DEPRESSION, ANXIETY AND STRESS ASSOCIATION AMONG TAZE BOARDING SCHOOL ADOLESCENT, SHWE BO DISTRICT, SGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY

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ความสัมพันธ์ระหว่างความรู้สึก ซึมเศร้า วิตกกังวล และความเครียดในนักเรียนวัยรุ่น โรงเรียน ประจำทาเซ เมืองชรีโบ เขตซากาย ประเทศเมียนมา: การศึกษาภาคตัดขวาง

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By	Mr. Nanda Win
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นานดา วิน : ความสัมพันธ์ระหว่างความรู้สึก ซึมเศร้า วิตกกังวล และความเครียดในนักเรียนวัยรุ่น โรงเรียน ประจำทาเซ เมืองชรีโบ เขตซากาย ประเทศเมียนมา: การศึกษาภาคตัดขวาง. (DEPRESSION, ANXIETY AND STRESS ASSOCIATION AMONG TAZE BOARDING SCHOOL ADOLESCENT, SHWE BO DISTRICT, SGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY) อ.ที่ปรึกษาหลัก : นพ.อเรสสิโอ พันซ่า

วัยรุ่นเป็นช่วงการเปลี่ยนภาพจากวัยเด็กสู่วัยผู้ใหญ่ ดังนั้นจึงมีปัญหาต่าง ๆ ที่เกิดขึ้นในช่วงเวลาดังกล่าวเช่นปัญหาด้านร่างกายสังคมและสุขภาพจิต การวิจัยนี้มีวัตถุประสงค์เพื่อศึกษาความชุกของการเกิดความรู้สึกซึมเศร้า วิตกกังวล, ความเครียดและปัจจัยที่เกี่ยวข้อง โดยศึกษาจากกลุ่มตัวอย่างทั้งหมด 360 คน ซึ่งเป็นนักเรียนที่ศึกษาอยู่ในโรงเรียนประจำ 3 โรงเรียนในเขตทาเซ ประเทศเมียนมา การเก็บรวมรวมข้อมูลโดยให้กลุ่มตัวอย่างกรอกข้อมูลด้วยตัวเอง เครื่องมือที่ใช้คือ คือ แบบสอบถามข้อมูลทั่วไป แบบวัดการสนับสนุนทางสังคม แบบวัดความสามารถในการแก้ไขปัญหา แบบวัดความภูมิใจในตัวเองและแบบประเมิน ความรู้สึกซึมเศร้า ความวิตกกังวล และความเครียด โดยใช้แบบประเมิน (DASS-21) การวิเคราะห์ถดถอยโลจิสติกส์พหุกลุ่ม จะนำมาวิเคราะห์เพื่อศึกษาความสัมพันธ์ระหว่างปัจจัยที่เกี่ยวข้องกับการเกิดภาวะซึมเศร้า ความวิตกกังวล และความเครียด ผลการวิจัยพบว่า อัตราการเกิดความรู้สึกซึมเศร้า ความวิตกกังวลและความเครียด คือ 85.0% 84.0% และ 71.0% ตามลำดับ ในการวิเคราะห์หลายตัวแปร การมีปัญหากับการมีปฏิสัมพันธ์กับครู สมรรถภาพทางการเรียน แรงสนับสนุนทางสังคมจากครอบครัวและความสามารถในการแก้ไขปัญหามีความสัมพันธ์กับการเกิดความรู้สึกซึมเศร้าอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.05$ การมีปัญหาสมรรถภาพทางการเรียนและความสามารถในการแก้ไขปัญหามีความสัมพันธ์กับการเกิดความรู้สึกซึมเศร้าอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.01$ ความขัดแย้งระหว่างบุคคลกับผู้ปกครอง การมีปัญหากับการมีปฏิสัมพันธ์กับครู และความสามารถทางสังคมมีความสัมพันธ์กับการเกิดความวิตกกังวลอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.05$ ความขัดแย้งระหว่างบุคคลกับผู้ปกครองและการมีปัญหากับการมีปฏิสัมพันธ์กับครูมีความสัมพันธ์กับการเกิดความวิตกกังวลอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.01$ อายุ ระดับชั้นเรียน เพศ การมีปัญหากับการมีปฏิสัมพันธ์กับครู สมรรถภาพทางการเรียนและความขัดแย้งระหว่างบุคคลกับผู้ปกครองมีความสัมพันธ์กับการเกิดความเครียดอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.05$ อายุ ระดับชั้นเรียน และการมีปัญหากับการมีปฏิสัมพันธ์กับครู ความสัมพันธ์กับการเกิดความเครียดอย่างมีนัยสำคัญทางสถิติที่ระดับ $p<0.01$ โรงเรียนประจำมีสภาพแวดล้อมที่ตึงเครียดเมื่อเปรียบเทียบกับโรงเรียนของรัฐ การศึกษาครั้งนี้แสดงให้เห็นถึงความสัมพันธ์ระหว่างความรู้สึกซึมเศร้า ความวิตกกังวล ความเครียดและปัจจัยแวดล้อมจากของผู้ปกครอง ครู และเพื่อนร่วมชั้น ในการศึกษาครั้งนี้ความชุกของการเกิดความรู้สึกซึมเศร้า ความวิตกกังวลและความเครียดอยู่ในระดับสูง ดังนั้นการศึกษาต่อควรมุ่งเน้นไปที่การศึกษาเพื่อช่วยลดภาวะซึมเศร้า ความวิตกกังวลและความเครียด รวมไปถึงการศึกษาเกี่ยวกับความคิดฆ่าตัวตายและความพยายามฆ่าตัวตายด้วย

สาขาวิชา	สาธารณสุขศาสตร์	ลายมือชื่อนิสิต .....
ปีการศึกษา	2561	ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

6178829753 : MAJOR PUBLIC HEALTH
KEYWORD: Depression, Anxiety, Stress, Boarding school, Adolescent

Nanda Win : DEPRESSION, ANXIETY AND STRESS ASSOCIATION AMONG TAZE BOARDING SCHOOL ADOLESCENT, SHWE BO DISTRICT, SGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY. Advisor: ALESSIO PANZA, M.D.

Adolescent is a transition phase from childhood to adulthood. Therefore, there are various problems occurring in that period such as physical, social and mental health issues. The study purpose is to describe prevalence of depression, anxiety, stress and to explore the associated factors. A cross-sectional study was conducted among 360 adolescents at three boarding schools in Taze, Myanmar. Data were collected by self-administered. The measurement tools including socio demographic characteristics, Modified form of social support scale, Pearlin's mastery scale, Rosenberg self-esteem scale and Depression, anxiety, stress -21 scale (DASS 21). Multivariate regression analysis was conducted to explore the associated factors of depression, anxiety and stress. The prevalence of depression, anxiety and stress was 85%, 84% and 71% respectively. In multivariate logistic regression analysis, depression was significantly associated with problems with teacher interaction, in school performance, social support from parents and mastery (p-value <0.05). Problems in school performance and mastery showed highly statistically significant associations (p-value <0.01). For anxiety, interpersonal conflict with parents, problems with teacher interaction, and social competence showed statistically significant association (p-value< 0.05). Problems with teacher interaction and interpersonal conflict with parents showed highly statistically significant associations (p-value <0.01). For stress, age, grade, sex, problems with teacher interaction, in school performance and interpersonal conflict with parents showed statistically significant association (p-value< 0.05). Age, grade and problems with teacher interaction showed highly statistically significant associations (p-value <0.01). Boarding school is a stressful environment compared with public schools. This study showed the associated factors of students' depression, anxiety, stress and conditions with parents, teachers and peers. In this study, the prevalence of depression, anxiety and stress was so high, further studies should focus on intervention study to reduce depression, anxiety and stress and investigate about suicidal ideation and suicidal attempt.

Field of Study:	Public Health	Student's Signature .....
Academic Year:	2018	Advisor's Signature .....

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Nanda Win

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LIST OF ABBREVIATIONS]

SEAR – South East Asia Region

PRISMA - Preferred Reporting Items for Systematic Reviews and Meta-Analyses

DSM-5 – Diagnostic and Statistical Manual of Mental Disorders, 5th Edition

DSM-4 – Diagnostic and Statistical Manual of Mental Disorders, 4th Edition

WHO – World Health Organization

DASS21 – Depression, Anxiety and Stress questionnaire (21 questionnaires)

CBT- Cognitive behavioral therapy

SDG - Sustainable Development Goals

U.S – United States

HBSC – Health Behavior in School-aged children

GDP – Gross Domestic Product

UNESCO - The United Nations Educational, Scientific and Cultural Organization

NCD – non-communicable disease

UNICEF - The United Nations International Children's Emergency Fund

NGO - Non-Governmental Organization

UNFPA - The United Nations Population Fund, formerly the United Nations Fund for Population Activities

DCD - Developmental coordination disorder

SEM- Structural equation modelling

CFA - Confirmatory factor analysis

CHAPTER I
INTRODUCTION

1.1 BACKGROUND AND RATIONALE

Adolescent is a transitional phase from a child to an adult. It is a unique and formative time. During this period, lots of physical, psychological and behavioral changes take place which lead to various physical, social and mental health issues. Mental health problems namely depression, anxiety and other conditions can lead to various behavioral problems at social, school and home environments, increases involvement in health risk behaviors like substance use and can lead to reduced academic performance in schools (WHO, 2009).

