PREVALENCE OF ANXIETY DISORDERS, DEPRESSION AND ASSOCIATED RISK FACTORS AMONG BOARDING HIGH SCHOOL STUDENTS IN THREE PROVINCES OF THAILAND: A CROSS SECTIONAL STUDY.

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ABSTRACT

Mental health problems are one of the most important public health issues worldwide. Many early mental health problems such as anxiety, depression and suicide are of concern in adolescents and children due to the disabilities they cause and the high prevalence rates, which may disrupt education and early careers potentially leading to significant lifelong consequences. There are few studies about the risk factors regarding mental illness in young students in schools. This research aims to explore the prevalence and risk factors of depression and anxiety disorders among boarding high school students in Pathumthani, Chonburi, and Phetchaburi.

The study was conducted as an analytical cross-sectional study designed among boarding high school students using anonymous self-reporting standardized test HADS scores for anxiety and depression and structured questionnaires to evaluate prevalence and identify risk factors (family, school, and personal factors). The participants were 387 high school students at grades 10 to 12. 28.4% of the students had anxiety and 11.4% had depression, with 8.8% having concurrent anxiety and depression. The major risk factors were abuse by their parents and/or teachers, aggressive behavior, learning difficulties, educational stress, and other problems. The prevalence rate for having suicidal thoughts and making suicide attempts were 18.4% and 5.9% respectively. The factors with significant correlation to these suicide risks were emotional and physical abused by family members (OR=3.85, 95% CI=1.63-9.09), having serious quarrels with family members (OR=5.35, 95% CI=2.24-12.80), sadness (OR=14.00, 95% CI=3.24-60.60) and drug addiction (OR=23.73, 95% CI=9.10-61.93). The development of a website to provide psycho-educational interventions, establish school-based counseling services for students, and involve teachers and parents may help to address some of the issues.

KEY WORDS: MENTAL HEALTH / DEPRESSION / ANXIETY DISORDERS / RISK FACTORS / HOSPITAL ANXIETY AND DEPRESSION SCALE

131 pages

ความชุกของโรควิตกกังวล ภาวะซึมเศร้า และปัจจัยเสี่ยงที่เกี่ยวข้อง ของกลุ่มนักเรียนระดับมัธยมศึกษาตอนปลายของประเทศไทย: การศึกษาแบบภาคตัดขวาง

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บทคัดย่อ

ปัญหาสุขภาพจิตเป็นหนึ่งในปัญหาสุขภาพสาธารณสุขที่สำคัญที่สุดที่พบได้ทั่วโลก ในวัยรุ่นพบได้มากและอาจส่งผลถึงการเรียนอาชีพและการดำรงชีพในระยะยาว การวิจัยนี้มีวัตถุประสงค์เพื่อสำรวจความชุกและปัจจัยเสี่ยงของความวิตกกังวลและภาวะซึมเศร้าระหว่างนักเรียนระดับมัธยมศึกษาตอนปลายในโรงเรียนประจำจังหวัดปทุมธานี ชลบุรี และเพชรบุรี

การศึกษานี้ดำเนินการในแบบการศึกษาเชิงพรรณนา แบบตัดขวาง ซึ่งถูกออกแบบเพื่อค้นหาความชุกและปัจจัยเสี่ยงหรือพฤติกรรมระหว่างกลุ่มนักเรียนโรงเรียนระดับมัธยมศึกษา โดยการใช้แบบสอบถามมาตรฐาน HADS ที่ไม่ระบุชื่อหรือรหัสประจำตัวนักเรียนเข้าร่วมในการศึกษา ร่วมกับแบบสอบถามหลักเรื่องประเมินความชุกของความเสี่ยงต่อภาวะความวิตกกังวลและภาวะซึมเศร้า และปัจจัยเสี่ยงที่อาจเกี่ยวข้อง ตามลำดับ โดยแบบสอบถามถูกแบ่งออกเป็น 3 ส่วนคือ ข้อมูลส่วนตัว ปัจจัยเสี่ยง (เช่น ปัจจัยครอบครัว โรงเรียน และปัจจัยส่วนบุคคล) และส่วนสุดท้ายเป็นระดับความเสียงของภาวะวิตกกังวลและภาวะซึมเศร้า มีนักเรียนมัธยมปลาย ระดับชั้นที่ 4-6 จำนวนทั้งหมด 387 คน มีนักเรียนทั้งหมด 28.4% จากกลุ่มเด็กปกติ ที่มีความวิตกกังวล และ 11.4% มีภาวะซึมเศร้า ความเสี่ยงที่สำคัญคือจากการถูกทำร้ายโดยผู้ปกครอง หรือครู ของนักเรียนเอง มีพฤติกรรมก้าวราว มีปัญหาการเรียนรู้ ความเครียดจากการเรียน มีปัญหาที่ไม่สามารถแก้ไขได้ และอื่นๆ

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LIST OF ABBREVIATIONS

ADHD	Attention Deficit Hyperactivity Disorder
ACC	Anterior Cingulate Cortex
CAD	Coronary Artery Disease
CI	Confidence Interval
DSM-IV-TR	Diagnostic and Statistical Manual of Mental Disorders-Fourth Edition (Text Revision)
HADS	The Hospital Anxiety and Depression Scale
HIV MSM	HIV in men who have sex with men
HPA	Hypothalamic-pituitary-adrenal
n4studies	Mobile application used for calculation simple size and power of the study
NCDs	Non-communicable Diseases
NPDs	Neuropsychiatric Disorders
MOPH	Ministry of Public Health
MDE	Major Depressive Episode
OCD	Obsessive Compulsive Disorder
OR	Odd ratio
PDD	Pervasive Developmental Disorder
PFC	Prefrontal Cortex
PRIME-MD	Primary Care Evaluation of Mental Disorders
PTSD	Post-traumatic Stress Disorder
SD	Standard Deviation
SPSS	Statistical Package for the Social Science
WHO	World Health Organization

CHAPTER I
INTRODUCTION

1.1 Background to the study

According to WHO, definition of health is not only an absence of infirmity or disease but also a state of complete physical, social, and mental well-being (1). Or more accurately “sound mind in sound body” where the important factor to live happily is to be well in both mentally and physically.

Mental health problems are one of the most important public health issues worldwide. While mental health is still a major concern, as it is a fundamental component of human health. However in many countries, it is still not given its priority as it needed compared to physical health issues counterpart. The negative trends can be seen in many areas, for instance, care and services, discrimination against mental illness individuals, and abuse of human rights. Untreated mental disorders exact a high prevalence with 13% of the total global burden of disease, according to World Health Organization (2). Mental disorders account for 33.5% and 25.3% of all years lived with a disability in middle- and low- income countries, accordingly (2). Furthermore, accounting for 4.3% of the global burden of disease, the third leading cause of disease burden is unipolar depressive disorder (2). In the primary settings for psychiatric care in Thai 668 hospital, a cross-sectional self-reported questionnaire was conducted with a total of 434 questionnaires were analyzable. The study found that the most common psychiatric diagnoses were anxiety disorders (37.5%), depressive disorders (29.2%) and alcohol and drugs abuse (28.1%) (3). The approximate calculation for low- and middle-income countries are 3.2% and 5.1%, respectively (2). The latest forecasts show that by 2030 depression will be the leading cause of disease burden worldwide.

There is a public awareness of mental health problems such as stress, depression, anxiety and suicide among Thai students. In the preliminary population-based cross-sectional survey done in the Northern Bangkok, Jirapramukpitak *et al.*

reported that 38% of the representative of 202 young residents, aged 16-25 years experiencing some form of abuse during childhood, with 11.7% having been physically abused, 5.8% subjected sexual penetration and 31.8% emotionally abused. They found that there is a great relationship between the extent of exposure to abuse during childhood and mental problems (4). A review study of 2,758 secondary school student grade 7 to 10, age between 13 and 15 years old, existing data from the 2008 Thailand Global School-Based Health Survey (GSHS) showed that the overall prevalence of suicidal ideation in the past 12 months was 8.8% (7.7% female and 9.9% males). Many variables influenced the suicidal ideation such as having felt sad, current alcohol use, lack of parental attachment, and having had sexual intercourse (5).

Anxiety can be treated, and early diagnosis can make the disorder easier to treat. Although anxiety and depression among students are prevalent disorders, very few studies have investigated the related risk factors. Therefore, the aim of this research is to determine the prevalence of anxiety, depression and associated risk factors in Thai high school students, to identify risk factors to improve their mental health situation in the school.

1.2 Rationale for the study

The early-onset of many mental health troubles starts during middle school and high school period. Even mental health may be a source to some of the health related problems in school, yet, it has so far being neglected and seen as an unimportant issue. Moreover, there are also a few studies shows the prevalence of mental health among high school students, despite many other studies conducted in regard of health issues. To the matter of fact, the health care systems have not yet adequately meet the needs on reducing or eliminating the burden of mental health problems in the society. The gap for the need of its improvement in treatment and provision is huge.

Previous cross-sectional study which was done in Thailand is related to prevalence and risk factors of suicidal ideation. There is paucity knowledge about the risk factors of depression and anxiety among high school pupils in boarding schools. To provide sufficient information to support giving further health education to

students and promote school policy implementation, this study conducted an investigation on depression and anxiety disorders in involving high school students from some of the boarding schools in Thailand. Upon identification of risk factors that are critical to the illness, the results can be referred to nominate potential targeted policy for mental health issues. Hereby, this study is proposed to perform a study to profile the risk factors or protective factors among high school pupils through the use of questionnaires coupled with the study of prevalence of depression and anxiety disorders among these groups to give more information to the issue. The study applied sample size calculation to determine the size of students in this research, the comparison of risk profiles allowed us to identify factors uniquely prominent in the reason of mental health specifically depression and anxiety disorders in the boarding schools.

1.3 Objectives of the Study

1.3.1 Main Objective

This research aims to explore the prevalence and risk factors of depression and anxiety disorders among high school students from boarding high schools in Thailand.

1.3.2 Secondary Objectives

To achieve this main objective, the study specifically attempts to determine the main risk factors associated with depression and anxiety disorders among students from three boarding high schools in Thailand.

1.4 Significance of the Study

The childhood disorders can be largely hidden (6). According to one study, 20% of Thai populations suffer from certain degrees of mental health issues which means 1 in every 5 people suffer from some form of mental disorder (7). Only three million went to hospital and around one million can get a regular treatment. The early-

onset of mental illness is during middle school and high school. Therefore, this purposed study is to identify prevalence and risk factors which may relate to anxiety and depression, thus developing an understanding of the major causes and create awareness and prevention's policies among boarding high school students.

Hopefully, this study can define the situation of depression and anxiety as well as some importance major factors related , which may provide us with a better understanding in and may leading to produce a suitable resolution or improvement method to solving these problems.

1.5 Conceptual Framework for the Study

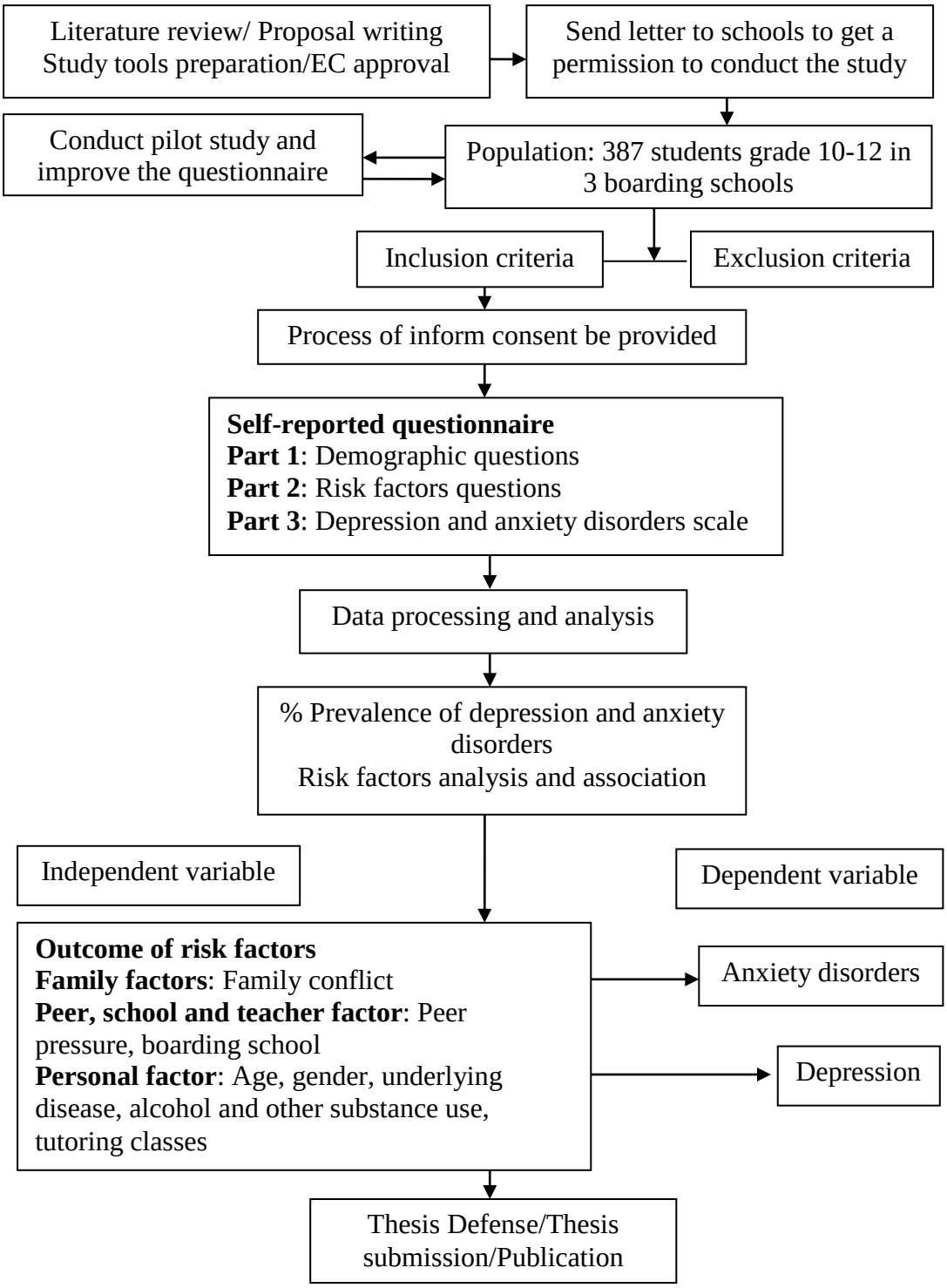

Figure 1.1 Conceptual framework

CHAPTER II
LITERATURE REVIEW

2.1 Public health research

There are three main types of public health research which are assessing, intervening, and ensuring.

2.1.1 Assessing includes gathering data on both positive contexts as well as negative problems on mental health issues at population level. Additionally, data are also gathered to define factors which influence pupils' mental health. These data are altogether analyzed and comprehended to enhance decisions making for interventions.

2.1.2 Intervening involve the use of programs, policy, services, education, social, marketing and environmental change which can undertake at personal, household, village, community, country level. Despite occurring only within the target populations, or the entire population, the advantages can be felt all over the population.

2.1.3 Ensuring defines a process of reassuring that intervening is conducted with a high level of quality, sustainability, effectiveness, and addresses the necessity to be sure that the provider of the interventions are enough trained.

Figure 2.1 The three core functions of a public health approach

The three core functions of a public health approach gives the information, interventions and evaluation needed to create a sophisticated and coordinated approach to maximizing mental health treatments for all children (8). This research seeks to align itself with the first step assessing as mentioned. Involving gathering information both protective and risk factors of mental health at school level to further influence the policy.

2.2 Mental health

2.2.1 Definition

Mental problem is the clinical related psychological, behavioral manifestations which relate to significantly increase of life suffering, morbidity, mortality (9). Mental wellness is a successful maintenance of mental activities including maintaining productive daily performance and fulfilling relationship with others and the ability to cope with stress and changes. Mental health disorder is psychiatric disorder related to the mind, include most frequent conditions, for instance, depression and anxiety (10).

2.2.2 Prevalence

The prevalence of mental health problems have been researched globally, providing approximates on how common mental health is with different thresholds of severity and criteria. According to WHO, 2011, as many as 450 million people suffer from a mental or behavioral disorder. Four of the six leading causes of years lived with disability are due to neuropsychiatric disorders (depression, alcohol-use disorders, schizophrenia and bipolar disorder). Nearly 1 million people commit suicide every year (2). The National Comorbidity Survey Replication done 12-month prevalence in the US adult population, the result was of anxiety estimated to be 18.1% (11). Early onset of mental disorders disrupt education and early careers potentially carrying the enormous lifelong negative consequences (12, 13).

About 50% of lifetime diagnosable psychiatric disorders starts by age 14, and increases to 75% by age 24 years. Mental health problems are highly main concern in adolescents and children due to the disabilities it causes and its highly prevalence (2). Major depressive disorders and anxiety disorder as the most common psychiatric disorder has the development from the young age to the early adulthood (11).

2.2.3 Prevalence in Thailand

The prevalence of mental health and risk of suicide in percentage among general population is shown in Figure 2.2. The prevalence of depression was the highest with 4.4%, followed by anxiety with 3.1%, risk of suicide was 2.1, psychosis was 0.97, and 0.84% for emotional disorders.

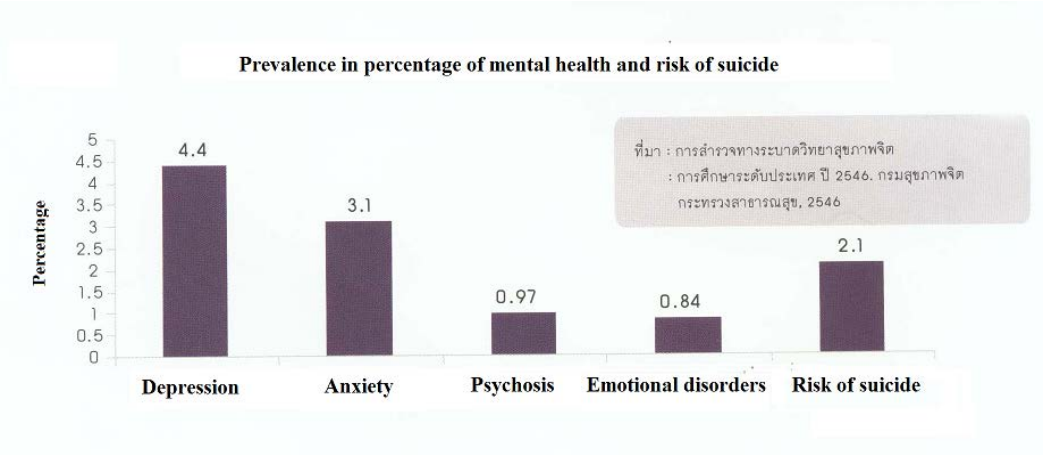

Figure 2.2 Prevalence of mental disorders and risk of suicide among Thai people in 2003 (http://dev.thaihealth.olr.th/files/un1.jpg)

1) Prevalence divided by Sex and age

The survey was an enquiry in Thai people aged over 15 years old to answer the self-reported question about mental illness, consisting of 15 questions during August 2014, total of 45 points, ranked into 3 levels, less than normal, normal and more than normal range (Figure 2.3). The research found that the mental health mean score among population age over 15 years old was 31.47% (male 31.85% and female 31.19%). 63% of this study population were classified as normal by using meaning $\pm$ SD and 22.4% male population at higher than normal, while 14.4% of male population with the score less than normal. In female 62.9% was normal score 19.1% was more than normal and 18.1% was less than normal (14). In summary, male had higher risk population for mental health, compared to general population, than female population.

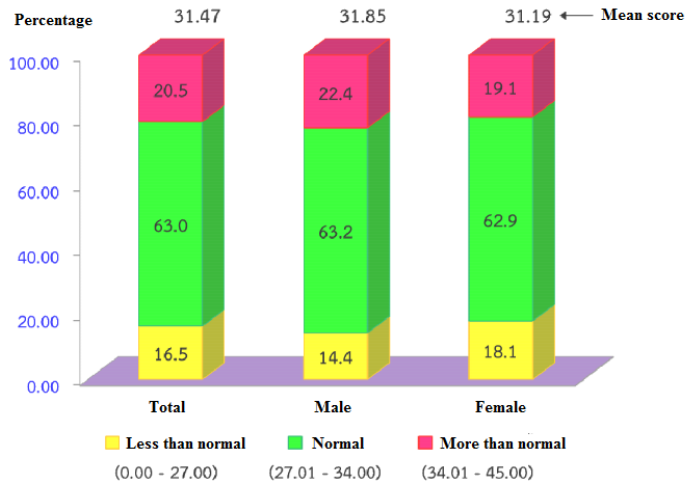

Figure 2.3 The mean score and percentage of those aged 15 years and over shows the level of mental health problems classified by gender, Thailand 2014 (14).

The mean score of the mental health in Thailand classified by age (Figure 2.4) indicates that Adult group or 25-59 years old had the maximum mean score of 31.57 score, followed by elderly group or the people aged over 60 years old with the mean score of 31.38 and lastly, the youth group with the least mean score of 31.33 (14). To conclude, mental health may be worse with age but also decline when they become elderly.

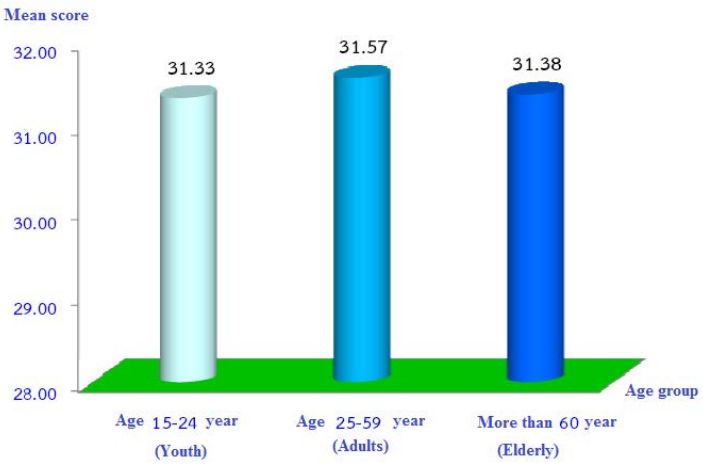

Figure 2.4 The mean score of those aged 15 years and over shows the level of mental health problems classified by age, Thailand 2014 (14).

2) Prevalence classified by regions

When analyzed the score of mental health problems among Thai people by regions (Figure 2.5) shows that northern part of Thailand had the maximum mean score of 31.83, followed by southern part of Thailand with 31.79, eastern with the mean score of 31.72, Bangkok was 31.44 and lastly central with the mean score of 30.97 (14). Although the first two regions which had mental health more than normal score was western followed by Bangkok.

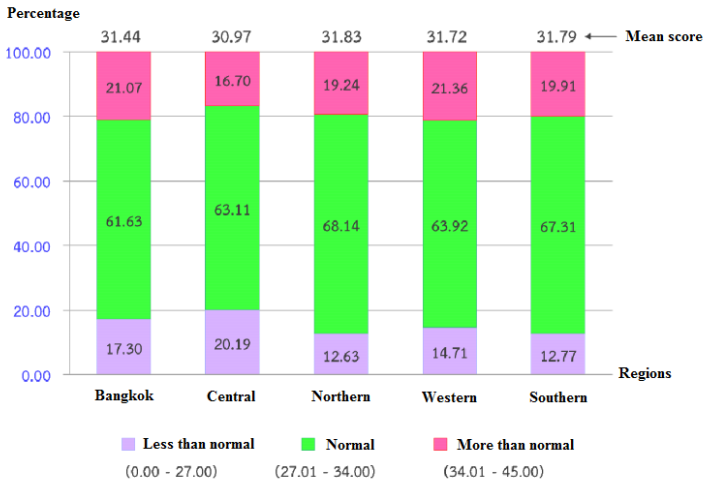

Figure 2.5 The mean score of those aged 15 years and over shows the level of mental health problems classified by regions, Thailand 2014 (14).

3) Prevalence classified by education

When classified by education, the study found that the highest percentage of those who graduated higher education suffer more mental illness (Figure 2.6). The people who graduated from higher education has the mean score of 32.84, secondary has the mean score of 31.57, elementary is 31.18 and those without any education or less than elementary have the least mean score of 30.79. The study also found that the proportion of mental health was higher than normal population when there is a higher level of education (14). In conclusion, that mental health problems increase with the more education while decrease with lesser education.

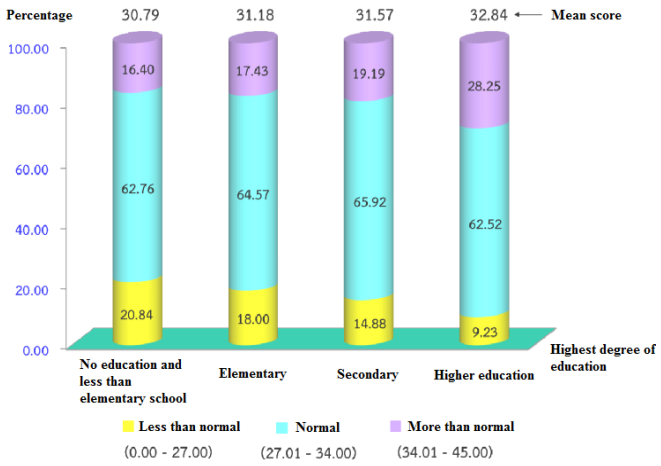

Figure 2.6 The mean score of those aged 15 years and over shows the level of mental health problems classified by highest degree of education, Thailand 2014 (14).

