PSYCHIATRIC MORBIDITY AMONG ORANG ASLI IN BUKIT LANJAN

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LIST OF ABBREVIATIONS

GAD	Generalised Anxiety Disorder
MDD	Major Depressive Disorder
PTSD	Post-Traumatic Stress Disorder
OCD	Obsessive Compulsive Disorder
CI	Confidence Interval
DSM 5	Diagnostic and Statistical Manual 5
OR	Odd ratio
DASS-21	Depression, Anxiety, Stress Scale 21 Test
JAKOA	Jabatan Kemajuan Orang Asli Malaysia
M.I.N.I	Mini International Neuropsychiatric Interview
SD	Standard Deviation
JHEOA	Jabatan Hal Ehwal Orang Asli
SPSS	Statistical Package for Social Sciences

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ABSTRACT

Prevalence of Psychiatric Morbidity Among Orang Asli In Bukit Lanjan, Selangor, Malaysia

Introduction

Orang Asli, the indigenous people of peninsular Malaysia, are those peoples who were born among Orang Asli, lives according to their distinguished culture and beliefs, and spoke their native languages. Malaysia has evolved rapidly over the years in the socioeconomic development especially in the rural areas. More jungle areas are open up for land development scheme such as Federal Land Development Authority (FELDA), housing projects, commercial farms and many more. Indigenous people are forced to face this rapid urbanization. The questions arise whether they are able to cope with rapid changes of lifestyles that will change their way of life.

The Desa Temuan resettlement village in Bukit Lanjan, Selangor, Malaysia is one of the resettlement village for Orang Asli of the Temuan tribe, subgroup of Proto-malays group of Orang Asli. Like other indigenous tribes in the world, the Temuan tribe in Bukit Lanjan have been exposed to multiple risk factors for poor mental health. Despite the rising concerns, no robust data are available on the prevalence of psychiatric morbidity among Orang Asli in Bukit Lanjan in Selangor.

Objectives

The objectives of this paper are to determine the prevalence of psychiatric morbidity among Orang Asli in Bukit Lanjan, Selangor.

Method

A cross sectional study was conducted in Desa Temuan, Bukit Lanjan using DASS-21 and MINI-7 Questionnaires. The study also obtained the demographic data of the participants.

Results

A total of 100 Orang Asli and 93 non-Orang Asli participated in this study. The psychiatric morbidity was determined by DASS-21 and MINI-7 Questionnaires. The prevalence of Major Depressive Disorder was 4% (n=4), Generalised Anxiety Disorder was 7% (n=7), Obsessive Compulsive Disorder was 5% (n=5), Alcohol Use Disorder was 5% (n=5) and Panic Disorder was 1% (n=1). Based on multiple logistic regression analysis, the predictors of psychiatric illness are age, ethnicity, marital status, underlying stress, anxiety, depression and employment status.

Conclusion

The prevalence of psychiatric illness among Orang Asli in Bukit Lanjan, Selangor is almost similar with other studies done on Orang Asli community in Peninsular Malaysia. Findings from this study can be used as baseline data to develop an effective program to assist the management of common psychiatric illness among them. The identification of predictors for psychiatric illness in the community is important to identify the target population for the program.

Keywords: Orang Asli, Psychiatric Morbidity, Psychiatric Illness, Indigenous People, Selangor, Malaysia

ABSTRAK

Kekerapan Masalah Psikiatri di kalangan Orang Asli di Bukit Lanjan, Selangor

Pengenalan

Orang Asli, adalah komuniti minoriti dan antara komuniti yang terawal yang tinggal di Semenanjung Malaysia. Mereka tinggal di kawasan pedalaman dan hutan hutan di Malaysia. Walaubagaimanapun, pembangunan yang pesat menjejaskan penempatan, tradisi hidup dan sosioekonomi mereka di seluruh negara. Desa Temuan di Bukit Lanjan adalah tempat penempatan semula oleh kerajaan untuk Orang Asli dari suku Temuan yang asalnya mereka menduduki di kawasan hutan Bukit Nanas, Kuala Lumpur. Seperti kaum Orang Asli di negara-negara lain, arus kemodenan menyebabkan Orang Asli suku Temuan juga terdedah kepada risiko-risiko yang boleh menjejaskan kesihatan mental. Walaubagaimanapun, terdapat kurang kajian tentang kekerapan masalah psikiatri di kalangan Orang Asli di Selangor.

Objektif

Objektif kajian ini adalah untuk menentukan kekerapan masalah psikiatri di kalangan Orang Asli di Bukit Lanjan, Selangor

Kaedah

Satu kajian rentas telah dijalankan ke atas 193 penduduk di Desa temuan di Bukit Lanjan menggunakan soal-selidik DASS-21 dan MINI-7. Data demografi juga diperolehi.

Keputusan

Jumlah peserta adalah 100 orang Asli dan 93 orang dari kaum lain. Jumlah kekerapan penyakit kemurungan di kalangan Orang Asli di Bukit Lanjan adalah 4% (n=4), Penyakit Anzieti adalah 7% (n=7), OCD adalah 5% (n=5), penyalahgunaan alkohol adalah 5% (n=5) dan Penyakit Panik adalah 1% (n=1). Berdasarkan analisis logistik regresi berganda. Didapati faktor-faktor yang berkait rapat dengan masalah psikiatri adalah kaum, status perkahwinan dan status pekerjaan.

Kesimpulan

Kekerapan masalah psikiatri di kalangan Orang Asli di Bukit Lanjan, Selangor adalah hampir sama dengan kajian-kajian yang telah dijalankan dikalangan komuniti orang asli di Semenanjung Malaysia yang lain. Hasil penemuan dalam kajian ini boleh dijadikan asas untuk membangunkan program yang lebih berkesan untuk menguruskan masalah psikiatri di kalangan Orang Asli di Bukit Lanjan, Selangor. Pengenalpastian tentang faktor yang berkaitrapat dengan masalah -masalah psikiatri juga penting untuk mengenal pasti golongan sasar untuk program-program seterusnya.

CHAPTER 1 : INTRODUCTION

As early as 11,000 BC, indigenous people of the peninsular Malaysia or Orang Asli were believed to have settled in some of the areas in Malaysia.[1] They are one of the small minorities of Malaysia, and their small population is only about 149, 723 from the 30 million people of Malaysia. [2] In peninsular Malaysia, Orang Asli commonly live in the jungle and far from the normal population. In the past, they have lack of basic facilities such as clean water, electricity, health care system, education and other services and they did not get access to proper hospital care, vaccination and other health services. [3]

Throughout the world, most indigenous people face similar problems of rapid cultural change that will affect their health, socioeconomic status and cultural identity. Indigenous people are generally considered to have more prevalence of mental illness than the general population. [4] In Australia, indigenous people are struggling with the rapid development of the country and suffer from poverty, changes of home, unemployment, cultural changes, family violence, depression and addiction.[3] Multiple studies in Australia stated that indigenous Australians have more psychiatric morbidities compared to normal population.[5]

The reason for this research was conducted because there are only a few latest data available on the prevalence of psychiatric morbidities among indigenous people or Orang Asli. Eventhough Orang Asli are considered at higher possibilities to be diagnosed with mental illness but many researches do not include direct comparisons with similar non-indigenous controls. A study by Abd Rashid et al in 2010 showed that the prevalence of psychiatric illness among the community of Orang Asli in Pulau

Carey, Selangor was comparable with general population. [6] From 183 orang asli that participated, the study showed that from the Mini international Neuropsychiatric Interview (MINI) and Alcohol Use Disorder Identification Test (AUDIT) questionnaire, 8 of them were diagnosed with alcohol use disorder, 1 for depression, 1 for dysthymia, 1 for antisocial personality disorder. [6]

In our study, we used a structured questionnaire which is Depression, Anxiety, Stress Scale-21 (Malay and English version) and Mini International Neuropsychiatric Interview -version 7 (MINI-7). We assessed the psychiatric morbidity among Orang Asli in Bukit Lanjan, Selangor and we made a comparison regarding the prevalence among Orang Asli with the general populations in Bukit Lanjan, Selangor. As there were limited data about prevalence of psychiatric morbidity among orang Asli in Bukit lanjan, the findings would help the relevant authorities to comprehend the problems and find ways to tackle the issues.

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CHAPTER 2 : LITERATURE REVIEW

2.1 The Indigenous Tribes Across the World

There are indigenous people all throughout the world, and they come from thousands of cultures.[4, 7] They practice their own tradition, rituals and ancestors` beliefs. They depend on their land and the natural resources nearby for their livelihoods, traditions as well and their physical and spiritual well-being. They are regarded as indigenous because their ancestors were the populations that inhabited the land before the time of colonization or before the initiation of present political boundries.[8] To this date, many people believe that the definition of indigenous is ambiguous, as it is often complicated, controversial and even provocative.[7, 9, 10]

United Nations [11] states that there is no internationally agreed definition of what represent indigenous people or ethnic minorities. United Nations [11] thus defined an ethnic group as having a commonly shared sense of identity with shared characteristics such as language, religion, tribe, nationality, race, or a combination. The term “ethnic minority” thus generally refers to ethnic or racial groups in a given country in which they are in a non-dominant position, i.e., a dominant ethnic population [11].

A considerable portion of the population commonly uses the term “indigenous” as a harsh or blunt expression implying someone as primitive.[12-14] Consequently, the United Nations (2008) further categorize these indigenous people as inheritors, and practitioners of unique cultures and have distinct ways of relating to their people and the environment.

The term is used to acknowledge the diversity of cultures, languages, and traditions that exist among Indigenous people. They depend on their land and the natural resources nearby for their livelihoods, traditions as well and their physical and spiritual well-being [15] These indigenous people have diverse and dissimilar social, traditional, economic and political characteristics that are distinct from those of the prevailing societies in which they live.[16, 17]

Then, over the centuries these indigenous communities have migrated, intermarriage occurred, many have died, or changed their languages and altered their allegiances.[12-14] Through the centuries as well with colonization, the dominant and influential groups continue to take over the indigenous groups` ancestral land.[12-14, 18] The aerial conquest resulted in the mass killings of indigenous people, which, to this date, have continued.[18, 19]

The dilemma continues as not only is it challenging to define indigenous people` it is as well not easy to identify them.[12-14] While it is easy to identify some indigenous groups, there are many more who are remote from the modern civilization.[20] The unclear description of Indigenous identification continues to contribute to the groups` sidelining and insufficient data for their numbers, health, and socioeconomic circumstances.[20, 21]

It is estimated that there are 5000 to 6000 distinct groups of indigenous people living in over 90 countries all over the world [22-24]. Their numbers is more than 250 million persons or about 4-5 % of the world's populations [25]. It is estimated that there are 500 to 600 distinct groups of indigenous people all over the world.[26] The Indigenous people make up one-third of the world's most inferior social group, and they face startling and worrying conditions in all countries where the group exists [15, 23, 27, 28]. In fact,

in 2004, the UN Commission on Human Rights [29] reported that indigenous people internationally continue to be among the poorest and most marginalised population.

However, these Indigenous people are subjected to and endure economic and political marginalization [11, 18, 28]. Additionally, there is further inter-group social, cultural, and environmental differences adding to an enormous diversity of values, lifestyles, and perspectives within any community and any urban Indigenous population [19].

Interestingly, most Indigenous populations are relative minorities to the total population of any country that have the Indigenous population [24]. The discrepancy in health outcomes for Indigenous people compared to the general population is significant and noteworthy [20, 30]. Their overall, health is unfavourable compared with their non-Indigenous counterparts [21].

In many countries, particularly the larger and more powerful nations, the needs and rights of these Indigenous people are of little concern to the general population and governments [18]. In some countries, the people and government do not officially recognise their Indigenous groups, and there is little information about the groups' health, morbidity, and mortality [20, 21, 31]. Their infant and maternal mortality rates are appalling along with data for child malnutrition, child obesity, and adult obesity [24, 32].

Throughout time, indigenous people around the world are affected by various of factors. European economic expansion, colonization, outbreak of infectious illnesses, outbreak of war and exportation of slaves resulted in huge pressures on indigenous people to protect their home, their identity and their ways of life.[33] Many segments of societies believe that Indigenous people are the "victim of progress" [34, 35]. Indigenous people stood in the way of plans by larger forces to exploit their natural sources [34, 35]. The

explorers found that wherever they went, there were indigenous people. In their path to conquer and take control, and to be sure 'progress' occurred or the dreams of these individuals visualized, tragically countless Indigenous people were slaughtered or displaced [34, 35]. Sadly, they lost their lives protecting the land they called and saw as their homes. The effects of colonization were devastating on the Indigenous people. The foreigners not only took their lives, their land and then they later dominated societies and consequently alienated the Indigenous people from their ways of life [18, 20].

Obviously, any colonisation would adversely affect any civilization's physical, social, emotional, and mental health and wellbeing in traditional societies [20, 36]. For the Indigenous people the cultural dislocation occurred dramatically and for most with severe consequences.

Anderson, Crengle [32] categorised the health situation and policy context of Indigenous people in three different regions:

1. Australia and the Pacific, where indigenous people have long argued for their rights against a backdrop of well-documented health disadvantage;
2. Latin America and the Caribbean, where Indigenous people are increasingly active in pursuit of equity after years of unequal health and, in many settings, extermination; and
3. In Africa, the existence of Indigenous people is particularly challenging, and they have some of the worst health indicators in the world.[32]

Thus, as stated, multiple factors affect the population of indigenous people around the world. The economic expansion, colonization, the discovery and exploitation of the New World, the outbreak of infectious diseases and the exportation of slaves placed enormous pressures on Indigenous people to protect their lands and to protect their ways

of life [18, 33]. The economy and population expansion brought the economic system that required people to acquire and exploit lands, causing enormous pressures on these indigenous people to protect their lands and ways of life [18, 33].

Minority Rights Group International [37] reported in Canada alone there are 53 Aboriginal languages, and many more dialects though about half are either close to extinction or endangered.

