size calculation

The sample size of the population was calculated using the Epi-info version 6, with 95% confidence interval and study power was set at 95%. Assuming the expected prevalence psychiatric morbidity in primary care is 30±5 % for a population 429,000, a sample size of minimum three hundred and twenty-six (with odds ratio of 2.33) was calculated. However considering the non-response rate of 51.7% in the last National Health Morbidity Survey III 2006 [50] for the Sabah population the sample size was aimed at six hundred and fifty two (362 X 2).

SECTION 4.2. ETHICAL CONSIDERATIONS AND APPROVAL

Prior to commencing data collection for this study, official approval was sought from three different ethical committees and the local authorities. The principal ethical committee was Human Research Ethics Committee of the University of Melbourne. The other two research committees were the ethical approval from the study sites in Malaysia; the National Medical Research Register (appendix 1) of the Malaysian Ministry of Health and the Research Committee of Universiti Malaysia Sabah (appendix 6).

All the local ethical approval and the study sites permission letters (appendix 3 and 4) and documents were submitted as supporting documents for the consideration of the Human Research Ethics Committee of the University of Melbourne. Human Research Ethics Committee (appendix 5) of the University of Melbourne granted the final ethical approval. The whole process of ethical approval took thirteen months.

SECTION 4.3. DATA COLLECTION

The samples were chosen using simple random sampling (based on the clinic registration number). Detailed sampling procedures are explained further in the method of sample selection section.
Training of Research Assistants

The three research assistants employed in this study were exposed to and trained on how to interview and administer the questionnaires. They attended two mock sessions in class and two actual sessions with patients prior to carrying out a pilot study. At the end of the pilot study the inter-rater reliability rates were calculated. These training sessions were important to ensure data of good quality was obtained.

The research assistants were paid RM 50 for each training session. Once selected as they each signed a declaration letter and were appointed as research assistants. They each received payment of RM 1,000 per month, whenever the targeted sample size was achieved.

The targeted samples were minimum ten respondents per day, equivalent to fifty samples per week and equivalent to two hundred samples a month.

Monitoring

All protocols stated within this study were consistent with the University of Melbourne’s guidelines. All researchers recognized the importance of adhering to these protocols.

The three research assistants reported weekly and the monthly progress reports were submitted. The research assistants were also monitored closely by principle researcher who was at each data collection site on one day each week. The research assistants went to the clinic assigned on each respective day of the week with the principle researcher.

Method of selection of sample

At the beginning of the data collection, the principle researcher briefed the research assistants on the method of selecting respondents for the study. The selection procedures were strictly followed.

The systematic random sampling, through clinic registration numbers was implemented as follows:

Every morning the principle researcher randomly chose a three-digit number from the Table of Random Numbers. From that table, thirty to forty randomly selected numbers derived as a list of the day to be used to randomly select patients. The principle researcher also checked the list of three-digit numbers and the list of prospective respondents available at the counter from the clerk.
The clerk at the clinic counter then called out the number in the clinic registration book or list. The principle researcher would then, based on the list of random numbers that he had, approached potential respondents that corresponded to the numbers being called out. The principle researcher first ticked the boxes in the selection check-list, to screen whether the patient satisfied the inclusion and exclusion criteria. He also verified from the clinic counter, the check-list, before the potential respondents met the research assistant.

Once the patient satisfied the check-list, he or she would be asked to meet the research assistants for Plain Language Statement (appendix 6 for English version and 7 Malay version) briefing and to obtain consent (appendix 8 for English version and 9 for Malay version).

In a private interview room set aside in the clinic for the purpose of the study, the research assistants read out the Plain Language Statement to the potential respondent individually. The consent was taken by the research assistant. Once the consent obtained, the interview began. If the patient did not satisfy the criteria, another patient would be selected from the clinic registration book/list based on the next randomly selected number. The whole process of selection would then be repeated.

As mentioned in the approval and the ethics committee requirement, no nurses, doctors or other clinic staffs were involved in selection.

Each day these procedures would be repeated until at least ten interviews were completed.

**Role of Research Assistants**

In a private interview room set aside in the clinic for the study, the research assistants read out the Plain Language Statement to the potential respondent either in English or Malay based on the patient’s preferences. They answered in reply to any questions that the potential respondents had. For every potential respondent, the research assistants explained clearly and emphasized the meaning of the following terms in the Plain Language Statement:

- voluntarily
- withdrawal from study
- confidentiality
- no prejudice
Those who agreed to participate; the research assistants obtained signed consent and explained to the patient that they were officially a respondent or participant of the study. The research assistants then administered the questionnaires. Each day these procedures were repeated until at least ten interviews were completed, with five male and five female clinic attendees.

Pilot study

A pilot study was conducted prior to the actual study. The objectives of the pilot study were to assess and familiarize the research assistants in administering the questionnaire, assess their ability to carry out the study and to calculate the inter-rater reliability of each of research assistants.

The pilot study was done at another, smaller government health clinic, Klinik Satu Malaysia Sepanggar. The clinic was manned by a staff nurse. Fifteen patients were selected for each research assistants to be interviewed together with the principle researcher. The estimated time to administer each questionnaire was calculated (see questionnaire section). The inter-rater reliability of each research assistant for the standardized questionnaires in comparison to the principle researcher were also calculated (the kappa inter-rater reliability will be mentioned in each questionnaire section respectively).

During the pilot study, the principle researcher also gave advice to the research assistants on how best to conduct the interview and give standardized replies to respondents.

Study questionnaires

The research questionnaires consisted of two components:

**Component 1:**

- Sociodemographic information (see Appendix 10 for English version and appendix 11 for Malay version)
- Patient Health Questionnaire (see Appendix 12 for English version and appendix 13 for Malay version)
- Work and Social Adjustment Scale (see Appendix 14 for English version and appendix 15 for Malay version)
Component 2:

Those respondents who had a probable mental disorder, based on the Patient Health Questionnaire, would be asked to further undertake the:

- General Practice Users Perceived-Need of Care Inventory (GUPI) (see Appendix 16 for English version and appendix 17 for Malay version)

  and

- A mental health service utilization questionnaire (based on Australian Mental Health Survey 1997). (see Appendix 18 for English version and appendix 19 for Malay version)

The probable presence of a mental disorder was determined by the algorithm within the Patient Health Questionnaire.

It was expected that the total duration of the interview (components 1 and 2) approximately fifty minutes to be completed.

<table>
<thead>
<tr>
<th>Interview component</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sociodemographic proforma</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Patient Health Questionnaire</td>
<td>15 minutes</td>
</tr>
<tr>
<td>Work and Social Adjustment Scale (WSAS)</td>
<td>10 minutes</td>
</tr>
<tr>
<td>General-Practice Users Perceived Need Inventory (GUPI) and mental health service utilization questionnaire</td>
<td>10 minutes</td>
</tr>
<tr>
<td><strong>Total interview time</strong></td>
<td><strong>50 minutes</strong></td>
</tr>
</tbody>
</table>
SECTION 4.4. STUDY VARIABLES

Poverty

The Malaysian national Economic Planning Unit definition of poverty was used for the study. According to the Malaysia National Economic Planning Unit in the year 2002; poverty line income of Sabah is RM690 and the hard core poverty line is defined as half of that amount [118]. The 2002 income classification was used because it was noted than more than half of Malaysian earned below RM2000 [11, 15]. Since this study covered government health clinics that frequently visited by people from low and middle-income patients, further detailed division of the group below RM1000 captured a much more detailed and relevant income group for this community.

Definition of indigenous

Besides the Malay people, the federal government of Malaysia has officially recognized twenty seven other ethnics groups as “the children of the soil” or Bumiputras or non-Malay Indigenous groups; Kadazan-Dusun, Kwijau, Murut, Bajau, Iranun, Lotud, Rungus, Tambanuo, Dumpas, Mangka’ak, Suluk, Orang Sungai, Brunei, Kedayan, Bisaya Beufort *Tidong, Maragang, Orang Cocos, Paitan, Ida’an, Minokok, Rumanau, Chinese of mixed bumiputra parentage, Filipino, Sarawak indigenous groups and Serani [5].

Sociodemographic variables factors

- Respondents were grouped into five categories based on their age. The groups were respondents between 18-29, 30-39, 40-49, 50-59 and 60-65 of age. The age groupings were consistent with the Malaysian National Health Morbidity Surveys [8, 50] and Universiti Kebangsan Malaysia primary care study 2009 [2]. This was done for relevant comparison.
- sex: male/female
- Ethnicity were grouped into Muslim indigenous (example Bajau), non-Muslim indigenous (example Kadazan), Malay, Chinese and Indian/other minorities.
- Marital status was classified into single, married, widower or divorcee.
- Education background was divided as non-formal education, primary, secondary and tertiary education.
• Occupation was divided according to seven categories; government sector workers, private sector workers, own business or agriculture, housewife, pensioner, students and unemployed.

• Monthly income was documented as the total household income in the preceding month.

• Poverty Monthly household income was documented as the total household income in the preceding month below RM690

• Distance from respondents’ houses to the government health clinic was also estimated and recorded based on addresses.

• Respondents were asked to estimate the time taken to travel from their house to the health clinic. These were on average, based on their usual experiences, including time taken to wait for the public transports.

• **Illness, disability, need for service, and service utilization variable**

• Co-morbid common physical conditions were elicited using a questionnaire to screen common physical problems according to patient’s ability to recall. It was also verified from the diagnosis written in the clinic appointment cards and the prescription slip. Permission from the respondents was obtained prior to verification. Examples of common physical conditions include Hypertension, Diabetes Mellitus, Stroke and others.

• Distance from respondents’ houses to the government health clinic was also estimated and recorded based on addresses.

• Respondents were asked to estimate the time taken to travel from their house to the health clinic. These were on average, based on their usual experiences, including time taken to wait for the public transports.

• Co-morbidity: Presence of more than one mental disorder according to the PHQ. Physical illness- This was verified from the diagnosis written in the clinic appointment cards and the prescription slip. Permission from the respondents was obtained prior to verification. Examples of common physical conditions include Hypertension, Diabetes Mellitus, Stroke and others.

• Presence of mental disorders and other variables based on questionnaires Patient Health Questionnaire (PHQ)
• The General-Practice Users Perceived Need Inventory (GUPI) – no need, unmet and met need
• Work and Social Adjustment Scale (WSAS – no disability, mild disability, moderate disability and severe disability in five different domains.)
• Mental Health Service Utilization Questionnaire (based on Australian Mental health Survey) – yes or no mental health service utilization the past 12 month.

SECTION 4.5. INSTRUMENTS

Socio-demographic questionnaire

This is a questionnaire to obtain the basic biodata, general medical history, past medical/surgical history, latest treatment, latest medication respondents received and family support in attending follow-up clinic.

Patient Health Questionnaire (PHQ) [119]- Diagnosis of mental disorder

The Patient Health Questionnaire (PHQ) is a self-administered instrument used to diagnose mental disorders in a primary care setting. The PHQ is the modified version of the PRIME-MD. It is more efficient than the original PRIME-MD as it requires less time. In a validation study of a of total 3,000 adult patients, it was shown that the overall accuracy is 85%, sensitivity is 75% and specificity is 90% [119]. Systematic review by Kroenke et al shows the PHQ is a brief well validated measures for detecting depression, anxiety and somatization[120]. It is also reported that PHQ scores are correlated with loss of function, disability and use of mental health services [120]. It also perform well in identifying depression among special population example the elderly[121]. In addition, the instrument most frequently utilized in primary care to screen for major depression is The Patient Health Questionnaire (PHQ-9) [122]. Most patients (88-93%) also reported feeling comfortable completing the PHQ.
The full Patient Health Questionnaire (PHQ) is a four-page questionnaire that screens eight common mental disorders in the primary care setting. The eight common mental disorders are somatization, major depression, other depressive disorders, generalized anxiety, other anxiety disorders, panic disorder, eating disorder and alcohol abuse. Once the questionnaire completed, the researcher takes, in average two minutes to evaluate the PHQ scores. The diagnostic algorithm that is abbreviated at the bottom of each page was easily used. On the last page, the PHQ also has questions on menstruation, pregnancy, childbirth and psychosocial stressors. The design of each items in the questionnaire also allows the researcher to assess the severity of symptoms.

The full PHQ was translated and validated in Malay language by the Universiti Kebangsaan Malaysia [2]. For this study, kappa inter-rater reliability was calculated between the principle researcher and the three research assistants. The kappa values were in good agreement; 0.587, 0.595 and 0.659 (with all p values of < 0.05) respectively. During the pilot study, the average time taken to complete the full PHQ was fifteen minutes.

There were several reasons the full PHQ was chosen over other forms of diagnostic or screening instruments. PHQ allows the principle researcher to generate specific diagnosis rather than screen for symptoms. The criteria for the eight common mental disorders are detailed and robust enough to achieve a specific diagnosis. Because of the high specificity of the PHQ (less false positives), it enabled the principle researcher to report confidently of the prevalence of various common mental disorders. Hence, supporting strongly the argument of whether or not, inclusive mental health services were needed in this setting.
At the same time, the hard copy PHQ was easily administered and required shorter time than other diagnostic tools, like the Mini-International Neuropsychiatric Interview (MINI). In the pilot study, it was observed that the questions were easily understood by the respondents. Furthermore, the research assistants did not have to spend much time explaining each item because each sentence was short. The logical flow of the criteria also made it easy for the research assistants to comprehend. The practicality in administering the PHQ together with the other questionnaires was very important in overcrowded government health clinics. The diagnostic algorithms were easy to follow and allowed for a fast decision to be made by the principle researcher in order to move on to the next stage of interview.

**Physical symptoms and medical problems reference checklists**

This is documented as part of the sociodemographic questionnaire and the research assistants were given a reference checklist of common symptoms and medical diagnosis. The respondents answers were documented in the past medical and surgical history section, in the sociodemographic questionnaire. Example diabetes mellitus, hypertension, joint ache, back ache (appendix 20 English version and appendix 21 Malay version)

**Assessment of perceived need**

General-practice Users’ Perceived Need of Care Questionnaire (GUPI) [123]

The General–practice Users’ Perceived Need Inventory (GUPI) questionnaire was designed for Beyond Blue, the Australian National Depression Initiative. It is a modification of the Perceived Need of Care Questionnaire (PNCQ). It is brief and simple compared to the paper form of the PNCQ. The original PNCQ is a 17-page instrument that requires considerable training in administering the ‘skip rules’. The principle researcher thought the GUPI questionnaire would be easier for the research assistants to administer. The GUPI was also faster to administer, therefore more feasible to be used in this setting.
The original PNCQ [124] was designed for the Australian National Survey of Mental Health and Wellbeing. The PNCQ collection of data on diagnosis and disability complemented respondents' perceptions of their needs for mental health care and the meeting of those needs. The four-stage design of the PNCQ mimics a conversational exploration of the topic of perceived needs. The instrument is quick to administer and has proved feasible for use in various settings. Inter-rater reliabilities for major categories, measured by the kappa statistic, exceeded 0.60 in most cases; for the summary category of all perceived needs, inter-rater reliability was 0.62. The multi-trait multi-method approach lent support to the construct validity of the instrument, as did findings in extreme groups.

For this study, kappa inter-rater reliability was calculated between the principle researcher and the three research assistants. The kappa values were in fair to good agreement; 0.602 (p<0.05), 0.595 (p<0.05) and 0.464 p=0.072.

Mental Health Service utilization Questionnaire [116]

This study used a section of the service utilization assessment the Australian National Mental Health Survey. The respondents were asked whether they had sought professional help for their mental health problems. Subsequently, they were also asked how they sought help for their psychological problems or alcohol or drug problems in the past 12 months.

a. section 1 of the questionnaires deals with questions relating to any overnight stays in a general or mental hospital (SR1-SR14 of the Australian Mental Health Service Utilization Questionnaire)

b. section 2 of the questionnaires addresses details of the different types of mental health consultations (SR40-SR137 of the Australian Mental Health Service Utilization Questionnaire)
Work and Social Adjustment Scale (WSAS) [125, 126]

Work and Social Adjustment Scale (WSAS) is a simple, reliable and valid measure of impaired functioning. In four separate studies assessing the reliability and validity of the WSAS for mood disorders, anxiety disorders, obsessive compulsive disorder and alcohol dependency, the psychometric properties were found to be strong (Cronbach’s alpha > 0.9). The WSAS is also sensitive to change with anxious/depressed patients, and those experiencing obsessive compulsive disorder, phobic disorders and agoraphobia.

The questionnaire is a simple 5-item measurement of general impairment. The five items are disability at work, home management, social leisure, private leisure and interpersonal relations. Each item rated on a scale of 0 to 8, with a total score of forty. The higher the score the more disabled the person. It can be used as both a self-rating instrument and as an assessor rating instrument.

For this study kappa inter-rater reliability was calculated between the principle researcher and the three research assistants. The kappa values were in fair to good agreement; 0.571 (p<0.05), 0.595 (p<0.05) and 0.444 (p=0.085).

SECTION 4.6. THE METHOD OF ANALYSIS

Data were stored and analysed using the Statistical Package of Social Science (SPSS). The level of significance in the test was determined to be 5% (p=0.05). All the results were rounded to two decimal points. All the findings and tables produced were discussed with Dr Graham Hepworth from the Statistic Consulting Centre, The University of Melbourne. There was some statistical advice obtained from Dr Freddie Robinson, University Malaysia Sabah.

The following is the detailed list of the null hypotheses tested according to the objectives, instruments used, and statistical methods used to test the hypotheses:
1. In order to achieve the first research objective; to determine the prevalence of probable mental disorder among primary care in Kota Kinabalu, the principle researcher set a null hypothesis. The null hypothesis was that the prevalence of mental disorders among primary care attendees in Kota Kinabalu was comparable or similar to the prevalence in West Malaysia around 25-30%. This would be lower than the prevalence rate of the research hypothesis based on clinical observation and literature reviews in countries and regions that shared similar situations with Sabah. The research hypothesis assumed the prevalence of mental disorders among primary care attendees in Kota Kinabalu would be around 30-50%.

The Instrument used to calculate the prevalence rate was the Patient Health Questionnaire (PHQ). The principle researcher calculated the number of patients diagnosed with a mental disorder using the PHQ over the total number of patients who participated.

2. For the second research objective, to identify factors associated with increased probability of mental disorders.

The following factors were the factors included for null hypothesis:

a. There is no significant difference between age groups in relation to the probability of having a mental disorder.
b. There is no significant difference between male and female in relation to the probability of having a mental disorder.
c. There is no significant difference among various ethnic groups in relation to the probability of having a mental disorder.
d. There is no significant difference between citizen and immigrant in relation to probability of having a mental disorder.
e. There is no significant difference between marital statuses in relation to the probability of having a mental disorder.
f. There is no significant difference between various income groups in relation to the probability of having a mental disorder.
g. There is no significant difference between different occupational statuses in relation to probability of having a mental disorder.
h. There is no significant difference between people of different educational backgrounds in relation to the probability of having a mental disorder.
i. There is no significant difference between different type of physical illness in relation to the probability of having a mental disorder.

According to the research hypothesis based on clinical observations and literature reviews the following factors are associated with significantly higher probability of mental disorder: older age, female gender, Indigenous ethnic group membership, being an immigrant, being a divorcee or widower, poverty, unemployment, lower educational attainment and chronic physical illness.

The Instruments used to test the nine hypotheses were; sociodemographic status proforma, the PHQ and the WSAS. The data was analysed using the chi-square analysis to find factors that were significantly associated with the probability of having a common mental disorder. Subsequently, factors found to be significantly associated were further analysed using the multiple logistic regression analysis.

3. For the third research objective, to investigate the association between comorbidity of mental disorder, disability and poverty, the following null hypotheses were tested:
   a. The first null hypothesis, there was no significant association between comorbidity of mental disorder and degree of disability in five domains (work performance, home management, social leisure activities, private leisure activities and family relationship).
   b. The second null hypothesis, there is no significant association between various income groups as and comorbidity.
   c. The third null hypotheses, there is no significant association between level of educational attainment and comorbidity.
   d. The fourth null hypothesis, there is no significant association between degree of disability in the five domains of function (work performance, home management, social leisure activities, private leisure activities and family relationship) and average monthly income as a poverty indicator.
   e. The fifth null hypothesis, there is no significant association between degree of disability in five domains of function (work performance, home management, social leisure activities, private leisure activities and family relationship) and level of education as a poverty indicator.
For the third research objective, the principle researcher hypothesized, that there would be a positive association between comorbidity of mental disorder, severity of disability and extent of poverty. Instruments used were the PHQ, the WSAS and socioeconomic status.

Since there was ordinal data, Gamma coefficient analysis was used for analysis of association between factors.

4. In the fourth research Objective; the study attempted to determine the magnitude of the treatment gap in primary care with mental disorders. The magnitude of the treatment gap was calculated as the proportion of those with mental disorders who received no psychiatric treatment. The instruments used to calculate the treatment gap were the PHQ and the Mental Health Service Utilization Proforma. From the data the principle researcher calculated a simple ratio of number of respondents with mental disorders not using mental health services divided by the total number respondents with a probable mental disorder.

5. For the fifth research objective; the principle researcher investigated self-perceived need for psychiatric treatment and care among primary care attendee's with mental disorders. The null hypotheses tested was that there would be no significant association between comorbidity of mental disorder and the five domains of self-perceived need (information, medication, counselling, help in practical issues and help to improve skills and ability). The research hypothesis was that there would be a weak association between co-morbid mental disorder and perceived need for psychiatric treatment and care. The instruments used to test the hypotheses were the PHQ and the GUPI. Chi-square analysis was used to analyse the hypothesis. The fifth research objective also examined factors that would be associated with lower self-perceived need for psychiatric treatment and care. The principle researcher hypothesized that among primary care with probable mental disorders the following factors would be associated with lower perceived need for psychiatric treatment and care; male gender, lower educational attainment, poverty, chronic physical illness, more severe disability and indigenous ethnic group membership.
The Instruments used to test the hypotheses were the GUPI, the WSAS and socioeconomic status data. The data were analysed using chi-square analysis.

6. The sixth objective; the study attempted to identify the determinants of access to psychiatric treatment and care.

The principle researcher hypothesized that the following factors would be associated with a lower probability of access to psychiatric treatment and care; male gender, poverty, physical illness, more severe disability, unemployment and indigenous ethnic group membership.

The instruments used to test the hypotheses were, socio-economic status data, the WSAS and the Mental Health Service Utilization Questionnaire. The data were analysed using the chi-square analysis. The initial idea of further analysing the factors using the multiple logistic regression was not possible due to the small number of respondents who actually utilized current mental health services available.
CHAPTER 5. RESULTS

SECTION 5.1. RESPONDENTS CHARACTERISTICS

A total of four hundred and eighty-one patients were selected for the study. However, only four hundred and thirty patients (89.6%) were interviewed and participated in the study. Fifty-one patients refused to give consent. The study sample reflected the Sabah state census 2006 in terms of ethnic distribution.

Two hundred and twenty-four (52.1%) patients out of four hundred and thirty samples were diagnosed to have Common Mental Disorders using the PHQ and two hundred and six (47.9%) patients were negative. The point prevalence rate for common Mental Disorders among primary care in Kota Kinabalu was 52.1%.

Urban and suburban clinic respondents

There were two hundred and fifty respondents selected from the urban clinic. One hundred and eighty respondents were selected from the two suburban clinics.
<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean (SEM)</th>
<th>t</th>
<th>P value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Urban clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mean income</td>
<td>RM827.90 (60.70)</td>
<td>0.912</td>
<td>0.346</td>
<td>(91.54859, 250.18459)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>36.1 (15.3)</td>
<td>0.619</td>
<td>0.866</td>
<td>(-3.15248, 2.65382)</td>
</tr>
<tr>
<td>Duration of physical illness (years)</td>
<td>2.4 (0.3)</td>
<td>0.721</td>
<td>0.472</td>
<td>(0.59991, 1.29440)</td>
</tr>
<tr>
<td>Distance from clinic (km)</td>
<td>9.6 (0.6)</td>
<td>3.023</td>
<td>0.03</td>
<td>(0.84106, 4.38001)</td>
</tr>
<tr>
<td>Time taken to travel to clinic (minutes)</td>
<td>26.6 (1.0)</td>
<td>3.438</td>
<td>0.01</td>
<td>2.31272, 8.48950,</td>
</tr>
<tr>
<td>Frequency of GP consultation (per year)</td>
<td>4.6 (0.3)</td>
<td>0.794</td>
<td>0.428</td>
<td>(1.27432, 0.54498)</td>
</tr>
<tr>
<td>GP Consultation time (minutes)</td>
<td>8.3 (0.4)</td>
<td>0.328</td>
<td>0.743</td>
<td>(0.98630, 1.36541)</td>
</tr>
<tr>
<td>Frequency of mental health consultation (per year)</td>
<td>0.08 (0.05)</td>
<td>1.254</td>
<td>0.211</td>
<td>(0.04543, 0.20543)</td>
</tr>
<tr>
<td>Mental health consultation time (minutes)</td>
<td>0.26 (0.17)</td>
<td>1.526</td>
<td>.128</td>
<td>(0.07566, 0.59566)</td>
</tr>
<tr>
<td>Frequency of visiting traditional healers (per year)</td>
<td>3.7(0.9)</td>
<td>1.474</td>
<td>0.157</td>
<td>(0.02661,0.18661)</td>
</tr>
<tr>
<td>Bomoh/traditional healer treatment time (Minutes)</td>
<td>38.6 (4.8)</td>
<td>1.142</td>
<td>0.166</td>
<td>(0.85160, 3.89160)</td>
</tr>
</tbody>
</table>

There were significant differences between the urban and suburban samples only in the distance from the clinic and the time taken to the clinic. Surprisingly, distance to the urban clinic, and time taken to travel to the urban clinic, were both greater than for the suburban clinics. Although these differences were statistically significant they are unlikely to have been of any practical significance (Table 5-1).
There were no differences between the two groups in age, mean income, duration of physical illness frequency of GP consultation, the duration of the GP consultation (‘GP consultation time’), frequency of mental health consultation, mental health consultation time, frequency of visiting traditional healers, and duration of ‘Bomoh/traditional healer consultation time’. It is notable that none of the respondents attending the suburban clinics has had any mental health consultation.

Four hundred of twenty-eight (99.5%) of four hundred thirty had consulted a general practitioner in the government health clinics in the past. Forty-one (9.5%) of four hundred and thirty respondents had sought the help of a complementary or alternative healer, for example a ‘Bomoh’ or a ‘Bobohizan’. Twenty-four (58.5%) of the forty-one respondents who had seen a complementary healer were PHQ positive, i.e. they had a probable psychiatric disorder. Of the respondents who had seen a traditional healer 63.4% were attending the urban clinic and 36.6% were attending the suburban clinics.

**Description of various physical illnesses**

One hundred and eight (25.1%) attended the clinic with upper respiratory infection symptoms. There were forty-eight (11.2%) that came for hypertension and thirty-nine (9.1%) respondents were seen for multiple chronic medical diseases; example Diabetes Mellitus and Hypertension. Thirty-seven (8.6%) of the respondents came with musculoskeletal problems, for example backache and joint problems that required investigation. There were eighteen (4.2%) respondents that came to the clinics with migraine headache. Another eighteen (4.2%) respondents came because of mild asthmatic attacks (Table 5-2).

Seventeen (4.0%) respondents came for Diabetes Mellitus follow-up. Fifteen (3.5%) respondents had skin problems, example Scabies, Psoriasis and mild allergic skin reactions. Thirteen (3.0%) respondents came to clinic or follow-up of gastritis. Another thirteen (3.0%) came to the clinic for a routine medical check-up prior to employment or fulfilling requirement for university or college admissions. Ten (2.3%) respondents came for the cancer follow-up clinic. The remaining respondents attended with a variety of reasons and purposes as detailed in the following table (Table 5-2).
<table>
<thead>
<tr>
<th>Physical Illnesses and Clinical Problems</th>
<th>Total</th>
<th>%within categories</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Mellitus</td>
<td>17</td>
<td>4.0</td>
</tr>
<tr>
<td>Cancer</td>
<td>10</td>
<td>2.3</td>
</tr>
<tr>
<td>Dressing or Treatment</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Upper Respiratory Infection</td>
<td>108</td>
<td>25.1</td>
</tr>
<tr>
<td>Musculoskeletal Disorders</td>
<td>37</td>
<td>8.6</td>
</tr>
<tr>
<td>Dental Problems</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Accidental Injury</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td>Medical Check-Up</td>
<td>13</td>
<td>3.0</td>
</tr>
<tr>
<td>Multiple Chronic Medical Diseases</td>
<td>39</td>
<td>9.1</td>
</tr>
<tr>
<td>Chronic Infection/Hepatitis</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Hypertension</td>
<td>48</td>
<td>11.2</td>
</tr>
<tr>
<td>Thyroid or Hormonal</td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td>Glaucoma or Eye Disease</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Skin Problems</td>
<td>15</td>
<td>3.5</td>
</tr>
<tr>
<td>Gastritis</td>
<td>13</td>
<td>3.0</td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td>6</td>
<td>1.4</td>
</tr>
<tr>
<td>Stroke</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Malaria</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Gynae Problems</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>High Cholesterol</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Ear Problems</td>
<td>6</td>
<td>1.4</td>
</tr>
<tr>
<td>Heart Diseases or Angina</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Allergy</td>
<td>7</td>
<td>1.6</td>
</tr>
<tr>
<td>Epilepsy or Any Neurological Disorders</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Wound Infection</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Parkinson</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Haemorrhoid</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>UPT Check</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Measles or Any Acute Infection</td>
<td>2</td>
<td>0.5</td>
</tr>
<tr>
<td>Kidney Problems</td>
<td>1</td>
<td>0.2</td>
</tr>
<tr>
<td>Migraine/Headache</td>
<td>18</td>
<td>4.2</td>
</tr>
<tr>
<td>Asthma</td>
<td>18</td>
<td>4.2</td>
</tr>
<tr>
<td>Tuberculosis</td>
<td>9</td>
<td>2.1</td>
</tr>
<tr>
<td>Gout, Arthritis or Joint Problems</td>
<td>5</td>
<td>1.2</td>
</tr>
<tr>
<td>Anaemia</td>
<td>3</td>
<td>0.7</td>
</tr>
<tr>
<td>Total</td>
<td>430</td>
<td>100%</td>
</tr>
</tbody>
</table>
The physical illnesses were later classified into four groups: chronic & acute on chronic single physical illness, acute physical illness, chronic multiple physical illnesses and patients attending clinic for medical check-up & procedure. Examples of diseases in the chronic and acute on chronic single physical illnesses were exacerbation of asthma, uncontrolled epilepsy, repeated migraine attacks, uncontrolled hypertension, poorly controlled diabetes mellitus and recurrent allergic rhinitis attacks. When a respondent reported two or more of the following: diabetes mellitus, hypertension and other chronic medical diseases, they fell into the chronic multiple physical illness category. Acute respiratory Infection, urinary tract infection and injury due to motor vehicle accident were categorized under acute physical illness. There were some patients who only came to the clinic for a medical check-up, cholesterol monitoring or regular wound dressing. These were put under the medical check-up and procedure group.

**Somatic complaints among respondents**

There were one hundred and thirty-eight (32.1%) of four hundred and thirty respondents who reported a minor stomach ache, and twenty (4.7%) respondents who reported a more severe stomach ache. One hundred and ninety-three (44.9%) respondents were bothered a little with back ache, and thirty-seven (8.6%) were bothered a lot by their backache. Two hundred and twenty-nine (53.3%) respondents were bothered a little with pain in the limbs and joints and fifty-nine (13.7%) reported a lot of pain in their limbs and joints.
Table 5-3 Showing somatic complaints among respondents

<table>
<thead>
<tr>
<th>Somatic Complaints</th>
<th>not bothered no (%)</th>
<th>bothered a little no (%)</th>
<th>bothered a lot no (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stomach Pain</td>
<td>272 (63.3)</td>
<td>138 (32.1)</td>
<td>20 (4.7)</td>
</tr>
<tr>
<td>Back Pain</td>
<td>200 (46.5)</td>
<td>193 (44.9)</td>
<td>37 (8.6)</td>
</tr>
<tr>
<td>Pain in The Arms, Legs or Joints</td>
<td>142 (33.0)</td>
<td>229 (53.3)</td>
<td>59 (13.7)</td>
</tr>
<tr>
<td>Menstrual Cramps or Other Related Problems (N=218)</td>
<td>131 (60.1)</td>
<td>70 (32.1)</td>
<td>24 (11.0)</td>
</tr>
<tr>
<td>Pain or Sexual Problems During Intercourse</td>
<td>406 (94.4)</td>
<td>24 (5.6)</td>
<td>0</td>
</tr>
<tr>
<td>Headaches</td>
<td>134 (31.2)</td>
<td>250 (58.1)</td>
<td>46 (10.7)</td>
</tr>
<tr>
<td>Chest Pain</td>
<td>286 (66.5)</td>
<td>122 (28.4)</td>
<td>22 (5.1)</td>
</tr>
<tr>
<td>Dizziness</td>
<td>128 (29.8)</td>
<td>269 (62.6)</td>
<td>33 (7.7)</td>
</tr>
<tr>
<td>Fainting Spells</td>
<td>393 (91.4)</td>
<td>31 (7.2)</td>
<td>6 (1.4)</td>
</tr>
<tr>
<td>Feeling the Heart Pound or Race</td>
<td>267 (62.1)</td>
<td>146 (34.0)</td>
<td>17 (4.0)</td>
</tr>
<tr>
<td>Shortness of Breath</td>
<td>289 (67.2)</td>
<td>120 (27.9)</td>
<td>21 (4.9)</td>
</tr>
<tr>
<td>Nausea, Gas, Or Indigestion</td>
<td>271 (63.0)</td>
<td>141 (32.8)</td>
<td>18 (4.2)</td>
</tr>
<tr>
<td>Constipation, Loose Bowel, Or Diarrhea</td>
<td>313 (72.8)</td>
<td>104 (24.2)</td>
<td>13 (3.0)</td>
</tr>
</tbody>
</table>

Twenty-four (11.0%) of two hundred and twenty-five females reported they were bothered a lot by menstrual cramps and or problems related to their menstrual cycle. Although Twenty-four (5.6%) of the four hundred and thirty respondents reported they were a little bothered by pain or sexual problems during sexual intercourse, However, none complained they were bothered a lot of pain or problems during sexual intercourse. Forty-six (10.7%) were bothered a lot by headache.

Twenty-two (5.1%) respondents were bothered a lot by chest pain. Thirty-three (7.7%) respondents reported they were bothered a lot by dizziness. Six (1.4%) respondents were bothered a lot by fainting spells.
Although one hundred and forty-six (34.0%) were a little bothered by feeling their heart beating fast, only seventeen (4.0%) respondents were bothered a lot by feeling their heart beating fast. One hundred twenty (27.9%) of the respondents were a little bothered by shortness of breath. Twenty-one (4.9%) respondents were bothered a lot by shortness of breath. Eighteen (4.2%) respondents were bothered a lot by nausea or indigestion. Thirteen (3.0%) respondents were bothered a lot by constipation, loose bowel and diarrhea (Table 5-3).

**Psychological complaints**

Twenty-four (5.6%) felt depressed, down or helpless more than half of the days in the past month. Further, nineteen (4.4%) respondents felt depressed, down or helpless nearly every day during the past month (Table 5-4).

Eighteen (4.2%) of four hundred and thirty respondents reported having lost interest or pleasure in doing things for more than half of their days the past month. Another, twenty (4.7%) respondents reported they had lost interest or pleasure in doing things nearly every day in the past month.

Forty-eight (11.2%) respondents had sleep problems more than half the days for the past month. Thirty-six (8.4%) respondents had sleep problems nearly every day. They were having trouble falling asleep, staying asleep or sleeping too much. Forty-two (9.8%) respondents felt tired and had little energy for more than half the days over the past month. Forty-four (11.2%) respondents felt tired and had little energy nearly every day for the past month. Sixteen (3.7%) respondents had poor appetite or overeating more than half the days within the past one month. Thirty-two (7.4%) respondents had poor appetite or overeating nearly every day for the past one month.

Nineteen (4.4%) respondents had negative impressions for more than half the days, during the past month. Fourteen (3.3%) respondents had negative impressions nearly every day for the past month. They felt bad about themselves, felt like a failure or had let themselves or their family down.
Seven (1.6%) respondents had trouble concentrating for more than half the days within the past month. Twelve (2.8%) respondents had trouble concentrating nearly every day for the past one month. They report having difficulties concentrating on things like reading or watching television. Four (0.9%) of the respondents had noticed that they moved or spoke slower than usual or behaved restlessly more than half the days within the past month. Five (1.2%) respondents had noticed that they moved or spoke slower than usual or behaved restlessly nearly every day for the past month.

Only one (0.2%) respondent had thought that they were better off dead or thought of hurting themselves more than half the days in the past one month. Two (0.5%) respondents had thought that they were better off dead or thought of hurting themselves nearly every day for the past month. There are respondents who reported depressive symptoms (Table 5-4).
Table 5-4 Showing psychological complaints

<table>
<thead>
<tr>
<th>Psychological complaints</th>
<th>Several days in the past month</th>
<th>More than half of days in the past month</th>
<th>Nearly every day in the past month</th>
</tr>
</thead>
<tbody>
<tr>
<td>Feeling down or depressed</td>
<td>204 (47.4%)</td>
<td>24 (5.6%)</td>
<td>19 (4.4%)</td>
</tr>
<tr>
<td>Lost interest or pleasure</td>
<td>214 (49.8%)</td>
<td>18 (4.2%)</td>
<td>20 (4.7%)</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>153 (35.6%)</td>
<td>48 (11.2%)</td>
<td>36 (8.4%)</td>
</tr>
<tr>
<td>Feeling tired or little energy</td>
<td>232 (54.0%)</td>
<td>42 (9.8%)</td>
<td>44 (11.2%)</td>
</tr>
<tr>
<td>Change in appetite</td>
<td>136 (31.6%)</td>
<td>16 (3.7%)</td>
<td>32 (7.4%)</td>
</tr>
<tr>
<td>Negative impression</td>
<td>100 (23.3%)</td>
<td>19 (4.4%)</td>
<td>14 (3.3%)</td>
</tr>
<tr>
<td>Poor concentration</td>
<td>113 (26.3%)</td>
<td>7 (1.6%)</td>
<td>12 (2.8%)</td>
</tr>
<tr>
<td>Moved or spoke slower than usual or behaved restlessly</td>
<td>62 (14.4%)</td>
<td>4 (0.9%)</td>
<td>5 (1.2%)</td>
</tr>
<tr>
<td>Suicidal thoughts</td>
<td>25 (5.8%)</td>
<td>1 (0.2%)</td>
<td>2 (0.5%)</td>
</tr>
<tr>
<td>Worries about things</td>
<td>208 (48.4%)</td>
<td>32 (7.4%)</td>
<td></td>
</tr>
<tr>
<td>Feeling restless</td>
<td>124 (28.8%)</td>
<td>13 (3.0%)</td>
<td></td>
</tr>
<tr>
<td>Easily tired</td>
<td>145 (33.7%)</td>
<td>27 (6.3%)</td>
<td></td>
</tr>
<tr>
<td>Muscle tension</td>
<td>110 (25.6%)</td>
<td>25 (5.8%)</td>
<td></td>
</tr>
<tr>
<td>Ache and soreness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trouble of falling asleep or staying asleep</td>
<td>121 (28.1%)</td>
<td>34 (7.9%)</td>
<td></td>
</tr>
<tr>
<td>Trouble concentrating</td>
<td>91 (21.2%)</td>
<td>10 (2.3%)</td>
<td></td>
</tr>
<tr>
<td>Easily annoyed and irritable</td>
<td>138 (32.1%)</td>
<td>25 (5.8%)</td>
<td></td>
</tr>
<tr>
<td>Anxiety and fear attack</td>
<td>81 (18.8%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Heart racing, pounding or skipping beats</td>
<td>53 (12.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chest pain or pressure</td>
<td>37 (8.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sweating</td>
<td>51 (11.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flashes and chill sensations</td>
<td>59 (13.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Feeling dizzy, unsteady or fainted</td>
<td>48 (11.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tingling sensation or numbness</td>
<td>44 (10.2%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trembling and shaking sensation</td>
<td>30 (7.0%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fear of dying</td>
<td>34 (7.9%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Thirty-two (7.4%) felt nervous, anxious or worried a lot about different things more than half the days in the past month. Thirteen (3.0%) felt restless more than half the days in the past month. Twenty-seven (6.3%) felt they got tired easily for more than half the days in the past month. Twenty-five (5.8%) of four hundred and thirty respondents had experienced muscle tension, ache and soreness, more than half the days in the past one month. Thirty-four (7.9%) had trouble of falling asleep or staying asleep more than half the days in the past month. Ten (2.3%) had trouble concentrating more than half the days in the past month. Twenty-five (5.8%) were easily annoyed and irritable more than half the days in the past one month (Table 5-4).

There are respondents who reported having panic symptoms. Eighty-one (18.8%) experienced anxiety attack, fear and panic symptoms. Fifty-three (12.3%) reported heart racing, pounding or skipping beats. Thirty-seven (8.6%) reported chest pain or pressure. Fifty-one (11.9%) reported sweating. Fifty-nine (13.7%) experienced flashes and chill sensations. Forty-eight (11.2%) reported feeling dizzy, unsteady or fainted. Forty-four (10.2%) experienced tingling sensation or numbness. Thirty (7.0%) experienced trembling and shaking sensations. Thirty-four (7.9%) had expressed fear of dying (Table 5-4).

**Alcohol consumption**

Forty-two of the four hundred and thirty respondents were diagnosed with alcohol abuse disorder using the PHQ. Thirty of those were male and twelve females. Eleven male respondents were diagnosed with co-morbid alcohol abuse disorder and depression. Only four female respondents had co-morbid alcohol abuse disorder and depression (Table 5-5).

There are respondents with more than one common mental disorders the percentage calculated based on gender. Seven male respondents were diagnosed with co-morbid alcohol abuse and anxiety. Only four females had co-morbid alcohol abuse and anxiety. Three male respondents were diagnosed with co-morbid alcohol abuse and somatoform disorders. Only one female respondent had co-morbid alcohol abuse and somatoform disorders (Table 5-5).
Table 5-5 Showing gender distribution in the alcohol co-morbidity groups.

<table>
<thead>
<tr>
<th>Condition</th>
<th>Male (%) *</th>
<th>Female (%) *</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=212</td>
<td>N=218</td>
<td></td>
</tr>
<tr>
<td>Alcohol &amp; depression</td>
<td>11 (5.2)</td>
<td>4 (1.8)</td>
</tr>
<tr>
<td>Alcohol &amp; anxiety</td>
<td>7 (3.3)</td>
<td>4 (1.8)</td>
</tr>
<tr>
<td>Alcohol &amp; somatoform disorders</td>
<td>3 (1.4)</td>
<td>1 (0.0)</td>
</tr>
<tr>
<td>Depression &amp; anxiety</td>
<td>10 (4.7)</td>
<td>17 (7.8)</td>
</tr>
<tr>
<td>Anxiety &amp; Panic Disorder</td>
<td>3 (1.4)</td>
<td>9 (4.1)</td>
</tr>
<tr>
<td>All Alcohol abuse</td>
<td>30 (14.1)</td>
<td>12 (5.5)</td>
</tr>
<tr>
<td>Alcohol abuse only</td>
<td>9 (4.2)</td>
<td>3 (1.4)</td>
</tr>
<tr>
<td>Anxiety only</td>
<td>23 (10.8)</td>
<td>41 (18.8)</td>
</tr>
<tr>
<td>Depression only</td>
<td>38 (17.9)</td>
<td>45 (20.6)</td>
</tr>
<tr>
<td>Somatoform disorder only</td>
<td>17 (8.0)</td>
<td>22 (10.1)</td>
</tr>
<tr>
<td>history of physical or sexual abuse the past one year</td>
<td>23 (10.8)</td>
<td>16 (7.3)</td>
</tr>
<tr>
<td>Binge eating disorder only</td>
<td>5 (2.4)</td>
<td>4 (1.8)</td>
</tr>
<tr>
<td>Bulimia Nervosa only</td>
<td>2 (0.01)</td>
<td>1 (0.0)</td>
</tr>
</tbody>
</table>

Respondents Mean income & duration of physical illness

The overall mean of income for all respondents was Ringgit Malaysia 794.60. The overall mean of duration of physical illness was 2.3 years (Table 5-6).