2.2.4 Causes

1) Biological, psychological, environmental factors

While the causes for most of the mental problems remained unknown, the cause of mental problem may relate to many factors which include biological, psychological, environmental or social influenced factors. Today, it is still believed, at least one or multiple combinations of those factors are responsible to the cause of these mental illness.

- Biological such as genetic, birth defect, birth injury with brain injury, head injury, post infection and prenatal damage (e.g. insufficient oxygen supplied to the brain at the early age may be a factor in the development of certain condition, for example, autism)
- Psychological such as an early important loss or neglect, emotional, sexual or physical abuse, difficulty in interacting with others
- Environmental or social influential factor such as drug use, parenting factor, migration, social discrimination, bullying, cultural or social expectation (e.g. eating disorder may develop from a society which association thinness with beauty), low self-esteem (15)

2) Brain faction

Studies about mental health suggest abnormalities in certain brain circuits may lead to the development of mental illnesses. Connections between nerve cells on

the circuits or particular pathways can contribute to problems with the brain processes information and result in abnormal thinking, mood, behavior, or perception. Here is the example of how brain function can influence mental disorders (Table 2.1).

Table 2.1 Association of mental disorders and the six major domains of brain functioning

Brain function	**Mental disorders**
Thinking or cognition	Psychosis
Perception or sensing	Pervasive Developmental Disorder, Autism
Emotions	Mood Disorders (depression), Bipolar
Behavior	Attention Deficit Hyperactivity Disorder, Substance Abuse
Physical Functions	Eating Disorders
Signaling (being responsive and reacting to the environment)	Anxiety Disorders, Post Traumatic Stress Disorder

(16).

3) Brain regions

Brain systems are segmented into specific regions and work together to function in our daily activities such as speech, visual and solve a problem. There are four major regions which contribute to mental illnesses.

- **Amygdala** – activates individual nature “fight-or flight” response. It is the brain's "fear hub," to escape or confront from a harmful situation. Furthermore, the amygdala also appears to be involved in learning not to fear, such as overcoming a fear of snake, and learning to fear an event, such as touching a hot plate. Researching how the amygdala assists in creating memories of safety and fear can improve treatments for anxiety disorders, for instance, post-traumatic stress disorder (PTSD) or phobias.

- **Prefrontal cortex (PFC)** – PFC is where the brain's executive functions, for example decision making, judgment, and problem solving. Various parts of the PFC are associated in retrieving long-term memories and in "working" or using

short-term memory. During stressful events, this area of the brain is also needed to control the amygdala. Some research shows that people who have ADHD or PTSD have compromised activity in their PFCs.

- **Anterior cingulate cortex (ACC)** - the ACC has many different roles, from responding when we sense a mistake to controlling heart rate and blood pressure, helping us managing proper emotional reactions, stay focused on a task and feel motivated. Damage to ACC or reduced activity in this brain area has been associated to mental illnesses such as depression, schizophrenia, and ADHD.
- **Hippocampus** – contributes to file and create new memories. When the hippocampus is deteriorated, an individual can learned skills, carry on a conversation and remember past events, all which rely on different parts of the brain, however that person is unable to create new memories. Through its control of a major mood circuit called the hypothalamic-pituitary-adrenal (HPA) axis, the hippocampus may be involved in mood disorders (17).

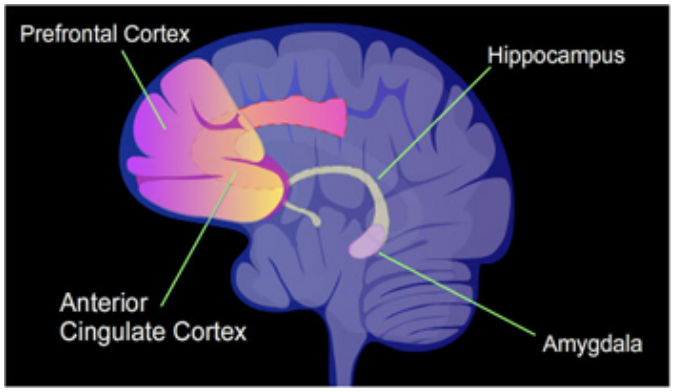

Figure 2.7 Brain regions

2.2.5 Classification of Mental problem

There is no agreement in defining the mental problem by recent WHO review (World Health Organization. 2005. WHO Resource Book on Mental Health: Human rights and legislation)

The major systems used to identify the mental problem are International Classification of diseases (ICD 11) and Diagnosis and statistical Manual of mental Disorders (DSM V)

ICD 11 categorize mental problems to 10 main groups as

- F0: Organic, including symptomatic, mental disorders
- F1: Mental and behavioral disorders due to use of psychoactive substances
- F2: Schizophrenia, schizotypal and delusional disorders
- F3: Mood [affective] disorders
- F4: Neurotic, stress-related and somatoform disorders
- F5: Behavioral syndromes associated with physiological disturbances and physical factors
- F6: Disorders of personality and behavior in adult persons
- F7: Mental retardation
- F8: Disorders of psychological development
- F9: Behavioral and emotional disorders with onset usually occurring in childhood and adolescence
- F10: Group of "unspecified mental disorders".(18)

The DSM V, latest version of this “The Diagnostic and Statistical Manual of Mental Disorders” in 2013 by American psychiatric association (19) possess simple and durable guideline for mental problem as 5 multi axis systems

- Axis I: All psychological diagnostic categories except mental retardation and personality disorder
- Axis II: Personality disorder and mental retardation
- Axis III: General medical condition; acute medical conditions and physical disorders
- Axis IV: Psychosocial and environmental factors contributing to the disorder
- Axis V: Global Assessment of Functioning or Children’s for children and teens under the age of 18

Table 2.2 The main categories of disorders in the DSM are as followed:

DSM Group	**Examples**
Disorders usually first diagnosed in infancy, childhood or adolescence. *Disorders such as ADHD and epilepsy have also been referred to as developmental disorders and developmental disabilities.	Mental retardation, ADHD
Delirium, dementia, and amnesia and other cognitive disorders	Alzheimer's disease
Mental disorders due to a general medical condition	AIDS-related psychosis
Substance-related disorders	Alcohol abuse
Schizophrenia and other psychotic disorders	Delusional disorder
Mood disorders	Major depressive disorder, Bipolar disorder
Anxiety disorders	Generalized anxiety disorder, Social anxiety disorder
Somatoform disorders	Somatization disorder
Factitious disorders	Münchausen syndrome
Dissociative disorders	Dissociative identity disorder
Sexual and gender identity disorders	Dyspareunia, Gender identity disorder
Eating disorders	Anorexia nervosa, Bulimia nervosa
Sleep disorders	Insomnia
Impulse control disorders not elsewhere classified	Kleptomania
Adjustment disorders	Adjustment disorder
Personality disorders	Narcissistic personality disorder
Other conditions that may be a focus of clinical attention	Tardive dyskinesia, Child abuse

Table 2.2 The main categories of disorders in the DSM are as followed: (cont.)

Disorders usually first diagnosed in infancy, childhood or adolescence. *Disorders such as ADHD and epilepsy have also been referred to as developmental disorders and developmental disabilities.	Mental retardation, ADHD
Delirium, dementia, and amnesia and other cognitive disorders	Alzheimer's disease
Mental disorders due to a general medical condition	AIDS-related psychosis
Substance-related disorders	Alcohol abuse
Schizophrenia and other psychotic disorders	Delusional disorder
Mood disorders	Major depressive disorder, Bipolar disorder
Anxiety disorders	Generalized anxiety disorder, Social anxiety disorder
Somatoform disorders	Somatization disorder
Factitious disorders	Münchausen syndrome
Dissociative disorders	Dissociative identity disorder
Sexual and gender identity disorders	Dyspareunia, Gender identity disorder
Eating disorders	Anorexia nervosa, Bulimia nervosa
Sleep disorders	Insomnia
Impulse control disorders not elsewhere classified	Kleptomania
Adjustment disorders	Adjustment disorder
Personality disorders	Narcissistic personality disorder
Other conditions that may be a focus of clinical attention	Tardive dyskinesia, Child abuse

2.2.6 Onset

As mentioned in the prevalence of difference mental health disorder tend to increase with age, it actually has an onset begin by early age especially adolescent, although there is an effective treatments, there still a delays (at times 10 years) from the first onset of symptoms and when the patients seek for help (20). According to the review of recent literature by Kessler (20), approximately half of all lifetime mental illnesses in most researches start by the mid-teen and three-fourths by the mid-20s. Most of later onsets are secondary conditions. Usually the disorder first begins by the mild disorders then become severe disorders but only seldom are brought to clinical attention. The study by the National Institute of Mental Health (NIMH) reveals that untreated mental health can lead to a more difficult, more severe problems, and development of co-occurring mental disorders. Therefore, mental disorders are the chronic disorders of the young. As it shown in Figure 2.6, pervasive developmental disorder (PDD) and attention deficit hyperactivity disorder (ADHD) begins very early with PDD before 5 years old and ADHD around 5 years old, respectively. Anxiety disorder, depression, and panic disorder begin at the teenage group. And lastly, schizophrenia and bipolar with the onset of 15 to over 25 years old. Young populations with mental disorders suffer disability when they would usually be the most productive, the prime of life, unlike other diseases such as cancers or heart diseases (21). Many of the mental disorders start the onset of the mental problem at the exact time that youth are entering or in middle school, high school or university (22) (Figure 2.6).

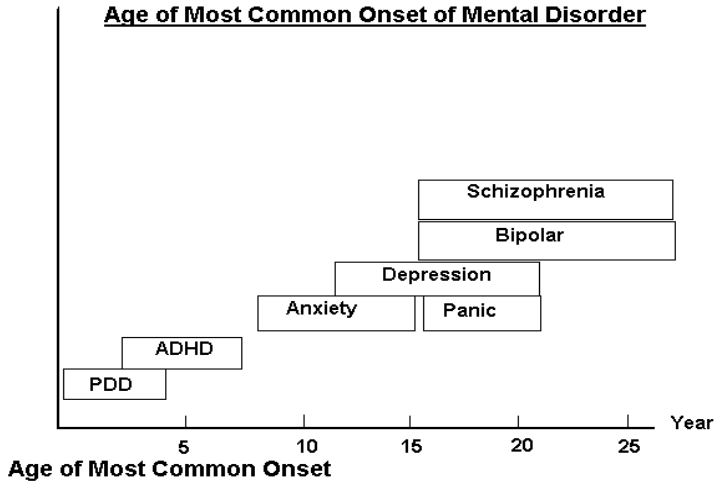

Figure 2.8 The onset of mental disorders

2.2.7 Burden

Mental disorders impose a range of costs on individuals, households, employers and society as a whole. Estimates of costs and burden issues are not available for all the various mental disorders, and certainly not available for all the countries in the world. At 1990 prices, mental health problems accounted for about 2.5% of GNP in the United States (2). In September 2007, Lancet (23) has published the journal "The Special Series on Mental Health", revealed that 14 percent burden of the disease globally as the result of neuropsychiatric disorders (NPDs). Among the non-communicable disease (NCDs), NPDs are the key issue leading to mobility, even more so than cancer, stroke, and heart disease, mainly due to its nature of chronically disabling depression and the problem of psychosis, drug- and alcohol-use disorders. As a result, mental health or psychiatric problems may not represent the true disease burden since the disorders have led to problems associated with NPDs. Therefore, mental health issues do not present a major problem to the public health. There are lack of personnel and inequality worldwide, and lack of the important to monitor the core mental health indicators and inadequately prioritize research on mental disorders (23).

2.2.8 Hospital admission and rate of accessibility for adult psychiatric illness in Thailand

The number of in-patient psychiatric beds in Thailand had risen over the period of 1994 to 2003 according to MOPH, Thailand (Figure 2.7), data was from the report of the Office of Policy and Strategy, Ministry of Public Health, 1994-2003. The lowest of occupancy rate is in the year 1995 at 93.1 people/100,000 population and the highest reached 174.3 people/100,000 population in 2002. It can be concludes that the number of occupancy rate in hospital Thailand has been increasing for the past 10 years, indicating the need to educate and increase the awareness among Thai population, especially children and parents where the onset already begin at the age of 5 and mid-teen.

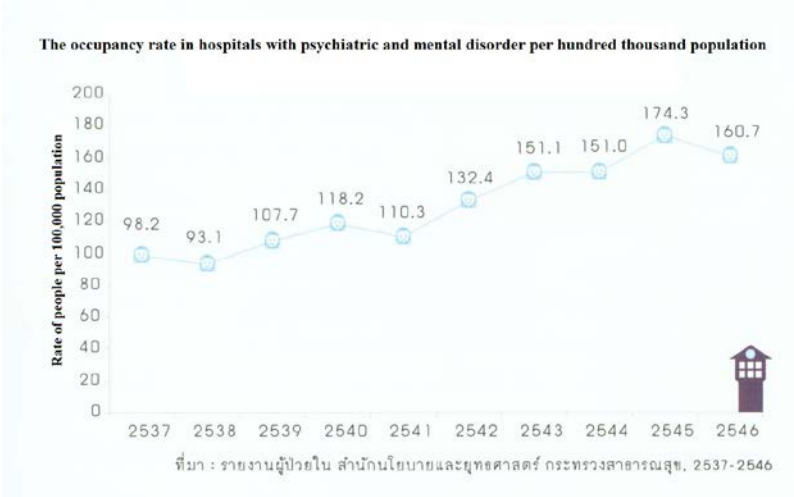

Figure 2.9 The occupancy rate in hospitals with psychiatric and mental disorders per hundred thousand population. (http://dev.thaihealth.or.th/files/un3.jpg).

Figure 2.8 illustrates the rate of mental health services which people with depressive disorder could access to in February 2016. Department of mental health, MOPH have done this research to help them identify the accessibility rate of mental health patient in any provinces in Thailand. They update the information every 25th of the months, the latest update was of 25th February 2016. The main goal of accessibility is 43% of patients are able to access to hospitality. Green indicates the province has successfully reach the goal of accessibility, while yellow is medium and red is low. Central regions were indicated with many red zone areas (low accessibility rate).

However, overall of Thai population were able to access mental health care with 44.51%.

Figure 2.10 The rate of accessibility of mental health services among patient who have depressive disorder in the year 2016 fiscal year (Green = rate of accessibility is high >43%, Yellow = rate is medium 42-42.99%, Red = rate is low <42%) (24).

Review of specific disorders; Anxiety, Stress and depression and suicide

2.3 Anxiety Disorders

2.3.1 Definition

Anxiety disorders are a form of mental illnesses in which a person overly thinks and worries about things, with the "fear about future uncertainties either based on real or imagined events, which may affect both physical and psychological health" (19). The definition of anxiety is to apprehend over an anticipated problem, on the other hand, fear is defined as a reaction to urgent danger (16). For anxiety to be defined as a disorder, the specified criteria for fear or anxiety is to be important enough to hinder the person's life in one way or another such as daily activities which causes distress to the individual. Each type of anxiety is distinguished by a different set of symptoms with anxiety disorders as the most common type of mental illness.

2.3.2 Summary of major anxiety disorder

A. Social Phobia: The fear of social scrutiny, unfamiliar people or crowds.

B. Specific Phobia: The fear of objects or situations that is exaggerated to any real danger.

C. Panic Disorder: The anxiety about recurrent panic attacks, which are often accompanied by agoraphobia i.e. fear of being in places or situations where panic attacks can occur.

D. Generalized Anxiety Disorder: Worry that is uncontrollable for at least 6 months.

E. Obsessive Compulsive Disorder (OCD): Obsessions which are uncontrollable thoughts, impulses, images or compulsions which are repetitive behaviors or mental acts.

F. Post-traumatic Stress Disorder (PTSD): The aftermath of a traumatic experience in which a person re-experiences the traumatic event, avoids stimuli associated with the event and experiences increased arousal.

G. Acute Stress Disorder or Complex PTSD: Symptoms are similar to those of post-traumatic stress disorder but occur for less than 4 weeks after the traumatic event.

H. Anxiety Disorder due to a general medical condition: When an individual experiences anxiety, panic or obsessive-compulsions as a direct consequence of a general medical condition.

I. Substance-induced Anxiety Disorder: Characterized by prominent and persistent anxiety believed to be the direct consequence of the physiological experience of intoxication or withdrawal states (16).

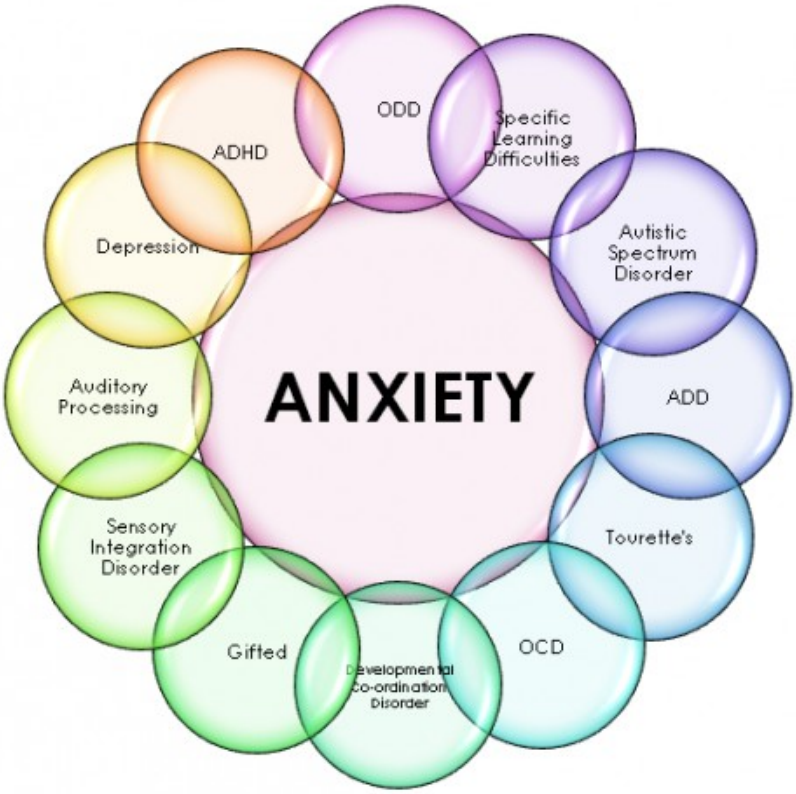

Figure 2.11 The figure shows the summary of major anxiety disorder as it is listed in DSM-IV-TR lists (16).

2.3.3 Social phobia

2.3.3.1 Definition

To a person with social anxiety, isolation tends to be a relief from normal everyday social gatherings since it causes self-consciousness, anxiety and fear, being afraid of him- or herself doing something shameful or making mistakes in public, or scrutinized by people surrounding them. It may seems fine for people without social phobia but to the people who have, there will be more fear, and unable to control oneself of being scared in public. The person may go to a great length of avoiding presentations or going to public events, unable to purchases at the grocery store, eat with friends, party with strangers. As a result, they may feel isolated, disconnected or a more serious health issue of eating disorder, for example, bulimia, nervosa, and anorexia.

Social anxiety disorder is the disorder of blushfulness when in front of many people. It is the most common disorder among the anxiety disorder. Social anxiety is one of the five phobia listed in psychological disorders or DSM-IV. It is different from panic disorder which is a physical pain. The people with panic disorder will be in and out of a hospital very often because they think they are sick physically. However, social phobia is the person who is aware that they are not physically sick and they will rarely go to the hospital or consult with a doctor.

2.3.3.2 Prevalence

Social anxiety is one of the most prevalence disorder among all 87 studies across 44 countries show range from 0.9% and 28.3% (2). The study suggests the association factors which include age, gender, culture, economic status conflict and urban city (2). In African cultures there are ranged from 3.5-8.1% and 7.0-15.5% in Euro/Anglo Cultures (2). Thus, it shows the high prevalence and indicates the burden globally. The review paper, done by Somers and colleagues found that across all of the anxiety disorder categories women have higher prevalence rates than men (25) which is consistent with another study done by Chhabra et al (26). Most adults with common mental health problem report their first signs before 24 years of age (27). Chhabra's study was executed in Delhi of the age group between 14-17 years. They concluded that social anxiety disorder in a government school of the age group was 10.3%, and the students of the age group 14-15 had a higher incident of

social phobia then the age group of 16-17 years (26).

2.3.3.4 Causes

Social phobia or social anxiety disorder is the fear of interaction with another person which led to self-consciousness, feelings of being negatively evaluated and judged, consequently, brings about avoidance (28). Social disorder is a disorder which usually initiated since they are young. This phobia makes a person to have an extreme sometimes unreasonable fear of being judged by someone. This may cause by genetic factor or objects or situation that may trigger the fear called phobic stimulus.

Many psychologists say that the cause of social anxiety is related to how they are being brought up although there is not enough evidence to support the issue because only one member of the family is social phobia. The rest of the family member has no sight of any related symptoms. To add to the point, there may be some biological evidence that other than the way of being brought up but also the cause of the phobia is related to the brain systems, genetic, the thinking process of themselves and how they react to people around them including the trauma or embedded habits from when they were young.

2.3.3.5 Impact

A person with social phobia may coped with extreme fear when they need to go in the public, consequently, may interfere even their normal life. In a long term, they may change their own behavior, eating disorder, set a different goal in their life and unable to reach their own potential and the quality of life they deserve. In the society level, it may become social problems such as early pregnancy, drug abuse, alcoholism etc.

The cultural specific presentations of SAD or social anxiety disorder are imminent in Japan and Korea called *Taijin Kyofusho* (TKS). The study done by Kawakami et al. (29) in Japan, there is approximately 9% of four community residents had experienced in any anxiety disorder for the past 12-month period. More severe cases were in the groups of bipolar I-II disorders, PTSD (Post traumatic stress disorder), drug abuse, and alcohol dependence (29). According to Kawakami research, the burden effect of social anxiety is focused on elderly. Since the most prevalence of the population are elderly, which are prone to have mental health problems and they

have a greater risk of having a severe mental health disorder (29).

2.3.3.6 Symptoms

The person with social phobia usually is a shy person, quiet, disengage, repressed, not very friendly, being unaware of the surrounding even though that person may want to be friends, want to participate, and relationship with a person but because they are scared. To identify the sigh and symptoms is divided into three categories as followed;

1) Emotional and thoughts expression: The person with social anxiety is scared every time they have to talk with unfamiliar people or greet a person in front of them even as a matter of courtesy. Additionally, being very nervous how another person judging them, scared of being criticized. They are unable to control themselves from thinking and scared in advance before the social situation happen, sometimes a week before they realize (i.e. to appear in front of a lot of people or public places) and sometimes will try to avoid these situations. They may be scared that they will do something wrong or scared if people can catch their nervousness.

2) Physical expression: Once they have entered in the social situation they will be shy with red face, and cannot make eye-contact, quiet or low voice, faster breathing, stomach disarray, in some vomiting, shaking voice, faster heartbeat, tight chest, sweating, dizziness or headache.

3) Behavior expression: They often love to be separated from the group because they are afraid of encounter with an unfamiliar faces. Low human relationships, they are not good at making bounds, and unable to keep in touch with their friends.

4) Effected group: According to statistic research, social anxiety can occur in every age group, female and male has the same chance of being social phobia. It is worth mentioned that the symptoms of this can be seen prominent in children and teenager due to the fact that they need to attend more social situations in this age group. In addition, there is some evidence that the person with social phobia may have this fear since before they are engaged in social situations and think of themselves as the imperfect person among the society which is the kind of thinking that lower their self-esteem without them realizing it, social phobia can occur as a result.

Shyness in children is normal because of their age. Nevertheless children who are at risk of social phobia are different from normal counterpart. They are afraid of going into any social gathering. Depending on how severe of the disorder, they are often scared of playing with other kids, or talking to an adult, they cannot make eye-contact and frequently do not want to go to school. On the other hand, social phobia in adult is usually followed from their childhood or as a teenager without the treatment to relieve the fear.

2.3.3.5 Prevention: Because the disorder is a combination between shyness, blushfulness, being scared of shameful act in the normal day-to-day public situations. It is normal for everyone to have this fear, the person with social phobia is not able to identify themselves of having a problem. Thus, it is important for the individual to be aware of themselves to what degree the shyness affects them, symptoms, how does it occur, and how much of the shyness is identified as social phobia.

2.4 Stress, depression and suicide

2.4.1 Stress

Since the earliest time, the ability to react quickly in response to threatening situations has been with human. To response to an occurring danger, nerves are readied, muscles are primed, and attention is focused for action. In the fast-paced and complex world, stressors are more socially based and consistently psychological, we face them regularly (30).

2.4.1.1 Definition

Stress is defined dependent to a person. Specialists define stress as any external stimulus which threatens the normal equilibrium of body function or homeostasis. It is also include the induction by the belief which the normal may soon be disrupted. Loss or lack of control is an especially essential factor of severe psychological stress, which have mental consequences. Most harmful aspects of stress can be chronic (30). Scientists have established a variety of stress-related disorders, including high blood pressure, clogged arteries, impotency and loss of sex

drive in males, irregular menstrual cycles in females, colitis, and adult-onset diabetes. Stress also can contribute to sleep loss when people get caught in a vicious cycle: elevated glucocorticoids delaying the onset of sleep, and sleep deprivation raising glucocorticoid levels (31).