One sixth of the world's people are adolescents aged 10 to 19 years old among 1.2 billion persons, actually 16% (0.2billion people). There are about 350 million adolescents including about 22% of the populace in the nations of the South-East Asia Region (SEAR). In Myanmar, Total population was 53.9 million people. Among these, 5.1 million people (9.6% of total population) were adolescents especially ranging from 13 to 17 years old age people according to 2016 data.

Regional and global burden of disease is mental health problems around more than 6% is one of the largest contributors to the regional and global burden of disease as more than 6%. Especially mental illness was around at 16% of total burden of disease and injury among adolescents globally. Mostly around 14 years of age have mental health issues at 50% and some circumstances were unnoticed and untouched. When compared to the previous survey conducted in 2007, the trend of unhealthy behaviors as well as mental health issue among students has been rising up. Every year, about 4 million adolescents attempt suicide globally (WHO, 2001a, 2001). Also, in Myanmar concerning mental health indicators among students; consider suicide, plan to suicide and attempted suicide are also increasing about seven times in recent decade.

In 2017 especially around the world, major depressive disorder in 10-14 years of age is exactly 5698776 but for 15-19 years of age is 12233724 while prevalence of Anxiety disorders in 10-14 years of age is 21867672 and in 15-19 years of age is

25,846,568. stress among adolescents and young adults around the world is currently estimated to range from 5% to 70%, with an Indian study (Sahoo S, 2010)

In South East, major depressive disorder for 10-14 years is 416915 and for 15-19 years age range is 876554. Prevalence of Anxiety disorders in 10-14 years of age in Southeast Asia in 2017 is 1591176 and for 15-19 years of age is 1866577.(Network., 2017)

In Myanmar Four percent (about) 4% of total population of adolescent is in anxiety while 27% is in depression among 5.1 million of total population (WHO, April, 2017a). The most common mental health problem among adolescent is anxiety disorders and depression.(Kessler RC, 2005).

Mental health problems are seen also in both children and adolescents in each country and culture. It is one of the illness and disability among adolescents globally. If ignored these people, it may become a serious health conditions namely high risk for abuse and neglect, suicide, alcohol and other drug use, school failure, violent and criminal activities, mental illness in adulthood, and health-jeopardizing impulsive behaviors. It can cause the affected person to suffer greatly and function poorly, at school and in the family. At its worst, depression lead to suicide. Suicide was the third important determinant of death especially from 15 to 19 years old (WHO, 2018). Adolescent attempt suicide around 4 million every year globally (WHO, 2001a, 2001).therefore, mental health problems in young people is not only a major public health challenge but also a development issue especially for low-income and middle-income countries and may need to achieve different Sustainable Development Goals (WHO, April, 2017b).

Mental illness (depression, anxiety and stress) can hinder their ability to grow and develop to their full potential, jeopardize not only their current health, but also their health as adults, and even the health of their future children. (WHO, 5 February 2018). Most of these young people suffer needlessly, unable to access appropriate resources for recognition, support, and treatment.

Adolescent is a growing period where children may be chiefly vulnerable to negative effects of stress. These harmful effects link to symptoms of mental disorders. (Chassin, 2003; O. Compas, & Grant, 1993; Garber, 2004; Zimmerman, 2003). Stress is a clear risk factor for mental health disorders, which have been estimated

approximately one fifth of the children aged 9 to 17 years (Services, 1999). School can be described as a stressful environment to students, particularly who are at boarding school. There are many factors in the boarding school environment that may lead to stress namely feeling of homesickness, academic pressure and lack of parental support. Academic matters are the most important cause of chronic stress among teens throughout the world, and may lead to mental health problems like depression and suicidal ideation. In particular in-school teenagers may suffer of depressions and anxiety due to between academic stress, parental pressure and psychiatric problems. (Sibnath Deb, 2015).

Whatever most adolescents have good mental health, multiple physical, emotional and social changes, including exposure to poverty, abuse or violence, can make vulnerable to mental health problems. Specific risk factors for depression consists of being female, low social support, and ineffective coping while nonspecific risk is poverty, lower socioeconomic status, exposure to forcefulness, lonely, child neglect and parents' divorce. Some reasons for anxiety disorder in adolescent are High Expectations. Nowadays teenagers are having loads of stress and tend to place high expectations on themselves. Most teens want to perform well in school and might expect to go to high-status universities. There are relationship between parental disapproval, peer pressure, drinking and drug use and depression (Malibu, November 28, 2017). I want to focus on study about depression among adolescent at boarding school is because of academic pressure, living far away from parents and families support, living and facing new challenges in new environment and making communication with strangers, new people. This can cause growing inclination of depression, anxiety and stress.

School environment can give an excellent opportunity to promote sound principles of mental health and healthy lifestyles (WHO, 2006). By 2030, according to the SDG Target 3.4 under SDG goal 3 for reducing premature death by one third through prevention, treatment and promotion of mental health and well-being. In fact, reducing the burdens of poverty, exposure to violence, child maltreatment, and other forms of family instability may play a significant role in reduction of depressive disorders in youth. Research on the additive effects of childhood risk factors suggest that the best point of preventing disorder is to address both specific and nonspecific risk

factors together (Tracy R.G. Gladstone, 2011). The guideline used in Myanmar is Diagnostic and Statistical Manual of Mental Disorders (DSM-5). Treatment of depression may include becoming involved with support groups, medications, and attending counseling sessions. Life skills Education program should be cooperated with Ministry of Health and Ministry of Education. Mental health information should be provided to both students and teachers. It should be strengthened the information network on in country as well as internationally for exchange of heath promoting school programme experiences. (Coordinator), 2008)

Adolescents have been entirely absent from national health plans for decades. Most of these teenagers have needlessly, unable to access appropriate properties for recognition, support, and treatment. Contributing factors are low GDP per capita, inadequate resources for trained personnel, for health services and facilities in all schools, and lack of education and awareness on some crucial health issues, social stigma, myths and other social and economic barriers. Health promoting school approach were utilized in a fragmented manners depend on resources availability. (Sports, 2016). Moreover, in the report of Myanmar Health Management Information System, in 2015, only 38.8% of schools covered health promoting school activities. (Ministry of Health and Sports, December 2016).

The education system in Myanmar is highly competitive. Myanmar school education system is textbook oriented that focuses on rote memorization of lessons and demands long hours of systematic study every day. The elaborate study routines that are expected by high school students span from the morning till late evening hours, leaving little time for satisfaction and recreation. Students face competition every level of education. Grade 10th and 11th board examination performances are important for a number of reasons. It will decide, to a very large magnitude, whether a student will specialize in his/her favorite stream of education. The student life in Myanmar is much non-democratic in comparison with western student cultures. Nowadays, boarding schools are becoming quite competitive with each other. Students in government schools, comprehensive schools and private boarding schools take the University Entrance Examination managed by Myanmar Board of Examinations (Myanmar, 2007-09-14). (Irrawaddy, 2009-11-18)

Mental health expenditure is only 0.3% of total health care expenditures. Not only health expenditure but also there are no human resources (C. o. o. M. i. c. WHO, with Ministry of Health, & Headquarters, 2006). Supporting for children and adolescent health, there is no mental health professional in primary and secondary schools but only 20% do have school-based activities to support mental health and prevent mental disorders. (WHO, 2007)

After searching the database of PubMed, Google scholar, into University of Yangon and Mandalay Library, and also Chulalongkorn University Library with Myanmar language and English language with the key words from 2008 to 2018, there are no identified studies jointly looking at depression, anxiety and stress and investigating the variables stressors, social resources, personal resources of adolescents in Taze, in Shwe Bo, in Sagaing and also in Myanmar. After extending the search with the additional key word South-east Asia, 384 studies were identified. Out of the 384 studies according to step 1 'selection by title' of PRISMA process, forty-four studies were identified. Out of these 44 studies according to step 2 'selection by abstract' of PRISMA process, 9 studies were identified. Out of these 9 studies according to step 3 'selection by the full text available online and relevant for this thesis proposal' of PRISMA process, the following 3 studies was available (see PRISMA searching strategy in annex a) result

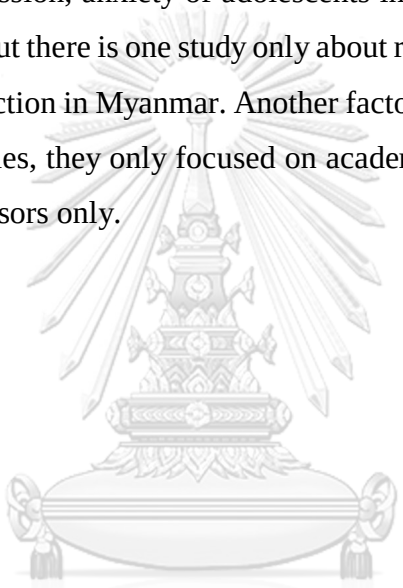
In cross-sectional study which was conducted in Malaysia focusing on 2927 secondary school students (13-17 years old) using DASS questionnaire, academic performance and risk behaviors along with the demographic characteristics are important contributor to adolescent depression. In that study, Chinese or had a lower average grade were three times more likely to have depression, while those who came from single-parent family were twice as likely to have depression (E. T. Latiffah Abdul Latiff, Normala Ibrahim, Azrin Shah Abubakar and Shirin Shameema Binti Albar Ali, January 2016).

In one cross-sectional study of 350 students in a selected boarding schools of Malaysia, the study focused on relationship between possible stressors and depression, anxiety and stress levels. According to the result, the prevalence of depression, anxiety and stress were 39.7%, 67.1% and 44.9% respectively. Intrapersonal-related stressors and learning/teaching-related stressor were 2.8 and 2 times more likely to cause

depressive symptoms. On the other hand, interpersonal-related stressor was 2.9 times more likely to cause anxiety. The learning/teaching-related and intrapersonal related stressors were 2.7 and 2.5 times more likely to develop stress (S. Wahab et al., 2013).