Table 5-6 Comparison of mean income and duration of physical illnesses between Negative PHQ and Positive PHQ.

<table>
<thead>
<tr>
<th>Factors</th>
<th>Median</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>All respondents (N=430)</td>
<td>Negative PHQ</td>
</tr>
<tr>
<td>Average monthly income in Ringgit Malaysia (RM)</td>
<td>519.0</td>
<td>600.0</td>
</tr>
<tr>
<td>Duration of physical illnesses in year</td>
<td>0.1</td>
<td>1.2</td>
</tr>
</tbody>
</table>
The mean income for respondents with a common mental disorder (PHQ positive) was RM 703.40 (SEM=RM 60.6) while the mean income for respondents without common mental disorder (PHQ negative) was RM 893.90 (SEM=RM 60.3), p-value < 0.05: 0.026). The income distribution appeared skewed (skewness = 3.260) with median values lower than the mean values however the t-statistic, widely regarded as being robust to this violation of normality, here indicated a significant difference between the mean income of respondents with a common mental disorder and those without (Table 5-6).

The mean duration of physical illness among respondents with a common mental disorder (PHQ positive) was 2.2 (SEM=0.32) years. The mean duration of physical illness among respondents without a common mental disorder (PHQ negative) was 2.4 (SEM=0.35) years. The p value > 0.05 (0.617). Therefore, there was no significant difference noted for duration of physical illness between the respondents with or without a common mental disorder (Table 5-6).

Table 5-7 Mann-Whitney U test Comparing mean income and duration of physical illnesses between Negative PHQ and Positive PHQ

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mean Rank (n)</th>
<th>Mann-Whitney U</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative PHQ</td>
<td>Positive PHQ</td>
<td></td>
</tr>
<tr>
<td>Average monthly income in Ringgit Malaysia (RM)</td>
<td>206</td>
<td>237.5</td>
<td>195.7</td>
</tr>
<tr>
<td>Duration of physical illnesses in year</td>
<td>224</td>
<td>220.8</td>
<td>210.8</td>
</tr>
</tbody>
</table>

Since the average monthly income was not normally distributed further analysis using non-parametric testing, Mann-Whitney U test was administered. For the average monthly income, the mean rank for respondents with PHQ negative was 237.5 and 195.7 for PHQ positive. There was a significant difference between both groups in relation to average monthly income (Mann-Whitney U=18635.1, p value=0.001) (Table 5-7).

For the duration of physical illness, the mean rank for respondents with PHQ negative was 220.8 and 210.8 for PHQ positive. There was no significant difference between both groups in relation to average monthly income (Mann-Whitney U=22024.0, p value=0.379) (Table 5-7).
SECTION 5.2. THE REFUSAL GROUPS

There was a total of fifty-one patients who refused to give consent after their number being called. Twenty-five (49.0%) of the refusals were male and twenty-six (51.0%) were female. The percentage of male and female non-respondents is comparable to the respondents group.

Two hundred and twelve (49.3%) respondents were male and two hundred and eighteen (50.7%) respondents were female.

Table 5-8 Showing comparison of age between refusal group and the respondents

<table>
<thead>
<tr>
<th>Factor</th>
<th>Refusal Group Mean (SEM)</th>
<th>Respondents Mean (SEM)</th>
<th>T Value</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>36.8 (13.4)</td>
<td>36.2 (15.1)</td>
<td>12.71</td>
<td>0.29</td>
</tr>
</tbody>
</table>

The mean age for the refusal group was 36.8 years with standard deviation of 13.4. Mean age for participants or respondents group was 36.2 years with standard deviation of 15.1. The result of paired t-test for the mean age between refusals and participants was p=0.29, df=1, t =12.71 (alpha level of significant 0.05), p > 0.05. Therefore, no significant difference was noted between the mean age of refusal and participant group (Table 5-8).

Both the refusal and participant groups were similar in age and gender distribution. The ethnic distribution was unable to be compared because most of the refusals did not provide details of their ethnic background.

SECTION 5.3. HYPOTHESIS 1-THE PREVALENCE OF SPECIFIC PSYCHIATRIC OR MENTAL DISORDERS

The prevalence of probable mental disorder among primary care attenders in KK will be 30-50%.

One hundred and twenty-nine (30.0%) respondents had a single psychiatric diagnosis. Ninety-five (22.1%) respondents had multiple psychiatric diagnosis. There were thirty-nine (9.1%) respondents with Somatoform diagnosis. Twelve (2.8%) respondents diagnosed with Major Depressive Disorder and seventy-one (16.5%) diagnosed with Other Depressive Disorders.
Table 5-9 Prevalence of Psychiatric Disorders and psychological problems

<table>
<thead>
<tr>
<th>PHQ diagnosis</th>
<th>Total</th>
<th>Percentage (%)</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall positive PHQ</td>
<td>224</td>
<td>52.1</td>
<td>(47.4-56.8)</td>
</tr>
<tr>
<td>Overall negative PHQ</td>
<td>206</td>
<td>47.9</td>
<td>(43.2-52.6)</td>
</tr>
<tr>
<td>Single diagnosis</td>
<td>129</td>
<td>30.0</td>
<td>(25.7-34.3)</td>
</tr>
<tr>
<td>Multiple diagnosis</td>
<td>95</td>
<td>22.1</td>
<td>(18.2-26.0)</td>
</tr>
<tr>
<td>Somatoform Disorder</td>
<td>39</td>
<td>9.1</td>
<td>(6.4-11.8)</td>
</tr>
<tr>
<td>Major Depressive Syndrome</td>
<td>12</td>
<td>2.8</td>
<td>(1.2-4.4)</td>
</tr>
<tr>
<td>Other Depressive Syndrome</td>
<td>71</td>
<td>16.5</td>
<td>(13.0-20.0)</td>
</tr>
<tr>
<td>Panic Syndrome</td>
<td>46</td>
<td>10.7</td>
<td>(7.8-13.6)</td>
</tr>
<tr>
<td>Other Anxiety Syndrome</td>
<td>30</td>
<td>7.0</td>
<td>(4.6-9.4)</td>
</tr>
<tr>
<td>Bulimia Nervosa</td>
<td>3</td>
<td>0.7</td>
<td>(0.0-1.5)</td>
</tr>
<tr>
<td>Binge Eating Disorder</td>
<td>9</td>
<td>2.1</td>
<td>(0.7-3.5)</td>
</tr>
<tr>
<td>Alcohol Abuse</td>
<td>42</td>
<td>9.8</td>
<td>(7.0-12.6)</td>
</tr>
<tr>
<td>Physically &amp; sexually victimized</td>
<td>39</td>
<td>9.1</td>
<td>(6.4-11.8)</td>
</tr>
<tr>
<td>Serious emotional problems prior to menstrual period</td>
<td>103</td>
<td>24.0</td>
<td>(20.0-28.0)</td>
</tr>
<tr>
<td>Sleep problems</td>
<td>84</td>
<td>19.6</td>
<td>(15.8-23.4)</td>
</tr>
<tr>
<td>Total patient</td>
<td>430</td>
<td>100%</td>
<td></td>
</tr>
</tbody>
</table>

Forty-six (10.7%) respondents were found to have Panic Syndrome. Further, thirty (7.0%) respondents were found to have Other Anxiety Syndrome. Three (0.7%) respondents were diagnosed to have Bulimia Nervosa. A further nine (2.1%) respondents were diagnosed as having Binge Eating Disorder.

Alcohol abused was elicited among forty-two (9.8%) respondents. Thirty-nine (9.1%) respondents were exposed to physical and sexual abuse. One hundred and three female respondents had serious emotional problems related to menstrual cycle. Eighty-four (19.6%) respondents complained of sleep problems.
Interpretation of hypothesis 1

The prevalence of common mental disorders is 52.1% [95% CI (47.4-56.8)]. The confidence interval overlaps with the upper border of the hypothesis range.

SECTION 5.4. HYPOTHESIS 2 – THE DETERMINANTS OF COMMON MENTAL DISORDER

The following factors will be associated with significantly higher probability of mental disorder: Older age; Female gender; Poverty; Physical illness; More severe disability; Unemployment; and Indigenous ethnic group membership and recent stressors.

Univariate Analysis for Hypothesis 2

5.4.1.1. Sociodemographic factors and Common Mental Disorders

Age

In this study, the age of patient ranges from eighteen years to sixty-five years with the mean of 36.18 (SD = 15.09). The mean age of the PHQ positive group was 32.91 (SD = 13.95). The mean age of the PHQ negative group was 39.75 (SD = 15.51).

The patients’ ages followed a normal distribution. Most of the patients fell in the age group between eighteen to twenty-nine. (Figure 4).
Figure 4 Histogram showing normal distribution of respondents age

All age groups were represented by both a PHQ positive and a PHQ negative result.

There were significant differences among the different age groups between PHQ positive and PHQ negative results (chi-square = 18.657, p value = 0.001). Refer Table 5-10. There was a trend noted in the younger age groups of a PHQ positive outcome. For example, the age group of eighteen to twenty-nine showed a positive response on the PHQ.
<table>
<thead>
<tr>
<th>Demographic data</th>
<th>PHQ negative n (% within categories)</th>
<th>PHQ positive n (% within categories)</th>
<th>X² value</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age in group</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>75 (37.7)</td>
<td>124 (62.3)</td>
<td>18.657</td>
<td>0.001</td>
<td>199</td>
</tr>
<tr>
<td>30-39</td>
<td>26 (49.1)</td>
<td>27 (50.9)</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>40-49</td>
<td>36 (54.5)</td>
<td>30 (45.5)</td>
<td></td>
<td></td>
<td>66</td>
</tr>
<tr>
<td>50-59</td>
<td>46 (59.0)</td>
<td>32 (41.0)</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>60-65</td>
<td>23 (67.6)</td>
<td>11 (32.4)</td>
<td></td>
<td></td>
<td>34</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>125 (59.0)</td>
<td>87 (41.0)</td>
<td>20.479</td>
<td>0.000</td>
<td>212</td>
</tr>
<tr>
<td>Female</td>
<td>81 (37.2)</td>
<td>137 (62.8)</td>
<td></td>
<td></td>
<td>218</td>
</tr>
<tr>
<td>Ethnic</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim Indigenous</td>
<td>130 (52.2)</td>
<td>119 (47.8)</td>
<td>5.892</td>
<td>0.207</td>
<td>249</td>
</tr>
<tr>
<td>Non-Muslim Indigenous</td>
<td>33 (38.4)</td>
<td>53 (61.6)</td>
<td></td>
<td></td>
<td>86</td>
</tr>
<tr>
<td>Malay</td>
<td>18 (40.9)</td>
<td>26 (59.1)</td>
<td></td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>Chinese</td>
<td>14 (50.0)</td>
<td>14 (50.0)</td>
<td></td>
<td></td>
<td>28</td>
</tr>
<tr>
<td>Indian &amp; Others</td>
<td>11 (47.8)</td>
<td>12 (52.2)</td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>Citizenship</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysians</td>
<td>188 (47.6)</td>
<td>207 (52.4)</td>
<td>0.189</td>
<td>0.663</td>
<td>395</td>
</tr>
<tr>
<td>Foreigners</td>
<td>18 (51.4)</td>
<td>17 (48.6)</td>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Marital status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Married</td>
<td>131 (54.8)</td>
<td>108 (45.2)</td>
<td>11.677</td>
<td>0.003</td>
<td>239</td>
</tr>
<tr>
<td>Single</td>
<td>66 (37.9)</td>
<td>108 (62.1)</td>
<td></td>
<td></td>
<td>174</td>
</tr>
<tr>
<td>Divorce/widow</td>
<td>9 (52.9)</td>
<td>8 (47.1)</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Religion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Islam</td>
<td>146 (49.8)</td>
<td>147 (50.2)</td>
<td>3.118</td>
<td>0.210</td>
<td>293</td>
</tr>
<tr>
<td>Christian</td>
<td>50 (41.7)</td>
<td>70 (58.3)</td>
<td></td>
<td></td>
<td>120</td>
</tr>
<tr>
<td>Buddha, Hindu &amp; Others</td>
<td>10 (58.8)</td>
<td>7 (41.2)</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Average monthly income</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;RM300</td>
<td>56 (41.2)</td>
<td>80 (58.8)</td>
<td>16.464</td>
<td>0.002</td>
<td>136</td>
</tr>
<tr>
<td>RM301-RM600</td>
<td>44 (41.5)</td>
<td>62 (58.5)</td>
<td></td>
<td></td>
<td>106</td>
</tr>
<tr>
<td>RM601-RM1000</td>
<td>38 (45.8)</td>
<td>45 (54.2)</td>
<td></td>
<td></td>
<td>83</td>
</tr>
<tr>
<td>RM1001-RM2000</td>
<td>45 (66.2)</td>
<td>23 (33.8)</td>
<td></td>
<td></td>
<td>68</td>
</tr>
<tr>
<td>Demographic Data</td>
<td>PHQ negative n (% within categories)</td>
<td>PHQ positive n (% within categories)</td>
<td>X² value</td>
<td>p value</td>
<td>Total</td>
</tr>
<tr>
<td>----------------------------------------------</td>
<td>--------------------------------------</td>
<td>--------------------------------------</td>
<td>----------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>&gt; RM 2000</td>
<td>23 (62.2)</td>
<td>14 (37.8)</td>
<td></td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Employment status</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>39 (54.2)</td>
<td>33 (45.8)</td>
<td>26.809</td>
<td>0.000</td>
<td>72</td>
</tr>
<tr>
<td>Private sector</td>
<td>59 (48.4)</td>
<td>63 (51.6)</td>
<td></td>
<td></td>
<td>122</td>
</tr>
<tr>
<td>Own business/Farmer</td>
<td>28 (63.6)</td>
<td>16 (36.4)</td>
<td></td>
<td></td>
<td>44</td>
</tr>
<tr>
<td>Housewife</td>
<td>42 (53.8)</td>
<td>36 (46.2)</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Pensioner</td>
<td>12 (66.7)</td>
<td>6 (33.3)</td>
<td></td>
<td></td>
<td>18</td>
</tr>
<tr>
<td>Unemployed/Student</td>
<td>8 (24.3)</td>
<td>14 (63.6)</td>
<td></td>
<td></td>
<td>22</td>
</tr>
<tr>
<td>Student</td>
<td>18 (24.3)</td>
<td>56 (75.7)</td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Level of education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>47 (66.2)</td>
<td>24 (33.8)</td>
<td>16.873</td>
<td>0.001</td>
<td>71</td>
</tr>
<tr>
<td>Primary</td>
<td>38 (52.1)</td>
<td>35 (47.9)</td>
<td></td>
<td></td>
<td>73</td>
</tr>
<tr>
<td>Secondary</td>
<td>94 (45.6)</td>
<td>112 (54.4)</td>
<td></td>
<td></td>
<td>206</td>
</tr>
<tr>
<td>Diploma/Certificate &amp; tertiary</td>
<td>27 (33.8)</td>
<td>53 (66.3)</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>Physical illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic &amp; acute on chronic single physical illness</td>
<td>101 (46.3)</td>
<td>117 (53.7)</td>
<td>1.924</td>
<td>0.588</td>
<td>218</td>
</tr>
<tr>
<td>Acute physical illness</td>
<td>75 (49.0)</td>
<td>78 (51.0)</td>
<td></td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>Chronic multiple physical illnesses</td>
<td>22 (56.4)</td>
<td>17 (43.6)</td>
<td></td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>8 (40.0)</td>
<td>12 (60.0)</td>
<td></td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Total</td>
<td>430 (100%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Gender**

In this study, two hundred and twelve patients (49.3%) were male and two hundred and eighteen patients (50.7%) were female. (Table 5-10). Both gender groups were represented by both PHQ positive and PHQ negative outcomes.

There was significant difference between the different genders regarding positive and negative outcomes on the PHQ (chi-square = 20.479, p value = 0.000) (Table 5-10). The female gender (62.8%) appeared to be associated with positive PHQ.

Sixty-three (28.9%) of the two hundred and eighteen female respondents had more than one diagnosis based on the PHQ. Seventy-four (33.9%) had a single diagnosis of a common mental disorder based on the PHQ. Thirty-two (15.1%) of the two hundred and twelve male respondents had more than one diagnosis based on the PHQ. Fifty-five (25.9%) were diagnosed with a single diagnosis based on the PHQ. There was a significant difference between gender in relation to single and multiple diagnoses based on the PHQ (chi-square=22.233, p value=0.000). (Table 5-10)

**Table 5-11 Table showing gender and single and multiple diagnosis (PHQ)**

<table>
<thead>
<tr>
<th>Overall diagnosis</th>
<th>PHQ negative</th>
<th>Single diagnosis</th>
<th>Multiple diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Male</td>
<td>Female</td>
<td>X2 value</td>
</tr>
<tr>
<td>PHQ negative</td>
<td>125 (59.0%)</td>
<td>81 (37.2%)</td>
<td>22.233</td>
</tr>
<tr>
<td></td>
<td>55 (25.9%)</td>
<td>74 (33.9%)</td>
<td></td>
</tr>
<tr>
<td>Single diagnosis</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Multiple diagnosis</td>
<td>32 (15.1%)</td>
<td>63 (28.9%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>212</td>
<td>218</td>
<td></td>
</tr>
</tbody>
</table>

**Ethnic group**

In this study, two hundred and forty nine patients (57.9%) were Muslim Indigenous, eighty-six patients (20.0%) were Non-Muslim Indigenous, forty-four patients (10.2%) were Malays, twenty-eight patients (6.5%) were Chinese and twenty-three (5.3%) were from other minority groups (Indians and others) (Table 5-10). Malays are mostly Muslim, Chinese include Buddhist and Christians and Indians include Hindus and Christians.
All ethnic groups were represented by both positive and negative PHQ outcomes. Among the Non-Muslim Indigenous (61.6%), Malays (59.1%) and the smaller minority groups (52.2%) the PHQ positive response dominated the presentation. Refer (Table 5-10).

There was no significant difference among the ethnic groups in terms of positive and negative PHQ results (chi-square = 5.892, p value = 0.207). Refer (Table 5-10).

There were thirty-five (14.1%) of two hundred and forty-nine Muslim indigenous respondents that had exposure to alcohol drinking. Forty-five (52.3%) of eighty-six non-Muslim indigenous respondents had history of alcohol drinking. Two (4.5%) of forty-four Malay respondents had history of consuming alcohol. Ten (35.7%) of twenty-eight Chinese respondents had a history of taking alcohol. Six (26.1%) of twenty-three respondents of other minority ethnicities had history of consuming alcohol. There was significant difference between the ethnicities in relation to their history of alcohol consumption (chi-square=64.552, p value=0.000). (Table 5-12)

Table 5-12 Showing alcohol intake among different ethnicities

<table>
<thead>
<tr>
<th>Ethnic groups</th>
<th>Alcohol intake</th>
<th>No alcohol exposure</th>
<th>Chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim Indigenous</td>
<td>35 (14.1%)</td>
<td>214 (85.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=249)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Muslim Indigenous</td>
<td>45 (52.3%)</td>
<td>41 (47.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=86)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malay</td>
<td>2 (4.5%)</td>
<td>42 (95.5%)</td>
<td>64.552</td>
<td>0.000</td>
</tr>
<tr>
<td>(n=44)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese</td>
<td>10 (35.7%)</td>
<td>18 (64.3%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=28)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian, Mixed &amp; Others</td>
<td>6 (26.1%)</td>
<td>17 (73.9%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(n=23)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Nine (3.6%) of two hundred and forty-nine Muslim indigenous respondents satisfied the alcohol abuse diagnosis using the PHQ. Twenty-six (30.2%) of eighty-six non-Muslim indigenous respondents were diagnosed as having alcohol abuse disorder. Three (10.7%) of twenty-eight Chinese respondents were diagnosed having alcohol abuse disorder. Four (17.4%) of twenty-three other minority ethnicities were diagnosed as having alcohol abuse disorder. None of the forty-four Malay respondents satisfied the alcohol abuse criteria based on the PHQ (Table 5-12)
Table 5-13 Showing alcohol abuse among different ethnicities

<table>
<thead>
<tr>
<th>Ethnic groups</th>
<th>Alcohol abuse</th>
<th>Chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Muslim Indigenous (n=249)</td>
<td>9 (3.6%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Muslim Indigenous (n=86)</td>
<td>26 (30.2%)</td>
<td>57.872</td>
<td>0.000</td>
</tr>
<tr>
<td>Malay (n=44)</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chinese (n=28)</td>
<td>3 (10.7%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indian, Mixed &amp; Others (n=23)</td>
<td>4 (17.4%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

There was a significant difference among the different ethnicities in relation to alcohol abuse based on the PHQ (chi-square=57.872, p value=0.000). (Table 5-13)

**Citizenship**

The patient’s citizenship was determined by identification card and other supporting documents. In this study, thirty-five (8.1%) respondents were foreigners or immigrants. This was a relatively small number, probably because many them refused to be selected by not responding to their number being called. Another explanation could be that many of them sought treatment at the private clinics.

Both Malaysian and immigrant groups were represented by both a PHQ positive and a PHQ negative outcome. The PHQ positive result dominates the representation in the Malaysian group (52.4%). However, there was no significant difference among Malaysians and immigrants, between PHQ positive and PHQ negative results (chi-square = 0.189, p value = 0.663). (Table 5-10)

**Urban versus suburban area**

Two hundred and fifty (58.1%) of the four hundred and thirty respondents were from the urban area clinic. One hundred and eighty (41.9%) came from the suburban area. One hundred and thirty-eight (55.2%) of those from the urban area clinic had PHQ positive responses. Eighty-six (47.8%) of those from the suburban area clinic had PHQ positive responses.
Table 5-14 Showing distribution of PHQ diagnosed common mental disorder at the different type of clinics

<table>
<thead>
<tr>
<th>Clinic type</th>
<th>PHQ negative</th>
<th>PHQ positive</th>
<th>chi-square</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urban clinic</td>
<td>112 (44.8%)</td>
<td>138 (55.2%)</td>
<td>2.310a</td>
<td>0.129</td>
</tr>
<tr>
<td>Suburban clinics</td>
<td>94 (52.2%)</td>
<td>86 (47.8%)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

However, there was no difference between the different areas in relation to PHQ positive and negative outcomes (chi-square=2.130, p value=0.129). (Table 5-14)

Marital status

In this study, two hundred and thirty-nine patients (55.6%) were married, and one hundred and seventy-four patients (40.4%) were single, seventeen patients (3.9%) were divorced or widowed. (Table 5-10).

All the different marital status groups were represented by both PHQ positive and PHQ negative results. Being single (62.1%) appeared to have a greater association with a PHQ positive outcome.

There was significant difference among the various groups between PHQ positive and PHQ negative (chi-square = 11.677, p value = 0.003). (Table 5-10).

Religion

In this study, two hundred and ninety-three patients (68.1%) were Muslims, one hundred and twenty patients (27.9%) were Christians, and seventeen patients (3.9%) were either Buddhists, Hindus or other.

All the different religious groups were represented by both PHQ positive and negative outcomes. (Table 5-10). There was no difference among the various religious groups between PHQ positive and negative (chi-square = 3.118, p value = 0.210). (Table 5-10).
**Average monthly income**

In this study, one hundred and thirty-six patients (31.6%) earned less than RM300 (AUD 100), one hundred and six patients earned between RM301 to RM600 (24.6%), eighty-three patients earned between RM601 to RM1000 (19.3%), sixty-eight patients earned between RM1001 to RM2000 (15.8%) and thirty-seven patients earned more than RM2000 (AUD666) (8.6%). (Table 5-10).

PHQ positive outcomes occurred more often in the groups that earned less than RM1000. There were 58.8% of patients from the group that earned less than RM300 had returned a PHQ positive result, 58.5% of patients from the group that earned between RM301 to RM600 showed a PHQ positive result and 54.2% of patients from the group that earned between RM601 to RM1000 also showed a PHQ positive outcome.

In comparison, only 33.8% of patients from the group that earned between RM1001 to RM2000 had PHQ positive result and 37.8% of patients from the group that earned more than RM2000 had a PHQ positive result (Table 5-10).

There was a significant difference in the average monthly income between the between PHQ positive and negative (chi-square = 16.464, p value = 0.002). (Table 5-10)

**Employment status**

In this study, twenty-two respondents (5.1%) were unemployed, seventy-eight respondents (18.1%) were housewives, one hundred and twenty-two respondents (28.4%) worked in the private sector, seventy-two respondents (16.7%) were government servants, forty-four respondents (10.2%) ran their own businesses or farms, seventy-four (17.2%) respondents were students and eighteen respondents (4.3%) were pensioners.

All the above groups were represented by both PHQ positive and negative results. The PHQ positive result peaked in three different groups, the unemployed (n = 14, 63.6%), students (n = 56, 75.7%) and the private sector (n = 63, 51.6%).

There was significant difference among the various groups between PHQ positive and PHQ negative outcomes (chi-square = 26.809, p value = 0.000). (Table 5-10).
**Education level**

In this study, the level of education of the respondents was stratified into four groups. There were respondents with no formal education, with a primary level of education, with a secondary level of education and with a tertiary level of education.

All the groups were represented by both PHQ positive and PHQ negative outcomes. Respondents with a higher level of education appeared to have a greater association with a PHQ positive response. For example, 54.4% of patients with PHQ positive response were in the secondary education group and 66.3% in the tertiary level of education group.

There was also significant difference among the different levels of education in PHQ positive and PHQ negative responses (chi-square = 16.873, p value 0.001). (Table 5-10).

**Physical Illness**

In this study, physical illnesses of the patients were divided into four groups. The groupings were as follows: chronic & acute on chronic single physical illness, acute physical illness, chronic multiple physical illnesses and patients attending clinic for medical check-ups & procedures. Example of diseases in this study that were categorized under chronic and acute on chronic single physical illnesses were asthma, epilepsy, migraine, hypertension only, diabetes mellitus only and allergic rhinitis. Diabetes mellitus, hypertension and other chronic medical diseases are categorized as chronic multiple physical illnesses. Acute respiratory infection, urinary tract infection and injury due to motor vehicle accident were categorised as acute physical illnesses. Those who came to the clinic for medical check-ups, cholesterol monitoring and routine wound dressings were classed in the medical check-up and procedure group.

Two hundred and eighteen respondents (50.7%) presented with chronic & acute on chronic single physical illnesses, one hundred and fifty-three respondents (35.6%) presented with acute physical illness, thirty-nine respondents (9.0%) presented with chronic multiple physical illnesses, and twenty respondents (4.7%) attended clinic for medical check-ups & procedures. (Table 5-10).
All the groups were represented by PHQ positive and PHQ negative responses. PHQ positive peaked in three different groups namely the chronic & acute on chronic single physical illness group \((n = 117, 53.7\%)\), the acute physical illness group \((n = 78, 51.0\%)\) and the medical check-up & procedure group \((n = 12, 60.0\%)\). (Table 5-10).

However, there was no significant difference among the various groups between the PHQ positive and PHQ negative results \((\text{chi-square} = 1.924, \text{p value} = 0.588)\). (Table 5-10).

**Interpretation of sociodemographic factors (objective 2 and hypothesis)**

The null hypothesis, that there is no significant difference among the age groups between respondents with and without common mental disorders, was rejected. Overall, the chi-square analysis indicated respondents between the age of 18-29 were associated with a higher probability of having common mental disorders. This was different than the earlier postulation that older age was associated with a higher probability of having a common mental disorder. This study elicited a trend in younger age groups being associated with common mental disorders.

The binary logistic regression analysis confirmed that the odds of having a common mental disorder increased as the age group decreased. The odds of having a common mental disorder was highest among the respondents aged between 18-29 \((\text{odds ratio of} \ 3.078, \text{p value of} \ 0.016)\).

For the gender factor, the null hypothesis that there is no significant difference between respondents with and without common mental disorders was rejected. The chi-squared analysis showed that female gender was significantly associated with common mental disorder. This was later confirmed, by logistic regression showing female respondents had three times the odds of having a common mental disorder \((\text{odds ratio of} \ 2.941, \text{p value of} \ 0.000)\).

In relation to ethnicity, the null hypothesis that there is no significant difference between people of different ethnicity with regards to having common mental disorder was accepted. All different ethnicities were reported to have respondents with common mental disorders. However, there was no unique ethnic group that was more highly associated with common mental disorders. Therefore, the ethnicity factor was exempted from further multivariate analysis.
The null hypothesis that there is no significant difference between immigrants and citizens in relation to having a common mental disorder was accepted. Both immigrants and citizens were reported to have respondents with common mental disorders. However, there was no association found between immigrants and incidence of common mental disorders (chi-square of 0.189, p value of 0.663). This could be due to the relatively smaller number of respondents with immigrant status (n=35, 8.1%). Therefore, the citizenship factor was exempted from further multivariate analysis.

For the marital status, the null hypothesis that there is no significant difference in marital status between respondents with and without common mental disorders was rejected. Respondents with single (62.1%) status appeared to be highly associated with common mental disorders (chi-square of 11.677, p value of 0.003). However, the logistic regression analysis did not report a higher odds ratio of having common mental disorder among single status respondents.

The null hypothesis that there is no significant difference between religious groups in relation to having a common mental disorder was accepted. Although the Christian groups were reported to have a higher proportion of respondents with a common mental disorder, it was not significantly associated (chi-square of 3.118, p value of 0.210).

In relation to monthly income, the null hypothesis that there is no significant difference among respondents with different income in relation to having a common mental disorder was rejected. Chi-square analysis showed that respondents with an income less than RM1000 were significantly associated with common mental disorders (chi-square of 16.464, p value of 0.002).

Further analysis of average monthly income using binary logistic regression showed that the odds of having a common mental disorder in respondents with an average monthly income of RM301 to RM600 were 2.9 times than respondents earning between RM1001 to RM2000. Respondents earning less than RM300 had the odds of 2.5 times compared to respondents earning RM1001 to RM2000 to have a common mental disorder. Respondents with an average monthly income more than RM2000 had the lowest odds ratio to have a common mental disorder (odds ratio of 0.920).
For employment status, the null hypothesis that there is no significant difference between the groups in relation to common mental disorders was rejected. Respondents who were unemployed, worked in the private sector and students appeared to be associated with a greater likelihood of having a common mental disorder. However, further analysis using binary logistic regression analysis did not find any significant predictive factors (p value of 0.216).

The null hypothesis that there is no significant difference among different levels of education in relation to having common mental disorders was rejected. Respondents with a higher level of educational background (secondary and tertiary education) appeared to be significantly associated with common mental disorders. Further analysis, using binary logistic regression showed that there were strong predictive factors for common mental disorders.

Respondents with secondary level of educational background had the odds of three times compared to respondents without a formal education to have a common mental disorder. Accordingly, respondents with tertiary or diploma level educational backgrounds had the odds of five times more compared to respondents without formal education to have a common mental disorder.

The null hypothesis that there is no significant difference among people with different types of physical illness in relation to having a common mental disorder was accepted. Common mental disorders were reported in all different types of physical illnesses. Further analysis, using logistic regression to determine the predictive factor for common mental disorders was not done for the separate types of physical illnesses.

The null hypothesis that there is no significant difference for history of alcohol consumption in relation to having a common mental disorder was rejected. Chi-squared analysis showed that there was a significant association between history of alcohol consumption and having a common mental disorder (chi-square of 11.834, p value of 0.001). However, further analysis, using binary logistic regression did not show any predictive value for common mental disorders (p value of 0.291).
Consequently, the null hypothesis that there is no significant difference for alcohol abuse in relation to having a common mental disorder was also rejected. Chi-squared analysis showed that there was significant association between alcohol abuse and having a common mental disorder (chi-square of 42.806, p value of 0.000). However, further analysis, using binary logistic regression did not show any predictive value for common mental disorders (p value of 0.997).

The null hypothesis that there is no significant difference in relation to a history of being physically or sexually victimized in the past year and having a common mental disorder was rejected. Chi-square analysis showed that a history of being physically or sexually victimized in the past year was significantly associated with having a common mental disorder (chi-square of 35.334, p value of 0.000). Further analysis, using binary logistic regression showed that a history of being physically or sexually victimized in the past year was highly predictive of common mental disorder. Respondents with a history of being physically or sexually victimized in the past year had the odds of forty-nine times more than respondent who are not abused to have a common mental disorder (p value of 0.000).

In conclusion, using the univariate analysis on the various socio-demographic factors, young age, female, being single, earning less than RM1000, being unemployed, being a student, history of alcohol consumption, alcohol abuse and having a secondary/tertiary level of education, were associated with common mental disorders (PHQ positive). It is also found that the type of physical illnesses was not associated with common mental disorders.

Hypothesis 2-Recent Stressors and Common Mental Disorders

In the PHQ, participants were asked about the various stressors they had experienced during the four weeks prior to the interview.

The stressors listed were nightmares or ruminations, thinking of something bad that happened recently, having no one to turn to when having problems, financial problems or worries, stress at work or outside of the home or at school, stress of taking care of children, parents or other family members, difficulties with husband/wife, partner/lover or boyfriend/girlfriend, little or no sexual desire or pleasure during sex, worries about health and worries about weight or looks.
Table 5-15 Showing association between stressors in the past four weeks and the PHQ score.

<table>
<thead>
<tr>
<th>Stressors *</th>
<th>PHQ Negative (% within categories)</th>
<th>PHQ Positive (% within categories)</th>
<th>Gamma</th>
<th>P value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nightmares or rumination</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>194 (54.5)</td>
<td>162 (45.5)</td>
<td><strong>0.722</strong></td>
<td><strong>0.000</strong></td>
<td>356</td>
</tr>
<tr>
<td>Bothered</td>
<td>12 (16.2)</td>
<td>62 (83.8)</td>
<td></td>
<td></td>
<td>74</td>
</tr>
<tr>
<td>Thinking of something bad that happened recently</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>183 (53.5)</td>
<td>159 (46.5)</td>
<td><strong>0.530</strong></td>
<td><strong>0.000</strong></td>
<td>342</td>
</tr>
<tr>
<td>Bothered</td>
<td>23 (26.1)</td>
<td>65 (73.9)</td>
<td></td>
<td></td>
<td>88</td>
</tr>
<tr>
<td>Having no one to turn to when having problem</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>161 (50.6)</td>
<td>157 (49.4)</td>
<td>0.208</td>
<td>0.055</td>
<td>318</td>
</tr>
<tr>
<td>Bothered</td>
<td>45 (40.2)</td>
<td>67 (59.8)</td>
<td></td>
<td></td>
<td>112</td>
</tr>
<tr>
<td>Financial problems or worries</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>90 (49.2)</td>
<td>93 (50.8)</td>
<td>0.044</td>
<td>0.649</td>
<td>183</td>
</tr>
<tr>
<td>Bothered</td>
<td>116 (47.0)</td>
<td>131 (53.0)</td>
<td></td>
<td></td>
<td>247</td>
</tr>
<tr>
<td>Stress at work or outside of the home or at school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>125 (53.0)</td>
<td>111 (47.0)</td>
<td><strong>0.222</strong></td>
<td><strong>0.020</strong></td>
<td>236</td>
</tr>
<tr>
<td>Bothered</td>
<td>81 (41.8)</td>
<td>113 (58.2)</td>
<td></td>
<td></td>
<td>194</td>
</tr>
<tr>
<td>The stress of taking care of children, parents or other family members</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>159 (50.5)</td>
<td>156 (49.5)</td>
<td>0.192</td>
<td>0.075</td>
<td>315</td>
</tr>
<tr>
<td>Bothered</td>
<td>7 (40.9)</td>
<td>68 (59.1)</td>
<td></td>
<td></td>
<td>115</td>
</tr>
<tr>
<td>Difficulties with husband/wife, partner/lover or boyfriend/girlfriend</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>189 (49.7)</td>
<td>191 (50.3)</td>
<td><strong>0.315</strong></td>
<td><strong>0.033</strong></td>
<td>380</td>
</tr>
<tr>
<td>Bothered</td>
<td>17 (34.0)</td>
<td>33 (66.0)</td>
<td></td>
<td></td>
<td>50</td>
</tr>
<tr>
<td>Little or no sexual desire or pleasure during sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>198 (49.1)</td>
<td>205 (50.9)</td>
<td><strong>0.393</strong></td>
<td><strong>0.045</strong></td>
<td>403</td>
</tr>
<tr>
<td>Stressors *</td>
<td>PHQ Negative (%within categories)</td>
<td>PHQ Positive (%within categories)</td>
<td>Gamma</td>
<td>P value</td>
<td>Total</td>
</tr>
<tr>
<td>------------------------------------------------</td>
<td>-----------------------------------</td>
<td>-----------------------------------</td>
<td>-----------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Bothered</td>
<td>8 (29.6)</td>
<td>19 (70.4)</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td><strong>Worrying about your health</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>61 (58.1)</td>
<td>44 (41.9)</td>
<td><strong>0.265</strong></td>
<td><strong>0.016</strong></td>
<td>105</td>
</tr>
<tr>
<td>Bothered</td>
<td>145 (44.6)</td>
<td>180 (55.4)</td>
<td></td>
<td></td>
<td>325</td>
</tr>
<tr>
<td><strong>Worries about your weight or how you look</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not bothered</td>
<td>143 (58.6)</td>
<td>101 (41.4)</td>
<td><strong>0.469</strong></td>
<td><strong>0.000</strong></td>
<td>244</td>
</tr>
<tr>
<td>Bothered</td>
<td>63 (33.9)</td>
<td>123 (66.1)</td>
<td></td>
<td></td>
<td>186</td>
</tr>
</tbody>
</table>

**Nightmare or rumination**

Seventy-four (17.2%) out of four hundred and thirty respondents had experienced “nightmare or rumination” four weeks prior to the interview. “Nightmare or rumination” appeared to be associated with a PHQ positive response with sixty-two (83.8%) participants returning a PHQ positive result.

There was also a significant difference between PHQ positive and PHQ negative results (gamma value= 0.722, p value=0.000). (Table 5-15).

**Thinking of something bad that happened recently**

Eighty-eight (20.5%) of the respondents had “thought of something bad that happened” four weeks prior to the interview. “Thought of something bad that happened” appeared to be associated with a PHQ positive response, with sixty-five (73.9%) participants returning a PHQ positive result.

There was also a significant difference between PHQ positive and PHQ negative results (gamma value= 0.530, p value=0.000). (Table 5-15).
**Having no one to turn to when having problem**

One hundred and twelve (26.0%) respondents reportedly experienced “having no one to turn to when having problems” four weeks prior to the interview. “Having no one to turn to when having problems” appeared to be associated with a PHQ positive result, with sixty-seven (59.8%) participants returning a PHQ positive result.

However, there was no significant difference between PHQ positive and PHQ negative results (gamma value= 0.208, p value=0.055). (Table 5-15)

**Financial problems or worries**

Two hundred and forty-seven (57.4%) respondents reported “financial problems or worries” four weeks prior to the interview. “Financial problems or worries” appeared to have an association with a PHQ positive result, with hundred and thirty-one (53.0%) participants returning a PHQ positive result.

However, there was no significant difference between PHQ positive and PHQ negative results (gamma value= 0.044, p value=0.649). (Table 5-15).

**Stress at work or outside of the home or at school**

One hundred and ninety-four (45.1%) respondents reported “stress at work or outside of the home or at school” four weeks prior to the interview. “Stress at work or outside of the home or at school” appeared to have an association with a PHQ positive result. One hundred and thirteen (58.2%) participants returned a PHQ positive result.

There was also a significant difference between PHQ positive and PHQ negative results (gamma value= 0.222, p value=0.020). (Table 5-15).

**Stress of taking care of children, parents or other family members**

One hundred and fifteen (57.4%) respondents reported “stress of taking care of children, parents or other family members” four weeks prior to the interview. “Stress of taking care of children, parents or other family members” appeared to have an association with a PHQ positive result, with sixty-eight (59.1%) respondents returning a PHQ positive result.
However, there was no significant difference between PHQ positive and PHQ negative results (gamma value= 0.192, p value=0.075). (Table 5-15).

**Difficulties with husband/wife/partner/lover or boyfriend/girlfriend**

Fifty (11.6%) out of the four hundred and thirty respondents reported “difficulties with husband/wife/partner/lover or boyfriend/girlfriend” four weeks prior to the interview. “Difficulties with husband/wife/partner/lover or boyfriend/girlfriend” appeared to be associated with a PHQ positive result, with thirty-three (66.0%) of the participants returning a PHQ positive result.

There was also a significant difference between PHQ positive and PHQ negative results (gamma value= 0.315, p value=0.033). (Table 5-15).

**Little or no sexual desire or pleasure during sex**

Twenty-seven (6.3%) respondents had “little or no sexual desire or pleasure during sex” four weeks prior to the interview. “Little or no sexual desire or pleasure during sex” appeared to be associated with a PHQ positive result, with nineteen (70.4%) respondents returning a PHQ positive result.

There was also a significant difference between PHQ positive and PHQ negative outcomes (gamma value= 0.393, p value=0.045). (Table 5-15).

**Worries about health**

Three hundred and twenty-five (75.6%) respondents had “worries about health” four weeks prior to the interview. “Worries about health” appeared to have an association with a PHQ positive result, with one hundred and eighty (55.4%) participants returning a PHQ positive response.

There was also a significant difference between PHQ positive and PHQ negative responses (gamma value= 0.265, p value=0.016). (Table 5-15).
Worries about weight or looks

One hundred and eighty-six (43.3%) of the respondents had “worries about weight or looks” four weeks prior to the interview. “Worries about weight or looks” appeared to be associated with a PHQ positive response, with one hundred and twenty-three (66.1%) participants returning a PHQ positive response.

There was also a significant difference between PHQ positive and PHQ negative results (gamma value= 0.469, p value=0.000). (Table 5-15).

Interpretation of recent stressor factors (objective 2 and hypothesis2)

In conclusion, seven out of ten listed recent stressors appeared to have an association with the common mental disorders. These were nightmare or rumination (n=74, 17.2%), thinking of something bad that happened recently (n=88, 20.5%), stress at work or outside of the home or at school (n=194, 45.1%) difficulties with husband/wife, partner/lover or boyfriend/girlfriend (n=50, 11.6%), little or no sexual desire or pleasure during sex (n=27, 6.3%), worries about health (n=325, 75.6%) and worries about weight or look (n=186, 43.3%). However, the “little or no sexual desire or pleasure during sex” seemed to have a small number of samples in the two by two table. That could give a significant gamma value. The PHQ also enabled this study to report on the recent stressors that may be significantly associated with common mental disorders. Since the variables collected ordinal data, gamma analysis was done. Further analysis, using binary logistic regression was also not permissible because of the use of ordinal data.

The null hypothesis, that there is no significant difference for nightmare and rumination the past four weeks in relation to having a common mental disorder, was rejected. Gamma analysis showed that there was a significant association between nightmare or rumination and probability of having a common mental disorder (gamma value of 0.772, p value of 0.000).

The null hypothesis was also rejected for ‘thought of something bad that happened’ in relation to having a common mental disorder. Gamma analysis elicited a significant association between ‘thought of something bad that happened’ and probability of a common mental disorder (Gamma value of 0.530, p value of 0.000).
The null hypothesis, that there is no significant difference for respondents ‘having no one to turn to when having problem’ in relation to having common mental disorder, was accepted. Gamma analysis showed that there was no significant association between ‘having no one to turn to when having problem’ and probability of having a common mental disorder (gamma value of 0.208, p value of 0.055).

The null hypothesis, that there is no significant difference where respondents had ‘financial problems or worries’ in relation to having a common mental disorder, was accepted. Gamma analysis showed there was no significant association between respondents with ‘financial problems or worries’ and having a common mental disorder (gamma value of 0.044, p value of 0.649).

The null hypothesis, that there is no significant difference where respondents experienced stress at work or at home or at school in relation to having a common mental disorder, was rejected. The gamma analysis showed there was a significant association between stress at work or at home or at school and probability of having a common mental disorder (gamma value of 0.222, p value of 0.020).

The null hypothesis, that there is no significant difference for respondents who experienced stress taking care of children, parents or other family members in relation to probability of having a common mental disorder, was accepted. The gamma analysis showed that there was no significant association between stress in taking care of children, parents or other family members and having a common mental disorder (gamma value of 0.192, p value of 0.075).