2.4.1.2 Prevalence in Thai population

The national survey study of the level of stress was done by Ministry of Public Health of Thailand regarding the epidemiology of mental health in Thailand classified by sex in 2003. In figure 2.12 shows that only 6.5% among male experience a lot of stress when compared to female with 9.6%, which increase the overall percentage to 8.1%. In male the people who have moderate stress is 32.2% when female is 34.2%. The figure also shows that the population who has small stress are mostly among male with 61.3%, whereas in female is 56.1%. Therefore, there is a high level of stress among women than men.

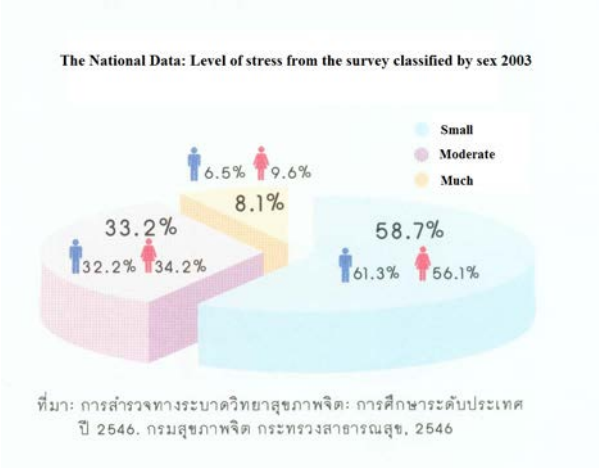

Figure 2.12 The survey about the epidemiology of mental health: the national data in 2003, Department of Mental Health, Ministry of Public Health 2003 (http://dev.thaihealth.or.th/files/un4.jpg).

2.4.1.3 Problems and causes of stress among general Thai population

There are ten most common problems that cause stress among Thai people (Figure 2.13). The highest stress causing is economy and finance which have 49.4% of Thai people who have this problem. The second highest cause is family

stress which is 34.2%. Third is work causing stress in Thai people around 30%. And there are other causes such as lover, coworkers and friends, physical illnesses, education, social and environment, behavior of children and adolescent etc.

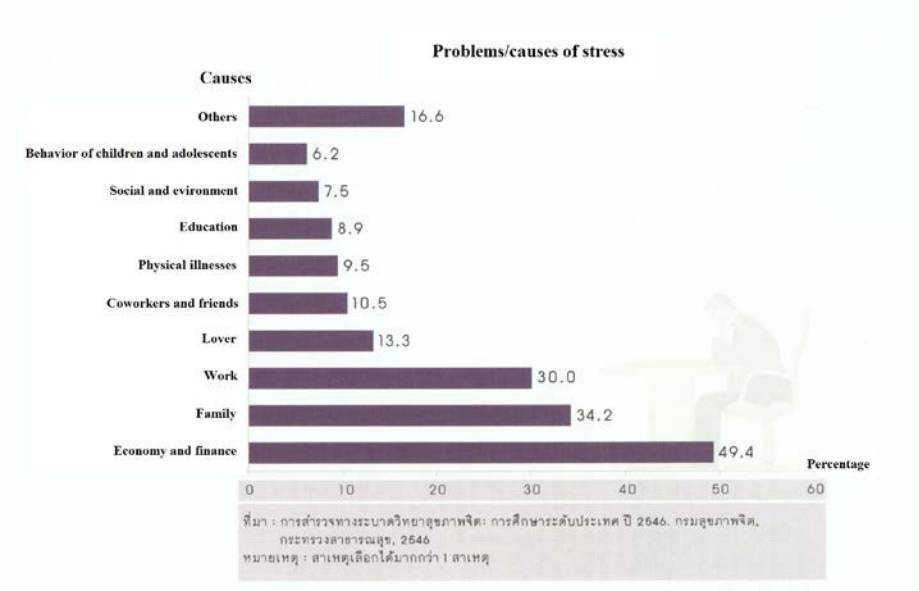

Figure 2.13 Ten most common problems and causes of stress in general Thai population in percentage (able to picked more than 1 cause) in 2003 (http://dev.thaihealth.or.th/files/un2.jpg).

2.4.2 Depression

2.4.2.1 Prevalence

Depression is one of the major causes of disability and a common mental disorder globally. It is clear that depression is a serious issue, with over 350 million people affected by depression worldwide. Women are more likely to be affected by the disorder than men (32). In middle-income and low-income countries, there is 85% and 76% of individuals who have severe mental disorders and acquire no cure for their disorder (2). Depression can potentially affect their adult lives, and the lives of the next generation. Thus, it is important for children and parents to recognize the problem and solve them early on.

2.4.2.2 Symptoms

Depression is a hidden disorder which may exist in the perfect normal looking person, strong and energetic. He or she may not look like someone

who has any sigh of sickness. However, depression can be categorized by loss of interest or pleasure, low self-worth or feelings of guilt, tiredness, disturbed sleep or appetite, difficult concentrating, making decisions, remembering, feeling slow down, reduced energy, sense of helplessness, pessimism, hopelessness and easily fatigue. They may have various physical complaints with no physical cause. It can be recurrent or long lasting, extensively compromise a person's ability to cope with daily life or operate at school or work, and most severe leads to suicide (32, 33).

2.4.3 Suicide

Suicide was the third leading cause of death among young people ages 15-24 in 2009. Suicide accounted for 14.4% in this age group of all deaths in 2009. Some examples of the risk factors leading to suicide are substance abuse (often in combine with mental illnesses), family history of suicide, family violence (i.e. sexual or physical abuse), being confined in poison, firearms in the house, prior suicide attempt, exposure to suicidal behavior of others (i.e. peers, family members), and depression and other mental health problems (34).

In 2011, Ministry of Public Health, Thailand has conducted a study to identify the national suicide rates per 100,000 populations by sex and year during 1997-2011. The graph in Figure 2.14 shows that female are less likely to successfully commit suicide compared to male throughout 17 years, with the stable rate between 3.77 maximum to 2.38 minimum. While in male population is fluctuated in the early year reached 13.32 in 1999 and in decline to the minimum of 9.24 minimum in 2006 and increase slightly until 2013 at 9.7. The overall Thai population rate of suicide by year is shown in Figure 2.15 (total female and male), which is similar to male rates of increasing at around 3 years in 1997, 1998, 1999 and dropped down to 5.77 in 2006 and stable at around 6. To conclude, the rate of suicide in Thailand has been stabled at around 6 per 100,000 population with the male is 3 times higher than female population. It implied that the intervention of suicide should focus around male population in Thailand.

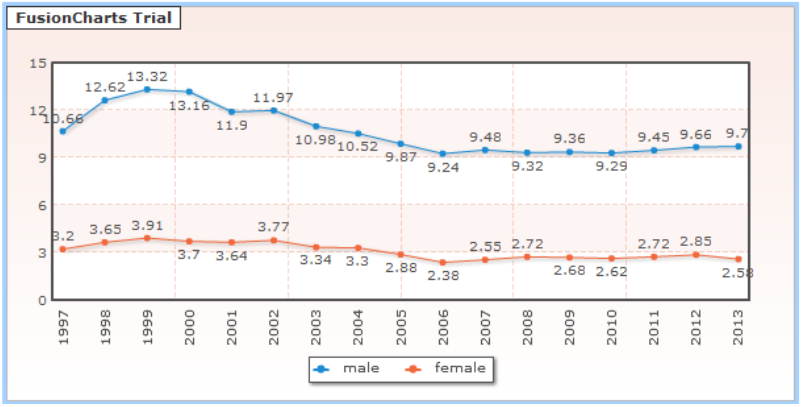

Figure 2.14 The national data suicide rates of Thailand (per 100,000 population) by sex during 1997-2011. Data is derived from Department of Mental Health: Ministry of Public Health (35).

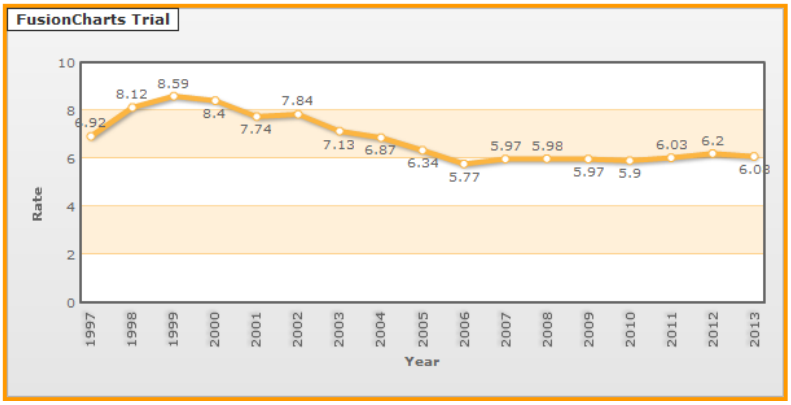

Figure 2.15 The national data suicide rates of Thailand (per 100,000 population) by year during 1997-2011. Data is derived from Department of Mental Health: Ministry of Public Health (35).

2.5 Risk factors

2.5.1 Internal factors

2.5.1.1 Family history

Genetic factors means the disorder is deprived since birth. People who are at risk of mental health can be observed via their biological parents or siblings who have the condition. One example is the study done in Sweden regarding

common genetic influences. The research found that another twin is 60-80% likely to also have bipolar disorder and schizophrenia. Half-sibs had a lower risk when compared to full-siblings (36).

2.5.1.2 Having a health condition that draws attention

Facial disfigurement, stuttering, Parkinson's disease and other health conditions can increase feelings of self-consciousness and may trigger anxiety disorder in some people (37). 20% and 39% of depression and anxiety respectively in Thai epileptics (Thailand) (38). Among HIVMSM, over half (55.8%) of the participants showed probable mild to severe depression (China) (39).

2.5.1.3 Temperament and brain

Children who are shy, timid, withdrawn or restrained when facing new situations or people may be at greater risk. Molecular studies confirm that stress leads to lower levels of protective neurotropic factors, which in turn contributes to atrophy and damage to limbic structures, including hippocampus (40). There is an increased activity of frontal and limbic regions to emotional stimuli in children at-risk for anxiety disorders (Ireland) (41).

2.5.1.3 Age and gender

Their age as shown in Figure 2.2 onset of mental illnesses and their gender as the study done in Vietnam found that female has 3 times higher than male (42). Minority ethnic group and female were found to be significantly associated with low well-being depressive symptoms and anxiety (43). Also, research which had done in South Arica shown that suicide ideation and suicide attempts girls have higher prevalence scores than boys (44).

2.5.2 External factors

2.5.2.1 Negative experiences

Teasing, bullying, rejection, ridicule or humiliation, family conflict or sexual abuse, stigma, negative thinking. 41.9 % of the adolescents' suicide risk behaviors through emotional distress (Thailand) (45). Physical or emotional abuse by the family (Vietnam) (42). Senaratne *et al* also found that left-behind children with migrating mothers in Sri Lanka had a higher prevalence of mental health problems

than non-left-behind children. Left-behind children were more likely to have conflicts with peers and teachers, have more anxiety, lower self-esteem, higher suicidal behavior and higher substance abuse than children living with their parents (Sri Lanka) (46). Living with non-biological parents, or ill person (Vietnam) (42).

2.5.2.2 Violence in children

There are two major violence in children that most children would experience in Thailand. Firstly, violence physically defined as causing harm to the body of a child from an act or omission to act in the nature of possible violence even though there is a possibility to improve the situation whether it is their parents, a person who is in charge of a child, authority over a child, or a person who a child trusts. It may happen once ore recurring violence. Furthermore, such actions may include due to violence or attempting to cause pain, injury or harm, by a person acting in the state where they are superior or have the power to negotiate. For example, punch, kick, catch, throw, shake, hit by objects or materials such as birch or belt, fire or scald, forced to eat or drink anything poisonous or dangerous. Secondly, violence emotionally and mentally which means parents or adults responds to the mood of the child inappropriately, creating an environment that is not suitable for the child's development. This results in serious and irreversible effects on the emotional development of children, include reinforcing the concept that they cannot be loved or do not deserve love or worthless (47). There has been an increasing number of violence to women and children between 2007 and 2013 (Figure 2.16).

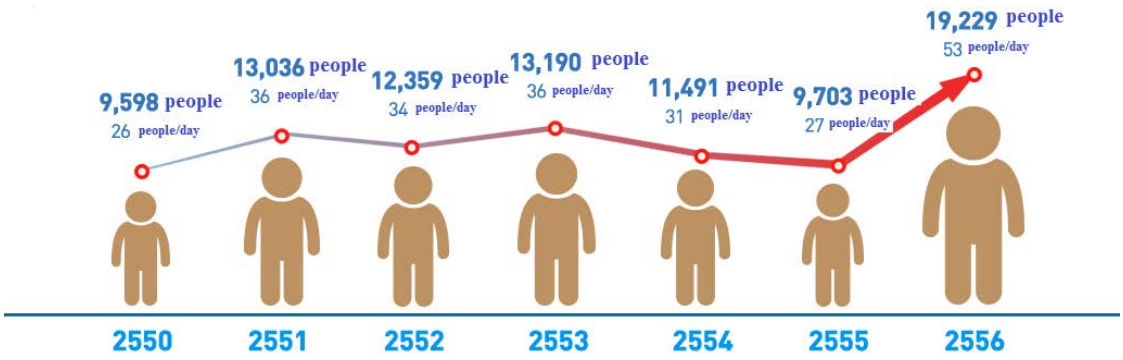

Figure 2.16 Statistics abused children and women at the reliance service center from 2007-2013 (http://endviolencethailand.org/violence_against_children).

2.5.2.3 Low-level social and economic support

Lack of parental attachment (Thailand) (5). Expected financial difficulties were significantly associated with psychotropic substances use, psychosomatic symptoms and poor mental health (48).

2.5.2.4 New social or work demands

Meeting new people, giving a speech in public or making an important work presentation may trigger anxiety disorder symptoms for the first time. One study done in China is a good example of children who recently move from their hometown or the place they used to live can trigger stress. The study was conducted with children aged between 10-18, found that 25.1% children with both parents migrating had higher rates of depression than children living with one or neither parents 22.1% and 22% (49).

2.5.2.5 Educational stress

Not only low academic performances but also average performance can induce stress among students. There are two studies has been done to understand the prevalence of educational related stress in medical students in German and Vietnam. Both of the results indicate, that there are high percentage of mental disorders among currently enrolled medical students in German with 15.7% for psychosomatic complaints, 5.8% for other depressive symptoms, 4.7% for major depression, 4.4% for anxiety, and 1.9% for panic disorders (48). Likewise, the study from Vietnam has the similar results of one in ten students experienced suicidal ideation in the past year, around two in five reported depressive symptoms and one in twenty have both symptoms and ideation which is found to be higher proportion compared to the general population in Vietnam (43).

2.5.2.6 Alcoholic and drug abuse

Drug abuse often co-occurring with mental health and develop into worse conditions. About 50% of individuals with severe mental health are affected by drug abuse (50). Negative life situations, chronic stress, physical and sexual abuse have been associated with increased risk of drug abuse and addiction vulnerability. Stressful events are often unpredictable and uncontrollable for both adults and children. The negative events range from isolation, trauma, interpersonal conflict and poor support to aggression, violence and loss. In addition, there is

evidence for a dose-dependent correlation, the more accumulated adversity, the more addiction risk (51). In the 2011 study about current drinking and health behavior risk among male high school in the central region of Thailand found that current drinking was 12.17% and health behavior risk factors (driving, carry weapons, violence, suicide ideation, and got someone pregnant) were associated with current alcohol consumption (52).

2.5.2.7 Sexual activities

As reviewed by Garcia and his co-authors, there are many reasons of why casual sex will result in mental health problems. One reason is that there is the discomfort factor. Despite a lot of media messages that hookups are understandable, people may still feel that they have done something that violates their own internal standards. Other common reactions include disappointment, regret, confusion, low self-esteem, guilt, and embarrassment, although other individuals certainly report feeling proud, nervous, excited, and desirable or wanted. (Feelings tended to be more positive before and during a hookup, and more negative afterward.) "Researchers examining the mental health associations of hookup sex also report that participants who were not depressed before showed more depressive symptoms and loneliness after engaging in casual sex." (53). Moreover, sex plays an important role in increased drug dependent and stress-related sensitivity to the worsen effects of drugs (51).

2.6 The important of detecting mental health problem in Children and adolescence

Mental health during the childhood is very importance since the early prevention, detection, and intervention may decrease the mental health burden of the rest of the life time. Prevention of the mental problems can be initiated from the early life since the difference factors affects the difference stages of growth and developments. Pregnancy, neonatal period can be time to promote mental health to prevent poor child care, child abuse, psychological and behavioral problem which have been proved to be the very effective mental health sustainable in a many reports and studies (54).

The strategy to prevent the mental problems in adolescence is more complex in term of many additional external risk factors influence. The high risk cases identifications methods need to be in place and can be accurately used as the tool for proper interventions plan individually. There were studies according to cognitive - behavioral modification and family based group interventions in the high risk groups which could reduce anxiety disorders and depressive disorders in adolescence (55).

2.7 Review the Roles of Schools

School faces multiple types of demand. They are places where society's main concerns all converge. "School settles between multiple functions: teaching mastery, introducing new technologies, transmitting traditional knowledge and enabling understanding of contemporary situations allowing for differences and ensuring a common educational base, helping students to succeed in education and teaching how to live in society such as providing training in environmental awareness providing health education" According to public health point of view, even if the core task of schools is focusing on educational outcomes, rather than the reduction of health problems, schools have a mission in relation to health and many other issues related besides. The school system lies at the intersection of all these approaches, and therefore would seem to be obviously a key actor of public health strategy because school is unique environment place in which all individuals of the same age come together so they are places in which specific preventive and protective themes may be easily implemented along with the educational.

2.7.1 Priority areas for programs in schools that are part of the Health Promotion Schools network (56)

On various levels, schools have approached the following aspects:

- Social well-being: community, communication, working together, participation, the school's culture, internal regulations, conflict management, prevention of violence;
- Physical well-being: diet, physical activity, relaxation, posture; prevention of addiction: on legal or illegal drugs, eating disorders;

- School structures: mission statement, training for person responsible for the project, social work in schools;
- Health of teachers;
- Psychological well-being: improving protective factors, self-esteem, stress management, suicide prevention;
- Planning of school facilities: playground, rest rooms, infrastructure;
- Working together with parents, authorities, specialized centers, school openness, working together with the local community;
- Sex education and AIDS prevention;
- Environment, nature;
- Risk and safety.

2.7.2 Boarding school reviewing

Boarding school is a school at which most or all of the students live during the part of the year that they go to lessons. The students or boarder may spend most of their childhood and adolescent life away from their families. The characteristic of each school are difference depending on the local rule and society context but the similar idea are staying and learning in one place options. It is claimed that children may be sent to boarding schools to give more opportunities than their family can provide. The negative impact of the boarding school were reported in many ways especially on the ground of the total institution and child displacement. The boarding school life with its round the clock habitation in the same environment, involved in studying, sleeping and socializing leads to pressures and stress in boarding school life. This may lead to abnormal or outliner behaviors, using substances and multi-psychological problems such as anxiety, depression and suicide. Studies show that about 90% of boarding school student acknowledge that living in a total institution like boarding school has significant impact on them as called “Boarding School Syndrome” (57, 58).

2.7.3 Types of boarding school

There are many types of boarding schools. The major type of boarding schools can be divided into three categories. First, college-preparatory boarding school where the main goal is to prepare students for further educated at college. There are

additional distinction between schools, for example, all-boys or all-girls boarding schools, military schools, pre-professional arts schools, religious boarding schools. Second, junior boarding schools where the schools offer for students grades 8 or lower to engage in boarding opportunities. Third, therapeutic boarding schools aimed toward students with difficulties (i.e. behavioral and emotional problems, substance abuse, and other learning difficulties) in a traditional school setting. These schools can also prepare students for college (59).

2.7.4 Boarding school emphasizing in Science and Technology (60)

This study was done in the boarding schools that specialize in science and technology. They are categorized in the college-preparatory boarding school, aimed to train young student who are interested in science, math, and technology. These school often have rigorous entrance examination and requirements. They are several benefit and drawback for those entered in a science boarding high school (see Table 2.3).

Table 2.3 Pros and cons of science school

Pros	Cons
• Perfect for their early preparation to enter those selective colleges in science or technology fields, if their passions are about these fields	Psychologists believe that specialize too early can eliminate the possibility to pursuits and develop a range of abilities (i.e. social competency)
• Adequate equipment and small size classes students' need	Very competitive and produce stress
• Teachers can be a role model who share students their passions for science	Overly serious at a young age
• An intensive program where normal school cannot provide.	The quality may not be as expected
• Take advanced courses which count as college credit	Far away from home

2.8 Review of the instruments used in the study (questionnaire construction and Hospital anxiety and Depression scale)

2.8.1 Survey study and Questionnaires (the study tools for this) reviewing

The strength of the survey depends on good quality data that stems comes; 1) Good design of the data collection instrument which is questionnaires and 2) the collection procedures. Good survey study should ask these questions at the beginning

1) What type of information is needed to be captured and evaluated? (Define research aims, questions)

2) What type of question(s) and response(s) will the best to be captured would enough (complete questionnaire response rate and response rate)? (Define population or sample including technique to survey)

3) What format should the questionnaire be designed to make it user-friendly and to also capture the breadth of information needed to be evaluated? (Define the survey format)

Literally, survey study, like many studies in human subject that require the well planned in advance including the data coding and data analysis. It is also require the ethic approval since this information the researcher required are also considered as related to human right and human protection issues.

2.8.2 Questionnaires

Questionnaires are the most commonly used method for collecting information from the survey study. Designing a questionnaire, it is important to keep key points in order to best meet the true outcomes/ responses require.

There are many different types of question used to get the information required. In the main, these fall into open and closed questions. An open question allows the respondents to use their own words to answer, such as “what do you think are the main causes of common cold?”

A closed question gives them pre-defined options, such as., “which of the following do you think are the main causes of backache: multiple responses a, b, c, d”. Other examples of closed end are yes/ no response, ranked responses e.g. Likert scale.

Table 2.4 The pros and cons of open-ended and close-ended questions

Open ended	Close ended
• Rich qualitative data	Elicit quantitative data
• Encourage thought and freedom of expression	Can encourage mindless to reply
• May discourage response from less literate or mindless respondent	Easy for all literacy level to responds
• Lake longer duration to answer	Quick to answer and may improve the response rate
• More difficult to analyses--- miss coding/ misinterpreted are most common	Easy to coded and analyses
• Interviewers confounding	-

General rules for questionnaires construction are

- Concise and unambiguous
- Avoid double questions
- Avoid questions involving negatives
- Ask for precise answers
- Avoid leading questions

2.8.3 Survey type

Decide whether the survey is to be completed by

1. Self- administered e. g. conventional post/ letter, by e-mail

2. Interviewer-administered e.g. face to face interview, telephone based, other interactive application based e. g SKYPE or MSN).

Computerization is playing an increasingly important role in standardizing interviews, decreasing the time spent on individual interviews. Internet-based surveys already are practical for use in selected groups and show great potential for use as widely access to and familiarity with computers, e-mail, and the Internet increase (61, 62).

Table 2.5 The advantages and disadvantages of interviewer-administered and self-administered questionnaire

	Interviewer-Administered Questionnaire	**Self-Administered Questionnaire**
• **Response**	Generally higher	Generally lower
• **Ability to Monitor Data Collection**	Easy to limited	Limited to impossible
• **Interviewer Error**	Present	None
• **Relative Cost**	Higher cost	Lower cost
• **Time in Field**	Longer data collection period	Shorter data collection period
• **Maximum Length**	60–90 minutes	30 minutes
• **Complexity of Questions**	Higher complexity	Lower complexity
• **Use of Visual Aids**	Easy	Difficult
• **Sensitive Topics**	Decreased respondent comfort	Increased respondent comfort

The questions consist of 28 questions, including questionnaire about demographic and risk factors. It was modified and adapted from two studies by Peltzer *et al* (5) and Nguyen *et al* (42) about suicidal ideation among adolescents in Thailand and depression and anxiety in Vietnamese students, respectively. The questions then developed, corrected by two other experts from Mahidol University and validated by conducting a pilot study among high school students.

2.8.4 Hospital anxiety and Depression scale (63)

The questionnaire includes socio-demographic characteristics concerning co-morbid anxiety and depression. HADS is a 14-item questionnaire, primary used to screen for symptoms of depression and anxiety. The 14-items can be separated into two 7-item sub-scales for depression and anxiety. The first subscales are indicated with ‘A’ or anxiety (HADS-A) items that reflect a state of generalized anxiety. ‘D’

indicates the next category or depression (HADS-D) which is another 7-items emphasize on the concept of the inability to feel pleasure or anhedonia (64, 65). The respondent rates each item ranging from 3 (extreme presence) to 0 (absence) on a 4-point scale. However, HADS do not contain questions to evaluate unexplained somatic complaints. The score is 21 per subscale or the total score of 42. The summing score for the scale as a whole or divided two subscales response can both be interpreted. 5 items out of 14 items are reverse coded. The lower scores are shown to be at lower levels of either depression or anxiety. The overall HAD scale can be considered as a global instrument of psychological distress (64, 66). The estimated length of the test is 5 minutes or less with 2 to 6 minutes to administer. The test is suitable for 13 and over with the age is between 13-17 in adolescent, 18-64 in adult and 65 or over in elderly adult.