Even though the method in use today are not as brutal as those in the past, the indigenous people continue to be seen as standing in the way of development [34, 37]. As many nation states develop and progress these fast and vast development have consequences on these indigenous people as their land is fast disappearing with equal consequences on their environment, culture and knowledge [35]. It is not surprising indigenous people are over-represented among the poorest and homeless populations in every part of the world where these rates are documented [15, 27].

Cohen (1999) reported the Mehinaku tribe that live in the Amazon forest in Brazil. When first contacted in 1877, 3000 occupants were living in the area. However, when the researcher looked for them in 1977, the population had fallen to 700. The measles and influenza epidemics affected the tribe and considerably diminished their population. The effects of the depopulation had disastrous effects on the Mehinaku tribe and the events made insecure about livelihood and their future [18].

Through the hundreds of years of colonization, many have migrated to urban centres as life in their communities became difficult [37]. It is not surprising that despite the migration to urban areas their living conditions remain poor, land and food are scarce,

and there was heightened suppression of their traditional ways [37, 38]. Amongst the Indigenous peoples and compared to the general population, the Australian Institute of Health and Welfare [38] reported that the infant mortality is twofold, lifespan is at least 10 years shorter and they are three to four times more likely to die before 65-years-old.

2.2 Indigenous Tribes and Mental Health

Around the world, indigenous people are challenged by multiple problems such as depopulation, violence, dislocation, poverty and repression of culture.[39, 40] Indigenous cultures and way of life have historically been suppressed and undermined. Indigenous people lost their homelands, kinship networks and family, leading to further isolation [36, 41]. The disruption of their cultural and spiritual identity further compounded their on-going struggles leading to many confused self-identity and insecurity [40, 42, 43]. Parker et al., (2010) stated that in the Aboriginal context, the sense of self is seen as a collective consciousness, intimately connected to all aspects of the group's life, community, spirituality, culture, and country.[42]

Land evictions, dislocation or forced relocations are the common conflicts between indigenous peoples and the authority. The indigenous people are often pushed aside and are forced to give up their homeland whenever they come into contact with authorities. For example, the Navajos and Hopis of the Southwest United States of America were relocated so that mining industries could be developed in Northern Arizona. [44] In Thailand, the indigenous people of the hill tribes were relocated because the authority believed that their primitive agriculture were affecting the flora and fauna. [44] Hydroelectric projects in China, and several South East Asia countries were displacing millions of people including indigenous tribes from the traditional lands.[26] Whatever the reason for dislocation, whether it is war or development, there will be a

psychological repercussion and often result in high prevalence psychiatric morbidities such as stress, depression or substance use.[45]

It is noted by many studies that indigenous people often associated with poverty. The World Bank Group stated that poverty among indigenous peoples in South America is extensive and serious. They are less educated, work more, earn less and their health care is worse than non-indigenous populations. [46] For example, the unemployment rates among the indigenous Maori tribe of New Zealand are approximately almost 4 times higher than non-Maoris population.[47]

There is a significant interrelationship between sociocultural environments and mental health [45]. However, the research data on mental illness among indigenous people are limited. Even if the data exist, the study settings and interview raise questions of their accuracy. [48] Indigenous people are generally considered to have higher psychiatric morbidities compared to general populations.[7] Possible explanations include unemployment, loss of homelands, trauma, cultural disruptions, and loss of influential ancient spiritual faiths.[49]

In Australia, New Zealand, and Canada the indigenous people have substantial disadvantage in key social outcomes [15, 32]. With the countless and continuous challenge, it is not surprising that indigenous people experienced, high rates of various neuropsychiatric and behavioural problems [15, 18, 27, 50-52].

The structural inequities and hardship related to years of colonisation along with dislocation and homelessness resulted in the indigenous people struggling with addiction problems and mental illness [15, 30, 32, 36, 53]. The confusion and continued unhappiness have led to a multitude of problems including family violence, welfare dependency, substance and alcohol misuse [40-42].

Thus, it is not surprising that Gracey and King (2009) stated that the indigenous populations have the poorest mental health condition than the general population. [20] The study also noted that almost 400 million Indigenous people have low standards of health. [20]

There has been an increasing and worrying attention concerning the mental health needs of the Indigenous peoples and their communities. In February 2009, at the meeting of the U.S. Senate Committee on Indian Affairs, the then vice-chairman of the committee, revealed the alarming mental health needs of the American Indian and Alaska Native (AI/AN) communities [54]. The committee heard regarding the astonishing rates of suicides and attempted suicides.

Since then there has been more reports regarding mental health difficulties among the Indigenous peoples and their communities world-wide [19, 55, 56]. Depression is common among the Indigenous population with rates comparable to other or higher than the normal population. [55] Beals et al., (2005a) postulated that the lifetime rates of major depressive episode among American Indians were only about 20% than were their counterparts of the same gender in the normal population.[55] Years earlier Robin et al., (1997) and Kinzie et al., (1992) reported the lifetime rates of depressive disorder among the native Americans were in excess of more than 20%. [57, 58]

Additionally, in the Indigenous population there is high incidences of addiction problems [56, 59-61], assault and aggression [56, 57, 62] and suicide [63, 64] particularly in youths. [19]

Beals et al., (2005b) carried out a survey involving 3,084 tribal members (1,446 in a Southwest tribe and 1,638 in a Northern Plains tribe) aged between 15–54 years living on or near their home reservation.[56] Beals et al., (2005b) found the most common lifetime diagnoses in the American Indian populations were alcohol addiction, posttraumatic stress disorder (PTSD), and a major depressive episode.[56] Szlemko et al., (2006) in a review stated that rates of alcohol dependence were higher among American Indians than among those in the general U.S. population, and that this is true for both adults and adolescents alcohol related mental illness. [61]

Beals et al., (2005b) discovered when compared to the National Comorbidity Survey (NCS), the lifetime rates of PTSD were higher in all the surveyed American Indian samples, and the lifetime alcohol dependence rates were higher for all but the Southwest women.[56] However, lifetime significant depressive episode rates were lower for Northern Plains men and women. Beals et al., (2005a) hypothesized the prevalence estimates for life- time and 12-month major depressive episodes were substantially lower in the American Indian samples, compared to the National Comorbidity Survey sample as the American Indians were substantially less likely than NCS participants to indicate that depressive symptoms.[55]

Kisely et al., (2017) performed a meta-analysis study comparing the prevalence of depression and anxiety disorders in the Indigenous populations in the Americas with those of non-Indigenous groups. Both groups had similar socio-demographic features.[51] Kisely et al., (2017) found there were no differences between Indigenous and similar non-Indigenous groups in the 12-month prevalence of depressive, generalized anxiety, and panic disorders. However, the study identified that Indigenous people were

at higher risk of PTSD. However, the study revealed that the lifetime prevalence rates of PTSD and social phobia were significantly higher in the Indigenous populations. [51]

So, it is not uncommon that despite mood disorder is a frequent occurrence among the Indigenous populations, it is still under detected and misdiagnosed [65]. Moreover, its relationships to other illness such as addictions, antisocial personality disorder, medical illness, or bereavement are not well understood [65].

A better understanding of the character of mood disorder among indigenous American community must precede accurate estimates about its prevalence and the testing of its etiology and the development of practical guidelines for its treatment in these populations. For example, in one of the indigenous tribes the Hopi Indians, a study showed that only 7% of the participants knew of any Hopi word or phrase that was equivalent to "depression." The medical personnel needs to gather more information to conclude the illness compared to the general population. [66]. Similarly, Beals et al., (2005a) concurred, there is a need for a careful examination of diagnostic instruments cross-culturally. [55]

Similarly, in Canada, especially in a remote region, the indigenous population experience a range of mental illness, and at higher rates than the general population in Canada and they continue to have a substantially shorter life expectancy [67]. The situation is mainly due to higher infant mortality and increased rates of death among young people by accidents and suicide.

Kirmayer et al., (2000) postulated that indigenous peoples experienced rapid culture change, marginalization, and absorption into a global economy that has little regard for their autonomy. As occurring in most Indigenous population, the government or interested party relocate the most Indigenous population rather the Indigenous population themselves [19]. Damage to their land or seizure of their land, and then restrictions for all, constitute what relocation is for most Indigenous population [19, 51]. The relocation resulted for most of the Indigenous population socio-economic deprivation, unemployment, trauma, and significant loss of important ancient spiritual support and beliefs [20, 54].

A consequence of these issues, the cultural discontinuity ensues resulting in the high rates of depression, alcoholism, suicide, and violence in these communities [19]. These changes profoundly impacted their youths [19]. The repressed hostility as consequence of the cultural discontinuity is often present in many Indigenous peoples. Following cultural and traditional beliefs, the elderly prohibits every individual showing any angry behaviours. Many believe the repressed hostility became explosive under the influence of illicit drugs or alcohol and to a high frequency of grief reactions [68, 69]. The colonial occurrences disrupted crucial bond with their land and their natural environment which is the key feature of their indigeneity [68, 69].

The history of dislocation and the disruption of traditional subsistence patterns and connection to the land resulted in the mammoth cultural discontinuity [19, 40, 42]. For many Indigenous peoples, every individual is characterized by their community-centered, as other people belonging to each own community, their land, and its animals [20]. These are all viewed as inherently a part of the self as the dislocation and the

disruption of traditional subsistence and reduces social cohesion and the ability to establish Indigenous institutions [20].

As in most culture the traditional teachings and knowledge by the elders in the community provide a basis for positive self-image and healthy identity [19, 68, 69]. Elders are widely seen to be pivotal for Indigenous societies to regain their positive identity [19].

Then in many colonized nations, many generations of Indigenous children were sent out of home, e.g., to residential schools or foster homes [69]. The experience resulted in collective trauma as consequences of the structural effects of disrupting families and communities [19, 43, 70]. Moreover, countless Indigenous adolescent experience relocation or institutionalization with the consequence of the loss of parenting skills along with the absence of warmth and intimacy. Consequently, the children as well experience the loss of their Indigenous knowledge, languages, and traditions; and the systemic devaluing of Indigenous identity and the occurrence of undetected physical and sexual abuse was a common occurrence [19, 43, 68].

Suicide is one of the most dramatic indicators of distress in indigenous populations. The Canadian indigenous populations have one of the highest suicide rates of any group in the world [63, 71]. The resulting identity deficits and negative identity is seen within many Indigenous populations, is associated with predictable health outcomes, particularly suicide [70]. The underlying causes of Indigenous suicides have been linked to factors such as colonialism, dislocation and the disruption of traditional subsistence

patterns, and difficulties integrating into mainstream societies [19, 40, 42, 70] Kirmayer et al., (1994) noted that one third of deaths among Aborigine youths are from suicide [63].

In many indigenous people in Canada, the rates of suicide are highly variable [63]. In Quebec, the Inult tribe have very high rates of suicides while the Cree tribe have less [43]. Meanwhile, the Inult tribe in Nunavik has documented extremely high rates of suicidal ideation and attempted suicide among adolescents and young adults [72]. From one the study, the risk factors are male gender, addiction to illicit substance, parental history of addiction and other psychiatric illnesses. Protective factors identified in this research are good school performance and regular attendance to church. It was noted that young males are not only much more likely to complete suicide but also attempt more often.

The same issues occur among indigenous people in Australia. Multiple reports concluded that psychiatric illness is a major non-communicable disease among them. Most of them suffer from Major Depressive Disorder, suicide, self-harm, trauma, addiction, domestic violence and child abuse.[73] A census in Australia reported that psychiatric illness and substance use are the leading cause of morbidities among indigenous tribes. [74] On all socioeconomic indicators, the indigenous population is clearly disadvantaged. The unemployment rate is 2.6 times higher than in the general population, and their household income levels are lower. They are less educated, and nearly one-third lived in overcrowded housing conditions. Infant mortality rates among indigenous people in Australia are three times of general populations and life expectancies are much shorter (17 and 15 years less for men and women, respectively). [75] In addition, indigenous people suffered from significantly higher rates of medical

illness such as metabolic syndromes, lung disorders and sexually transmitted infections.[76]

These findings have far reaching implications for mental health services for all indigenous people whose social worlds have been disrupted by mental illness. Such research indicates that it is essential to look beyond proximal factors and cross-sectional studies to determine the fundamental causes of psychiatric illness and to develop effective prevention and intervention strategies.[77]

2.3 Malaysia: Its Population and Status of Mental Health

Malaysia is one of the countries with diverse ethnicity, cultures and religious backgrounds, situated in South East Asia. Psychiatric morbidities among Malaysians was about 10.7 percent in the year 2000.[78] However, this data is only based on figures from health clinic and hospitals, and the actual numbers of people with psychiatric illness is still unknown. Multiple studies shown that prevalence of psychiatric illness is approximately between 10% and 30% respectively.[79]

Psychiatric illnesses are expected to be a significant health issue among Malaysia. In 2016, the Ministry of Health of Malaysia has conducted a survey that showed the psychiatric morbidity among people age 16 years old and above was 29.2% as approximately 4 million. The rate showed that one in three Malaysian has experienced mental illnesses. The current situation is worrying as the findings indicate high increment from 10.6% in 1996 to 11.2% in 2006. Individuals with mental health problems may have a negative impact towards their self and the community. It was also noted that psychiatric illness were commonly higher among teenagers, with young adults aged 16 to 19 years old (34.7%), followed by those aged 20 to 24 (32.1%).[80] Furthermore, the National Morbidity Health Study conducted by the Malaysian Ministry of Health in 2011 noted that the incidence of depression among adolescent was 1.8% and anxiety was 1.7%.