In one cross-sectional study which was conducted in 2013 focusing on 428 Burmese adolescents (12-18 years old students) who were living in boarding houses in Thailand, there was not statistically significant association between social support and mental health problems (Takeshi Akiyama, 2013).

Therefore, there are many research gaps. First, there are not any studies about jointly looking at depression, anxiety of adolescents in Taze, in Shwe Bo, in Sagaing and also in Myanmar. But there is one study only about relationship between depression and online gaming addiction in Myanmar. Another factor is that when comparing to the above three recent studies, they only focused on academic performance, demographic characteristics and stressors only.



1.2 Research Question

1.2.1 What is the prevalence and degree of depression, anxiety and stress among adolescents living at boarding school?

1.2.2 Is there any relationship between socio demographic characteristics and depression, anxiety, stress among adolescents living at boarding school?

1.2.3 Is there any relationship between stressors and depression, anxiety, stress among adolescents living at boarding school?

1.2.4 Is there any relationship between social resources and depression, anxiety, stress among adolescents living at boarding school?

1.2.5 Is there any relationship between personal resources and depression, anxiety, stress among adolescents living at boarding school?

1.3 Research Objective

1.3.1 General Objective

To measure the characteristics and degree of depression, anxiety, stress and their associations with socio-demographic characteristics, stressors, social resources, personal resources among adolescents living at boarding school Taze, Shwe Bo District, Sagaing Division, Myanmar.

1.3.2 Specific Objectives

1.3.2.1 To assess the prevalence and degree of depression, anxiety and stress among adolescents who are living at boarding school.

1.3.2.2 To describe socio demographic characteristics and their associations with depression, anxiety and stress among adolescents who are living at boarding school.

1.3.2.3 To describe stressors and their associations with depression, anxiety and stress among adolescents living at boarding school.

1.3.2.4 To describe social resources and their associations with depression, anxiety and stress among adolescents who are living at boarding school.

1.3.2.5 To describe personal resources and their associations with depression, anxiety and stress among adolescents who are living at boarding school.

1.4 Research Hypothesis

Null Hypothesis

There is no relationship between depression, anxiety, stress and some explanatory factors namely socio demographic characteristics, stressors, social resources, and personal resources among adolescents who are living at boarding school in Taze.

Alternative Hypothesis

There is a relationship between depression, anxiety, stress and some explanatory factors namely socio demographic characteristics, stressors, social resources, and personal resources among adolescents who are living at boarding school in Taze.

1.5 Conceptual Framework

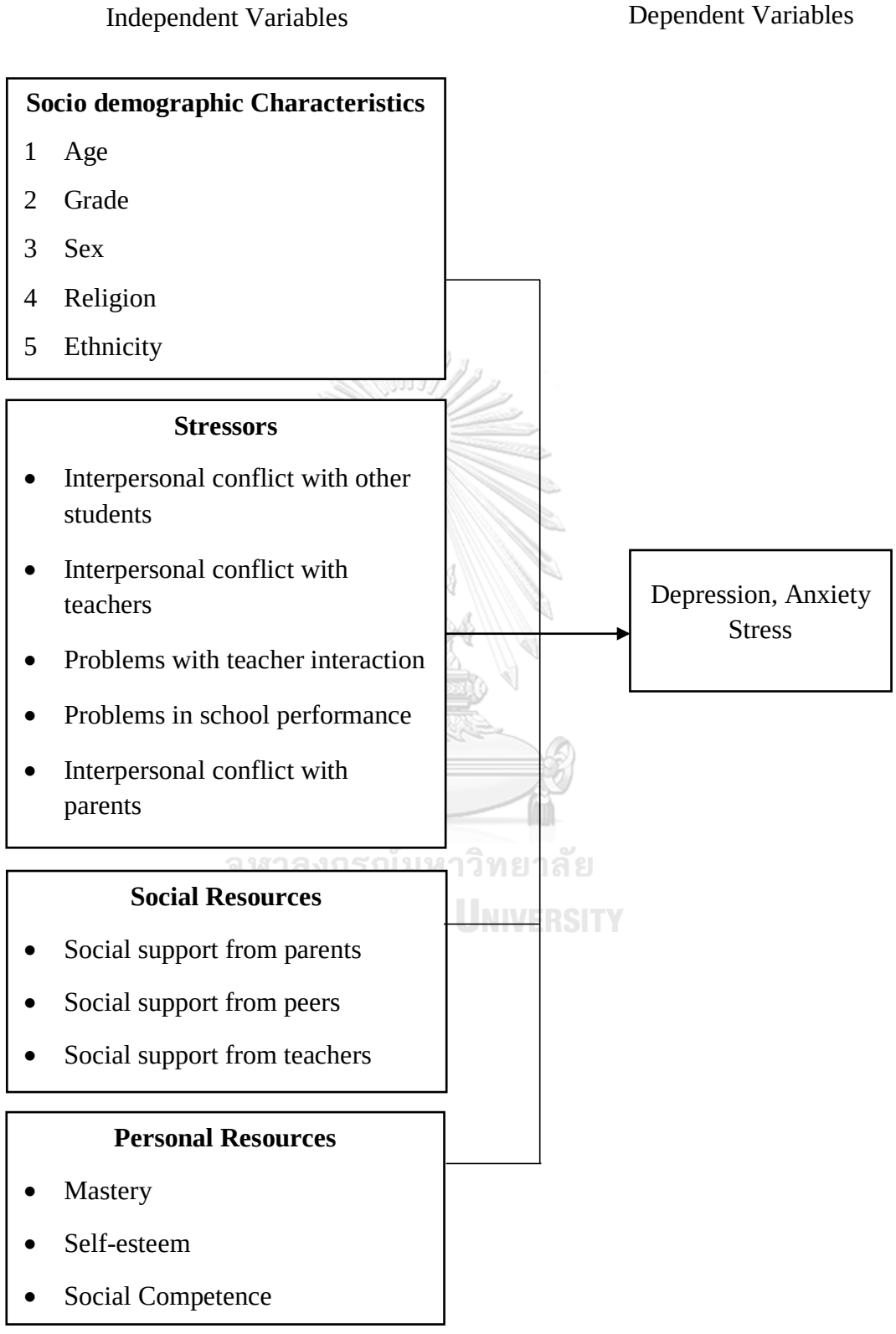


Figure 1 Conceptual Framework

1.6 Operational Definition

1.6.1 Independent Variables

Socio Demographic Characteristics

- Age refers to the last completed birth day as determined by school registration documents.
- Grade refers to the level of education in the boarding school as determined by school document.
- Sex refers to biological male and female as observed by the interviewer.
- Religion refers to self-report set of beliefs namely Buddhist, Christ and Muslim, Hindu and other specify measured as multiple choice.
- Ethnicity refers to which ethnicity does the interviewee belongs to and it is obtained by self-report. They are classified into Burmese, Shan, Karen, Rakhine, Chinese, Mon and others according to largest ethnic groups in Myanmar (Sawe, June 6, 2018.).

Stressors

- Interpersonal Conflict with students refers to self-report having conflict with other students at boarding school measured on a Likert scale.
- Interpersonal Conflict with teachers refers to self-reported four aspects of teacher conflicts measured on a Likert scale.
- Problems with teacher interaction refers to self-report how adolescents interact with teachers and they got problems from that interaction of teachers measured on a Likert scale.
- Problems in school performance refers to self-report how adolescent students got problems in academic sources measured on a Likert scale.
- Interpersonal conflict with parents refers to self-report having conflict with parents before and during attending boarding school measured on a Likert scale.
- Problems in romantic relationship refers to self-report having worry to make relationship measured on a Likert scale.

Social Resources

- Social support from parents refers to self-report getting social support especially from parents measured on a Likert scale.
- Social support from peers refers to self-report getting social support especially from peers measured on a Likert scale.
- Social support from teachers refers to self-report getting social support especially from teachers measured on a Likert scale.

Personal Resources

- Mastery refers to self-report mastery skill which are psychological coping skills: defined as "the extent to which one regards one's life-chances as being under one's own control in contrast to being fatalistically ruled" the skills include problem solving, assertiveness , decision making, self-confidence and self-efficacy (L. I. Pearlin, & Schooler, C., 1978) measured on a Likert scale.
- Self-esteem refers to self-report Rosenberg Self-Esteem Scale (Rosenberg, 1965) to measure adolescents' global feelings of self-worth or self-acceptance which contains ten items with 4 points Likert scale - from strongly agree to strongly disagree. Sum the scores for the 10 items. The score range is 10-40. The higher the score, the higher the self-esteem.
- Social Competence refers to self-report social skills (interpersonal relationship skills) and social communication (effective communication) (Semrud-Clikeman, 2007). Interpersonal relationship skills are defined as to relate in positive ways with the people we interact with. This mean being able to keep friendly relationships, which can be of great importance to our mental and social well-being. It may mean keeping good relations with family members, which are an importance source of social support. It may also mean being able to end relationships constructively. (WHO, 1997). Effective communication means that we are able to express ourselves, both verbally and non-verbally, in ways that are appropriate to our cultures and situations. This means being able to express opinions and desires, but also needs and fears. And it may mean being able to ask for advice and help in a time of need (WHO, 1997). They were measured on a Likert scale.