2.8.5 Reliability and validity of HADS

Hospital Anxiety and Depression Scale (HADs) is derived from Zigmond & Snaith (63). The HAD scale was at first designed for use in hospital setting in multiple patient populations, nonetheless, the measure was validated by Bjelland (67) in the review literature of the 747 identified papers which used HADS. The research found to operate well in assessing the caseness and symptom severity of depression and anxiety disorders in both somatic, primary care and psychiatric patients in the common population and general practice. The example of HADS usage is the two studies conducted among epileptic people to assess their depression and anxiety disorder in Ethiopia and another in Thai epileptic patients (38, 68).

2.8.5.1 Cut-off score and responsiveness

In the meta-analytic evidence, the cut-off score of 8 on both the HADS-D and HADS-D showed an optimal balance between specificity and sensitivity to indicate ‘case’ from ‘non-case’ (67). However in the study by Stafford *et al,* cut-off scores were lower than the generally recommended to improve the sensitivity of HAD scale while retaining specificity, which demonstrates a balance between both of them. Thereby improving their usefulness to screen for coronary artery disease (CAD) patients with depression (69). In the study of coronary heart disease by Bambauer *et al*, scores of 8 also showed unbalance responsiveness with

lower sensitivity and high specificity, on the contrary, using a cutoff of 7 demonstrates a balance (70).

Table 2.6 Cut-off score

Study	**Author**	**Year**	***n***	**Mean age (SD)**	**Assessed**	**Cut-off score**
Acute Stroke (71)	Aben et al	2002	202	68.5 (11.6) years	< 1 month post-stroke; Dutch sample	≥ 8 indicates depression (sensitivity: 73.1, specificity: 81.6)
Coronary Heart Disease Patients (69)	Stafford et al	2007	193	64.14 (10.37) years	3 months post-discharge for a cardiac admission	6 indicates depressive disorder (sensitivity = 80; specificity=77.8)
Meta-Analysis (72)	Brennan et al	2010	3244	-	Emotional distress in nonpsychiatric patients across 16 studies	≥ 8 indicates major depression (sensitivity=0.82, specificity=0.74) ≥ 11 (sensitivity=56, specificity=0.92)
Primary Care Patients (73)	Wilkinson & Barczak	1988	100	37.4 (17.4) years	> 5 weeks period a one in 5 sample of patients attending a single practitioner in an urban practice	≥ 8 was found to be optimal for detecting DSM-III-defined psychiatric morbidity

2.8.5.2 Test-retest reliability

Table 2.7 Test-retest reliability

Author	Year	Objective	Assessed	Duration to obtain optimum result		
				Excellent	Adequate to Excellent	Adequate
Herrmann (74)	1996	test-retest reliability	meta-analytic results	at 0-2 weeks (n = 79; r = 0.84 - 0.85)	at >2-6 weeks (n = 111; r = 0.73- 0.76)	at >6 weeks (n = 901; r = 0.70)
Roberts et al (64)	2001	test with coronary heart disease	n=130 people with coronary heart disease	-	-	at 8 weeks (r=0.63-0.79)
Wang (75)	2008	test with coronary heart disease	n=173 with coronary heart disease	at 2 weeks (r=0.86-0.90)	-	-

2.8.5.3 Limitations

The GHQ-28 and the GDS were suggested to be better screening measures for depression than the HADS-D (66). Self-assessment scales are only valid for screening purposes. The HADS may perform better in male compared to female acute stroke patients (71). Cognitive impairments, debilitating comorbid illnesses, and impaired physical states all interfere with the efficiency of the HADS to identify depression and anxiety in a target population (64).

In this research, HAD scale is modified and checked for the appropriateness for screening with students by four experts from Mahidol University. The HAD scale is validated again by conducting a pilot study among high school students to further validity.

CHAPTER III
MATERIALS AND METHODS

3.1 Study design

The study were conducted an analytical cross-sectional study design to profile the risk factors or behaviors among school pupils by using anonymous self-reporting questionnaires. The duration of this project was approximately 6 months including the data collection for 2 weeks during the first academic semester in October 2016. The research's commencement was in March 2016 and was completed in November 2016 (Table 3.1).

Figure 3.1 Map of Thailand (76).

3.2 Study area and population

3.2.1 Criteria selection of study site

This study purposively selected three boarding high schools. The study selected three areas by convenience sampling. The boarding schools were reported to

have a higher numbers of mental disturbances compared to the other schools. Permission has been granted by these three schools, to conduct the research on premises with the students.

3.2.2 Study Site

The schools setting of these three schools are in a developmental urban-setting, similar to Bangkok. The schools are in Pathumthani, Chonburi and Phetchaburi about 100 km from Bangkok. The schools are about 10 years old. Three schools are part of the group of science school, were established by the Ministry of Education for her royal intention, committed to promote better life quality, the well-being and the youth education quality for all students, especially those who are far away from the major cities. The school gathers talents that has good potentials in science and mathematics, they are educated and trained to become professionals in different fields such as, scientists, researchers, mathematicians, inventors, and technological fields. The school system consists of middle school and high school, in which each class has an average size of 24 students, 4 classes for each grade in the junior high school and 6 classes for each grade in senior high school. The ratio between teacher and students is 1 to 10.

All students receive partial scholarships thus it is not expensive, however there are highly competitive to enter and performance. Boarding school students are required to stay inside the school during the weekday's period and allowed to go back to their family as often as once a week or month.

There were three main health services within a school. First, the schools invited several health care staff (i.e. dentist, mental health teacher, doctors) to lecture and give basic knowledge to students at the school. Second, schools encouraged students to have an exercise session every morning before classes. Third, the schools have received an external qualification assessment (3 times a year) by a public organization, the office for national education standard and quality assessment or ONESQA (77). The result of the assessment were as followed.

Table 3.1 The result of school assessment by ONESQA

Strengths	Weaknesses
• Environment and learning center is achieved as intended as a science school	A number of students were not able to adapt to society, the ability was under the standard practice
• A strong desire for knowledge and learning	Students were not engaged in the maintenance of common areas
• Provide opportunity for students for a real practice according to their interests by doing a project	Not a real student centered classes
• Highest O-NET result within a province	

3.2.3 Sample Size Estimation

$$n = \frac{z^2_{1-\frac{\alpha}{2}} p(1-p)}{d^2}$$

Figure 3.2 Formula for testing the infinite population proportion (78, 79).

n4studies is a mobile application used for calculating simple size and power of the study, and according to the output of sample size calculation from n4studies for estimating the infinite population proportion. It shows the minimum numbers of participants we must have for this study to be 385 students.

3.2.4 Participants

The study has included 387 students from these three schools between grade 10 to 12, and to ensure the accuracy of this study the number of participants that have been participated from these three schools are approximately the same (Figure 3.3 and 3.4).

3.2.4.1 Inclusion

Participants were young adults, include both male and female, aged 14-18, Thai and other nationalities, who resident in a boarding school between

grade 10 to 12. They must be able to understand written Thai to be able to participate. Participants are students who are willing to participate in the study. This study was conducted in form of an anonymous online survey. The identity for all participants remain unknown.

3.2.4.2 Exclusion

Students who withdraw from the study were excluded in the analysis.

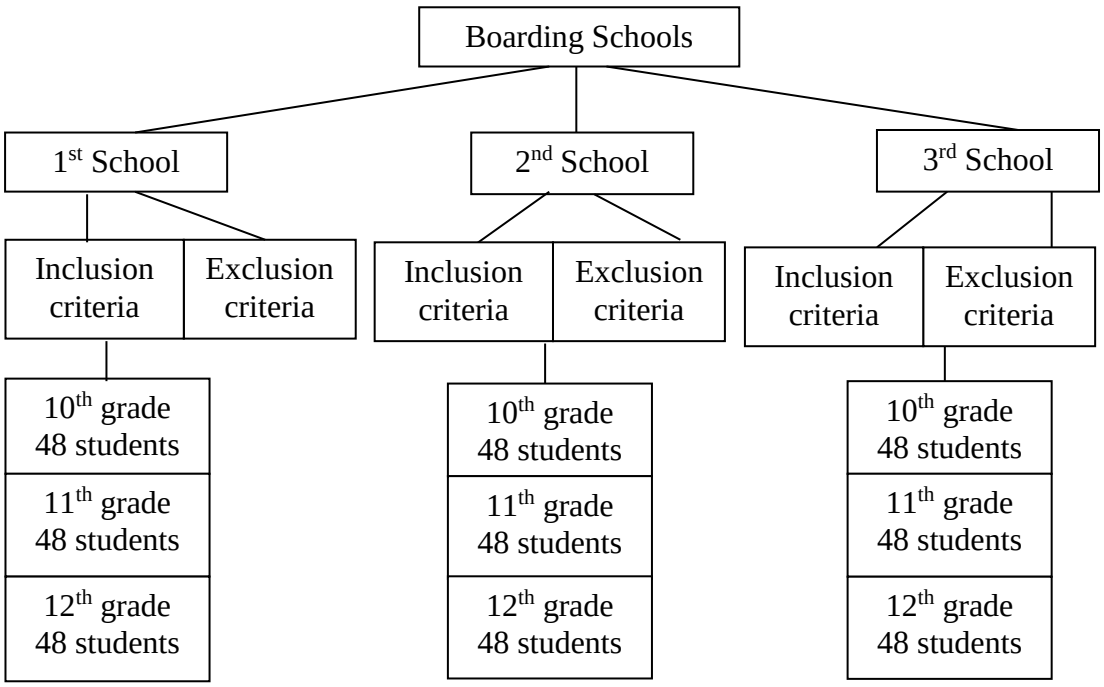

Figure 3.3 Participation selection

3.3 Research instrument

The instrument use of this research is a pretested standardized or pre-designed semi-questionnaire. Questionnaires are divided into 3 parts, part 3 and some from part 2 were developed in English and translated to Thai. The rest of part 2 are adapted and developed from several studies from Vietnam and Thailand. The questionnaires are consisted as followings:

Part 1. Demographic questionnaire. In this part, the students are asked for information about socio-demographic and socioeconomic characteristics.

Part 2. Risk factor questionnaire, which consisted of 31 questions. In this part, the students are questioned on different risk factors they may have encountered for example family conflict, substance abuse, suicidal ideation, exercise etc.

Part 3. Hospital anxiety and depression scale (HADS), which consisted of 14 questions to diagnosis for any potential depression and anxiety disorders.

3.4 Criteria for cut-off point

In order to classify disorders from non-disorders, there are criteria for each test to obtain the prevalence (HADS). Scores of 11 or over indicates clinical illness, 8-10 indicates borderline and 0-7 subscales are consider as normal (63). The score for clinical risk is 8 or above. This included students who are at borderline and clinical scale, as students falls into both categories are consider to have been potentially exposed to mental disturbances and will require careful attentions and self-awareness for their situation.

3.5 Data analysis

3.5.1 Data entry

After analysis was performed, data are processed and analyzed with Microsoft Excel 2013 and SPSS 18.0. SPSS is used for all statistical analyses.

3.5.2 Statistical analysis

1) Descriptive statistic

The descriptive statistics for all of the independent variables (i.e. means ± standard deviation (SD), percentage), to test the difference in the prevalence of depression and anxiety disorders by sex groups, age, school of children, and place of residence.

2) Inferential statistics

For comparisons of categorical variables were calculated with Pearson's χ^2 tests. The test is used to examine unadjusted associations between, and the total effects

of, the independent variables of interest and risk factors of interest i.e. socio-demographic characteristics, and variable outcomes. Only $P < 0.05$ values are considered significant for all statistical tests and two tailed tests were applied. SPSS for Windows, version 18 was used for data analyses (80). Multivariate logistic regression models are built in order to determine adjusted associations between independent variables on each outcome measure i.e. family characteristics, educational stress, and academic achievement. All tests were 2-tailed and a p-value of <0.05 was considered statistically significant.

3.6 Ethical Considerations

Prior collecting data from the student, ethical approval are obtained from Ethic Committee of Faculty of Tropical Medicine, Mahidol University. Furthermore, this study had gained permission from the relative authorities and the students themselves. The written consent were also obtained from guardians or parents of participant for them to participate in the study.

The research were conducted using student code for confidential and referral purpose. The survey did not asked the students to fill in their names or other information that can identify the participant. Privacy and confidentiality were protected. Notes for the study were stored securely. The reports published does not include information which may be able to identify the students. The file were shared by only research team and ethics committees in the forms of electronic data on hard copies, and flash drive. The estimated time of personal information retention is 1 month. The school or teachers were not able to receive the information regarding the answers of the questionnaire from students but sent directly to the research team. And the research team were be able to identify students from the answers. By conclusion, the study processes, data analysis, report, thesis writing or publication were done under the anonymous compiling to good clinical practice guideline (GCP) Students were able to withdraw from the study at any time.

3.7 Time table (Gantt chart)

Table 3.1 Time table

Timeline	March	April	May	June	July	Aug	Sep	Oct	Nov	Dec
Research										
Proposal Submission										
Ethical Approval										
Preparation										
Data Collection										
Data Processing and Analysis										
Research paper writing										
Thesis Defense										
Publication										

CHAPTER IV
RESULTS

This chapter illustrates the findings of the study. The results answer to the research questions and fulfill the objectives from Chapter I. There are 3 parts of the study results. The first part is the general demographic and the descriptive of the risk factors (family, peer and school, and personal risk factors). Second part is the anxiety and depression prevalence Second part is risk factors associate with anxiety and depression. The third part is the additional analysis about the suicidal problems. At the end of the results, there are also the comments and other suggestions from participants.

4.1 Demographic and prevalence

4.1.1 Demographic of study participants

The research population consisted of 387 secondary school students, which included 145 (37.5%) boys and 242 (62.5%) girls. The age group has been defined in the range of 14 to18 years old (mean age 16.05+ SD years). The number of students for each grade from 10 to 12 was equal among the three grades, with a response rate of about 80.6% (grade 10: 87.5%, grade 11: 95.1%, and grade 12: 64.6%). Among these three schools participating the study, the numbers of participants from each school were approximately the same between school one and school three, with the overall proportion of 35.4% and 33.1%. While school two represents 31.5% to the overall proportion to the number of participants. Almost all participants had an overall GPA above 3.0, only 5 students received a GPA below 3.0. The majority of students (99.2%) were Thai; other students included Chinese and Japanese (0.8%) (Table 4.1).

Table 4.1 Characteristics of study participants

Characteristics	**N%**
	387 (100)
Sex	
Male	145 (37.5)
Female	242 (62.5)
Age	
≤ 15	123 (31.7)
16	123 (31.8)
≥ 17	141 (36.4)
Grade	
10	126 (32.6)
11	137 (35.4)
12	124 (32.0)
School	
1	137 (35.4)
2	122 (31.5)
3	128 (33.1)
GPA	
3-4	382 (98.7)
More than 2	3 (0.8)
Less than 2	2 (0.5)
Nationality	
Thai	384 (99.2)
Others	3 (0.8)

4.1.2 Anxiety and depression prevalence

To classify disorder from non-disorder, there are classification for each level to obtain the prevalence of anxiety and depression using HADS (The Hospital Anxiety and Depression Scale). The score for each “Anxiety and Depression Test” is cap at 21 points. Participants who have a score of 11 or above indicates there is a

potential of clinical risk, 8-10 subscales are considered to be the borderline and 0-7 indicates normal (63).

In this study, highlighted areas represent those who are at the borderline of minor risks and clinical risks. In other words, those who received a score above 7 are potentially at risk. Thus, those who receive a score fall into the category of minor risks and clinical risks require precaution and awareness of their risks (Table 4.2).

4.1.2.1 Anxiety and depression

Table 4.2 and Table 4.3 express anxiety and depression severity in term of normal (No) and not normal (Yes) by summing up the number for borderline and clinical risk, and the result shows a negative result for normal and a positive result for not normal. Table 4.2 shows the overall test result for prevalence anxiety and depression, in which 31% of all participants faced the risk for either anxiety or depression. One hundred twenty students had abnormal score for anxiety or depression or both.

When we remove depression from the equation, it shows 28.4% of the participants were at risk of anxiety, and when anxiety is removed from the equation, it shows 11.4% of the participants were at risk of depression.

Table 4.2 Overall prevalence of anxiety and depression among study participants

Characteristics	**N%**
	387 (100)
Anxiety and depression	
Yes	120 (31.0)
No	267 (69.0)

Table 4.3 The prevalence of anxiety and depression among study participants

Characteristics	**N%**
	387 (100)
Anxiety	
Yes	110 (28.4)
No	277 (71.6)
Depression	
Yes	44 (11.4)
No	343 (88.6)

4.1.2.2 Anxiety

Total score for anxiety was 21 for 7- items. The mean (±SD), (range) scores for anxiety was 6.26 (± 3.25), (0-18). One hundred and ten students (28.4%) had the symptoms of anxiety (a HAD score of >7). The prevalence of being in a category at risk for clinical anxiety (a HAD score of ≥ 11) was 46 (11.9%) while 64 (16.5%) were classified to have an elevated level of anxiety symptoms with a HAD score of 8-10 (Table 4.4).

4.1.2.3 Depression

The result of the 7-item HAD Scale (with total score of 21), the mean score (±SD), (range) of depression was 3.5 (±2.84), (0-13). Forty-four (11.9%) had the symptoms of depression. The prevalence of being in a category at risk for clinical depression (a HAD score of ≥ 11) was 2.8% while 8.5% of the students were identified to have an elevated level escalated level of depressive symptoms (a HAD score of 8-10) (Table 4.4).

Table 4.4 The prevalence of anxiety and depression divided by three levels

Characteristics	**N (%)**
	387 (100)
Anxiety	
Normal	277 (71.6)
Borderline	64 (16.5)
Clinical risk	46 (11.9)
Depression	
Normal	343 (88.6)
Borderline	33 (8.5)
Clinical risk	11 (2.8)

4.1.2.3 Comparing between male and female

Table 4.5 shows the students who are at risk of anxiety and/or depression and students who has no risk. There are two levels of anxiety and depression risks which are borderline level and clinical level. The percentage of anxiety between male and female are closely the same, while depression in male has a higher percentage compared to female (13.1% vs. 10.3%) however not significant (p, 0.960 for anxiety and P, 0.406 for depression).

Table 4.5 Overall prevalence of anxiety and depression by sex

Characteristics	**Anxiety**		**P**	**Depression**		**P**
	Yes	**No**		**Yes**	**No**	
	N (%)	**N (%)**		**N (%)**	**N (%)**	
Male (n=145)	41 (28.3)	104 (71.7)	0.960	19 (13.1)	126 (86.9)	0.406
Female (n=424)	69 (28.5)	173 (71.5)		25 (10.3)	217 (89.7)	

4.2 Risk factors

A chi square (X2) statistic was performed to study the correlation between anxiety, and depression, and several other factors such as, demographic, familial, educational and lifestyle. Students with anxiety and depression are shown in the following tables in three categories; normal, borderline and clinical risks.

4.2.1 Risk factors regarding demographic characteristics

The result from Table 4.6 shows male students had slightly higher chance of having depression symptoms, compared to female counterpart (p=0.046). The results also showed that grade-12 students had a notably higher number of borderline and higher risk for depression compared to other grades but not statistically significant.

Table 4.6 Prevalence of anxiety and depression by demographic characteristics

Characteristics	Anxiety				Depression			
	Normal N (%)	Borderline N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Caseness N (%)	P-value
Gender								
Male (n=145)	104 (71.7)	23 (15.9)	18 (12.4)	0.942	126 (86.9)	11 (7.6)	8 (5.5)	**0.046***
Female (n=242)	173 (71.5)	41 (16.9)	28 (11.6)		217 (89.7)	22 (9.1)	3 (1.2)	
Grade								
10 (n=126)	99 (78.6)	15 (11.9)	12 (9.5)	0.266	114 (90.5)	8 (6.3)	4 (3.2)	0.536
11 (n=137)	96 (70.1)	25 (18.2)	16 (11.7)		123 (89.8)	10 (7.3)	4 (2.9)	
12 (n=124)	82 (66.1)	24 (19.4)	18 (14.5)		106 (85.5)	15 (12.1)	3 (2.4)	

Table 4.6 Prevalence of anxiety and depression by demographic characteristics (cont.)

Charac-teristics	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Age								
≤ 15 (n=123)	94 (76.4)	17 (13.8)	12 (9.8)	0.332	111 (90.2)	8 (6.5)	4 (3.3)	0.115
16 (n=123)	91 (74.0)	19 (15.4)	13 (10.6)		113 (91.9)	9 (4.9)	4 (3.3)	
≥ 17 (n=141)	92 (65.2)	28 (19.9)	21 (14.9)		119 (84.4)	19 (13.5)	3 (2.1)	
BMI								
Underweight (n=78)	57 (73.1)	13 (16.7)	8 (10.3)	0.708	67 (85.9)	10 (12.8)	1 (1.3)	0.078
Normal (n=267)	193 (72.3)	41 (15.4)	33 (12.4)		242 (90.6)	16 (6.0)	9 (3.4)	
Obese (n=42)	27 (64.3)	10 (23.8)	5 (11.9)		34 (81.0)	7 (16.7)	1 (2.4)	

*$P<0.05$

4.2.2 Risk factors regarding family factors

Anxiety was shown to be independently associated with: experiencing financial problems as shown in the monthly household with less than 30,000 baht/month; physical and emotional abuse within the family; serious quarrel with parents or other adults in the household; aggressive toward friends or families; students whose parents do not understand their problems and worries; parents do not help with homework; and when the parents do not keep track on their children's leisure activities. On the one hand, depression are shown with similar risks as anxiety but fewer risk factors as followed: physical and emotional abuse within the family members; aggressive toward friends or families; while parents help with homework

and knowing their leisure activities are the protective factors as the result of this, the study shows a significant decrease in the risk of depression (Table 4.7).