Women show higher rates of mental illness compared to men. the incidence of depression among women is 2.3 percent compared to 1.4% for men. [81]

According to recent study, one in three Malaysian adults are at risk of developing mental illness for the last 5 years.[82] By 202, psychiatric illness is expected to be the second highest non-communicable diseases after cardiology problem by the year 2020.[82] The house and working environment are the critical environments that affects mental wellbeing. Some studies showed that mental illness among students also keep increasing yearly.[82]

There are many challenges with mental health management in Malaysia. A study by Yeap et al, (2009) indicated that about 60% of the psychiatric patient did not want other people to know his or her illness, meanwhile 61% participants perceived that psychiatric patients are not to be blamed for their own conditions. Approximately, 50% of the participants perceived that psychiatric patients are more prone to be violent.[83] It was noted that approximately 70% respondents perceived that only people with family history of mental illness would suffer the psychiatric illness. Stigma and beliefs also to be the crucial aspects that contributing the challenges as it is dominated by supernatural explanation like demon possession.[84]

As a matter of fact, the demands of living nowadays drive to the causing of emotional instability, anxiety, and other psychiatric illness. Unemployment, financial crisis, family problems, addiction and environmental are the factors that could contributed to the rapid increment of psychiatric illness in Malaysia over the last 10 years.[85] Furthermore, the prevalence of psychiatric illness is the highest among young adults and low-income earners. The demands of living in recent times are causing depression, anxiety, personality disorders and other mental health problems. [84]

2.4 The Orang Asli of Malaysia: the Indigenous Tribe of Malaysia : Population and Socioeconomic Status.

Similar to the American Indians or Aborigines, the Orang Asli tribes are Malaysia's indigenous population [86, 87]. Orang Asli are the indigenous minority people in Peninsular Malaysia. Alike to the other Indigenous peoples around the world the Orang Asli tribes are peoples with unique languages, knowledge systems and beliefs [87, 88].

Similarly, the Orang Asli population have many issues in common with the other neglected segments of societies, such as the lack of political representation and participation, economic marginalization and poverty [87, 88]. They as well face the lack of access to social services and discrimination [87-89]. Unfortunately others have targeted the land that the Orang Asli have lived on for centuries for resource extraction, conversion to plantation crops, and development [87, 88]. Over the past three decades the Orang Asli population faced relocation programs as the state authority acquired their land for the sake of development [89]. Unfortunately, the Orang Asli population are as well marginalised socioeconomically and culturally in Malaysia [86-88].

Notwithstanding this political dominance, the socio-economic status of the majority of indigenous peoples in East Malaysia still lags behind, as it does with their counterparts in Peninsular Malaysia [86].

The indigenous peoples of Malaysia, or Orang Asli, are not homogenous group. [86] There are at least 95 subgroups, each with their own distinct language and culture.

[86] They can be found in almost all the states in peninsular Malaysia except in Perlis and Penang. Majority of them mostly inhabited in the interior part of Pahang, Perak, Kelantan and Terengganu. Orang Asli representing approximately 0.6% on national population. [90] They were initially recognized as " original peoples" or " first people" living in the jungle and avoiding contact with urban population.[91] After rehabilitation plan, some of them started to live in the urban fringe areas. However, most of them still prefer living in their semi-primitive habit although many efforts initiated by the government encouraging them to adopt a more modern lifestyle.[92]

There are 18 Orang Asli tribes in Peninsular Malaysia officially classified under three main groups which are Negrito (Semang), proto-Malay (Aboriginal Malay) and Senai with each groups comprising of 6 subgroups as shown in the table below.[91] The classification of these tribes were based on physical appearances, linguistic affinities, cultural practices and geographical locations.[91]

Orang Asli		
Senoi	Proto-Malay	Semang (Negrito)
▪ Temiar	▪ Orang Selatar	▪ Kintak
▪ Semai	▪ Jakun	▪ Lanoh
▪ MahMeri	▪ Orang Kuala/Laut	▪ Kensiu
▪ Che Wong		▪ Jahai
▪ Jah Hut	▪ Orang Kanaq	▪ Mendriq
▪ SemakBeri	▪ Temuan	▪ Batek
▪ Temoq	▪ Semelai	

Table 1.1 Ethnics groups and subgroups of Orang Asli in Peninsular Malaysia

According to the annual report of Jabatan Hal Ehwal Orang Asli (Department of Orang Asli Affairs), Orang Asli population in Malaysia grew at the rate of 2.3 percent per year from 54, 033 in 1969 to 92,529 in 1994. In 2006, there are about147,412 Orang Asli living in approximately more than 800 villages. [91]

Senoi is the largest ethnic group followed by the Proto-Malays and the Negrito as shown in the pie chart (Figure 1)[93]. Geographically, the Negritos can be found in Kedah and Perak, while the Senois confined in the central peninsular and the proto-Malay can be found in Selangor, Negeri Sembilan, Malacca and Johore. The Temuan tribe is one of the subgroup in the Proto-malays group and most of them settled in Malacca, Johor and Selangor.[94]

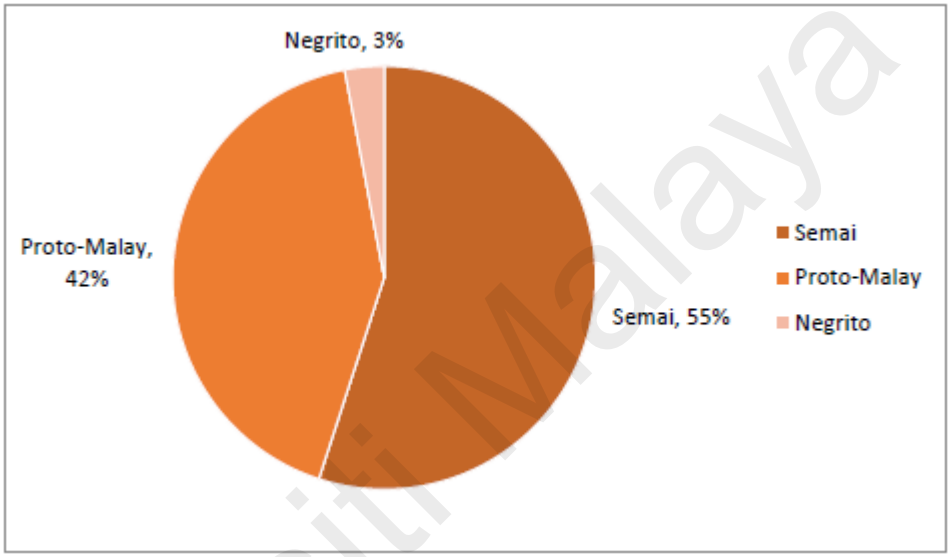


Figure 1. Percentage of distribution of Orang Asli based on difference ethnics in 2005; source of data: Jabatan Hal Ehwal Orang Asli Malaysia (Department of Orang Asli Affairs) (JHEOA) (2010). Currently JHEOA is known as Jabatan Kemajuan Orang Asli (Department of Orang Asli Development) (JAKOA).

Although these main groups speak in their own mother tongue and have their own culture, but their way of life and occupations are almost similar. Of the 869 orang asli communities in peninsular Malaysia, 37.2 % of them are residing in the forest/interior areas while majorities of them, 61.4% are living in forest fringe or rural areas with merely 1.4% living close to urban area.[95] [96] Most of the Orang Asli earned their living by fishing, hunting and gardening.[86, 96] In Pahang, Perak, Kelantan and Terengganu,

majority of them live in the forest and still practice the traditional ways of living that are greatly influenced by their ancestral practices. A fair number of them also have salaried jobs or self-employed. Even though they retained their owned identity to the present day, some of them have economic dealings with neighbouring communities and played significant role in the peninsular economy.[90] JAKOA reported in that 2013, there are 853 of Orang Asli settlement in Malaysia, of which 525 settlement are located in rural areas, 332 settlements are located in remote forest areas and 6 settlements are located in urban areas.[97] (Table 2.0)

Table 2.0 Distribution of Orang Asli settlement in Peninsular Malaysia

States	Remote (Forest)	Rural	Urban	Total Villages	Total Residents
Pahang	113	148	1	262	64,443
Perak	112	143	0	255	53,299
Kelantan	73	45	0	118	13,457
Selangor	0	70	4	74	17,587
Negeri Sembilan	4	64	0	68	10,563
Johor	20	37	1	58	15,841
Melaka	0	14	0	14	1,844
Terengganu	0	3	0	3	893
Kedah	0	1	0	1	270
Total	**332**	**525**	**6**	**853**	**178,197**

Source: JAKOA (2013)

Jabatan Hal Ehwal Orang Asli (JHEOA) and Kamaruddin et al., (2008) reported that half of the Orang Asli live below the poverty level which extremely high compared to 3.8% national poverty rate in 1999. [95] Unfortunately, they remain as the most impoverished of Malaysian even after the implementation of 10th year Malaysian Plan.

Therefore, under the 11th Malaysia Plan, the aim is to improve their socioeconomic inequalities by providing more income generating programs. [98] The social disadvantages and financial constraint can significantly associate with mental

health. A study carried by Cheng et al (2014) reported that the median household of Orang Asli in Perak is RM 400 and majority of them unable to afford their children`s education and healthcare expenses.[99]

Generally, the health condition of Orang Asli is poor compared to the general population. During the period 1984 to 1987, the median for the infant mortality was about 51.7 per thousand live births for the Orang Asli population compared to 16.3 infant deaths in general population. The life expectancy at birth for Orang Asli was estimated to be 52 years and 54 years for female and male respectively compared to general population, which is 72 years for female and 68 years for male. Higher maternal death rates among females due to poor maternal health and childbirth contribute to lower life expectancy at birth among them. [100]

Currently under Jabatan Kemajuan Orang Asli (JAKOA), heath care among Orang Asli have been gradually improved. Multiple initiatives are initiated under the Ministry of Rural Development and Ministry of Health. In 2012, Hospital Gombak was declared as Hospital Orang Asli to cater the need of Orang Asli healthcare in Selangor. Health clinics in Orang Asli settlement are planned to be built in Kelantan and Pahang. The Flying Doctor service is conducted by JAKOA Health and Medicine Division using private helicopter. The frequency of these services is two to four times a month in the interior part of Orang Asli villages in Kuala Krai and Gua Musang, Kelantan. [97]

2.5 The Significance of Mental Health and The Indigenous Tribe

Orang Asli similar to the other Indigenous population experience a wide range of health problems, and at higher rates than the general population [43]. An example is in Canada and in the indigenous communities there are high rates of alcoholism, suicides, violence, and depressions [15, 63]. Kirmayer et al., (2003) reported that among Aboriginal populations, injuries and poisonings are the leading cause of potential years

of life lost. Aboriginal peoples have 1.5 times the national mortality rate and 6.5 times the national rate of death by injuries and poisonings [43].

The mental health status among the Indigenous population is thus reflective of these health and social problems. The Australian Institute of Health and Welfare (2017) reported that there is about a 40% gap between Indigenous and non-Indigenous Australians health outcomes which can be explained by social determinants. The same report stated that the top cause of death among Indigenous and non-Indigenous Australians population was due to intentional self-harm, road traffic accidents, and accidental poisoning. In all areas, the report stated that the Indigenous population out-numbered the non-Indigenous Australians, including in the rates of assault, and external causes of accidental injury.[101]

Invariably, the long-term disability and disadvantage occur as a consequence of the injury or poisoning which in turn reduces opportunities for education and employment, while adding burden on caregivers [101].

The mental health issues also cause a lot of trouble as many indigenous people affected do not seek help due to lack of awareness and geographical problems.

In the US, a study mentioned that 30% of the indigenous communities suffered from depression, bipolar disorders, psychosis, Post-Traumatic Stress Disorders, alcoholism and illicit drugs addiction. There is obvious sex difference among the

mentally ill people, with nearly 50% of men affected and only 18.4% of women. Most of them are unemployed and have alcohol related problems. [60, 102, 103]

Many authors identified alcohol, and illicit drugs use are the leading cause of teenagers` morbidity and mortality [43, 104, 105]. Road traffic accidents, self-harm behaviour, rape, assault, falls, drowning, and unprotected sex occurs as a consequent subsequence use [43, 104, 105].

Thus, it is not unexpected alcohol dependence and substance use disorder among adolescent, and young adults have become an important community and public health concern. Alcohol dependence and illicit drugs addiction are the direct consequence and related to the dislocations and disruption of the individual traditional subsistence patterns and connection to their land and tradition [19, 40, 42]. As stated earlier Szlemko et al., (2006) found alcohol dependence among American Indians is higher than among those in the general U.S. population.[61] The rates are for both American Indians adults and adolescents. Similarly, the Australian Institute of Health and Welfare (2017) found males, aged between 18-24-year-old, Aborigines and Torres Islanders were the highest group to consume alcohol at risky or high-risk levels. This was followed by males, aged between 25-34-year-old.[101]

Health status measurements were no better. Infants mortality rates among indigenous people were three times that of general populations, and life expectancies were much shorter, which is 17 years and 15 years less for men and women [106-108]. There were high incidences of substance abuse especially, alcoholism.[109] High alcohol addiction rates also causes high incidents of road traffic accidents, violence and homicide. The resultant social disruption had its most potent effects on young adults who were

already leading dislocated lives in town camps and under the stress of high rates of unemployment. About 15 years later, these events were followed by a dramatic increase in suicide and self- destructive behaviours among young indigenous adults in town [110]. The study also noted that alcohol would not be the immediate contributing factor to suicide and self-harm behaviours among indigenous young people, but the chaotic childhood environment that alcohol use creates was the fundamental cause. In fact, in an investigation of indigenous suicides while in police custody, one study found that alcohol use was not a significant factor, but that history of alcohol dependence and heavy drinking in the family was predictive of depression and suicides among the indigenous young adult [111].