The null hypothesis, that there is no significant difference for respondents having difficulties with partners or friends in relation to probability of having a common mental disorder was rejected. The gamma analysis showed that there was a significant association between having difficulties with partners or friends and probability of having a common mental disorder (gamma value of 0.315, p value of 0.033).
The null hypothesis, that there is no significant difference for respondents having little or no desire or pleasure during sex and the probability of having a common mental disorder, was rejected. Gamma analysis showed that there was significant association between loss of sexual desire or pleasure during sex and probability of having a common mental disorder (gamma value of 0.393, p value of 0.045).

The null hypothesis, that there is no significant difference for respondents with worries about their health in relation to having a common mental disorder, was rejected. The gamma analysis showed that there was a significant association between worries about health and probability of having a common mental disorder (gamma value of 0.265, p value of 0.016).

The null hypothesis, that there is no significant difference for respondents having worries about weight or looks in relation to having a common mental disorder, was rejected. The gamma analysis showed that there was a significant association between worries about weight or looks and probability of having a common mental disorder (gamma value of 0.469, p value of 0.000).

**Multivariate Analysis for Hypothesis 2**

Since there were five socio-demographic and seven stressor factors significantly associated with common mental disorders found in the univariate analysis, further statistical analysis was done to determine the predictors of common mental disorder or PHQ positive responses among them. A step wise binary logistic regression model was used. This was to provide a clinical model that would allow primary care doctors to prioritize factors in the screening of common mental disorders in the future.

Initially, only age, gender and marital status were entered. Secondly, the other demographic factors were entered. Finally, the stressors and the clinical history were introduced. The clinical histories included which were relevant in the Sabah setting were alcohol exposure, alcohol abuse, and a history of being physically or sexually victimized in the past year prior to the interview.

The odds of having a PHQ positive result or a common mental disorder increased as the aged group decreased. The odds ratio peaked in the 18-29-year age group with the odds ratio of 3.078 and p value of 0.016 (CI=1.236, 7.663). However, the overall p value for the age group is 0.110 (Table 5-16).
The female gender was shown to have the odds of 2.941 times more than the male gender to have a common mental disorder or PHQ positive result ($p$ value=0.000, CI=1.938,4.462) (Table 5-16).

The odds of having a PHQ positive result or a common mental disorder also increased as the level of education of the patients increased. Patients with a secondary level of education have the odds of 2.987 ($p$ value=0.004, CI=1.415, 6.306) compared to patients without formal education to have a common mental disorder (baseline reference). Patients with tertiary or diploma level of education have an even higher odds ratio. They have the odds of 5.203 times ($p$ value=0.001, CI=1.896,14.276) compared to patients without formal education to have a common mental disorder (baseline reference). The overall $p$ value for level of education is 0.013 (Table 5-16).

The odds of having a PHQ positive result or a common mental disorder decreased as income increased over RM1,000. As the income reduced, the odds of having a PHQ positive result or a common mental disorder increased. However, the odds ratio appeared to reduce for the group with income below RM300. The odds ratio peaks in the group with income of RM301-RM600. The odds ratio for people with income of RM301-RM600 to have a common mental disorder or a PHQ positive result is 2.864 ($p$ value=0.010, CI=1.291, 6.355). The overall $p$ value for the income group is 0.042 (Table 5-16).

The odds of people with a history of being physically and sexually victimized having a PHQ positive result or a common mental disorder is 48.688 times ($p$ value=0.000, CI=6.151, 385.040). The 95% confidence interval for this factor is very wide (Table 5-16).
Table 5-16 Logistic Regression table to show factors that predict PHQ score positive.

<table>
<thead>
<tr>
<th>Factor</th>
<th>p value</th>
<th>Odds Ratio/Exp (B)</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>0.016</td>
<td>3.078</td>
<td>(1.236-7.663)</td>
</tr>
<tr>
<td>30-39</td>
<td>0.079</td>
<td>2.317</td>
<td>(0.908-5.910)</td>
</tr>
<tr>
<td>40-49</td>
<td>0.258</td>
<td>1.676</td>
<td>(0.685,4.103)</td>
</tr>
<tr>
<td>50-59</td>
<td>0.376</td>
<td>1.484</td>
<td>(0.619,3.561)</td>
</tr>
<tr>
<td>60-65 reference</td>
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<td></td>
<td></td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
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</tr>
<tr>
<td>Female</td>
<td>0</td>
<td>2.941</td>
<td>(1.938,4.462)</td>
</tr>
<tr>
<td>Male reference</td>
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</tr>
<tr>
<td><strong>Marital status</strong></td>
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<td></td>
</tr>
<tr>
<td>Single</td>
<td>0.18</td>
<td>1.484</td>
<td>(0.833,2.643)</td>
</tr>
<tr>
<td>Divorced/widowed</td>
<td>0.896</td>
<td>0.933</td>
<td>(0.332,2.626)</td>
</tr>
<tr>
<td>Married reference</td>
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</tr>
<tr>
<td><strong>Employment status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private sector</td>
<td>0.486</td>
<td>1.276</td>
<td>(0.643,2.528)</td>
</tr>
<tr>
<td>Own business/farmer</td>
<td>0.854</td>
<td>0.919</td>
<td>(0.373,2.264)</td>
</tr>
<tr>
<td>Housewife</td>
<td>0.179</td>
<td>0.537</td>
<td>(0.216,1.331)</td>
</tr>
<tr>
<td>Pensioner</td>
<td>0.729</td>
<td>0.798</td>
<td>(0.222,2.862)</td>
</tr>
<tr>
<td>Unemployed</td>
<td>0.269</td>
<td>2.023</td>
<td>(0.578,7.150)</td>
</tr>
<tr>
<td>Student</td>
<td>0.369</td>
<td>1.621</td>
<td>(0.565,4.653)</td>
</tr>
<tr>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Level of education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Primary education</td>
<td>0.068</td>
<td>1.994</td>
<td>(0.949,4.190)</td>
</tr>
<tr>
<td>Secondary education</td>
<td>0.004</td>
<td>2.987</td>
<td>(1.415,6.306)</td>
</tr>
<tr>
<td>Diploma/certificate/tertiary</td>
<td>0.001</td>
<td>5.203</td>
<td>(1.896,14.276)</td>
</tr>
<tr>
<td>No formal education</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Average monthly income in Ringgit Malaysia (RM)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1AUD=3RM</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;RM300</td>
<td>0.05</td>
<td>2.514</td>
<td>(1.001,6.313)</td>
</tr>
<tr>
<td>RM301-RM600</td>
<td>0.01</td>
<td>2.864</td>
<td>(1.291,6.355)</td>
</tr>
<tr>
<td>RM601-RM1000</td>
<td>0.017</td>
<td>2.476</td>
<td>(1.180,5.195)</td>
</tr>
<tr>
<td>RM1001-RM2000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt;RM2000</td>
<td>0.855</td>
<td>0.919</td>
<td>(0.369,2.286)</td>
</tr>
<tr>
<td><strong>Physically or sexually victimized the past one year</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0</td>
<td>48.668</td>
<td>(6.151-385.040)</td>
</tr>
<tr>
<td>Alcohol abuse</td>
<td>0.997</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Exposure to alcohol</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>0.291</td>
<td>0.672</td>
<td>(0.321,1.406)</td>
</tr>
</tbody>
</table>
Interpretation of multivariate analysis (objective2 hypothesis2)

Four socio-demographic factors and one clinical history factor were found to be significant. These were age, gender, level of education, average monthly income and a history of being physically or sexually victimized in the past year.

SECTION 5.5. HYPOTHESIS 3- ASSOCIATION ANALYSIS

There will be a positive association between co-morbidity of mental disorder, severity of disability and extent of poverty.

In hypothesis 3, co-morbidity of the Common Mental Disorder, severity of disability and extent of poverty were analysed to find whether there is any association among these three factors. We hypothesized that there will be a positive association between co-morbidity of mental disorder, severity of disability and extent of poverty.

Association between disability and co-morbidity

The WSAS was used to measure the disability. There were five items scored: disability in work performance, home management, social leisure activities, private leisure activities and family relationships. Each item was rated in four levels; no disability, slightly disabled, moderately disabled and severely disabled.

The respondents with common mental disorders were group into two: single mental disorder and co-morbid mental disorder (more than one diagnosis based on the PHQ). The association between disability and co-morbid common mental disorders was analysed using the gamma coefficient analysis. The gamma coefficient analysis is able to show the ordinal degree of association between the level of disability and single or co-morbid common mental disorders in each item.
Table 5-17 Showing degree of association between disability and co-morbidity.

<table>
<thead>
<tr>
<th>Disability</th>
<th>Single psychiatric disorder</th>
<th>Co-morbid psychiatric disorder</th>
<th>Total</th>
<th>gamma</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>16 (84.2)</td>
<td>3 (15.8)</td>
<td>19</td>
<td>0.286</td>
<td>0.005</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>44 (66.7)</td>
<td>22 (33.3)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>43 (47.8)</td>
<td>47 (52.2)</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>26 (53.1)</td>
<td>23 (46.9)</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Home management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>36 (63.2)</td>
<td>21 (36.8)</td>
<td>57</td>
<td>0.173</td>
<td>0.091</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>47 (62.7)</td>
<td>28 (37.3)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>33 (49.3)</td>
<td>34 (50.7)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>13 (52.0)</td>
<td>12 (48.0)</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social leisure activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>53 (67.9)</td>
<td>25 (32.1)</td>
<td>78</td>
<td>0.237</td>
<td>0.019</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>37 (56.1)</td>
<td>29 (43.9)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>28 (46.7)</td>
<td>32 (53.3)</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>11 (55.0)</td>
<td>9 (45.0)</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private leisure activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>55 (67.9)</td>
<td>26 (32.1)</td>
<td>81</td>
<td>0.326</td>
<td>0.001</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>41 (63.1)</td>
<td>24 (36.9)</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>24 (42.1)</td>
<td>33 (57.9)</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>9 (42.9)</td>
<td>12 (57.1)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Family &amp; relationships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>67 (63.8)</td>
<td>38 (36.2)</td>
<td>105</td>
<td>0.244</td>
<td>0.023</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>37 (59.7)</td>
<td>25 (40.3)</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>18 (43.9)</td>
<td>23 (56.1)</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>7 (43.8)</td>
<td>9 (56.3)</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall disability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>5 (100.0)</td>
<td>0 (0.0)</td>
<td>5</td>
<td>0.282</td>
<td>0.036</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>98 (60.1)</td>
<td>65 (39.9)</td>
<td>163</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>14 (37.8)</td>
<td>23 (62.2)</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>12 (63.2)</td>
<td>7 (36.8)</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5.5.1.1. Disability in Work Performance

Sixty-six respondents were slightly disabled, ninety were moderately disabled and forty-nine were severely disabled out of the two hundred and twenty-four respondents with common mental disorders. Only nineteen were not disabled.

The moderately \((n=47, 52.2\%)\) disabled appeared to have a positive association with co-morbid common mental disorders. However, the severely \((n=23, 46.9\%)\) disabled seemed to have a weaker association with co-morbid common mental disorders. This could be due to the relatively small number of respondents in the severely disabled cells.

There was an increased trend of association from no disability to moderate disability with co-morbid mental disorders. In other words, there was a relatively higher percentage of individuals with co-morbidity as they became more disabled, up until the moderately disabled group. However, there was a downward trend of association from moderately disabled to severely disabled. The reason an increased trend was not seen here could be due to smaller number of respondents in the severely disabled cells.

Overall there was a significant difference between single mental disorders and co-morbid common mental disorders for disability in work performance \((\text{gamma value}=0.286, \text{p value}=0.005)\). (Table 5-17)

5.5.1.2. Disability in home management

Fifty-seven respondents had no disability, seventy-five were slightly disabled, sixty-seven were moderately disabled and twenty-five were severely disabled out of two hundred and twenty-four respondents with common mental disorders.

The moderately \((n=34, 50.7\%)\) disabled appeared to have positive association with co-morbid common mental disorders. However, the severely \((n=12, 48.0\%)\) disabled seemed to have a weaker association with co-morbid common mental disorders. This could be due to the relatively small number of individuals in the severely disabled cells.
However, overall there was no significant difference between single mental disorders and co-morbid common mental disorders for disability in home management (gamma value=0.173, p value=0.091). (Table 5-17)

5.5.1.3. **Social leisure activities**

Seventy-eight respondents had no disability, sixty-six were slightly disabled, sixty samples were moderately disabled and only twenty-five were severely disabled out of the two hundred and twenty-four respondents with common mental disorders.

The moderately (n=32, 53.3%) disabled appeared to have positive association with co-morbid common mental disorders. However, the severely (n=9, 45.0%) disabled seemed to have a weaker association with co-morbid common mental disorders. This could be due to relatively small number of respondents in the severely disabled cells.

There was an increased trend of association from no disability to moderate disability with co-morbid mental disorders. In other words, there was a relatively higher percentage of individuals with co-morbidity as they became more disabled, up to the moderately disabled level. However, there was a downward trend of association from moderately disabled to severely disabled. The reason an increased trend was not seen here could be due to smaller sample size in the severely disabled cells.

Overall there was a significant difference between single mental disorders and co-morbid common mental disorders for disability in social leisure activities (gamma value=0.237, p value=0.019). (Table 5-17)

5.5.1.4. **Private leisure activities**

Eighty-one individuals reported no disability, sixty-five were slightly disabled, fifty-seven were moderately disabled and only twenty-one were severely disabled out of the two hundred and twenty-four respondents with common mental disorders.
The moderately \((n=33, 57.9\%)\) and the severely \((n=12, 57.1\%)\) disabled appeared to have a positive association with co-morbid common mental disorders. There was an increased trend of association from no disability to moderate and severe disability with co-morbid mental disorders. In other words, there was a relatively higher percentage of individuals with co-morbidity as they became more disabled.

Overall there was a significant difference between single mental disorders and co-morbid common mental disorders for disability in private leisure activities \((\text{gamma value}=0.326, p \text{ value}=0.001)\). (Table 5-17)

5.5.1.5. Family and relationships

One hundred and five individuals had no disability, sixty-two were slightly disabled, forty-one samples were moderately disabled and only sixteen were severely disabled out of the two hundred and twenty-four respondents with common mental disorders.

The moderately \((n=23, 56.1\%)\) and the severely \((n=9, 56.3\%)\) disabled appeared to have a positive association with co-morbid common mental disorders. There was an increased trend of association from no disability to severe disability with co-morbid mental disorders. In other words, there was a relatively higher percentage of individuals with co-morbidity as they became more disabled.

Overall there was a significant difference between single mental disorders and co-morbid common mental disorders for disability in family and relationship \((\text{gamma value}=0.244, p \text{ value}=0.023)\). (Table 5-17)

5.5.1.6. Overall Disability

Five respondents had no disability, one hundred and sixty-three were slightly disabled, thirty-seven were moderately disabled and only nineteen were severely disabled out of two hundred and twenty-four individuals with common mental disorders.
The moderately (n=23, 62.2%) disabled appeared to have a positive association with co-morbid common mental disorders. However, the severely (n=7, 36.8%) disabled seemed to have a negative association with co-morbid common mental disorders. This could be due to the relatively small number of individuals in the severely disabled cells.

There was an increased trend of association from no disability to moderate disability with co-morbid mental disorders. In other words, there was a relatively higher percentage of respondents with co-morbidity as they became more disabled, up to the moderately disabled level. However, there was a downward trend of association from moderately disabled to severely disabled. The reason an increased trend was not seen here could be due to the smaller sample size in the severely disabled cells.

There was a significant difference between single mental disorders and co-morbid common mental disorders for overall disability (gamma value=0.282, p value=0.036) (Table 5-17).

In conclusion, two hundred and nineteen (97.8%) out of the two hundred and twenty-four respondents with common mental disorders had some form of disability. One hundred and sixty-three (72.8%) were slightly disabled, thirty-seven (16.5%) were moderately disabled and only nineteen (8.5%) were severely disabled.

**Association between poverty indicators and co-morbidity**

The average monthly income and level of education were used as poverty indicators. The average monthly income was divided into two categories based on the poverty cut-off point as defined by the Malaysian government at RM690 per month.

Level of education was divided into four groups. These were: no formal education, primary education, secondary education and tertiary or diploma level of education. The level of education as indicator of poverty was primary education and people without formal education.
The respondents with common mental disorders were grouped into two: those with a single mental disorder and those with co-morbid mental disorders (more than one diagnosis based on the PHQ). The association between the poverty indicators and co-morbid common mental disorders was analysed using the gamma coefficient analysis. The gamma coefficient analysis was used to show the ordinal degree of association between the level of poverty and single or co-morbid common mental disorders in poverty indicators.

Table 5-18 Showing the degree of association between poverty indicator and co-morbidity

<table>
<thead>
<tr>
<th>Poverty indicator</th>
<th>Single psychiatric disorder</th>
<th>Co-morbid psychiatric disorder</th>
<th>gamma</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Income</td>
<td>&lt;RM690</td>
<td>81 (57.0)</td>
<td>61 (43.0)</td>
<td>-0.031</td>
<td>0.827</td>
</tr>
<tr>
<td></td>
<td>&gt;RM691</td>
<td>48 (58.5)</td>
<td>34 (41.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Level of education</td>
<td>No formal education</td>
<td>18 (75.0)</td>
<td>6 (25.0)</td>
<td>0.194</td>
<td>0.071</td>
</tr>
<tr>
<td></td>
<td>Primary education</td>
<td>21 (60.0)</td>
<td>14 (40.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Secondary education</td>
<td>63 (56.2)</td>
<td>49 (43.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diploma &amp; tertiary education</td>
<td>27 (50.9)</td>
<td>26 (49.1)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5.5.1.7. Average monthly income

There were one hundred and forty-two (63.4%) respondents that earned less than RM690 per month (AUD230) and eighty-two (36.6%) that earned more than RM691 per month.

Both groups, that with an income of less than RM690 (n=61, 43.0%) and that with an income of more than RM690 (n=34, 41.5%), showed a negative association with the co-morbid common mental disorders.

No significant difference was found between single mental disorders and co-morbid common mental disorders across the different income groups (gamma value=-0.031, p value=0.827). (Table 5-18)
5.5.1.8.  

**Association of level of education as a poverty indicator and co-morbidity**

Twenty-four (10.7%) respondents had no formal education, thirty-five (15.6%) had primary education only and one hundred and twelve (50.0%) had secondary education. While fifty-three (23.7%) respondents with common mental disorders had a tertiary or diploma level of education.

All groups showed a negative association with co-morbid common mental disorders. The group with no formal education had only 6 respondents (25.0%) with co-morbidity. The group with a primary education had 14 respondents (40.0%) with comorbidity. The group with secondary education had 49 respondents (43.8%) with co-morbidity and those with a tertiary or diploma level of education had only 26 (49.1%) individuals with co-morbid common mental disorders.

There was no significant difference between those with single mental disorders and those with co-morbid common mental disorders across the different education groups (gamma value=-0.194, p value=0.071). (Table 5-18)
Association between level of disability and poverty indicators

5.5.1.9. Level of disability and average monthly income

Table 5-19 Showing the degree of association between disability and income as indicator of poverty (N=224)

<table>
<thead>
<tr>
<th>Disability</th>
<th>&lt;RM690</th>
<th>&gt;RM691</th>
<th>Total</th>
<th>gamma</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Work performance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>13 (68.4)</td>
<td>6 (31.6)</td>
<td>19</td>
<td>0.111</td>
<td>0.296</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>47 (71.2)</td>
<td>19 (28.8)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>50 (55.6)</td>
<td>40 (44.4)</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>32 (65.3)</td>
<td>17 (34.7)</td>
<td>49</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Home management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>40 (70.2)</td>
<td>17 (29.8)</td>
<td>57</td>
<td>0.092</td>
<td>0.379</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>45 (60.0)</td>
<td>30 (40.0)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>42 (62.7)</td>
<td>25 (37.3)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>15 (60.0)</td>
<td>10 (40.0)</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Social leisure activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>50 (64.1)</td>
<td>28 (35.9)</td>
<td>78</td>
<td>-0.003</td>
<td>0.975</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>40 (60.6)</td>
<td>26 (39.4)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>40 (66.7)</td>
<td>20 (33.3)</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>12 (60.0)</td>
<td>8 (40.0)</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Private leisure activities</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>51 (63.0)</td>
<td>30 (37.0)</td>
<td>81</td>
<td>-0.055</td>
<td>0.603</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>38 (58.5)</td>
<td>27 (41.5)</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>40 (70.2)</td>
<td>17 (29.8)</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>13 (61.9)</td>
<td>8 (38.1)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Family &amp; relationships</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>71 (67.6)</td>
<td>34 (32.4)</td>
<td>105</td>
<td>0.078</td>
<td>0.476</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>33 (53.2)</td>
<td>29 (46.8)</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>29 (70.7)</td>
<td>12 (29.3)</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>9 (56.3)</td>
<td>7 (43.8)</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Overall disability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>3 (60.0)</td>
<td>2 (40.0)</td>
<td>5</td>
<td>-0.014</td>
<td>0.924</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>103 (63.2)</td>
<td>60 (36.8)</td>
<td>163</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>25 (67.6)</td>
<td>12 (32.4)</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>11 (57.9)</td>
<td>8 (42.1)</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Disability in work performance**

Overall, the samples with low income (less than RM690/AUD230) had a higher percentage of representation across the different level of disabilities in work performance.

There was also no ordinal association either increasing or decreasing trend of association between low income and disability in work performance.

There was no significant difference between the different levels of disability and the different income groups (gamma value=-0.111, p value=0.296). (Table 5-19)

**Disability in home management**

There was also no ordinal association showing an increasing or decreasing trend of association between low income and disability in home management.

There was also no significant difference between the different level of disability in home management and the different income groups (gamma value=-0.092, p value=0.379). (Table 5-19)

**Disability in social leisure activities**

Forty (60.6%) had slight disability, forty (66.7%) had moderate disability and twelve (60.0%) had severe disability.

There was also no ordinal association shown in the increasing or decreasing trend of association between low income and disability in social leisure activities.

There was also no significant difference between the different levels of disability for participating in social leisure activities and the different income groups (gamma value=-0.003, p value=0.975). (Table 5-19)

**Disability in private leisure activities**

Thirty-eight (58.5%) had slight disability, forty (70.2%) had moderate disability and thirteen (61.9%) had severe disability.
There was also no ordinal association shown in either the increasing or decreasing trend of association between low income and disability in private leisure activities.

There was also no significant difference between the different level of disability for participating in private leisure activities and the different income groups (gamma value=-0.055, p value=0.603). (Table 5-19)

**Disability in family and relationships**

One hundred and three (63.2%) had slight disability, twenty-five (67.6%) had moderate disability and eleven (57.9%) had severe disability.

There was also no ordinal association shown in either an increasing or decreasing trend of association between low income and overall disability.

There was also no significant difference between the different level of overall disability groups and the different income groups (gamma value= -0.014, p value=0.924). (Table 5-19)

**Overall Disability**

All the respondents with low income (less than RM690/AUD230) had a higher percentage of representation across the different levels of overall disabilities. Seventy-one (67.6%) respondents had no disability, thirty-three (53.2%) had slight disability, twenty-nine (70.7%) had moderate disability and nine (56.3%) had severe disability.

There was also no ordinal association shown in either the increasing or decreasing trend of association between low income and disability in family and relationships. The association appeared to peak in the moderately disabled group (N=29, 70.7%).

There was also no significant difference between the different level of disability in family and relationship groups and the different income groups (gamma value= 0.078, p value=0.476) (Table 5-19).
In conclusion, there was no significant association between the different levels of disability and income groups. There was also no ordinal association between severity of disability and lower income.

5.5.1.10. Association between Level of disability and level of education

Association between level of disability in work performance and level of education

All the respondents without formal education had a lower percentage of representation across the different levels of overall disabilities.

Respondents with a tertiary level of education had a relatively high representation in the slightly disabled group (N=21, 31.8%) and the moderately disabled group (N=23, 25.6%).

Respondents with secondary education had a higher percentage of representation across the different levels of overall disabilities.

The lowest representation was among respondents who were slightly disabled with no formal education (N=3, 15.8%), and slightly disabled with diploma and tertiary level education (N=3, 15.8%).

There was no significant difference between the different levels of disability in the work performance item and the level of education groups (gamma value= -0.151, p value=0.075). (Table 5-20)

Table 5-20 Showing the degree of association between disability and level of education as a poverty indicator (N=224)

<table>
<thead>
<tr>
<th>Disability</th>
<th>No formal education</th>
<th>Primary education</th>
<th>Secondary education</th>
<th>Diploma &amp; tertiary</th>
<th>Total</th>
<th>Gamma</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Work performance</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>3 (15.8)</td>
<td>5 (26.3)</td>
<td>8 (42.1)</td>
<td>3 (15.8)</td>
<td>19</td>
<td>-0.151</td>
<td>0.075</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>5 (7.6)</td>
<td>5 (7.6)</td>
<td>35 (53.0)</td>
<td>21 (31.8)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>7 (7.8)</td>
<td>17 (18.9)</td>
<td>43 (47.8)</td>
<td>23 (25.6)</td>
<td>90</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>9 (18.4)</td>
<td>8 (16.3)</td>
<td>26 (53.1)</td>
<td>6 (12.2)</td>
<td>49</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 5-20 (contd.)

<table>
<thead>
<tr>
<th>Disability</th>
<th>No formal education</th>
<th>Primary education</th>
<th>Secondary education</th>
<th>Diploma &amp; tertiary</th>
<th>Total</th>
<th>Gamma</th>
<th>p value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Home management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>2 (3.5)</td>
<td>12 (21.1)</td>
<td><strong>30 (52.6)</strong></td>
<td>13 (22.8)</td>
<td>57</td>
<td>-0.160</td>
<td>0.039</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>7 (9.3)</td>
<td>7 (9.3)</td>
<td><strong>37 (49.3)</strong></td>
<td>24 (32.0)</td>
<td>75</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>10 (14.9)</td>
<td>14 (20.9)</td>
<td><strong>29 (43.3)</strong></td>
<td>14 (20.9)</td>
<td>67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>5 (20.0)</td>
<td>2 (8.0)</td>
<td><strong>16 (64.0)</strong></td>
<td>2 (8.0)</td>
<td>25</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Social leisure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>5 (6.4)</td>
<td>11 (14.1)</td>
<td><strong>38 (48.7)</strong></td>
<td>24 (30.8)</td>
<td>78</td>
<td>-0.205</td>
<td>0.011</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>8 (12.1)</td>
<td>9 (13.6)</td>
<td><strong>32 (48.5)</strong></td>
<td>17 (25.8)</td>
<td>66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>8 (13.3)</td>
<td>12 (20.0)</td>
<td><strong>31 (51.7)</strong></td>
<td>9 (15.0)</td>
<td>60</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>3 (15.0)</td>
<td>3 (15.0)</td>
<td><strong>11 (55.0)</strong></td>
<td>3 (15.0)</td>
<td>20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Private leisure</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>8 (9.9)</td>
<td>16 (19.8)</td>
<td>38 (46.9)</td>
<td>19 (23.5)</td>
<td>81</td>
<td>-0.044</td>
<td>0.601</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>6 (9.2)</td>
<td>9 (13.8)</td>
<td>29 (44.6)</td>
<td>21 (32.3)</td>
<td>65</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>5 (8.8)</td>
<td>8 (14.0)</td>
<td>34 (59.6)</td>
<td>10 (17.5)</td>
<td>57</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>5 (23.8)</td>
<td>2 (9.5)</td>
<td>11 (52.4)</td>
<td>3 (14.3)</td>
<td>21</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Family &amp; relationships</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>10 (9.5)</td>
<td>22 (21.0)</td>
<td>51 (48.6)</td>
<td>22 (21.0)</td>
<td>105</td>
<td>0.089</td>
<td>0.318</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>6 (9.7)</td>
<td>8 (12.9)</td>
<td>32 (51.6)</td>
<td>16 (25.8)</td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>5 (12.2)</td>
<td>4 (9.8)</td>
<td>21 (51.2)</td>
<td>11 (26.8)</td>
<td>41</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>3 (18.8)</td>
<td>1 (6.3)</td>
<td>8 (50.0)</td>
<td>4 (25.0)</td>
<td>16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overall disability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>1 (20.0)</td>
<td>2 (40.0)</td>
<td>2 (40.0)</td>
<td>0 (0.0)</td>
<td>5</td>
<td>-0.089</td>
<td>0.425</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>14 (8.6)</td>
<td>27 (16.6)</td>
<td>78 (47.9)</td>
<td>44 (27.0)</td>
<td>163</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>5 (13.5)</td>
<td>4 (10.8)</td>
<td>21 (56.8)</td>
<td>7 (18.9)</td>
<td>37</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Severely disabled</td>
<td>4 (21.1)</td>
<td>2 (10.5)</td>
<td>11 (57.9)</td>
<td>2 (10.5)</td>
<td>19</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
**Association between level of disability in home management and level of education**

All the respondents without formal education had a lower percentage of representation across the different levels of overall disabilities. Two (3.5%) of the respondents had no disability, seven (9.3%) had slight disability, 10 (14.9%) had moderate disability and five (20.0%) had severe disability.

Respondents with a tertiary level of education had a relatively high representation in the no disability group (N=13, 22.8%), slightly disabled group (N=24, 32.0%) and moderately disabled group (N=14, 20.9%).

Respondents with secondary education had a higher percentage of representation across the different levels of overall disabilities. Thirty (52.6%) respondents had no disability, thirty-seven (49.3%) had slight disability, twenty-nine (43.3%) had moderate disability and sixteen (64.0%) had severe disability.

The lowest representation was among respondents who were slightly disabled with no formal education (N=2, 3.5%), severely disabled with primary education (N=2, 8.0%), and severely disabled with diploma and tertiary education (N=2, 8.0%). The highest representation was among respondents who were severely disabled with secondary education (N=16, 64.0%)

There was also a significantly weak negative association between the different levels of disability in the home management item and the level of education groups (gamma value= -0.160, p value=0.039). However, there was no ordinal association between level of disability and the level of education groups. (Table 5-20)

**Association between level of disability in social leisure activities and level of education**

All the respondents without formal education had a lower percentage of representation across the different levels of overall disabilities. Five (6.4%) respondents had no disability, eight (12.1%) had slight disability, eight (13.3%) had moderate disability and three (15.0%) had severe disability.
Respondents with a tertiary level of education had a relatively high representation in the no disability group \( (N=24, 30.8\%) \), slightly disabled group \( (N=17, 25.8\%) \) and moderately disabled group \( (N=9, 15.0\%) \).

Respondents with secondary education had a higher percentage of representation across the different levels of overall disabilities. Thirty-eight \( (48.7\%) \) respondents had no disability, thirty-two \( (48.5\%) \) had slight disability, thirty-one \( (51.7\%) \) had moderate disability and eleven \( (55.0\%) \) had severe disability.

The lowest representation was among respondents with who were severely disabled with primary education \( (N=3, 15.0\%) \), and severely disabled in the diploma and tertiary group \( (N=3, 15.0\%) \). The highest representation was among respondents with no disability and secondary education \( (N=38, 48.7\%) \).

There was an upward trend of representation as the disability increased in those with a secondary education. There was also a downward trend of representation as the disability increased in the diploma and tertiary education group.

There was also significantly weak negative association between the different levels of disability in the social leisure activity item and the level of education groups (gamma value= -0.205, p value=0.011). (Table 5-20)

**Association between level of disability in private leisure activities and level of education**

All the respondents without formal education had a lower percentage of representation across the different levels of overall disabilities.

Respondents with a tertiary level of education had a relatively high representation in the no disability group \( (N=19, 23.5\%) \), the slightly disabled group \( (N=21, 32.3\%) \) and the moderately disabled group \( (N=10, 17.5\%) \).

Respondents with secondary education had a higher percentage of representation across the different levels of overall disabilities.
The lowest representation was among respondents who were severely disabled in the primary education group (N=2, 9.5%), and severely disabled in the diploma and tertiary education group (N=3, 14.3%). The highest representation was among respondents with moderate disability in the secondary education group (N=34, 59.6%).

There was no trend of association between the various levels of disabilities in the private leisure activities item and different levels of education.

There was also no association between the different levels of disability in the social leisure activity item and the level of education groups (gamma value= -0.044, p value=0.601). (Table 5-20)

**Association between level of disability in family and relationships, and level of education**

Respondents with a tertiary level of education had a relatively high representation in the no disability group (N= 22, 21.0%), slightly disabled group (N=16, 25.8%), moderately disabled group (N=11, 26.8%) and severely disabled group (N=4, 25.0%).

Respondents with a secondary education had a higher percentage of representation across the different levels of overall disabilities.

The lowest representation was among respondents who were severely disabled in the primary education group (N=1, 6.3%). The highest representation was among respondents with slight disability in the secondary education group (N=32, 51.6%).

There was no trend of association between various levels of disabilities in the family and relationships item and different levels of education.

There was also no association between the different levels of disability in the family and relationships item and the level of education groups (gamma value= 0.089, p value=0.318). (Table 5-20)
Association between the overall level of disability and level of education

Overall, two hundred and nineteen (97.8%) of the respondents with a common mental disorder had some form of disability. One hundred and sixty-three (72.8%) had mild disability, thirty-seven (16.5%) had moderate disability and nineteen respondents (8.5%) had severe disability.

There were no respondents represented in the no disability group with a tertiary and diploma education. The highest representation was among respondents with severe disability in the secondary education group (N=11, 57.9%).

Respondents with a tertiary level of education had a relatively high representation in the slightly disabled group (N=44, 27.0%), the moderately disabled group (N=7, 18.9%) and the severely disabled group (N=2, 10.5%).

Respondents with secondary education had a higher percentage of representation across the different levels of overall disabilities.

There was an upward trend of representation as the disability increased in the secondary education group. There was also a downward trend of representation as the disability increased in the diploma and tertiary education group excluding no disability group.

However, there was no association between the overall level of disability and the level of education groups (gamma value= 0.089, p value=0.425). (Table 5-20)

Interpretation of association between co-morbidity of mental disorders, disability and poverty (objective 3 and hypothesis 3)

Objective 3 aimed to investigate associations between three different factors in this population. In general, we hypothesized that there would be a positive association between co-morbidity of mental disorders, severity of disability and extent of poverty. A summary diagram of the results is shown in Figure 5.
We examined the association between each factor separately. Firstly, we looked at the association between disability and co-morbidity of mental disorders. Secondly, we examined the association between poverty indicators (using average monthly, income and level of education) and co-morbidity of mental disorders. Lastly, the association between disability and poverty indicators (using average monthly, income and level of education) was examined. All the hypotheses were analysed using gamma coefficient analysis. The gamma coefficient analysis was used because the data was ordinal.

For the first objective, six hypotheses were tested based on the disability items measured by the WSAS.

The first null hypothesis, that there is no difference in degree of disability in work performance between respondents with single and co-morbid mental disorders, was rejected. The gamma analysis showed that there was a positive association between degree of disability and co-morbidity except in the moderately disabled group (gamma value of 0.286, p value of 0.005). There was a relatively weaker positive association between moderately disabled respondents and co-morbidity. As noted in the results section, this could be due to the smaller number of respondents in the severely disabled group.
Secondly, the null hypothesis, that there is no difference in degree of disability in home management between respondents with single and co-morbid mental disorders, was accepted. The gamma analysis showed that there was no significant association between the degree of disability and co-morbidity (gamma value of 0.173, p value of 0.091). The apparent increase in degree of disability among respondents with co-morbid mental disorders was not significant, probably due to the relatively small number of respondents.

Thirdly, the null hypothesis, that there is no significant difference in degree of disability for social leisure activities between respondents with single and co-morbid mental disorders, was rejected. The gamma coefficient analysis showed that there was a significant degree of association between level of disability and co-morbid mental disorders (gamma value of 0.237, p value of 0.019). There was a strong positive association between degree of disability and co-morbidity up to the level of moderate disability. However, there was a relatively weaker association between degree of disability and co-morbidity among respondents with severe disability. This could be due to the relatively smaller number of respondents in the severely disabled group.

Fourthly, the null hypothesis, that there is no significant difference in degree of disability for private leisure activities between respondents with single and co-morbid mental disorder, was rejected. The gamma coefficient analysis showed that there was a significant association between the degree of disability for private leisure activities and co-morbid mental disorders (gamma value of 0.326, p value of 0.001). Hence, there was a strong association between the degree of disability and co-morbid mental disorders.

The null hypothesis, that there is no significant difference in degree of disability for family and interpersonal relationships between single and co-morbid mental disorders, was rejected. The gamma coefficient analysis showed that there was a significant association between degree of disability for family and interpersonal relationships and co-morbid mental disorders (gamma value of 0.244, p value of 0.023). Hence, there was a strong association between degree of disability in family and interpersonal relationships, and co-morbid mental disorders.
Lastly, the null hypothesis, that there is no significant difference for overall disability between respondents with single and co-morbid mental disorders, was rejected. The gamma coefficient analysis showed that there was significant association between degree of disability and co-morbid mental disorders (gamma value of 0.282, p value of 0.036). There was a strong association between degree of overall disability and co-morbidity up to the level of moderately disabled. However, there was a negative association between severely disabled and co-morbid mental disorder.

In conclusion, there was a significant and consistent association between the moderately disabled and co-morbid common mental disorders in nearly all areas of disability. However, the severely disabled group was shown to have an association with co-morbidity in only two areas of disability. These were private leisure activities and family relationships. A strong positive association between the level of disability and co-morbid common mental disorders was shown in the area of disability in private leisure activities and family relationships.

In order to investigate the association between poverty indicators and co-morbidity two null hypotheses were generated based on the poverty indicators, namely poverty level based on average monthly income and level of education.

The null hypothesis, that there is no significant difference for poverty level between respondents with single and co-morbid mental disorders, was accepted (gamma value of 0.031, p value of 0.827). The gamma coefficient analysis showed that respondents both below and above poverty level had a weak but insignificant association with co-morbid mental disorders.

The second null hypothesis, that there is no significant difference between the different levels of education with regards to co-morbidity of mental disorders, was accepted (gamma value of 0.194, p value of 0.071). The gamma analysis showed that all the different levels of education had a weak and insignificant association with co-morbid mental disorders.

The third objective in this study attempting to investigate the association between disability and poverty indicators, generated twelve null hypotheses. These were based on the six disability items and two poverty indicators.
Firstly, the null hypothesis, that there is no significant difference between the various levels of disability in work performance and the different income groups, was accepted (gamma value of 0.111, p value of 0.296). The gamma coefficient analysis showed no association between level of disability in work performance and income level.

Secondly, the null hypothesis, that there is no significant difference between the various levels of disability in home management and monthly income, was accepted (gamma value of 0.092, p value of 0.379). The gamma analysis showed that there was no association between disability in home management and monthly income.

Thirdly, the null hypothesis, that there is no significant difference between the various levels of disability in social leisure activities and level of income, was accepted (gamma value of 0.003, p value of 0.975). The gamma coefficient analysis showed that there was no association between degree of disability in social leisure activities and level of income.

The null hypothesis, that there is no significant difference between the different levels of disability in private leisure activities and level of income, was accepted (gamma value of 0.055, p value of 0.603). The gamma analysis showed that there was no association between degree of disability in private leisure activities and level of income.

The null hypothesis, that there is no significant difference between the different levels of disability in family and interpersonal relationships and level of income, was also accepted (gamma value of 0.014, p value of 0.924). Gamma analysis showed no association between degree of disability in family and interpersonal relationships and level of income.

Lastly, the null hypothesis, that there is no significant difference between the different overall levels of disability and level of income, was also accepted (gamma value of 0.078, p value of 0.476). Gamma analysis also showed no association between degree of overall disability and level of income.

In order to examine the association between level of disability and level of education, six hypotheses were tested using the gamma coefficient analysis. The six hypotheses were based on the six different items of disability.
Firstly, the null hypothesis, that there is no significant difference between level of disability in work performance and level of education, was accepted (gamma value of 0.151, p value of 0.075). The gamma coefficient analysis did not show any association between degree of disability in work performance and the level of education.

Secondly, the null hypothesis, that there is no significant difference between level of disability in home management and level of education, was rejected (gamma value of 0.160, p value of 0.039). The gamma coefficient analysis showed that there was a negative association between degree of disability and level of education. There appeared to be an inverse association. As the level of education improved the degree of disability increased. The respondents with secondary education appeared to have the strongest association with disability in home management.

The third null hypothesis, that there is no significant difference between level of disability in social leisure activities and level of education, was rejected (gamma value of 0.205, p value of 0.011). The gamma coefficient analysis showed that there was a significant weak negative association between degree of disability in social leisure activities and level of education. The analysis reported that there was also an inverse association. As the level of education improved, the degree of disability in social activities increased. Another explanation for these findings could be because of the smaller number of respondents in the no formal education group.

The fourth null hypothesis, that there is no significant difference between disability in private leisure activities and level of education, was accepted (gamma value of 0.044, p value of 0.601). The gamma coefficient analysis showed that there was no significant association between degree of disability in private leisure activities and different levels of education.

The fifth null hypothesis, that there is no significant difference between disability in family and interpersonal relationships and level of education, was accepted (gamma value of 0.089, p value of 0.318). The gamma coefficient analysis showed that there was no significant association between degree of disability in family and interpersonal relationships and different levels of education.
Lastly, the null hypothesis, that there is no significant difference between overall disability and level of education, was accepted (gamma value of 0.089, p value of 0.425). The gamma analysis did not show any significant association between degree of overall disability and level of education.

In conclusion, there was no significant association between different levels of disability and income group. There was also no ordinal association between severity of disability and lower income. There was a weak negative association between different levels of disability in social leisure activities and home management with the different levels of education. There was an upward/increasing trend of disability in social leisure activities in the secondary education group.

SECTION 5.6. HYPOTHESIS 4 - TREATMENT GAP

The treatment gap will be at least 75%

Table 5-21 Showing the treatment gap in the various psychiatric services available for respondents with CMD (PHQ positive).

<table>
<thead>
<tr>
<th>Treatment facilities</th>
<th>No of respondent not using the facilities or services</th>
<th>Percentage of total respondents with CMD (N=224)</th>
<th>95% confidence interval</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mental health admission</td>
<td>220</td>
<td>98.2</td>
<td>96.9-99.5</td>
</tr>
<tr>
<td>Psychiatrist consultation</td>
<td>221</td>
<td>98.7</td>
<td>97.6-99.8</td>
</tr>
<tr>
<td>Psychologist consultation</td>
<td>222</td>
<td>99.1</td>
<td>98.2-100.0</td>
</tr>
<tr>
<td>Mental health nurse</td>
<td>224</td>
<td>100.0</td>
<td></td>
</tr>
<tr>
<td>General practitioner consultation</td>
<td>221</td>
<td>98.7</td>
<td>97.6-99.8</td>
</tr>
<tr>
<td>Other mental health services professional</td>
<td>208</td>
<td>92.8</td>
<td>90.4-95.2</td>
</tr>
<tr>
<td>Complementary ‘Dukun’ or ‘Bomoh’</td>
<td>200</td>
<td>89.3</td>
<td>86.4-92.2</td>
</tr>
<tr>
<td>Overall treatment gap *</td>
<td>205</td>
<td>91.5</td>
<td>88.9-94.1</td>
</tr>
</tbody>
</table>

(The total number respondents with CMD who had not seen any mental health professional in the last year, including discussion with GP about mental health).

*Some respondents had seen more than one professional
Only four of the two hundred and twenty-four respondents with common mental disorders were admitted to a psychiatric ward.

Only three respondents with common mental disorders were seen by a psychiatrist. Therefore, 98.7% of respondents did not receive any psychiatrist consultation.

Two of the two hundred and twenty-four respondents with common mental disorders were seen by a psychologist. Therefore, 99.1% of respondents did not receive any psychologist consultation. Three respondents had discussed mental health problems with their general practitioner, so 98.7% had not consulted general practitioners for their mental health problems.

None of the respondents had consulted a mental health nurse. However, sixteen (7.2%) respondents with common mental disorders were seen by other mental health professionals such as occupational therapists, counsellors or social workers.

Twenty-four (10.7%) of the two hundred and twenty-four respondents with common mental disorders had sought alternative or complementary medicine (Table 5-21).