Table 4.7 Prevalence of anxiety and depression by family factors

Risk factors	**Anxiety**				**Depression**			
	Normal N (%)	**Border-line N (%)**	**Clinical Risk N (%)**	**P-value**	**Normal N (%)**	**Clinical Risk N (%)**	**Case-ness N (%)**	**P-value**
Growing up and living with both natural parents								
Yes (n=368)	263 (71.5)	60 (16.3)	45 (12.2)	0.608	325 (88.3)	33 (9.0)	10 (2.7)	0.333
No (n=19)	14 (73.7)	4 (21.1)	1 (5.3)		18 (94.7)	0 (0)	1 (5.3)	
Parents' status								
Married (n=318)	233 (73.3)	48 (15.1)	37 (11.6)	0.266	283 (89.0)	24 (7.5)	11 (3.5)	0.271
Divorced (n=43)	29 (67.4)	8 (18.6)	6 (14.0)		111 (89.5)	10 (8.1)	3 (2.4)	
Separated (n=14)	7 (50.0)	4 (28.6)	3 (21.4)		131 (87.3)	11 (7.3)	8 (5.3)	
Windowed (n=12)	8 (66.7)	4 (33.3)	0 (0)		37 (88.1)	5 (11.9)	0 (0)	
Monthly Household								
<30,000 (n=83)	52 (62.7)	20 (24.1)	11 (13.3)	**0.047***	71 (85.5)	9 (10.8)	3 (3.6)	0.315
30,000-49,999 (n=100)	68 (68.0)	17 (17.0)	15 (15.0)		88 (88.0)	7 (7.0)	5 (5.0)	
>50,000 (n=167)	132 (79.0)	22 (13.2)	13 (7.8)		15 (91.6)	12 (7.2)	2 (1.2)	

Table 4.7 Prevalence of anxiety and depression by family factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Number of siblings								
0 (n=69)	48 (69.6)	17 (24.6)	4 (5.8)	0.139	62 (89.9)	7 (10.1)	0 (0)	0.271
1 (n=124)	90 (72.6)	21 (16.9)	13 (10.5)		111 (89.5)	10 (8.1)	3 (2.4)	
2 (n=150)	106 (70.7)	22 (14.7)	22 (14.7)		131 (87.3)	11 (7.3)	8 (5.3)	
>3 (n=42)	32 (76.2)	3 (7.1)	17 (16.7)		37 (88.1)	5 (11.9)	0 (0)	
Being abused physically or emotionally by parents, or other adults in the household								
No (n=306)	234 (76.5)	44 (14.4)	28 (9.2)	**<0.001*** **	280 (91.5)	20 (6.5)	6 (2.0)	**<0.001 *** **
Not frequent (n=72)	42 (58.3)	17 (23.6)	13 (18.1)		59 (81.9)	8 (11.1)	5 (6.9)	
Frequent (n=9)	1 (11.1)	3 (33.3)	5 (55.6)		4 (44.4)	5 (55.6)	0 (0)	
Serious quarrel with parents or other adults in the household								
No (n=291)	225 (77.3)	37 (12.7)	29 (10.0)	**<0.001*** **	263 (90.4)	20 (6.9)	8 (2.7)	0.051
Not frequent (n=87)	49 (56.3)	25 (28.7)	13 (14.9)		74 (85.1)	10 (11.5)	3 (3.4)	
Frequent (n=9)	3 (33.3)	2 (22.2)	4 (44.4)		6 (66.7)	3 (33.3)	0 (0)	

Table 4.7 Prevalence of anxiety and depression by family factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Aggressive behavior toward friends or families								
No (n=292)	227 (77.7)	41 (14.0)	24 (8.2)	**<0.001 *** **	264 (90.4)	23 (7.9)	5 (1.7)	**<0.001 *** **
Not frequent (n=90)	49 (54.5)	22 (24.4)	19 (21.1)		77 (85.6)	7 (7.8)	6 (6.7)	
Frequent (n=5)	1 (20.0)	1 (20.0)	3 (60.0)		2 (40.0)	3 (60.0)	0 (0)	
Parents understand problems and anxieties								
Not understand (n=63)	44 (69.8)	7 (11.1)	12 (19.0)	**0.004* * ***	55 (87.3)	7 (11.1)	1 (1.6)	0.099
Not frequent (n=129)	80 (62.0)	29 (22.5)	20 (15.5)		108 (83.7)	14 (10.9)	7 (5.4)	
Frequent (n=195)	153 (78.5)	28 (14.4)	14 (7.2)		180 (92.3)	12 (6.2)	3 (1.5)	
Parents help with homework								
No (n=138)	92 (66.7)	21 (15.2)	25 (18.1)	**0.006* * ***	114 (82.6)	21 (15.2)	3 (2.2)	**0.003* * ***
Not frequent (n=161)	114 (70.8)	35 (21.7)	12 (7.5)		114 (89.4)	10 (6.2)	7 (4.3)	
Frequent (n=88)	71 (80.7)	8 (9.1)	9 (10.2)		85 (96.6)	2 (2.3)	1 (1.1)	

Table 4.7 Prevalence of anxiety and depression by family factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Parents know what you are doing in your free time								
No (n=39)	23 (59.0)	10 (25.6)	6 (15.4)	**0.008 ****	29 (74.4)	8 (20.5)	2 (5.1)	**0.003* ***
Not frequently know (n=126)	81 (64.3)	22 (17.5)	23 (18.3)		106 (84.1)	15 (11.9)	5 (4.0)	
Frequently know (n=222)	173 (77.9)	32 (14.4)	17 (7.7)		208 (93.7)	10 (4.5)	4 (1.8)	
Parents or relatives used to suffer from depression								
Yes (n=28)	20 (71.4)	4 (14.3)	4 (14.3)	0.887	25 (89.3)	1 (3.6)	2 (7.1)	0.242
Not frequent (n=359)	257 (71.6)	60 (16.7)	42 (11.7)		318 (88.6)	32 (8.9)	9 (2.5)	
Living with a depressed or mentally ill person								
Yes (n=15)	9 (60.0)	2 (13.3)	4 (26.7)	0.196	15 (100)	0 (0)	0 (0)	0.368
No (n=372)	268 (72.0)	62 (16.7)	42 (11.3)		328 (88.2)	33 (8.9)	11 (3.0)	

****P*<0.001; ***P*<0.01;**P*<0.05

4.2.3 Risk factors regarding peer, school and teacher factors

A chi square (X^2) statistic was also used to explore the relation between mental health and school risk factors. The 8-risk factor question was used to identify possible risk factor at school. Based on the analysis, 6 variables significantly increased the risk of anxiety and 5 variables significantly increased the risk of depression

(Table 4.8). Students were likely to show a higher level of anxiety and depressive symptoms when they were being physically or emotionally abused, often having serious quarrels with teachers or other school staff members, and lack of peer support. Those with frequent learning difficulties and high educational stress also show a higher likelihood to develop anxiety and depressive symptoms.

Table 4.8 Prevalence of anxiety and depression by peer, school and teacher factors

Risk factors	**Anxiety**				**Depression**			
	Normal N (%)	**Border-line N (%)**	**Clinical Risk N (%)**	**P-value**	**Normal N (%)**	**Clinical Risk N (%)**	**Case-ness N (%)**	**P-value**
Learning difficulties								
No (n=80)	69 (86.3)	7 (8.8)	4 (5.0)	**<0.001***	79 (98.8)	1 (1.3)	0 (0)	**<0.001***
Not frequent (n=257)	189 (73.5)	42 (16.3)	26 (10.1)		231 (89.9)	20 (7.8)	6 (2.3)	
Frequent (n=50)	19 (38.0)	15 (30.0)	16 (32.0)		33 (66.0)	12 (24.0)	5 (10.0)	
Educational stress								
No (n=96)	83 (86.5)	8 (8.3)	5 (5.2)	**<0.001***	93 (96.9)	3 (3.1)	0 (0)	**<0.001***
Not frequent (n=239)	176 (73.6)	38 (15.9)	25 (10.5)		214 (89.5)	19 (7.9)	6 (2.5)	
Frequent (n=52)	18 (34.6)	18 (34.6)	16 (30.8)		36 (69.2)	11 (21.2)	5 (9.6)	
Part-time job								
Yes (n=26)	18 (69.2)	5 (19.2)	3 (11.5)	0.929	24 (92.3)	2 (7.7)	0 (0)	0.651
No (n=361)	259 (71.7)	59 (16.3)	43 (11.9)		319 (88.4)	31 (8.6)	11 (3.0)	

Table 4.8 Prevalence of anxiety and depression by peer, school and teacher factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Being abused physically or emotionally by teachers or other staff members at school								
No (n=293)	228 (77.8)	41 (14.0)	24 (8.2)	**<0.001***	274 (93.5)	16 (5.5)	3 (1.0)	**<0.001***
No (n=86)	49 (57.0)	20 (23.3)	17 (19.8)		65 (75.6)	14 (16.3)	7 (8.1)	
Frequent (n=8)	0 (0)	3 (37.5)	5 (62.5)		4 (50.0)	3 (37.5)	1 (12.5)	
Serious quarrel with teachers, friends or other staff in the school in the past 12 months								
No (n=318)	243 (76.4)	48 (15.1)	27 (8.5)	**<0.001***	289 (90.9)	24 (7.5)	5 (1.6)	**0.002***
Not frequent (n=63)	32 (50.8)	14 (22.2)	17 (27.0)		48 (76.2)	9 (14.3)	6 (9.5)	
Frequent (n=6)	2 (33.3)	2 (33.3)	2 (33.3)		6 (100)	0 (0)	0 (0)	
Peer support								
No (n=16)	11 (68.8)	2 (12.5)	3 (18.8)	**0.007***	13 (81.3)	3 (18.8)	0 (0)	**<0.001***
Not frequent (n=96)	60 (62.5)	15 (15.6)	21 (21.9)		72 (75.0)	17 (17.7)	7 (7.3)	
Frequent (n=275)	206 (74.9)	47 (17.1)	22 (8.0)		258 (93.8)	13 (4.7)	4 (1.5)	

Table 4.8 Prevalence of anxiety and depression by peer, school and teacher factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Having close friends								
Yes (n=380)	275 (72.4)	62 (16.3)	43 (11.3)	**0.016***	338 (88.9)	31 (8.2)	11 (2.9)	0.150
No (n=7)	2 (28.6)	2 (28.6)	3 (42.9)		5 (71.4)	2 (28.6)	0 (0)	
Truancy								
0 times (n=334)	234 (70.1)	57 (17.1)	43 (12.9)	0.552	297 (88.9)	26 (7.8)	11 (3.3)	0.502
1-2 times (n=38)	31 (81.6)	5 (13.2)	2 (5.3)		33 (86.8)	5 (13.2)	0 (0)	
3 or more (n=15)	12 (80.0)	2 (13.3)	1 (6.7)		13 (86.7)	2 (13.3)	0 (0	

****P*<0.001; ***P*<0.01;**P*<0.05

With or without support from friends and family is another factor for anxiety. Result (Table 4.9) shows having support from close friends and family help to reduce the likelihood to develop anxiety symptoms by six times compared to those with no close friends (71.4% vs. 27.6%) (OR = 6.55; 95% CI OR = 1.25-34.27, p=0.011).

Table 4.9 Overall prevalence of anxiety associated with having close friends

Characteristics	**Anxiety**		
	Yes N (%)	**No N (%)**	**P**
Having close friends			
Yes (n=380)	105 (27.6)	275 (72.4)	**0.011***
No (n=7)	5 (71.4)	2 (28.6)	

**P*<0.05

4.2.4 Risk factors regarding personal and lifestyle factors

In the same method of analysis, not accounting for effect modification, ten variables associated with possible anxiety and twelve with depression.

4.2.4.1 Anxiety associate with personal and lifestyle

Seven variables were considerably strong significant factors, which are likely to increase the risk of anxiety symptoms. The risk factors are as followed; have had poor quality of sleep, sadness, social anxiety, hunger, having unsolvable challenges, suicide ideation, and attempted suicide. Others significant variables includes drug abused in the past 1 month, transgender and drug abused during life time (Table 4.10). Unlike depression, underlying disease, amount of money allowances and drug addictions do not have much effect on causing anxieties. While drug abused during lifetime have an effect on developing anxiety compared to depression. Although it is important to note that regular exercise and medication are one of the important protective factors and help improve mental health problems. Moreover, the result from this study suggested that; capability to seek for help; being around with any drug user; exercise and sexual intercourse have less influence in causing anxiety and depression in this group.

4.2.4.2 Depression associate with personal and lifestyle

There are seven variables consider to be the strongest factors which increased the risk of depression symptoms. These seven variables are equally the same as the ones that cause anxiety ($p<0.001$). It is implied that these seven variables are likely to cause both anxiety and depression. Two of the less but strong factors are drug or alcohol abuse in the past 1 month and transgender ($p<0.01$) which

have a similar trend to develop anxiety ($p<0.05$). Other factors are underlying disease, allowance and drug addictive with $p<0.05$ (see Table 4.10).

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors

Risk factors	**Anxiety**				**Depression**			
	Normal N (%)	**Border-line N (%)**	**Clinical Risk N (%)**	**P-value**	**Normal N (%)**	**Clinical Risk N (%)**	**Case-ness N (%)**	**P-value**
Underlying disease								
Normal (n=319)	231 (72.4)	52 (16.3)	36 (11.3)	0.673	285 (89.3)	23 (7.2)	11 (3.4)	**0.046***
Disease (n=68)	46 (67.6)	12 (17.6)	10 (14.7)		58 (85.3)	10 (14.7)	0 (0)	
Allowance								
<100 (n=129)	83 (64.3)	27 (20.9)	19 (14.7)	0.083	107 (82.9)	16 (12.4)	6 (4.7)	**0.042***
100 or more (n=258)	194 (75.2)	37 (14.3)	27 (10.5)		236 (91.5)	17 (6.6)	5 (1.9)	
Unable to sleep at night for the past 12 months								
Never (n=243)	190 (78.2)	35 (14.4)	18 (7.4)	**<0.001** ** *	225 (92.6)	15 (6.2)	3 (1.2)	**<0.001** ***
Not frequent (n=131)	85 (64.9)	27 (20.6)	19 (14.5)		112 (85.5)	12 (9.2)	7 (5.3)	
Frequent (n=13)	2 (15.4)	2 (15.4)	9 (69.2)		6 (46.2)	6 (46.2)	1 (7.7)	

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Sadness								
No (n=210)	178 (84.8)	26 (12.4)	6 (2.9)	**<0.001***	205 (97.6)	5 (2.4)	0 (0)	**<0.001***
Not frequent (n=152)	93 (61.2)	33 (21.7)	26 (17.1)		122 (80.3)	20 (13.2)	10 (6.6)	
Frequent (n=25)	6 (24.0)	5 (20.0)	14 (56.0)		16 (64.0)	8 (32.0)	1 (4.0)	
Social anxiety								
No (n=67)	58 (86.6)	4 (6.0)	5 (7.5)	**<0.001***	66 (98.5)	0 (0)	1 (1.5)	**<0.001***
Not frequent (n=248)	188 (75.8)	36 (14.5)	24 (9.7)		225 (90.7)	18 (7.3)	5 (2.0)	
Frequent (n=72)	31 (43.1)	24 (33.3)	17 (23.6)		52 (72.2)	15 (20.8)	5 (6.9)	
Feeling hungry because there is not enough food in the household								
No (n=234)	186 (79.5)	30 (12.8)	18 (7.7)	**<0.001***	220 (94.0)	14 (6.0)	0 (0)	**<0.001***
Not frequent (n=128)	75 (58.6)	28 (21.9)	25 (19.5)		102 (79.7)	16 (12.5)	10 (7.8)	
Frequent (n=25)	16 (64.0)	6 (24.0)	3 (12.0)		21 (84.0)	3 (12.0)	1 (4.0)	

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Have problems which cannot be solved								
Never (n=120)	107 (89.2)	10 (8.3)	3 (2.5)	**<0.001***	117 (97.5)	2 (1.7)	1 (0.8)	**<0.001***
Not frequent (n=226)	158 (69.9)	42 (18.6)	26 (15)		202 (89.4)	16 (7.1)	8 (3.5)	
Frequent (n=41)	12 (29.3)	12 (29.3)	17 (41.5)		24 (58.5)	15 (36.6)	2 (4.9)	
Able to try to seek for help								
Never (n=41)	29 (70.7)	5 (12.2)	7 (17.1)	0.575	34 (82.9)	4 (9.8)	3 (7.3)	0.278
Not frequent (n=265)	193 (72.8)	45 (17.0)	27 (10.2)		234 (88.3)	25 (9.4)	6 (2.3)	
Frequent (n=81)	55 (67.9)	14 (17.3)	12 (14.8)		75 (92.6)	4 (4.9)	2 (2.5)	
Drug or alcohol abuse in the past 1 month								
Never (n=315)	227 (72.1)	52 (16.5)	36 (11.4)	**0.034***	286 (90.8)	23 (7.3)	6 (1.9)	**0.001****
Not frequent (n=62)	44 (71.0)	12 (19.4)	6 (9.7)		51 (82.3)	8 (12.9)	3 (4.8)	
Frequent (n=9)	5 (55.6)	0 (0)	14 (44.4)		5 (55.6)	2 (22.2)	2 (22.2)	

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Drug addiction (need to take drugs frequently, drink alcohol or smoke regularly)								
No (n=359)	259 (72.7)	60 (16.7)	40 (11.1)	0.060	323 (90.0)	28 (7.8)	8 (2.2)	**0.020***
Not frequent (n=22)	15 (68.2)	60 (18.2)	3 (13.6)		16 (72.7)	4 (18.2)	2 (9.1)	
Frequent (n=6)	3 (50.0)	0 (0)	3 (50.0)		4 (66.7)	1 (16.7)	1 (16.7)	
Seriously considered hurting oneself or suicide								
No (n=316)	250 (79.1)	42 (13.3)	24 (7.6)	**<0.001 *** **	292 (92.4)	18 (5.7)	6 (1.9)	**<0.001 *** **
Not frequent (n=61)	26 (42.6)	20 (32.8)	15 (24.6)		46 (75.4)	10 (16.4)	5 (8.2)	
Frequent (n=10)	1 (10.0)	2 (20.0)	7 (70.0)		5 (50.0)	5 (50.0)	0 (0)	
Attempted suicide								
No (n=364)	267 (73.4)	60 (16.5)	37 (10.2)	**<0.001 *** **	329 (90.4)	26 (7.1)	9 (2.5)	**<0.001 *** **
Not frequent (n=19)	9 (47.4)	4 (21.1)	6 (31.6)		12 (63.2)	5 (26.3)	2 (10.5)	
Frequent (n=4)	1 (25.0)	0 (0)	3 (75.0)		2 (50.0)	2 (50.0)	0 (0)	

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Transgender								
Yes	20	1	4	**0.042**	22	2	1	**0.001**
(n=25)	(80.0)	(4.0)	(16.0)	*****	(88.0)	(8.0)	(4.0)	******
No	229	49	34		283	19	10	
(n=312)	(73.4)	(15.7)	(10.9)		(90.7)	(6.1)	(3.2)	
Not sure	28	14	8		38	12	0	
(n=50)	(56.0)	(28.0)	(16.0)		(76.0)	(24.0)	(0)	
Being with a substance or alcohol abuser								
Yes	60	22	12	0.097	80	12	2	0.222
(n=94)	(63.8)	(23.4)	(12.8)		(85.1)	(12.8)	(2.1)	
No	217	42	34		263	21	9	
(n=293)	(74.1)	(14.3)	(11.6)		(89.8)	(7.2)	(3.1)	
Drug abuse during life time								
Yes (n=6)	3	0	3	**0.012**	4	2	0	0.086
	(50.0)	(0)	(50.0)	*****	(66.7)	(33.3)	(0)	
No	274	64	43		339	31	11	
(n=381)	(71.9)	(16.8)	(11.3)		(89.0)	(8.1)	(2.9)	
Transgender								
Yes	11	3	1	0.788	12	3	0	0.225
(n=15)	(73.3)	(20.0)	(6.7)		(80.0)	(20.0)	(0)	
No	266	61	45		331	30	11	
(n=312)	(71.5)	(16.4)	(12.1)		(89.0)	(8.1)	(3.0)	

Table 4.10 Prevalence of anxiety and depression by personal and lifestyle factors (cont.)

Risk factors	Anxiety				Depression			
	Normal N (%)	Border-line N (%)	Clinical Risk N (%)	P-value	Normal N (%)	Clinical Risk N (%)	Case-ness N (%)	P-value
Number of exercises in 1 week								
0 days	21	8	6	0.668	29	4	2	0.255
(n=35)	(60.0)	(22.9)	(17.1)		(82.9)	(11.4)	(5.7)	
1-2 days	96	25	17		117	18	3	
(n=138)	(69.6)	(18.1)	(12.3)		(84.8)	(13.0)	(2.2)	
3-4 days	65	15	12		84	5	3	
(n=92)	(70.7)	(16.3)	(13.0)		(91.3)	(5.4)	(3.3)	
5-6 days	37	5	3		42	1	2	
(n=45)	(82.2)	(11.1)	(6.7)		(93.3)	(2.2)	(4.4)	
Everyday	58	11	8		71	5	1	
(n=77)	(75.3)	(14.3)	(10.4)		(92.2)	(6.5)	(1.3)	

***P<0.001; **P<0.01;*P<0.05

4.2.5 The differences between male and female regarding important risk factors

As shown in Table 4.6, the correlation between demographic risk factors, and anxiety and depression, indicates a slightly significant relationship comparing male and female for depressive risk factor ($p<0.05$). Therefore, this topic will illustrate the number differences of male and female who answer yes or no for each question. The questions in this chapter are from the previous topics where there is a significant differences between normal students and students with depressive clinical risk (the tables are not shown). It is aimed to demonstrate the reason for the significant difference between male and female depressive risk. The result of Table 4.11 shows almost all the significant risk factors also illustrate that there are significant difference in number between male and female who answer the question yes or no. The odd ratio suggests that there are more female who have educational stress than male (OR=0.529,

95% CI=0.331-0.846), more sadness in male (OR=1.759, 95% CI=1.161-2.665), more social anxiety in female (OR=0.479, 95% CI=0.281-0.815), more hunger in male (OR=2.849, 95% CI=1.859-4.368), more male in all drug problems (use of drug in the past 1 month, drug addiction, use of drug during life time) with odd ratio of 2.238 (95% CI=1.329-3.770), 3.288 (95% CI=1.473-7.338), and 8.607 (95% CI=0.995-74.418), respectively.

Table 4.11 The differences between male and female regarding important risk factors

Risk factors	**Gender**		**P-value**	**OR (95% CI)**
	Male N (%)	**Female N (%)**		
Parents know what students are doing during their free time				
Yes (n=348)	128 (36.8)	220 (63.2)	0.405	0.753
No (n=39)	17 (43.6)	22 (56.4)		(0.386-1.470)
Educational stress				
Yes (n=291)	98 (33.7)	193 (66.3)	**0.007****	0.529
No (n=96)	47 (49.0)	49 (51.0)		(0.331-0.846)
Sadness				
Yes (n=177)	79 (44.6)	98 (55.4)	**0.008****	1.759
No (n=210)	66 (31.4)	144 (68.6)		(1.161-2.665)
Social anxiety				
Yes (n=320)	110 (34.4)	210 (65.6)	**0.006****	0.479
No (n=67)	35 (52.2)	32 (47.8)		(0.281-0.815)
Feeling hungry because there is not enough food in the household				
Yes (n=153)	80 (52.3)	73 (47.7)	**<0.001*****	2.849
No (n=234)	65 (27.8)	169 (72.2)		(1.859-4.368)
Use of drug in the past 1 month (including alcohol and smoking at least 1 time)				
Yes (n=71)	38 (53.5)	33 (46.5)	**0.002****	2.238
No (n=315)	107 (34.0)	208 (66.0)		(1.329-3.770)

Table 4.11 The differences between male and female regarding important risk factors (cont.)

Risk factors	**Gender**		**P-value**	**OR (95% CI)**
	Male N (%)	**Female N (%)**		
Drug addiction (need to take drugs frequently, drink alcohol or smoke regularly)				
Yes (n=28)	18 (64.3)	10 (35.7)	**0.002****	3.288
No (n=359)	127 (35.4)	232 (64.6)		(1.473-7.338)
Use of drug during life time (i.e. methamphetamines (Yaba), ecstasy, 4 × 100, or marijuana)				
Yes (n=6)	5 (83.3)	1 (16.7)	**0.019***	8.607
No (n=381)	140 (36.7)	241 (63.3)		(0.995-74.418)
Being with a substance or alcohol abuser				
Yes (n=94)	39 (41.5)	55 (58.5)	0.355	1.251
No (n=293)	106 (36.2)	187 (63.8)		(0.778-2.010)

****P*<0.001; ***P*<0.01;**P*<0.05

4.3 Considered hurting oneself or suicide

Two additional aspects which was not originally in the objective and did not emphasized are suicidal ideation and suicide attempt. Nonetheless, in this study we found that among 387 students, there are 71 students who have had suicidal ideation or hurting oneself both frequent and not frequent. There are 23 students who had attempted at suicide with not frequent of 19 students and 4 students who had done suicide attempt frequently. As this is a serious problem and need urgent notification, we have expended our research and look through the risk factors of these 71 students and 23 students who have considered hurting oneself or attempted suicide in this part of the result.

4.3.1 Considered hurting oneself or suicide related to family factor

The participants were asked during the past 12 months, they have ever considered hurting themselves or suicide. There were several factors related to family that correlated to ever consider hurting oneself or suicide. Three important factors were being abused by his or her family members, having serious quarrel with them and/or aggressive toward their any of family members. Serious quarrel were the highest risk out of the three with 4 times chances of having thoughts of suicide or hurting oneself. Followed by being abused by their family member with approximately 4 times more risk and finally 3 times risk compared to normal participants who do not have aggressive behavior toward their families. Another significant and important factor was living with one or more family member who may have had mental health problem would have 3 times likely to be have thoughts of hurting oneself or suicide. This study found that there are 4 factors that influence thoughts of hurting oneself and suicide as listed; being abused by family members, having serious quarrel with family members, aggressive toward them, and living with family members who have mental illness (Table 4.12).

Table 4.12 Risk factors of considered hurting oneself or suicide related to family

Risk factors	**Considered hurting oneself or suicide**		**P-value**	**OR (95% CI)**
	Yes	**No**		
	N (%)	**N (%)**		
Sex				
Male (n=145)	25 (17.2)	120 (82.8)	0.664	0.888
Female (n=242)	46 (19.0)	196 (81.0)		(0.519-1.519)
BMI				
Normal (n=267)	43 (16.1)	224 (83.9)	0.089	0.631
Not normal (n=120)	28 (23.3)	92 (76.7)		(0.370-1.076)
Monthly Household (bath)				
Less than 50,000 (n=183)	38 (20.8)	145 (79.2)	0.339	1.301
50,000 or more (n=167)	28 (16.8)	139 (83.2)		(0.758-2.234)

Table 4.12 Risk factors of considered hurting oneself or suicide related to family (cont.)

Risk factors	Considered hurting oneself or suicide		P-value	OR (95% CI)
	Yes N (%)	No N (%)		
Being with natural parents since youth				
Yes (n=368)	66 (17.9)	302 (82.1)	0.357	0.612
No (n=19)	5 (26.3)	14 (73.7)		(0.213-1.758)
Parents status				
Married (n=318)	54 (17)	264 (83.0)	0.136	0.626
Not married (n=69)	17 (24.6)	52 (75.4)		(0.336-1.164)
Being abused by family members				
Yes (n=81)	29 (35.8)	52 (64.2)	**<0.001*** **	3.505
No (n=306)	42 (13.7)	264 (86.3)		(2.005-6.130)
Serious quarrel with family members				
Yes (n=96)	35 (36.5)	61 (63.5)	**<0.001*** **	4.064
No (n=291)	36 (12.4)	255 (87.6)		(2.362-6.993)
Aggressive toward family members				
Yes (n=95)	30 (31.6)	65 (68.4)	**<0.001*** **	2.826
No (n=292)	41 (14)	251 (86.0)		(1.640-4.869)
Family members understand their problems				
Yes (n=324)	57 (17.6)	267 (82.4)	0.385	0.747
No (n=63)	14 (22.2)	49 (77.8)		(0.386-1.445)
Family members help with their homework				
Yes (n=249)	39 (15.2)	210 (84.3)	0.067	0.615
No (n=138)	32 (23.2)	106 (76.8)		(0.365-1.037)
Parents aware of the participants' leisure				
Yes (n=348)	60 (17.2)	288 (82.8)	0.093	0.530
No (n=39)	11 (28.2)	28 (71.8)		(0.250-1.124)

Table 4.12 Risk factors of considered hurting oneself or suicide related to family (cont.)