In Canada, the average income of indigenous people was 60% of non-indigenous people. Having lower income causes some effects of their mental and physical health. The effects of poverty among indigenous people in Canada clearly have impact on the mental and physical health [19]. Similarly in Australia, the Australian National Institute of Health and Welfare (2007) found the Indigenous Australians were more likely to be unemployed and not in the labour work forced compared to the non-Indigenous Australians.[101]

In Australia, a report mentioned that psychiatric illness is a significant issue in indigenous people community. Mood disorders, suicide, addiction, borderline personality disorders and domestic violence are common. [51, 73, 101] According to Australian census of 1991 estimated that the indigenous population is about 1.6% of the Australian population. On all socioeconomic indicators, the indigenous population was clearly

disadvantaged. [108] The unemployment rate was 2.6 higher than in the general population. The household income is lower. The indigenous people were less educated and nearly one-third of them lived in overcrowded housing conditions.

There are high rates of alcohol use among Aboriginal and Torres Strait Islander people in Australia even though they only constitute 3% of Australia`s population. The rate of psychiatric cases with alcohol use disorder among this tribes is noted to be 2.3 times higher compared to non-indigenous people.[112] Pink and Allbon noted from their study that the admission of indigenous patient with severe depression and anxiety disorders is 1.2 times the rate of general population. [113] A survey among indigenous people in Victoria, Australia noted that 54 % of the indigenous people tested with standard psychiatric rating scale is having symptoms of psychiatric illness and symptoms that suggestive of major depressive disorder is the most common.[108] Jorm conducted a community survey among indigenous people in Torres Strait in 2012 noted that 50% of the respondents showed high levels of anxiety and depressive symptoms.[114]

Most of the research conclude that the source of stress to which indigenous people of the world have been and continue to be exposed such as infections, discrimination, violence, loss of lands and migration, high rates of morbidity and mortality resulted in high prevalence of psychiatric illness. These include intellectual disabilities, depression, anxiety, suicide and addiction.[115] The development of effective programmes of treatment and preventive services depends on reliable and valid epidemiological knowledge and a thorough understanding of how the local worlds and belief of indigenous people shape their mental health.[9] Understanding local worlds and beliefs will help to prevent the establishment of programmes that offer treatments that are not culturally appropriate. For example, Manson and colleagues report that group and family therapies

are being used in mental health services for American Aborigines and Alaskan natives because those techniques have greater salience for these people than individual therapy.[116] It is also critical for indigenous peoples` believe and attitudes about the mental health to be integrated into the development of any programmes. A study by Irigoyen in 1990 noted that a successful mental health programme for the indigenous people in northern Mexico requires an understanding that their concept of mental illness refers more directly to antisocial personality than to other symptoms of mental disorders.[117] Even organic disorders are shaped by cultural considerations. For example, the indigenous people of Nepal recognise intellectual disabilities primarily by the presence of speech problems rather than by symptoms of cognitive problems.[118]

2.6 Status of Mental Health Issues in the Orang Asli of Malaysia

In Selangor, the medical services for the Orang Asli provides health care in the villages, at medical jungle posts and at Gombak Orang Asli Hospital.[119] Now the government has initiated a new plan for health clinics inside the Orang Asli settlement and there would be health care personnel closer to their community.

In the 60`s and 70`s, for the psychiatric services in the Orang Asli community, the medicine man of the tribe is usually the first line of the treatment.[120] The medicine men treats the "mentally disordered" individuals with holy water (air jampi) and the imposition of taboos. This is especially so for any neurotic disorders and milder form of psychosis. When the abnormal behaviour of the mentally ill person disrupts the life of other members of the community, members of the tribe decides jointly with the headman what action should be taken. There is great variation among tribes as to disposition. One extreme case has been cited where the psychotic person is tied to a tree for days without food. The community believed the affected person must have angered the god of thunder, and hence should be left in the hands of this supreme deity.[121] Another tribe which also believes

in evil spirits would typically make an image of the evil spirit believed to cause the mental illness and would carry out a ritual to appease this spirit. The image would be burned with the expectation that the person would stop his abnormal behaviour. [122]

Nowadays, most Orang Asli tribes recognise and accept the usefulness of western medicine. In Selangor, this is made easier by the fact that staff at the helicopter landing zones or the jungle medical posts are Orang Asli from local tribes. The Medical Assistant (MA) gives monthly injections of fluphenazine decanoate and other long acting antipsychotics for the patient during their visit. For a new case or a relapse of illness, the MA consults the doctors from Gombak Orang Asli Hospital. If hospitalization is required, boat or helicopter will be sent to take the patient to the nearest available government hospital or to Gombak Orang Asli Hospital directly.

For the mentally ill Orang Asli, admission into a government hospital that is entirely new to him or her, is an added stress. Very often the patient would feel alienated and problems of communicating with him leave the medical staff exasperated. Other patients tend to stare at the Orang Asli and some patient will complain to medical staff about their manner of dressing, eating and voiding in the ward. In larger towns, however, a section of the hospital service is devoted to the care of Orang Asli and here the situation is better, though seldom ideal. The best possible environment for the mentally ill Orang Asli who requires hospitalization is Gombak Orang Asli Hospital.[120] At Gombak Orang Asli Hospital, the mentally ill are well accepted by other patients and receive equal care from the staff. The very fact that they are not isolated or put in separate wards attest to the accepting nature of patients and staff. When difficulties in diagnosis or management arise, medical officers may refer the case to the Psychiatric Unit at Universiti Malaya Medical Center, Selayang General Hospital or General Hospital of Kuala Lumpur.[120]

At present there are less information about the prevalence of psychiatric illness among Orang Asli in peninsular Malaysia. Firstly, it is because Orang Asli tribes are distributed throughout the country, most of them in difficult and rugged terrain and some in inaccessible and remote areas. Secondly, many forms of mental illness are not recognised as a state of ill health by various tribes.[120] Among the Orang Asli there is a remarkable attitude of acceptance and non-interference in the affairs of others. Consequently, many forms of non-violent or problematic behaviour which psychiatrists would view as a minor neurosis or brief psychosis, are simply not regarded as a mental illness. Only the severe and aggressive cases requiring hospitalization will be sent to primary care of hospital.

CHAPTER 3

RATIONALE OF STUDY AND OBJECTIVE

3.1 Rationale of study

1. There is a paucity of local data about psychiatric morbidity among Orang Asli in Peninsular Malaysia
2. There is no local data about psychiatric morbidity among Orang Asli in Bukit Lanjan, Selangor.
3. The prevalence of mental disorder is on the rise globally. Orang Asli in Malaysia are exposed to multiple factors that can make them vulnerable to mental illness. Studies among this minorities will help in the planning of better intervention to improve the mental health among the Orang Asli in Malaysia

3.2 General Objective

To determine the prevalence of psychiatric morbidities among Orang Asli in Bukit Lanjan, Selangor

3.3 Specific Objective

1. To compare between prevalence of psychiatric morbidities among Orang Asli in Bukit Lanjan with the non-Orang Asli population in Bukit Lanjan, Selangor

2. To determine the association factor of psychiatric disorder among Orang Asli in Bukit Lanjan, Selangor.

3.4 Research hypothesis

1. The prevalence of psychiatric disorder among Orang Asli in Bukit Lanjan, Selangor is higher compared to non-Orang Asli population

2. There is significant association between ethnicity, age, marital status, employment status, underlying stress with psychiatric disorder.

CHAPTER 4

METHODS

4.1 Study Setting

Desa Temuan in Bukit Lanjan, Damansara Perdana,Selangor is one of the resettlement area that were implemented by Malaysian government. In 2002, Desa Temuan resettlement in Bukit Lanjan was set up after MK Land Development acquired the Temuan`s tribe traditional land in Bukit Nanas, Kuala Lumpur for urban development comprising of mostly luxury condominiums and office development. Orang Asli from the Temuan tribe was forced to leave their traditional land and shifted to Bukit Lanjan. The resettlement village of Desa Temuan in Bukit Lanjan was allocated by MK Land and the Selangor State Government, consist of 18 hectares of land near the Damansara area. There are 1108 orang asli in Desa Temuan. There are 147 bungalows in the Desa Temuan, and only 90 of them were resided by Orang Asli. The head of the village is called Tok Batin, and Tok Batin is assisted by Villagers` Committee (Jawatankuasa Kemajuan Kampung, JKK). There are 230 families of Orang Asli in this village. Most of them are only primary school education. Meanwhile, there are 130 apartment units were given to Orang Asli`s young children who are still single. However, the apartments are now occupied with majority of them being non-Orang Asli renters. Most of the young Orang Asli still stay with their family. Some of the house of the Orang Asli occupied by about 10 to 12 persons from the same family. They preferred to live together as this is their culture for generations.[3] The village are provided with facilities such as a multipurpose community hall (Balai Raya), a mini library, an Orang Asli Mini Museum, one Surau, a primary school, a kindergarten, and a few shophouses.

There is monthly visit from the doctors of National Diabetic Institute and Hospital Gombak for monthly medical follow ups.

4.2 Study Design

The study was a cross-sectional prospective study which was conducted among the community in Desa Temuan in Bukit Lanjan between March 2018 and September 2018.

4.3 Sample Collection

Convenience sampling was done from house to house in Desa Temuan, Bukit Lanjan. The data also collected during the village`s weekend morning community activities that were held almost every Saturday and Sunday. The activities were organised by public and local universities, government and non-governmental organisation. About 30 houses were approached. All the members of the household who met the criteria were invited to participate in the research.

4.3.1 Sample size calculation

Sample size was determined by the following formula:

Population size (for finite population correction factor or fpc)(*N*):	1108
Hypothesized % frequency of outcome factor in the population (*p*)*:	7%+/-5
Confidence limits as % of 100(absolute +/- %)(*d*):	5%
Design effect (for cluster surveys-*DEFF*):	1

Sample Size(*n*) for Various Confidence Levels

ConfidenceLevel(%)	Sample Size
95%	92
80%	42
90%	67
97%	111
99%	150
99.9%	225
99.99%	292

Sample size $n = (DEFF*Np(1-p))/ ((d^2/Z^2_{1-\alpha/2}*(N-1)+p*(1-p))$

Results from OpenEpi, Version 3, open source calculator—SSPropor

Description:

- n = required sample size
- Z = confidence level at 95% (standard value of 1.96)
- p = estimated prevalence of psychiatric morbidity among Orang Asli in Central peninsular Malaysia* (7%) (based on study by R. Abd Rashid (2010)) [6]
- d = margin of error at 5% (standard value of 0.05)

F tests - ANCOVA: Fixed effects, main effects and interactions (For continuous dependent variables)

Analysis:	A priori: Compute required sample size	
Input:	Effect size f	= 0.25
	α err prob	= 0.05
	Power (1-β err prob)	= 0.80
	Numerator df	= 1
	Number of groups	= 16
	Number of covariates	= 4
Output:	Non-centrality parameter λ	=8.0000000
	Critical F	= 3.9290117
	Denominator df	= 108
	Total sample size	= 128
	Actual power	= 0.8004504

z tests - Logistic regression

Options:	Large sample z-Test, Demidenko (2007) with var corr	
Analysis:	A priori: Compute required sample size	
Input:	Tail(s)	= Two
	Odds ratio	= 3.0
	Pr(Y=1|X=1) H0	= 0.2
	α err prob	= 0.05
	Power (1-β err prob)	= 0.80
	R^2 other X	= 0

	X distribution	=	Binomial
	X parm π	=	0.5
Output:	Critical z	=	1.9599640
	Total sample size	=	131
	Actual power	=	0.8004818

4.3.2 Sampling and Data Collection

The participants that were available during the data collection days in Desa Temuan, Bukit Lanjan who fulfilled the inclusion criteria were recruited. The participants then would be given an explanation regarding the study and a written informed consent would be obtained, if they agreed to participate. Confidentiality was assured to participants and no names would be attached to the questionnaire sheets. Upon obtaining the consent, the demographic data would be obtained from the participant. The participants were asked to fill up the Depression, Anxiety and Stress Scale-21 (DASS-21) in Malay or English before the interview sessions where the Mini International Neuropsychiatric Interview-7 (MINI-7) was used to identify any psychiatric diagnosis. The flow chart of the study is showed on the next page.

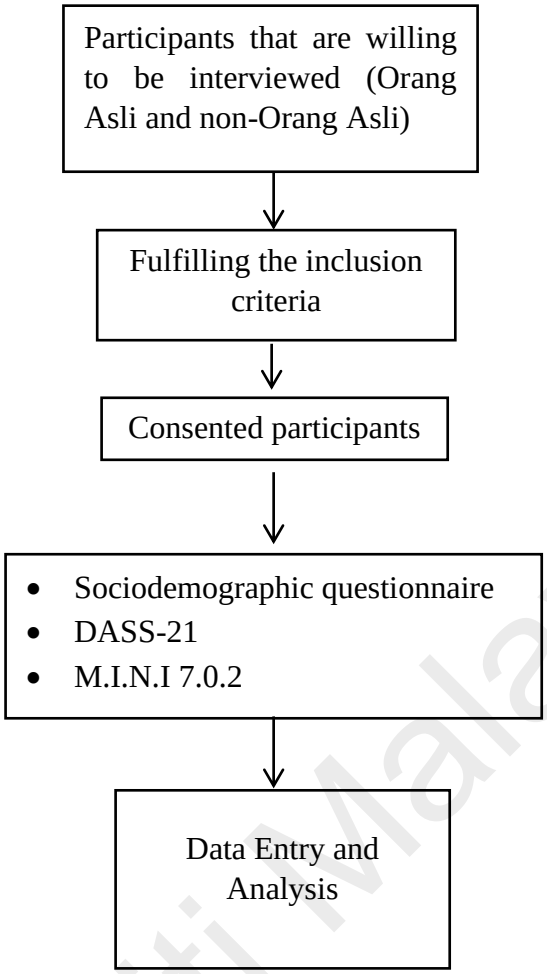


Figure 2: Flow chart of the study

4.4 Study Sample

4.4.1 Inclusion Criteria (Orang Asli participants)

1. Orang Asli in Desa Temuan, Bukit Lanjan
2. Age 18 years old and above
3. Participants able to read and understand Malay or English adequately well.