**Interpretation of treatment gap (objective 4 and hypothesis 4)**

The null hypothesis, that the treatment gap is not different than that reported in West Malaysia, was rejected. Two hundred and five of the two hundred and twenty-four respondents with common mental disorders had not received any mental health treatment, medication, interventions or professional help. Therefore, the treatment gap was 91.5%. In conclusion, the treatment gap is higher than the postulated rate. The alternative and complementary medicine in the form of ‘Bobohizan’ (local shaman) and ‘Bomoh’ were reported as the most sought after by the respondents (10.7%).

**SECTION 5.7. HYPOTHESIS 5.1- SELF-PERCEIVED NEED AND CO-MORBID MENTAL DISORDERS**

Hypothesis 5.1: There will be a positive association between co-morbid mental disorder and perceived need for psychiatric treatment and care.
There is a weak association between co-morbid mental disorder and perceived need for psychiatric treatment and care.

Perceived need for psychiatric treatment and care was divided into five items: information about emotional problems or getting treatment, medication to help emotional problems, counselling, help in practical issues, and help to improve ability and individual skills. Mental disorder was divided into two groups: single psychiatric/mental disorder and comorbid psychiatric/mental disorder.

Table 5-22 Showing association between co-morbidity and perceived need for psychiatric treatment and care. (N=224)

<table>
<thead>
<tr>
<th>Type of Perceived need</th>
<th>Single psychiatric disorder/ one PHQ positive</th>
<th>Co-morbid psychiatric disorder/ Multiple PHQ positive</th>
<th>Chi-square value</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information about emotional problems or getting treatment</td>
<td>No need</td>
<td>90 (68.2)</td>
<td>42 (31.8)</td>
<td><strong>15.030</strong></td>
<td>0.001</td>
</tr>
<tr>
<td></td>
<td>Unmet need</td>
<td>34 (41.5)</td>
<td>48 (58.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Met need</td>
<td>5 (50.0)</td>
<td>5 (50.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medication to help emotional problems</td>
<td>No need</td>
<td>111 (62.4)</td>
<td>67 (37.6)</td>
<td><strong>8.434</strong></td>
<td>0.015</td>
</tr>
<tr>
<td>No need</td>
<td>Unmet need</td>
<td>17 (40.5)</td>
<td>25 (59.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No need</td>
<td>Met need</td>
<td>1 (25.0)</td>
<td>3 (75.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Counseling</td>
<td>No need</td>
<td>80 (70.2)</td>
<td>34 (29.8)</td>
<td><strong>15.062</strong></td>
<td>0.001</td>
</tr>
<tr>
<td>No need</td>
<td>Unmet need</td>
<td>42 (44.7)</td>
<td>52 (55.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No need</td>
<td>Met need</td>
<td>7 (43.8)</td>
<td>9 (56.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help in practical issues</td>
<td>No need</td>
<td>81 (65.9)</td>
<td>42 (34.1)</td>
<td><strong>7.644</strong></td>
<td>0.022</td>
</tr>
<tr>
<td>No need</td>
<td>Unmet need</td>
<td>45 (47.4)</td>
<td>50 (52.6)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No need</td>
<td>Met need</td>
<td>3 (50.0)</td>
<td>3 (50.0)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Help to improve ability and individual skills</td>
<td>No need</td>
<td>87 (63.0)</td>
<td>51 (37.0)</td>
<td>5.013</td>
<td>0.082</td>
</tr>
</tbody>
</table>
### Association between mental disorder and perceived need for information about emotional problem or getting treatment

One hundred and thirty-two (58.9%) of the two hundred and twenty-four respondents with common mental disorders perceived no need for information about emotional problems or getting treatment. Eighty-two (36.6%) respondents with a common mental disorder perceived unmet needs for information about emotional problems or getting treatment. Only ten (4.5%) respondents perceived that they their needs were met.

Ninety (68.2%) of the one hundred and thirty-two respondents, who perceived no need for information about emotional problems or getting treatment, had a single psychiatric or mental disorder.

Forty-eight (58.5%) of eighty-two respondents, who perceived unmet need for information about emotional problems or getting treatment, had co-morbid psychiatric or mental disorders.

Five (50.0%) of ten respondents, who perceived met need for information about emotional problems or getting treatment, had co-morbid psychiatric or mental disorders.

There was a significant difference between the various perceived needs for information about emotional problem or getting treatment and comorbidity amongst respondents with mental disorders (chi-square=15.030, p=0.001). (Table 5-22)

<table>
<thead>
<tr>
<th>Type of Perceived need</th>
<th>Single psychiatric disorder/ one PHQ positive</th>
<th>Co-morbid psychiatric disorder/ Multiple PHQ positive</th>
<th>Chi-square value</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unmet need</td>
<td>40 (50.0)</td>
<td>40 (50.0)</td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>Met need</td>
<td>2 (33.3)</td>
<td>4 (66.7)</td>
<td></td>
<td></td>
<td>6</td>
</tr>
</tbody>
</table>
**Association between mental disorders and perceived need for medication to help emotional problems**

One hundred seventy-eight (79.4%) of the two hundred and twenty-four respondents with common mental disorders perceived no need for medication to help emotional problems. Forty-two (18.7%) of two hundred and twenty-four respondents with common mental disorders perceived an unmet need for medication to help emotional problems. Only four (1.8%) respondents perceived their needs were met.

One hundred and eleven (62.4%) of the one hundred and seventy-eight respondents who had perceived no need for medication to help emotional problems, had a single psychiatric or mental disorder.

Twenty-five (59.5%) of forty-two respondents who had perceived an unmet need for medication to help emotional problems, had co-morbid psychiatric or mental disorders.

Three (75.0%) of five respondents who had perceived met need for medication to help emotional problems, had co-morbid psychiatric or mental disorders.

There was significant difference between the various perceived needs for medication to help emotional problems and co-morbidity among respondents with mental disorders ($\chi^2=8.434, p=0.015$). (Table 5-22)

**Association between mental disorder and perceived need for counselling**

One hundred and fourteen (50.9%) of the two hundred and twenty-four respondents with common mental disorders perceived no need for counselling. Ninety-four (42.0%) of two hundred and twenty-four respondents with common mental disorder perceived an unmet need for counselling. Only sixteen (7.1%) respondents perceived their needs were met.

Eighty (70.2%) of the one hundred and fourteen respondents who had perceived no need for counselling had a single psychiatric or mental disorder.

Fifty-two (55.3%) of ninety-four respondents who had a perceived unmet need for counselling had co-morbid psychiatric or mental disorders.
Nine (56.3%) of sixteen respondents who had perceived a met need for counselling had co-morbid psychiatric or mental disorders.

There was a significant difference between the various perceived needs for counselling and co-morbidity among respondents with mental disorders (chi-square=15.062, p=0.001). (Table 5-22)

**Association between mental disorder and perceived need for help in practical issues**

One hundred and twenty-three (54.9%) of two hundred and twenty-four respondents with common mental disorders perceived no need for help in practical issues. Ninety-five (42.4%) of two hundred and twenty-four respondents with common mental disorders perceived an unmet need for help in practical issues. Only six (2.7%) respondents perceived their needs were met.

Eighty-one (65.9%) of one hundred and twenty-three respondents who had perceived no need for help in practical issues, had a single psychiatric or mental disorder.

Fifty (52.6%) of ninety-five respondents who had a perceived unmet need for help in practical issues, had co-morbid psychiatric or mental disorders.

Three (50.0%) of six respondents who had perceived a met need for help in practical issues, had a single psychiatric or mental disorder.

There was a significant difference between the various perceived needs for help in practical issues and co-morbidity among respondents with mental disorders (chi-square=7.664, p=0.022). (Table 5-22)

**Association between mental disorder and perceived need for help to improve ability and individual skills.**

Eighty-seven (63.0%) of one hundred and thirty-eight respondents who had perceived no need for help to improve ability and individual skills, had a single psychiatric or mental disorder.

Forty (50.0%) of eighty respondents who had perceived unmet need for help to improve ability and individual skills, had co-morbid psychiatric or mental disorders.
Four (66.7%) of six respondents who had a perceived need for help to improve ability and individual skills, had co-morbid psychiatric or mental disorders.

There was no significant difference between the various perceived needs for help to improve ability and individual skills and co-morbid psychiatric or mental disorders among respondents with mental disorder (chi-square=5.013, p=0.082). (Table 5-22)

**Interpretation of perceived need (objective 5 and hypothesis 5.1)**

Hypothesis 5.1: There will be a positive association between co-morbid mental disorder and perceived need for psychiatric treatment and care. The null hypotheses were tested using chi-square analysis.

The first null hypothesis, that there is no significant difference between having single and co-morbid mental disorder and perceived need for information about emotional problem or getting treatment, was rejected (chi square of 15.030, p value of 0.001). Respondents with a single (n=90, 68.2%) psychiatric morbidity were reported to have perceived no need for information about emotional problems or getting treatment. However, respondents with co-morbid (n=48, 58.5%) mental disorders tended to have perceived an unmet need for information about emotional problems or getting treatment.

The second null hypothesis, that there is no significant difference between having a single or co-morbid mental disorder and perceived need for medication to help emotional problems, was rejected (chi square of 8.434, p value of 0.015). It was reported that respondents with a single (n=117, 62.4%) psychiatric morbidity were associated with perceived no need for medication to help emotional problems. However, respondents with co-morbid (n=25, 59.5%) psychiatric disorders were reported to have perceived an unmet need for medication to help emotional problems.

The third null hypothesis, that there is no significant difference between having single or co-morbid mental disorders and perceived need for counselling, was rejected (chi-square of 15.062, p value of 0.001). Respondents with a single (n=80, 70.2%) psychiatric disorder were reported to have perceived no need for counselling.
On the other hand, respondents with co-morbid (n=52, 55.3%) psychiatric disorders were reported to have perceived an unmet need for counselling.

Fourthly, the null hypothesis, that there is no significant difference between having a single or co-morbid mental disorder and perceived need for help in practical issues, was rejected (chi-square of 7.664, p value of 0.022). Respondents with a single psychiatric disorder were reported to have perceived no need for help in practical (n=81, 65.9%) issues. However, respondents with co-morbid (n=50, 52.6%) mental disorders were found to have perceived an unmet need.

Lastly, the null hypothesis, that there is no significant difference between having a single or co-morbid psychiatric disorder and perceived need for help to improve ability and individual skills, was accepted (chi-square of 5.013, p value of 0.082).

In conclusion, there were significant differences between four out of five items of perceived need and co-morbidity status of the respondents. Therefore, there were associations between co-morbid mental disorder status and perceived need for psychiatric treatment and care in most items of perceived need except for help to improve ability and individual skills. Respondents who perceived no need tended to have a single psychiatric or mental disorder. Respondents who had perceived an unmet need tended to have co-morbid psychiatric or mental disorders.

SECTION 5.8. HYPOTHESIS 5.2 – FACTORS AFFECTING PERCEIVED NEED

Hypothesis 5.2 Among primary care attendees with probable mental disorder the following factors will be associated with a lower perceived need for psychiatric treatment and care: male gender, lower educational attainment; poverty; physical illness; more severe disability and indigenous ethnic group membership.

Again, to discuss the association of factors, perceived need for psychiatric treatment and care was divided into five items. The five items are information about emotional problems or getting treatment, medication to help emotional problems, counselling, help in practical issues, and help to improve ability and individual skills.
Table 5-23 Showing factors associated with perceived need for information about emotional problems or getting treatment.

<table>
<thead>
<tr>
<th>Factors</th>
<th>No need (%within categories)</th>
<th>Unmet need (%within categories)</th>
<th>Met need (%within categories)</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>67 (54.0)</td>
<td>49 (39.5)</td>
<td>8 (6.5)</td>
<td>7.135</td>
<td>0.522</td>
<td>124</td>
</tr>
<tr>
<td>30-39</td>
<td>16 (59.3)</td>
<td>10 (37.0)</td>
<td>1 (3.7)</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>40-49</td>
<td>18 (60.0)</td>
<td>12 (40.0)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>50-59</td>
<td>22 (68.8)</td>
<td>9 (28.1)</td>
<td>1 (3.1)</td>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>60-65</td>
<td>9 (81.8)</td>
<td>2 (18.2)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44 (50.6)</td>
<td>36 (41.4)</td>
<td>7 (8.0)</td>
<td>6.657</td>
<td>0.036</td>
<td>87</td>
</tr>
<tr>
<td>Female</td>
<td>88 (64.2)</td>
<td>46 (33.6)</td>
<td>3 (2.2)</td>
<td></td>
<td></td>
<td>137</td>
</tr>
<tr>
<td><strong>Ethnic Group</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Muslim Indigenous</td>
<td>66 (55.5)</td>
<td>50 (42.0)</td>
<td>3 (2.5)</td>
<td>12.446</td>
<td>0.132</td>
<td>119</td>
</tr>
<tr>
<td>Christian Indigenous</td>
<td>34 (64.2)</td>
<td>18 (34.0)</td>
<td>1 (1.9)</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Malay</td>
<td>19 (73.1)</td>
<td>6 (23.1)</td>
<td>1 (3.8)</td>
<td></td>
<td></td>
<td>26</td>
</tr>
<tr>
<td>Chinese</td>
<td>7 (50.0)</td>
<td>5 (35.7)</td>
<td>2 (14.3)</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Indian, mixed &amp; others</td>
<td>6 (50.0)</td>
<td>3 (25.0)</td>
<td>3 (25.0)</td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt;RM300</td>
<td>44 (55.0)</td>
<td>33 (41.3)</td>
<td>3 (3.8)</td>
<td>9.699</td>
<td>0.287</td>
<td>80</td>
</tr>
<tr>
<td>RM301-RM600</td>
<td>42 (67.7)</td>
<td>18 (29.0)</td>
<td>2 (3.2)</td>
<td></td>
<td></td>
<td>62</td>
</tr>
<tr>
<td>RM601-RM1000</td>
<td>21 (46.7)</td>
<td>20 (44.4)</td>
<td>4 (8.9)</td>
<td></td>
<td></td>
<td>45</td>
</tr>
<tr>
<td>RM1001-RM2000</td>
<td>17 (73.9)</td>
<td>5 (21.7)</td>
<td>1 (4.3)</td>
<td></td>
<td></td>
<td>23</td>
</tr>
<tr>
<td>&gt;RM2000</td>
<td>8 (57.1)</td>
<td>6 (42.9)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>21 (63.6)</td>
<td>11 (33.3)</td>
<td>1 (3.0)</td>
<td>12.791</td>
<td>0.384</td>
<td>33</td>
</tr>
<tr>
<td>Private sector</td>
<td>35 (55.6)</td>
<td>24 (38.1)</td>
<td>4 (6.3)</td>
<td></td>
<td></td>
<td>63</td>
</tr>
<tr>
<td>Own business or farmer</td>
<td>10 (62.5)</td>
<td>5 (31.3)</td>
<td>1 (6.3)</td>
<td></td>
<td></td>
<td>16</td>
</tr>
<tr>
<td>Housewife</td>
<td>28 (77.8)</td>
<td>8 (22.0)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>36</td>
</tr>
<tr>
<td>Pensioner</td>
<td>4 (66.7)</td>
<td>2 (33.3)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>6</td>
</tr>
<tr>
<td>Unemployed</td>
<td>9 (64.3)</td>
<td>4 (28.6)</td>
<td>1 (7.1)</td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td>Student</td>
<td>25 (44.6)</td>
<td>28 (50.0)</td>
<td>3 (5.4)</td>
<td></td>
<td></td>
<td>56</td>
</tr>
</tbody>
</table>
Table 5-23 Contd.

<table>
<thead>
<tr>
<th>Factors</th>
<th>No need (% within categories)</th>
<th>Unmet need (% within categories)</th>
<th>Met need (% within categories)</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of Education</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No formal education</td>
<td>18 (75.0)</td>
<td>5 (20.8)</td>
<td>1 (4.2)</td>
<td>8.375</td>
<td>0.212</td>
<td>24</td>
</tr>
<tr>
<td>Primary education</td>
<td>26 (74.3)</td>
<td>8 (22.9)</td>
<td>1 (2.9)</td>
<td></td>
<td></td>
<td>35</td>
</tr>
<tr>
<td>Secondary education</td>
<td>60 (53.6)</td>
<td>47 (42.0)</td>
<td>5 (4.5)</td>
<td></td>
<td></td>
<td>112</td>
</tr>
<tr>
<td>Diploma &amp; tertiary education</td>
<td>28 (52.8)</td>
<td>22 (41.5)</td>
<td>3 (5.7)</td>
<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Overall disability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No disability</td>
<td>5 (100.0)</td>
<td>0 (0.0)</td>
<td>0 (0.0)</td>
<td>12.229</td>
<td>0.057</td>
<td>5</td>
</tr>
<tr>
<td>Slightly disabled</td>
<td>102 (62.6)</td>
<td>54 (33.1)</td>
<td>7 (4.3)</td>
<td></td>
<td></td>
<td>163</td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>19 (51.4)</td>
<td>17 (45.9)</td>
<td>1 (2.7)</td>
<td></td>
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<tr>
<td>Severe disabled</td>
<td>6 (31.6)</td>
<td>11 (57.9)</td>
<td>2 (10.5)</td>
<td></td>
<td></td>
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<tr>
<td>Type of physical illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic &amp; acute on chronic physical illness</td>
<td>69 (59.0)</td>
<td>44 (37.6)</td>
<td>4 (3.4)</td>
<td>13.888</td>
<td>0.031</td>
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<tr>
<td>Acute physical illness</td>
<td>46 (59.0)</td>
<td>29 (37.2)</td>
<td>3 (3.8)</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Multiple chronic physical illness</td>
<td>10 (58.8)</td>
<td>7 (41.2)</td>
<td>0 (0.0)</td>
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<td>17</td>
</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>7 (58.3)</td>
<td>2 (16.7)</td>
<td>3 (25.0)</td>
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</table>

Need for information about emotional problem or getting treatment

*Age*

There was no significant difference between the different age groups and perceived need for information about emotional problems or getting treatment (chi-square=7.135, p=0.552). (Table 5-23)
Gender

There was a high representation of perceived no need for information about emotional problems or getting treatment for both genders. Forty-four (50.6%) of eighty-seven male respondents perceived no need for information about emotional problems or getting treatment. Eighty-eight (64.2%) of one hundred and thirty-seven female respondents perceived no need for information about emotional problems or getting treatment.

There were low representations of perceived met need for information about emotional problems or getting treatment for both genders. Seven (8.0%) of the male respondents and three (2.2%) of the female respondents perceived their needs met for information about emotional problems or getting treatment.

There were thirty-six (41.4%) of eighty-seven male respondents that had an unmet need for information about emotional problems or getting treatment. Forty-six (33.6%) of one hundred and thirty-seven female respondents had an unmet need for information about emotional problems or getting treatment. There was also a significant difference between gender and perceived need for information about emotional problems or getting treatment (chi-square=6.657, p=0.036) (Table 5-23).

Ethnic group

There was no significant difference between the different ethnic groups and perceived need for information about emotional problems or getting treatment (chi-square=12.446, p=0.132). (Table 5-23).

Income

There was no significant difference between the different income groups and perceived need for information about emotional problems or getting treatment (chi-square=9.699, p=0.287). (Table 5-23).
**Occupation**

There was no significant difference between the different occupational groups and perceived need for information about emotional problems or getting treatment (chi-square=12.791, p=0.384). (Table 5-23).

**Level of education**

There was no significant difference between the different levels of education groups and perceived need for information about emotional problems or getting treatment (chi-square=8.375, p=0.212). (Table 5-23).

**Overall disability**

There was no significant difference between the different levels of disability groups and perceived need for information about emotional problems or getting treatment (chi-square=12.229, p=0.057). (Table 5-23).

**Type of physical illness**

There was a high representation of perceived no need for information about emotional problems or getting treatment across the different types of physical illnesses. Sixty-nine (59.0%) of one hundred and seventeen respondents with chronic and acute on chronic single physical illness perceived no need for information about emotional problems or getting treatment. Forty-six (59.0%) of seventy-eight respondents with acute physical illness perceived no need for information about emotional problems or getting treatment. Ten (58.8%) of seventeen respondents with multiple chronic physical illnesses had no perceived need for information about emotional problems or getting treatment. Seven (58.3%) of twelve respondents who came for medical check-up or procedure perceived no need for information about emotional problems or getting treatment.

There were low representations of perceived met need for information about emotional problems or getting treatment across the different types of physical illnesses.
All groups had relatively high unmet needs for information about emotional problems or getting treatment. There were forty-four (37.6%) of one hundred and seventeen respondents with chronic and acute on chronic single physical illness that perceived an unmet need for information about emotional problems or getting treatment. There were twenty-nine (37.2%) of seventy-eight with acute physical illness that perceived an unmet need for information about emotional problems or getting treatment. There were seven (41.2%) of seventeen with multiple chronic physical illnesses that perceived an unmet need for information about emotional problems or getting treatment. There were two (16.7%) of twelve respondents who came for medical check-up or procedure that perceived an unmet need for information about emotional problems or getting treatment. There was significant difference between the different types of physical illness and perceived need for information about emotional problems or getting treatment (chi-square=13.888, p=0.031). (Table 5-23).

Need for medication to help emotional problems

Table 5-24 Showing factors associated with perceived need for medication to help emotional problems.

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<thead>
<tr>
<th>Factors</th>
<th>No need</th>
<th>Unmet need</th>
<th>Met need</th>
<th>Chi-Square</th>
<th>p value</th>
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<td>Indian, mixed &amp; others</td>
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<td>1 (8.3)</td>
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Table 5-24 Contd.

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<th>p value</th>
<th>Total</th>
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<td>Level of Education</td>
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<td>Slightly disabled</td>
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<td>3 (1.8)</td>
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<tr>
<td>Moderately disabled</td>
<td>28 (75.7)</td>
<td>8 (21.6)</td>
<td>1 (2.7)</td>
<td></td>
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<td>37</td>
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<tr>
<td>Severe disabled</td>
<td>10 (52.6)</td>
<td>9 (47.4)</td>
<td>0 (0.0)</td>
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<td></td>
<td>19</td>
</tr>
<tr>
<td>Type of physical illness</td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic &amp; acute on chronic physical illness</td>
<td>93 (79.5)</td>
<td>22 (18.8)</td>
<td>2 (1.7)</td>
<td>3.627</td>
<td>0.727</td>
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<tr>
<td>Acute physical illness</td>
<td>63 (80.8)</td>
<td>14 (17.9)</td>
<td>.1 (1.3)</td>
<td></td>
<td></td>
<td>78</td>
</tr>
<tr>
<td>Multiple chronic physical illness</td>
<td>13 (76.5)</td>
<td>4 (23.5)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>9 (75.0)</td>
<td>2 (16.7)</td>
<td>1 (8.3)</td>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
**Age**

There was no significant difference between the different age groups and perceived need for medication to help emotional problems. (chi-square=8.741, p=0.365). (Table 5-24)

**Gender**

There was no significant difference between genders and perceived need for medication to help emotional problems (chi-square=2.357, p=0.308) (Table 5-24)

**Ethnic**

There was no significant difference between the various ethnic groups and perceived need for medication to help emotional problems (chi-square=10.130, p=0.256). (Table 5-24)

**Income**

There was no significant difference between the different income groups and perceived need for medication to help emotional problems (chi-square=7.245, p=0.510). (Table 5-24)

**Occupation**

There was no significant difference between the different occupational groups and perceived need for medication to help emotional problems (chi-square=7.912, p=0.792). (Table 5-24)

**Level of education**

There was no significant difference between the different levels of education groups and perceived need for medication to help emotional problems (chi-square=2.440, p=0.875). (Table 5-24)
**Overall disability**

There was a high representation of perceived no need for medication to help emotional problems across the different levels of disability groups. Five (100.0%) respondents with no disability perceived no need for medication to help emotional problems. One hundred and thirty-five (82.8%) of one hundred and sixty-three respondents with slight disability perceived no need for medication to help emotional problems. Twenty-eight (75.7%) of thirty-seven respondents with moderate disability had no perceived need for medication to help emotional problems. Ten (52.6%) of nineteen with severe disability perceived no need for medication to help emotional problems.

There were low representations of perceived met need for medication to help emotional problems across the different levels of disability groups. Three (1.8%) respondents with slight disability and one (2.7%) with moderate disability perceived a met need for medication to help emotional problems. There was no representation of perceived met need in the group with no disability or amongst those with severe disability.

All three groups with some form of disability had high unmet needs for medication to help emotional problems. There were twenty-five (15.3%) of one hundred and sixty-three respondents with slight disability that perceived an unmet need for medication to help emotional problems. There were eight (21.6%) of thirty-seven with moderate disability that perceived an unmet need for medication to help emotional problems. There were nine (47.4%) of nineteen with severe disability that perceived an unmet need for medication to help emotional problems. There was no representation of perceived unmet need in the group with no disability.

There was a significant difference between the different levels of disability groups and the perceived need for medication to help emotional problems (chi-square=13.302, p=0.038). (Table 5-24)

**Type of physical illness**

There was no significant difference between the different types of physical illness and the perceived need for medication to help emotional problems (chi-square=3.627, p=0.727) (Table 5-24).
### Need for counselling

Table 5-25 Showing factors associated with perceived need for counselling

<table>
<thead>
<tr>
<th>Factors</th>
<th>No need</th>
<th>Unmet need</th>
<th>Met need</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
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</tr>
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<td>58 (46.8)</td>
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<td>1 (3.7)</td>
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<td>40-49</td>
<td>16 (53.3)</td>
<td>13 (43.3)</td>
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<td>60-65</td>
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<tr>
<td>Chinese</td>
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<td>4 (28.6)</td>
<td>4 (28.6)</td>
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<tr>
<td>Indian, mixed &amp; others</td>
<td>8 (66.7)</td>
<td>2 (16.7)</td>
<td>2 (16.7)</td>
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<td>39 (48.8)</td>
<td>7 (8.8)</td>
<td>7.078</td>
<td>0.528</td>
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<td>22 (35.5)</td>
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<tr>
<td>Own business or farmer</td>
<td>7 (43.8)</td>
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<td>1 (6.3)</td>
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<tr>
<td>Housewife</td>
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<td>10 (27.8)</td>
<td>1 (2.8)</td>
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<tr>
<td>Pensioner</td>
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</tr>
<tr>
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<td>6 (10.7)</td>
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Table 5-25 **Contd.**

<table>
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<th>Met need</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
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<td><strong>Primary education</strong></td>
<td></td>
<td></td>
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<td></td>
</tr>
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<td>13 (37.1)</td>
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<tr>
<td>Unmet need</td>
<td>54 (48.2)</td>
<td>50 (44.6)</td>
<td>8 (7.1)</td>
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<td>112</td>
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<tr>
<td>Met need</td>
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<td>25 (47.2)</td>
<td>5 (9.4)</td>
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<td></td>
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</tr>
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<td><strong>Overall disability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>No disability</td>
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<td>65 (39.9)</td>
<td>10 (6.1)</td>
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<tr>
<td>Moderately disabled</td>
<td>14 (37.8)</td>
<td>18 (48.6)</td>
<td>5 (13.5)</td>
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<tr>
<td>Severe disabled</td>
<td>8 (42.1)</td>
<td>10 (52.6)</td>
<td>1 (5.3)</td>
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<td><strong>Type of physical illness</strong></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic &amp; acute on chronic physical illness</td>
<td>61 (52.1)</td>
<td>49 (41.9)</td>
<td>7 (6.0)</td>
<td>7.343</td>
<td>0.290</td>
<td>117</td>
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<tr>
<td>Acute physical illness</td>
<td>40 (51.3)</td>
<td>33 (42.3)</td>
<td>5 (6.4)</td>
<td></td>
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<tr>
<td>Multiple chronic physical illness</td>
<td>7 (41.2)</td>
<td>9 (52.9)</td>
<td>1 (5.9)</td>
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</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>6 (50.0)</td>
<td>3 (25.0)</td>
<td>3 (25.0)</td>
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</tbody>
</table>

**Age**

There was no significant different between the different age groups and perceived need for counselling (chi-square=10.437, p=0.236). (Table 5-25)

**Gender**

There was no significant difference between gender and perceived need for counselling (chi-square=4.064, p=0.131). (Table 5-25)
**Ethnicity**

There was a high representation of perceived no need for counselling across the different ethnic groups. Fifty-seven (47.9%) of one hundred and nineteen Muslim indigenous respondents perceived no need for counselling. Twenty-seven (50.9%) of fifty-three Christian indigenous respondents perceived no need for counselling. Sixteen (61.5%) of twenty-six Malay respondents had no perceived need for counselling. Six (42.9%) of fourteen Chinese respondents and eight (66.7%) respondents from other minority groups perceived no need for counselling.

There were low representations of perceived met need for counselling across the different ethnic groups. Six (5.0%) Muslim indigenous respondents, two (3.8%) Christian indigenous respondents, two (7.7%) Malays, four (28.6%) Chinese and two (16.7%) other minority group respondents perceived met need for counselling.

Unmet need for counselling appeared to peak among the Muslim indigenous group the Christian indigenous group and the Malay group. There were fifty-six (47.1%) of one hundred and nineteen Muslim Indigenous respondents that perceived an unmet need for counselling. There were twenty-four (45.3%) of fifty-three Christian indigenous respondents that perceived an unmet need for counselling. There were eight (30.8%) of twenty-six Malay respondents that perceived an unmet need for counselling.

There was significant different between the different ethnic groups and perceived need for counselling. (chi-square=17.745, p=0.023). (Table 5-25)

**Income**

There was no significant difference between the different income groups and perceived need for counselling (chi-square=7.078, p=0.528). (Table 5-25)
**Occupation**

There was a high representation of perceived no need for counselling across the different occupation groups. Twenty-one (63.6%) of thirty-three respondents who worked in the government agencies perceived no need for counselling. Thirty-one (49.2%) of sixty-three respondents who worked in the private sector perceived no need for counselling. Seven (43.8%) of sixteen respondents who worked in farming or business perceived no need for counselling. Twenty-five (69.4%) of thirty-six housewives had no perceived need for counselling. Thirty-one (49.2%) of sixty-three respondents who worked in the private sector perceived no need for counselling. Four (66.7%) of six pensioners perceived no need for counselling. Nine (64.3%) of fourteen unemployed respondents perceived no need for counselling. Seventeen (30.4%) of fifty-six students perceived no need for counselling.

There were low representations of perceived met need for counselling across the different occupation groups. Two (6.1%) government servants, four (6.3%) private sector workers, one (6.3%) farmer, one (2.8%) housewife, two (14.3%) unemployed respondents, and six (10.7%) students perceived a met need for counselling. There was no representation from the pensioner group.

There were five occupational groups that had high unmet need for counselling. There were ten (30.3%) of thirty-three government servants who perceived an unmet need for counselling. There were twenty-eight (44.4%) of sixty-three private sector workers that perceived an unmet need for counselling. There were eight (50.0%) of sixteen farmers or businessmen that perceived an unmet need for counselling. Thirty-three (58.9%) of fifty-six students perceived an unmet need for counselling.

There was a significant difference between the different occupational groups and perceived need for counselling. (chi-square=21.115, p=0.049). (Table 5-25).

**Level of education**

There was no significant difference between the different levels of education groups and perceived need for counselling (chi-square=6.048, p=0.418). (Table 5-25).
**Overall disability**

There was no significant difference between the different levels of disability groups and the perceived need for counselling (chi-square=7.105, p=0.308). (Table 5-25).

**Type of physical illness**

there was no significant difference between the different types of physical illness and perceived need for counselling (chi-square=7.343, p=0.290). (Table 5-25).

**Need for help in practical issues**

Table 5-26 Showing factors associated with perceived need for help in practical issues.

<table>
<thead>
<tr>
<th>Factors</th>
<th>No need</th>
<th>Unmet need</th>
<th>Met need</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 18-29</td>
<td>69 (55.6)</td>
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<td>0.696</td>
<td>124</td>
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<tr>
<td>30-39</td>
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<td>15 (55.6)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>40-49</td>
<td>14 (46.7)</td>
<td>15 (50.0)</td>
<td>1 (3.3)</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>50-59</td>
<td>21 (65.6)</td>
<td>10 (31.3)</td>
<td>1 (3.1)</td>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>60-65</td>
<td>7 (63.6)</td>
<td>4 (36.4)</td>
<td>0 (0.0)</td>
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<tr>
<td>Gender Male</td>
<td>42 (48.3)</td>
<td>43 (49.4)</td>
<td>2 (2.3)</td>
<td>2.867</td>
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<td>4 (2.9)</td>
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<td>Ethnic GroupMuslim Indigenous</td>
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<td>50 (42.0)</td>
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<td>Christian Indigenous</td>
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<td>1 (1.9)</td>
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<td></td>
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<td>6 (42.9)</td>
<td>1 (7.1)</td>
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<td></td>
<td>14</td>
</tr>
<tr>
<td>Indian, mixed &amp; others</td>
<td>6 (50.0)</td>
<td>5 (41.7)</td>
<td>1 (8.3)</td>
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<td>Income &lt;RM300</td>
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<td>3 (3.8)</td>
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<tr>
<td>RM601-RM1000</td>
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<td>22 (48.9)</td>
<td>2 (4.4)</td>
<td></td>
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<td>RM1001-RM2000</td>
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<td>&gt;RM2000</td>
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<td>Met need</td>
<td>Chi-Square</td>
<td>p value</td>
<td>Total</td>
</tr>
<tr>
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<td>------------</td>
<td>----------</td>
<td>------------</td>
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<td><strong>Occupation</strong></td>
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<td></td>
</tr>
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<tr>
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<td>9 (56.3)</td>
<td>0 (0.0)</td>
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<td>16</td>
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<tr>
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<td>13 (36.1)</td>
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<td>36</td>
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<td>1 (16.7)</td>
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<tr>
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<td><strong>Level of Education</strong></td>
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<td>51 (45.5)</td>
<td>3 (2.7)</td>
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</tr>
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<td>Diploma &amp; tertiary education</td>
<td>33 (62.3)</td>
<td>19 (35.8)</td>
<td>1 (1.9)</td>
<td></td>
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</tr>
<tr>
<td><strong>Overall disability</strong></td>
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<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
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<tr>
<td>Slightly disabled</td>
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<td>62 (38.0)</td>
<td>3 (1.8)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Moderately disabled</td>
<td>14 (37.8)</td>
<td>21 (56.8)</td>
<td>2 (5.4)</td>
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<td></td>
<td></td>
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<tr>
<td>Severe disabled</td>
<td>7 (36.8)</td>
<td>11 (57.9)</td>
<td>1 (5.3)</td>
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</tr>
<tr>
<td><strong>Type of physical illness</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chronic &amp; acute on chronic physical illness</td>
<td>60 (51.3)</td>
<td>53 (45.3)</td>
<td>4 (3.4)</td>
<td>4.006</td>
<td>0.676</td>
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<td>1 (1.3)</td>
<td></td>
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<td>78</td>
</tr>
<tr>
<td>Multiple chronic physical illness</td>
<td>10 (58.8)</td>
<td>7 (41.2)</td>
<td>0 (0.0)</td>
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<td>17</td>
</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>6 (50.0)</td>
<td>5 (41.7)</td>
<td>1 (8.3)</td>
<td></td>
<td></td>
<td>12</td>
</tr>
</tbody>
</table>
**Age**

There was no significant difference between the different age groups and perceived need for help in practical issues (chi-square=5.562, p=0.696). (Table 5-26)

**Gender**

There was no significant difference between gender and perceived need for help in practical issues (chi-square=2.867, p=0.238). (Table 5-26)

**Ethnicity**

There was no significant difference between the various ethnic groups and perceived need for help in practical issues (chi-square=7.954, p=0.438). (Table 5-26)

**Income**

There was no significant difference between the different income groups and perceived need for help in practical issues (chi-square=9.730, p=0.284). (Table 5-26)

**Occupation**

There was no significant difference between the different occupational groups and perceived need for help in practical issues (chi-square=11.708, p=0.469). (Table 5-26)

**Level of education**

There was no significant difference between the different levels of education groups and perceived need for help in practical issues (chi-square=3.621, p=0.728). (Table 5-26)

**Overall disability**

There was no significant difference between the different levels of disability groups and perceived need for help in practical issues (chi-square=10.733, p=0.097). (Table 5-26).

**Type of physical illness**

There was no significant different between the different types of physical illness and
perceived need for help in practical issues (χ² = 4.006, p = 0.676). (Table 5-26)

**Need for help to improve ability and individual skills**

Table 5-27 Showing factors associated with perceived need for help to improve ability and individual skills

<table>
<thead>
<tr>
<th>Factors</th>
<th>No need</th>
<th>Unmet need</th>
<th>Met need</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
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<tbody>
<tr>
<td><strong>Age</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>18-29</td>
<td>76 (61.3)</td>
<td>43 (34.7)</td>
<td>5 (4.0)</td>
<td>12.446</td>
<td>0.132</td>
<td>124</td>
</tr>
<tr>
<td>30-39</td>
<td>14 (51.9)</td>
<td>12 (44.4)</td>
<td>1 (3.7)</td>
<td></td>
<td></td>
<td>27</td>
</tr>
<tr>
<td>40-49</td>
<td>14 (46.7)</td>
<td>16 (53.3)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>30</td>
</tr>
<tr>
<td>50-59</td>
<td>25 (78.1)</td>
<td>7 (21.9)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>32</td>
</tr>
<tr>
<td>60-65</td>
<td>9 (81.8)</td>
<td>2 (18.2)</td>
<td>0 (0.0)</td>
<td></td>
<td></td>
<td>11</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48 (55.2)</td>
<td>36 (41.4)</td>
<td>3 (3.4)</td>
<td>20.699</td>
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<td>Female</td>
<td>90 (65.7)</td>
<td>44 (32.1)</td>
<td>3 (2.2)</td>
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</tr>
<tr>
<td><strong>Ethnic Group</strong></td>
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<td></td>
<td></td>
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<td>43 (36.1)</td>
<td>3 (2.5)</td>
<td>13.950</td>
<td>0.083</td>
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</tr>
<tr>
<td>Christian Indigenous</td>
<td>36 (67.9)</td>
<td>17 (32.1)</td>
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<td></td>
<td></td>
<td>53</td>
</tr>
<tr>
<td>Malay</td>
<td>17 (65.4)</td>
<td>9 (34.6)</td>
<td>0 (0.0)</td>
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</tr>
<tr>
<td>Chinese</td>
<td>7 (50.0)</td>
<td>6 (42.9)</td>
<td>1 (7.1)</td>
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<td></td>
<td>14</td>
</tr>
<tr>
<td>Indian, mixed &amp; others</td>
<td>5 (41.7)</td>
<td>5 (41.7)</td>
<td>2 (16.7)</td>
<td></td>
<td></td>
<td>12</td>
</tr>
<tr>
<td><strong>Income</strong></td>
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<td>&gt;RM2000</td>
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<td>Diploma &amp; tertiary education</td>
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<td>44 (37.6)</td>
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<tr>
<td>Medical check-up &amp; procedure</td>
<td>5 (41.7)</td>
<td>4 (33.3)</td>
<td>3 (25.0)</td>
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**Age**

There was no significant difference between the different age groups and perceived need for help to improve ability and individual skills (chi-square=12.446, p=0.132). (Table 5-27)
**Gender**

There was a high representation of perceived no need for help to improve ability and individual skills for both genders. Forty-eight (55.2%) of eighty-seven male respondents perceived no need for help to improve ability and individual skills. Ninety (65.7%) of one hundred and thirty-seven female respondents perceived no need for help to improve ability and individual skills.

There were low representations of perceived met need for help to improve ability and individual skills in both genders. Three (3.4%) of the male respondents and three (2.2%) female respondents perceived a met need for help to improve ability and individual skills.

There were thirty-six (41.4%) of eighty-seven male respondents that perceived an unmet need for help to improve ability and individual skills. Forty-four (32.1%) of one hundred and thirty-seven female respondents perceived an unmet need for help to improve ability and individual skills.

There was a significant difference between gender and perceived need for help to improve ability and individual skills. (chi-square=20.669, p=0.008). (Table 5-27)

**Ethnic**

, there was no significant difference between the different ethnic groups and perceived need for help to improve ability and individual skills  (chi-square=13.950, p=0.083). (Table 5-27)

**Income**

There was no significant difference between the different income groups and perceived need for help to improve ability and individual skills  (chi-square=6.043, p=0.642). (Table 5-27)

**Occupation**

There was no significant difference between the different occupational groups and perceived need for help to improve ability and individual skills. (chi-square=18.360, p=0.105). (Table 5-27)
**Level of education**

There was no significant difference between the different levels of education groups and perceived need for help to improve ability and individual skills (chi-square=2.610, p=0.856). (Table 5-27)

**Overall disability**

There was no significant difference between the different levels of disability groups and perceived need for help to improve ability and individual skills  (chi-square=11.343, p=0.078). (Table 5-27)

**Type of physical illness**

There was a high representation of perceived no need for help to improve ability and individual skills across the different types of physical illnesses. Seventy-one (60.7%) of one hundred and seventeen respondents with chronic and acute on chronic single physical illness perceived no need for help to improve ability and individual skills. Fifty (64.1%) of seventy-eight respondents with acute physical illness perceived no need for help to improve ability and individual skills. There were low representations of perceived met need for help to improve ability and individual skills across the different types of physical illnesses.

All groups had relatively high unmet need for help to improve ability and individual skills across the different types of physical illnesses. There were forty-four (37.6%) of one hundred and seventeen respondents with chronic and acute on chronic single physical illness that perceived an unmet need for help to improve ability and individual skills. There were twenty-seven (34.6%) of seventy-eight with acute physical illness that perceived an unmet need for help to improve ability and individual skills. There were five (29.4%) of seventeen with multiple chronic physical illnesses that perceived an unmet need for help to improve ability and individual skills. There were four (33.3%) of twelve respondents who came for medical check-up or procedure that perceived an unmet need for help to improve ability and individual skills.

There was a significant difference between the different types of physical illness and perceived need to improve ability and individual skills  (chi-square=25.199, p=0.000). (Table 5-27)
Interpretation of perceived need (objective 5 and hypothesis 5.2)

In order to investigate perceived need for psychiatric treatment and care, forty null hypotheses were tested based on five items of perceived need and separate factors.

5.8.1.1. Discussion on factors associated with perceived need for information about emotional problem or getting treatment

The first null hypothesis, that there is no significant difference between different age groups and perceived need for information about emotional problem or getting treatment, was accepted (chi-square of 7.135, p value of 0.552). Generally, it was reported that the majority of respondents across all age groups perceived no need for information about emotional problems or getting treatment. It was also reported that respondents in the 18-29 years of age group perceived an unmet need for information about emotional problems or getting treatment.

The second hypothesis, that there is no significant difference between gender and perceived need for information about emotional problems or getting treatment, was rejected (chi-square of 6.657, p value of 0.036). The female (n=88, 64.2%) respondents more often perceived no need for information about emotional problems or getting treatment. Whereas, the male (n= 36, 41.4%) respondents reported more perceived unmet need for information about emotional problems or getting treatment. These findings differed to what was originally hypothesized. There was a significant difference between the genders in terms of perceived need for information about emotional problems or getting treatment.

For the third hypothesis on ethnicity, the null hypothesis, that there is no significant difference between ethnicities in relation to perceived need for information about emotional problems or getting treatment, was accepted (chi-square of 12.46, p value of 0.132). Generally, majority of the different ethnic groups perceived no need for information about emotional problems or getting treatment. Although unmet need was perceived higher among the Muslim indigenous and the Christian indigenous groups, the differences were not significant.
Fourthly, the null hypothesis, that there is no significant difference between the different income groups and perceived need for information about emotional problems or getting treatment, was accepted (chi-square of 9.699, p value of 0.287). Perceived no need for information about emotional problems or getting treatment prevailed in all income groups. Respondents earning less than RM300 reported more perceived unmet need, but the difference was not significant.

The null hypothesis, that there is no significant difference between the different occupational groups and perceived need for information about emotional problems or getting treatment, was accepted (chi-square of 12.791, p value of 0.384). Perceived no need for information was reported high across all occupational groups. Respondents working in the private sector (n=24, 38.1%) and students (n=28, 50.0%) reported high unmet need, however the difference was not statistically significant.