Risk factors	Considered hurting oneself or suicide		P-value	OR (95% CI)
	Yes N (%)	No N (%)		
One or more of the family members used to or suffer from mental health				
Yes (n=28)	4 (14.3)	24 (85.7)	0.564	0.726
No (n=359)	67 (18.7)	292 (81.3)		(0.244-2.163)
Participants are living with family members with mental illness				
Yes (n=15)	6 (40.0)	9 (60.0)	**0.027***	3.149
No (n=372)	65 (17.5)	307 (82.5)		(1.083-9.153)

****P*<0.001;**P*<0.05

4.3.2 Considered hurting oneself or suicide related to school factors

Schools are where participants spend most of their days even more so than other students who do not stay at the boarding school. Therefore, school must be inevitably brings great influence to students. This study found 4 factors related to school which influence students' decision to hurt themselves or to suicide including learning difficulty, educational stress, being abused by the staff or teacher at school and serious quarrel with them. Serious quarrel with teachers or staff at school was the most prominent factor with 3 times more risk to have thoughts of hurting oneself or suicide. The next important factors were educational stress and being abused by teachers, friends or staff at school. There are greatly influence students at boarding school to have more risk of negative thoughts at around 3 times. And lastly, learning difficulties was also influence students at these schools to have about 3 times more risk than students who do not have learning difficulties. Students who have problems with teachers, friends or staff at school either argue or got abused by them, and educational stress are the key factors which leading to the thoughts of hurting oneself and suicide (Table 4.13).

Table 4.13 Risk factors of considered hurting oneself or suicide related to school

Risk factors	**Considered hurting oneself or suicide**		**P-value**	**OR (95% CI)**
	Yes N (%)	**No N (%)**		
Learning difficulties				
Yes (n=307)	64 (20.8)	243 (79.2)	**0.013***	2.747
No (n=80)	7 (8.8)	73 (91.3)		(1.206-6.255)
Educational stress				
Yes (n=291)	63 (21.6)	228 (78.4)	**0.003****	3.039
No (n=96)	8 (8.3)	88 (91.7)		(1.399-6.602)
Having part time job				
Yes (n=26)	7 (26.9)	19 (73.1)	0.242	1.710
No (n=361)	64 (17.7)	297 (82.3)		(0.690-4.238)
Being abused by teachers, friends or staff at school				
Yes (n=94)	28 (29.8)	66 (70.2)	**0.001****	2.467
No (n=293)	43 (14.7)	250 (85.3)		(1.426-4.266)
Serious quarrel with teachers, friends or staff at school				
Yes (n=69)	24 (34.8)	45 (65.2)	**<0.001*****	3.075
No (n=318)	47 (14.8)	271 (85.2)		(1.715-5.516)
Having peer supports				
Yes (n=371)	69 (18.6)	302 (81.4)	0.537	1.599
No (n=16)	2 (12.5)	14 (87.5)		(0.355-7.200)
Having close friends				
Yes (n=380)	68 (17.9)	312 (82.1)	0.091	0.291
No (n=7)	3 (42.9)	4 (57.1)		(0.064-1.328)
Truancy				
Yes (n=53)	9 (17.0)	44 (83.0)	0.782	0.897
No (n=334)	62 (18.6)	272 (81.4)		(0.416-1.935)

****P*<0.001; ***P*<0.01;**P*<0.05

4.3.3 Thoughts of hurting oneself or suicide related to their lifestyle and personal factors

There are several more factors than family and schools that is personal factors. Most factors may come from personal factors. This study has listed 6 factors which are significant in this category. Feeling sad and drug addiction are the most highlighted in this category with both 6 times higher risk than those who do not have these factors ($p<0.001$). The second most important factors are having unsolved problems and experienced of drug usage with 3 and 9 times higher risk, accordingly. The last but not least significant factors are feeling sad for the past 2 weeks and use of drug in the past 1 month. Students are at risk of 2 times for both two factors to have thoughts of hurting themselves or suicide (Table 4.14).

Table 4.14 Risk factors of considered hurting oneself or suicide related to personal and lifestyle

Risk factors	**Considered hurting oneself or suicide**		**P-value**	**OR (95% CI)**
	Yes N (%)	**No N (%)**		
Underlying disease				
Yes (n=68)	16 (23.5)	52 (76.5)	0.224	1.477
No (n=319)	55 (17.2)	264 (82.8)		(0.786-2.776)
Money allowance (baht)				
Less than 100 (n=129)	25 (19.4)	104 (80.6)	0.710	1.108
100 or more (n=258)	46 (17.8)	212 (82.2)		(0.645-1.902)
Unable to sleep at night for the past 2 months				
Yes (n=144)	35 (24.3)	109 (75.7)	**0.020***	1.846
No (n=243)	36 (14.8)	207 (85.2)		(1.098-3.105)
Feeling sad and hopeless every day for 2 weeks until one stop doing normal activities				
Yes (n=177)	56 (31.6)	121 (68.4)	**<0.001*****	6.017
No (n=210)	15 (7.1)	195 (92.9)		(3.258-11.110)

Table 4.14 Risk factors of considered hurting oneself or suicide related to personal and lifestyle (cont.)

Risk factors	Considered hurting oneself or suicide		P-value	OR (95% CI)
	Yes N (%)	No N (%)		
Social anxiety				
Yes (n=320)	66 (20.6)	254 (79.4)	0.011	3.222
No (n=67)	5 (7.5)	62 (92.5)		(1.245-8.336)
Hunger				
Yes (n=153)	37 (24.2)	116 (75.8)	**0.016***	1.876
No (n=234)	34 (14.5)	200 (85.5)		(1.117-3.152)
Having problems that cannot be solved				
Yes (n=267)	59 (22.1)	208 (77.9)	**0.004****	2.553
No (n=120)	12 (10.0)	108 (90.0)		(1.316-4.953)
Try to seek for help				
Yes (n=346)	63 (18.2)	283 (81.8)	0.838	0.918
No (n=41)	8 (19.5)	33 (80.5)		(0.405-2.083)
Use of drug in the past 1 month (including alcohol and smoking at least 1 time)				
Yes (n=71)	20 (28.2)	51 (71.8)	**0.019***	2.030
No (n=315)	51 (16.2)	264 (83.8)		(1.117-3.690)
Drug addiction (need to take drug, drink alcohol or smoke regularly)				
Yes (n=28)	15 (53.6)	13 (46.4)	**<0.001*****	6.243
No (n=359)	56 (15.6)	303 (84.4)		(2.818-13.832)
Transgender				
Yes (n=25)	4 (16.0)	21 (84.0)	0.754	0.839
No (n=362)	67 (18.5)	295 (81.5)		(0.279-2.524)
Being with a substance or alcohol abuser				
Yes (n=94)	23 (24.5)	71 (75.5)	0.078	1.653
No (n=293)	48 (16.4)	245 (83.6)		(0.942-2.903)

Table 4.14 Risk factors of considered hurting oneself or suicide related to personal and lifestyle

Risk factors	**Considered hurting oneself or suicide**		**P-value**	**OR (95% CI)**
	Yes N (%)	**No N (%)**		
Use of drug during life time (i.e. methamphetamines (Yaba), ecstasy, 4 × 100, or marijuana)				
Yes (n=381)	4 (66.7)	2 (33.3)	**0.002****	9.373
No (n=6)	67 (17.6)	314 (82.4)		(1.682-52.227)
Exercise				
Yes (n=352)	63 (17.9)	289 (82.1)	0.407	0.736
No (n=35)	8 (22.9)	27 (77.1)		(0.319-1.695)
Sexual intercourse				
Yes (n=15)	5 (33.3)	10 (66.7)	0.126	2.318
No (n=372)	66 (17.7)	306 (82.3)		(0.767-7.006)

****P*<0.001; ***P*<0.01;**P*<0.05

4.3.4 Factors which influence thoughts of hurting oneself and/or suicide regarding their anxiety, depression and suicide attempt

Suicide attempt is a by far the crucial indicator suggesting that the person with who had attempted suicide would have 141 more risk to have thoughts of hurting oneself or suicide. Anxiety and depression is also important risk factors to predict the negative thoughts. Anxiety has a high risk of 6 times more risk than normal people and depression is about 5 times higher risk (Table 4.15).

Table 4.15 Risk factors of considered hurting oneself or suicide related to anxiety, depression and suicide attempt

Risk factors	**Considered hurting oneself or suicide**		**P-value**	**OR (95% CI)**
	Yes N (%)	**No N (%)**		
Anxiety				
Yes (n=110)	44 (40.0)	66 (60.0)	**<0.001*** **	6.173
No (n=277)	27 (9.7)	250 (90.3)		(3.559-10.705)
Depression				
Yes (n=44)	20 (45.5)	24 (54.5)	**<0.001*** **	4.771
No (n=343)	51 (14.9)	292 (85.1)		(2.457-9.266)
Attempted suicide				
Yes (n=23)	22 (95.7)	1 (4.3)	**<0.001*** **	141.429
No (n=364)	49 (13.5)	315 (86.5)		(18.640-1073.077)

****P*<0.001

4.4 Attempted suicide

Two additional aspects which was not original in the objective and did not emphasize is suicidal ideation and suicide attempt. Nonetheless, in this study we found that among 387 students, there are 71 students who have had suicidal ideation both frequent and not frequent and they are 23 students who actually attempted at suicide with not frequent of 19 students and 4 students who have done suicide attempt frequently. As this is a serious problem and need urgent notice, we have expended our research and look through the risk factors of these 23 students who have attempted suicide in this part of the result.

4.4.1 Attempted suicide and risk factors related to demographic and family

The research team have complied demographic and family risk factors from the previous part of the result to identify the risk factors which may result in the suicide attempt. There are two risk factors in this category which are being abused by

family members and serious quarrel with family members. It is implied that individuals who are being abused by family members and have a serious argument are the major factor which lead to anxiety, depression and suicide attempt. Serious quarrel is a strong negative influence showing 1 in 6 students who have serious quarrel with family members have experienced of suicide attempt and 5 times likely to have suicide attempt compared to normal students who does not have serious argument with families. Being abused is another issue which need to be addressed with approximately 4 times more than normal students who does not get abused to have ever commit suicide (Table 4.16)

Table 4.16 Risk factors of suicide attempt regarding demographic and family factors

Risk factors	**Suicide attempt**		**P-value**	**OR**
	Yes N (%)	**No N (%)**		**(95% CI)**
Sex				
Male (n=145)	12 (8.3)	133 (91.7)	0.133	1.895
Female (n=242)	11 (45)	231 (95.5)		(0.813-4.413)
BMI				
Normal (n=267)	14 (5.2)	253 (94.8)	0.385	0.682
Not normal (n=120)	9 (7.5)	111 (92.5)		(0.287-1.623)
Monthly Household (bath)				
Less than 50,000 (n=183)	11 (6)	172 (94)	0.993	1.004
50,000 or more (n=167)	10 (6.0)	329 (94)		(0.415-2.429)
Being with natural parents since youth				
Yes (n=368)	20 (5.4)	348 (94.6)	0.063	0.307
No (n=19)	3 (15.8)	16 (84.2)		(0.082-1.139)
Parents status				
Married (n=318)	16 (5)	302 (95)	0.103	0.469
Not married (n=69)	7 (10.1)	62 (89.9)		(0.185-1.188)

Table 4.16 Risk factors of suicide attempt regarding demographic and family factors (cont.)

Risk factors	Suicide attempt		P-value	OR
	Yes N (%)	No N (%)		(95% CI)
Being abused by family members				
Yes (n=81)	11 (13.6)	70 (86.4)	**0.001****	3.850
No (n=306)	12 (3.9)	294 (96.1)		(1.631-9.086)
Serious quarrel with family members				
Yes (n=96)	14 (14.6)	82 (85.4)	**<0.001*****	5.350
No (n=291)	9 (3.1)	282 (96.9)		(2.235-12.804)
Aggressive toward family members				
Yes (n=95)	11 (11.6)	84 (88.4)	0.007	3.056
No (n=292)	12 (4.1)	280 (95.9)		(1.301-7.175)
Family members understand their problems				
Yes (n=324)	18 (5.6)	306 (94.4)	0.465	0.682
No (n=63)	5 (7.9)	58 (92.1)		(0.244-1.911)
Family members help with their homework				
Yes (n=249)	12 (4.8)	237 (95.2)	0.209	0.585
No (n=138)	11 (8.0)	127 (92.0)		(0.251-1.362)
Parents aware of the participants' leisure				
Yes (n=348)	19 (5.5)	329 (94.5)	0.230	0.505
No (n=39)	4 (10.3)	35 (89.7)		(0.163-1.569)
One or more of the family members used to or suffer from mental health				
Yes (n=28)	3 (10.7)	25 (89.3)	0.268	2.034
No (n=359)	20 (5.6)	339 (94.4)		(0.566-7.313)
Participants are living with family members with mental illness				
Yes (n=15)	1 (6.7)	14 (93.3)	0.904	1.136
No (n=372)	22 (5.9)	350 (94.1)		(0.143-9.041)

****P*<0.001; ***P*<0.01

4.4.2 Attempted suicide related to school environment

School environment is another most part students life especially boarding school students who need to stay at the dormitory after school and back to see their families at most once every week or month or year. It is understandable that these students are likely to have educational stress and problems regarding school life. There is in fact one more factor that was associated to students committing suicide compared to family with two factors. Those factors were; being abused by teacher, friends, or staff at school; serious quarrel with them or having no close friends are the major factors that could result in attempted suicide in the school environment. Serious quarrel with friends and teachers were the most important factor similar to family quarrel, followed by being abused by them and lastly having no friends were all the negative influence leading to suicide attempt. Compared to normal students, there were 5 times more risks for students to commit suicide if they have serious quarrel with teachers and friends and 3 times more risks for students who are being abused (Table 4.17).

Table 4.17 Risk factors of suicide attempt regarding school environment

Risk factors	**Suicide attempt**		**P-value**	**OR**
	Yes N (%)	**No N (%)**		**(95% CI)**
Learning difficulties				
Yes (n=307)	20 (6.5)	287 (93.5)	0.352	1.789
No (n=80)	3 (3.8)	77 (96.3)		(0.518-6.176
Educational stress				
Yes (n=291)	19 (6.5)	272 (93.5)	0.396	1.607
No (n=96)	4 (4.2)	92 (95.8)		(0.533-4.845)
Having part time job				
Yes (n=26)	2 (7.7)	24 (92.3)	0.696	1.349
No (n=361)	21 (5.8)	340 (94.2)		(0.299-6.097)
Being abused by teachers, friends or staff at school				
Yes (n=94)	11 (11.7)	83 (88.3)	**0.007****	3.103
No (n=293)	12 (4.1)	281 (95.9)		(1.321-7.290)

Table 4.17 Risk factors of suicide attempt regarding school environment (cont.)

Risk factors	Suicide attempt		P-value	OR
	Yes N (%)	No N (%)		(95% CI)
Serious quarrel with teachers, friends or staff at school				
Yes (n=69)	11 (15.9)	58 (84.1)	**<0.001*** **	4.836
No (n=318)	12 (3.8)	306 (96.2)		(2.036-11.485)
Having peer supports				
Yes (n=371)	23 (6.2)	348 (93.8)	0.304	0.938
No (n=16)	0 (0)	16 (100)		(0.914-0.963)
Having close friends				
Yes (n=380)	21 (5.5)	359 (94.5)	**0.011***	0.146
No (n=7)	2 (28.6)	5 (71.4)		(0.027-0.799)
Truancy				
Yes (n=53)	3 (5.7)	50 (94.3)	0.925	0.942
No (n=334)	20 (6.0)	314 (94.0)		(0.270-3.287)

****P*<0.001; ***P*<0.01;**P*<0.05

4.4.3 Attempted suicide related to their personal and life style

In this chapter, the category, which should be the most highlighted, is the factors from themselves. Risk factors related to their personal life and life style are total of 6 risk factors leading to serious problem, suicide attempt. The most prominent risk factors are drug addition, feeling sad for at least two weeks, use of drug in the past 1 month and drug experience during life time (p<0.001). Specifically, drug addiction with an increase of 23 times more likely to cause students to commit suicide, it also means 75% of students who they are a current drug additive may result in suicide attempt. The second serious issue that can lead to suicide is using drug during life time which mean they have the experience of drug usage with a high number of 18 times more risk. The third significant factor is sadness or feeling sad in the past 2 weeks until they stops doing normal activities, also a high number of 14 times more likely to commit suicide than normal students without sadness. Use of drug in the past 1 month is also significant with 5 times higher chances. Other factors are hunger and unable to

sleep with both about three times more risk, respectively. There are many serious factors related to personal and life style that lead to suicide attempt in high school especially drug addition, experiencing drug once in their life time, and feeling sadness consistently for the past 2 weeks (Table 4.18).

Table 4.18 Risk factors of suicide attempt regarding life style and personal factors

Risk factors	**Suicide attempt**		**P-value**	**OR**
	Yes N (%)	**No N (%)**		**(95% CI)**
Underlying disease				
Yes (n=68)	6 (8.8)	62 (91.2)	0.269	1.719
No (n=319)	17 (5.3)	302 (94.7)		(0.652-4.535)
Money allowance (baht)				
Less than 100 (n=129)	10 (7.8)	119 (92.2)	0.287	1.584
100 or more (n=258)	13 (5.0)	245 (95.0)		(0.675-3.716)
Unable to sleep at night for the past 2 months				
Yes (n=144)	14 (9.7)	130 (90.3)	**0.015***	2.800
No (n=243)	9 (3.7)	234 (96.3)		(1.180-6.646)
Feeling sad and hopeless every day for 2 weeks until one stop doing normal activities				
Yes (n=177)	21 (11.9)	156 (88.1)	**<0.001*****	14.000
No (n=210)	2 (1.0)	208 (99.0)		(3.235-60.596)
Social anxiety				
Yes (n=320)	20 (6.3)	300 (93.8)	0.577	1.422
No (n=67)	3 (4.5)	64 (95.5)		(0.410-4.930)
Hunger				
Yes (n=153)	15 (9.8)	138 (90.2)	**0.009****	3.071
No (n=234)	8 (3.4)	226 (96.6)		(1.269-7.431)
Having problems that cannot be solved				
Yes (n=267)	20 (7.5)	247 (92.5)	0.055	3.158
No (n=120)	3 (2.5)	117 (97.5)		(0.920-10.839)

Table 4.18 Risk factors of suicide attempt regarding life style and personal factors (cont.)

Risk factors	Suicide attempt		P-value	OR
	Yes N (%)	No N (%)		(95% CI)
Try to seek for help				
Yes (n=346)	20 (5.8)	326 (94.2)	0.694	0.777
No (n=41)	3 (7.3)	38 (92.7)		(0.221-2.737)
Use of drug in the past 1 month (including alcohol and smoking at least 1 time)				
Yes (n=71)	12 (16.9)	59 (83.1)	**<0.001*** **	5.621
No (n=315)	11 (3.5)	304 (96.5)		(2.368-13.341)
Drug addiction (need to take drug, drink alcohol or smoke regularly)				
Yes (n=28)	12 (42.9)	16 (57.1)	**<0.001*** **	23.727
No (n=359)	11 (3.1)	348 (96.9)		(9.090-61.932)
Transgender				
Yes (n=25)	2 (8.0)	23 (92.0)	0.653	1.412
No (n=362)	21 (5.8)	341 (94.1)		(0.312-6.396)
Being with a substance or alcohol abuser				
Yes (n=94)	7 (7.4)	87 (92.6)	0.479	1.393
No (n=293)	16 (5.5)	277 (94.5)		(0.555-3.496)
Use of drug during life time (i.e. methamphetamines (Yaba), ecstasy, 4 × 100, or marijuana)				
Yes (n=6)	3 (50.0)	3 (50.0)	**<0.001*** **	18.050
No (n=381)	20 (5.2)	361 (94.8)		(3.424-95.162)
Exercise				
Yes (n=352)	22 (6.3)	330 (93.8)	0.418	2.267
No (n=35)	1 (2.9)	34 (97.1)		(0.296-17.343)
Sexual intercourse				
Yes (n=15)	2 (13.3)	13 (86.7)	0.217	2.571
No (n=372)	21 (5.6)	351 (94.4)		(0.544-12.145)

***P<0.001; **P<0.01;*P<0.05

4.4.4 Attempted suicide related to anxiety and depression

Anxiety and depression both are the good indicator or predictor of the risk of attempted suicide. Anxiety has 3 times more risk than normal and 6 times more risk with depression. The risk factor of ever consider hurting oneself or suicide is immense, 141 times will result in suicide attempt (see Table 4.19).

Table 4.19 Risk factor of suicide regarding anxiety and depression

Risk factors	**Suicide attempt**		**P-value**	**OR**
	Yes N (%)	**No N (%)**		**(95% CI)**
Anxiety				
Yes (n=110)	13 (11.8)	97 (88.2)	**0.002****	3.578
No (n=277)	10 (3.6)	267 (96.4)		(1.519-8.427)
Depression				
Yes (n=44)	9 (20.5)	35 (79.5)	**<0.001*****	6.043
No (n=343)	14 (4.1)	329 (95.9)		(2.440-14.967)
Considered hurting oneself or suicide				
Yes (n=71)	22 (95.7)	49 (13.5)	**<0.001*****	141.429
No (n=316)	1 (4.3)	315 (86.5)		(18.640-1073.077)

CHAPTER V
DISCUSSION

The study of anxiety and depression is very important, since anxiety and depression can hinder one's activities in their daily life and suppresses individuals from reaching their full potential or may result in depression and cause disabilies. Even the study was performed in the school setting, which may be an issue around the vulnerable group trail; the study has been done under the individual consent. The participation was purely voluntarily. As the study was conducted through an online anonymous survey, thus the survey attendee were not recorded and identified. Therefore, all information from attendee are kept concealed, shared only to the research team and are not reported to the authority, regardless of whether or not they have committed any socially unacceptable behavior. This study is one of the few studies focusing on high school students regarding their mental health. The study aims to know the prevalence and risk factors of possible serious mental health problems among students.

5.1 Demographic characteristics and prevalence

Around 31% of 387 students in these boarding high schools were detected as borderline and clinical risk for anxiety and depression by HADs score. It is implied that 3 in 10 students were experiencing either anxiety or depression during the study period. This study also demonstrates over one fourth (28.4%) of boarding high school students were at risk of anxiety and one tenths (11.4%) were at risk for depression.

The ratio of male and female in the study corresponded to the actual gender ratio of the study population. Male students reported a slightly higher level of depression. Key risk factors were physical and emotional abuse within the household and school, lack of parents and peer support, and high educational stress. Anxiety and depression were revealed to be strong predictors of suicidal ideation. As many as 71

students (18.4%) had seriously considered hurting oneself or suicide, among them 10 students (2.5%) had made a suicidal plan or hurting themselves frequently and 23 students (5.9%) had attempted suicide. There were also 25 students (6.5%) who reported frequent sadness for as long as 2 weeks making them stop doing the normal activities. A majority of students thought that reducing the demands of the academic curriculum, sharing their concerns on an appropriate channel and appointing confidential counselors would help to improve their mental health.

5.2 Prevalence of anxiety and depression compared to previous studies

The comparison to previous studies was not straight forward since the survey tools/methods or study designs were not harmonized across the studies and most of the studies were not the study in the boarding school. The prevalence of abnormal mental health was slightly higher than in previous studies of secondary school students in high economic prosperity Thailand, Bangkok, Chiang Mai, Ubon Ratchathani and Songkla (21.9%) (81). The prevalence of anxiety was similar to the study done about anxiety and depression in high school students in Can Tho, Vietnam (2013). Students are at risk of anxiety of nearly one fourth (22.8%).

The finding was also very similar to the high rate anxiety and depressive disorders in population-based samples from Kessler et al survey which revealing the US, the lifetime prevalence of anxiety disorders and major depression among adults in the United States has been reported to be 28.8 percent and 16.6 percent, respectively (82).

The prevalence of depressive symptoms in this study was quite similar to a study of adolescents (12–17 years) in California, USA, in which approximately 10% of the adolescents reported more than 10 depression symptoms (83). However, the prevalence of depressive symptoms in this study was a lot less than Vietnamese's findings (41.1%) are at risk for depression (42) and another US study reported a higher level of depressive symptoms among adolescent (mean age 19.7) with scoring above 16 and 28 CES-D total score cut offs with 38.5% and 10.4% respectively (84).

The prevalence of psychosocial distress in this study were less compared to the study of secondary analysis of existing data from 2008 Thailand Global School-Based Health Survey (GSHS) (2012), 16.5% reported sadness but this study has a lot higher anxiety compared to the same study of 6.5% (5). The socio-economic development status in the location of this study (Pathumthani, Chunburi, and Phetchaburi provinces), is much lower than in the USA or in Bangkok, which may explain the higher levels of anxiety and depressive symptoms. Regional and national differences in the mental health scores of adolescents and children can probably be clarified by many factors including individual, environmental, familial, and cultural. Some examples of environmental factors, such as illness, traumatic events, and poverty, have been consistently related to decline mental health problems among young people around the world (85).