1.6.2 Dependent Variables

Depression, Anxiety and Stress

- Depression refers to self-report having hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia during past two weeks measured by DASS-21 in 4 point Likert scale. Scores for depression is calculated by summing the scores for seven items and multiply by two to get 42 and to be categorized as following table (Lovibond, 1995).
- Anxiety refers to self-report having autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect during past two weeks measured by DASS-21 in 4 points Likert scale. Scores for anxiety is calculated by summing the scores for seven items and multiply by two to get 42 and to be categorized as following table (Lovibond, 1995).
- Stress refers to self-report having difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient during past two weeks measured by 4 points Likert scale. Scores for stress is calculated by summing the scores for seven items and multiply by two to get 42 and to be categorized as following tables (Lovibond, 1995)

Table 1 Severity of depression, anxiety and stress

	Depression	**Anxiety**	**Stress**
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

CHAPTER II

LITERATURE REVIEW

This chapter presents the 7 sections the following issues: (1) adolescent, (2) adolescent mental health, (3) school education in adolescent, (4) mental health conditions in Myanmar, (5) mental health services in Myanmar, (6) related studies and (7) theory model in detail.

2.1 Adolescent

The word “adolescence” is originally from Latin, the verb is adolescence that means “to grow into adulthood”. In every societies, adolescent is a time of growing up, of changing from the immaturity stage of childhood into the maturity of adulthood. Adolescence is a period of transitions and affected by many things namely biological, psychological, social and economic factors. It is an exciting time of lifetime and they have many challenges in that period. Not all adolescents have smooth pathway in their life, some are rough, and others passages are short while others are long. Therefore, not all occur at the same time and not all have same experiences. That’s why the different aspects of adolescence have various beginnings and endings for each individual (steinberg, 1996). Actually, the whole concept of ‘adolescence’ did not even exist until the twentieth century (Demos, 1969)

Adolescence is categorized into three subgroups which are early adolescence (from 11 to 13 years of age), middle adolescence (from 14 to 16 years of age) and late adolescence (from 17 to 19 years of age) (Clark, 1991).

2.1.1 Two Types of Problems in adolescent

Scholars studying young people’s problems often make a distinction between internalizing problems and externalizing problems (Oltmanns, 2001). Internalizing problems are problems namely depression, anxiety and eating disorders. Internalizing problems tend to go together (B. E. Compas, Connor, J. K., & Hinden, B. R., 1998; Petersen, 1993). For example, adolescents who have an eating disorder are also more

likely than other adolescents to be depressed. Adolescents who are depressed are also more likely than other adolescents to have anxiety disorders. Young people who have internalizing problems are sometimes called over controlled (Asendropf, 1999). They tend to come from families in which parents exercise tight psychological control especially South-east Asia countries (B. K. Barber, 2002). As a result, their own personalities are often overly controlled and self-pushing. Internalizing problems are more common among females than among males (B. E. Compas, Connor, J. K., & Hinden, B. R., 1998).

Externalizing problems create difficulties in a person's external world. Types of externalizing problems include delinquency, fighting, substance use, risky driving, and unprotected sex. Like internalizing problems, externalizing problems tend to go together (Jesssor, 1987; Loeber, 1998). For example, adolescents who always fight to other people are more probably than others to commit criminal things; adolescents who have unprotected sex are more likely than others to be in substance abuse including alcohol and marijuana. Young people with externalizing problems are sometimes called under controlled (Asendropf, 1999). They tend to come from families where parental monitoring and control is lacking (B. Barber, Olsen, J., & Shagle, S., 1994). As a result, they tend to lack self-control themselves, which then manifest itself in their externalizing problems. Externalizing problems are more common among males than females (Loeber, 1998).

Other key difference of internalizing and externalizing problems is that adolescents with internalizing problems usually more chance to have distress than others with externalizing problems (Maggs, 1999). Most young people in Western community join in externalizing behaviors from time to time (Arnett, 2002 b). Whatever those young people are externalizing behavior with family, friends, or school, they do not have that kind of distress. Externalizing behaviors are often motivated not by underlying unhappiness or psychopathology but by the desire for excitement and intense experiences (Arnett, 1992, 1994 b) and can also be one way of having fun with friends (Arnett, 1994 b). Externalizing behaviors are almost always viewed as problems by adults, but young people themselves may not see it that way.

In general, the problems within each type occur together, but some young people have both kinds of problems. For example, delinquent adolescents are

sometimes depressed as well (D. M. Capaldi, 1991; Loeber, 1998) and depressed adolescents sometimes abuse drugs and alcohol (Henry, 1993) some studies have found that adolescents with both externalizing and internalizing problems have had especially difficult family backgrounds (D. M. Capaldi, & Stoolmiller, M., 1999).

2.2 Adolescent Mental Health

A commonly used definition of mental health is “a state of well-being in which the individual realizes his or her own abilities, can cope with the normal stresses of life, can work productively and fruitfully, and is able to make a contribution to his or her community” makes it clear that mental or psychological well-being is predisposed not only by individual features or qualities, but also by the socioeconomic conditions and the environment where they live. (WHO, August 2014)

Mental health is more meaning than being psychological well-being; it consists of emotional and social well-being and is affected by many different kinds of factors. Mentally healthy students attend school, enjoy to learn, actively participate in school activities, have good relationships with adults and peers, have problem-solving skills, and contribute to positive school culture (Freeman 2011; National Research Council and Institute of Medicine 2009)

The very term mental health has different meanings for different people. For some, this term refers to good health, and is sometimes known as emotional health and well-being. On the other hand, for other people mental health is the term used to describe disorder or illness. A significant number of those who struggle during the adolescent stage of development are affected by mental illness or disorder. Early theories of adolescence suggested that the stage itself could be considered to be a traumatic time, and the term “storm and stress” was used to describe this period of life. Today these notations are no longer prevalent, but there is still debate about what proportion of young people are affected by mental illness. While large-scale surveys appear to indicate that around 10 percent have a psychological disorder, studies of depression or stress might lead one to conclude that a much higher number of young people experience problems during this stage of their lives (J. C. Coleman, 2011)

This leads on to the question of what constitutes mental ill-health during adolescence. According to Vostanis (2007) the term disorder refers to a clinically recognizable set of symptoms or behaviors, linked with distress or interference with personal functions of at least two weeks duration (Vostanis, 2007). However, clearly mental health is a continuum, operating on many levels. A young person may be experiencing difficulties in one area, but functioning perfectly well in other areas. For this reason, no single aspect of behavior can be described as “normal” or “abnormal” but rather the behavior will need to be judged against a number of criteria including its duration, severity, the coexistence of other signs of distress, and the impact of the behavior on the young person and on the family. The link between well-being and mental ill-health is complex, but important to understand. The most helpful way to conceptualize it is as a continuum from good to bad health, with well-being at one end and disorder at the other. (J. C. Coleman, 2011)

Depression

Depression - adolescent depression is a disorder occurring during the teenage years marked by persistent sadness, discouragement, loss of self-worth, and loss of interest in usual activities. Depression can be well-defined as feeling sad, hopeless and/or unmotivated for at least two weeks or more (Martin, 2007). The symptoms may specify depression, mainly when they last for more than two weeks: poor presentation in school, removal from friends and events, sadness and hopelessness, lack of interest, energy or inspiration, anger and range, overreaction to criticism, feelings of being unable to satisfy ethics, poor responsibility, lack of concentration, restlessness, alterations of eating or sleeping outlines, substance abuse, problems with authority, suicidal thoughts.

Depression is a common mental illness that avoids with depressed mood, loss of concentration, feelings of guilt, change of sleep or eat, low level of energy and poor concentration. These issues can become chronic or recurrent and toward to substantial injuries to each person capability to pay attention of his or her average tasks. (WHO, 2008).

The depressive episode may be categorized as mild, moderate and severe, or with psychotic features according to the nature and severity of symptoms.

Differential Diagnosis of Major depressive order

(1) Manic episodes with irritable mood or mixed episodes.

(2) Mood disorder due to another medical condition.

(3) Substance/medication-induced depressive or bipolar disorder.

(4) Attention-deficit/hyperactivity disorder

(5) Adjustment disorder with depressed mood

(6) Sadness.

Differential Diagnosis of Generalized Anxiety Disorder

(1) Anxiety disorder due to another medical condition

(2) Substance/medication-induced anxiety disorder.

(3) Social anxiety disorder.

(4) Obsessive-compulsive disorder

(5) Posttraumatic stress disorder and adjustment disorders.

(6) Depressive, bipolar, and psychotic disorders (Dilip V. Jeste, 2013).

Table 2 Anxiety disorders commonly included in anxiety research among children and adolescents. Typical onset period and core features (Olofsdotter, 2017)

Disorder	Typical onset period	Core features
Separation anxiety disorder	Early childhood	Anxiety concerning personal or parental harm. Refusal to go to school, leave home alone, leave parents, attend school trips, or sleep at friends' homes. Anxiety exceeds that expected for developmental stage.
Specific phobia	Early childhood	Intense fear and avoidance of specific situations or objects, e.g., spiders, heights, or injections

Table 2 Continued

Disorder	Typical onset period	Core features
Social anxiety disorder (social phobia)	Late childhood to early adolescence	Intense fear and anxiety of negative evaluations in social situations, e.g., being judged as stupid, anxious, crazy, or boring, leading to avoidance or endurance of social situations with intense anxiety.
Generalized anxiety disorder	Late childhood to early adolescence	Excessive anxiety and worry about possible negative outcomes in several activities or events. The worry is difficult to control and out of proportion to the likelihood or impact of feared outcome, e.g., worry about school performances and negative impact on adult life, or worry about social competence and keeping friends. Frequently associated symptoms are muscle tension or aches difficulty concentrating, sleep disturbance, and irritability.
Panic disorder	Late adolescence to early adulthood	Recurring and unexpected panic attacks with physical symptoms, namely palpitations, shaking, shortness of breath, or nausea, and fear of going crazy or dying, followed by avoidance of situations thought to trigger panic attacks.