4.4.2 Exclusion Criteria (Orang Asli participants)

1. Patients who refused to participate in the study.
2. Patients who are unable to converse in Malay or English adequately well

4.4.3 Inclusion Criteria (Non-Orang Asli participants)

1. Patients who refused to participate in the study.
2. Patients who are unable to converse in Malay or English adequately well

4.4.4 Exclusion Criteria (Non-Oang Asli participants)

1. Patients who refused to participate in the study.
2. Patients who are unable to converse in Malay or English adequately well

4.5 Study Instruments

4.5.1 Mini International Neuropsychiatric Interview (M.I.N.I) v 7.0.

The Mini International Neuropsychiatric Interview (M.I.N.I) is a concise and systematic diagnostic interview tool. In epidemiological studies, it is been used as a short but accurate diagnostic tool. It was developed to assess any current and lifetime psychiatric disorders according to the DSM-V (Diagnostic and Statistical Manual for Mental Disorders) criteria. It is a useful instrument with good psychometric qualities. It takes approximately 15-17 minutes to conduct compared to using the SCID (Structured Clinical Interview for DSM- IV Disorders), CIDI (Composite International Diagnostic

Interview) or SCAN (Schedules for Clinical Assessment in Neuropsychiatry).[123] M.I.N.I consist of about 16 modules covering various areas of psychiatric symptoms such as psychosis and mood disorders.[124]

4.5.2 Depression Anxiety Stress Scale – 21 (DASS-21) (Malay Version)

The Depression Anxiety Stress Scale-21(DASS-21) is a self-assessment questionnaire to measure anxiety, depression and stress. The DASS-21 has been translated and validated in multiple languages and used with several ethnic groups. DASS-21 is selected as it was easier to understand and available in Malay version. It was rated by the participants without any assist by the investigator. It only takes about 4 minutes to complete it. It is widely used to assess symptoms of common mental illness.[125, 126] DASS-21 showed good reliability and good concurrent and construct validity.[127] Symptoms of anxiety, depression and stress are assessed from over the past week with 4-point Likert scale of 0 (did not apply to me at all) to 3 (applied to me very much and most of the time). [128]

4.5.3 Participant demography

The researcher developed a questionnaire to collect demographic data from the participants. The form includes age, sex, marital status, ethnicity, and occupation.

4.6 Definition of variables

4.6.1 Orang Asli

Malaysian indigenous people or known as Orang Asli are the indigenous ethnic minorities in peninsular Malaysia. Orang Asli in Malaysia are protected by law under Orang Asli Act 134.[129]

4.6.2 Psychiatric Diagnosis such as Depression, Anxiety, Alcohol use Disorder, Obsessive Compulsive Disorder and many more.

All the psychiatric diagnosis was established using the DASS-21 and MINI Questionnaire

4.7 Ethical Considerations

The study was registered with the University Malaya Medical Centre Ethics Committee with MRED registration number 2017213-4908. The permission from Jabatan Kemajuan Orang Asli (Department of Orang Asli Development, JAKOA) was also obtained and approved via JAKOA Office in Jalan Ampang, Kuala Lumpur with the approval letter no JAKOA/PP.30.052Jld13(58) and letter no JAKOA/PP.30.052Jld12(54). Before the study, the researcher made an appointment with the Tok Batin and the Village Committee member, (JKK) Encik Azman and a few other villagers to obtain further explanation about the culture and the rules of Desa Temuan, Bukit Lanjan. All participants who took part in the study were asked to sign the Participant Consent Form, following which a detailed explanation regarding the purpose of the study was explained.

4.7.1 Confidentiality

Confidentiality was assured to the patient, and all data pertaining to the patient was not identified by name. Participants' data pertaining to this study were only accessible to the investigators. No patient identifying data would be used for any publication purposes.

4.8 Statistical Analyses

The data was obtained and was keyed-in into Microsoft Excel and analysed by the latest Statistical Package for Social Studies (SPSS) software version 23.0 to produce the appropriate epidemiological statistics. The demographic data were summarised using descriptive statistics. The prevalence of psychiatric illness among Orang Asli and non-Orang Asli in Bukit Lanjan, Selangor were described. Univariate and multivariate analysis was done to analyse the association of stress, depression, anxiety with the demographic data. Univariate and multivariate analysis on stress and anxiety were done

by generalised linear model included t-test whereas logistic regression was used to investigate the association between demographic data with depression.

CHAPTER 5

RESULTS

5.1 Socio Demographic Data

Table 5.1: Descriptive analysis of Sociodemographic Data

Socio-demographic	Non-orang Asli (n=93)		Orang Asli (n=100)		p value
	n (%)	Median (IQR)	n (%)	Median (IQR)	
Gender#					0.623
Male	47 (50.5)		47 (47.0)		
Female	46 (49.5)		53 (53.0)		
Employment#					0.183
No	34 (36.6)		46 (46.0)		
Yes	59 (63.4)		54 (54.0)		
Marital status#					< 0.01**
Married	38 (40.9)		77 (77.0)		
Single	50 (53.8)		20 (20.0)		
Widower	5 (5.4)		3 (3.0)		
Age*		30.0 (14.0)		45.5 (17.0)	< 0.01**
Age category#					< 0.01**
18-49	87 (93.5)		66 (66.0)		
≥ 50	6 (6.5)		34 (34.0)		

N=frequency; SD = Standard Deviation
# = Chi square; * = Mann-Whitney

*Noted: Since marital status and age were significant different between non-orang Asli in comparison to orang Asli therefore these variables were included in downstream as confounders.

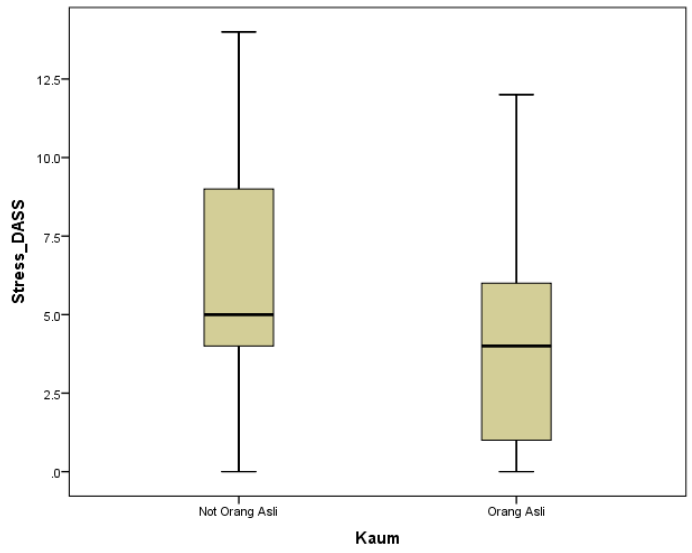
A summary of the socio-demographic data was presented in the table 5.1 above. A total of 193 subjects agreed to participate in this research. The mean age of participants was 34 (SD 12.4) for the non-Orang Asli and 44.6 (SD 12) for Orang Asli.

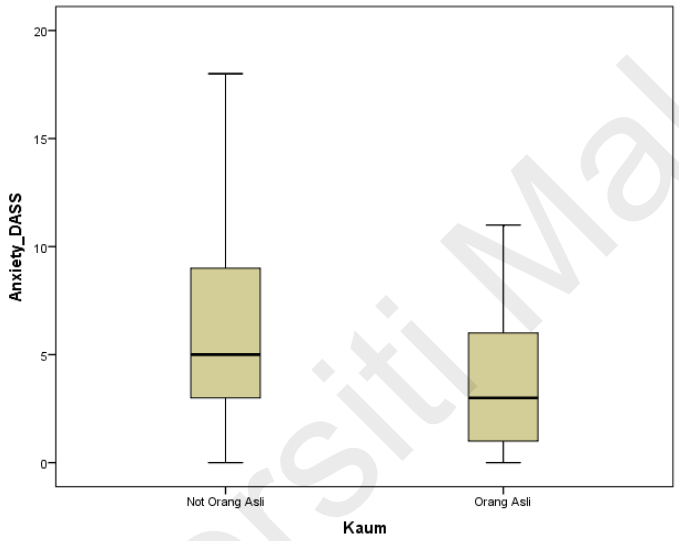
From the Orang Asli participants, 77% were married (n=77), 20% of them were single (n=20) and 3% of them were widower (n=3). Majority of the participants among

Orang asli, 54% were employed (n=54) and 46% of then were unemployed (n=46).10% of them work as security guards (n=10) and labour (n=6). From the 46% of the unemployed Orang Asli, most of them were housewives and students.

From the non-Orang Asli participants, 50.5% of them were male (n= 47) and 49.5% of them were female (n= 46). Majority of them, 53.8% were single (n=50), 40.9 % were married (n=38) and 5.4% were widower (n=5). Majority of the non-Orang Asli, (63.4%) were employed (n=59) and only 36.6% were unemployed (n=34). Most of the participants from the normal population were students and business owners.

Normality checking on DASS (Stress, anxiety and depression) showed that stress and anxiety continuous variable no obvious outliers between non-orang Asli versus orang Asli [Skewness and Kurtosis both within $-2 < X < 2$)] and box plots no obvious outliers (Figure 5.1). However, the depression scale did contain outliers (indicated as white dots) (Figure 5.1). Hence, generalized linear model with identity function will be used on the outcome variables like stress and anxiety. Meanwhile, the depression variable is analysed by logistic regression (transformation from five categories in Table 5.2.1 to two categories [e.g. Not normal vs normal]).





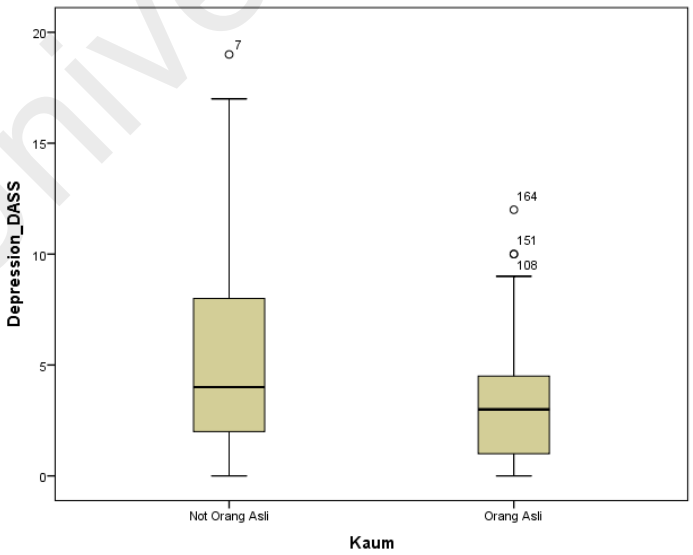


Figure 5.1

5.2 Distribution of Study Sample According to Dass-21 In Different Ethnic

TABLE 5.2.1 Distribution of Study Sample According to Dass-21 In Different Ethnic

TABLE 5.2.1	Non-orang Asli (n=93)		Orang Asli (n=100)		p value
	n (%)	Mean (SD)/Median (IQR)	n (%)	Mean (SD)/Median (IQR)	
DASS (Stress)		6.14 (3.62)		4.03 (3.07)	< 0.01**#
Stress (5 categories)	63 (67.7)		87 (87.0)		

Normal	12 (12.9)		5 (5.0)	
Mild	15 (16.1)		8 (8.0)	
Moderate	3 (3.2)		-	
High	-		-	
Severe				
DASS (Anxiety)		5.76 (3.49)	3.69 (3.03)	< 0.01**#
Anxiety (5 categories)	41 (44.1)		58 (58.0)	
Normal	12 (12.9)		23 (23.0)	
Mild	16 (17.2)		12 (12.0)	
Moderate	16 (17.2)		5 (5.0)	
High	8 (8.6)		2 (2.0)	
Severe				
DASS (Depression)		4.00 (6.00)	3.00 (4.00)	< 0.01**$
Depression (5 categories)				
Normal	53 (57.0)		82 (82.0)	
Mild	10 (10.8)		8 (8.0)	
Moderate	17 (18.3)		9 (9.0)	
High	9 (9.7)		1 (1.0)	
Severe	4 (4.3)		-	

N=frequency; SD = Standard Deviation.
* = < 0.05; **= <0.01.
# = independent t-test; $ = Mann-Whitney U test.

From table 5.2.1 above, for DASS-21 questionnaire, non-Orang Asli appeared to be more stress, more anxious and more depressed compared to Orang Asli. In the set of question for “stress”, 12.9% scored mild stress (n=12), 16.1% scored moderate stress (n=15) and 3.2% (n=3) scored high stress in non-Orang Asli population. In Orang Asli population, only 5% score mild stress (n=5) and 8% scored moderate stress (n=8).

In the set of questions for “anxiety”, 12.9% scored mild anxiety (n= 12), 17.2% scored moderate anxiety, 17.2% scored high anxiety (n=16) and 8.6% scored severe anxiety (n=8) in the community of non-Orang Asli. However, the Orang Asli community scored 23% for mild anxiety (n=23), 12% scored moderate anxiety (n=12), 5% scored high anxiety (n=5) and only 2% scored severe anxiety (n=2). The non-Orang Asli were more anxious compared to Orang Asli according to self-rated DASS-21.

In the set of questions from “depression”, 10.8% of the non-Orang Asli scored mild depression (n=10), 18.3% scored moderate depression (n=17), 9.7% scored high depression (n=9) and 4.3% of them scored severe depression (n=4). However, in Orang Asli community, only 8% of them scored mild depression (n=8), 9% of them scored moderate depression (n=9) and 1 % of them scored high depression (n=1). The non-Orang Asli were more depressed compared to Orang Asli according to self-rated DASS-21.