The null hypothesis, that there is no significant difference between the different levels of educational background and perceived need for information about emotional problems or getting treatment, was accepted (chi-square of 8.375, p value of 0.212). Perceived no need for information about emotional problems or getting treatment was reportedly high in all levels of educational backgrounds. Unmet need for information about emotional problems or getting treatment was reportedly high among respondents with secondary and tertiary education, although it was not statistically significant.

The null hypothesis, that there is no significant difference between levels of disability and perceived need for information about emotional problems or getting treatment, was accepted (chi-square of 12.229, p value of 0.057). Perceived no need for information about emotional problems or getting treatment was reportedly high in all levels of disabilities. All the respondents with some form of disability reported unmet need for information about emotional problems or getting treatment, although it was not statistically associated.
Lastly, the null hypothesis, that there is no significant difference between the different categories of physical illness and perceived need for information about emotional problems or getting treatment, was rejected (chi-square of 13.888, p value of 0.031). Perceived no need for information about emotional problems or getting treatment was reported high in all categories of physical illness. Unmet need for information about emotional problems or getting treatment was reportedly highest among respondents with chronic and acute on chronic single physical illnesses.

**In conclusion, there were significant differences between gender, type of physical illness and perceived need for information about emotional problems or getting treatment.**

### 5.8.1.2. Discussion on factors associated with perceived need for medication to help emotional problems.

The first null hypothesis on age, that there is no significant difference between the different age groups and perceived need for medication to help emotional problems, was accepted (chi-square of 8.741, p value of 0.365). Overall, all the age groups presented with high perceived no need for medication to help emotional problems. The unmet need for medication to help emotional problems was highest in the group 18-29 years of age, though the difference was not statistically significant.

Secondly, the null hypothesis, that there is no significant difference between gender and perceived need for medication to help emotional problems, was accepted (chi-square of 2.357, p value of 0.308). Perceived no need for medication to help emotional problems was high among both genders. Unmet need for medication to help emotional problems was reported to be relatively low among both genders.

The third null hypothesis, that there is no significant difference between the different ethnicities in relation to perceived need for medication to help emotional problems, was accepted (chi-square of 10.130, p value of 0.256). All ethnic groups reported a high perceived no need for medication to help emotional problems. Unmet need for medication to help emotional problems was reported highest among the Muslim indigenous (n=19, 16.0%) group.
Fourthly, the null hypothesis, that there is no significant difference between different income groups and perceived need for medication to help emotional problems, was accepted (chi-square of 7.245, p value of 0.510). Perceived no need for medication to help emotional problems prevailed in all income groups. Respondents earning less than RM300 (n=17, 21.3%) reported a greater perceived unmet need, but the difference was not significant.

The null hypothesis, that there is no significant difference between different occupational groups and perceived need for medication to help emotional problems, was accepted (chi-square of 7.912, p value of 0.792). Perceived no need for information was reported as high across all occupational groups. Respondents working in the private sector (n=12, 19.0%) and students (n=13, 23.2%) reported relatively high unmet need, however the difference was not statistically significant.

The null hypothesis, that there is no significant difference between different levels of educational background and perceived need for medication to help emotional problems, was accepted (chi-square of 2.440, p value of 0.875). Perceived no need for medication to help emotional problems was reported highly in all levels of educational backgrounds. Unmet need for medication to help emotional problems was reported highest among respondents with secondary education (n=22, 19.6%), though it was not statistically significant.

The null hypothesis, that there is no significant difference between level of disability and perceived need for medication to help emotional problems was rejected (chi-square of 13.302, p value of 0.038). Perceived no need for medication to help emotional problems was reported as high in all levels of disabilities. All the respondents with some form of disability reported unmet need for medication to help emotional problems. Respondents in the slightly (n=25, 15.3%) disabled group had the highest number of perceived unmet needs for medication to help emotional problems.
Finally, the null hypothesis, that there is no significant difference between the different categories of physical illness and perceived need for medication to help emotional problems, was accepted (chi-square of 3.627, p value of 0.727). Perceived no need for medication to help emotional problems was reported as high in all categories of physical illness. Unmet need for medication to help emotional problems was reportedly highest among respondents with chronic and acute on chronic single physical illnesses (n=22, 18.8%) and respondents with acute physical illnesses (n=14, 17.9%).

In conclusion, only the degree of disability had a significant association with perceived need for medication to help emotional problems.

5.8.1.3. Discussion on factors associated with perceived need for counselling.

The first null hypothesis null on age, that there is no significant difference between the different age groups and perceived need for counselling, was accepted (chi-square of 10.437, p value of 0.236). Overall, all the age groups presented with high perceived no need for counselling. The unmet need for counselling was highest in the group 18-29 years of age (n=58, 46.8%, though the difference was not statistically significant.

Secondly, the null hypothesis, that there is no significant difference between gender and perceived need for counselling, was accepted (chi-square of 4.064, p value of 0.131). Perceived no need for counselling was high among both genders. Nearly half of both the male and female respondents perceived no need for counselling. Unmet need for counselling was reported higher among female (n=59, 43.1%) respondents than male (n=35, 40.2%) respondents. However, the difference was not statistically significant.

The third null hypothesis, that there is no significant difference between the different ethnicities in relation to perceived need for counselling, was rejected (chi-square of 17.745, p value of 0.023). All ethnic groups reported high perceived no need for counselling. Low met need for counselling was also reported in all ethnic groups. Unmet need for counselling was reported significantly highly among the Muslim indigenous (n=56, 47.1%) and non-Muslim indigenous (n=24, 45.3%) than the other ethnicities.
Fourthly, the null hypothesis, that there is no significant difference between different income groups and perceived need for counselling, was accepted (chi-square of 7.078, p value of 0.528). Perceived no need for counselling prevailed in all income groups. Respondents earning less than RM300 (n=39, 48.8%) reported to have higher perceived unmet need, but the difference was statistically not significant.

The null hypothesis, that there is no significant difference between different occupational groups and perceived need for counselling, was rejected (chi-square of 21.115, p value of 0.049). Perceived no need for information was reported as high across all occupational groups. There was also low perceived met need for counselling reported in all occupational groups. Respondents working in the private sector (n=28, 44.4%) and students (n=33, 58.9%) reported a statistically significant high unmet need for counselling.

The null hypothesis, that there is no significant difference between different levels of educational background and perceived need for counselling was accepted (chi-square of 6.048, p value of 0.418). Perceived no need for counselling was reported as high in all levels of educational backgrounds. Unmet need for counselling was reported highest among respondents with secondary education (n=50, 44.6%), though it was not statistically significant.

The null hypothesis, that there is no significant difference between level of disability and perceived need for counselling, was accepted (chi-square of 7.105, p value of 0.308). Perceived no need for counselling was reported as high in all level of disabilities. All the respondents with some form of disability reported an unmet need for counselling. Respondents in the slightly (n=65, 39.9%) disabled group had the highest number of perceived unmet needs for medication to help emotional problems.

Lastly, the null hypothesis, that there is no significant difference between the different categories of physical illness and perceived need for counselling, was accepted (chi-square of 7.343, p value of 0.290). Perceived no need for counselling was reported as high in all categories of physical illness. Unmet need for counselling was reportedly highest among respondents with chronic and acute on chronic single physical illnesses (n=49, 41.9%) and respondents with acute physical illnesses (n=33, 42.3%).
In conclusion, only ethnicity and occupational background had a significant association with perceived need for medication to help emotional problems. Unmet need for counselling was observed higher among major ethnic groups, private sector workers and students.

5.8.1.4. Discussion on factors associated with perceived need for help in practical issues.

The first null hypothesis on age, that there is no significant difference between the different age groups and perceived need for help in practical issues, was accepted (chi-square of 5.562, p value of 0.696). All the age groups presented with high perceived no need for help in practical issues. The unmet need for help in practical issues was highest in the group 18-29 years of age (n=51, 41.1%), though the difference between this group and the others was not statistically significant.

The second null hypothesis, that there is no significant difference between gender and perceived need for help in practical issues, was accepted (chi-square of 2.867, p value of 0.238). Perceived no need for help in practical issues was high among both genders. Nearly half the male respondents and more than half of the female respondents, perceived no need for help in practical issues. Unmet need for help in practical issues was reported to be relatively higher among male (n=43, 49.4%) respondents than female (n=52, 38.0%) respondents. However, the difference was not statistically significant.

The third null hypothesis, that there is no significant difference between the different ethnicities in relation to perceived need for help in practical issues, was accepted (chi-square of 7.954, p value of 0.438). All ethnic groups reported high perceived no need for help in practical issues. Unmet need for help in practical issues was reported as relatively high among the Muslim indigenous (n=50, 42.0%) and Christian indigenous (n=27, 50.9%) groups compared to the other ethnicities.

The fourth null hypothesis, that there was no significant difference between different income groups and perceived need for help in practical issues, was accepted (chi-square of 9.730, p value of 0.284). Perceived no need for help in practical issues prevailed in all income groups. Respondents earning less than RM300 (n=40, 50.0%) were reported to have higher perceived unmet need, but the differences were statistically not significant.
The null hypothesis, that there is no significant difference between different occupational groups and perceived need for help in practical issues, was accepted (chi-square of 11.708, p value of 0.469). Perceived no need for help in practical issues was reported as high across all occupational groups. There was also low perceived met need for help in practical issues in all occupational groups. Respondents working in the private sector (n=29, 46.0%) and students (n=25, 44.6%) reported relatively high unmet need for help in practical issues. However, it was not statistically significant.

The null hypothesis, that there is no significant difference between different levels of educational background and perceived need for help in practical issues, was accepted (chi-square of 3.621, p value of 0.728). Perceived no need for help in practical issues was reported as high in all levels of educational backgrounds. Unmet need for help in practical issues was reported highest among respondents with secondary education (n=51, 45.5%), though it was not statistically significant.

The null hypothesis, that there is no significant difference between levels of disability and perceived need for help in practical issues, was accepted (chi-square of 10.733, p value of 0.097). Perceived no need for help in practical issues was reported as high in all levels of disabilities. All the respondents with some form of disability reported unmet need for help in practical issues. Respondents in the moderately (n=21, 56.8%) disabled group had a relatively high number of perceived unmet needs for help in practical issues.

Finally, the null hypothesis, that there is no significant difference between the different categories of physical illness and perceived need for help in practical issues, was accepted (chi-square of 4.006, p value of 0.676). Perceived no need for counselling was reported high in all categories of physical illness. Unmet need for medication counselling was reported as relatively high among respondents with chronic and acute on chronic single physical illnesses (n=53, 45.3%) and respondents with acute physical illnesses (n=30, 38.5%).

In conclusion, no factor was found to be significantly associated with perceived need for help in practical issues.
5.8.1.5. Discussion on factors associated with perceived need for help to improve ability and individual skills.

The first null hypothesis on age, that there is no significant difference between the different age groups and perceived need for help to improve ability and individual skills, was accepted (chi-square of 12.446, p value of 0.132). Overall, all the age groups presented with high perceived no need for help to improve ability and individual skills. The unmet need for help to improve ability and individual skills was highest in the group 18-29 years of age (n=43, 34.7%), though the difference was not statistically significant.

Secondly, the null hypothesis that there is no significant difference between gender and perceived need for help to improve ability and individual skills, was rejected (chi-square of 20.669, p value of 0.008). Perceived no need for help in practical issues was high among both genders. More than half of male and female respondents respectively had perceived no need for help to improve ability and individual skills. There were only small number of respondents that perceived a met need for help to improve ability and individual skills. Unmet need for help to improve ability and individual skills was reported more highly among male (n=36, 41.4%) respondents than the female (n=44, 32.1%) respondents.

The third null hypothesis, that there is no significant difference between the different ethnicities in relation to perceived need for help to improve ability and individual skills, was accepted (chi-square of 13.950, p value of 0.083). All ethnic groups reported high perceived no need for help to improve ability and individual skills. Unmet need for help to improve ability and individual skills was reported relatively as higher among the Muslim indigenous (n=43, 36.1%) and Chinese (n=6, 34.0%) respondents than among the other ethnicities.

The fourth null hypothesis, that there is no significant difference between different income groups and perceived need for help to improve ability and individual skills, was accepted (chi-square of 6.043, p value of 0.642). Perceived no need for help to improve ability and individual skills prevailed in all income groups. Respondents in the RM601- RM1,000 group (n=21, 46.7%) were reported to have higher perceived unmet need, but the difference was statistically not significant.
The null hypothesis, that there is no significant difference between different occupational groups and perceived need for help to improve ability and individual skills, was accepted (chi-square of 18.360, p value of 0.105). Perceived no need for help to improve ability and individual skills was reported as high across all occupational groups. There was also low perceived met need for help in practical issues in all occupational groups. Respondents working in the private sector (n=26, 41.3%), government servants (n=12, 36.4%) and students (n=21, 37.5%) reported relatively high unmet needs for help to improve ability and individual skills. However, the difference was not statistically significant.

The null hypothesis, that there is no significant difference between different levels of educational background and perceived need for help to improve ability and individual skills, was accepted (chi-square of 2.610, p value of 0.856). Perceived no need for help to improve ability and individual skills was reported as high in all levels of educational backgrounds. Unmet need for help to improve ability and individual skills was reported highest among respondents with secondary education (n=40, 35.7%), though the difference was not statistically significant.

The null hypothesis, that there is no significant difference between levels of disability and perceived need for help to improve ability and individual skills, was accepted (chi-square of 11.343, p value of 0.078). Perceived no need for help to improve ability and individual skills was reported as high in all level of disabilities. All respondents with some form of disability reported an unmet need for help to improve ability and individual skills. Respondents in the moderately (n=49, 30.1%) disabled group had a relatively high number of perceived unmet needs for help to improve ability and individual skills.

Finally, the null hypothesis, that there is no significant difference between the different categories of physical illness and perceived need for help to improve ability and individual skills, was rejected (chi-square of 25.199, p value of 0.000). Perceived no need to improve ability and individual skills was reported as high in all categories of physical illness. There was low percentage of met need among the respondents who came for medical check-up or procedure (n=3, 25%). Unmet need to improve ability and individual skills was reported significantly higher among respondents with chronic and acute on chronic single physical illnesses (n=44, 37.6%) and respondents with acute physical illnesses (n=27, 34.6%).
In conclusion, gender and type of physical illness were significantly associated with perceived need for help to improve ability and individual skills. Male gender, and respondents with chronic and acute physical illness were associated with perceived an unmet need for help to improve ability and individual skills.

**SECTION 5.9. HYPOTHESIS 6: FACTORS INFLUENCING MENTAL HEALTH SERVICES UTILIZATION**

Hypothesis 6: The following factors will be associated with a lower probability of access to psychiatric treatment and care: Male gender, Poverty, Physical illness, severe disability, unemployment and Indigenous ethnic group. (Table 5-28)

**Table 5-28 Showing factors associated with access to psychiatric treatment and care**

<table>
<thead>
<tr>
<th>Factors</th>
<th>Mental health service utilization</th>
<th>Chi-Square</th>
<th>p value</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>yes</td>
<td>no</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>12 (5.7)</td>
<td>200 (94.3)</td>
<td>1.527</td>
<td>0.217</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>7 (3.2)</td>
<td>211 (96.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>18-29</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11 (5.5)</td>
<td>188 (94.5)</td>
<td>1.079</td>
<td>0.299</td>
</tr>
<tr>
<td></td>
<td>30-65</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>8 (3.5)</td>
<td>223 (96.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Income</td>
<td>&lt;RM690</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>14 (15.8)</td>
<td>228 (94.2)</td>
<td>2.447</td>
<td>0.118</td>
</tr>
<tr>
<td></td>
<td>&gt;RM691</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>5 (2.7)</td>
<td>183 (97.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethnic</td>
<td>Muslim Indigenous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>11 (4.4)</td>
<td>238 (95.6)</td>
<td>3.284</td>
<td>0.511</td>
</tr>
<tr>
<td></td>
<td>Non-Muslim Indigenous</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (3.5)</td>
<td>83 (96.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Malay</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (2.3)</td>
<td>43 (97.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chinese</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (10.7)</td>
<td>25 (89.3)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Others</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (4.3)</td>
<td>22 (95.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Clinic location</td>
<td>urban</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>235</td>
<td>3.536</td>
<td>0.060</td>
</tr>
<tr>
<td></td>
<td>Semi-urban clinic</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>4</td>
<td>176</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occupation</td>
<td>Government</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 (2.8)</td>
<td>70 (97.2)</td>
<td>15.564</td>
<td>0.016</td>
</tr>
<tr>
<td></td>
<td>Private sector</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 (2.5)</td>
<td>119 (97.5)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Own business or far</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (2.3)</td>
<td>43 (97.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Housewife</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (1.3)</td>
<td>77 (98.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Pensioner</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 (5.6)</td>
<td>17 (94.4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Unemployed</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 (9.1)</td>
<td>20 (90.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Student</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>9 (12.2)</td>
<td>65 (87.8)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Type of</td>
<td>Chronic &amp; acute on</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>10 (4.6)</td>
<td>208 (95.4)</td>
<td>7.209</td>
<td>0.066</td>
</tr>
<tr>
<td>Factors</td>
<td>Mental health service utilization</td>
<td>Chi-Square</td>
<td>p value</td>
<td>Total</td>
</tr>
<tr>
<td>------------------------------</td>
<td>----------------------------------</td>
<td>------------</td>
<td>---------</td>
<td>-------</td>
</tr>
<tr>
<td>Physical illness</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Acute physical illness</td>
<td>6 (3.9)</td>
<td>147 (96.1)</td>
<td></td>
<td>153</td>
</tr>
<tr>
<td>Multiple chronic physical illness</td>
<td>0 (0.0)</td>
<td>39 (100.0)</td>
<td></td>
<td>39</td>
</tr>
<tr>
<td>Medical check-up &amp; procedure</td>
<td>3 (15.0)</td>
<td>17 (85.0)</td>
<td></td>
<td>20</td>
</tr>
<tr>
<td>Overall disability</td>
<td>No disability</td>
<td>0 (0.0)</td>
<td>5 (100.0)</td>
<td>1.826</td>
</tr>
<tr>
<td>Slightly disable</td>
<td>9 (5.5)</td>
<td>154 (94.5)</td>
<td></td>
<td>163</td>
</tr>
<tr>
<td>Moderately disable</td>
<td>4 (10.8)</td>
<td>33 (89.2)</td>
<td></td>
<td>37</td>
</tr>
<tr>
<td>Severely disable</td>
<td>1 (5.3)</td>
<td>18 (94.7)</td>
<td></td>
<td>19</td>
</tr>
<tr>
<td>Need for counselling *</td>
<td>No need</td>
<td>4 (1.7%)</td>
<td>235 (98.3)</td>
<td>23.823</td>
</tr>
<tr>
<td>Unmet need</td>
<td>10 (5.9)</td>
<td>160 (94.1)</td>
<td></td>
<td>170</td>
</tr>
<tr>
<td>Met need</td>
<td>5 (23.8)</td>
<td>16 (76.2)</td>
<td></td>
<td>21</td>
</tr>
</tbody>
</table>

* the other four domains of perceived need are not displayed because they had more than 1 cell with less than 5 respondents.

**Gender**

Although male respondents appeared to have been utilizing the mental health service more than the female respondents, there was no significant difference between the two groups (chi-square=1.527, p=0.217) (Table 5-28).

**Age**

There was no significant difference between the different age groups in utilizing the mental health service (chi-square=1.079, p=0.299) (Table 5-28).

**Ethnic groups**

There was no significant difference between the ethnic groups in utilizing the mental health service (chi-square=3,284, p=0.511) (Table 5-28).

**Location of the clinic**

However, there was no significant difference between the different location groups in utilizing the mental health service (chi-square=3.536, p=0.060) (Table 5-28).

163
**Income**

There was no significant difference between the poor and the rich in relation to utilizing the mental health service \((\text{chi-square}=2.447, \ p=0.118)\) (Table 5-28).

**Occupation**

Occupation was divided into seven groups: government servant, private sector, own business or farming, housewife, pensioner, unemployed and students. There were seventy-two (16.7%) government servants, one hundred and twenty-two (28.4%) private sector workers, forty-four (10.2%) in the own business or farming group, seventy-eight (18.1%) housewives, eighteen (4.2%) pensioners, twenty-two (5.1%) unemployed people and seventy-four (17.2%) students among the four hundred and thirty respondents.

Two (2.8%) of the seventy-two government servants utilized the mental health service. Three (2.5%) of the one hundred of twenty-two private sector workers utilized the mental health service. Nine (12.2%) of seventy-four students utilized the mental health service.

There was a significant difference between the various occupational groups in relation to mental health service utilization \((\text{chi-square}=15.564, \ p=0.016)\) (Table 5-28).

**Type of Physical Illness**

There was no significant difference between the different types of physical illness in relation to mental health service utilization \((\text{chi-square}=7.209, \ p=0.066)\) (Table 5-28).

**Disability**

There was no significant difference between the level of disability and the utilization of mental health services \((\text{chi-square}=1.826, \ p=0.609)\) (Table 5-28).
Need for counselling

There were two hundred and thirty-five (98.3%) of two hundred of thirty-nine respondents who perceived no need for counselling and were not utilizing the mental health service. There were also one hundred and sixty respondents (94.1%) who had perceived an unmet need and were not utilizing mental health services or had not been referred to services available. Only five (23.8%) of sixteen respondents with met need had used the mental health service available in the past one year.

There was apparently a higher number of respondents with perceived met need who utilized the mental health services available, compared to less than five percent of respondents with unmet need that had been referred to or used the mental health services. This difference appeared to be statistically significant (chi-square 23.823, p value=0.000) (Table 5-28).

Interpretation of factors influencing mental health service utilization (objective 6 and hypothesis 6)

Hypothesis six postulated that the following factors were associated with lower access to psychiatric treatment and care. The factors were male gender, poverty, chronic physical illness, severe disability, unemployment and indigenous ethnic groups. Six null hypotheses were analysed using chi-square analysis.

The first null hypothesis, that there is no significant difference between gender in relation to access to psychiatric treatment and care, was accepted (chi-square of 1.527. p value of 0.217). Although more male respondents appeared to utilize mental health services, both genders had low access to psychiatric treatment and care.

The second null hypothesis, that there is no significant difference between age groups in relation to access to psychiatric treatment and care, was accepted (chi-square of 1.079, p value of 0.299). There was no significant difference between the younger or older age groups in having access to psychiatric treatment and care.
The third null hypothesis, that there is no significant difference between ethnic groups in relation to access to psychiatric treatment and care, was accepted (chi-square of 3.284, p value of 0.511). Muslim indigenous respondents were reported to be using the mental health services more. The ethnic groups that used the least mental health services were the Malay and other minorities. However, there was no significant difference between the ethnic groups in having access to psychiatric treatment and care.

The fourth null hypothesis, that there is no significant difference between the different location of the clinics was accepted (chi-square of 3.563, p value of 0.060). Although there was higher percentage of respondents from urban clinic who used mental health services, but it was not significantly difference.

The null hypothesis that there is no significant difference between income groups in relation to mental health service utilization, was accepted (chi-square of 2.447, p value of 0.118). Although respondents below the poverty level appeared to utilize more mental health services, both the poor and rich respondents had lower mental health services utilization.

The null hypothesis, that there is no significant difference between occupational groups in relation to mental health service utilization, was rejected (chi-square of 15.564, p value of 0.016). The students (n=9, 12.2%) group used significantly more mental health services. Only two (9.1%) unemployed respondents were reported to use the mental health services available.

There was a higher number of respondents with perceived met need who utilized the mental health services available, compared to less than five percent of respondents with unmet need that had been referred or used the mental health services. There was a statistically significant difference between the perceived need of counselling in relation to utilization of mental health services. The null hypothesis was rejected.
The null hypothesis, that there is no significant difference between types of physical illnesses in relation to mental health service utilization, was accepted (chi-square of 7.209, p value of 0.066). Respondents with single chronic physical illnesses (n=10, 4.6%) appeared to use the mental health services more than the others. None of the respondents with multiple chronic physical illnesses were reported to use the mental health services. However, these findings were not statistically significant.

The null hypothesis, that there is no significant difference between the level of disability and mental health service utilization, was accepted (chi-square of 1.826, p value of 0.609). Respondents with slight disability appeared to have used the mental health service more. However, this finding was not statistically significant.

Finally, the null hypothesis, that there is no significant difference between the need for counselling and mental health service utilization, was rejected (chi-square of 23.823, p value of 0.000). Respondents with slight disability appeared to have used the mental health service more. Ninety-four percent of respondents with perceived unmet need in counselling were not using the mental health services and 23.8% respondents with perceived met need in counselling used mental health services in the last one year.

**In conclusion, only perceived need for counselling found to have statistically significant association with mental health service utilization.**
Reasons for Refusing Professional Help

Table 5-29 Showing reasons for refusing help among respondent with PHQ positive

<table>
<thead>
<tr>
<th>Reasons</th>
<th>No of respondent</th>
<th>% from the total PHQ positive N=224</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not applicable, I have not needed any of this kind of help (non-preference)</td>
<td>93</td>
<td>41.5</td>
</tr>
<tr>
<td>I preferred to manage myself (self-reliance)</td>
<td>139</td>
<td>62.1</td>
</tr>
<tr>
<td>I didn’t think anything would help (pessimism)</td>
<td>18</td>
<td>8.0</td>
</tr>
<tr>
<td>I didn’t know where to get help (ignorance)</td>
<td>88</td>
<td>39.3</td>
</tr>
<tr>
<td>I was afraid to ask for help or what others would think of me if I did (stigma)</td>
<td>78</td>
<td>34.8</td>
</tr>
<tr>
<td>I couldn’t afford the money (finance)</td>
<td>65</td>
<td>29.0</td>
</tr>
<tr>
<td>I asked but didn’t get help (non-response)</td>
<td>19</td>
<td>8.5</td>
</tr>
</tbody>
</table>

Reasons for refusing professional help, among the respondents with common mental disorder (PHQ positive), was elicited by using the General Practice User Perceived Need Inventory (GUPI). Ninety-three (41.5%) of two hundred and twenty-four who refused help said they felt it was not applicable for them. One hundred and thirty-nine (62.1%) respondents refused help because they thought they could manage the problem. Eighteen (8.0%) respondents felt that nothing could be done to help them (Table 5-29).

Eighty-eight (39.3%) respondents did not know where to get professional help. Seventy-eight (34.8%) refused professional help because they were afraid to ask, and they feared what others would think of them. Sixty-five (29.0%) respondents felt they could not afford the treatment. Nineteen (8.5%) respondents did ask for help but did not get the help that they needed. The number one barrier to accessing professional help in this study was the determination of self-reliance, followed by non-preference, ignorance, stigma and financial barriers (Table 5-29).
CHAPTER 6. DISCUSSION

SECTION 6.1. GENERAL

This thesis is a cross-sectional study looking at various factors and reasons behind prevailing common mental disorders at the government health clinics in the densely populated district of Kota Kinabalu, the capital of Sabah. The study covers possible factors that may contribute to the common mental disorders, helps to understand the effects of disability and assesses the mental health services and needs.

The patients’ profile of this study is consistent with the profile in most of government health clinics in Malaysia which are attended by younger age group, females, 18-45 years and lower income group. This reflect that the popularity of the easily accessed and the highly subsidized government health clinics in the urban area of Malaysia [127]

The respondents of this study included clinic attendees who had a chronic single physical illness (50.7%), or an acute physical illness (35.6%). Thirty-nine respondents (9.0%) had chronic multiple physical illnesses, and 4.7% attended the clinic for medical check-up & procedure. The prevalence of common mental disorders in this study was 52.1%. Thirty percent of respondents had a single psychiatric diagnosis. Twenty-two percent of respondents had multiple psychiatric diagnoses or co-morbid common mental disorders. The common mental disorders with the highest prevalence were those categorized as other depressive disorders (16.5%). Other diagnoses that had high prevalence included respondents with panic syndrome (10.7%), alcohol abuse (9.8%), somatoform disorder (9.1%), anxiety disorder (7.0%) and major depressive disorder (2.8%). There were respondents who reported history of exposure to physical or sexual abuse (9.1%) and sleep problems (19.6%).

Common mental disorders (PHQ positive) were significantly associated with young age, female gender, income less than RM1000, unemployment, student, respondents with secondary/tertiary education and those with recent stressors. However, using binary logistic regression analysis only five predictive factors were reported. These were young age (18-29 years of age), female gender, higher education, income less than RM1000 and a history of being physically or sexually victimized.
Two hundred and nineteen (97.8%) out of two hundred and twenty-four participants with a common mental disorder had some form of disability. One hundred and sixty-three (72.8%) were slightly disabled, thirty-seven participants (16.5%) were moderately disabled and nineteen (8.5%) were severely disabled. There was a significant and consistent positive association between moderate disability and co-morbid common mental disorder in nearly all items of disability. The severely disabled group was shown to have a positive association with co-morbidity in two of five items of disability. These were private leisure activities and family relationships. Respondents with secondary and diploma/tertiary education also were shown to be significantly more disabled than respondents with a lower educational level.

In this study, the treatment gap was reported as 91.5%. Significant numbers of respondents sought treatment other than mental health services, for example, the traditional healer ‘bobohizan’. Respondents with co-morbidity or multiple common mental disorders tended to have perceived unmet needs in almost all aspects of psychiatric treatment and care. Conversely, respondents with a single common mental disorder perceived no need for psychiatric treatment and care. As the disability of respondents increased the self-perceived need among respondents also increased in percentage.

Although there was a higher percentage of perceived no need in the various types of psychiatric treatment and care, there were respondents with probable common mental disorders who reported perceived unmet need in areas of counselling (42.0%), information about problems and getting help (36.6%), help to improve ability and skills (35.7%) and help in practical issues (42.4%).

It was difficult to derive conclusive factors that influence mental health service utilization in this study because of the small number of respondents that utilized the mental health services available. Only nineteen (4.4%) out of four hundred and thirty respondents reported using the mental health services. The most common reason given for the lack of need for mental health service or treatment was “I preferred to manage the problem myself” (62.1%).
SECTION 6.2. PREVALENCE OF COMMON MENTAL DISORDER

Comparison of Results to Other Studies Conducted in Primary Care

Several other studies have used the PHQ to measure the prevalence of common mental disorders in primary care. Our study reported a prevalence rate of common mental disorder that is twice as high as the prevalence rate reported in the study done in West Malaysia. Ruzanna et al, in their study of patients with common mental disorders in an urban primary care setting of Kuala Lumpur, reported that respondents aged between 18-29 years are more likely to have a common mental disorder [2]. Ruzanna et al [2] reported prevalence of 24.7% and Varma et al [3] reported a prevalence of 26.7%.

These studies looked at different types of populations. While the first one studied an urban population, the later looked at a more homogenous Malay, predominantly rural population. Both studies were conducted in university run health clinics, which may have had a different population background. University run health clinics tend to attract more middle income and upper middle-income population. This contrasts with this study, where the majority of the respondents earn below RM1000. Therefore, the social issues and stressors faced by this group may be much more challenging because they are from a lower socioeconomic class living in urban and semi-urban city.

A cross-sectional study [2] of two hundred and sixty seven respondents carried out in a semi-urban primary healthcare centre located south of Kuala Lumpur by the Universiti Kebangsaan Malaysia. The proportion of respondents who had at least one Patient Health Questionnaire (PHQ) positive diagnosis was 24.7% and some respondents had more than one diagnosis. Diagnoses included depressive illness (n = 38, 14.4%), somatoform disorder (n = 32, 12.2%), panic and anxiety disorders (n = 17, 6.5%), binge eating disorder (n = 9, 3.4%) and alcohol abuse (n = 6, 2.3%). Younger age (18 to 29 years) and having a history of stressors in the previous four weeks were found to be significantly associated (p = 0.036 and p = 0.044 respectively) with PHQ positive scores.
Both our study and the UKM study reported on the high prevalence of depressive illness. However, this study highlighted that much of depressive illnesses elicited were not the classic major depressive disorder. The majority did not fulfil the minimum criteria for PHQ major depressive disorder. It is interesting that UKM reported a higher prevalence of somatoform disorder than the more rural state of Sabah. This is contrary to the report in the past that associated rural people and Asian ethnicities with higher somatization symptoms that manifested as their common mental health problems especially in the older group [128]. The lower reporting of somatization could be due to many younger respondents that were represented in this study.

Varma et al reported the incidence of depression at 13.2%, hypochondriacal symptoms at 8.2% and anxiety at 6.1% [3]. The high hypochondriacal symptoms noted in Varma’s study could be due to the strongly held belief of superstitious explanations for psychological experiences at that particular time among the largely rural Malay communities in Kelantan. This may not apply to this setting, because has been shown that this population tend to be more open to environmental and stress factors in explaining their mental health problems. Although this study had a higher prevalence rate for common mental disorders, it had some similar findings as in the other two studies: higher prevalence rate among those at the young and age of 18-29 years old, and the occurrence of multiple diagnoses or comorbidity of common mental disorders and high somatization/somatoform disorder rate. However, it must be pointed out that the prevalence of comorbidity or multiple common mental disorders as high as 22% in a primary care setting in Malaysia, is a new finding.
One explanation for this is the high reports of complaints that are reported as somatoform and other depressive disorders. This is consistent with observations made in a primary care population. Haftgoli reported that somatic complaints are common among patients with common mental disorders in the primary care setting and are associated with psychosocial stressors [129]. Some of the complaints are culturally specific. In a factor-analytical study [130] of depression across two cultures, African and European, certain cultural similarities and important differences were found in presentation of depression. Depression in African cultures presented principally as low mood and somatic complaints. Whereby, European patients tended to report psychological complaints like guilt, suicidal ideas or anxiety. Both groups lost interest in work and the environment. Guilt and suicidal ideas and acts are uncommon in African respondents. These differences in presentation are apparently culturally determined.

In an Indian cross-sectional survey Patel; et al [131] examined somatic and psychological models of common mental disorder in attendees at two primary care clinics. Although the majority of patients had somatic complaints (97%), 51% of subjects with a clearly defined common mental disorder had psychological complaints. Patients with psychological attributions were more likely to be women and to have a longer duration of illness. They were more likely to be recognized by the primary health care physician.

In this study, female respondents tended to have more psychological complaints and were diagnosed to have either depressive disorder or anxiety disorder. They also tended to have multiple common mental disorders. On the other hand, the male respondents had more comorbidity with alcohol and tended to report a history of being physically abused in the past year.

SECTION 6.3. SOCIAL DETERMINANTS OF COMMON MENTAL DISORDER

This study reported on several social determinant factors of common mental disorders in the primary care populations. Young age, female gender, income less than RM1000, unemployment, student status, respondents with secondary/tertiary education and recent stressors were significantly associated with common mental disorders (PHQ positive).
Social factors influence the prevalence of depression and common mental disorders. Evidence for the association between socioeconomic status and the prevalence of neurotic disorders is varied and inconsistent. It differs from country, region and between developing and developed countries[132].

In this study, it was reported that the age group between 18-29 years old are more prone to have common mental disorders. Respondents of the age group 18-29 were three times greater odds to have a common mental disorder compared to the elderly group of 60-65 years old. This could be because the majority of respondents were represented by this young active age. However, the range of age in this population follows a normal distribution from 18-65 years old.

This finding is quite consistent with that of the Malaysia Third National Health Morbidity Survey, 2006[9]. That survey reported the overall prevalence for children and adolescents at 20.3%, with a higher prevalence noted among those in the group 16-19 years old. Subsequently, in the year 2011, the worrying trend of high prevalence of mental disorders was again reported by the Institute of Public Health Malaysia with prevalence at 22.2%[10] It is quite clear that children and adolescents are consistently becoming a vulnerable age group for common mental disorders in Malaysia. This study showed that the same consistent findings can be elicited in a specialized population such as the primary care setting.

Similar findings were also reported by The Australian mental health survey. Younger and middle aged persons were more likely to have anxiety disorders[133]. It was also found that prevalence of depressive disorders was lower among the elderly [133]. The USA National Comorbidity Survey [134] reported that nearly half of the population aged 18 years and older will experience either a psychiatric or substance use disorder in their lifetime and that half of all lifetime cases start by the age of 14 years and three-quarters by age 24. It appears that the adolescent and young adult period is an important vulnerable time for the development of common mental disorders. These young people were also significantly less likely to receive mental health services than adults in older age groups [134].
Mental disorders account for a large proportion of the disease burden in young people in all societies. Most mental disorders begin during youth (12-24 years of age), although they are often first detected later in life [135]. The WHO World Mental Health surveys [136] reported that age-of-onset is much earlier for anxiety disorders (25-53 year old), mood disorders (25-45 year old), and substance disorders (18-29 year old). Roughly half of all lifetime mental disorders are reported in most studies as starting by the mid-teens and three quarters by the mid-20s.

The prevalence of mental health problems among children and adolescents in Malaysia showed an increasing trend from 13.0% in 1996 to 19.4% in 2006 and 20.0% in 2011 [137]. Male children and adolescents and those who were in less affluent families were significantly associated with mental health problems. The findings indicate that children from socially and economically disadvantaged groups are most vulnerable to mental health problems [137].

The high prevalence of depression among school-going students was also supported by a cross sectional, descriptive study of 2048 students in secondary school from urban and rural areas in the state of Selangor, in a study by Adlina et al [138]. They reported the depression rate among students in the urbanized state of Selangor was 10.3%. They also reported 4.1% of the secondary school students took alcohol. Female students were more depressed than males. Students whose parents had no formal education or had only primary education were also more depressed than students whose parents had secondary, college or university education. Suicidal tendencies were also more likely among the depressed students.

Stress and depression are also reported to be rising in a trend not only among those in secondary school education but also among university students. Sherina [139] reported as high as 42% of undergraduate medical students in one local university had psychological stress at any one time. She also noted a significant association between stress and depressive illness in her study. The changes in the learning experience, student debts, greater material expectations and academic demand are said to play a role in the stress faced by students studying in the university.
Maniam et al reported that the indigenous peoples of the East Malaysian states of Sabah and Sarawak had the highest suicidal ideation second rate only to the Indians [140]. In this study, suicidal ideation was reported especially among twenty-eight (6.5%) respondents the majority of whom are in the younger age group. Three of them had more severe and frequent suicidal thoughts. In their study, Maniam et al [140] also commented that the presence of depressive illness and alcohol abuse and dependence increased the risk of suicidal ideation and suicidal plans.

Gender factors have been shown to play a role in the risk of having common mental disorders in many parts of the world. Whether it is a biological phenomenon or social status that put the women more at risk is still not known [85]. In our study, we have also found a significant difference among gender that is associated with common mental disorders that put the female gender more at risk. The female respondents (62.8%) appeared to be associated with PHQ positive results. There was a significant difference between the genders in relation to single and multiple diagnoses based on the PHQ, with female gender having a higher percentage than the counterpart. The multivariate analysis also reported female gender as having an odds ratio of three greater to have a common mental disorder or to show a PHQ positive result. In all countries of the world, women experience higher levels of psychiatric morbidity than men, but the gap appears greatest in poorer countries [141].

In the Australian Mental Health survey it was reported women are more likely to have anxiety or affective disorder [133]. In general women are more at risk of having common mental disorders [75, 142]. Gender disadvantage and exposure to intimate-partner violence are the probable mechanisms for higher common mental disorders among women [75].

In a community study involving 487 women in West Malaysia [143], it was reported that the prevalence of current depressive symptoms was 34.5%, while the prevalence of lifetime major depressive symptoms was 27.5%. A significantly higher rate of current depressive symptoms was observed in urban women compared to rural women. Among the factors associated with current depressive symptoms, the single most important was lifetime major depressive symptoms, followed by current life stressors, and family history of mental health problems.
Women also faced depression during the child-bearing age. In Malaysia, postnatal depression (PND) among Malaysian women was reported as being between 25-35% [144]. Therefore, nurses and midwives running the antenatal and postnatal clinic at the government health clinics would be the best front-line option to screen depression among mothers and women in general. However, it was reported that 50% of midwives and nurses confused postnatal depression as natural adjustment problems after giving birth [144]

In a longitudinal study looking at determinants of common mental disorders in India, Patel et al [142] reported the following factors were independently associated with the risk for common mental disorder: poverty (low income and having difficulty making ends meet); being married as compared with being single; use of tobacco; experiencing abnormal vaginal discharge; reporting a chronic physical illness; and having higher psychological symptom scores at baseline.

Women with depression in low income countries[145] tend to express their problems primarily through somatic complaints, typically a variety of body aches, autonomic symptoms, gynaecological symptoms and sleep problems. There was frequent mention of overall "weakness" and tiredness. Economic difficulties and difficulties with interpersonal relationships (particularly related to marital relationships) were the most common causal models.

In our study, it was reported that 11.6% of respondents had “difficulties with husband/wife/partner/lover or boyfriend/girlfriend” four weeks prior to the interview. “Difficulties with husband/wife/partner/lover or boyfriend/girlfriend” appeared to have a significant association with having a common mental disorder.

It is interesting to note that this study has elicited a different finding with regards to educational factor. The odds of having a common mental disorder increased as the level of education of the respondents increased. Patients with secondary level of education have three greater odds to have common mental disorder compared to patients without formal education (baseline reference). Patients with tertiary or diploma level of education have an even higher odds ratio. They are five times greater odds to have a common mental disorder compared to patients without formal education. The overall p value for level of education as a predictive factor for common mental disorder is 0.013, which is statistically significant.
However, a reverse finding is elicited in income level as a factor predicting common mental disorder. The odds of having a common mental disorder decreased as the income increased more than RM1,000. As the income reduced, the odds of having a PHQ positive result or common mental disorder increased.

The group with income of RM301-RM600 was three times greater odds to have a common mental disorder compared to respondents earning more than RM2000.

It is worth noting that these findings defer to the more conventional findings as reported in the National Mental Health Morbidity Survey (NHMS III) 2006, that elicited higher prevalence among the people with no education and the lowest income group. The NHMS III findings were still consistent with the findings of NHMS II, 1996. It is easy to dismiss and explain the findings by probable selection bias. However, this contradiction in both education and income could be seen as a mismatch between educational level and income as social capital.

Another interesting explanation is from a study in Chile that examined which indicators of socioeconomic status are associated with an increased prevalence of common mental disorders. Araya et al [146] after meticulously explaining and adjusting for confounding variables, concluded that a strong, inverse, and independent association existed between education and common mental disorders. However, income was not associated with the prevalence of common mental disorders after adjusting for other socioeconomic variables. Similar results have been found in other Latin American studies. Araya et al emphasized in their study that reported income but not education is associated with common mental disorders [146]. This could also be true in our study that income is more relevant in predicting common mental disorders than education.

In this largely young population, education is seen as a social capital investment to improve overall income. This allows young people to survive physically and mentally, facing the rapid changes of modernity and fast urbanization that surround them. However, a better educational level does not necessarily translate to better income. Disappointment and frustration can lead to new found stressors in facing daily life in a modern city like Kota Kinabalu. Therefore, it is more likely these young people develop common mental disorders.
It has been reported that people with depression or common mental disorders tend to socially withdraw. At the same time individuals with a lack of social participation may be predisposed to develop a common mental disorder. Hence, it is only natural that people with common mental disorders have lower social capital [147]

In a society that is rapidly changing and trying to embrace the new modern world, Kota Kinabalu is a unique place of meeting of the old and the new worlds. The rural and urban co-existing side by side. The traditional family and traditional values are threatened by the demands of progress and performance. Extended families are replaced by smaller family sizes. Young people in the city can be easily isolated without social support and social capital to face the day to day challenges of life.

High levels of social capital may be beneficial to community members, in contrast to the minorities [148]. Generally, homogenous societies that often with high social capital are sometimes characterised by an intolerance of ‘deviant’ behaviour, lack of autonomy and an unwritten demand for obedience to norms. Minorities, whether defined by ethnicity, religious beliefs, sexuality or (mental) ill health, may experience marginalisation in this society[148]. This may be true in many parts of Kota Kinabalu, especially the rural or village areas which are still dominated by homogenous ethnic or religious groups, following a strict adherence to values and demanding conformity to the norms.