Table 2 Continued

Disorder	Typical onset period	Core features
Agoraphobia	Late adolescence to early adulthood	Intense fear and anxiety of situations where bad things are anticipated to happen and where escape might be difficult, namely vomiting in the school bus, getting lost in shops, or panic attacks when standing in a crowd, leading to avoidance of situations or endurance with intense anxiety.

Stress

Stress is defined as the total of the physical, mental, and emotional strains or tensions on individually. Having felt of stress on people outcome from interactions between people and their surroundings. Sometimes it also depends on people perceptions and their physical strength or health.

A stressor refers to a factor that can stimulate to become stress response in an organism. Stressors can be described as acute or chronic, and as external or internal to the organism. The Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR) is defined as a psychosocial stressor as "any life event or life change that may be associated temporally with the onset, occurrence, or exacerbation of a mental disorder". Stress is also closely concerned with depression and can cause severe the symptoms of disorders(Rebecca, 2003).

According to Piekarska study, there is a relationship between stress and psychological and personality characteristics. (Piekarska, 2000). In the study of Gaab et al, behavior affect the individual stress management (Gaab, 2003). Shepard et al proved that there is a relationship between stress and illness(Shepard, 2000). In 1974, there were two different kinds of stress into eustress and distress. If stress advance the ability of physical, or mental. It is eustress. Persistent stress that is not determined through coping or adaptation, deemed distress, may lead to anxiety or withdraw

depression. The coping method and their expectations determine the huge differences between eustress and distress (Lazarus, 1993)

According to 2001 WHO's Global disease burden, depression as a one of the four neuropsychiatric disorder was 33% of the years lived with disability. It meant depression in more than 150 million people at any point in time. (WHO, 2003). After a year prevalence, generalized anxiety disorder is 0.9% among adolescents in the United States. The 12-month prevalence for the disorder in other countries ranges from 0.4% to 3.6%. (Dilip V. Jeste, 2013). Twelve-month prevalence of major depressive disorder in the United States is approximately 7%, with marked differences by age group such that the prevalence in 18- to 29-year-old individuals is threefold higher than the prevalence in individual's age 60 years or older. males' experience 1.5- to 3-fold higher rates than males beginning in early adolescence.(sex) (Dilip V. Jeste, 2013). Major depression was the fourth most prevalent human disease in 1990 and is expected to rank second by the year 2020 in adolescent age group (Lope AD, 1998). Twenty percent (one-fifth) of adolescents had depression in the USA and Australia. In developing countries, between 12 to 29 percent of teenage having depression and anxiety disorder took primary health care facilities (Rask K. Astedt-Kurki P, 2002). Several studies indicate that the prevalence rates of Depression, anxiety and stress are growing among adolescents(Evaluation, 2013). Prevalence of Major depressive disorder in 10-14 years of age in 2017 globally is exactly 5698776. Prevalence of Major depressive disorder in 15-19 years of age in 2017 globally is 12233724 while prevalence of Anxiety disorders in 10-14 years of age in 2017 globally is 21867672 and Prevalence of Anxiety disorders in 15-19 years of age in 2017 globally is 25846568. (Network., 2017). According to the 'Mental Health Status of Adolescents in South-East Asia: Evidence for Action', a report published by WHO in April 2017, in 2007, 5.8% population of India was in the age group of 13-15. The report suggested that about 25% adolescents in the country reported being depressed for 2 weeks or more in a row. The percentage of adolescents who reported being in anxiety was 8%. (Singh, October 10, 2017)

Prevalence of Major depressive disorder in Southeast Asia for 10-14 years age range is 416915. Prevalence of Major depressive disorder in Southeast Asia for 15-19 years age range is 876554. Prevalence of Anxiety disorders in 10-14 years of age in Southeast Asia in 2017 is 1591176. Prevalence of Anxiety disorders in 15-19 years of

age in Southeast Asia in 2017 is 1866577.(Network., 2017). In Myanmar Four percent (about) 4% of total population of adolescent is in anxiety while 27% is in depression among 5.1 million of total population (WHO, April, 2017a). Anxiety disorders, depression are the most common mental health problems among adolescents (Kessler RC, 2005).

The lifetime morbid risk is 9.0%. Disturbances to an individual's mental well-being can adversely compromise these capacities and choices, leading not only to diminish functioning at the individual level but also broader welfare losses at the household and societal level. (WHO, August, 2012). During adolescence there are some other symptoms of depression. Extreme fatigue, even after adequate rest, difficulty in concentrating, as on school work, even after adequate study, and extreme occupation with physical development, may be signal of impending or existent depression (Weiner, 1980, 1982). Older adolescents and adults may manifest depression through drug abuse, alienation from others, or other means of cutting the self-off from the social world. This seems to reflect a view that there is little point in doing anything constructive. Substance related disorders, panic disorder, obsessive-compulsive disorder, anorexia nervosa, bulimia nervosa, and borderline personality disorder are other co-occur of disorders with major depressive disorder (Dilip V. Jeste, 2013). Mental ill-health carries with it a significant degree of disadvantage extending to almost all aspects of development. Writing in a major survey of mental disorder in Britain (Green, 2005) pointed out that those with such disorders were likely to miss more school, have fewer friends and a more limited social network, and that their problems were likely to impact on other family members. Mental health problems are not equally distributed across society. Depressive disorders often start at a younger age; they reduce people's function and often are recurring(CA, 1989; Farby JJ, 1980). Students with poor mental and physical health are also found to have a higher risk of dropping out of upper secondary school (De Ridder & H., 2013; Markussen, 2012; Sagatun, 2014; Vander Stoep, 2003). Extreme worrying reduce the each person ability to do things fast and professionally, whether at home or at school. The worrying consumes both time and energy; the association with muscle stiffness and feeling on edge, fatigue, difficult concentration, and lack of sleep lead to the impairment. Therefore, having worrying excessively may reduce the confidence of children (Dilip V. Jeste, 2013). There is a relationship between

generalized anxiety disorder and disability, distress significantly. Every year, generalized anxiety disorder is seen in 110 million U.S population disability (Dilip V. Jeste, 2013). Estimated suicide rates per 100000 according to 2012 data is 15.7. It has been noted that the majority of suicides in India are by those below the age of 30 years (WHO, 2001b). In terms of the numbers of young people who complete suicide, research shows that in Britain, among young men , the rate have fallen since the mid-1990s (J. Coleman, and Brooks, F, 2009; Windfuhr, 2008). Although the absolute number of adolescents who commit suicide is not large, it is a tragedy. Nearly 7 percent of all suicides are adolescents, and estimates are that 1 in 1000 adolescent's attempts to commit suicide. The one factor that is clearly associated with suicide is poor family relations, which make the adolescent feel neglected and isolated. These feelings lead to depression, which may predispose the adolescent to suicide. In women, the risk for suicide attempts is higher, and the risk for suicide completion is lower. The disparity in suicide rate by gender is not as great among those with depressive disorders as it is in the population as a whole. (Dilip V. Jeste, 2013)

The school environment can give an excellent opportunity to promote principles of mental health and healthy lifestyles. (WHO, 2006). By 2030, according to the SDG Target 3.4 under SDG goal 3 have to reduce premature mortality by one third through prevention and treatment mental health and well-being. For reducing depressive disorder, it should reduce the burdens of poverty, exposure to violence, child maltreatment, and other forms of family instability. It also focus on reducing specific and nonspecific risk factors to get the best chance of preventing disorder(Tracy R.G. Gladstone, 2011). The guideline used in Myanmar is Diagnostic and Statistical Manual of Mental Disorders (DSM-5).Treatment of depression is, medications, attending counseling sessions and support groups. (Coordinator), 2008)

Treatment of depression

Many different kinds of treatment consist of psychotherapy or talk therapy, family meeting and, discussions with your child's school. Another treatment is cognitive behavioral therapy (CBT) and interpersonal psychotherapy. Antidepressant medication is also one of the main important treatment. The potential risks and benefits of any medicine should be carefully discussed. ((AACAP), October 2018). Each of these beliefs about the etiology of depression is tied to various therapeutic approaches, including individual, family or group therapy, drug therapy and behavior therapy. Which, if any, is most successful is completely open to debate (Weiner, 1982). Treatment of suicide attempters typically involves building better family and peer relationships. Treatment of depression may include becoming involved with support groups, medications, and attending counseling sessions.

Barriers

Adolescents have been entirely absent from national health plans for decades. Contributing factors are low GDP per capita, inadequate resources for trained personnel, for health services and facilities in all schools, and lack of education and awareness on some crucial health issues, social stigma, myths and other social and economic barriers. Health promoting school approach were utilized in a fragmented manners depend on resources availability. (Sports, 2016)

Moreover, in the report of Myanmar Health Management Information System, in 2015, only 38.8% of schools covered health promoting school activities. (Ministry of Health and Sports, December 2016).

2.3 School Education in Adolescent

2.3.1 Function of school

The school is the one social institution to which virtually all adolescents are exposed. From the time the child begins school until the school years are ended, more time is spent in the school and in engaging in school related activities than is spent in any other single function (Wagner, 1970). The school represents the meeting ground

for the peer group and is the setting in which many peer group functions occur. As a result, the school represents both a formal and informal mechanism that is highly influential in the socialization of the adolescent. The formal aspect of the school's socialization function is the transmission of the knowledge and skills that will allow the individual to be successful member of society. The informal aspects relate to the physical setting of the school, including teachers, classmates, friends and peer groups.