5.3 Psychiatric Diagnosis Among Orang Asli and non-Orang Asli Community in Desa Temuan, Bukit Lanjan, Selangor

TABLE 5.3.1 Distribution of Study Sample According to MINI

	Non-orang Asli (n=93)	**Orang Asli (n=100)**
	n (%)	**n (%)**
MINI		
MDD (Current)		
No	87 (93.5)	98 (98.0)
Yes	6 (6.5)	2 (2.0)
MDD (Past)		

No	91 (97.8)	98(98.0)
Yes	2 (2.2)	2 (2.0)
Suicidality (Current)		
No	93 (100.0)	100 (100.0)
Suicidality (Lifetime)		
No	93 (100.0)	100 (100.0)
Bipolar I Disorder (Current)		
No	93 (100.0)	100 (100.0)
Bipolar I Disorder (Past)		
No	93 (100.0)	100 (100.0)
Bipolar Disorder with Psychotic Features (Current)		
No	93 (100.0)	100 (100.0)
Bipolar Disorder with Psychotic Features (Past)		
No	93 (100.0)	100 (100.0)
Other specified Bipolar and Related Disorder		
No	93 (100.0)	100 (100.0)
Panic Disorder (Current)		
No	91(97.8)	99 (99.0)
Yes	2(2.2)	1 (1.0)
Panic Disorder (Lifetime)		
No	93 (100.0)	100 (100.0)
Agoraphobia		
No	93 (100.0)	99 (99.0)
Yes	-	1 (1.0)
Social Anxiety Disorder		
No	93 (100.0)	100 (100.0)
OCD		
No	87 (93.5)	99 (99.0)
Yes	6(6.5)	1 (1.0)
PTSD		
No	93 (100.0)	100 (100.0)
Alcohol Use Disorder		
No	91 (97.8)	99 (99.0)
Yes	2 (2.2)	5 (5.0)
Substance Use Disorder		
No	92 (98.9)	100 (100.0)
Yes	1 (1.1)	-
Any Psychotic Disorder (Current)		

No	93 (100.0)	100 (100.0)
Any Psychotic Disorder (Lifetime)		
No	93 (100.0)	100 (100.0)
MDD with Psychotic features (Current)		
No	93 (100.0)	100 (100.0)
MDD with Psychotic Features (Lifetime)		
No	93 (100.0)	100 (100.0)
Anorexia Nervosa		
No	93 (100.0)	100 (100.0)
Bulimia Nervosa		
No	93 (100.0)	100 (100.0)
Binge Eating Disorder		
No	93 (100.0)	100 (100.0)
Generalized Anxiety Disorder		
No	93 (100.0)	100 (100.0)
GAD		
No	69 (74.2)	93 (93.0)
Yes	24 (25.8)	7 (7.0)
Antisocial Personality Disorder		
No	93 (100.0)	100 (100.0)
Psychiatric Illness due to Organic causes		
No	93 (100.0)	100(100.0)

The table 5.3.1 above indicate the score from the Mini International Neuropsychiatric Interview (MINI) questionnaire. The descriptive analysis showed that the prevalence of Major Depressive Disorder (Current) among Orang Asli in Bukit Lanjan were 2 % (n=2), compared to 6.5% (n=6) of non-Orang Asli, and 2% of non-Orang Asli and Orang Asli had past episode of Major Depressive Disorder. The result showed that more cases of depression occurred in non-Orang Asli compared to Orang Asli community.

There were 7% of Orang Asli noted to have Generalised Anxiety Disorder compared to non-Orang asli which were 24% (n=24). This result was in keeping with DASS-21 (Anxiety) Scale.

There were 5% (n=5) of Orang Asli were diagnosed with alcohol use disorder compared to 2.2% (n=2) of non-Orang Asli.

Table 5.3.2: Percentage of alcohol used disorder partitioned by gender and employment and age

Demographic data	Alcohol used disorder			
	Yes n (%)	**No n (%)**	**Odds ratio (95% CI)**	**p value**
Gender			0.926#	< 0.01**
Male	7 (7.4)	87 (92.6)		
Female	-	99 (100.0)		
Employment			1.066#	0.023*
No	-	80 (100.0)		
Yes	7 (6.2)	106 (93.8)		
Age			0.954#	0.348
18-50	7 (4.6)	146 (95.4)		
> 50	-	40 (100.0)		

CI = Confidence interval; # For cohort no.
* = < 0.05; **= <0.01.

From the table 5.3.2 above noted that all the participants that were diagnosed with Alcohol Use Disorder were male and employed. All 7 of them were at the age between 18 to 50 years old.

Data from MINI noted that 1% of non-indigenous people in Bukit Lanjan had Substance Use Disorder (n=1) compared to none from Orang Asli.

Table 5.3.3: Percentage of Obsessive-Compulsive Disorder partitioned by age

Demographic data	Obsessive-Compulsive Disorder		OR (95% CI)	p value (Fisher's exact test)
	Yes n (%)	No n (%)		
Age			1.592	1.000
18-50	6 (3.9)	147 (96.1)		
> 50	1 (2.5)	39 (97.5)		
MDD			5.800	0.083
Yes	2 (14.3)	12 (85.7)		
No	5 (2.8)	174 (97.2)		
GAD			1.292#	< 0.01**
Yes	7 (22.6)	24 (77.4)		
No	-	162 (100.0)		

CI = Confidence interval; # = for cohort OCD = no.
* = < 0.05; **= <0.01

It was noted that 6% of non-Orang Asli had Obsessive Compulsive Disorder compared to only 1% (n=1) among Orang Asli, and most of them were between 18 to 50 years of age.

For Panic disorder, the study noted that there were 2.2% (n=2) of non-Orang Asli affected, whereas only 1% (n=1) had Panic Disorder. There was 1% of Orang Asli had symptoms suggestive of Agoraphobia (n=1).

5.4 Factors Associated with Stress, Anxiety and Depression

Table 5.4.1a: Factors associated with DASS-Stress (univariable)

Factors	Mean difference (95% CI)	*p* value
Race		
Non-orang Asli	2.11 (1.17, 3.05)	< 0.01
Orang Asli (R)		

Gender		
Male	0.74 (-0.24, 1.72)	0.140
Female (R)		
Employment		
No	0.48 (-0.52, 1.47)	0.350
Yes (R)		
Marital status		
Married	-1.79 (-2.76, -0.82)	< 0.01
Single&windower (R)		
Covariate	**B (95% CI)**	***p* value**
Age	-0.04 (-0.08, -0.01)	0.026

CI = confidence interval; B = regression coefficient.

Table 5.4.1b: Factors associated with DASS-Stress (multivariable)

Factors	**Adjusted mean difference (95% CI)**	***p* value**
Race		
Non-orang Asli	1.79 (0.76, 2.81)[a]	< 0.01**
Orang Asli (R)		
Marital status		
Married	-1.45 (-2.69, -0.22)[b]	0.021
Single&windower (R)		
Covariate	**Adjusted B (95% CI)**	***p* value**
Age	0.02 (-0.03, 0.07)	0.415

CI = confidence interval; B = regression coefficient; (R) = Reference group.
*** = < 0.05; ** = < 0.01**
a = mean difference of stress between races adjusted by marital status and age.
b = mean difference of stress between marital status adjusted by race and age.

For table above, (Table 5.4.1) noted that under univariable analysis, factors that showed differences between groups are race, marital status and age. Non-Orang Asli have higher stress level compared to Orang Asli (p<0.01) whereas married participants (p<0.01) and older participants (p=0.026) are less stressful compared to their counterparts.

Multivariable analysis showed that race and marital status again showed significant difference between groups after adjusted by each and other variables including gender, employment and age. Surprisingly, employment which was not a significant factor under univariable analysis did show significant difference between employed and unemployed individuals. Unemployed individuals were significantly stressful compared

to employed individuals (p=0.019) after adjusted by other factors like race, gender, marital and age.

Table 5.4.2a: Factors associated with DASS-Anxiety (univariable)

Factors	**Mean difference (95% CI)**	***p* value**
Race		
Non-orang Asli	2.07 (1.16, 2.99)	< 0.01
Orang Asli		
Gender		
Male	0.09 (-0.87, 1.05)	0.858
Female		
Employment		
No	0.10 (-0.87, 1.08)	0.834
Yes		
Marital status		
Married	-1.15 (-2.11, -0.18)	0.020
Single&windower		
Covariate	**B (95% CI)**	***p* value**
Age	-0.03 (-0.07, 0.01)	0.095

CI = confidence interval; B = regression coefficient.

Table 5.4.2b: Factors associated with DASS-Anxiety (multivariable)

Factors	**Adjusted mean difference (95% CI)**	***p* value**
Race		
Non-orang Asli	1.99 (0.98, 3.00)[a]	< 0.01**
Orang Asli (R)		
Marital status		
Married	-0.64 (-1.86, 0.57)[b]	0.299
Single&windower (R)		
Covariate	**Adjusted B (95% CI)**	***p* value**
Age	0.01 (-0.03, 0.06)	0.537

CI = confidence interval; B = regression coefficient; (R) = Reference group.
*** = < 0.05; ** = < 0.01**
a = mean difference of anxiety between race adjusted by marital status and age.

b = mean difference of anxiety between marital status adjusted by race and age.

For table 5.4.2 above, under univariable analysis, factors that showed differences between groups are race, marital status and age. Based on DASS-Anxiety score, it was noted that non-Orang Asli were more likely to be anxious compared to Orang Asli.($p<0.01$) and married participants are less likely to be anxious compared to their counterparts ($p=0.02$).

Table 5.4.3: Factors associated with Generalized Anxiety Disorder (GAD) (Univariable)

Factors	**GAD**		**Wald's Chi square**	**OR (95% CI)**	***p* value**
	No	**Yes**			
Race			11.169	0.216	< 0.01
nOA	69 (74.2)	24 (25.8)		(0.088, 0.531)	
OA (R)	93 (93.0)	7 (7.0)			
Gender			0.001	1.015	0.969
Male	79 (84.0)	15 (16.0)		(0.471, 2.190)	
Female (R)	83 (83.8)	16 (16.2)			

Employment			3.586	2.300	0.058
No	72 (90.0)	8 (10.0)		(0.971, 5.447)	
Yes (R)	90 (79.6)	23 (20.4)			
Marital Status			12.764	0.216	< 0.01
Single& widower	56 (71.8)	22 (28.2)		(0.093, 0.501)	
Married (R)	106 (92.2)	9 (7.8)			
Covariate	**B (SE)**				
Age	-0.03 (0.02)		3.581	0.970 (0.939, 1.001)	0.058
DASS-Anxiety	0.36 (0.07)		24.225	1.430 (1.240, 1.649)	< 0.01
DASS-Stress	0.24 (0.06)		17.347	1.274 (1.137, 1.428)	< 0.01
DASS_Depression	0.21 (0.05)		18.671	1.236 (1.123, 1.360)	< 0.01

CI = confidence interval; OR = Odds ratio; B = regression coefficient; SE = Standard error; (R) = Reference group.
*** = < 0.05; ** = < 0.01**

Table 5.4.3 showed univariable analysis for factors associated with Generalised Anxiety Disorder (GAD) based on Mini International Neuropsychiatric Interview (MINI). It was noted that Orang Asli and married participants are less odds to be diagnosed with GAD compared to their counterparts (p <0.01). Besides, DASS-Anxiety, DASS-Stress and DASS-Depression are also found to be positively correlated with GAD (p < 0.01).

Table 5.4.4: Factors associated with Generalized Anxiety Disorder (GAD) (multivariable)

Factors	**OR (95% CI)**	**Adjusted OR (95% CI)**	***p* value**
Race	0.216	0.533[a]	0.245
nOA	(0.088, 0.531)	(0.185, 1.538)	
OA (R)			

Marital Status Single& widower Married (R)	0.216 (0.093, 0.501)	0.261[b] (0.075, 0.907)	0.034*
Covariate			
Age	0.970 (0.939, 1.001)	1.007 (0.962, 1.055)	0.767
DASS-Anxiety	1.430 (1.240, 1.649)	1.348 (1.139, 1.596)	< 0.01**
DASS-Stress	1.274 (1.137, 1.428)	1.065 (0.872, 1.300)	0.539
DASS-Depression	1.236 (1.123, 1.360)	0.992 (0.834, 1.180)	0.926

CI = confidence interval; OR = Odds ratio; B = regression coefficient; SE = Standard error; (R) = Reference group.
*** = < 0.05; ** = < 0.01**
a = The odds of not having GAD between races adjusted by marital status, age and anxiety, depression and stress scores by DASS.
b = The odds of not having GAD between single/widower in comparison to married participants adjusted by race, age and anxiety, depression and stress scores by DASS.

However, under multivariable analysis, noted that marital status (p=0.038) and positive score of DASS-Anxiety (p=0.01) are the only factors significantly associated with GAD. The odds of married participant screened positive for GAD was 0.251 (0.068, 0.094). Every increment one unit of DASS anxiety score contributed to the 1.36 times odds, with 95% CI of 1.137 to 1.627 of diagnosing positive for GAD via MINI instrument.

Table 5.4.5: Factors associated with DASS-Depression (univariable)

Factors	**DASS (Depression)**		**Wald's Chi square**	**OR (95% CI)**	***p* value**
	Not normal	**Normal**			
Race nOA	30 (32.3)	63 (67.7)	13.210	4.29 (1.96, 9.39)	< 0.01**

OA (R)	10 (10.0)	90 (90.0)			
Gender			3.762	2.03	0.052
Male	25 (26.6)	69 (73.4)		(0.99, 4.15)	
Female (R)	15 (15.2)	84 (84.8)			
Employment			0.758	1.37	0.384
No	19 (23.8)	61 (76.2)		(0.68, 2.75)	
Yes (R)	21 (18.6)	92 (81.4)			
Marital Status			19.079	5.60	<
Single&widower	29 (37.2)	49 (62.8)		(2.58, 12.12)	0.01**
Married (R)	11 (9.6)	104 (90.4)			
Covariate	**B (SE)**				
Age	0.01 (0.01)		0.667	1.01	0.414
				(0.98, 1.04)	

R = Reference; OR = Odds ratio; CI = confidence interval; SE = standard error.