Hashim et al [149] showed similar findings in regard to educational factors as found in this study. He reported that having secondary education was significantly associated with depression in his cross-sectional study of patients with type 2 diabetes mellitus who attended the hospital-based primary care clinics at the University of Malaya Medical Centre, Kuala Lumpur. He proposed that as the number of years of formal education increased, the corresponding odds of having an affective disorder also increased at the rate of 16% per year of education.
Fifty-seven percent of respondents in this study had “financial problems or worries” four weeks prior to the interview. “Financial problems or worries” appeared to be association with a PHQ positive result or having a common mental disorder, with 53.0% of respondents with financial worries diagnosed with common mental disorder. Forty-five percent of respondents reported “stress at work or outside of the home or at school” four weeks prior to the interview. “Stress at work or outside of the home or at school” appeared to have an association with a PHQ positive result or with having a common mental disorder, with 58% respondents having some form of common mental disorder. Therefore, financial problems and stress at work and at school are a significant stressor among young people who attended the government health clinics.

Ruzanna et al[2], also reported that patients with history of recent stressors has association with common mental disorder. Another study from Pakistan also had showed association with life difficulties or social stress and common mental disorders [150]. Work and family are the two areas from which most adults derive satisfaction in life. Consequently, they are the most common sources of stressful experiences. Job restructuring, greater part-time, contract work, and greater workload demands create an insecure environment in the workplace. Therefore, there is a common community perception that work is increasingly the source of much of our distress. Stress at work, at school or outside the home was reported to be associated with common mental disorders in this population. Furthermore, the more recent the life event, the more difficult it is to be able to cope with the stress [151].

Respondents of this study also reported stress about personal well-being and image to be a significant recent stressor. Three hundred and twenty-five (75.6%) respondents confessed to having “worries about health” four weeks prior to the interview. “Worries about health” appeared to have an association with common mental disorders, with 55.4% respondents diagnosed as having common mental disorders. One hundred and eighty-six (43.3%) respondents had “worries about weight or looks” four weeks prior to the interview. “Worries about weight or looks” was also significantly associated with common mental disorders. Sixty-six percent of respondents who worried about their weight or looks had some form of common mental disorder.
Family and lack intimate relationships were also important recent stressors in this study. Fifty (11.6%) respondents had “difficulties with husband/wife/partner/lover or boyfriend/girlfriend” four weeks prior to the interview. “Difficulties with husband/wife/partner/lover or boyfriend/girlfriend” appeared to have an association with a PHQ positive result, with thirty-three (66.0%) of the respondents complaining about it having a diagnosable common mental disorder. Twenty-seven (6.3%) respondents had “little or no sexual desire or pleasure during sex” four weeks prior to the interview. “Little or no sexual desire or pleasure during sex” appeared to have an association with a PHQ positive result, with nineteen (70.4%) respondents having a PHQ positive diagnosed common mental disorder.

Our study also reported that poverty, alcohol abuse and violence exposure were some of the relevant factors for common mental disorders among majority indigenous groups. In this study, more than 50% of the populations are made up of smaller groups of indigenous ethnicities. There are at least thirty-two indigenous groups in Kota Kinabalu. For the purpose of analysis in this study, the indigenous groups were classified into two main groups: the Muslim indigenous and the Christian indigenous.

The Christian indigenous may well satisfy the definition of an indigenous group as defined by the International Labour Organization [152]:

“those tribal people whose social, cultural, economic conditions distinguish them from other sections of the national community and whose status is regulated wholly or partially by their own customs or traditions or by special laws or regulations”.

These indigenous groups are given a special native certificate and their lands and culture are protected by the native law with a special native court.

For the majority of Muslim Indigenous groups, their status as indigenous is defined as:

“people in independent countries who are regarded as indigenous on account of their descent from populations which inhabited the country, or a geographical region to which the country belongs, at the time of conquest or colonization or the establishment of present state boundaries and who, irrespective of their legal status, retain some or all of their own social, economic, cultural and political institutions”.

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Substance abused, alcohol abused, depression and suicide are common among indigenous groups all over the world [152]. These are partly due to the social stressors which they are exposed to, poverty, discrimination, marginalization, lack of education, violence, loss of lands and threats to their identity and culture.

This study reported forty-two (9.8%) respondents diagnosed with alcohol abuse using the PHQ. Thirty were male and twelve were female respondents. Eleven of the male respondents were diagnosed to have co-morbid alcohol abuse and depression and four female respondents had co-morbid alcohol abuse and depression.

Reflecting intrusively into the respondents’ psychological stressors: seventy-four (17.2%) out of four hundred and thirty respondents had experienced “nightmare or rumination” four weeks prior to the interview. “Nightmare or rumination” appeared to have a statistically significant association with diagnosable PHQ common mental disorder, with sixty-two respondents having common mental disorders. Eighty-eight (20.5%) of respondents had “thought of something bad that happened” four weeks prior to the interview. “Thought of something bad that happened” appeared to have an association with a PHQ positive result that is significant, with sixty-five respondents diagnosed to have some form of common mental disorder.

Univariate analysis showed that history of being physically or sexually victimized in the past year among respondents was significantly associated with having a common mental disorder (chi-square of 35.334, p value of 0.000). Further analysis, using binary logistic regression showed that history of being physically or sexually victimized in the past year was highly predictive of common mental disorder. Respondents with history of being physically or sexually victimized in the past year were forty-nine times greater odds to have a common mental disorder (p value of 0.000).

However, this high predictive value should be taken with caution because of the very wide 95% confidence interval. This may be due to the relatively small number of respondents being selected.
Gender based violence, especially among women has been well documented in Sabah. An anthropological study among rural indigenous people, reported more than 30 per cent of households in the village studied, had a history of spousal abuse during their lifetimes [42]. A population-based study done at the northern part of Sabah showed that alcohol was causing some harm in the communities. It was reported that families with male respondents who abused alcohol tended to report as seventeen times more likely to have a female member of the household with symptoms of a mental disorder on the PHQ [46].

This indigenous issue is also reported among the indigenous Australians [153] who have reported higher rates of serious mental disorders and of mental health problems associated with social disadvantage. This disadvantage is greater for Indigenous Australians living outside metropolitan centres. The psychological and behavioural problems that emerge as a result are compounded by inadequate mental health services. The World Health Organization considers gender violence a cause of anxiety, depression and suicidal thoughts among women. A Brazil population-based household survey [154] was conducted on violence committed against women by their intimate partners, found that most women were exposed to psychological violence (18.8%) or accompanied by physical violence (16.0%). The prevalence of mental disorders was significantly higher (49.0%) among women who reported any type of violence.

Violence is also associated with alcohol abuse and chronic medical diseases. Two qualitative [155] research studies in Zambia elicited common problems faced by women: domestic violence, depression syndrome, alcohol abuse and behaviour problems.

This study also reported the occurrence of common mental disorders among male respondents who were exposed to physical abuse in the past year. That physical abuse is not only confined to the female gender but also the vulnerable young male respondents. In an investigation into high rates of suicide among young Aborigines, Hunter found that heavy alcohol drinking helps create a chaotic and violent environment which is too unbearable for the adolescents that may push them to suicide [152]. In this study 28 (6.5%) respondents had reported having suicidal thoughts in the past month, with 3 respondents complaining of more frequent suicidal thoughts.
Besides focusing on the indigenous, this study attempted to report on the migrants that visited the government clinics. This is quite relevant because the number of foreigners in Malaysia is increasing. From 1.4 million in 2000 to 2.3 million in 2010; the latter comprised 8.2% of the 28.6 million population in Malaysia [156]. However, this number is probably an underestimation because of undocumented foreigners especially in Sabah context [16].

In this study, thirty-five (8.1%) were foreigners or immigrants. Forty-nine percent of the immigrants had diagnosable common mental disorders. This was a relatively small number, probably because they refused to be selected by not responding to their number being called. The other explanation could be that many of them sought treatment at the private clinics. The past 10 years also saw increasing numbers of immigrants seeking primary care services at the private clinics rather than the government clinics. This is partly due to the gradual increment in the medical consultation fees and limited supply of medication in each consultation for immigrants [157]. Our study did not report a significant difference between Malaysians and immigrants in relation to having common mental disorders because of the smaller number of migrant respondents. However, that does not exclude the fact that the immigrants do face common mental health problems or disorders. Reporting and detecting common mental disorders or any mental health problems is even more complex among foreigners or immigrants. As shown by the 2012 National Medical Care Survey (NMCS), a cross sectional survey of 10,830 foreigners attending both private and government health clinics, there was no occurrence of any common mental disorders or mental health complaints reported among the immigrants [157].
On the contrary, a cross-sectional, descriptive study [158] of 281 patients in a semi-urban primary care centre reported significantly higher prevalence of psychological morbidity among women (61.8%). A review [159] of international research literatures on the relationship of urbanization, mental health, and social deviance, indicates; that rural and urban environments can have unique characteristics. Research is needed to identify critical etiological factors and their relationship to subpopulation characteristics. One urban and two suburban government clinics were involved in our study. There were two hundred and fifty respondents selected from the urban clinic. One hundred and eighty respondents were selected from the two suburban clinics. There was no difference in terms of sociodemographic factors in relation to common mental disorders between the urban government health clinic and the suburban or more rural clinics in this study.

A cross-sectional study [160] of patients from a rural primary care practice in a developed country reported the prevalence of all psychiatric disorders at 26.5%; 10.0% were specific depressive disorders, and 5.3% were disorders without depression, usually anxiety related. Another 11.2% of patients were thought to have a disorder with significant depressive symptomatology that could not be classified into a specific depressive disorder category.

A study [161] using data from the WHO Collaborative Project on Psychological Problems in General Health Care (15 centres in 14 countries around the world), reported that primary care attendees from less developed centres described more somatic symptoms and showed greater gender differences than individuals from more developed centres.
SECTION 6.4. TREATMENT GAP, LACK OF NEED AND UNDERUTILIZATION OF MENTAL HEALTH SERVICE

The three government health clinics selected for this study are very busy and important clinics that act as gatekeepers to the health system in Kota Kinabalu. As gatekeepers, they also act to triage and refer to the more specialized mental health services available either at the clinic itself or at other facilities around Kota Kinabalu. Two hundred of two hundred and twenty-four (91.5%) respondents with common mental disorders had not received any mental health treatment or professional help. Therefore, the treatment gap was 91.5%. This is higher than the postulated rate. The treatment gap was even higher than what was reported in India [162] and few of the African countries [62, 163] who may had worse socioeconomic challenges. Alternative and complementary medicine in the form of ‘Bobohizan’ (local shaman) and ‘Bomoh’ were reported as the most sought-after help by the respondents.

However, the treatment gap for people with mental disorders exceeds 50% in all countries of the world, approaching astonishingly high rates of 90% in the least resourced countries [164]. Therefore, the result of a more than 90% treatment gap in this study is not isolated or inconsistent with some of the findings elsewhere.

It is estimated approximately 20% of primary care patients have had at least one diagnosable mental disorder in the past year [165], and 10–25% have a current anxiety or depressive disorder. Perhaps more importantly, emotionally distressed patients are several times more likely to see a medical provider than a mental health specialist. This is the worldwide acceptable notion of mental health in primary care.

Even in the developed countries, recognition and management of common mental disorders has been a major health research issue. Studies have shown that common mental disorders were underreported by the family physician in charged at the primary care level, even when the patient complains of distress. The ability of doctors in primary care to detect mental health problems is critical in order to start addressing the huge treatment gap. In a study of the ability of primary care physicians in detecting mental health problems in a developed country it was reported that physicians detected 38.8% of psychological problems [166].
Karen et al [167] reported on the Canadian Community Health Survey 2002 that there is a strong association between comorbid mental disorders and unmet need for care, including a large proportion of respondents who stated they preferred to self-manage their symptoms. This observation is similar to the finding of this study.

In this setting each government clinic only has one family physician at any time who attended to thousands of patients every week. The junior medical officers who had to see 30-40 patients in one morning or afternoon had to assume the task of screening for common mental disorders. With the unusually heavy workload, it is a very difficult task. The psychiatrists station at the nearby mental hospital also need to actively collaborate and coordinate the mental health service in the primary care. As clearly highlighted by Patel [168], the great shortage, and inequitable distribution of psychiatrists in low and middle-income countries is one of the key reasons for the large treatment gap for people with mental disorders. Psychiatrists need to play a new role in public mental health leadership. Psychiatrists new roles should include designing and managing such programmes run by non-specialist health workers, building clinical capacity, supervision, quality assurance, providing referral pathways and research [168].

In a local study [45] to understand the local worldview of depressive symptoms, it was reported that the most common label for the depression vignette given out to respondents was “stress”. This highlighted common difficulties to distinguish between stress and depression among the local people.

A closer observation of treatment gap in the neighbouring country Singapore has also come to the same conclusion. In the Singapore national study [169] of 6616 persons aged 18 years, treatment gap varied considerably between disorders; which alcohol abuse had the largest treatment gap (96.2%), followed by obsessive compulsive disorder (89.8%) and alcohol dependence (88.3%). The disorder for which people were most likely to seek help was major depressive disorder. Women with dysthymia were more likely than men to seek help.

In a review [90] of research being done on the use of mental health services for anxiety, mood, and substance disorders in 17 countries, it was found that many people who need services are not receiving them. The problem also exists in both developing nations and wealthy countries.
The Australian National Survey of Mental Health and Wellbeing, conducted in 1997 [93] with a sample of 10641 Australians, reported a substantial majority of people who are significantly disabled by mental health problems are among those who see themselves as having perceived need. Perceived need is increased in females, in people in the middle years of adulthood, and in those who have affective disorders or co-morbidity. There is less perceived need for social interventions and possibly more for counselling in females. Disability is confirmed as having a strong positive association with perceived need.

Rates of consultation, specialist consultation and perceived need for care were low for anxiety disorders in the Australian survey [170]. Disability, neuroticism and presence of mental disorders were stronger determinants of consultation and perceived need than sociodemographic. Panic disorder was the only anxiety disorder associated with consultation, specialist consultation and effective treatment. Consultation with a mental health specialist as opposed to another health professional was associated with effective treatment for anxiety. The most common reason for not consulting was "I preferred to manage the problem myself". Although the more severely symptomatic and comorbid individuals seek treatment for anxiety, a significant number of disabled individuals do not consult. While treatment coverage for panic disorder was better than for the other anxiety disorders, coverage could be improved across all the anxiety disorders. Given the relationship between specialist consultation and effective treatment, it is important that general practitioners are able to treat persons with mild to moderate anxiety competently and refer more disabled individuals to mental health specialists.

This study is the first in Sabah, to report on the perceived need as viewed by the people visiting general health clinics for their physical health who were screened and found to have co-morbid common mental disorders. The majority of them were undetected and untreated. It is interesting to witness the high percentage of people apparently aware that they need professional help that is not readily available to them (39%). At the same time, there is a high percentage of people who are ignorant about common mental disorders and psychological problems and prefer to manage on their own (62%) or do not see the need for any form of intervention (42%). Primary care physician should be aware of stigma among patients with depression or common mental disorders in the primary care that may become obstacle in seeking professional help and treatment especially among the indigenous or the minorities.
Sareen [171] reported about the attitude factors that influence mental health service utilization. He reported similar patterns across three countries, United States, Canada and the Netherlands. He stated that attitudinal barriers, thoughts that the problem would get better, were more prevalent than structural barriers, example inability to get appointment, while Vega [172] et al reported a high perceived stigma among 200 low income group minorities who attended primary care clinics. This stigma prevented the patients from disclosing their problems.

Shoesmith and Pang [45] reported that local Sabahans viewed depression or any common mental disorder as a situational or environmentally influenced. This is a much better worldview compare to West Malaysian who still beliefs in supernatural[30]. However these supernatural explanation of mental disorder is becoming less popular in a study in West Malaysia, Swami [36] reported that urban Malays were more likely to correctly label depression in vignettes than rural Malays. rural West Malaysian Malays were much more likely to use non-psychiatric labels, like the generic terms ‘tekanan’ (stress) or ‘tekanan emosi’ (emotional stress). Rural Malays were more likely to explain the cause of depression using god and supernatural causes, whereas urban Malays used biological or scientific explanations. In this sense, the local Sabahan world view of common mental disorders or depression is much more progressive than that of the rural west Malaysians. Sabahans also tend to endorse religious methods, lifestyle modification and psychological treatments as a means to treat their depression or common mental disorder [45].

In two majority Muslim countries, Turkey and Qatar, it was reported that depression and common mental disorders are conceptualized differently by the people. For example, a public survey done in Istanbul, Turkey [173] reported a general reluctance to consult a physician for symptoms of depression. The public believes that psychological and social interventions are more effective than pharmacotherapy, and that the medicines used in treatment of depression are harmful and addictive. A cross-sectional study at primary healthcare centres in Qatar[174] reported that women held more to the cultural beliefs related to some aspects of mental illness. Nearly half of the women surveyed thought traditional healers can treat mental illness. They were afraid to talk about mental illness and not willing to seek professional help for mental health reasons.
In an article [175] describing the survival strategies, social support and needs of families caring for mentally ill people in Malaysia and Zimbabwe, it was reported that in both countries the families feel isolated, ill-informed and bereft of support, yet their needs are similar to the needs of families in "developed" countries.

Ethnic status was also associated with inequality in access mental health care. The minority ethnic groups have high unmet needs and inaccessibility to mental health services. A follow-up survey [176] of adult respondents of the 1996–1997 United States national survey, reported greater unmet need for alcohol and drug abuse treatment and mental health care among African American people and Hispanics relative to Caucasian people.

In general, the Malaysian publics appear to not utilize mental health services and care as much as they should be. The Malaysian Mental Health Survey (MMHS) [177] on utilisation of four basic health services, namely contact with health care professionals, ward admissions, having diagnostic or laboratory tests done and being on any medications, reported only 30% of the total of 2202 participants had contacts with health care professionals. Those with health complications, disabilities, and those aged 50 years and above, utilised health services more significantly as compared to those who lacked health facilities near their homes, had little family support during illnesses and were from the Chinese ethnic group.

Another aspect of psychiatric practice that requires review is how psychiatrists and mental health professionals view the patients’ participation and differing opinion about mental disorders and treatment. Paternalistic and custodial attitudes [28] still dominate Malaysian psychiatric practice especially in the hospital and in clinic based practice. These attitudes do not acknowledge issues of spirituality or alternative healing practices that are important to many patients. Modernisation of services have not led to a parallel development with regard to patient participation or in terms of appropriate cultural responses [28]. By ignoring the local belief system psychiatric practice has appeared detached from the population at large consequently making it harder to mainstream the mental health issues among the people. Furthermore, in a multi-countries survey [164] of psychiatric leaders, three strategies were jointly agreed upon for reducing the treatment gap: increasing the numbers of psychiatrists and other mental health professionals, increasing the involvement of a range of appropriately trained non-specialist providers, and the active involvement of people affected by mental disorders.
A cross-sectional study [178] of a representative community sample and a sample of mental health clinic users from the same population, reported that users of psychiatric services, compared with nonusers, were significantly younger, more likely to be separated or divorced, more psychologically distressed, and physically symptomatic.

**Lack of perceived need for psychiatric treatment and care**

Overall this study not only recorded an extremely high treatment gap, it also reported on the perceived lack of need in all aspects of psychiatric treatment and care. Among the 52% of respondents with common mental disorders, more than half recorded perceived no need in psychiatric treatment and care. One hundred and seventy-eight (79.4%) of two hundred and twenty-four respondents with common mental disorders perceived no need for medication to help emotional problems. This means only 20% of respondents feel the need for medication to help them.

One hundred and thirty-two (58.9%) of two hundred and twenty-four respondents with common mental disorders perceived no need for information about emotional problems or getting treatment. One hundred and fourteen (50.9%) of two hundred and twenty-four respondents with common mental disorders perceived no need for counselling.

One hundred and twenty-three (54.9%) of two hundred and twenty-four respondents with common mental disorders perceived no need for help in practical issues. One hundred and thirty-eight (61.6%) of two hundred and twenty-four respondents with common mental disorders perceived no need for help to improve ability and individual skills.

Consistently, there were only a few respondents (less than 10%) who claimed to have perceived met need in all areas of psychiatric treatment and care. This contrasts with the Australian study [179] which showed quite high perceived met need especially in terms of medication and counselling. Proportionally, need for medication is most likely to be rated as met at 84%, needs for counselling and information are met at a rate of between 50% and 60%, need for skills training at approximately 40%, and social interventions needs are those least likely to be rated as fully met at 25%.
However, there are respondents with probable common mental disorders who recorded perceived unmet need in areas of counselling (42.0%), information about problems and getting help (36.6%), help to improve ability and skills (35.7%) and help in practical issues. This contrasts with the reduced number of perceived unmet needs that are reported in Australia. Reduced unmet perceived need suggests improved access to some interventions. Also between 1997 and 2007 perceived need of psychiatric professional help for mental health reasons has increased in Australia [180].

It is also worth noting that this study has observed that perceived unmet need increased in percentage as the respondents scored moderate to severe disability due to common mental disorders. For example, 47% of respondents with severe disability perceived unmet need for medication to help with emotional problems.

There are also different perceived needs between respondents with a single common mental disorder and those with multiple or co-morbid common mental disorders. Firstly, respondents with a single (n=90, 68.2%) psychiatric morbidity were reported to have perceived no need for information about emotional problems or getting treatment. However, respondents with co-morbid (58.5%) mental disorders tend to have perceived unmet needs for information about emotional problems or getting treatment.

Secondly, respondents with a single (62.4%) psychiatric morbidity perceived no need for medication to help emotional problems. However, respondents with co-morbid (59.5%) psychiatric disorders were reported to have perceived unmet needs for medication to help emotional problems.

Thirdly, respondents with a single (70.2%) psychiatric disorder were reported to have perceived no need for counselling. On the other hand, respondents with co-morbid (55.3%) psychiatric disorders were reported to have perceived unmet needs for counselling.
Finally, respondents with a single psychiatric disorder were reported to have perceived no need for help in practical (65.9%) issues. However, respondents with co-morbid (52.6%) mental disorders were found to have perceived unmet needs. Overall, respondents who had no need tend to have a single psychiatric or mental disorder. Respondents who had unmet need tend to have co-morbid or multiple common mental disorders.

In this study, perceived unmet need for counselling appeared significantly higher among the respondents between the ages of 18 to 49 years. There were 46.8% of respondents in the 18-29 years age group that perceived an unmet need for counselling. There were 40.7% of respondents between the ages of 30 to 39 years that perceived an unmet need for counselling.

In a household survey done in Kuala Lumpur, Yeap [181] reported younger respondents had a better attitude towards mental health and were more willing to seek help. This is similar to the findings in this study in that younger respondents, either university or college students and young private sector workers tend to have greater unmet need for counselling and mental health help.

In our study it was also perceived unmet need for counselling that was found to be high among the Muslim indigenous group and the Christian indigenous group. There were 47.1% of one hundred and nineteen Muslim indigenous respondents that perceived an unmet need for counselling. There were 45.3% of Christian indigenous respondents that perceived an unmet need for counselling.

**SECTION 6.5. DISABILITY, MENTAL DISORDER AND POVERTY**

Among those respondents who had chronic physical illnesses (70%), half of them had some form of common mental disorder, and almost all of the respondents had varying degrees of work and social adjustment disability (98%). Among these people, some were moderately disabled (16.5%) and few of them were severely disabled (8.5%). It is also shown significantly that respondents with multiple or co-morbid common mental disorders tend to be more disabled than respondents with a single common mental disorder. The disability is noted in the domains of work performance, social leisure activities, private leisure activities and family relationships.
This study did not report any associative relation between poverty (as measured by educational level and income) and co-morbidity of common mental disorder. This contrasts with the findings reported in other studies[182, 183]. Andrews G et al reported that generally mental disorders are more frequent among the less educated. The less educated are twice more likely have common mental disorder such as anxiety or depression.

There was also no significant association between different level of disability and income group. Again, this give a contrasting finding compare to previously reported. Skapinakis et al in a longitudinal study of 2406 people reported financial difficulty was the only sociodemographic factor associated with depression at follow-up [184].

However, there is an association between disability and educational level. This is noted in two domains of home management and social leisure activities. The respondents with secondary education and tertiary education are more disabled in these two areas compare to respondents with lower education.

Overall the study showed a significant association relationship; the respondents who had co-morbid common mental disorder better educational level appeared to be more disabled.

This study emphasized the importance of assessing psychosocial disability in primary care patients suffering from common physical illness. World Health Organization World Mental Health (WMH) survey [185] in 15 countries showed that in nearly all countries higher disability was attributed to mental disorders more than to the commonly occurring physical disorders. The mental health disabilities were mostly limited to disability in social and personal role functioning.
SECTION 6.6. FACTORS OF MENTAL HEALTH SERVICE UTILIZATION

This project set out to find out factors of mental health service utilization. However, because of the few respondents (4.4%) that used or referred to mental health was unable to make an adequate association analysis and logistic regression for the factors it is quite astonishing to find that only few respondents referred or used the mental health services available. The clinic had a trained counsellor and established system of referral and consultation with the psychiatrist in a nearby hospital. The medical officers also undergo regular training in detecting and treating common mental disorder.

Even among the more disabled respondents are not using the mental health service. Four (10.8%) of thirty-seven respondents with moderate disability had utilized mental health service. Only one (5.3%) of nineteen respondents with severe disability had utilized the mental health services. Majority of them were referred to psychiatrist for medication.

The students (12.2%) group significantly used more mental health service. Only few unemployed (9.1%) respondents were reported to use the mental health service available.

Respondents with single chronic physical illnesses (4.6%) appeared to use the mental health more than the others. None of the respondents with multiple chronic physical illnesses were reported to use the mental health services.

Respondents appeared to have relatively higher unmet need in areas of counselling (42.0%) and practical issues (42.4%) than unmet needs for medication to ease their mental health problems. This is quite consistent with findings from Swami study[36]. It is reported both urban and rural west Malaysian tend to distinguish a clear difference between counsellor and psychiatrist/psychologist as a source of professional help. Majority of people tend to favour counsellor as their professional aid. This can be a strength for the government health clinics because there are easily available as a human resource needs in these facilities compare to clinical psychologist. However, a paradigm shift is required in order to allow the counsellor to see clinical cases rather than the so call ‘normal clients’.

There was statistically significant higher number of respondents with perceived met need (24%) who utilized mental health service available, compare to less than five percent of respondents with unmet need had been referred or used the mental health services.

There are several reasons for refusing professional help. One hundred thirty-nine (62.1%) refused help because they thought they could managed the problem or self-reliance. This is a social environment mindset that these mental health problems are temporary, and it will go away eventually without intervention. The mental health symptoms will disappear as patients solve their practical problems.

Forty one percent seems to think that mental health problems are not relevant to them and deny the issues altogether. Eighty-eight (39.3%) respondents are ignorant of where to get professional help. Thirty four percent refused help due to stigma related to mental health. Sixty-five (29.0%) respondents give financial excuse for not seeking professional help.

Although few people in need of mental health treatment receive it, indigenous minority groups are among those least likely to receive services appropriate to their needs. Many of the factors believed to account for this disparity—mental health related attitudes, stigma and preferences, among others—are termed “cultural.”. Millman defined access to mental health care as “timely use of personal health services to achieve the best possible health outcomes” [186]. This is often a major challenges to achieve especially in a developing country.

In classical paper exploring the help-seeking behaviour of Malay psychiatric patients in a rural homogenous northern state of Kelant an Razali and Najib [32] reported that 69% had visited traditional healers (bomoh) for the present illness before consulting psychiatrists. He also extrapolated that this is probably due to deep seated cultural belief. There is a common notion that modern secular treatments are effective for physical illnesses but powerless against black magic and unexplained supernatural causes.
In our study a much smaller number had sought out traditional healers. There were only twenty-four (10.7%) of two hundred and twenty-four respondents with common mental disorder had sought alternative or complementary medicine. This could be due to the more urban respondents who are selected. This showed that there is a change in the mindset of and how people view the mental health problems in this rather heterogeneous population.

This contrasts with the report of traditional belief and strong stigma reported by another East Malaysian study. Chang [37] reported in Sarawak the impact of the stigma of the relatives' mental illness on family caregivers and families is pervasive and strong. Mental health team need to help family caregivers to cope with the stresses and stigmas of their relatives' mental illnesses through psychosocial education or family intervention, and to provide them with culturally-congruent care.

However, there could be more practical reasons for refusing professional help. For example, the relatively shorter time spent with the patients at the government clinics (less than 10 minutes) compare to time spent by the traditional healers (30 minutes). This gives an apparent better rapport and displayed more interest on the part of traditional healers on the subjective psychosocial problems that the patients may have. Furthermore, the distance and time taken to access the urban clinics are longer. With the current traffic congestions that are building up in the city, these situations probably will persist for some time.

Shoesmith [187] et al, in a qualitative study of 130 participants including mental health care staffs and families, reported that the pathway to psychiatric services in Sabah does not follow the usual pathway commonly reported in western countries. Primary care was not considered as an important option in the pathway. This may help to explain the high treatment gap elicited in this study. The decision about which option to take is often determined collectively by the family and the community. The family and community will deliberate on factors such as beliefs about the cause of illness, beliefs about the acceptability and perceived efficacy of treatment options and potential stigmatising effect that any label might have before committing themselves [187].
SECTION 6.7.  SITUATIONAL ANALYSIS OF MENTAL HEALTH CARE IN SABAH IN 2018

The Current Context of Kota Kinabalu District and Sabah

Although Kota Kinabalu is the biggest city in the state, there are many rural areas, squatter areas and inaccessible areas. At the same time, the population growth and density that includes a big number of immigrants and indigenous offers a culturally diverse mental health issues and challenges. Although Kota Kinabalu is considered the most developed district, the burden of diseases, poor living conditions among the low socioeconomic people and access to better health care especially mental health care and treatment are pertinent issues that are related in this thesis.

Implementation of Mental health Policies and Plans in Sabah

Although Malaysia had embarked on paradigm shift in treatment and care of mental health from mental hospital to community and primary care with the introduction of Malaysia mental health policy 1998. In 2011, the new Mental Health Act 2001 was introduced, replacing the previous Lunatics Ordinance (Sabah) 1951 [188]. This gave the patients greater rights and protections, including the right of appeal. The Psychiatric and Mental Health Services Operational Policy was also introduced in 2011 by the Ministry of Health [189], which highlighted the role of primary care services in four areas: promotion of mental health, early detection and prompt treatment, follow-up of stable cases and defaulter tracing, psychosocial rehabilitation (PSR).
Part of this policy was the introduction of community mental health centers to improve outreach and re-integration of people with mental health problems into the community. These are known as MENTARI, which is an attempt for image-branding (i.e. "MENTA" from the word 'mental' and "RI" from 'psikiatri'). Mentari also means “sun” in the Malay language of the Malay Archipelago. There are more than 20 MENTARI centers set up since 2011 in Malaysia [108]. They are located at the community, near to the general hospital, for example MENTARI Selayang. The initiatives have mainly occurred in West Malaysia and changes are slow in Sabah, which is likely to be due to the comparative lack of resources. Mental health facilities in Sabah are less well developed and understaffed. Sabah still only has one MENTARI, which was started in 2016, but even this is not a true community mental health center. There was no suitable land available for the building of the MENTARI, so the center is located inside the grounds of the psychiatric hospital. This causes problems, since patients are still reluctant to visit, due to stigmatization of the hospital. The center only covers a limited geographical area within the main town. For much of the population of Sabah there are no community mental health services and attending a hospital outpatient department is the only treatment option available.

The lack of Mental Health treatment coverage in community

Our study had shown that common mental disorders and mental health related problems, disabilities and needs are relevant in primary care. The recent prevalence finding of the NHMS 2016 also emphasized the high prevalence rate of mental health problems in the population of Sabah. The lack of mental health research in Sabah especially at the local district level contributes to the lack of knowledge, awareness and understanding the magnitude of the problems and the needs.

The current trend of focusing on the mental hospital and the serious mental disorders had somewhat neglected the common mental disorder and mental health problems in general.
Availability of mental health services and primary care referral system

In 2010, the year the study was done, Sabah had 8 psychiatrists, no clinical psychologists and approximately 20 trained psychiatric nurses in the state health department to cater to 3 million population, meaning that Sabah is deprived of trained staff. This number has now grown to 22 psychiatrist and one clinical psychologist, but this still gives a ratio of 0.7 psychiatrists per 100000 population, which is less than one tenth of the staffing level found in higher income countries. The number of trained nurses has stayed roughly the same, since there is no post-graduate training program in Sabah, meaning that nurses must be willing to travel if they wish to train. The current batch of trained psychiatric nurses are now retiring, and it is likely that the number will reduce unless training is started in Sabah. The limited manpower, mental health resources and lack of mental health data and the lack of awareness of the availability of the resources are huge challenges for the mental health system.

Although there is understanding of referral from primary care clinics to the specialist mental health service, there is no systematic referral system. The referral depends on the decision and assessment of the doctors. It is also depending on the patients whether they would eventually agree to go see the psychiatrist at the psychiatric hospital. Without the systematic referral system, the quality of care for patients with common mental disorders is impaired, from the initial detection at the clinic, early referral to the specialist and for the follow-up in the primary care clinic. In other words, it is not adequate just to refer in adhoc but also important to have a seamlessly functioning and reliable referral system. This may be overcome with a closer collaboration and supervision effort of the mental health specialist and the primary care clinic.

Education, knowledge and service training

It is quite clear with the limited resources and budget for mental health services in the clinics, attendees with common mental disorders and varying degrees of disabilities are not getting enough attention. Detection requires the health care workers to familiarize themselves with the screening tool and have the acquired skill. However, there is no regular in-service/on the job training or supervision for the health care workers to upgrade their skills in detecting and treating common mental disorders.
Most of these common mental disorders can be managed by non-specialist health care workers. The WHO mhGAP intervention guide can be practical guidelines on how to integrate mental health care in a primary care setting. It also provides guidance on how to detect and manage mental health problems.

Community

Based on our study the young people are more flexible have more perceived need for psychiatric treatment and care. Our study also showed that only 10% of respondents sought treatment from traditional healers, meaning people in Sabah have not relied heavily on the traditional healers. The literatures also reported that supernatural explanation is no longer the dominant view in relation to mental health problems.

Social problems like violence and exposure to harmful alcohol drinking are still important stressor for common mental disorder. Providing information and health education at the primary care clinic, which is less stigmatizing is an opportunity that health care workers at the primary care can play a big role. By integrating this at the primary care level, may contribute in reducing stigma among common mental disorders.

Limitations and strengths of the study

The results of this study should be interpreted with caution due to methodological limitations. The study was carried out in primary care clinics. Most of the patients attending these clinics are patients under follow up for multiple chronic physical illnesses. Being a busy government health clinic, many patients are from lower socioeconomic backgrounds. Therefore, there could be a high percentage of people with higher social class and defaulters that are excluded from this clinic-based study.

The cross-sectional nature of this study does not allow the determination of a relationship of cause and effect of the probable predictors of common mental disorders although the binary multiple logistic regression analysis controls the sociodemographic confounding factors.

Some of the confounding factors are not able to be examined because of the limited resources of the project. For example, other poverty indicators or health and behavioural attitude could not be included. This would require more extensive interviews and a longer duration of study.
The sample number is too small to allow a more reliable inference made for some factors, for example those that influence mental health service usage. Although the minimum sample size had been achieved taking into consideration the previous response rate from the National Health Morbidity Surveys.

Because of the short duration of time it was also not possible to professionally back translate the WSAS, GUPI and Australian Mental Health Service Utilization Questionnaire. However, the PHQ questionnaire as diagnostic tool was validated by Universiti Kebangsaan Malaysia for Malaysian population.

Immigrants may be under represented with significant numbers in the refusal group. The apprehensive attitude of these patients is understandable in not wishing to be selected for interview.

Some of the sensitive issues that are elicited in this could be understood better with a different study design. Examples of the more sensitive issues are physical abuse and alcohol related behaviours. A different design may be able to deeper explore the context and the meaning of these events.

Finally, the data on stressors, health care service use and history of chronic illnesses of respondents were self-reported. Therefore, the results may be influenced by the possibility of the recall bias of among older and weaker respondents in a busy government clinic. Even the minority immigrants may selectively not recall their mental health episode.

As far as the knowledge of the researcher, this is the first research project that examined comprehensively the mental health issues in government health clinics in Sabah. It is also the first such project that had received ethical approval and permissions from all relevant parties, the Ministry of Health, the State of Sabah Health Department and the universities. The number of issues that were examined also relevant to current mental health situation; treatment gap, psychiatric co-morbidities, self-perceived need of care, mental health disabilities, mental health service utilization and the probable reasons for refusing current mental health services.
CHAPTER 7. CONCLUSIONS AND RECOMMENDATIONS

SECTION 7.1. CONCLUSIONS

With the finding of treatment gap of more than 90%, this study has established that common mental disorders are a relevant public health issue even in a specialized population at government health clinics. The fact that one in two physically ill patients visiting the clinics may have a common mental disorder should make the authority alert to this important issue. These results are also in keeping with the rising trend of mental health problems previously reported by the Ministry of Health in the general population of Sabah from 1996.[48, 50] till 2015[8].

![Diagram showing observed pathway to care among respondents with Common Mental Disorder]

Figure 6 Diagram showing observed pathway to care among respondents with Common Mental Disorder

This comprehensive study, although small in size, adds important local evidence to the urgent and dire need for improvement and better mental health service in the primary care clinics of Kota Kinabalu.
A cross-sectional situational analysis of key informants at a rural district of Cambodia [190] using the PRIME questionnaires had emphasized in places with limited resources and mental health budget, it is important to scale up and integrate mental health into primary health care to improve the population’s access to and quality service of Cambodian mental care [190].

It may be premature to conclude the pathway of help seeking for these patients because of the limited options available to them. Although many patients professed to prefer to manage their mental health problems and disabilities on their own, there are a substantial number of patients who would benefit from some form of treatment and mental health care.

It is also noted that one in five patients attending the clinics may have co-morbid common mental disorders or multiple psychiatric diagnoses. Among these patients, there are 13% with moderate to severe work and social disability related to common mental disorders.

At the same time unmet perceived need for some modalities of treatment and intervention, for example, counselling, is urgently needed by the patients. However, the mental health service and referral system in these clinics needs to appeal to the changing mindset of the population. The positive side of this is that the population is more open to the environmental and counselling interventions. They appeared to be less inclined towards superstitious and traditional beliefs.

Although the respondents of this study appeared to hold a more open and modern view of common mental disorders, it is premature to exclude traditional healing methods as part of patients’ ways in seeking help. This is not to suggest that traditional healing methods stand in opposition to biomedicine, but whether the two approaches could work together to have a holistic and culturally compatible mental health care service. This is also not intended to totally negate or deny the existence and the role of alternative medicine such as the bobohizan because it is shown that there are a relevant percentage of respondents who consulted with them. They are quite satisfied with the bobohizans because they tend to spend significantly more time listening to the patients than the doctors.
In this study, it was found that the perceived need of care is higher among the Christians and Indigenous Muslims than in other ethnic groups. Although the bomoh or bobohizan is a central healing figure in pre-Islamic culture, it has become a smaller role since Islamic teachings have become dominant in the community. Furthermore, diverse Christian sects and healing rituals have flourished in this state[28]. The results are that eclectic, mixed visions of cure, between modern, religious and local cultural practices have become the majority view in the society. At times, these different practices work hand in hand in harmony, but at other times they become conflicting and competing beliefs that influence patients’ decisions.

This study also elicited several predicting characteristics of common mental disorders after controlling for confounding factors within the sociodemographic determinants and some stress factors. The acknowledgment of these factors allows clinic managers and local authorities to better focus their efforts to identify the vulnerable groups. With changing time and changing population demographics, different approaches and models need to be used to tackle the more subjective mental health problems in the government health clinics. However, before an approach or model can be introduced, a deeper and more comprehensive analysis of the magnitude of mental health problems and their impacts is needed. Further, a relevant sociocultural formulation of mental health problems and service usage also may be useful to create more socially relevant mental health strategies and programs at the primary care level. This study provides a comprehensive understanding, albeit with some flaws, as a first project of this nature in this setting. It is relevant for 10 to 15 years. However, a regular assessment and service formulation will allow the authority to keep abreast of changes in population and to anticipate different problems over time. During the stressful economic challenges that Malaysia is facing it is probably more cost effective and wise to focus on the most vulnerable groups in this setting and use the primary care clinics as a critical focal point of action.

With clearer understanding of the magnitude of common mental disorder problems, the association with disability and perceived need of psychiatric care in these clinics, a new strategy can be planned for the mental health services. These services should target the most at-risk groups: young, female, students, unemployed, low income, relatively higher educational level and those people with a history of exposure to violence. At the same time clinical issues like suicide and alcohol abuse should also be included in the monitoring plan of patients.
Relevant screening tools and diagnoses of common mental disorders should be introduced. The doctors and the nurses must be trained to administer the screening tools and help to detect patients with mental health issues.

Doing more research or surveys such as the National Health Morbidity Surveys alone is not adequate enough to transform clinical practices in the government clinics. The issues being researched should be relevant to the needs of the locals and the regions. The World Health Report 2001 [191] suggests that relevant research in and for low and middle income countries should assist them in reducing the burden of disabling common mental disorder through evidence based and feasible interventions, while ensuring equity and cultural relevance. Currently, the mental health practices in the developing world are based primarily on evidence from high-income countries. This poses major misalignments because the information is collected from different background and contexts.

Hopefully, this study managed to provide some evidence not previously recognized in this region and highlighted how prominent common mental disorders and mental health issues are in the primary care clinics. Failure to act may prove to be costly in the long run for the state and country that aspires for the society to embrace and achieve the status of a developed nation.

In a rapidly developing region like Kota Kinabalu, socioeconomic changes, changing life styles, higher cost of living and life events have led to increases in rates of mental disorders. Rapid changes provide both a threat and an opportunity for mental health services. It is important to deliver equitable mental health services in primary care that are sensitive to the needs of the patients. It is crucial that mental health services in primary care are supported because in general the government health clinics have better and more comprehensive preventive care provisions [192]. Furthermore, the demand for mental health services is increasing. In psychiatry, delivering mental health services in an equitable and effective way is important to reduce the disability and the burden of the disorders.
SECTION 7.2. RECOMMENDATIONS FOR FUTURE RESEARCH AND SERVICES IMPROVEMENT

Research

1. The amount of research from Sabah (2.5%) needs to be increased, to help plan services based on evidence, latest facts and address the current problems of the society.
   This project that views primary care within a critical sub-population should be included in the regular National Health Morbidity Survey. The design of the study should be comprehensive enough to give constructive ideas in order to plan and strategize mental health service in primary care. As suggested by Abas, there is minimal research evidence related to primary care from developing countries [99]. Among low and middle-income countries, treatment of mental health in primary care receives low priority and lack of resources. In terms of documentation and publications, there is a lack of routine data, many facts remain unknown, undocumented and unshared [99].

2. An explorative exercise using a qualitative study design may be appropriate to develop a deeper understanding of some of the social, aetiological explanations of common mental disorders. This may be especially true for sensitive social issues like domestic violence, alcohol abuse, physical and sexual abuse, immigrant issues and indigenous poverty.

3. To approach immigrants, a population-based study that is more flexible in its approach may be a better way to gain feedback. This type of research is more relevant to understand the subjective norms or cultural factors that influence help seeking among primary care attendees for their mental health problems.

4. The government also need to fund a more extensive and comprehensive research approach, such as longitudinal studies/cohort studies or incidence case-control studies. These studies allow possibilities to compare the disease outcome measure or more usually changes in the measure, over time between exposed and non-exposed groups. A longitudinal study might involve measuring mental health problems in exposed and non-exposed patients to violence over time.
5. A multidisciplinary research team with more specialized capabilities would allow a more
detailed exploration of the facts. The teams should include family physicians,
sociologists, health economists and administrators. A holistic representation, more
rigorous instruments and clear definitions of factors would allow a factual framework to
inform the policy makers. A participatory action research design would give practical
guidance on how to design the local mental health system based on the needs of the
population, to implement changes and measure the outcomes.

**Services**

It is a huge window of opportunity for government health clinics in Kota Kinabalu to
ensure the health and wellness of the public. Besides addressing and managing physical
diseases, the productivity of the people can be further enhanced if common mental
disorders and problems that also contribute to disability can be remedied, keeping in
mind that the definition of health is not just a mere absence of disease but a complete
state of physical, mental and social well-being. Since this study reported a high treatment
gap for common mental disorders in these clinics, we proposed some strategies to
improve this so that primary care can play a more holistic and relevant role in providing
health care to the people. It consists of improvement and planning based on the five
levels as noted in the Goldberg and Huxley Model.