As we explore the various aspects of the school situation and its influence on the adolescent's development, we shall attempt to assess the importance of the quality of schools and the degree to which schools meet the needs of the adolescent.

As notions regarding the role of the school have gradually evolved, there can be discerned a growing interest in pupil well-being. Various strands of both research and policy have contributed to this trend. In the first place the writings of Goleman (1996) and others on the topic of emotional intelligence have been influential in encouraging educators to concern themselves with the emotional aspects of learning. Secondly there has been an international movement developing ideas to do with mental health promotion in the school setting (J. Coleman, and Schofield, J, 2007). Various interventions in countries including Canada and Australia have looked at ways in universal well-being among young people (Sawyer, 2010). Thirdly, there has been widespread concern over the possibility that emotional disorders among adolescents are on the rise. This has led some to take the view that, if say teenage depression is on the increase, then schools have a place in tackling this problem. This concern is linked with cross-country comparisons, namely those contained in the UNICEF report on child well-being in rich countries (2007), and in the HBSC study of young people and health (Currie, 2008). Both these publications have shown young people in Britain to be doing poorly on indicators of emotional health when contrasted with their peers in other countries.

Most students nowadays face academic stress around the world whether they are learning at their hometown or in other city. Whatever, it seem like students who study at boarding school have more academic difficulties than their domestic student because of the differences between the learning or teaching methods in their hometown and other city (Chavajay & Skowronek, 2008; Irizarry, 2010; Lushington, 1999).

The school serves two primary functions: maintenance-actualization and skills training/cultural transmission (Ausubel, 1977; McCANDLESS, 1970). These two functions can also be described respectively as individual-oriented and community-oriented functions. In general, the maintenance-actualization function of the school is aimed at giving the student an opportunity to grow socially and emotionally. This is as true for those who are high in measures of these traits as it is for those who, because of personal circumstances, are poorly developed in these areas. Similarly, the skills-training/cultural transmission function of schools is aimed at providing the individual with the skills and knowledge necessary to become an economically independent and productive member of the society. The former set of skills should enhance the individual's self-esteem and self-concept, and the latter should make the individual capable of functioning within our social system.

Around 56 million students directly contact with schools for as a minimum 6 hours per day during the most serious years of their social, physical, and intellectual improvement. School health curriculums can decrease the occurrence of health risk behaviors on adolescent people and have an optimistic result on school achievement. For adolescents, school is the most important living arena outside the family setting. Adolescent health is contributed by environmental factors as example school. They are also influenced with the individual, peer, family, school, community, and societal levels. Because various parts of culture contribute to adolescent health, safety, and well-being. School environments can shake student well-being and educational achievement. To achieve the most optimistic effect on adolescent health, many sector parts are worked together collaboratively including schools, government agencies, community organizations, and community members. School curriculum makes students the chance to study the significance of behaviors and skills how to live healthy lifestyle. School is important because it is easier and more effective to mature healthy behaviors throughout childhood than to adjustment unhealthy behaviors in adulthood. Some earlier school researches have focused on appearances of the school surroundings to assess its efficiency. (CDC, June 14, 2018).

Obviously, school is a vital field for social and emotional growth but it can also cause some adverse life effects. Poor academic success and views about educational

capacity, tied with depression, outcome of deprived school engagement, increase awareness of school-related stress and problematic manners. (al, 2002)

2.3.2 School system in Myanmar; Private schools and boarding schools

At the end of Standard 10(Grade 11), students take the University Entrance Examination, commonly referred to as the matriculation exam in English, administered by the Board of Examinations annually in mid-March (Myanmar, 14 September 2007).

The education system in Myanmar is highly competitive. Myanmar school education system is textbook oriented that focuses on rote memorization of lessons and demands long hours of systematic study every day. The elaborate study routines that are expected by high school students span from the morning till late evening hours, leaving little time for satisfaction and recreation. Students face competition every level of education. Performance on the 9^{th}, 10^{th} and 11th grade board examinations are important for a number of reasons. It determines, to a very large extent, whether a student will get to specialize in his/her preferred stream of education, and whether or not they will be admitted into the institution of his/her choice. High school students either science or arts at high school. Science-specified students take six major subjects: Myanmar, English, Mathematics, Chemistry, Physics and Biology while arts-specific students take six major subjects: Myanmar, English, Mathematics, Geography, History and Economics. When comparing to the western countries, the student life in Myanmar is much non-democratic. Every year, most boarding schools receive more than 500 students. Nowadays, there are big competition between each boarding schools. Students in all schools, including government schools, comprehensive schools and private boarding schools have to take the University Entrance Examination which is matriculation exam(Myanmar, 2007-09-14). Students from government high schools and comprehensive schools can register for the examinations internally by the guidelines of school teachers, though students from private boarding schools have to register from the outside themselves. Students who attend international English-language schools or other private schools are not appropriate to sit for the matriculation exam, also not allowed to join Burmese universities. (Irrawaddy, 2009-11-18)

Comparing to the world, the expenditure for education in Myanmar is only 0.8 percent of GDP (2011). This is the lowest rates in the world. The reason why government spending on education is so low because of traditional Buddhist monasteries(Jeffrey Hays, 2008).

Teachers who work at state education institutions commonly earn around US$20-30 each month. That can cause teachers to become lack of motivation, and forcing them to prioritize paid private tuition over their school jobs.(Jeffrey Hays, 2008)

2.3.3 School Education System in Sagaing

Except Yangon and Mandalay, educational opportunities are exceedingly restricted. According to official statistics, there are less than 10% of primary school students to reach school in Sagaing Region.In Sagaing Region, there are two national "professional" universities. They are Monywa Institute of Economics and the Sagaing Institute of Education (Organization, 2011-09-29).

Table 3 Number of schools, teachers and students in Sagaing

AY 2002-2003	Only Primary (Grade 1-5)	Only Middle (Grade 6-9)	Only High (Grade10-11)
Schools	3854	190	84
Teachers	16,100	5,000	1,600
Students	550,000	140,000	49,000

2.3.4 Boarding school in Myanmar

Parents are making a beeline to private schools, hoping to give their children quality education along with personal guidance, which is hard to come by in public schools. In pursuit of quality education, more students are joining private and boarding schools hoping to find a more conducive learning environment and greater personal attention. Increasingly, the perception among parents is that private schools offer a more efficient teaching system, enforce strict discipline and conduct regular assessments to monitor academic performance. Overall, parents believe, they are far

better than public schools because students are given personal attention and teachers emphasize high standards of academic excellence. The average cost of sending a student to a boarding school for a year could be a minimum of K2.5 million and this amount can be paid in three installments (Lwin, 2017).

More students enroll in boarding schools because parents are unable to monitor their kids' educational progress due to time constraints, and parents from far-flung areas also prefer these institutions so as they have a better learning environment. Theingi Win, mother of a matriculation student, said, "I am busy every day with my own workload and I'm not able to give full attention to my children's education. That's the reason I have been sending my kids to boarding schools for the whole term. I feel assured that they are going to obtain the necessary knowledge as they are being nurtured in social skills and gain experience in life on a daily basis." (Lwin, 2017)

Although all private schools do not have the same entry guidelines, most require that a few basic criteria be met, like a student's dressing habits, hairstyle and whether they have tattoos. First, we tell parents to check the school's day-to-day activities and if they are satisfied, we tell prospective students to do the same. Then, we discuss with the students to see whether they can settle here or not. A student's outlook is imperative as he or she is the one who will be staying here," said Unity Private High School founder Nilar Than, who has had 16 years in private education. Some private schools require students to sit for an entrance test and others admit only selected highly qualified students. The only stipulations would be that a student must first and foremost abide by the school discipline and, second, he or she must be prepared to stay in school for the whole term. We would accept any student who can comply with these two requirements," Han Myint Maung said. Most private schools assess a student's performance at least once a week and send progress reports to parents. "We also give an aptitude test once a month. Then we show the graded answer sheet to the student and discuss their weak points, before informing the parents about their performance. In this way, parents are able to know their children's academic progress," Nilar Than said. (Lwin, 2017)

The most stringent regulations at boarding schools would include abstaining from fighting, drug abuse and using electronic devices, including mobile phones and making relationship. If students are found flouting these rules more than once, parents

are summoned to the school and disciplinary action, up to expelling a student, is taken. And also the boarding schools do not allow students to go back home or visit home except on big holiday, whatever holiday, they allow them to stay at their home just few days for not interruption to school academic performance (Lwin, 2017).

Private high schools are supposed to run as an alternative education system. In reality, they teach their students the same lessons prescribed in the government's school curriculum, but in a more meticulous manner. Teachers in boarding schools are holding teacher License and also trained as a counsellor for students who can come to ask help and advice for any help anytime. Some teach additional excerpts from the same set of courses using their own teaching techniques. "We don't teach anything out of the ordinary. We rely mainly on the government-published text books. We don't teach from special books or from question compilations," said Han Myint Maung Private High School founder, who had about 20 years' experience managing a boarding school. (Lwin, 2017)

Except for major healthcare expenses and buying of notebooks, most boarding schools take care of all logistics, including food and living costs and laundry services. "We take care of our students' health by retaining our own school physician and we also consult the student's family doctor if needed. If a sick student has an appointment at a specialist clinic, we inform the parents and they accompany us. We feed our students nutritious food so they are always in good health" Nilar Than said. Boarding schools usually accept students from surrounding areas but popular institutions have students coming from across the country as well. (Lwin, 2017).