*** = < 0.05; ** = < 0.01**

Under univariable analysis, factors such as race and marital status were significantly associated with depression (p<0.01) (Table 5.4.5). After multiple factors adjustment, more factors were found to be associated with depression. These factors were race, employment, marital status and age. Orang Asli were four times odd to be screened normal in depression compared to non-Orang Asli, OR (95% CI) =4.08 (1.61-10.31) with p value of 0.003. From Table 5.4.6 (below), the study noted that being employed had three times odds to be less depressive in comparison to unemployed individuals OR (95%CI) =3.14 (1.27-7.79). Additionally, married participants had approximately 20 times odds to be screened as normal under depression evaluation compared to those single or widower, OR (95%CI) =19.48 (5.09-74.52), p<0.01. (Table 5.4.6)

Finally, this finding also showed that older individuals tend to be less depressive compared to the younger individuals, OR (95%CI) = 0.93 (0.89-0.97), p=0.01 (Table 5.4.6)

Table 5.4.6: Factors associated with DASS-Depression (multi-variable)

Factors	**OR (95% CI)**	**Adjusted OR (95% CI)**	***p* value**
Race	4.29	4.00[a]	0.003**
NoA	(1.96, 9.39)	(1.61, 9.99)	
oA (R)			

Marital Status Single&widower Married (R)	5.60 (2.58, 12.12)	15.34[b] (4.50, 52.27)	< 0.01**
Covariate			
Age	1.01 (0.98, 1.04)	1.076 (1.03, 1.12)	0.001**

R = Reference; OR = Odds ratio; CI = confidence interval; SE = standard error.

*** = < 0.05; ** = < 0.01**

a = The odds of having depression symptom between race adjusted by marital status and age.

b = The odds of having depression symptom between single/widower compared to married participants adjusted by race and age.

CHAPTER 6

DISCUSSION

Around the world, indigenous people or Orang Asli had been known to have a higher level of psychological stress than the healthy population [15, 27, 32, 130]. In some region, indigenous population was considered to have the worse mental health than the general populations [15, 27, 32, 130]. Possible explanations for the dreadful situation seen

include their socioeconomic deprivation, unemployment, cultural disruption, loss of significant spiritual beliefs, and migration [20].

In Peninsular Malaysia, the study about prevalence of psychiatric morbidities among Orang Asli were scarce. [131] Our study was done with the aim of examining the prevalence of psychiatric morbidity among the Orang Asli in Bukit Lanjan, and to compare the findings with rates in the non-Orang Asli population. The study used the DASS-21 and MINI questionnaires.

A total of 193 subjects agreed to participate in this research. The mean age of participants was 34 years (SD 12.4) for the non-Orang Asli, and 44.6 years (SD 12) for Orang Asli.

Our research explored the relationship between Orang Asli and the non-Orang Asli, considering the individual's age employment, and marital status, and any presence of psychiatric illness. The study found using the DASS-21 questionnaire, the non-Orang Asli participants appeared to be more stress, anxious and depressed compared to Orang Asli participants.

Furthermore, the descriptive analysis showed that the prevalence of Major Depressive Disorder (Current) among the Orang Asli participants in Bukit Lanjan was 2 % (n=2), compared to 6.5% (n=6) of non-Orang Asli, and 2% of non-Orang Asli and

Orang Asli had past episode of Major Depressive Disorder. The result showed that more cases of depression occurred in non-Orang Asli compared to Orang Asli community. There were 7% of Orang Asli noted to have Generalised Anxiety Disorder compared to non-Orang Asli which were 24% (n=24). This result was in keeping with DASS-21

(Anxiety) Scale. There were 5% (n=5) of Orang Asli were diagnosed with alcohol use disorder compared to 2.2% (n=2) of non-Orang Asli.

The study found in the Orang Asli population, only 5% (n=5) of the participants were mildly **stress,** and 8% (n=8) were moderately stressed. While in the non-Orang Asli population, 12.9% (n=12) were mildly stressed, and 16.1% (n=15) moderately stress.

For the **presence of anxiety**, 12.9% (n= 12) had mild anxiety and 17.2% (n=16) moderate anxiety, while high anxiety levels were found in 8.6% (n=8) in the non-Orang Asli participants. In the Orang Asli participants, 23% (n=23) scored mild anxiety, 12% (n=12) moderate 5% (n=5), high anxiety and only 2% (n=2) scored severe anxiety. It appeared that the non-Orang Asli participants were more anxious compared to Orang Asli participants.

6.1.1 Prevalence of Major Depressive Disorders Among Orang Asli In Bukit Lanjan, Selangor

From the study, the author interviewed a total of 100 Orang Asli and 93 of non-Orang Asli for the study. From the DASS-21 questionnaires, the study noted that 43% of non-Orang Asli had varying levels of depression compared to 18% of the Orang Asli participants.

The DASS-21 questionnaires also showed that 32.3% of non-Orang Asli in Bukit Lanjan score mild, moderate, high and severe stress scale compared to Orang Asli, which is only 13.05%. **The study found that non-Orang Asli participants were more stress and depressed compared to Orang Asli.**

Our study used the Mini International Neuropsychiatric (MINI) questionnaire for the participants and noted that, there was only 2% (n=2) of the Orang Asli participants in

Bukit Lanjan were currently diagnosed with major depressive disorder and 2% of them experienced depression in the past.

The findings in the study were almost similar to another local study done in Peninsular Malaysia. Abd Rashid [132] Abd Rashid (2010) in a survey among the Orang Asli in Carey Island noted from the 183 Orang Asli participants, only 1% of the participants appeared to have depression and one diagnosed with dysthymia. In the same survey, Abd Rashid [132] found the prevalence of alcohol use among Orang Asli comparable with the general population surveyed. [6]

The prevalence of depression among the Orang Asli was 2% which was lower compared to non-Orang Asli participants in Bukit Lanjan where 6.5% (n=6) of them recorded symptoms of major depressive disorder, and 2.2% of them experienced the symptoms in the past. The findings were lower compared to a study determining the prevalence of depression among adults in Selangor and using the Patient Health Questionnaire (PHQ-9). The study noted that 10% of the 1556 participants showed symptoms suggestive of depression [133]. The Orang Asli surveyed in Bukit Lanjan which is an urban area in the Klang Valley. Moreover, there is a lack of data to compare the latest prevalence of psychiatric illness among the Orang Asli population in an urban area.

As stated, the current study recorded a low prevalence rate of depression compared to other studies around the world. However, other studies showed that the overall prevalence rates of depression or other mental illness vary between regions [51, 55, 134].

In Canada's aboriginal population, Bombay et al., (2009) related approximately 30 per cent of the First Nations people living on-reserve reported feeling sad, blue or depressed for two weeks or more. Similarly, off-reserve the Aboriginals were twice as

likely to suffer an episode of major depression in the past year compared to the general population [135, 136]. Bombay et al., (2009) and Tjepkema (2002) postulated there is health inequalities present for any Indigenous population living within and off the Indigenous reserves. Further, health determinants such as low socio-economic status, smoking, and obesity were more prevalent in the off-reserve Aboriginal population [135, 136].

Beals et al., (2005a) postulated that the lifetime rates of major depressive episode among American Indians were only about 30% than were their counterparts of the same gender in the non-Indigenous population. Beals et al., (2005a) proposed that the rates of depression among the Indigenous population were comparable to other or higher than the non-Indigenous population. [55] Then Beals et al., (2005a) surveyed a total of 3,084 tribal members (1,446 in a Southwest tribe 73.7% of eligible participants, and 1,638 in a Northern Plains tribe, 76.8% of eligible participants, aged between 15–54 years living on or near their home reservations. The study found the prevalence estimates for life- time and 12-month major depressive episodes were substantially lower in the American Indian samples compared to the National Co-morbidity Survey.[55]

Multiple studies showed that the overall prevalence rates of depression or other mental illness varied between regions. [137] Allbon and Pink (2008) in their study in 2008 noted that the admission to hospital of aboriginal and Torres Strait Islander men with depression is 1.2 times the rate of non-aboriginal populations.[138] Mc Kendrick

conducted a survey of indigenous people attending a community-controlled health service on Victoria, reporting that 54% of the people tested with standard psychiatric scale were suffering from psychiatric illness and depression was the most common in this group [139].

Nasir et al., (2018) carried out a cross-sectional study among four Aboriginal Medical Services and the general community located in urban, regional and remote areas of Southern Queensland and two Aboriginal Reserves located in New South Wales.[36] According to Nasir et al., (2018), the current mood, anxiety, substance use and any mental disorder were 16.2% (12.2% to 20.2%), 29.2% (24.2% to 34.1%), 12.4% (8.8% to 16.1%) and 42.2% (38.8% to 47.7%), respectively. Additionally, the rates were 6.7-fold, 3.8-fold, 6.9- fold and 4.2-fold higher, respectively, than those of the Australian population.[36] The study as well noted that the Indigenous people who lived in the remote area (at least 450 to 500km from a metropolitan area) have markedly low rates of psychiatric illness compared to indigenous people living in urban areas.

Black et al., (2015) from a systemic review identifying prevalence rates of psychiatric disorders reported the occurrence of major depressive disorder among indigenous people in most of the regions in Australia varied between 4.3% to 51%.[30]

Duran et al., (2004) investigating the lifetime and the past-year prevalence and correlates of common mental disorders among American Indian and Alaska Native women presenting to the primary care.[140] The study noted that the lifetime prevalence of any mood disorder was 44% (SE = 3.4), and 86% of women who reported mood disorders suffered from major depression. Then Duran et al., (2004) found among the depressed participants, nearly one third were moderate or severely depressed. [140]

Bowen et al., (2006) aimed to determine the prevalence of depression and its correlates in pregnancy found that Aboriginal women had higher levels of depressive symptoms than non-Aboriginal women.[134] Moreover, Bowen et al., (2006) discovered that participants who had stopped using tobacco or alcohol during their pregnancy had more depressive symptoms than those who had quit before pregnancy. [134]

In another study in Australia, Hunter et al., (2006) from a community survey, noted that there were different rates of depressive disorder found at different sites. Hunter et al., (2006) recorded a rate of 2.5 % at Mornington Island, 6% at Bourke, and 1% for an aboriginal community in Kimberley. [141]

The present study noted that the participant's race, employment status and marital status are associated with depressive symptoms. According to our data, Non-Orang Asli participants who are unemployment, single, or widowed were more likely to have depressive episodes. This finding was in keeping with a study done by Stankunas et al., (2006) showed that unemployed persons have more episodes of depression in the past 12 months compared to employed persons.[142] Long term unemployment and experiencing financial stress increase stress levels which in turn predispose a person to mental health problems such as depression, anxiety and substance use [143].

Cunningham et al., (2012) comparing a cohort of Indigenous and non-Indigenous Australian adults aged 18-64 years, found Indigenous adults were three times more likely than non-Indigenous adults to experience very high psychological distress.[144] The study found Indigenous people living in remote areas had a lower prevalence of psychological distress than their non-remote counterparts, with only marital status, main language, and food insecurity were significantly associated with psychological distress in remote areas. In the same study, Cunningham et al., (2012) found among the non-

Indigenous participants, being male, and unemployed were factors related to high stress levels. The study also noted that, chronic health conditions were among the Indigenous Australian adult reason for highest psychological stress. The adult participants were particularly worried about congestive heart failure, myocardial infarction and coronary heart disease.[144]

Bulloch et al., (2009) found one critical social factor that modifies depression is the person's marital status, and research has repeatedly shown that married people have better mental health than those who are single, widowed, separated or divorced.[145] The findings were supported by Akhtar-Danesh and Landeen (2007)`s study, which found married individuals have lower rates of depression compared to those who are single, widowed, or divorced.[146] Bulloch et la., (2017) further added that the relationship between marital problem and depression was bidirectional.[145] Bulloch et al, (2009) in a meta-analysis work noted people aged more than 55-years-old and not married was a significant risk factor for depression in later life. [147]

From DASS-21 score of multivariable analysis in this study the results showed that age was also a factor for depression. The data analysis showed that older individuals tend to be less depressive compared to younger individuals. However, this finding was not in keeping with most of the studies about the relation between age and depression.

In a study by Roberts et al., (1997), showed that healthy and well-functioning older adults were at no greater risk for depression than younger adults.[148] Roberts et al., (1997) added that physical health problems, chronic illnesses and related disability were more related to depression than age.[148]

Then, Patten et al., (2016) disclosed that the prevalence of depression decreases steadily with advancing age.[149]

Lewinsohn et al., (1991) reported that depression was not part of the ageing pattern. The changes in neurophysiological functioning were not directly associated with depression. Base on epidemiological evidence, healthy and normally functioning older adults were at no greater risks for depression than younger adults [150].

6.1.2 Prevalence of Generalised Anxiety Disorders Among Orang Asli in Bukit Lanjan

Anxiety was one of the most common psychiatric illness in the world with an early age onset. Approximately more than 200 million people around the globe had symptoms of an anxiety disorder in 2010. [151] Anxiety disorders mostly occurred in female compared to male and adults aged 20 to 64 years old were shown to have the highest incidence among the other age groups.[152]

In this current study and using the MINI interview, the prevalence of Generalized Anxiety Disorder among Orang Asli in Bukit Lanjan was 7% (n=7). Again, the figure is lower compared to 25.8% (n=24) of non-Orang Asli.

From the DASS-21 score, it was noted that 55 % of non-orang Asli scored mild, moderate, high and severe for anxiety compared to only 42% of Orang Asli. This result was in keeping with a study done in Bella Coola Valley, in British Columbia in 2001 which noted that the non-indigenous people showed higher rates of anxiety compared to indigenous people [153].