**Level 1-Community**

1. The mental health literacy of the people in general and the clinic attendees needs to be
improved as noted in the discussion chapter.

2. Gatekeeper training is required for identification and treatment of mental health issues.
For example, in Australia, the Mental Health First Aid (MHFA) program provided
training for members of public to help in a mental health crisis situation. The course was
found to produce the following benefits: better recognition of mental disorders ,changed
beliefs about treatment to be more like those of health professionals, decreased social
distance from people with mental disorders, increased confidence in providing help and an
increase in the amount of help provided to others[193].

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3. Health promotion and public health education is also critical, especially when our study has reported significantly higher numbers of young people and workers who are affected by common mental disorders. Therefore, a conscious, regular and well planned mental health promotion may need to be introduced in schools and in strategic government and private offices.

4. Self-help groups, such as Alcoholics Anonymous groups, should be encouraged. Mental health user group now forming. AA has started in 2009, but only one group. Peer support training is needed. There are few support groups and patients involved in mental health advocacy in Sabah. However, Mercy Malaysia in collaboration with the University Malaysia Sabah had started specifically Alcohol advocacy work.

5. The religious groups and non-governmental organizations that are active around the city should be engaged in collaboration with the clinics. These would give a different perspective to the mental health issue, beyond the biomedical model. Although the mindset of the urban people has changed and is now more open to the scientific or modern explanation of mental health problems, there are some who remain faithful to the traditional beliefs and practices. Therefore, it is important for the primary care clinics to engage religious institutions, organizations, and alternative healers to participate and collaborate with the clinic initiatives and programs. One model that has been designed for five low and middle-income countries by inviting traditional healers to participate in the community mental health effort. Programme for Improving Mental Health Care (PRIME) promoted people outside the formal health care system, for example, traditional healers, service users, caregivers, and community members to play important complementary roles in providing community-based care [194].

6. To reduce the high prevalence of common mental disorders among young people, youth specific mental health programs are needed. Such a program should be broad in concept, for example, combining stress management with fun youth social activities. The primary health care workers also need to collaborate with the school and education system. Through understanding the general causes of stress at school, a strategic plan of intervention can be introduced. Parents and teachers’ associations and other consumer or sponsorship bodies could also contribute to programs organized in a way to make them family and community friendly.
Level 2 and Level 3 – Primary Care Clinics

7. The general doctors and health care workers in the clinic need to be trained to improve their skills and attitude towards patients. Rather than just focusing on the physical or basic level of care nursing, they should be trained properly in appropriate communication skills and in forming a therapeutic alliance with their patients. Good communication skill is essential in order to use the critical few minutes of interview session with patients effectively[195]. Good communication skill is critical in forming therapeutic alliance. In the context of busy government health clinics in Kota Kinabalu, it is almost impossible for patients to form a therapeutic alliance. With poor communication skills, the matter is made worse.

8. Health care workers need to be consistently educated on how to screen for and detect common mental disorders. The primary health care nurses are usually the first person to be in contact with the patients at the counter. They can be trained to screen for mental health problems, and people in stressful circumstances. This screening task must be monitored to ensure good outcomes. An interesting model is the innovative primary care integration done in Rwanda [196]. This innovative primary care program was supported by non-governmental organization. It helps to overcome problems of lack of specialists, funding and leadership. The collaboration and mentoring of primary care nurses stationed at government health clinics in rural district of Rwanda by specialists and psychologists. Therefore management of mental health patients are shared between district hospital out-patient speciality clinic and primary care [196]

9. The health care workers in the clinics need to be aware of the more subjective functional disability that people with common mental disorders may have to cope with. Their abilities to identify current stressors, disability and the lack of coping methods are important. This would allow them to educate clinic attendees on how to cope, and how to improve social and occupational functioning of the patients.
10. Adequate numbers of general health care workers need to be educated on how to engage with clinic attendees who may have milder forms of common mental disorders. It is not enough to only refer to psychiatric or specialist treatment in severe cases.

11. Our study has shown that there is significant perceived need for counselling. Therefore, more counsellors are needed to see patients to fulfil that need. The method and the means should make use of the local understanding of mental health using local terminologies to better express the concept of mental health and its treatment. It should also attempt to be compatible with culture and religion.

12. We need more professional diversity of primary care staff, including staffs that are capable of delivering psychological interventions. Staffs need to be trained in interprofessional collaborative practice. Collaborative care models, which empower primary care staffs, should be implemented. The staffs should not only focus on psychiatrist but other mental health professionals such as case managers, primary care nurses. The objective is to meet the patients need, improve clinical outcomes and patient satisfaction. In a systematic review of collaborative care models it was shown key predictors of depressive symptom outcomes included systematic identification of patients, professional background of staff and specialist supervision. [197]

13. Continuity of care is needed in primary care around Kota Kinabalu. High turnover rate of staffs and frequent changing of doctors and therapists will not be helpful in providing continuity of care. Continuity of care is defined as a process involving the orderly, uninterrupted movement of patients among the diverse elements of the service delivery system [198]. Although the review shows mix outcomes because of the study design and measurement of continuity of care, the concept is still relevant in psychiatric services and important research topic [199].

14. Disability related to mental health needs to be included in the assessment of patients. Programs aiming to reduce mental health disability need to be given attention as much as the physical disabilities.

15. A special multidisciplinary unit is needed for cases of victims of violence, alcohol abuse and dependency. Traumatic exposure to these life events can precipitate common mental disorders.
**Level 4 – New mental health services**

16. The University Malaysia Sabah had proposed community mental health centre in collaboration with the state health department. This centre aims to establish a recovery orientated mental health service based on the Sabah Collaborative Care model and elements of the Flexible Assertive Community Treatment model. It also inspires to inculcate multi-professionalism and collaborative practice amongst mental healthcare professionals and improve evidence-based community psychiatric treatment.

**Level 5 – Psychiatric Hospital and psychiatric ward**

17. The future teaching hospital, Hospital Universiti Malaysia Sabah is currently under construction and expected to be competed in 2021. Teaching hospital is a hospital that provides medical services to patients and provide clinical teaching and training for pre & post-graduate students of medicine, subspecialty training, nurses and allied health training programs. It is also responsible for conducting research and is also a centre of excellence in innovation and the latest clinical services. Needs of teaching hospitals in line with the learning cycle. Currently there are no developed psychiatric services. Sabah psychiatric services are at a similar level to developed countries in the 1970s and are less developed than services in many low-income countries now. Centralised in large psychiatric hospitals, which have a custodial environment. Very few community services. Little treatment available, other than medication and ECT. Psychosocial treatments are almost non-existent. Therefore, psychiatric services proposed for the new teaching hospital will have more emphasis on community, primary care collaboration and with current government psychiatric hospital.

18. Although there are twice number of specialists in the state compare to ten years ago. It is still inadequate. It is hopeful with the new teaching hospital and community mental health centre there will be more trained staffs recruited, example counsellors, clinical psychologists, psychiatrically trained occupational therapist and medical social workers,
For the public, an improved mental health treatment and care model is urgently needed before a proper assessment of mental health service utilization at the primary care level can be carried out. As of 1st of January 2018, the government health clinics in Kota Kinabalu will introduce a new approach to managing patients that is based on a family doctor concept with medical outreach teams assigned to follow up families in specific zones. The idea is to have a comprehensive, more humane, consistent follow up of chronic medical problems. At the moment, they are mainly focusing on antenatal and medical diseases.

However, this is a great opportunity for mental health to ‘piggy back’ the new approach being introduced and adds a further human dimension to the services offered. With collaboration between Ministry of Health, the university and the public in the new services and models will provide a seamless mental health care system in this state.
REFERENCES


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87. World Health Organization (WHO), *Global Status Report on Alcohol and Health.*


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Appendix 1-National Medical Research Register, Malaysian Ministry of Health Ethics Approval

PEJABAT TIMBALAN KETUA PENGARAH KESIHATAN
OFFICE OF THE DEPUTY DIRECTOR-GENERAL OF HEALTH
(PENYELIDIKAN & SOKONGAN TEKNikal)
(RESEARCH & TECHNICAL SUPPORT)
KEMENTERIAN KESIHATAN MALAYSIA
MINISTRY OF HEALTH MALAYSIA

Arias 12, Blok E7, Parcel E, Presint 1
Level 12, Blok E7, Parcel E, Precinct 1
Pusat Pentadbiran Kerajaan Persekutuan
Federal Government Administrative Centre
62590 PUTRAJAYA

Tel : 03 88832543
Faks : 03 88895184

JAWATANKUASA ETIKA & PENYELIDIKAN
PERUBATAN
KEMENTERIAN KESIHATAN MALAYSIA
d/a Institut Pengurusan Kesihatan
Jalan Rumah Sakit, Bangsar
59000 Kuala Lumpur

Ruj. Kami : (2) KKM/NHSEC/08/0804/P09-
Tanik : 30 Disember 2009

Prof Madya Dr Ahmad Faris bin Abdullah
Univeriti Malaysia Sabah

Tuan,

NMRR-09-734-4539
A Study on Factors that Influence Mental Health Service Utilization among Primary Care Attendees in Kota Kinabalu

Lokasi projek : Hospital Kuala Lumpur

Dengan hormatinya perkara di atas adalah dirujuk.

2. Jawatankuasa Etika & Penyelidikan Perubatan (JEPP), Kementerian Kesihatan Malaysia (KKM) mengambil maklumat bahawa kajian tersebut merupakan syarat kelulusan akademik untuk ijazah Kedoktoran dari University of Melbourne.

3. Sehubungan dengan ini, dimaklumkan bahawa JEPP, KKM tiada halangan, dari segi etika, ke atas pelaksanaan kajian tersebut. JEPP mengambil maklumat bahawa kajian tersebut tidak mempunyai intervensi klinikal ke atas subjek dan merupakan kajian pemerhatian yang hanya melibatkan pengumpulan data melalui borang soal solidik.


5. Laporan tamat kajian dan sebarang penerbitan dari kajian ini hendaklah dikemukakan kepada Jawatankuasa Etika & Penyelidikan Perubatan selepas tamatnya kajian ini.

Sekian terima kasih.

BERKHIDMAT UNTUK NEGARA
Saya yang menurut perintah,

(DATO' DR CHANG KIAN MENG)
Pengerusi
Jawatankuasa Etika & Penyelidikan Perubatan
Kementerian Kesihatan Malaysia
Appendix 2 Research Committee of Universiti Malaysia Sabah Approval

UNIVERSITI MALAYSIA SABAH
Sekolah Perubatan, Aras 1, Blok B2, Bangunan Sains dan Teknologi
MEDICAL RESEARCH ETHICS COMMITTEE

Tarikh : 25 June 2009

DR AHMAD FARIS ABDULLAH
School of Medicine

Sir,

MEDICAL RESEARCH ETHICS COMMITTEE APPROVAL

TITLE : A STUDY OF FACTORS THAT INFLUENCE MENTAL HEALTH SERVICE UTILIZATION AMONG PRIMARY CARE ATTENDERS IN KOTA KINABALU

PRINCIPAL RESEARCHER : DR AHMAD FARIS ABDULLAH

MAIN SUPERVISOR : AP HARRY MINAS (UNIVERSITY OF MELBOURNE)
EXTERNAL SUPERVISOR : AP DR NARASAPPA KUMARASWAMY (UMS)

The above matters referred.

For your information the Medical Research Ethics Committee, Universiti Malaysia Sabah held a meeting (Bil 1/2009(8)) on 21st May 2009. We are glad to inform you that the committee had approved your research proposal as per details below;

- Approved with condition as per attachment
- Approval Code : JKEtika 1/09(1)

Therefore, we hope that you can conduct your research subject to rules and regulations provided.

Thank you.

Sincerely,

PROF DR OSMAN ALI
Chairperson of Medical Research Ethics Committee
Universiti Malaysia Sabah

cc : Deputy Vice Chancellor Research and Innovation
     Fail

BERTEKAD CEMERLANG
Appendix 3 Study Sites Permission
Appendix 4 Study Sites Permission Letter

PEJABAT
PENGGARAH KESIHATAN NEGERI SABAH
(BAHAGIAN KESIHATAN AWAM)
TINGKAT 1, RUMAH PERSEKUTUAN
PETI SURAT NO. 11290
88814 KOTA KINABALU

Rujukan kami: JKNS/KAJ/02/02/107 ( )
Tarikh: 15 September 2009

Assoc Prof Harry Minas,
PhD Supervisor,
The University of Melbourne,
Victoria 3010,
Australia.

Dear Prof,

This department acknowledges the interest of your PhD candidate Dr Ahmad Faris Bin Abdullah, Student No 316831 in doing his PhD research project entitled “A Study Factors That Influence Mental Health Service Utilization among Primary Care Attendees in Kota Kinabalu”.

Dr Ahmad Faris Bin Abdullah has communicated his intention conduct this study in the various government health clinics (Integrated Health Clinic Luyang, Bandaran, Polyclinic Menggatal, Tuaran and Tamparuli) around Kota Kinabalu.

Therefore, this department will give permission for him and his research team to conduct the study in the clinics, provided that there will be no interference in the clinical work of our staffs and follow the rules and regulations set by the department. There will also no access to patients files.

Thank you.

Yours Sincerely,

(DR. MOHD YUSOF IBRAHIM)
Deputy Health Director (Public Health)
State Health Department
Kota Kinabalu
Sabah

PENYAYANG, KERJA BERPASUKAN & PROFESIONALISMA
ADALAH BUDAYA KERJA KITA
Appendix 5- University of Melbourne. Human Research Ethics Approval

22 April 2010

Associate Professor M. Minus
Centre for International Mental Health
Population Health
The University of Melbourne

Dear Associate Professor Minus,

I am pleased to advise that the Health Sciences Human Ethics Sub-Committee has approved the following project:

Project Title: A Study of Factors That Influence Mental Health Service Utilisation Among Primary Care Attendees in two Melbourne, South

Researchers: [Name of Researchers]

Ref # 123

The Project has been approved for the period 13-Apr-2010 to 31-Dec-2010.

It is your responsibility to ensure that all people associated with the Project are made aware of what has actually been approved.

Research projects are normally approved for 12 months upon receipt of a satisfactory assessment. If a project is to continue beyond five years a new application will normally need to be submitted.

Please read the following conditions apply in your approval. Failure to abide by these conditions may result in the suspension or disallowance of approval and/or disciplinary action.

(a) Limit of Approval: Approval is limited strictly to the research as submitted in your proposal.

(b) Variation to Projects: Any subsequent variation or modifications you wish to make to the Project must be notified formally to the Human Ethics Sub-Committee for further consideration and approval. If the Sub-Committee considers that the proposed changes are significant, you may be required to submit an amended proposal for approval of the revised Project.

(c) Incidents of adverse effects: Researchers must report immediately to the Sub-Committee anything which might affect the ethical acceptability of the protocol including adverse effects on participants or unforeseen events that might affect continued ethical acceptability of the Protocol. Failure to do so may result in the suspension or disallowance of approval.

(d) Monitoring: All projects are subject to monitoring at any time by the Human Research Ethics Committee.

(e) Annual Reports: Please ensure that the Human Research Ethics Committee receives an annual report at the end of each year to continue authorisation of the project. Failure to submit an annual report will mean that its approval will lapse.

(f) Auditing: All projects may be subject to audit by the Sub-Committee.

If you have any queries or need further information, please contact me on the above details.

Please quote the ethics reference number and the title of the project in all your correspondence.

On behalf of the Sub-Committee I wish you well in your research.

Yours sincerely,

[Sign]

Debra Murphy
Executive Officer, Human Research Ethics
Phone: 93489333, Email: d.murphy@unimelb.edu.au

[Signature]

Mental Health - Population Health
Ahmed Parla Abdul

Melbourne Research
The University of Melbourne, John Goods Building, Victoria 3010, Australia
T: +61 3 8341 2400, F: +61 3 8341 8775
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Appendix 6 – Plain Language Statement English Version

PLAIN LANGUAGE STATEMENT

[Date]

A/Professor Harry Minas (supervisor)
Director, Centre for International Mental Health
Ph. +61 3 8344 0908

A/Professor Narasappa Kumaraswamy (local supervisor)
Ph 088-320000

Dr Ahmad Faris bin Abdullah
(PhD student researcher)
Ph 088-320000

PROJECT: “A STUDY ON FACTORS THAT INFLUENCE MENTAL HEALTH SERVICE UTILIZATION AMONG PRIMARY CARE ATTENDEES IN KOTA KINABALU, SABAH”

ETHICS ID: 0829832.1

Introduction

You are invited to take part in a study that aims to understand and assess common mental health problems among patients at Government Health Clinics. This study is a PhD project of Dr Ahmad Faris bin Abdullah.

Patients attending the health clinics are being randomly selected to take part in the study. This study will allow us to understand better the magnitude of the problems and the impact of any mental health problems on physical health, disability and poverty. Based on the findings from the study it will be possible to develop more effective services for people with mental health problems.

Participation in this project is completely voluntary. You do not have to participate if you do not wish to do so and, if you decide not to participate, this decision will not affect your treatment in any way.

This project has been approved by the Human Research Ethics Committee at the University of Melbourne as well as Universiti Malaysia Sabah Medical Ethics Committee.

How am I selected?

All patients attending the outpatient health clinic who are aged between 18 to 65 years, who have lived in the area for at least 12 months, and who can communicate in Malay or English, may be invited to have the participate in this study. A clerk at the registration counter will randomly select patients attending the clinic as potential participants.

What will I be asked to do?

By agreeing to participate you are also agreeing to be interviewed using standard questionnaires for about one hour. The questions will ask about your personal data, mental health questions, how you are affected because of illness, your views about treatment and whether you have sought any mental health care or treatment during the past year.

Are there risks involved? There are very few risks involved in completing this study. It is possible however you might feel saddened or upset while participating in the interview. If this happens and you wish to stop the interview and withdraw from participating your wish will be respected and you are free to stop. Your withdrawal will not have any effect on your treatment. If it is thought to be necessary, and with your approval, you may be referred to a nearby mental health clinic. It will be your decision whether you act on this referral.
How will my confidentiality be protected?
We intend to protect your anonymity and the confidentiality of your responses to the fullest possible extent. You will not be identified by name in this research. Completed surveys will be kept in a locked filing cabinet in a locked office. Your name will be kept in a separate, password-protected computer file from any data that you supply. The information that is gathered from you will be coded, with your name and the code assigned to you kept in separate places to protect your identity. The data will be kept by the researchers for at least five years before being destroyed.

How will I receive feedback?
Once the project report from this research has been completed participants may obtain project outcomes through public forums and media reporting. (No individual information of any kind will be contained in such a report.) If you wish to be notified about the public forums or media reporting of the results of this project, please leave your address and contact telephone number on the consent from.

Will participation prejudice me in any way?
Your participation in this study is completely voluntary. Should you wish to withdraw at any stage, or to withdraw any unprocessed data you have supplied, you are free to do so at any time without giving reasons. Your participation in this study will not affect your treatment at the health clinic in any way.

Where can I get further information?
Should you require any further information, or have any concerns, please do not hesitate to contact any of the researchers on the numbers given above. Should you have any concerns about the conduct of the project, you are welcome to contact the Executive Officer, Human Research Ethics, The University of Melbourne, on ph: +61 3 8344 2073, or fax: +61 3 9347 6739 or Universiti Malaysia Sabah 088-320000.

How do I agree to participate?
If you would like to participate, please indicate that you have read and understood this information by signing the accompanying consent form and returning it to the researcher. Then, the interview may begin.
Appendix 7- Plain Language Statement in Malay Language

PLAIN LANGUAGE STATEMENT

xxx

Professor Madya Harry Minas (Penyelia Utama)
Pengarah, Pusat Kesihatan Mental Antarabangsa
The University of Melbourne
Tel. +61 3 83440908

Professor Madya Narasappa Kumaraswamy
(Penye\nalia Tempatan)
Universiti Malaysia Sabah
Tel 088-320000/014-3578263

Dr Ahmad Faris bin Abdullah
(Calon PhD / Penyelidik)
Tel 088-320000/012-8310903

PROJEK: “KAJIAN FAKTOR-FAKTOR YANG MEMPENGARUHI PENGUNGAAN PERKHIDMATAN KESIHATAN MENTAL DI KALANGAN PESAKIT KLINIK KESIHATAN AWAM KOTA KINABALU, SABAH”

NO ETIKA: 0829832.1

Pengenalan

Anda dijemput mengambil bahagian di dalam kajian ini yang bertujuan memahami dan menilai masalah-masalah kesihatan mental di kalangan pesakit di klinik kesihatan awam kerajaan. Ini adalah sebuah projek PhD calon bernama Dr Ahmad Faris bin Abdullah.

Pesakit-pesakit yang mengunjungi klinik-klinik kesihatan ini akan di pilih secara rawak untuk mengambil bahagian. Adalah diharapkan, kajian ini memungkinkan kami memahami magnitud masa\nlah dan kesan masalah kesihatan mental terhadap penyakit fizikal, kehilang-upayaan dan kemiskinan. Kajian ini berusaha mengetengahkan masalah-masalah kesihatan mental di klinik-klinik, melihat sejauh mana masalah disamping menilai jagaan kesihatan mental yang diperlukan dan kekurangan dalam perkhidmatan kesihatan mental di klinik kesihatan awam. Berdasarkan penemuan-penemuan kajian ini, kemungkinan program-program pencegahan dapat dirancang untuk membantu mencegah masalah kesihatan mental.

Penyertaan dalam projek ini adalah sukarela. Anda tidak perlu terlibat sekiranya anda tidak mahu terlibat, dan keengganan anda tidak akan mempengaruhi rawatan yang anda terima dalam apa cara sekali.

Projek ini telah mendapat kelulusan dari Jawatankuasa Etika Penyelidikan Manusia, Universiti Melbourne, Jawatankuasa Etika Perubatan Universiti Malaysia Sabah dan Jawatankuasa Etika Kementerian Kesihatan Malaysia.

Bagaimanakah saya terpilih?

Semua pesakit di klinik kesihatan ini yang berumur antara 18-65 tahun, yang tinggal di kawasan ini sekurang-kurangnya selama 12 bulan, dan boleh bercakap dalam Bahasa Melayu atau Bahasa Inggeris yang di pilih untuk terlibat dalam kajian ini. Seorang kerani di kaunter akan memilih secara rawak pesakit-pesakit di klinik yang layak sebagai peserta yang berpotensi.
Apakah yang perlu anda lakukan?

Sekiranya anda bersetuju terlibat, bermakna anda bersetuju untuk ditemubual menggunakan borang soal selidik yang seragam selama lebih kurang sejam. Antara soalan-soalan yang ditanyakan adalah berkena butir-butir diri, soalan-soalan berkaitan kesihatan mental, sejauh mana masalah ini memberi kesan dan menghilangkan keupayaan diri anda, persepsi berkenaan rawatan dan pertanyaan samada anda pernah menerima rawatan atau penjagaan kesihatan mental sejak setahun kebelakangan ini.

Adakah terdapat risiko-risiko dalam kajian ini?


Bagaimana rahsia sulit saya di rahsiakan?


Bagaimana saya menerima maklumbalas?

Sebaik sahaja tesis penyelidikan siap, peserta boleh mendapatkan keputusan projek melalui forum-forum awam dan laporan media. (tiada laporan individu akan disertai dalam laporan tersebut). Sekiranya anda ingin dimaklumkan berkenaan forum-forum awam atau laporan media berkenaan kajian ini, sila tinggalkan alamat penuh dan nombor talipon anda di atas surat persetujuan.

Adakah penyertaan saya mengundang prejudis?

Penyertaan anda dalam kajian ini adalah sukarela. Anda boleh menarik diri di mana-mana peringkat atau menarik balik data-data yang belum diproses, anda bileh melakukan tanpa bebanan prejudis. Penyertaan anda juga tidak akan memberi kesan ke atas rawatan anda di klinik kesihatan ini tidak kira unit mana sekali pun.

Di mana saya boleh mendapat maklumat lanjut?


Bagaimana saya memberikan persetujuan penyertaan?

Sekiranya anda mahu terlibat, anda perlu menandatangani surat persetujuan yang memberi indikasi bahawa anda telah membaca dan memahami penerangan ini dan pulangkan surat persetujuan kepada penyelidik. Seterusnya, temubual kajian boleh bermula.
Appendix 8 – Consent Form English Version

Centre for International Mental Health

Consent form for persons participating in a research project

PROJECT TITLE: A STUDY ON FACTORS THAT INFLUENCE MENTAL HEALTH SERVICE UTILIZATION AMONG PRIMARY CARE ATTENDEES IN KOTA KINABALU, SABAH

ETHICS ID: 0829832.1

Name of participant:

Name of investigators: A/Prof Harry Minas, A/Prof Narasappa Kumaraswamy and Dr Ahmad Faris bin Abdullah

1. I consent to participate in this project, the details of which have been explained to me, and I have been provided with a written plain language statement to keep.

2. I understand that my participation will involve me completing a brief survey and I agree that the researcher may use the results as described in the plain language statement.

3. I acknowledge that:
   (a) The possible effects of participating in the survey have been explained to my satisfaction;
   (b) I have been informed that I am free to withdraw from the project at any time without explanation or prejudice and to withdraw any unprocessed data I have provided;
   (c) The project is for the purpose of research and a PhD project of Dr Ahmad Faris bin Abdullah;
   (d) I have been informed that the confidentiality of the information I provide will be safeguarded subject to any legal requirements;
   (e) I have been informed that I have to complete another two questionnaires based on my response to the first two questionnaires.
   (f) I have been informed that with my consent the survey will be stored at University of Melbourne and will be destroyed after five years;
Subject’s Name: ___________________________ I/C No: ___________________________

Subject’s Signature: ___________________________ Date: ___________________________

Subject’s Contact No & address: ___________________________

2.2 Certification by research assistant:

I confirm that I have disclosed the risks that may be involved in this study in terms readily understood by the subject.

Name of research assistant conducting the informed consent discussion: ___________________________

I/C No: ___________________________

Signature: ___________________________ Date: ___________________________
Appendix 10- Plain Language Statement English version

PLAIN LANGUAGE STATEMENT

[Date]

A/Professor Harry Minas (supervisor)
Director, Centre for International Mental Health
Ph. +61 3 8344 0908

A/Professor Narasappa Kumaraswamy (local supervisor)
Ph 088-320000

Dr Ahmad Faris bin Abdullah
(PhD student researcher)
Ph 088-320000

PROJECT: “A STUDY ON FACTORS THAT INFLUENCE MENTAL HEALTH SERVICE UTILIZATION AMONG PRIMARY CARE ATTENDEES IN KOTA KINABALU, SABAH”

ETHICS ID: 0829823.1

Introduction

You are invited to take part in a study that aims to understand and assess common mental health problems among patients at Government Health Clinics. This study is a PhD project of Dr Ahmad Faris bin Abdullah.

Patients attending the health clinics are being randomly selected to take part in the study. This study will allow us to understand better the magnitude of the problems and the impact of any mental health problems on physical health, disability and poverty. Based on the findings from the study it will be possible to develop more effective services for people with mental health problems.

Participation in this project is completely voluntary. You do not have to participate if you do not wish to do so and, if you decide not to participate, this decision will not affect your treatment in any way.

This project has been approved by the Human Research Ethics Committee at the University of Melbourne as well as Universiti Malaysia Sabah Medical Ethics Committee.

How am I selected?

All patients attending the outpatient health clinic who are aged between 18 to 65 years, who have lived in the area for at least 12 months, and who can communicated in Malay or English, may be invited to have the participate in this study. A clerk at the registration counter will randomly select patients attending the clinic as potential participants.

What will I be asked to do?

By agreeing to participate you are also agreeing to be interviewed using standard questionnaires for about one hour. The questions will ask about your personal data, mental health questions, how you are affected because of illness, your views about treatment and whether you have sought any mental health care or treatment during the past year.

Are there risks involved? There are very few risks involved in completing this study. It is possible however you might feel saddened or upset while participating in the interview. If this happens and you wish to stop the interview and withdraw from participating your wish will be respected and you are free to stop. Your withdrawal will not have
any effect on your treatment. If it is thought to be necessary, and with your approval, you may be referred to a nearby mental health clinic. It will be your decision whether you act on this referral.

**How will my confidentiality be protected?**
We intend to protect your anonymity and the confidentiality of your responses to the fullest possible extent. You will not be identified by name in this research. Completed surveys will be kept in a locked filing cabinet in a locked office. Your name will be kept in a separate, password-protected computer file from any data that you supply. The information that is gathered from you will be coded, with your name and the code assigned to you kept in separate places to protect your identity. The data will be kept by the researchers for at least five years before being destroyed.

**How will I receive feedback?**
Once the project report from this research has been completed participants may obtain project outcomes through public forums and media reporting. (No individual information of any kind will be contained in such a report.) If you wish to be notified about the public forums or media reporting of the results of this project, please leave your address and contact telephone number on the consent form.

**Will participation prejudice me in any way?**
Your participation in this study is completely voluntary. Should you wish to withdraw at any stage, or to withdraw any unprocessed data you have supplied, you are free to do so at any time without giving reasons. Your participation in this study will not affect your treatment at the health clinic in any way.

**Where can I get further information?**
Should you require any further information, or have any concerns, please do not hesitate to contact any of the researchers on the numbers given above. Should you have any concerns about the conduct of the project, you are welcome to contact the Executive Officer, Human Research Ethics, The University of Melbourne, on ph: +61 3 8344 2073, or fax: +61 3 9347 6739 or Universiti Malaysia Sabah 088-320000.

**How do I agree to participate?**
If you would like to participate, please indicate that you have read and understood this information by signing the accompanying consent form and returning it to the researcher. Then, the interview may begin.
Pusat Kesihatan Mental Antarabangsa

Surat Persetujuan penyertaan dalam projek penyelidikan

PROJEK: "KAJIAN FAKTOR-FAKTOR YANG MEMPENGARUHI PENGGUNAAN PERKHIDMATAN KESIHATAN MENTAL DI KALANGAN PESAKIT KLINIK KESIHATAN AWAM KOTA KINABALU, SABAH"

ETHICS ID: 0829832.1

Nama peserta:

Nama penyelidik: Dr Ahmad Faris bin Abdullah

1. Saya bersetuju terlibat dalam projek ini, perincian maklumat berkenaan telah dijelaskan kepada saya, dan saya telah diberikan kenyataan bertulis untuk simpanan.

2. Saya faham penglibatan saya, melibatkan saya menghabiskan soal-selidik dan saya bersetuju penyelidik boleh menggunakan data-data seperti termaktub dalam kenyataan bertulis.

3. Saya juga bersetuju yang:
   (a) kemungkinan kesan-kesan penglibatan dalam soal-selidik ini telah dijelaskan dan saya berpuas hati dengan penerangan diberikan;
   (b) saya diberitahu yang saya bebas menarik diri dari projek ini bila masa tanpa penjelasan atau prejudis dan menarik balik data yang belum diproses yang saya berikan;
   (c) projek ini adalah untuk keperluan penyelidikan dan Projek PhD calon bernama Dr Ahmad Faris bin Abdullah;
   (d) saya telah dimaklumkan yang rahsia sulit dalam maklumat yang saya berikan akan dirahsikan bergantung kepada keperluan undang-undang;
   (e) saya telah dimaklumkan yang saya akan melengkapkan dua soal-selidik bergantung kepada dua sola-selidik yang pertama;
   (f) saya telah dimaklumkan yang dengan persetujuan saya borang soal selidik akan disimpan di Universiti Malaysia Sabah dan akan dimusnahkan selepas lima tahun;
Nama peserta: __________________________
No K/P: __________________________
Tandatangan peserta: __________________________
Tarikh: __________________________
Alamat dan no talipon: __________________________

2.2 Pengesahan penolong penyelidik:

Saya mengesahkan saya telah menerangkan risiko yang terlibat dalam kajian menggunakan bahasa yang mudah difahami peserta.

Nama penolong penyelidik: __________________________
No K/P: __________________________
Tandatangan: __________________________
Tarikh: __________________________
# Sociodemographic Information English Version

## SOCIODEMOGRAPHIC PROFORMA

<table>
<thead>
<tr>
<th>Biodata</th>
<th>Occupation : ____________________</th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>Monthly income : ____________________</td>
</tr>
<tr>
<td></td>
<td>RM ____________________</td>
</tr>
<tr>
<td></td>
<td>Education level (current highest level) : ____________________</td>
</tr>
<tr>
<td>I.C no</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Address</td>
<td>Gender : Male ( )</td>
</tr>
<tr>
<td></td>
<td>Female ( )</td>
</tr>
<tr>
<td></td>
<td>Ethnic : Melayu ( )</td>
</tr>
<tr>
<td></td>
<td>Cina ( )</td>
</tr>
<tr>
<td></td>
<td>India ( )</td>
</tr>
<tr>
<td></td>
<td>Kadazan Dusun ( )</td>
</tr>
<tr>
<td></td>
<td>Bajau ( )</td>
</tr>
<tr>
<td></td>
<td>Murut ( )</td>
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<td></td>
<td>Suluk ( )</td>
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<td></td>
<td>Iban ( )</td>
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<tr>
<td></td>
<td>Brunei ( )</td>
</tr>
<tr>
<td></td>
<td>Kedayan ( )</td>
</tr>
<tr>
<td></td>
<td>Other: ____________________</td>
</tr>
<tr>
<td>Phone No :</td>
<td>Marital status : Married ( )</td>
</tr>
<tr>
<td></td>
<td>Single ( )</td>
</tr>
<tr>
<td></td>
<td>Divorce ( )</td>
</tr>
<tr>
<td></td>
<td>Parent/caregivers : ____________________</td>
</tr>
<tr>
<td>Date of birth :</td>
<td>Address : ____________________</td>
</tr>
</tbody>
</table>
Phone No : 
_________________________________________ (H) 
_________________________________________ (O) 

GENERAL MEDICAL HISTORY

Date first falling sick/ duration of physical illness:

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Comments / notes :

________________________________________________________________________
________________________________________________________________________
________________________________________________________________________
________________________________________________________________________

Latest treatment given/ rehabilitation/support group etc.

   i. ____________________________________________
   ii. __________________________________________
   iii. _________________________________________
   iv. _________________________________________
   v.  _________________________________________
   vi. _________________________________________
   vii. _______________________________________
   viii. ______________________________________
   ix.  _______________________________________

Medical/surgical history

   I. Yes  (  )
   II. No   (  )

Latest medication medical/surgical/ psychiatry

   i. _________________________________________
   ii. _______________________________________
   iii. _______________________________________
iv. ______________________
v. ______________________
vi. ______________________
vii. ______________________

Drug history (state the name of medication or injection)

i. ______________________
ii. ______________________
iii. ______________________

**FAMILY SUPPORT**

Active family/caregiver support in follow-up:

a) Yes ( )
b) No ( )

Monitoring of compliance in taking medications:

a) Yes ( )
b) No ( )

Distance of location of stay from the clinic:

_________________________ (km)

(State the name of the area)

Time taken to arrive to clinic including waiting time for the bus and walking time to the main road:

_________________________ minutes
## Appendix 11 – Sociodemographic Information Malay Version

<table>
<thead>
<tr>
<th>Biodata</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Nama</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>No. I.C</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Alamat</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>No Telefon</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Tarikh Lahir</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>Agama</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pekerjaan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pendapatan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>RM</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Tahap Pendidikan</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>(sila kemukakan tahun semasa)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Jantina</th>
<th></th>
</tr>
</thead>
</table>
| Lelaki                                       | ( )
| Perempuan                                    | ( )

<table>
<thead>
<tr>
<th>Bangsa</th>
<th></th>
</tr>
</thead>
</table>
| Melayu                                       | ( )
| Cina                                         | ( )
| India                                        | ( )
| Kadazan/Dusun                                | ( )
| Bajau                                        | ( )
| Murut                                        | ( )
| Suluk                                        | ( )
| Iban                                          | ( )
| Brunei                                       | ( )
| Kedayan                                      | ( )
| Lain-lain                                    |  |

<table>
<thead>
<tr>
<th>Status</th>
<th></th>
</tr>
</thead>
</table>
| Berkahwin                                    | ( )
| Bujang                                       | ( )
| Bercerai                                     | ( )

<table>
<thead>
<tr>
<th>Penjaga</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Alamat</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>
No Telefon :

(R)

(P)

Sejarah Umum Perubatan

Mula sakit/ tempoh sakit:

Komen / Catatan :

Rawatan terkini / program 'psychoeducation' / Program rehabilitasi / kumpulan sokongan

i. 

ii. 

iii. 

iv. 

v. 

vi. 

vii. 

viii. 

ix. 

Sejarah perubatan/pembedahan

I. Ya ( )

II. Tidak ( )

Jika Ya sila nyatakan (cth: darah tinggi, kencing manis, gout, migraine, sawan, barah dll) (rujuk senarai semak)
Sejarah Ubatan Lampau (Catatkan Nama
Ubat sahaja Termasuk Suntikan Depot
sekitanya ada)

i. 

ii. 

iii. 

SOKONGAN KELUARGA

Penglibatan aktif keluarga/penjaga dalam
klinik susulan:

a) Ya (  )
b) Tidak (  )

Mengawasi Pengambilan Ubat:

a) Ya (  )
b) Tidak (  )

Jarak tempat tinggal dari tempat rawatan:

_________________________ (km)

(Sila catatkan nama kawasan tempat tinggal)

Masa diambil dari tempat tinggal ke
hospital/tempat rawatan termasuk masa yang
diambil untuk menunggu bus dan berjalan
kaki ke jalan utama:

_________________________ minit.
## Appendix 12 – PHQ English Version

### Patient Health Questionnaire™ (PHQ)

This questionnaire is an important part of providing you with the best health care possible. Your answers will help in understanding problems that you may have. Please answer every question to the best of your ability unless you are requested to skip over a question.

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Sex:</th>
<th>Male</th>
<th>Today’s Date</th>
</tr>
</thead>
</table>

### 1. During the last 4 weeks, how much have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not bothered</th>
<th>Bothered a Little</th>
<th>Bothered a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Stomach pain</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Back pain</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Pain in your arms, legs, or joints (knees, hips, etc)</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Menstrual cramps or other problems with your periods</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. Pain or problems during sexual intercourse</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f. Headaches</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g. Chest pain</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h. Dizziness</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i. Fainting spells</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>j. Feeling your heart pound or race</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>k. Shortness of breath</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>l. Constipation, loose bowels, or diarrhoea</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>m. Nausea, gas, or indigestion</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

### 2. Over the last 2 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Problem</th>
<th>Not at all</th>
<th>Several days</th>
<th>More than half the days</th>
<th>Nearly every day</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. Little interest or pleasure in doing things</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>b. Feeling down, depressed, or hopeless</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>c. Trouble falling or staying asleep, or sleeping too much</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>d. Feeling tired or having little energy</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>e. Poor appetite or overeating</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>f. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>g. Trouble concentrating on things, such as reading the newspaper or watching television</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>h. Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
<tr>
<td>i. Thoughts that you would be better off dead or of hurting yourself in some way</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

**FOR OFFICE CODING:** Item D for at least three of 18 or more are "a lot" and lack an adequate bed explanation. May Dep Sym if answers to Q2a or b and three or more of Q2c are at least "More than half the days" (score 0 if present at all). Other Dep Sym if 0, 1, or 2, three, or four of Q3 are at least "More than half the days" (score 0 if present at all).
3. Questions about anxiety.

a. In the last 4 weeks, have you had an anxiety attack — suddenly feeling fear or panic?  
   □ NO □ YES

If you checked "NO", go to question #5.

b. Has this ever happened before?  
   □ NO □ YES

c. Do some of these attacks come suddenly out of the blue — that is, in situations where you don’t expect to be nervous or uncomfortable?  
   □ NO □ YES

d. Do these attacks bother you a lot or are you worried about having another attack?  
   □ NO □ YES

4. Think about your last bad anxiety attack.

a. Were you short of breath?  
   □ NO □ YES

b. Did your heart race, pound, or skip?  
   □ NO □ YES

c. Did you have chest pain or pressure?  
   □ NO □ YES

d. Did you sweat?  
   □ NO □ YES

e. Did you feel as if you were choking?  
   □ NO □ YES

f. Did you have hot flushes or chills?  
   □ NO □ YES

g. Did you have nausea or an upset stomach, or the feeling that you were going to have diarrhea?  
   □ NO □ YES

h. Did you feel dizzy, unsteady, or faint?  
   □ NO □ YES

i. Did you have tingling or numbness in parts of your body?  
   □ NO □ YES

j. Did you tremble or shake?  
   □ NO □ YES

k. Were you afraid you were dying?  
   □ NO □ YES

5. Over the last 4 weeks, how often have you been bothered by any of the following problems?

<table>
<thead>
<tr>
<th>Feeling nervous, anxious, on edge, or worrying a lot about different things</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not at all</td>
</tr>
<tr>
<td>□</td>
</tr>
</tbody>
</table>

If you checked “Not at all”, go to question #6.

b. Feeling restless so that it is hard to sit still  
   □ NO □ YES

c. Getting tired very easily  
   □ NO □ YES

d. Muscle tension, aches, or soreness  
   □ NO □ YES

e. Trouble falling asleep or staying asleep  
   □ NO □ YES

f. Trouble concentrating on things, such as reading a book or watching TV  
   □ NO □ YES

g. Becoming easily annoyed or irritable  
   □ NO □ YES

FOR OFFICE CODING: Pair #3a-d are "YES" and four or more of #4a-k are "YES". Other Axis III if 5 or more and answers to three or more of #3b-g are "More than half the days".
6. Questions about eating.
   a. Do you often feel that you can't control what or how much you eat?  
      NO  YES
   b. Do you often eat, within any 2-hour period, what most people would regard as an unusually large amount of food?
      NO  YES
   If you checked ‘NO’ to either #a or #b, go to question #9.
   c. Have you been as often, on average, as twice a week for the last 3 months?
      NO  YES

7. In the last 3 months have you often done any of the following in order to avoid gaining weight?
   a. Made yourself vomit?
      NO  YES
   b. Took more than twice the recommended dose of laxatives?
      NO  YES
   c. Fasted — not eaten anything at all for at least 24 hours?
      NO  YES
   d. Exercised for more than an hour specifically to avoid gaining weight after binge eating?
      NO  YES

8. If you checked “YES” to any of these ways of avoiding gaining weight, were any as often, on average, as twice a week?
   NO  YES

9. Do you ever drink alcohol (including beer or wine)?
   NO  YES
   If you checked “NO” go to question #11.

10. Have any of the following happened to you more than once in the last 6 months?
    NO  YES
    a. You drank alcohol even though you knew you had a problem with your health
       NO  YES
    b. You drank alcohol, were high from alcohol, or hung over while you were working, going to school, or taking care of children or other responsibilities
       NO  YES
    c. You missed or were late for work, school, or other activities because you were drinking or hung over
       NO  YES
    d. You had a problem getting along with other people while you were drinking
       NO  YES
    e. You drove a car after having several drinks or after drinking too much
       NO  YES

11. If you checked off any problems on this questionnaire, how difficult have these problems for you to do your work, take care of things at home, or get along with other people?

<table>
<thead>
<tr>
<th>Not difficult at all</th>
<th>Somewhat difficult</th>
<th>Very difficult</th>
<th>Extremely difficult</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

FOR OFFICE CODING: But Not if #a, b, and c are all "YES". Ill Eat Din the same but #8 either "NO" or left blank. Ali Abo if any of #10a-e is "YES".
12. In the last 4 weeks, how much have you been bothered by any of the following problems?
   Not bothered | Bothered a little | Bothered a lot
   a. Worrying about your health   |   |   |
   b. Your weight or how you look   |   |   |
   c. Little or no sexual desire or pleasure during sex   |   |   |
   d. Difficulties with husband/wife, partner/lover or boyfriend/girlfriend   |   |   |
   e. The stress of taking care of children, parents, or other family members   |   |   |
   f. Stress at work outside of the home or at school   |   |   |
   g. Financial problems or worries   |   |   |
   h. Having no one to turn to when you have a problem   |   |   |
   i. Something bad that happened recently   |   |   |
   j. Thinking or dreaming about something terrible that happened to you in the past - like your house being destroyed, a severe accident, being hit or assaulted, or being forced to commit a sexual act   |   |   |
   13. In the last year, have you been hurt, slapped, kicked or otherwise physically hurt by someone, or has anyone forced you to have an unwanted sexual act?   |   | YES |
   14. What is the most stressful thing in your life right now? ____________________________________________________________________________________________

15. Are you taking any medicine for anxiety, depression or stress?   | NO | YES |
16. FOR WOMEN ONLY: Questions about menstruation, pregnancy and childbirth.
a. Which best describes your menstrual periods?