2.3.5 Peer Pressure, Peer Support and Parental Influence

Peer pressure is described as how teenagers' behavior is shaped by wanting to feel they belong to a group of friends or peers. Sometimes, peer pressure and peer support can be positive while some can be negative. The results of peer pressure and influence in adolescents are wearing same outfits, hairstyle, listening and watching same kind of movies or music, changing their talking styles like friends, they use doing risky things including smoking, using drugs, drinking alcohol, taking part in sexual activities, or breaking rules of school. The way of coping well with peer influence is about getting the equilibrium between being yourself and suitable in with your group. They are as followed: building up self-esteem and self-confidence, also need to communicate with parents and teachers and getting advice, suggestions from them not only from peers, they should know how to say no for not doing bad things and encouraging a wide social network. (Albert, 2013; Bámaca, 2006; Baruah, 2016; Goel, 2017; McCoy, 2017; Townshend, 2013)

In Indian and South-east Asia community, father is head of family. In Indian culture, parents traditionally have much more authority over their children than American parents do. Children are more obedient and respectful toward their parents. Children are also likely to do well in school performance and education is highly respected in Indian society (Thompson, 2017). According to school-based survey among 2502 students (13-17 years old) in Myanmar(World Health Organization, 2018), parent knew what they were doing with their free time at 56.9%, parents understood their problems/worries with 52.3% and parents checked to see if their homework was done at 47.3%. The relationship between parents and adolescents in Myanmar was so strong and the influence among adolescents was so big.

2.3.6 Bullying

Twenty eight percent of young people from grades six through 12 have been the victim of bullying (Dryden-Edwards, 2018). According to school-based survey among 2502 students (13-17 years old) in Myanmar (World Health Organization, 2018), around half of students were bullied. There are many kinds of bullying which are verbally (name-calling, teasing) and physically (hitting, kicking, pushing) considered as direct forms and indirect forms are deliberate social exclusion, isolation through rumor spreading, and relationship manipulation (Yuhong Zhu, 2015). Boys are more likely to have direct forms (Nansel, 2001) while female adolescents are affected by indirect forms (Seals, 2003). Being bullied at school was due to low self-esteem, poor family background, and family problems mostly. Being bullied are higher chance to develop depression and it can be along with them for the rest of life. Nowadays, cyber bullying cases are increasing among adolescents in modern technology. In one study, some people suffering mental health issues have past history of being bullied 40 years ago and in extreme conditions, they could lead to suicide. The major side effect of being bullied is depression. That side effect consequently lead to do poor school performance, smoking, alcohol, drug abuse as a coping mechanism an then later kick out from school. This can lead to serious mental health issues (Hospital, 2017).

2.4 Mental Health Conditions in Myanmar

According to Public Health Statistics (2014-2016), mental health problem per 100,000 population in 2016 shown that 9 persons were in psychosis, 6 people had depression, 7 persons stayed with anxiety and mental retardation, 5 diagnosed with epilepsy, 120 depended on alcohol.

According to Myanmar Global School based Student Health Survey 2016, in MYANMAR, Generally, 3.6% of students felt so worried about something. Therefore, they could not sleep at night within a year. Students had faced a problem about lonely with 8.5%. Mostly about 9.2 % and 8.4% of students considered attempting suicide and had suicide plan last 12 months. There are 3.7% of students without close friends. Mental health problems are growing in Myanmar. (Tun, 2018). There are two NGOs,

Myanmar Anti Narcotic Association (MANA) and Myanmar Maternal and Child Welfare Association (MMCWA) which are involved in individual assistance actions namely counselling and support groups(C. o. o. M. i. c. WHO et al., 2006).

2.5 Mental Health Services in Myanmar

The number of outpatient mental health services, community based psychiatric inpatients, mental hospitals are twenty-five, seventeen and two. Psychotropic drugs are available in mental hospitals, inpatient and outpatient services. The government health departments invest only 0.3% of health care expenditures towards mental health but when compared to others, it is only about 13%.

The total number of human resources working in mental health facilities or private practice is 265, at a rate of 0.477 per 100,000 general population. They are 89 psychiatrist, 13 other medical doctors, 127 nurses, 4 psychologists, 23 social workers, 1 occupational therapist, 8 other health or mental health workers. There were 74% psychiatrist working at government mental health facilities, 26% for NGO's and for-profit mental health facilities and private practice. The distribution of health staff of psychiatrists between urban and rural areas is not proportionate (C. o. o. M. i. c. WHO et al., 2006). Based on best estimates, 1-20% of psychiatrist go to work to other countries. (C. o. o. M. i. c. WHO et al., 2006)

2.6 Mental Health System in Adolescent

Systems of care in Europe

The Section of Child and Adolescent Psychiatry of the Union of European Medical Specialists (UEMS) has established guidelines for training platform for child and adolescent psychiatrists. The program has been presented in numerous countries of the European Union and can function as a global model. The program recognizes detailed requirements and offers guidance on monitoring and quality assurance.

Adolescent Mental Health Promotion and Prevention in Myanmar

The Ministry of Health and Sports and the Ministry of Education of Myanmar jointly are rearranging school health programme with a greater weight on health promotion and health education, environmental health and sanitation, NCD prevention, including mental health, injury and violence prevention. With the support from UNICEF, Ministry of Education has been implementing Skills Based Health Education and Life skills Programme since 2002. Life skills-based Education discusses to the process of teaching and learning which enables children and young people to attain knowledge, attitudes and skills which support the adoption of healthy behaviors including taking full responsibility for their own lives; making healthy life choices; fighting back to negative pressures; and reducing dangerous behaviors. With the support of WHO, the comprehensive school health strategy (2017-2022) was established based on the setting of National Health Plan 2017-2022 for younger generation. With the support of UNFPA, the National strategic plan for Young People's Health (2016-2020) has been implemented to strengthen the existing policy framework and adolescent health programmes. However, definitely youth-focused mental health promotion and prevention programs under Myanmar Youth Policy should be applied as joint efforts between Ministry of Health and Sport, Ministry of Education and Ministry of Social Welfare (Tun, 2018).

Health care of Sagaing Division

The general state of health care in Myanmar is poor. The military government spends anywhere from 0.5% to 3% of the country's GDP on health care, consistently ranking among the lowest in the world (Anwar, 2007-06-28; PPI, 2007-01-17). Although health care is nominally free, in reality, patients have to pay for medicine and treatment, even in public clinics and hospitals. Public hospitals lack many of the basic facilities and equipment. Moreover, the health care infrastructure outside of Yangon and Mandalay is extremely poor. In 2003, Sagaing Region had less than a quarter of the number of hospital beds counted in Yangon Region, with a similar size of population. (Organization, 2011-09-29.)

2.7 Related Studies

Part 1: Socio Demographic Characteristics

Prevalence

One cross-sectional study which has examined prevalence of depression, anxiety and stress was focused on young male adults especially college population in India, not include association The result only showed mild to extremely sever depressive symptoms and anxiety and stress prevalence is higher in that population. (Sahoo S, 2010).

Another cross-sectional study was focused on association with socio demographic factors and depression which was conducted in an urban area of Bihar, India in 2017. In that study, elder students were more depressed than younger ones and also significantly associated with gender and religion (Kunal Kishor Jha, 2017).

Age

The symptoms of depression, and indeed the disorder itself, seem to depend on age. Younger adolescents, up to about age 16 or17, do not exhibit the same signs of depression as do older adolescents or adults (Weiner, 1980, 1982) the reasons for this are related to the developmental tasks faced by adolescents of different ages. Younger adolescents face tasks that challenge self-esteem (for example, independence from parents, heterosexual friendship patterns) which make them less likely to admit self-critical attitudes and feelings of helplessness. Second, they are more likely to express feelings and emotions through doing rather than thinking. Hence, they are much less likely than older adolescents or adults to express and feel the brunt of depression through cognitive functions namely introspective preoccupation.

In a cross-sectional study about 350 students (15-17 years old) who were living in secondary boarding school of Malaysia in 2013, higher level of depression was seen in students aged 16 years old than other ages. This was contrary to their expectations because the data collection time was so early. (S. Wahab et al., 2013)

In a cross-sectional study design among 545 secondary girl (aged 14-20 years old) in Abha, Saudi Arabia in October 2010, this research pointed out that there was no

association between socio-demographic characteristics and depression, anxiety, stress (Khalid S, 2010).

Grade

400 school going adolescent students residing in boarding houses in Tamilnadu, India suffered from poor mental health and the perceived social support was not significant in predicting mental health status of Burmese adolescents living at boarding school. Depression, anxiety and stress were significantly associated with 10^{th} class students comparing to other classes which were 11^{th} and 12^{th} classes (Praveena Daya A., 2018)

Sex

Although the most reproducible finding in the epidemiology of major depressive disorder has been a higher prevalence in females, there are no clear differences between genders in symptoms, course, treatment response, or functional consequence. In clinical settings, females had more generalized anxiety disorder than males especially two third of females (Dilip V. Jeste, 2013).

In a cross-sectional study about 350 students (15-17 years old) (S. Wahab et al., 2013) who were living in secondary boarding school of Malaysia in 2013, female students presented more anxiety, depression and stress symptoms compared to their male students, which was consistent and another cross-sectional finding were in one Sri Lanka aged (14 – 18) 445 students from two randomly selective schools in 2010 (c. a. S. W. Chaturaka Rodrigo, 1 Jayantha Gurusinghe,1 Thilina Wijeratne,1 Gamini Jayananda,1 and Senaka Rajapakse2, 2010)

Ethnicity

In a cross-sectional study about 350 students (15-17 years old) (S. Wahab et al., 2013) who were living in secondary boarding school of Malaysia in 2013, association between race and depression was not found out.