The concurrent of anxiety and depression is our study was 8.8%. The co-finding of anxiety together with depressive disorders is highly prevalence in many studies. The impact of the these two disorders co- finding is higher, individuals affected by both disorders concurrently have generally shown greater levels of functional impairment, reduced quality of life, and poorer treatment outcomes compared with only one disorder (82, 86, 87).

5.3 Risk factors of anxiety and depression compared to previous study

5.3.1 Demographic risk factors

The results of this study revealed one potentially important difference between gender on the prevalence of depression among Thai boarding high school students and general population. In this study, gender was not significantly associated with overall rates of anxiety and depression while the cross-national epidemiology of DSM-IV major depressive study in general population (2011) found that female: male ratio was about 2:1 (88). Another study from Vietnam also shows the same trend with cross-national study, female students had a significantly higher risk of anxiety and depression (42). However, this study was similar to the other study, undertaken in 2006, of Da Nang and Khanh Hoa provinces, found that among Vietnamese youth

gender was not influence the overall rates of anxiety and depression. It is important to note that this study also conducted three groups of depression (normal, borderline, clinical risk), the result was slightly different between female and male (0.046, $p<0.05$) with male has slightly higher risk than female. In conclusion, present study shows a different gender trend with prevalence estimates of anxiety and depression among adolescents in boarding school, Thailand and in other studies.

5.3.2 Possibly reasons for male's depression

In order to identify and treat their depression, it is important to understand how men are brought up in our society. First of all, men are usually expected to be successful. These cultural expectation are sometimes a mask of their aggression and anger instead of showing the true symptoms of depression. It is more acceptable to express a "tough guy" behavior (89). Secondly, men tends to depends on drugs, alcohol or other risk behavior to suppress their depressive feelings as also shown in the result of Table 4.11 in this study, use of drug in the past 1 month (OR=2.238, 95% CI=1.329-3.770) drug addiction (OR=3.288, 95% CI=1.473-7.338), use of drug during life time (OR=8.607, 95% CI=0.995-74.418). It is likely that alcohol might be the main cause of depression in men in this group. Other problems may include having sad feelings (OR=1.759, 95% CI=1.161-2.665) and hunger (OR=2.849, 95% CI=1.859-4.368) which shown to be more in the male group.

5.3.3 Family risk factors

There are six positive findings of risk factor that causes anxiety and depression involving family factor. The major cause of anxiety and depression are from their bad experience from early age. Being abused physically or emotionally by parents, or other adults in the household, serious quarrel with parents or other adults in the household, aggressive behavior toward friends or families. Consistent with the study by Springer et al and Kessler studies, childhood abuse is a positive association to anxiety disorders, aggression, hostility, fear, anger, personality disorders and significant impacts on early onset and recurrent depression (90, 91). Moreover, Lindert et al, also state that in adults exposed to childhood sexual and physical abuse, reported of high levels of depression, anxiety and distress (92).

There are three protective factors found from this study which are parents understand problems and anxieties, parents help with homework, parents know what the participant are doing in their free time. Parents can help to reduce the likelihood of developing a mental illness risk, for example, having good attachment to parents or carers, strong family values and having caring relationship with parents or adult are the key protective factors that influence children's mental health and builds resilience to help children face with difficulties (93).

However, there are some negative finds which is exited in other study but are not significant in this study such as parents or relatives used to suffer from depression and living with a depressed or mentally ill person. Boarding school probably a confounding factor in this research. The students normally can meet their parents during weekends or summer to know well about their relatives or parents having a mental illness, or they could be too young to know. Thus the answer from students can be underestimated.

5.3.4 School risk factors

There are four positive finding in regard to school risk factors. Frist, learning difficulties and educational stress. The high expectation from parents and teachers can put a lot of stress to adolescence when they are still in a transition from children to adult (94). This study found that there is a correlation between anxiety and depression, and learning difficulty and educational stress. A study by Satvinderpal found that with regard to high and low level of academic stress, academic stress put negative impact on the mental health of the adolescents (94).

Second, being abused physically or emotionally by teachers or other staff members at school and serious quarrel with teachers, friends or other staffs in the school in the past 12 months are another significant point to discuss. Bullying has big effects on children's mental health and emotional well-being. It causes self-harm or self-isolation, high disruption to their ability to learn and engage with school, and their overall relationships (95). This study is consistent with several studies in regard to the significant level of emotional abused at school causes mental health problems. Other studies found that there are many negative consequences to bullying. Psychological squeal may include social difficulties, internalizing symptoms, anxiety and depression,

suicidal ideation, and eating disorders (96) causes long-term adverse effect (97) and increased risk of psychiatric hospitalization because of mental health illnesses (98).

In this study, protective factor also present in those who have at least one good friend. A prospective longitudinal study done by Collishaw, in 262 families suggested that good-quality relationship with friends and family is associated with mental health resilient (99). Similarly another study done by Layous et al, found that peer acceptance can bring about well-being. Practicing positive relationship reported feeling more grateful, more connected to others (100).

5.3.5 Personal and lifestyle risk factors

There are total of five significantly important factor in regard to personal factor. Firstly, unable to sleep is one of the predictor of anxiety and depression. The current study is similar to a study in Japan about importance of sleep in mental health. The research suggested that sleep loss and sleep insufficiency can cause depression, mental disorders and be impaired cognitive function and performance (101). Study about sleep disturbance by Anderson and Bradley, also suggested the association between mental health disorders and neurodegenerative disorders (102).

Secondly, hunger in school-age children. These children are often from low-level income families. This research found the association between anxiety and depression among student with frequent staving. Study about its impact on children's health on hunger also found that young children with severe hunger scores had internalizing behavior problems when compared with children with no hunger and parent-reported anxiety scores that were more than double the scores for children with no hunger and significantly higher chronic illness counts (3.4 vs 1.8) (103).

5.4 Suicidal ideation and suicide attempt

Suicide ideation is an important issue to address due to there is a high probability that the person with suicide thoughts may result in an actual suicide. The prevalence of hurting oneself or suicidal thoughts in the past 12 months in this study population is 18.4% and suicide attempt is 5.9%. This rate seems to be higher than in the secondary analysis of existing data from 2008 Thailand Global School-Based

Health Survey (GSHS) (8.8% suicidal thoughts) (5), central of Thailand study in 2011 (4.6% suicide ideation) (52) and in Bangkok 2001 study (4% suicidal thoughts) (104). The current study also shows a higher number of students with suicide thoughts compared to other countries in this region, Hanoi studies (10.6% suicidal thoughts) and Ho Chi Minh City (6.3% suicidal thoughts and 4.6% suicidal plans), and among Malaysian adolescent (6.2% with suicide ideation) (105). This study, however, was similar to a study in Guyana (18.4% seriously considered committing suicide) (106), and lower than in Zambia (31.3% suicide ideation) (107) and in rural Uganda (21.6% seriously considered committing suicide) (108), and in urban Peru (26.3% suicidal thoughts) (109).

The prevalence of suicide attempts (5.9%), was similar in Ho Chi Minh City (5.8%), but lower than in Hanoi (9.2%) (42) and in Peru (17.5%) (109). Chi-square analysis in this study shows that having quarrel with teachers, friends or family members, being sad or hopeless, drug problems (drug additive, current drug usage and use of dangerous drug at least once in their lifetime), anxiety and depression, having thoughts of suicide were significantly related to increased risk of suicidal ideation, while having quarrel with teachers, friends or family members, aggressive behavior, being abused by family and people at the school, sad or hopeless, drug additive, anxiety and depression were associated with suicide attempt. Consistent with the previous researches (5, 42, 105, 109, 110).

This study shows that individual's lifestyle has great impact on suicidal thoughts or suicide attempt when compared to families and schools. It is suggested that many of mental health factors mainly comes from drug problems, sadness and hopeless. Although, we know there are several factors from their lifestyle, it is uncertain which of the factors have more impact on the individual to have such thoughts. The rise of depression and suicide in adolescent, Thailand maybe due to personal depression. There can be many causes for depression and combined with mental imbalances, if left untreated, it can result in suicide (111). Educational stress and learning difficulties are both not the factors for attempted suicide but frequently occur to be a risk factor in other categories including anxiety, depression, and having ideation of hurting oneself or suicide. Furthermore, there was 1 student who claimed that he or she have never had thoughts of hurting oneself or suicide, but actually have

had suicide attempt in the past 12 months. Two assumption maybe because he or she misinterpreted the question or tried to suicide out of drug or alcohol. There are 31% of students who have suicide thoughts and actually tried commit suicide which means 1 out of 3 people who have suicide thoughts may result in actual suicide attempt.

Another reason for an increase in number of suicidal thoughts or suicide attempt may be the lack of personal for mental health consultant and stigma to those who are being treated by them. There are small number of psychiatrist, according to the public health target, there need to be one psychiatrist for every 100,000 people. In reality, there are only one licensed psychiatrist for every 250,000 people in Thailand (111).

5.5 Comment and suggestion from students

Most participants made the request to receive a copy of their own test result. Regardless, whether or not they are at risk to have depression and/or anxiety or they are at a critical level of depression and anxiety. Students who felt concern about their own health are more likely to either have risk of developing depression and anxiety or already at critical level. This considers a good sign, as the students are self-aware and concern about themselves and wish to seek a solution from this study. One student in particular asked, whether there will be any assist and prevention offer to those in need. It means the study has successfully attracted interests from the participants and proves people do agree with the meaning to conduct this research. However, the objective of this study is not about making changes on the current practices, but to support and propose the need to revise the current policies to improve awareness on the importance to prevent mental health from causing in school.

In additionally, there were another student came to express his unhappiness. Although, he did not share the reason for his unhappiness, the result shows he has a minor depression at borderline scale and clinical consideration with anxiety.

The above shows a reflection of effectiveness for this questionnaire and the students are aware and concern with their mental health status

5.6 Limitation

5.6.1 Before conducting the study

5.6.1.1 Important of assessment

The process of determining if a student is or is not suffering from depression and anxiety requires a meaningful screening assessment and must be tested beforehand. An assessment of adolescent mental illness that will need an attention toward a wide range of variables in order to maximize accuracy of the information collected. Fortunately, the existing tests designed from Minister of Public Health which is already proven, a well-researched screening tool that are appropriate for use with high school students suspected of mental health disorders. However, this research does not cover all risk factors due to the limitation of the assessment tool. Hence according to the research literature, the researcher team designed risk factor questionnaire to focus on the factors, which are likely to act as the main sources of the mental health problems among this group of students.

5.6.1.2 Setting issues

There were multiple limitations to this study. Implementing research in schools can create challenges in the school setting such as systemic, practical and methodological barriers (112). Conducting a research when there are school sessions is a barrier, as this could disrupt teachers and students and potentially change the results. Due to a cross-sectional nature of this research aimed to minimize and create less interference with their daily activities. Moreover, the study needed to obtain signatures on the consent forms and the informed assent can also be a burdensome. The parents may reject to participate even with the students' permission. Most importantly, the schools often deny participating due to their busy schedules.

5.6.1.3 Student Issues

Students who do not wish to participate may stem from worries that doing so may label the school as having many students with mental health problems. No school administrator would want to place a spotlight on a student health problem that can easily be misinterpreted by the community as a sign that the school has many stress issues. In addition, there may have been a recall issue since students were asked of their past behaviors and attitudes toward what they can remember. It

can be difficult for students to distinguish their feelings, one example is because the presentation of the illness can be different at times so they may not be well aware of the problems or overact of what they are feeling at the moment. Therefore, it may be difficult to differentiate distress from disorder. Further, this research were conducted specifically students with age between 14 to 18 years old. There may be some minor terms differences between adolescence and adults. In addition, the students in this age are likely to involve in the consuming alcohol from time to time or if they are using drugs, there may be some effects of those substances and can hinder with identifying behaviors. And most importantly, if the students are in fact have co-existing mental illness prior to our diagnosis, the illness itself can interfere with the study. Thus, having such confounding factors can be challenging to identify mental illness in children and youth.

5.6.2 Overall study limitation

Several limitations of the study need to be considered. First, the HAD scale, like other screening instruments, cannot be viewed as a diagnostic tool but only as a screening instrument to identify members of groups at risk of anxiety and depression. Second, using the HADS provides higher estimates of depression incidence than the estimates acquired using a diagnostic test, for example, the PRIME-MD (113). Third, due to the fact that the data set is cross-sectional, it was only illustrate contemporary relationships between the associations. Because of the time limitation, we cannot follow them through to see if the results are consistence, therefore the associations may be overestimated the facts or underestimated them.

Fourth, this study use self-administration method as an assessment tool; this may lead to overestimation of the strength of the association between some of the socio-demographic variables and depression (114). Furthermore, this is an online survey, given the freedom to do the survey in their free time or any time after school. This can lead to a low respond rate. However, the study was able to include more students from other similar classes. Thus the low non-response bias should be very small.

Fifth, the study population may not be representative of all youth of secondary school age throughout the country, given that some youth do not attend

secondary school and the study was conducted in only three schools. Another limitation is that the questions that students are being asked did not specified how serious is their suicide attempt which can be addressed in the next study. Finally, the word “hurting oneself” may have resulted in an overestimate of the burden of suicide ideation because does not represent suicide ideation.

CHAPTER VI
CONCLUSION AND RECOMMENDATION

The rates of anxiety and depression found ascertain to the findings of other studies that the prevalence is high among Thai high school students. Research shows that anxiety and depression have been correlated to many major factors in three domains (family, school and personal). Emotional and physical abuse within the family/school, educational stress and drug usage were the main predictors of anxiety and depressions. Moreover, the finding of this study could demonstrate higher risk of both suicidal attempt and suicidal idea and the major risk factors associated.

Based on this study finding, anxiety, depression and suicide are caused by multifactor. This study used a screening tool (HADS), there may be necessary to other tools. Further studies should also focus on drug problems and conduct the study under other type of school. Finally, longitudinal studies are important to understand etiological pathway from risk factors to mental health and suicide prevention.

The most doable strategy in promoting mental health and decreasing mental health problems among high school students in Thailand today might be the development of a website to provide psycho-educational interventions designed to meet the needs of Thai youth. Teachers and parents should also participate in psychological education programs to raise awareness of how certain efforts with young children (i.e. harsh punishment, and pressure to perform), may be counterproductive. This may help to address some of the issues related to teacher and parent attitudes, and may allow for discussion of abusive vs. effective methods of discipline. Additionally, hour of study should also be addressed; there should be a balance between extra curriculum and intense study, to reduce the academic stress among adolescents in order to keep them in sound mental well-being. School should not over expect beyond the capabilities of the child and should not over burden the students with work.

To conclude, school can be an effective place for mental health intervention by creating a non-stigma environment, for students to be able to express

themselves and discuss. School should be mindful about students' mental health problems, provide effective listening, recognition the students need, encourage good relationship with friends, build protective factor and reduce risks. Ideally, school should establish school-based counseling services for students, probably by collaborating with volunteers, or local universities, private sector and hospital.

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APPENDICES

APPENDIX A
INSTRUMENTS IN THIS STUDY

Study on the surveillance for depression and anxiety disorders among boarding high school students

Part 1. Demographic questions (Page 1)

Part 2. Risk factor questionnaires (Page 2-3)

Part 3. Prevalence questionnaires (HADS score) (Page 4)

Participant/respondent study number: |__|-|__|__|__|

Instruction

- The research aims to investigate mental health of high school students and risk factors
- It is self-administered questionnaire
- They are one best choice answer questions otherwise indicated. Please ✓ for your chosen choice for fill in space provide.
- The information provided in this study will be kept confidential

Part 1. Demographic Questions

Today's date: (dd/mm/yyyy) [__|__]-[__|__]-[__|__|__|__]

Date of birth: [__|__]-[__|__]-[__|__|__|__] Gender: ☐Male ☐Female

Grade: ☐10 ☐ 11 ☐ 12 Class: [__|__|__]

Weight: _____kg. Height: _____ cm.

Hometown: ☐Chon Buri ☐ Phetchaburi ☐Pathum Thani

☐Others, specify_____

Father's occupation: ☐ Personal business/sales

☐Government and public administration ☐ Company employee

☐ Homemaker ☐ Retired ☐Others, specify.....

Mother's occupation: ☐ Personal business/sales

☐ Government and public administration ☐ Company employee

☐ Homemaker ☐ Retired ☐Others, specify.....

Father's degree of education: ☐Vocational Certificate ☐Diploma

☐Bachelor degree ☐Master's Degree ☐Doctoral degree

☐Do not know ☐Others, please specify.....

Mother's degree of education: ☐Vocational Certificate ☐Diploma

☐Bachelor degree ☐Master's Degree ☐Doctoral degree

☐Do not know ☐Others, please specify.....

Parental marital status: ☐ Married ☐ Divorced

☐ Separated ☐ Living together ☐ Widowed ☐Other, specify_____

Before you come to this school, are you growing up and living with both natural parents: ☐ Yes ☐ No, specify_____

Monthly household income: ☐ Less than 10,000 Baht ☐10,000-29,999 Baht

☐ 30,000-49,999 Baht ☐ 50,000-79,999 Baht ☐70,000-99,999 Baht

☐ 100,000-299,999 Baht ☐300,000-499,999 Baht ☐ More than 500,000 Bah

☐ Do not know ☐ Others, specify.....

Underlying disease or birth defect(s): ☐Yes, please specify_____

☐ No Nationality: ☐ Thai ☐ Others, specify _____

Daily school allowance: ☐Less than 100 Baht ☐100-299 Baht ☐300-499 Baht ☐500 or more Baht

Part 2. Risk factors please check ✓each of the following factors according to ***frequency of*** what you have experienced.

Definitions

Abuse is the improper usage or treatment of an entity, often to unfairly or improperly gain benefit. Abuse can come in many forms, such as: physical or verbal maltreatment, injury, assault, violation, rape, unjust practices; crimes, or other types of aggression

Substance abuse refers to the harmful or hazardous use of psychoactive substances, including alcohol and illicit drugs.

Current tobacco use is defined as smoking cigarettes and/or use of other tobacco products in the past 1 month

Frequency guide Usually = >80 %, Often = 50-80%, Sometimes = 20-50%, Seldom = >0-20%, Never = 0%

	Question	Never	Seldom	Sometimes	Often	Usually
1	During the past 12 months, how often you could not sleep at night?					
2	During the past 1 month, how often did your parents or guardians understand your problems or worries?					
3	Difficulty learning lessons in class					
4	Feel of educational stress at school or cram school					
5	During the past 1 month, how often did you go hungry because there was not enough food?					
6	Being abused mentally, physically or verbally by your teachers or other staff members at school					
7	Being abused mentally, physically or verbally by your parents or other adults in the household					
8	Serious quarrel with teachers, friends or other staff at school in the past 12 months					
9	Serious quarrel with family members in the past 12 months					
10	During the past 1 month, how often did your parents or guardians check to see if your homework was done?					
11	During the past 1 month, how often did your parents or guardians really know and understand what you were doing with your free time?					

12	How often do you have problem that you cannot solve					
13	How often do you try to seek for help when you have a problem					
14	During the past 1 month, on how many days did you have at least one drink containing alcohol or other substances such as smoke, drugs?					
15	Substance dependent such as the need to take drugs frequently, drink alcohol or smoke regularly which are harmful to the body					
16	Have you bully your friends, family members or others in the past 1 month?					
17	During the past 12 months, did you ever seriously consider attempting to hurt yourself or suicide?					

18. Do you consider yourself Gay, Lesbian, Transgender or Bisexual?

☐ Yes ☐ No ☐ Not sure

19. Living with or close to a substance or alcohol abuser

☐ Yes, how does the person relate to you, please specify ☐ Friend ☐ Senior ☐ Others, specify_____ and what substance does the person use ☐ Alcohol ☐ Marijuana (กัญชา) ☐ Others, specify_____

☐ No, I don't live with or close to a substance abuser

Definition A person with depressed mood includes feeling sad, and having less interest or pleasure in things that are normally enjoyable, low self-esteem, guilt, tiredness, anxiety or pessimism, and sometimes thinking about hurting oneself or suicide.

20. Living with a depressed or mentally ill person

☐ Yes ☐ No

21. Have parents or relatives who have suffered or used to suffer from depression

☐ Yes ☐ No

22. Academic performance from the last semester

☐ GPA 3-4 ☐ GPA Less than 3 but more than 2 ☐ Less than 2

Definition A close friend is a friend that you can talk about anything without worrying that they will judge you. They will always be there for you, and you feel so comfortable at each other's houses that it is like they are a second home to you.

23. Do you have any close friends?

☐ Yes ☐ No

24. If yes in 23, please fill in 24.1-24.4 questions about your close friend(s)

24.1 Age: ☐ Older ☐ Same age ☐ Younger

24.2 Sex: ☐ Male ☐ Female

24.3 Same school: ☐ Yes ☐ No

24.4 What activities do you prefer to do together: ☐ Chat ☐ Sport

☐ Music ☐ Game ☐ Travel ☐ Study ☐ Others, specify.....

25. During the past 1 month, on how many days did you miss classes or school without permission?

☐ 0 times ☐ 1 or 2 time(s) ☐ 3 or more times ☐ 5 or more times ☐ 10 or more times

Definition Bullying occurs when a student or group of students say or do bad and unpleasant things to another student. It is also bullying when a student is teased a lot in an unpleasant way or when a student is forced to withdraw from certain activities on purpose.

26. During your life, how many times have you used drugs, such as methamphetamines (Yaba), ecstasy, 4 × 100, or marijuana?

☐ 0 times ☐ 1-3 time(s) ☐ 4-9 times ☐ 10 or more times

Definition Physical activity is defined as any activity that increases heart rate and makes one out of breath some of the time. Physical activity can be done in sports, playing with friends, or walking to school. Some examples of physical activity are running, fast walking, biking, dancing, and football. **Physical education or gym classes are not to be included.**

27. During a typical or usual week, on how many days are you physically active for a total of at least 60 minutes per day?

☐ 0 days ☐ 1-2 day(s) ☐ 3-4 days ☐ 5-6 days ☐ Everyday

28. How old were you when you had sexual intercourse for the first time?

☐ I have never had sexual intercourse ☐ <12 ☐ 13-15 ☐ 16 or older

Part 3. Hospital Anxiety and Depression Scale (HADS)

Instructions: Emotions play an important part in most illnesses. This questionnaire is designed to mental health check for self-assessment. Read each item and place a firm tick in the box opposite the reply which comes closest to how you have been feeling in the past week. Don't take too long over your replies: your immediate reaction to each item will probably be more accurate than a long thought out response.

1. I feel tense or 'wound up': □ Most of the time □ A lot of the time □ From time to time, occasionally □ Not at all	6. I feel cheerful: □ Not at all □ Not often □ Sometimes □ Most of the time	11. I feel restless as if I have to be on the move: □ Very much indeed □ Quite a lot □ Not very much □ Not at all
2. I still enjoy the things I used to enjoy: □ Definitely as much □ Not quite so much □ Only a little □ Not at all	7. I can sit at ease and feel relaxed: □ Definitely □ Usually □ Not often □ Not at all	12. I look forward with enjoyment to things: □ As much as I ever did □ Rather less than I used to □ Definitely less than I used to □ Hardly at all
3. I get a sort of frightened feeling like something awful is about to happen: □ Very definitely and quite badly □ Yes, but not too badly □ A little, but it doesn't worry me □ Not at all	8. I feel as if I am slowed down: □ Nearly all the time □ Very often □ Sometimes □ Not at all	13. I get sudden feelings of panic: □ Very often indeed □ Quite often □ Not very often □ Not at all

4. I can laugh and see the funny side of things: □ As much as I always could □ Not quite so much now □ Definitely not so much now □ Not at all	9. I get a sort of frightened feeling like 'butterflies in the stomach': □ Not at all □ Occasionally □ Quite often □ Very often	14. I can enjoy a good book or radio or TV program: □ Often □ Sometimes □ Not often □ Very seldom
5. Worrying thoughts go through my mind: □ A great deal of the time □ A lot of the time □ From time to time but not too often □ Only occasionally	10. I have lost interest in my appearance: □ Definitely □ I don't take as much care as I should □ I may not take quite as much care □ I take just as much care as ever	15. Question, suggestion or comment …… …… …… …… …… …… …… ……

การสำรวจความชุกของโรควิตกกังวล ภาวะซึมเศร้า และปัจจัยที่ก่อให้เกิดความเสี่ยงที่เกี่ยวข้องของกลุ่มนักเรียนประจำระดับมัธยมศึกษาตอนปลายในสามจังหวัดของประเทศไทย: การศึกษาแบบภาคตัดขวาง

ส่วนที่ 1. คำถามทั่วไป (หน้า 1)

ส่วนที่ 2. คำถามความเสี่ยง (หน้า 2-3)

ส่วนที่ 3. แบบสอบถาม HADS (หน้า 4)

<u>คำอธิบาย</u>

- งานวิจัยนี้ทำเพื่อสำรวจสุขภาพจิตของนักเรียน และหาสาเหตุสำคัญของที่ทำให้เกิดความเครียดในกลุ่มนักเรียน
- เป็นแบบสอบถามตอบด้วยตนเอง
- ตอบคำถามที่ตรงกับตัวเองมากที่สุด หรือตอบที่ระบุไว้ โดยทำเครื่องหมาย ✓ ในช่องที่กำหนด
- ข้อมูลทั้งหมดที่ให้ไว้ในการศึกษาครั้งนี้จะถูกเก็บเป็นความลับ
- น้องสามารถไม่ตอบคำถามข้อใดก็ได้

<u>ส่วนที่ 1. คำถามทั่วไป</u>

วันที่วันนี้ (วัน/เดือน/ปปปป): [__|__]-[__|__]-[__|__|__|__]

อายุ:..... ปี **เพศ:** ☐ ชาย ☐ หญิง

ชั้นมัธยม: ☐ 4 ☐ 5 ☐ 6 **ห้อง:** [__|__]

น้ำหนัก: .....ก.ก. **ส่วนสูง:** ..... ซม.