<table>
<thead>
<tr>
<th>Periods are unchanged</th>
<th>No periods because pregnant or recently gave birth</th>
<th>Periods have become irregular or changed in frequency, duration or amount</th>
<th>No periods for at least a year</th>
<th>Having periods because taking hormone replacement (estrogen) therapy or oral contraceptive</th>
</tr>
</thead>
<tbody>
<tr>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
<td>□</td>
</tr>
</tbody>
</table>

b. During the week before your period starts, do you have a serious problem with your mood - like depression, anxiety, irritability, anger or mood swings?

   If YES: Do these problems go away by the end of your period?
   Have you given birth within the last 6 months?
   Have you had a miscarriage within the last 6 months?
   Are you having difficulty getting pregnant?

Developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Knapp, and colleagues, with an educational grant from Pfizer Inc. For research information, contact Dr. Spitzer at The names PREVA-NIDB and PREVA-NIDTODAY® are trademarks of Pfizer Inc.
Soal Selidik Kesihatan Pesakit (Malay version of the PHQ)

Nama ___________________________ Umur ______ Jantina: ☐ Lelaki ☐ Perempuan Tarikh hari ini ____________

1. Dalam tempoh 4 minggu yang lalu, sejauh manakah anda telah terganggu oleh sebarang masalah yang berikut?
   a. Sakit perut
   b. Sakit belulang
   c. Sakit pada bahagian tangan, kaki atau sendu anda (tulang, pinggang, dsb.)
   d. Sakit semasa dalang hidai atau masalah lain berkenaan dengan hidai anda (untuk wanita sohaja)
   e. Sakit atau masalah semasa hubungan seksual
   f. Sakit kepala
   g. Sakit dada
   h. Pening kepala
   i. Pengurangan untuk sekhat
   j. Rasa jantung berdegup kuat atau cepat
   k. Setak rasa
   l. Gembul, kerap buang air besar atau di-lahit...
   m. Loys, rasa perut kembung serta mambuang angin atau mengalami tidak sedap perut.

   Tidak Terganggu  Terhadap  Terganggu
   Tidak sedikit  terganggu  Terganggu
   Tidak banyak  terganggu  Terganggu

2. Dalam tempoh 2 minggu yang lalu, berapa kerapakah anda telah terganggu oleh sebarang masalah yang berikut?
   a. Kurang berminat atau keseronokan dalam melakukan sesuatu perkara
   b. Rasa sedih, tidak gemibra atau pulus asa
   c. Masalah untuk tidur atau tidur nyenyak atau tidur berlebihan
   d. Rasa lelah atau mempunyai sedikit tenaga
   e. Kurang selera atau makan berlebihan
   f. Rasa buruk mengenai diri anda — atau anda seorang yang gagal atau anda telah menyebabkan diri anda atau keluarga anda kecewa
   g. Membenci untuk menumpukan perhatian ke atas sesuatu perkara seperti membaca surat khabar atau menonton televisyen
   h. Bergabung atau berakap terlalu perlahan sehingga orang lain perasa? Atau sebaliknya — menjadi sangat resah atau gelisah sehingga anda telah bergepak dengan banyak daripada biasa
   i. Memikirkan adalah lebih baik saja jika anda mati atau mencederaan diri sendiri dalam beberapa cara

   Tiada langsung  Beberapa hari  Lebih dari pada 7 hari  Hampir setiap hari

FOR OFFICE CODING: Som Dis if at least 3 of 9a-m are "a lot" and lack an adequate lord explanation.

Maj Dep Sym if answers to 9a or 5 and five or more of 9a-i are at least "More than half the days" (count #9 if present at all).

Other Dep Sym if 9a or b and two, three, or four of 9a-i are at least "More than half the days" (count #9 if present at all).
   a. Dalam tempoh 4 minggu yang lalu, pemahak anda mengalami serangan masalah kebimbangan — tiba-tiba berasa takut atau panik?  
   
<table>
<thead>
<tr>
<th>TIDAK</th>
<th>YA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

   Jika anda menandakan "TIDAK", terus ke soalan #5.

   b. Pemahak ini berlaku kebelum ini?  
   c. Adakah beberapa daripada serangan-serangan ini datang secara tiba-tiba tanpa disedari — biasa, dalam keadaan di mana anda tidak sepenuhnya gelisah atau tidak selesa?  
   d. Adakah serangan-serangan ini mengganggu anda dengan banyak atau adalah anda bimbang tentang mengalami satu serangan lagi?  

<table>
<thead>
<tr>
<th>TIDAK</th>
<th>YA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

4. Fikirkan tentang serangan masalah kebimbangan anda yang buruk yang terakhir (bila menjawab soalan-soalan di bawah).
   a. Adakah anda sesak nafas?  
   b. Adakah jantung anda berdegup cepat, berdegup kuat atau berhenti seketika?  
   c. Adakah anda mengalami salit dada atau tekanan pada dada?  
   d. Adakah anda berpergulah?  
   e. Adakah anda rasa seolah-olah anda sedang terbakar?  
   f. Adakah anda rasa terlalu panas secara tiba-tiba pada keseluruh bahagian atas badan atau rasa sejuk yang tidak selesa secara tiba-tiba?  
   g. Adakah anda rasa luh atau perut tidak selesa atau rasa seperti anda akan mengalami cint-ambil?  
   h. Adakah anda rasa pering, tidak stabil atau pitam?  
   i. Adakah anda rasa berdenyut-denyut atau kebas pada bahagian tubuh anda?  
   j. Adakah anda menggeletar atau menggigil?  
   k. Adakah anda rasa takut bahawa anda akan mati?  

<table>
<thead>
<tr>
<th>TIDAK</th>
<th>YA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

5. Dalam tempoh 4 minggu yang lalu, berapa kerapkah anda telah terganggu oleh sebarang masalah yang berikut?
   a. Rasa gemuruh, bimbang, gelisah atau sangat risau tentang polibagi perkara.  
   b. Rasa gelisah sehingga sakit untuk duduk diam.  
   c. Sangat mudah menjadi penat.  
   d. Ketegangan, sakit atau bisa otot.  
   e. Masalah untuk tidur atau tidur nyenyak.  
   f. Masalah dalam menumpukan perhatian terhadap perkara-perkara seperti membaca buku atau menonton TV.  
   g. Mudah menjadi marah atau merendah.  

<table>
<thead>
<tr>
<th>Tiada langsung</th>
<th>Beberapa hari</th>
<th>Lebih daripada 7 hari</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FOR OFFICE CODING: Pen Syn: If all of #3a-d are "YES" and four or more of #4a-k are "YES", Other Ans: If #3a and answers to three or more of #4a-g are "More than half the days".
   a. Adakah anda kerap merasa yang anda tidak boleh mengawali apa
      atau berasa banyak anda makan? ........................................
      TIDAK          YA
      □            □
   b. Adakah anda selalu makan, dalam sebarang selang 2 jam, apa yang
      kebanyakan orang anggap sebagai jumlah makanan yang biasa
      yang luar biasa? ...........................................................
      □            □

Jika anda menandakan "TIDAK" pada sama ada #a atau #b, terus ke soalan #c.
   c. Adakah perkara ini sudah selalu berlaku, secara purata, dua kali
      seminggu sepanjang 3 bulan yang lalu? ..............................
      □            □

7. Dalam tempoh 3 bulan yang lalu adakah anda kerap melakukan
   sebarang perkara yang berikut untuk mengelak daripada
   pertambahan berat badan?
   a. Membuatkan anda murtah? ................................................
      □            □
   b. Mengambil lebih daripada dua kali dosis asal yang disarankan? ...
      □            □
   c. Telah berpuasa — tidak mengambil sebarang makanan sama
      sekali sepanjang tempoh seluarang-kurangnya 24 jam? ...........
      □            □
   d. Telah bersenam lebih daripada sejauh terutamanya untuk mengelak
      daripada pertambahan berat badan selepas makan mengikut
      nafsu?...........................................................................
      □            □

8. Sekiranya anda menandakan "YA" pada sebarang cara-cara
   tersebut bagi mengelak daripada pertambahan berat badan, adakah
   ia selalu berlaku, secara purata, dua kali seminggu? ..............
   □            □

9. Pernahkah anda minum alkohol (termasuk bir atau wain)? .......
   □            □

Jika anda menandakan "TIDAK", terus ke soalan #11.

10. Pernahkah sebarang perkara berikut berlaku kepada anda lebih
    daripada sekali dalam tempoh 6 bulan yang lalu?
    a. Anda minum alkohol walapun doktor menyarankan bahawa anda
       berhenti minum disebabkan masalah dengan kesihatan. .........
       □            □
    b. Anda telah minum alkohol, perasaan menjadi sangat gembara akibat
       alkohol atau menjadi pening semasa bekerja, ke sekolah atau
       menjaga kanak-kanak atau menjalankan tanggungjawab yang lain
       kerana terlampau banyak minum.......................................
       □            □
    c. Anda tidak hadir atau lambat untuk ke tempat kerja, sekolah atau
       aktiviti-aktiviti yang lain kerana anda minum alkohol atau menjadi
       pening kerana terlampau banyak minum alkohol..................
       □            □
    d. Anda mengalami masalah bergang dengan orang lain semasa anda
       minum alkohol........................................................
       □            □
    e. Anda memandu kereta selepas mengambil beberapa gelas alkohol
       atau selepas minum dengan terlampau banyak........................
       □            □

11. Jika anda menandakan sebarang masalah pada soal selidik ini, sejauh
    manakah masalah-masalah tersebut membuatkan anda sukar untuk
    membuat kerja anda, mengurangkan kerja-kerja di rumah atau
    bergang dengan orang lain?

    Tidak mempunyai kesukaran langsung
    □
    Agak sukar
    □
    Sangat sukar
    □
    Terlampau sukar
    □

FOR OFFICE CODING: But Her #b,a, and c and 3 are all "YES". Bin Sat Dis the same but fill either "NO" or left blank.
All Abo if any of #b is "YES".
Diriikan oleh Dns. Robert L. Spitzer, Janet B. Y. Williams, Kurt Kinner dan ahli-ahli dengan peranan pendidikan daripada
Nama PRIME-MDB dan PRIME-MCD-TCDBY9 adalah hak cipta Pfizer Inc.
12. Dalam tempoh 4 minggu yang lalu, berapa kerapkah anda telah terganggu oleh sebarang masalah yang berikut?

<table>
<thead>
<tr>
<th>Masalah</th>
<th>Tidak terganggu</th>
<th>Telah sedikit terganggu</th>
<th>Telah banyak terganggu</th>
</tr>
</thead>
<tbody>
<tr>
<td>a. risau pasal kesihatan anda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>b. berat anda atau bagaimana rupa anda</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>c. sedikit atau tiada kegairahan seksual atau kenikmatan semasa seks</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>d. masalah bersama suami/isteri, pasangan/kekasih atau teman lelaki/perempuan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>e. stres kerana menjaga anak-anak, ibubapa, atau ahli keluarga</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>f. stres kerana kerja di luar rumah atau di sekolah</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>g. masalah kewangan atau kegelisahan</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>h. ketiadaan sesiapa untuk mengadu bila anda mempunyai masalah</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. sesuatu yang buruk berlaku baru-baru ini</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>j. memikirkan atau bermimpi berkenaan sesuatu yang buruk terjadi pada anda di masa lampau- seperti rumah anda musnah, satu kemalangan teruk, dipukul atau diserang, atau dipaksa melakukan perlakuan seks</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Semasa tahun lepas, pernahkah anda dipukul, tampar, terajang atau dicederakan secara fizikal oleh seseorang, atau adakah sesiapa memaksa anda melakukan perlakuan seks tanpa rela? TIDAK  YA

14. Apakah perkara paling stres dalam hidup anda sekarang?_____________________

15. Adakah anda mengambil ubat untuk kerisauan, kemurungan atau stres? TIDAK  YA
16. HANYA UNTUK WANITA: soalan berkenaan haid, mengandung dan bersalin

a. Yang manakah paling tepat menggambarkan tempoh haid anda?

Haid tidak berubah-ubah haid kerana  

(normal) mengandung atau baru bersalin  

haid telah menjadi tiada haid  

bercelar atau  

sekurang-kurangnya sekurang- 

kuantiti tempoh atau  

ada haid kerana  

setahun mengambil  

Hormon (HRT) atau pil perancang keluarga (OCP)

☐ ☐ ☐ ☐ ☐

b. Semasa minggu sebelum haid anda datang, adakah anda mengalami masalah serius dengan emosi anda –

TIDAK YA (atau tidak berkenaan)

seperti kemurungan, kegelisahan, cepat marah, marah

atau perasaan yang melampau?

☐ ☐ ☐ ☐

Sekiranya YA: adakah masalah ini hilang di penghujung haid anda?

☐ ☐ ☐ ☐

Adakah anda bersalin dalam tempoh 6 bulan yang lalu?

☐ ☐ ☐ ☐

Adakah anda keguguran dalam tempoh 6 bulan yang lalu?

☐ ☐ ☐ ☐

Adakah anda mengalami masalah untuk mengandung?

☐ ☐ ☐ ☐
Appendix 14- WSAS English version

<table>
<thead>
<tr>
<th>Work and Social Adjustment Scale (WSAS)</th>
</tr>
</thead>
</table>

**INSTRUCTIONS:**
People's psychological difficulties sometimes affect their ability to do certain day-to-day tasks in their lives. To rate your psychological difficulties look at each section and determine on the scale provided how much your psychological difficulties affect your ability to carry out the activity. Once you have decided on a number, circle it. Then proceed to the next stage.

1. **WORK**
   - Not at all
   - Slightly
   - Definitely
   - Markedly
   - Very severely
   - I cannot work

2. **HOME MANAGEMENT**
   - Cleaning, tidying, shopping, cooking, looking after home/children, paying bills etc.
   - Not at all
   - Slightly
   - Definitely
   - Markedly
   - Very severely

3. **SOCIAL AND LEISURE ACTIVITIES**
   - With other people, e.g., parties, pubs, outings, entertaining etc.
   - Not at all
   - Slightly
   - Definitely
   - Markedly
   - Very severely

4. **PRIVATE LEISURE ACTIVITIES**
   - Done alone, e.g., reading, gardening, sewing, hobbies, walking etc.
   - Not at all
   - Slightly
   - Definitely
   - Markedly
   - Very severely

5. **FAMILY AND RELATIONSHIPS**
   - Form and maintain close relationships with others including the people that I live with.
   - Not at all
   - Slightly
   - Definitely
   - Markedly
   - Very severely
Appendix 15- WSAS Malay Version

Skala Pekerjaan dan Penyesuaian Sosial
(WSAS Bahasa Malaysia version)

ARAHAN:


1. PEKERJAAN

0-------------1---------2----------3-----------4---------5-----------6--------7--------8

Tidak langsung    sedikit    sudah tentu    sangat terjejas    secara jujurnya

Saya tidak boleh bekerja

2. PENGURUSAN RUMAHTANGGA

Membasuh, membersih, membeli-belah, memasak, menjaga rumah/anak-anak, membayar sewa dll.

0-------------1---------2----------3-----------4---------5-----------6--------7--------8

Tidak langsung    sedikit    sudah tentu    amat terjejas    teramat terjejas
3. KEGIATAN SOSIAL DAN MASA LAPANG

Bersama orang lain, cth., parti, kelab malam, bersiar-siar, hiburan, kenduri dll

0---------1---------2---------3---------4---------5---------6---------7---------8
Tidak langsung  sedikit  sudah tentu  amat terjejas  teramat terjejas

4. KEGIATAN MASA LAPANG PERIBADI

Dilakukan bersendirian, cth., membaca, berkebun, menjahit, hobi, berjalan dll

0---------1---------2---------3---------4---------5---------6---------7---------8
Tidak langsung  sedikit  sudah tentu  amat terjejas  teramat terjejas

5. KELUARGA DAN HUBUNGAN

Mengadakan dan menjaga hubungan rapat bersama orang lain yang hidup bersama

0---------1---------2---------3---------4---------5---------6---------7---------8
Tidak langsung  sedikit  sudah tentu  amat terjejas  teramat terjejas

DARE- soalan penilaian kemasukan
### The General-Practice Users Perceived-Need Inventory (GUPI)

**Instructions:**

These questions ask about your needs for mental health care from health professionals during the last three months. Please first carefully read the list of three choices, one at the top of each of the columns, then fill in one circle like this • in each row, for the option which best applies to you.

<table>
<thead>
<tr>
<th>Type of help</th>
<th>I have not had this kind of help in the last 3 months but I would like to discuss this kind of help with a health care professional</th>
<th>I don't need to discuss this kind of help</th>
<th>I have had some of this kind of help in the last 3 months from a healthcare professional</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Information about emotional problems or getting treatment for these problems</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>2. Medication or tablets to help you with emotional problems</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>3. Counselling: including any kind of help to talk through your problems</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>4. Help to sort out practical issues such as housing or money problems</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
<tr>
<td>5. Help to improve your ability to work, to care for yourself, to use your time or to meet people</td>
<td>•</td>
<td>•</td>
<td>•</td>
</tr>
</tbody>
</table>

Have any of the following reasons stopped you in the last three months, from getting any of these kinds of help, or from getting as much help as you needed. Fill in any circles that apply to you.

- Not Applicable, I haven't needed any of these kinds of help
- I preferred to manage myself
- I didn't think anything would help
- I didn't know where to get help
- I was afraid to ask for help or what others would think of me if I did
- I couldn't afford the money
- I asked but didn't get help

Fill in (like this •) any of the circles that apply to you.
Appendix 17 - GUPI Malay Version

**Inventori Persepsi-Keperluan Pengguna bagi Doktor Klinik Awam**
*(General Practice User Perceived Need Inventory - GUPI Malay version)*

**ARAHAN:** Soalan-soalan ini bertanya keperluan anda untuk rawatan kesihatan mental dari ahli-ahli professional kesihatan sepanjang tiga bulan lalu. Tolong baca dengan teliti senarai tiga pilihan, setiap pilihan tertulis di atas setiap lajur, seterusnya **hitamkan satu bulatan di setiap baris**, untuk jawapan yang paling bersesuaian bagi anda.

<table>
<thead>
<tr>
<th>Jenis bantuan</th>
<th>Saya tidak pernah mendapat bantuan begini sepanjang 3 bulan lalu tapi saya ingin berbincang berkenaan bantuan ini dengan ahli-ahli kesihatan professional</th>
<th>Saya tidak perlu berbincang berkenaan bantuan begini</th>
<th>Saya pernah mendapat bantuan begini sepanjang 3 bulan yang lepas dari ahli-ahli professional kesihatan</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Maklumat berkenaan masalah emosi atau rawatan untuk masalah ini</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>2. Ubat atau pil untuk membantu masalah emosi</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>3. Kaunseling; termasuk apa sahaja bantuan dalam bentuk bercakap</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
<tr>
<td>4. Bantuan untuk menolong menyelesaikan masalah praktikal seperti perumahan atau kewangan</td>
<td>O</td>
<td>O</td>
<td>O</td>
</tr>
</tbody>
</table>

Bantuan ini bermula _________ minggu yang lepas
5. **Bantuan untuk**
   menambah keupayaaan bekerja,
   menjaga diri,
   memanfaatkan masa atau berjumpa orang

   O       O       O

   hitamkan bulatan di setiap barisan

   Bantuan ini bermula __________ minggu yang lepas

---

Adakah antara sebab-sebab di bawah menghalang anda sepanjang tiga bulan yang lalu, dari mendapatkan bantuan, atau sebanyak bantuan yang diperlukan. **Hitamkan bulatan yang sesuai dengan anda.**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Tidak perlu, saya tidak memerlukan apa-apa bantuan sebegini</td>
<td>O</td>
</tr>
<tr>
<td>Saya lebih cenderung mengurus diri sendiri</td>
<td>O</td>
</tr>
<tr>
<td>Saya tidak fikir apa-apa pun boleh membantu</td>
<td>O</td>
</tr>
<tr>
<td>Saya tidak tahu di mana mendapatkan bantuan</td>
<td>O</td>
</tr>
<tr>
<td>Saya takut meminta bantuan atau apa yang orang lain akan fikirkan tentang saya sekiranya saya minta bantuan.</td>
<td>O</td>
</tr>
<tr>
<td>Saya tidak mampu (kewangan)</td>
<td>O</td>
</tr>
<tr>
<td>Saya minta bantuan tapi tidak diberi bantuan</td>
<td>O</td>
</tr>
</tbody>
</table>
### Appendix 18- Mental Health Service Utilization Questionnaire English Version

#### Section 1: Questions relating to any overnight stays in hospital SR1-SR14

**SR1** Have you ever in your lifetime been admitted overnight or longer in any hospital for any reason (FEMALES ONLY: other than uncomplicated childbirth)?

- **YES**, number: ____________
- **NO**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________

**INTERVIEWER NOTE:** ROUTINE ADMISSIONS FOR CHILD BIRTH ARE NOT INCLUDED BUT ADMISSIONS FOR COMPLICATIONS ARISING FROM CHILDBIRTH OR PREGNANCY ARE.

**SR2** How many times in your lifetime has this occurred?

- **TEN TIMES**, number: ____________
- **LESS THAN TEN TIMES**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________

**SR3** How old were you the first time this occurred?

- **YEARS OLD**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________

**SR4** (Was that admission/ were any of these admissions) for a physical health problem?

- **YES**, number: ____________
- **NO**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________

**SR5** In the past 12 months, how many times were you admitted overnight to any hospital for a physical health problem?

- **TEN TIMES**, number: ____________
- **LESS THAN TEN TIMES**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________

**SR6** (For those admissions in the past 12 months) how many nights in total did you stay in hospital because of a physical health problem?

- **TEN NIGHTS**, number: ____________
- **LESS THAN TEN NIGHTS**, number: ____________
- **DON'Tknow**, number: ____________
- **REFUSED**, number: ____________

**SR7** Was that admission in a public or a private bed?

- **PUBLIC**, number: ____________
- **PRIVATE**, number: ____________
- **NEITHER PUBLIC NOR PRIVATE**, number: ____________
- **DON'T KNOW**, number: ____________
- **REFUSED**, number: ____________
SR8  Refer to the card SR1. Thinking of your most recent admission for physical health problems, please choose the category or categories from the list that best describe the main reason or reasons for that admission.
CODE MORE THAN ONE REASON FOR THE ADMISSION IF NECESSARY.

SR9  The next few questions are about problems with your mental health. This includes but is not restricted to such things as stress, anxiety, depression or dependence on alcohol or drugs.
With this definition in mind have you ever been admitted overnight or longer in any hospital for problems with your mental health?
YES........................................... 1
NO............................................. 5  GO TO Section two question SR15 table 1
DON'T KNOW.............................. 8  GO TO Section two question SR15 table 1
REFUSED..................................... 9  GO TO Section two question SR15 table 1

SR10 How old were you the first time this occurred?
YEARS OLD
DON'T KNOW.............................. 998
REFUSED..................................... 999

SR11 In the past 12 months how many times were you admitted overnight to any hospital for problems with your mental health?
(that is for things such as stress, anxiety, depression or dependence on alcohol or drugs.)
TIMES
DON'T KNOW.............................. 998  GO TO Section two question SR15 table 1
REFUSED..................................... 999  GO TO Section two question SR15 table 1
IF CODED ZERO GO TO Section two question SR15 table 1

SR12 (For that admission/Over those admissions) in the past 12 months, how many nights in total did you stay in hospital because of problems with your mental health?
NIGHTS
DON'T KNOW.............................. 998
REFUSED..................................... 999

SR13 Was that admission in a public or a private hospital?
PUBLIC....................................... 1
PRIVATE..................................... 5
BOTH PUBLIC & PRIVATE.. 6
DON'T KNOW.............................. 8
REFUSED..................................... 9

SR14 Refer to the card SR2. Thinking of your most recent admission for mental health problems, please choose the category or categories from the list which best describe the main reason or reasons for that admission.
CODE MORE THAN ONE REASON FOR THE ADMISSION IF NECESSARY (COLUMN).
<table>
<thead>
<tr>
<th>Column 1</th>
<th>Column 2</th>
<th>Column 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Apart from the times you were admitted to hospital overnight or longer) Have you ever seen any of the doctors or professionals on this list for your own physical or mental health? Please circle all those that client says they have seen</td>
<td>In the past 12 months, how many consultations did you have with ________ for your physical or mental health?</td>
<td>How many minutes did (that consultation last on average)?</td>
</tr>
<tr>
<td>A. General practitioner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Psychiatrist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Psychologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Mental health nurse</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Other professional providing specialist mental health services including social worker, counselor, occupational therapist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Specialist doctor or surgeon including cardiologist, gynecologist or urologist</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Other professional providing general services including social worker, occupational therapist, counselor</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Complementary / alternative therapies such as Iskcelebit or osteopaths</td>
<td></td>
<td></td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Income &amp; Wealth</td>
<td>Financial Markets</td>
<td>Political Economy</td>
</tr>
</tbody>
</table>

Please note all these themes overlap for problems with human development.

For initiatives to have more impact, they may work in combination with one another.

For practical purposes, systems thinking makes it easier to understand and manage complexity.

Please refer to the document for more information on the production of columns.
SOALAN-SOALAN BERKENAAN BERMALAM DI HOSPITAL
(Mental Health Service Utilization Questionnaire Bahasa Malaysia version)

SR 1 Adakah anda pernah dimasukkan bermalam atau tinggal lama di mana-mana hospital atas apa-apa sebab (BAGI PEREMPUAN: selain kelahiran anak normal/tanpa komplikasi)

PERHATIAN KEPADA PENEMUDUGA: KEMASUKAN RUTIN UNTUK KELAHIRAN TIDAK DIKIRA TAPI KEMASUKAN KERANA KOMPLIKASI SEMASA KELAHIRAN ATAU MENGANDUNG ADALAH DIKIRA.

YA..................1
TIDAK.............. 5 TERUSKAN KE SEKSYEN DUA SOALAN SR15 RAJAH 1
TIDAK TAHU….8 TERUSKAN KE SEKSYEN DUA SOALAN SR15 RAJAH 1
ENGGAN JAWAB..........999 9 TERUSKAN KE SEKSYEN DUA SOALAN SR15 RAJAH 1

SR2 Berapa kali dalam hidup kamu perkara ini berlaku?

____________KALI
TIDAK TAHU....................998
ENGGAN JAWAB.....................999

SR3 berapa umur anda semasa pertama kali ini berlaku?

____________ TAHUN
TIDAK TAHU..........................998
ENGGAN JAWAB.....................999
SR4  (adakah kemasukan itu/adakah antara kemasukan itu) untuk masalah kesihatan fizikal?

YA................................1
TIDAK..........................5 TERUSKAN KE SR9
TIDAK TAHU...............8 TERUSKAN KE SR9
ENGGAN JAWAB.................9 TERUSKAN KE SR9

SR5  Selama 12 bulan yang lalu, berapa kali anda bermalam di mana-mana hospital untuk masalah kesihatan fizikal?

______________ KALI
TIDAK TAHU.........................998 TERUSKAN KE SR9
ENGGAN JAWAB..................999 TERUSKAN KE SR9
SEKIRANYA DIKOD KOSONG TERUSKAN KE SR9

SR6  (Untuk kemasukan tersebut/ Semasa kemasukan-kemasukan tersebut) sepanjang 12 bulan yang lalu, berapa malam secara keseluruhannya anda tinggal di hospital kerana masalah kesihatan fizikal?

______________ malam
TIDAK TAHU.....................998
ENGGAN JAWAB...............999

SR7  adakah kemasukan ke hospital awam atau swasta?

AWAM..............................1
SWASTA.......................... 5
AWAM & SWASTA.............6
TIDAK TAHU.................8
ENGGAN JAWAB...........9
SR 8 merujuk kepada kad SR1. Memikirkan mengenai kemasukan anda yang terkini untuk masalah kesihatan fizikal, sila pilih satu kategori atau kategori-kategori dalam senarai yang paling baik menerangkan satu sebab atau sebab-sebab untuk kemasukan itu.

KOD: LEBIH DARI SATU SEBAB UNTUK KEMASUKAN SEKIRANYA PERLU __________________________

SR9 soalan-soalan seterusnya adalah berkenaan masalah kesihatan mental anda. Ini termasuk tapi tidak semestinya terhad kepada stres, kegelisahan, kemurungan dan ketagihan alkohol atau dadah.

Dengan definisi ini di minda adakah anda pernah masuk bermalam atau lebih lama di hospital untuk masalah kesihatan mental anda?

YA .................. 1

TIDAK ................. 5 TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1

TIDAK TAHU .......... 8 TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1

ENGGAN JAWAB .... 9 TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1

SR10 berapa umur anda ketika pertama kali ini berlaku?

__________________ TAHUN

TIDAK TAHU ..................... 998

ENGGAN JAWAB .................. 999

SR11 selama 12 bulan kebelakangan berapa kali anda bermalam di mana-mana hospital untuk masalah-masalah kesihatan mental anda?

(ini adalah untuk masalah seperti stres, kegelisahan, kemurungan atau ketagihan alkohol dan dadah)

__________________ KALI

TIDAK TAHU .................... 998 TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1

ENGGAN JAWAB ............. 999 TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1
SEKIRANYA DIKOD KOSONG TERUSKAN KE SEKSYEN DUA SR15 RAJAH 1

SR12 Untuk kemasukan tersebut/ Semasa kemasukan-kemasukan tersebut) sepanjang 12 bulan yang lalu, berapa malam secara keseluruhannya anda tinggal di hospital kerana masalah kesihatan mental?
_______________malam
TIDAK TAHU………………..998
ENGGAN JAWAB…………..999

SR13 adakah kemasukan ke hospital awam atau swasta?
AWAM……………………………1
SWASTA…………………………5
AWAM & SWASTA……….6
TIDAK TAHU…………………8
ENGGAN JAWAB……………9

SR 14 merujuk kepada kad SR2. Memikirkan mengenai kemasukan anda yang terkini untuk masalah kesihatan mental, sila pilih satu kategori atau kategori-kategori dalam senarai yang paling baik menerangkan satu sebab atau sebab-sebab untuk kemasukan itu.

KOD: LEBIH DARI SATU SEBAB UNTUK KEMASUKAN SEKIRANYA PERLU (JALUR)
SEKSYEN 3: KONSULTASI KESIHATAN SR40-SR137 Rajah 4: Konsultasi kesihatan mental dan fizikal

Sila tunjukkan kad SR5 kepada peserta. Sila bulatkan segala soalan yang berkaitan di jalur 1, sekiranya perkara tertentu dibulatkan sila Tanyakan soalan selanjutnya di jalur 2 dan 3.

<table>
<thead>
<tr>
<th>Jalur 1</th>
<th>Jalur 2</th>
<th>Jalur 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>(selain dari masa anda dimasukkan bermalam di hospital atau tinggal lebih lama) pernahkah anda berjumpa doctor atau professional dalam senarai ini untuk kesihatan mental atau fizikal?</td>
<td>Sepanjang 12 bulan, berapa banyak konsultasi/temujanji yang anda buat dengan......................untuk kesihatan mental atau fizikal?</td>
<td>Berapa minit (konsultasi itu/secara purata konsultasi) mengambil masa?</td>
</tr>
<tr>
<td>Sila bulatkan semua yang peserta beritahu mereka pernah jumpa</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Doktor di klinik awam (swasta atau kerajaan)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Pakar Psikiatri</td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Pakar Psikologi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Jururawat Kesihatan Mental</td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Ahli professional lain yang menyumbangkan perkhidmatan kesihatan mental seperti pegawai kebajikan sosial, kaunselor, jurupulih kerja</td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Doktor pakar atau pakar bedah termasuk pakar jantung, sakit puan atau pakar urologi</td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Ahli professional lain yang menyumbangkan perkhidmatan umum seperti pegawai kebajikan social, kaunselor, jurupulih kerja</td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Perawat alternatif atau komplimentari seperti bomoh, dukun, ‘herbalist’ atau ‘naturopath’</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Rajah 5: Konsultasi Kesihatan Mental

Sila tunjukkan kad SR5 kepada peserta. Sila bulatkan segala soalan yang berkaitan di jalur 1, sekiranya perkara tertentu dibulatkan sila tanyakan selanjutnya di jalur 2-7.

<table>
<thead>
<tr>
<th>Jalur 1</th>
<th>Jalur 2</th>
<th>Jalur 3</th>
<th>Jalur 4</th>
<th>Jalur 5</th>
<th>Jalur 6</th>
<th>Jalur 7</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pernahkah anda berjumpa…………….. untuk masalah kesihatan mental anda?</td>
<td>Berapakah umur anda kali pertama anda berjumpa…………….. untuk masalah kesihatan mental anda? (jawab dalam tahun)</td>
<td>Sepanjang 12 bulan, berapa banyak konsultasi/emujanji yang anda buat dengan………. untuk kesihatan mental?</td>
<td>Berapa minit (konsultasi itu/secara purata konsultasi) mengambil masa?</td>
<td>Pilih bagaimana perkhidmatan ini dibayar? (baca kad SR6 untuk senarai yang berkaitan)</td>
<td>Tidak mengambil kira wang pulangan insuran kesihatan</td>
<td>Memikirkan berkenaan… … Yang pernah anda jumpa untuk masalah kesihatan mental sepanjang 12 bulan, adakah doctor di klinik awam yang mencadangkan atau merujuk secara rasmi anda ke……….</td>
</tr>
</tbody>
</table>

A. Doktor klinik awam (swasata atau kerajaan) |
B. Pakar Psikiatri |
C. Pakar Psikologi |
D. Jururawat Kesihatan Mental |
<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>E. Ahli professional lain yang menyumbangkan perkhidmatan kesihatan mental seperti pegawai kebajikan sosial, kaunselor, jurupulih kerja</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>F. Doktor pakar atau pakar bedah termasuk pakar jantung, sakit puan atau pakar urologi</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>G. Ahli professional lain yang menyumbangkan perkhidmatan umum seperti pegawai kebajikan sosial, kaunselor, jurupulih kerja</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>H. Perawat alternatif atau komplimentari seperti bomoh, dukun, 'herbalist' atau 'naturopath'</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
### Appendix 20- Reference Check List for Medical Problems and Physical Problems

<table>
<thead>
<tr>
<th>Physical Illnesses And Clinical Problems</th>
<th>Ear Problems</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diabetes Mellitus</td>
<td>Heart Diseases Or Angina</td>
</tr>
<tr>
<td>Cancer</td>
<td>Allergy</td>
</tr>
<tr>
<td>Dressing Or Treatment</td>
<td>Epilepsy Or Any Neurological Disorders</td>
</tr>
<tr>
<td>Upper Respiratory Infection</td>
<td>Wound Infection</td>
</tr>
<tr>
<td>Muskuloskeletal Disorders</td>
<td>Parkinson</td>
</tr>
<tr>
<td>Dental Problems</td>
<td>Haemorrhoid</td>
</tr>
<tr>
<td>Accidental Injury</td>
<td>UPT Check</td>
</tr>
<tr>
<td>Diarrhea</td>
<td>Measles Or Any Acute Infection</td>
</tr>
<tr>
<td>Medical Check-Up</td>
<td>Kidney Problems</td>
</tr>
<tr>
<td>Multiple Chronic Medical Diseases</td>
<td>Migrane/Headache</td>
</tr>
<tr>
<td>Chronic Infection/Hepatitis</td>
<td>Asthma</td>
</tr>
<tr>
<td>Hypertension</td>
<td>Tuberculosis</td>
</tr>
<tr>
<td>Thyroid Or Hormonal</td>
<td>Gout, Arthritis Or Joint Problems</td>
</tr>
<tr>
<td>Glaucoma Or Eye Disease</td>
<td>Anaemia</td>
</tr>
<tr>
<td>Skin Problems</td>
<td></td>
</tr>
<tr>
<td>Gastritis</td>
<td></td>
</tr>
<tr>
<td>Urinary Tract Infection</td>
<td></td>
</tr>
<tr>
<td>Stroke</td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td></td>
</tr>
<tr>
<td>Gynae Problems</td>
<td></td>
</tr>
<tr>
<td>High Cholesterol</td>
<td></td>
</tr>
</tbody>
</table>
## Appendix 21- Reference Check List for Medical Problems and Physical Problems In Malay

<table>
<thead>
<tr>
<th>Penyakit Fizikal dan Masalah Klinikal</th>
<th>Sakit Jantung</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kencing Manis</td>
<td>Alahan</td>
</tr>
<tr>
<td>Ketumbuhan / Barah</td>
<td>Sawan Babi atau Penyakit Saraf</td>
</tr>
<tr>
<td>Cuci Luka atau Rawatan</td>
<td>Jangkitan Luka</td>
</tr>
<tr>
<td>Jangkitan Salur Nafas Atas</td>
<td>Parkinson</td>
</tr>
<tr>
<td>Penyakit Otot dan Sendi</td>
<td>Buasir</td>
</tr>
<tr>
<td>Penyakit Pergigian</td>
<td>Pemeriksaan Kehamilan</td>
</tr>
<tr>
<td>Kecedaraan</td>
<td>Campak atau Jangkitan Akut Lain</td>
</tr>
<tr>
<td>Cirit-birit</td>
<td>Masalah Buah Pinggan</td>
</tr>
<tr>
<td>Pemeriksaan Kesihatan</td>
<td>Migran/Sakit Kepala</td>
</tr>
<tr>
<td>Pelbagai Penyakit Medikal yang Kronik</td>
<td>Ampus/penyakit Asma</td>
</tr>
<tr>
<td>Jangkitan Kronik / Hepatitis</td>
<td>Tuberculosis/Batuk Kering</td>
</tr>
<tr>
<td>Darah Tinggi</td>
<td>Gout, Arthritis Atau Radang Sendi</td>
</tr>
<tr>
<td>Masalah Kelenjar Tiroid atau Hormon</td>
<td>Kurang Darah/Pucat</td>
</tr>
<tr>
<td>Glaucoma atau Penyakit Mata</td>
<td></td>
</tr>
<tr>
<td>Masalah Kulit</td>
<td></td>
</tr>
<tr>
<td>Penyakit Gastrik</td>
<td></td>
</tr>
<tr>
<td>Jangkitan Salur Kencing</td>
<td></td>
</tr>
<tr>
<td>Strok / Angin Ahmar</td>
<td></td>
</tr>
<tr>
<td>Malaria</td>
<td></td>
</tr>
<tr>
<td>Masalah Sakit Puan</td>
<td></td>
</tr>
<tr>
<td>Kolesterol Tinggi</td>
<td></td>
</tr>
<tr>
<td>Masalah Telinga</td>
<td></td>
</tr>
</tbody>
</table>
Appendix 22 Abstract Presentation 1

CO-MORBIDITY, TREATMENT GAP, DISABILITY AND PERCEIVED NEED - MENTAL HEALTH SERVICES IN PRIMARY CARE SETTING OF KOTA KINABALU (ORAL)

Ahmad Faris Abdullah*, Harry Minas**, Graham Meadows***, Narappa Kumaraswamy**

*Universiti Malaysia Sabah, Kota Kinabalu.
**School of Pharmacy, The University of Melbourne, Australia
***Monash University Australia

Introduction: Prevalence and treatment gap of common mental disorder in primary care varies among the Low and Middle Income Countries. Rapid social changes have influenced negatively the mental health indicators among Asian countries. Mental health services in the public health sector in Sabah are still rudimentary compare to the rapid socio-economic challenges.

Objective: The study was designed to determine the prevalence, treatment gap, disability and perceived need among primary care attenders with probable common mental disorder among primary care attenders in Kota Kinabalu.

Methodology: This is a Cross-sectional, general health clinic based study among primary care attenders in Kota Kinabalu district of Sabah from April 2010 to August 2010. The project received ethical ethics approval from UMS, MREC/09/1(22), FMHRR-09-234-4353, The University of Melbourne 029353. Simple random sampling was used to select patients at three government general outpatient clinics. 430 consented and 51 patients (12.5%) refused. Participants were interviewed by trained interviewers using a Patient Health Questionnaire, Work and Social Adjustment Scale, General Practitioner User Perceived Need Questionnaire and Mental Health Service Utilisation Questionnaire.

Results: The prevalence of common mental disorder was 53.1% with 32.1% co-morbidity, substantially higher than in West Malaysia. 25.5% of 224 participants who had common mental disorder experienced moderate to severe disability. 91.5% had received no treatment, and 18.8% - 42.4% had perceived unmet needs.

Conclusion: In summary, there is huge treatment gap, high co-morbidity and unmet needs. Therefore, mental health service in this setting needs to be reviewed and addressed.

MALAYSIAN CONTRIBUTION IN MENTAL HEALTH RESEARCH: ANALYSIS OF INDEXED JOURNAL PUBLICATIONS 1960-2008 (POSTER)

Ahmad Faris Abdullah*, Harry Minas**

*Universiti Malaysia Sabah, Kota Kinabalu.
**School of Pharmacy, The University Of Melbourne, Australia

Introduction: The importance of mental health and mental disorders as a public health issues are palpable among Malaysian experts for quite some time. There are several studies done in Malaysia focusing on psychiatric morbidity, mental health policy and profile, cultural beliefs, psychiatric services and rare syndrome that can be traced back to the 1960.
Appendix 23- Abstract Presentations 2 and 3
Appendix 24- Abstracts 4 and 5
Common Mental Disorder and Mental Health Services in Primary Care Setting of Kota Kinabalu

Ahmad Firis A, Minna H, Meadows G
1 Universiti Malaysia Sabah, Kota Kinabalu, Sabah, Malaysia
2 Centre for International Mental Health, University of Melbourne, Australia

Modernization and economic development creates rapid social changes around Asia. These rapid social changes have influenced negatively the mental health indicators among Asian countries. For the state of Sabah, the socio-economic challenges are even more complicated with issues of poverty, immigration, diverse and increasing growth of population. Mental health services are playing a ‘catching up’ game with the rapid socio-economic challenges. This study reported on one of the most vulnerable section of the community to experience common mental disorder, the primary care attenders around Kota Kinabalu. It is a Cross-sectional, general health clinic based study among primary care attenders in Kota Kinabalu district of Sabah. Aims: The study was designed to determine the prevalence of common mental disorder among primary care attenders in Kota Kinabalu and to identify the factors that were associated with it. It also determines the treatment gap, disability and perceived need for psychiatric treatment and care among primary care attenders with probable common mental disorder. Method: Simple random sampling was used to select patients at three government general outpatient clinics. Four hundred and eighty one patients were invited to participate. Four hundred and thirty consented and 51 patients (13.8%) refused. Participants were further interviewed by trained interviewers using a standard protocol to obtain socio-demographic data and clinical profile, Patient Health Questionnaire (PHQ), Work and Social Adjustment Scale (WSAS), General Practitioner User Perceived Need Questionnaire and Mental Health Service Utilization Questionnaire. Results: The prevalence of common mental disorder was 32.1%, substantially higher than in similar previous studies in West Malaysia. 91.9% of those with mental disorder had received no treatment, and 18.8% - 42.4% had additional unmet needs among five domains of perceived need. The presentation makes recommendations for mental health service delivery through primary care clinics in Sabah.
Appendix 26-Malaysia Map

https://www.worldatlas.com/webimage/countrys/asia/my.htm
### Appendix 27 - Timeline of the study

<table>
<thead>
<tr>
<th>Task</th>
<th>2008</th>
<th>2009</th>
<th>2010</th>
<th>2011</th>
</tr>
</thead>
<tbody>
<tr>
<td>Registration of program</td>
<td></td>
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<tr>
<td>Literature review</td>
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<tr>
<td>Preparation and proposal presentation</td>
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<tr>
<td>Acquiring approval from the sites</td>
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<tr>
<td>Ethical clearance from Universiti Malaysia Sabah (UMS)</td>
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<td>Ethical clearance from Ministry of Health</td>
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<td>Ethical clearance from Univ of Melbourne</td>
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<tr>
<td>Preparation of instrument</td>
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<tr>
<td>Preparation of protocol</td>
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<tr>
<td>Training of research assistant and pilot</td>
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<tr>
<td>Data collection</td>
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<td>Cleaning data</td>
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