Similarly, in Duran et al., (2004) study, anxiety disorders were the most common mental disorders found among the female Indigenous participants surveyed. The investigation found 62.8% of the women met the criteria for any life- time anxiety disorder diagnosis.[140] Duran et al., (2004) found the investigation revealed close to 31% met the diagnosis for specific phobia followed by posttraumatic stress disorder (29%) while 15% of the participants met criteria for both disorders.[140]

In the study, Thommasen et al., (2005) surveyed the Bella Coola Valley population. The Bella Coola Valley is a geographically isolated community located in the central coast region of British Columbia. In the 2001 British Columbia census, 2285 people lived in the Bella Coola Valley, and 46% of these people were of Aboriginal descent.[153] Thommasen et al., (2005) found depression was the most common problem (86%) in the patients surveyed. Additionally, the study found women had a higher rate of depression–anxiety disorders (10.3%) than did men (4.7%) ($P < 0.001$). Moreover, the non-Aboriginal participants had a slightly higher rate (8.5%) than did the Aboriginal people (6.3%). However, the difference was not statistically significant. The study discovered that there were more Aboriginal people, especially the women, were taking antidepressants.[153]

In the study by Dillard et al., (2012) involving 26 Alaska Native people (ANs) communities across three regions of Alaska, twenty percent of women and thirteen percent of men scored positive for depression. Among the ANs men surveyed, the odds of depression were higher if the individuals were not married and if their highest educational level was less than high school. Among the ANs women and being 34 to 59 years of age increased their odds of having depression. Additionally, for both genders,

having chronic physical conditions and poorer self- reported health was associated with positive depression scores and alcohol usage and current tobacco use increased odds of depression among women only.[154]

Nasreen et al., (2018) examined the prevalence anxiety disorders among Canadian First Nations adults living off-reserve, and the relationship between anxiety disorders and Indigenous health. Nasreen, Brar [155] found the prevalence of anxiety disorders was about 15% among off-reserve First Nations adults. There was an increased odds of anxiety disorders among those participating in traditional activities compared to their counterparts. [155]

Heath et al., (2019) investigated the physical and mental health of Cree adults, and its association with the presence of lifetime anxiety and mood disorders.[156] Heath et al., (2019) found close to 35% of the individuals surveyed met the DSM-IV criteria for an anxiety or mood disorders. The individuals with an anxiety or mood disorder were younger, predominantly female, and with higher educational levels, and a large proportion (48%) met the lifetime criteria for substance dependence. The hierarchical regression determined that anxiety or mood disorders were associated with serious problems getting along with parents, a history of physical and sexual abuse, and a lifetime diagnosis of substance dependence [156]. Overall, the study found 29.7% of the Cree adults surveyed reported sexual abuse, 47.1% physical abuse, and 52.9% emotional abuse.[156]

Nasreen et al, 2012, their study indicated that in the prevalence of anxiety among indigenous people in Canada were varies depending on region. A regional study by Galloway and Saudny [157] noted that 9.3% of indigenous people in Manitoba, Canada was diagnosed with generalised anxiety disorder. In Nunavut, a study conducted in 2007 and 2008 with 1710 Inuit from 25 communities indicated that 14% of them show symptoms suggestive of anxiety [157].

Duran, Sanders [140] investigated the lifetime and the past-year prevalence and correlates of common mental disorders among American Indian and Alaska Native women who presented for primary care. The study found among its participants there were high rates of alcohol use disorders, anxiety disorders, and anxiety/depression. The rates were higher compared with other samples of non–American Indian/Alaska Native women in primary care settings.

Black, Ranmuthugala [30] from a systemic review to identify the prevalence rates of psychiatric disorders in Australia's Indigenous populations, Aboriginal and Torres Strait Islander peoples found half of participants experienced psychiatric disorders such as major depression, PTSD, anxiety, and alcohol or substance dependence.

From local data, a Community Survey by students from University Putra of Malaysia in 2015 noted that the prevalence of anxiety among adults in Selangor was 8.2% [158]. Another local study in a rural area in the East Coast of Peninsular Malaysia was done by researchers from Universiti Sultan Zainal Abidin in 2011 noted that prevalence of anxiety was 12.9% [159]. However, the study that was done by University Putra of Malaysia used GAD-7 to measure anxiety and University Sultan Zainal Abidin used

Hospital Anxiety depression scale (HADS) to measure anxiety. The discrepancies in the prevalence could be due to the different screening instrument used [158].

From our data noted that marital status was one of the factors for anxiety. The study noted that married participants were less anxious compared to single or widower participants. This is supported with study by Maideen, Sidik [158] noted that divorcees have the highest prevalence of anxiety (42%) and married couple only 6.6%. Many past research showed that marriage was frequently more beneficial for mental wellbeing [160]. Research also showed that marital problems was a potential risk for the most onset of mental illness including anxiety [161].

Our study noted that there was association between anxiety and depression. From univariable analysis for factors associated with generalized anxiety disorder (GAD) based on MINI, it was noted that depressive symptoms stated in DASS-21 was found to be positively correlated with Generalized Anxiety Disorder diagnosis in MINI questionnaire. This findings was in keeping with study by Johansson et al, 2013, whereby 57.5 % of depressed persons were found to have anxiety symptoms [162]. This is supported by study by Kader Maiden et al, 2015 that noted from their study, the comorbidity between depression and anxiety was 53.3%. The study also noted that depressed adults have almost 18 times higher risks of developing anxiety compared to non-depressed person [158]. Data from the Netherlands Study of Depression and Anxiety showed that person with comorbidity of anxiety-depression had higher levels of cognitive, physical and social disability [163] .The severity of functional impairment and mental illness were strongly associated with anxiety and depression [164].

In our study, noted that anxiety was significantly associated with perceived stress from DASS-21 questionnaires. This is in keeping with multiple studies that showed

correlation between stress and anxiety. A study by McNamara et al., (2018), showed that indigenous people in Australia experienced different types of psychological stress such as migration, loss of land, loss of jobs and difficulty to adapt in new resettlement home.[165] These are the factors contributed to them to be vulnerable to mental illness such as depression and anxiety.[165] A community study about prevalence of anxiety in Selangor noted that there was a significant association between high perceived stress and anxiety. The odds of developing anxiety were 5 times higher in participants with high perceived stress as compared to general community [158].

6.1.3 Prevalence of Other Psychiatric Illness Among Orang Asli In Bukit Lanjan

Obsessive Compulsive Disorder (OCD) was a prevalent and disabling lifespan disorder. Multiple studies around the world repeatedly showed that lifetime prevalence of OCD is about 1% to 1.6 %.[166] Based on the MINI questionnaire, there were 6% prevalence of Obsessive-Compulsive Disorder among non-Orang Asli compared to 1% of Orang Asli in Bukit Lanjan. This study was in keeping with New Zealand Mental

Health Survey that was conducted in 2004 whereas the survey noted that among indigenous people in New Zealand, the prevalence for Obsessive Compulsive Disorder was 1%. [167] However, in Australia, a cross sectional study in 2016 noted that lifetime prevalence for Obsessive compulsive Disorder among 544 indigenous people in Australia was 2.9%. [77]

The prevalence of alcohol use disorder among orang asli in Bukit Lanjan was 5% compared to 2% of non-Orang Asli in Bukit Lanjan. All the participants using alcohol were male and all of them were employed. This finding was almost similar with a study done by Rashid et al, 2010 as the findings noted that only 4% of Orang Asli in Carey Island, Selangor were noted to have alcohol dependence and all of them were male.[6]

However, the findings were not in keeping with other studies among indigenous people in Australia. In 2011, alcohol use disorder accounted for an estimated 8.3% of the overall burden of disease among indigenous people in Australia. In 2015, the overall rate of suicide among indigenous people of Torres Strait Islander was 2.1 times higher than among non-indigenous people 40% of male suicides and 30% of female suicides were attributable to alcohol use [168]. A study by Prof Hatta in 2011 noted that the prevalence of alcohol use in Malaysia in 2011 was 11.6%. Among the alcohol users, 23.6% of them practiced risky drinking.[169]

Kirmayer (1994) and Chandler et al., (2003) discovered among adolescents in Canada's First Nation populations alcohol and other drugs is the leading cause of adolescent morbidity and mortality consequent to motor vehicle accidents, suicidal behaviours, violence, falls, drowning, and unprotected sex.[63, 105] As such, youth alcohol and other substance abuse in First Nations communities, is an important community and public health concern and can be readily understood in part as the direct

consequences of social factors, i.e., dislocations and disruption of traditional subsistence patterns and disconnection to their land and tradition [43, 104]. Mushquash et al., (2010) proposed that using substance serves an attempt to deal with stressful situations, including help alleviate their worries about anxious feelings where anxiety may occur. [104]

Sarche and Spicer (2008) exploring the challenges faced by the American Indian and Alaska Native populations and children found among the American Indian and Alaska Native women surveyed the highest lifetime rates of disorder were posttraumatic stress disorder (SW, 22.5%; NP, 20.2%), alcohol dependence (SW, 8.7%; NP, 20.2%), and major depression (SW, 14.3%; NP, 10.3%).[170] Then among the men the highest lifetime rates of disorder were alcohol dependence (SW, 31.1%; NP, 30.5%), posttraumatic stress disorder (SW, 12.8%; NP, 11.5%), and alcohol abuse (SW, 11.2%; NP, 12.8%). Sarche and Spicer (2008) discovered compared with national data, the rates of posttraumatic stress disorder were significantly higher for men and women from both tribal backgrounds, ranging from two to three times the national rate. Alcohol dependence was as well significantly higher among men (50% higher) and NP women (100% higher). Sarche and Spicer (2008) discovered deaths among the American Indian and Alaska Native populations where highest due to chronic liver disease, cirrhosis, and other alcohol-related causes (e.g., accidents) and was seven times the national rate.[170]

Then, DeChamplain et al., (2019) reviewing Indigenous mental health in Canada found problems with suicidal behaviour and problematic substance use were over-represented in the papers reviewed. [171]

In the discussion regarding the varied results authors such as Beals et al., (2005a), Cunningham and Paradies (2012) and others have identified and acknowledged that the Indigenous populations have a different understanding of health.[55, 144] Much of their understanding of health are oral traditions of their traditional culture, ordered interaction between people as well as the maintenance of essential natural resources [172]. van Aaken (2013) emphasize the rather simple statement that circumscribes a complex concept of a power relationship between the holder of knowledge or knowing, and a pupil or someone willing to listen, hear and learn.[172] Moreover, there has been no adequate measures or tools available [30, 144, 173].

Additionally, help-seeking from traditional healers is common in American Indian populations. Beals et al., (2005b) discovered that American Indian women were less likely to speak to non-specialty providers about their emotional and mood problems.[56] Besides, Beals et al., (2005b) revealed that both the American Indian men and women were **less likely to endorse** each of the major depressive episode symptoms than were their counterparts of the same gender and in the non- American Indian sample. Beals et al., (2005b) study concluded American Indian samples struggled with the interview question about the occurrence of depressive symptoms.[56]

Black et al., (2015) suggested even between Indigenous living in remote and urban areas rates of psychiatric morbidity will differ.[30]

Nasir and Toombs (2018) and Cunningham and Paradies (2009) are among several authors who identified the Indigenous populations have a different understanding of psychological distress, and specific questions in the available assessment tools are potentially sensitive to the Indigenous populations.[36, 144] Additionally, Cunningham and Paradies (2009) identified that the instrument might be less valid for Indigenous people living in remote areas or those living in an Indigenous majority environment.[144]

Nasir and Toombs (2018) even suggested conducting a culturally acceptable interview to help improve understanding the Indigenous populations' psychological distress state.[36] Thus, it is no surprise that Beals et al., (2005) emphasize that there is a need for a careful examination of diagnostic instruments cross-culturally. [55]

Then investigators found such as Becares et al., (2009), Das-Munshi et al., (2010) and Cunningham and Paradies (2012) regarding the issue with inequality between the health of ethnic minorities increased ethnic density is beneficial for minority communities. In the Desa Temuan, Bukit Lanjan area, the Orang Asli live in an urban area where schools, shops, health facilities and transportation, is readily available. [144, 174, 175]

CHAPTER 7

STRENGTH AND LIMITATIONS

7.1 Strength

1. The assessment and interview were done in Malay language and the self-reported questionnaire DASS-21 was in Malay language.
2. The interview was performed by a trained medical officer

7.2 Limitations

1. The data in this study were self-reported by participants which may incur some recall or reporting bias.
2. This is a cross sectional study design which limits the determination of the temporal relationship between the studied independent variables and psychiatric illness.
3. Response bias may occur among participants due to some sensitive question in the study such as question about alcohol use and other illicit drug use.
4. There are possibilities that some of the participants from Orang Asli did not understand the questionnaire.

7.3 Recommendations

1. Future researchers could use more questionnaires available that more specific to certain diagnosis such as AUDIT-1, YBOCS or HAM-D.
2. Future researchers could use mixed method such as the blend of qualitative approach and quantitative approach in collecting the data from the respondents for the research. This is because from the interview session, the researcher can get multiple information rather than only using questionnaire where the answers might not represent the actual meaning of respondents.
3. This is a cross sectional study among urban community of Orang Asli. The future researchers can continue the study with comparison with the rural community of Orang Asli in Peninsular Malaysia.

CHAPTER 8

CONCLUSION

In summary, this study found the prevalence of psychiatric morbidity among Orang Asli in Bukit Lanjan, Selangor. The prevalence of Major Depressive Disorder is 2%, Generalised Anxiety Disorder is 7%, and Alcohol Use Disorder is 5%. The prevalence of Panic Disorder, Agoraphobia and Obsessive-Compulsive Disorder were 1% each. While race, marital status, age and employment were the significant factors for psychiatric illness, underlying depression or anxiety can be an important association

for some of the illnesses. Based on literature review, the overall prevalence rates of psychiatric illness for both Orang Asli and non-Orang Asli varied between regions.

CHAPTER 9

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APPENDICES

Appendix A : Helaian Informasi Pesakit

UNIVERSITY OF MALAYA MEDICAL CENTRE

Helaian Informasi Pesakit