ภูมิลำเนา: ☐ ชลบุรี ☐ เพชรบุรี ☐ ปทุมธานี ☐ กทม ☐ อื่นๆ โปรดระบุ.....

อาชีพหลักของพ่อ: ☐ ค้าขาย/ธุรกิจส่วนตัว ☐ รับราชการ ☐ พนักงานบริษัท

☐ พ่อบ้าน ☐ เกษียณ ☐ อื่นๆ โปรดระบุ.....

อาชีพหลักของแม่: ☐ ค้าขาย/ธุรกิจส่วนตัว ☐ รับราชการ

☐ พนักงานบริษัท ☐ แม่บ้าน ☐ เกษียณ ☐ อื่นๆ โปรดระบุ.....

ระดับการศึกษาของพ่อ: ☐ ปวช/ปวส ☐ ม.6 ☐ ปริญญาตรี

☐ ปริญญาโท ☐ ปริญญาเอก ☐ ไม่ทราบ ☐ อื่นๆ โปรดระบุ.....

ระดับการศึกษาของแม่: ☐ ปวช/ปวส ☐ ม.6 ☐ ปริญญาตรี

☐ ปริญญาโท ☐ ปริญญาเอก ☐ ไม่ทราบ ☐ อื่นๆ โปรดระบุ.....

สถานภาพการสมรสของผู้ปกครอง: ☐ แต่งงาน ☐ หย่าร้าง ☐ แยกกันอยู่
☐ อยู่ด้วยกัน ☐ หม้าย ☐ อื่นๆ, ระบุ……

ก่อนเข้าโรงเรียนนี้ท่านอาศัยอยู่กับพ่อแม่แท้ๆ ตั้งแต่เกิด:
☐ ใช่ ☐ ไม่ใช่, ระบุ อาศัยอยู่กับ……

จำนวนพี่และน้องในครอบครัว:_____คน

รายได้รายเดือนของครอบครัว:☐ น้อยกว่า 10,000 บาท ☐ 10,000-29,999 บาท
☐ 30,000-49,999 บาท ☐ 50,000-79,999 บาท ☐ 70,000-99,999 บาท
☐ 100,000-299,999 บาท ☐ 300,000-499,999 บาท ☐ มากกว่า 500,000 บาท
☐ ไม่ทราบ ☐ อื่นๆ โปรดระบุ.....

โรคประจำตัวหรือข้อบกพร่อง: ☐ มี โปรดระบุ…… ☐ ไม่มี

สัญชาติ: ☐ ไทย ☐ อื่นๆ โปรดระบุ ……

เงินมาโรงเรียนต่อวัน: ☐ น้อยกว่า 100 บาท ☐ 100-299 บาท
☐ 300-499 บาท ☐ 500 บาทหรือมากกว่า

ทำงานหารายได้พิเศษระหว่างเรียนหรือไม่: ☐ ใช่ ☐ ไม่ใช่

งานอดิเรก: _____

<u>ส่วนที่ 2. ปัจจัยเสี่ยง</u> โปรดทำเครื่องหมาย ✓ ในแต่ล่ะข้อต่อไปนี้ตาม ความถี่ ของสิ่งที่คุณมีประสบการณ์

ถูกทำร้าย คือ การกระทำหรือปฏิบัติไม่เหมาะสม มักจะไม่เป็นธรรมหรือไม่ถูกต้อง หรือไม่เกิดประโยชน์ การละเมิดสามารถกระทำในหลายรูปแบบ เช่น การกระทำผิดทางกาย วาจา บาดเจ็บ ข่มขืน ไม่เป็นธรรม อาชญากรรม หรือการรุกรานอื่นๆ

กลั่นแกล้ง ในที่นี้หมายถึง เมื่อนักเรียนหรือหลุ่มนักเรียนพูดหรือ ทำสิ่งที่ไม่ดีและไม่พอใจให้กับนักเรียนคนอื่น นอกจากนี้มีการข่มขู่ในทางที่ไม่พึ่งประสงค์หรือถูกบังคับให้ต้องถอนตัวจากการทำกิจกรรมใดกิจกรรมหนึ่งโดยเจตนา

สารเสพติด หมายถึง การใช้ที่เป็นอันตรายของสารออกฤทธิ์ทางจิตรวมทั้งเครื่องดื่มแอลกอฮอล์ และสารเสพติด

การใช้ยาสูบในปัจจุบัน หมายถึง การใช้ยาสูบหรือผลิตภัณฑ์ยาสูบอื่นๆ ใน 1 เดือนที่ผ่านมา

<u>ความหมายของความถี่</u> เป็นประจำ = >80%, บ่อยๆ = 50-80%, บางครั้ง 20-50%, นานๆครั้ง 0-20%, ไม่เคย = 0%

	คำถาม	ไม่เคย	นานๆ ครั้ง	บางครั้ง	บ่อยๆ	เป็นประจำ
1	ไม่สามารถนอนหลับได้ในเวลากลางคืนใน 2 เดือนที่ผ่านมา					
2	12 เดือนที่ผ่านมา เคยรู้สึกเศร้า สิ้นหวัง เกือบทุกวันเป็นเวลา 2 สัปดาห์หรือมากกว่า ที่ทำให้หยุดทำกิจกรรมตามปกติหรือไม่					
3	ฉันรู้สึกกังวลก่อนเวลาอันควร เมื่อต้องทำกิจกรรมหรือปรากฏตัวต่อหน้าผู้อื่น เช่น ต้องนำเสนองาน เข้าโรงเรียนวันแรก เจอเพื่อนใหม่					
4	มีความยากลำบากในการศึกษา เรียนรู้บทเรียนในชั้นเรียน					
5	มีความเครียดจากการเรียนในโรงเรียน หรือสถานกวดวิชาเพิ่มเติม					
6	รู้สึกหิว เพราะไม่มีอาหารเพียงพอรับประทานในช่วง 1 เดือน ที่ผ่านมา					
7	ถูกทำร้าย หรือถูกกลั่นแกล้งทางร่างกาย หรือจิตใจโดยคำพูดที่รุนแรงโดยครูหรือเจ้าหน้าที่อื่นๆ ในโรงเรียน					
8	ถูกทำร้าย หรือถูกกลั่นแกล้งทางร่างกาย หรือจิตใจโดยคำพูดที่รุนแรงโดยพ่อแม่หรือผู้ใหญ่คนอื่นๆ ในครัวเรือน					
9	มีปัญหาการทะเลาะกันรุนแรงกับครู เพื่อน หรือเจ้าหน้าที่อื่นๆ ในโรงเรียนในรอบ 2 เดือนที่ผ่านมา					
10	มีปัญหาการทะเลาะกันรุนแรงกับสมาชิกในครอบครัวในรอบ 12 เดือนที่ผ่านมา					
11	เคยแสดงอาการก้าวร้าว ทำร้ายผู้อื่น เพื่อนคนอื่นๆ หรือคนในครอบครัว ในช่วง 1 เดือน ที่ผ่านมา					
12	พ่อแม่หรือผู้ปกครองเข้าใจปัญหาหรือความกังวลของคุณ ในช่วง 1 เดือนที่ผ่านมา					

13	พ่อแม่หรือผู้ปกครองช่วยหรือตรวจสอบว่าการบ้านของคุณทำเสร็จแล้วหรือไม่ ในช่วง 1 เดือนที่ผ่านมา					
14	พ่อแม่หรือผู้ปกครองมีความเข้าใจในตัวคุณว่าคุณใช้เวลาว่างทำอะไรอยู่ ในช่วง 1 เดือน ที่ผ่านมา					
15	มีปัญหาที่ไม่สามารถแก้ไขได้					
16	การพยายามขอความช่วยเหลือของคุณเมื่อมีปัญหา					
17	1 เดือนที่ผ่านมา บ่อยครั้งแค่ไหนที่เพื่อนส่วนใหญ่ในโรงเรียนใจดีและให้การช่วยเหลือ					
18	ดื่มเครื่องดื่มแอลกอฮอล์หรือใช้สารเสพติด ในช่วง 1 เดือน ที่ผ่านมา					
19	มีการติดสารให้โทษต่อร่างกาย เช่น ต้องกินยาบ่อยๆ หรือดื่มเครื่องดื่มที่มีแอลกอฮอล์เป็นประจำ หรือติดการสูบบุหรี่					
20	มีความคิดที่อยากจะทำร้ายตัวเอง หรือฆ่าตัวตายในรอบ 12 เดือนที่ผ่านมา					
21	ช่วง 12 เดือนที่ผ่านมา คุณมีความพยายามอย่างจริงจังที่จะฆ่าตัวตาย					

22. มีความรู้สึกรักร่วมเพศ หรือคิดว่าเป็นเพศที่สามหรือไม่

☐ เป็น ☐ ไม่เป็น ☐ ไม่แน่ใจ

23. คลุกคลีใกล้ชิดกับผู้ที่ใช้สารเสพติดหรือดื่มเครื่องดื่มที่มีแอลกอฮอล์หรือไม่

☐ ใช่ โปรดระบุว่า มีความสัมพันธ์เกี่ยวข้องเป็น: ☐ เพื่อน ☐ รุ่นพี่ ☐ อื่นๆ โปรดระบุ.....

และเป็นสารเสพติดชนิด: ☐ แอลกอฮอล์ ☐ กัญชา ☐ อื่นๆ โปรดรุบุ.....

☐ ไม่อยู่รวมกับผู้ใช้สารเสพติดหรือดื่มเครื่องดื่มที่มีแอลกอฮอล์

คนที่มีอาการซึมเศร้า คือคนที่รู้สึกเศร้า มีความสนใจต่อสิ่งที่เคยสนใจน้อยลง ความนับถือตนเองต่ำ รู้สึกผิดตลอดเวลา มีความเมื่อยล้า ความวิตกกังวัล หรือมองโลกในแง่ร้าย และบางครั้งมีความคิดเกี่ยวกับการทำร้ายตัวเองหรือฆ่าตัวตาย

24. อาศัยอยู่กับผู้ที่มีภาวะซึมเศร้าหรือป่วยเป็นโรคทางจิตหรือไม่

☐ อาศัยอยู่ด้วย ☐ไม่

25. มีพ่อแม่หรือญาติเคยป่วยเป็นโรคทางจิตหรือไม่

☐ มี ☐ไม่

26. ผลการเรียนจากภาคการศึกษาที่ผ่านมา

☐ เกรดเฉลี่ย 3-4 ☐ เกรดเฉลี่ยน้อยกว่า 3 แต่มากกว่า 2 ☐ น้อยกว่า 2

เพื่อนสนิท คือเพื่อนที่คุณสามารถพูดคุยเกี่ยวกับเรื่องทุกอย่างโดยไม่กังวลว่าพวกเขาจะคิดว่าคุณจะเป็นอย่างไร พวกเขาจะอยู่กับคุณทุกๆ ครั้ง และคุณรู้สึกสะดวกสบายในบ้านของกันและกันเหมือนแป็นบ้านหลังที่สองให้กับคุณ

27. คุณมีเพื่อนสนิท (หากมี โปรดตอบคำถามข้อ 27.1-27.4)

☐ มี ☐ ไม่มี

27.1 อายุของเพื่อน: ☐ มากกว่า ☐ เท่ากัน ☐ น้อยกว่า

27.2 เพศ: ☐ ชาย ☐ หญิง

27.3 อยู่ในโรงเรียนเดียวกัน: ☐ ใช่ ☐ ไม่ใช่

27.4 กิจกรรมที่ชอบทำร่วมกัน: ☐ พุดคุย ☐ กีฬา ☐ ดนตรี

☐ เกม ☐ เที่ยว ☐ เรียน ☐ อื่นๆ โปรดระบุ.....

28. คุณขาดเรียนหรือไม่เข้าโรงเรียนโดยไม่ได้รับอนุญาติ ในช่วง 1 เดือน ที่ผ่านมา

☐ 0 ครั้ง ☐ 1 หรือ 2 ครั้ง ☐ 3 ครั้งหรือมากกว่า

☐ 5 ครั้งหรือมากกว่า ☐ 10 ครั้งหรือมากกว่า

29. คุณเคยใช้สารเสพติด เช่น ยาบ้า, ยาอี, 4 × 100, หรือกัญชา

☐ 0 ครั้ง ☐ 1-3 ครั้ง ☐ 4-9 ครั้ง ☐ 10 ครั้ง

การออกกำลังกาย หมายถึง การทำกิจกรรมใดๆ ที่ช่วยเพิ่มอัตราการเต้นของหัวใจ และทำให้หายใจหอบในบางครั้งร่วมด้วย การออกกำลังกายที่สามารถทำได้ คือ การเล่นกีฬากับเพื่อน หรือการเดินไปโรงเรียน ตัวอย่างการออกกำลังกายคือ การวิ่ง เดินเร็ว ขี่จักรยาน เต้นรำ และ เล่นฟุตบอล (การออกกำลังกายในชั่วโมงพลศึกษาจะไม่รวมในที่นี้)

30 ปกติคุณเคลื่อนไหวร่างกายรวมกันอย่างน้อย 60 นาทีต่อวันในหนึ่งสัปดาห์

☐ 0 วัน ☐ 1-2 วัน ☐ 3-4 วัน ☐ 5-6 วัน ☐ ทุกๆ วัน

31. คุณเคยมีเพศสัมพันธ์ครั้งแรกตอนอายุ

☐ ไม่เคยมีเพศสัมพันธ์ ☐ ตอนอายุน้อยกว่า 12 ☐ อายุ 13-15 ☐ 16 ปีหรือมากกว่า

-มีหน้าถัดไป-

ส่วนที่ 3 แบบสอบถาม Hospital Anxiety and Depression Scale ฉบับภาษาไทย (Thai HADS)

<u>คำชี้แจ้ง</u> กรุณาอ่านข้อความแต่ละข้อ และทำเครื่องหมาย ✓ ในช่องคำตอบที่ใกล้เคียงกับความรู้สึกของท่าน ในช่วง 1 สัปดาห์ที่ผ่านมา มากที่สุด และกรุณาตอบทุกข้อ

1. ฉันรู้สึกตึงเครียด ☐ เป็นส่วนใหญ่ ☐ บ่อยครั้ง ☐ เป็นบางครั้ง ☐ ไม่เป็นเลย	6. ฉันรู้สึกแจ่มใสเบิกบาน ☐ ไม่มีเลย ☐ ไม่บ่อยนัก ☐ เป็นบางครั้ง ☐ เป็นส่วนใหญ่	11. ฉันรู้สึกกระสับกระส่าย เหมือนกับจะอยู่นิ่งๆ ไม่ได้ ☐ เป็นมากทีเดียว ☐ ค่อนข้างมาก ☐ ไม่มากนัก ☐ ไม่เป็นเลย
2. ฉันรู้สึกเพลิดเพลินใจกับสิ่งต่างๆ ที่ฉันเคยชอบได้ ☐ เกือบไม่มีเลย ☐ มีเพียงเล็กน้อย ☐ ไม่มากเท่าแต่ก่อน ☐ เหมือนเดิม	7. ฉันสามารถทำตัวตามสบาย และรู้สึกผ่อนคลาย ☐ ไม่มีเลย ☐ ไม่บ่อยนัก ☐ ได้โดยทั่วไป ☐ เหมือนเดิม	12. ฉันมองสิ่งต่างๆในอนาคตด้วยความเบิกบานใจ ☐ เกือบจะไม่มีเลย ☐ น้อยกว่าที่เคยเป็น ☐ ค่อนข้างน้อยกว่าที่เคยเป็น ☐ มากเท่าที่เคยเป็น
3. ฉันมีความรู้สึกกลัว คล้ายกับว่ากำลังจะมีเรื่องไม่ดีเกิดขึ้น ☐ มี และค่อนข้างรุนแรงด้วย ☐ มี แต่ไม่มากนัก ☐ มีเพียงเล็กน้อย และไม่ทำให้กังวลใจ ☐ ไม่มีเลย	8. ฉันรู้สึกว่าตัวเองคิดอะไรทำอะไร เชื่องช้าลงกว่าเดิม ☐ เกือบตลอดเวลา ☐ บ่อยครั้ง ☐ เป็นบางครั้ง ☐ ไม่เป็นเลย	13. ฉันรู้สึกผวาหรือตกใจขึ้นมาอย่างกระทันหัน ☐ บ่อยมาก ☐ ค่อนข้างบ่อย ☐ ไม่บ่อยนัก ☐ ไม่มีเลย
4. ฉันสามารถหัวเราะและมีอารมณ์ขันในเรื่องต่างๆได้ ☐ ไม่ได้เลย ☐ มีน้อย ☐ ไม่มากนัก	9. ฉันรู้สึกไม่สบายใจ จนทำให้ปั่นป่วนในท้อง: ☐ บ่อยมาก ☐ ค่อนข้างบ่อย ☐ เป็นบางครั้ง	14. ฉันรู้สึกเพลิดเพลินไปกับการอ่านหนังสือ ฟังวิทยุ หรือดูโทรทัศน์ หรือกิจกรรมอื่นๆที่เคยเพลิดเพลินได้ ☐ น้อยมาก

☐ เหมือนเดิม	☐ ไม่เป็นเลย	☐ ไม่บ่อยนัก ☐ เป็นบางครั้ง ☐ เป็นส่วนใหญ่
5. ฉันมีความคิดวิตกกังวล ☐ เป็นส่วนใหญ่ ☐ บ่อยมาก ☐ เป็นบางครั้ง แต่ไม่บ่อย ☐ ไม่เป็นเลย	10. ฉันปล่อยเนื้อปล่อยตัว ไม่สนใจตนเอง ☐ ใช่ ☐ ไม่ค่อยใส่ใจเท่าที่ควร ☐ ใส่ใจน้อยกว่าแต่ก่อน ☐ ยังใส่ใจตนเองเหมือนเดิม	15. มีข้อสงสัย ความคิดเห็นหรือข้อเสนอแนะ ……... …… …… …… …… …… ……

☺ *ขอขอบคุณที่ให้ความร่วมือในการกรอกแบบสอบถามครั้งนี้* ☺

APPENDIX B

Submission No. TMEC .....

FTM-ECF-021-04

หนังสือแสดงเจตนายินยอมเข้าร่วมการวิจัย

(Informed Consent Form)

แบบฟอร์มนี้ใช้สำหรับ เด็กโตอายุระหว่าง13 - ก่อน18 ปีบริบูรณ์

วันที่.....เดือน.....พ.ศ. .....

ข้าพเจ้า (นาย /นาง /นางสาว).....นามสกุล.....อายุ.....ปี อยู่บ้านเลขที่.....หมู่.....ตำบล.....อำเภอ.....จังหวัด..... ขอแสดงเจตนายินยอมเข้าร่วมการวิจัย ในโครงการวิจัยเรื่องการสำรวจความชุกของโรควิตกกังวล ภาวะซึมเศร้า และปัจจัยที่ก่อให้เกิดความเสี่ยงที่เกี่ยวข้อง ของกลุ่มนักเรียนประจำระดับมัธยมศึกษาตอนปลายในสามจังหวัดของประเทศไทย

โดยข้าพเจ้าได้อ่านเอกสารคำอธิบายโครงการวิจัยและ /หรือได้รับฟังคำอธิบายจาก น.ส. ธนพร ศรีปาน ผู้ทำโครงการวิจัย และได้รับทราบถึงรายละเอียดของโครงการวิจัยเกี่ยวกับ วัตถุประสงค์และระยะเวลาที่ทำการวิจัย ขั้นตอนและวิธีการปฏิบัติตัวที่ข้าพเจ้าต้องปฏิบัติ ผลประโยชน์ที่ข้าพเจ้า จะได้รับ ผลข้างเคียงหรืออันตรายที่อาจเกิดขึ้นจากการเข้าร่วมโครงการ ตลอดจนค่าตอบแทนที่จะได้รับ และค่าใช้จ่ายที่ข้าพเจ้าจะต้องรับผิดชอบจ่ายเอง

และข้าพเจ้ายินยอมให้ผู้วิจัยใช้ข้อมูลส่วนตัวของข้าพเจ้า ที่ได้รับจากการวิจัย โดยให้นำเสนอเป็นข้อมูลโดยรวมจากการวิจัยนั้นแต่จะไม่เผยแพร่ ต่อสาธารณะเป็นรายบุคคล ทั้งนี้ข้าพเจ้า สามารถถอนตัวหรืองดเข้าร่วมการวิจัยได้ทุกเมื่อ โดยจะไม่มีผลกระทบและไม่เสียสิทธิ์ใด ๆ ในการรับการบริการที่ข้าพเจ้า จะได้รับต่อไปในอนาคต

หากข้าพเจ้า มีข้อข้องใจเกี่ยวกับขั้นตอนของการวิจัย หรือหากเกิดผลข้างเคียงที่ไม่พึงประสงค์จากการวิจัยขึ้นกับข้าพเจ้า ข้าพเจ้าสามารถติดต่อกับ น.ส. ธนพร ศรีปาน เบอร์โทรศัพท์ 084-443-9443

หากข้าพเจ้า ได้รับการปฏิบัติไม่ตรงตามที่ได้ระบุไว้ในเอกสารชี้แจงผู้เข้าร่วมการวิจัย ข้าพเจ้าสามารถแจ้งให้คณะกรรมการจริยธรรมฯ ทราบได้ที่ ฝ่ายเลขานุการคณะกรรมการจริยธรรมการวิจัยในคน สำนักงานบริการการวิจัย ชั้น 4 อาคารเฉลิมพระเกียรติฉลองสิริราชสมบัติครบ 60 ปี คณะเวชศาสตร์เขตร้อน มหาวิทยาลัยมหิดล โทร. 0 2354 9100-4 ต่อ 1349, 1525 ต่อ 16-17

ข้าพเจ้า เข้าใจข้อความในเอกสารชี้แจงผู้เข้าร่วมการวิจัย และหนังสือแสดงเจตนายินยอมนี้โดยตลอดแล้ว จึงได้ลงนามยินยอมเข้าร่วมโครงการ

ลายมือชื่อผู้เข้าร่วมโครงการวิจัย .....

(.....)

วันที่.....เดือน.....พ.ศ.....

ลายมือชื่อผู้ปกครอง .....

(.....)

(เกี่ยวข้องเป็น.....)

วันที่.....เดือน.....พ.ศ.....

ลายมือชื่อผู้ให้ข้อมูล/ ผู้ขอความยินยอม .....

(.....)

วันที่.....เดือน.....พ.ศ.....

เอกสารฉบับนี้จะสมบูรณ์เมื่อมีตราประทับของคณะกรรมการจริยธรรมการวิจัยในคน

Version.....4..... date.....15/9/2016.....

APPENDIX C

MUTM 2016-069-01

CERTIFICATE OF ETHICAL APPROVAL
Ethics Committee of the Faculty of Tropical Medicine, Mahidol University
420/6 Ratchawithi Rd., Ratchathewi, Bangkok 10400, Thailand

This Certificate of Ethical Approval (MUTM 2016-069-01) applies to the

Project entitled: Prevalence of anxiety disorders, depression, and associated risk factors among boarding high school students in three provinces of Thailand: a cross sectional study

EC Submission No.: TMEC 16-035

with the following relevant documents:

1. Research proposal (FTM ECF-019-05); English version 4 date 15 September 2016
2. Participant Information Sheet for boarding high school students (FTM ECF-020-02); Thai version 4 date 15 September 2016
3. Participant Information Sheet for parent (FTM ECF-020-02); Thai version 4 date 15 September 2016
4. Informed Consent Form (FTM ECF-021-04); Thai version 4 date 15 September 2016
5. Structured questionnaire; Thai version 4 date 15 September 2016

Principal Investigator: Ms. Thanaphon Sripan

Advisor: Prof. Dr. Yaowalark Sukthana

Affiliation: Department of Protozoology,
Faculty of Tropical Medicine, Mahidol University

This project has been approved for the period
from 28 September 2016 to 27 September 2017

The Ethics Committee of Faculty of Tropical Medicine certify that we are in compliance with Declaration of Helsinki, ICH Guidelines for Good Clinical Practice and other International Guidelines for Human Research Protection.

Signature .....
(Prof. Dr. Srisin Khusmith)
Chairperson (Panel 2)
Ethics Committee of the
Faculty of Tropical Medicine
Date 30 SEP 2016

Signature .....
(Mrs. Pornpimon Adams)
Member and Secretary
Ethics Committee of the
Faculty of Tropical Medicine
Date 30 SEP 2016

BIOGRAPHY

NAME	Ms. Thanaphon Sripan
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