Religion

More depressed individuals benefit significantly more from religiosity than the least depressed. Religions help to buffer against stressors and improve self-esteem or coping skills.(Jane Cooley Fruehwirth, January 2016).

Part 2: Stressors

Interpersonal Conflict

Individuals with depression histories are known to contribute to the occurrence of interpersonal and other stressors at a high rate, (Hammen C., 2009)

In a short-term longitudinal study among 350 of middle adolescents, depressive symptoms predicted increases in negative qualities, and decreases in positive qualities. However, neither positive nor negative relationship qualities predicted increases in depressive symptoms (Oppenheimer & Hankin, 2011)

In a study about cross sectional descriptive study conducted among Qatari adolescents in secondary Schools in Qatar in 2017, Bad relationship with peers, parents and teachers were among the most significant predictors of depression (Noora Al-Kaabi1, 2017)

Problems with teacher interaction

Teachers often focus on the achievement of education, so they often neglect the students' emotional feelings and that can lead to cause mental distress and learning problems for students. Therefore, students may feel unfamiliar conditions like nervousness, worry, frustration, abasement, depression, etc. (F. S. Chen, Lin, Y.M. and Tu, C.A., , 2006)

In a study about cross sectional descriptive study conducted among Qatari adolescents in secondary Schools in Qatar in 2017, bad relationship with peers, parents and teachers can cause depression significantly. (Noora Al-Kaabi1, 2017)

Problems in school performance

In a cross-sectional study about 350 students (15-17 years old) (S. Wahab et al., 2013) who were living in secondary boarding school of Malaysia in 2013, it showed all

six sources of stress were significantly associated with stress, depression and anxiety. Among all these stressors, academic-related stressors had higher association with all of the symptoms studied than other stressors (teacher-related stressor, intrapersonal-related stressor, interpersonal-related stressor, learning/teaching-related stressor). Other research indicated that academic matters are one of the top 10 sources of stress and these were supposed to 100 pupils selected for transactional study, from the secondary school under the government of Malaysia (S.B.Y., 2010)

In one of the cross-sectional study about 368 Chinese high school students, the finding suggested that gender and students' perception of school climate could moderate the relationships between Chinese high school students' academic problems and their depressive symptoms (Liu & Lu, 2012).

In a cross-sectional study among secondary schools in Tamil Nadu, adolescents who had academic problems were more depression than those who did not have academic stress. (J. T. Arul, M & Rajkumar, Rajamanickam. (2015). , 2015).

Problems in romantic relationship

In a cross-sectional study about Seventy-six European-American high school juniors and seniors, the result proved that there was positive relationship between problems in romantic relationship and depression and mostly was seen in girls more than boys. (Cohan, 2002)

Part 3: Social Resources

Social support from parents, peers and teachers

In one cross-sectional study which was conducted in 2013 focusing on 428 Burmese adolescents (12-18 years old students) who were living in boarding houses in Thailand, there was not statistically significant association between social support and mental health problems (Takeshi Akiyama, 2013).

400 school going adolescent students residing in boarding houses in Tamilnadu, India suffered from poor mental health and the perceived social support was not significant in predicting mental health status of Burmese adolescents living at boarding school. Depression, anxiety and stress were significantly associated with 10^{th} class

students comparing to other classes which were 11th and 12th classes (Praveena Daya A., 2018)

However, other results indicated that positive association between social support and mental health status.

One of the prospective studies about 249 Chinese students from Grades 7 to 9, collected from two urban and two suburban schools in Hong Kong results demonstrate that social support acted as a moderator between stressful life events and depression for Chinese adolescents. On the other hand, the results also suggested that Chinese adolescents having high levels of stressful life events and also lacked parental and peer support were more at risk for high depression. (HENGI, 1997).

The study was conducted to examine the relationship between social support and psychological problems and their influence on academic performance among 120 undergraduate students of the International Islamic University Malaysia (IIUM). The findings of this study revealed that there were significant negative relationship between social support and psychological problems suggesting that the higher the social support, the lower is the psychological problem. (Mariam Adawiah Dzulkifli, 2009)

In a case control study, all the study participants were between 14 to 17 years of age. The cases and controls were based on their age, gender, education, type of school and medium of study. The result showed that inadequate perceived social support were 1.9 more risk of developing depression than the adolescents having adequate perceived social support. (Jayanthi.P., 2016)

One longitudinal study about over 600 respondents of Korean immigrants living in Toronto, Canada showed that social support especially Ethnic social support were important factor in determination of psychological problems (Noh S, 1996). Another study which was 20017 Australian National Survey of Mental Health and Well-being of 8841 participants aged 16-85 years proved that social isolation and low levels of social support are associated with depression, particularly support from friends, were warranted.(Werner-Seidler, Afzali, Chapman, Sunderland, & Slade, 2017)

Part 4: Personal Resources

Mastery

In a cross-sectional study of 1170 Black adolescents in USA, a higher sense of mastery was associated with a lower risk of MDD. This association, however, was significant for African Americans but not Caribbean Blacks. Similarly, among African American males and females, higher mastery was associated with lower risk of MDD. Such association could not be found for Caribbean Black males or females (Assari & Caldwell, 2017)

Self-esteem

One cross-sectional survey which was conducting about 15 to 18 years old Turkish students in Manisa in 2007, research found that students with low self-esteem are at risk of developing depression compared to those with high self-esteem (Dilek Ozmen, 2007)

This was also supported by another study which was conducted among 793 adolescents aged 12 to 20-years-old, a cross sectional study design using random cluster sampling method from four out of a total of 35 secondary schools in Klang District, Selangor in 2008 (Sherina et al., 2008).

Social Competence

In longitudinal study of 467 students in the 6th to 10th grades of five Chicago area schools, the relationship between perceived social competence and depressive symptoms was partially mediated by negative interactions with parents but not peers (Lee, Hankin, & Mermelstein, 2010). Perceived social competence is negatively associated with mental health disorders in general (R. McGee , & Stanton , W. R., 1992), as well as risk for multiple mental health disorders (R. McGee , Feehan , M. , Williams , S. , Partridge , F. , Silva , P. A. , & Kelly , J., 1990).

In a study among 62 participants who were aged between 12 and 19 years and comprised 31 clinically depressed group and 31 non depressed group, depressed group demonstrated lower social competence (Donovan, 26 June 2013)

2.8 Methodology Related literature

Likert Scale

Likert scale is mainly used psychometric response scale in questionnaires to get participant' opinion, attitude or agreement using a statement, Likert items. In 1932, Dr. Rensis Likert, a sociologist at the University of Michigan, developed these scales to measure attitudes scientifically and published the original report "A Technique or Measurement of Attitudes." There are several types of Likert scale. The most commonly used scale is 5point scale ranging from "Strongly Disagree" to "Strongly Agree with neutral one or uncertain in the middle. However, some researchers used 7 point scales, 9 point scales, and 10 point scales. Now, to avoid the situation that most of the respondents choose a neutral option and to get a particular response, most researchers use 4 points Likert scale. 4 point Likert scale is also called force Likert scale, and there is no neutral option. Nevertheless, there are advantages and disadvantages of 4 points Likert scale and 5 points Likert scale (Bertram, 2007).

In using a 4point Likert scale, one of the advantages is that there are no neutral option and people was forced to choose a specific response. Other advantages are that respondents may be more chance to discriminate and think to the statements as they cannot sit on the fence by answering neutral option and it is avoiding the misinterpretation of mid-point. As for disadvantages, this scale makes force to respondents to choose to certain respondents, and people would not like to answer some sensitive responses. In addition to, as respondents could become frustrated if it is a sensitive issue to answer and if they are confused, they will skip the statements without answering, especially in self-administered questions and more chance to get missing data (Jans Losby, 2012).

In using 5 points Likert scale, one of the advantages is that people can stay out by choosing the neutral option if they do not want to judge specific issues including political situation. Moreover, if the topic is highly sensitive, it is better to keep neutral or mid-point option. As disadvantages, if the respondents are not clear the meaning of statements or their mind is confused, people will choose the neutral option, or if they are lazy to answer, they will choose neutral option, and it is difficult to get exact responses from respondents as people are less discrimination on specific statement or

issues (Jans Losby, 2012). Another reason is that when we use 5 or 7 points Likert scale, it takes a longer time to ask and get an answer.

According to statistic results, respondents' data using 4 point scale and 5 point scale do not same to each other, and the tools with 5 point scale had more accurate data and given a better picture. However, 4 points Likert scale is good to use in the statement that the respondents are already familiar with the issues. In choosing these two categories of Likert scale, it is important to think of a method of administration and categories meaningful to respondents.

In our study, the questionnaire is self-administered. In addition to, most of the statements. Therefore, 4 points Likert scale will be used in this study. The Depression Anxiety and Stress Scales (DASS) is widely a useful one, known as the screening tool, for checking the signs of despair, tension and nervousness of all people in the world. There are three sub-scales in that instrument. They are (1) the Depression sub-scale, (2) the Anxiety scale, and (3) the Stress scale. The purpose of the first one is to measure lack of hope, low self-respect, and low positive effect. And the aim of the second is to examine free enthusiasm, muscular-skeletal signs, occasional tension that depends on situations and subjective feelings and experience of anxious enthusiasm. And then, the last one's function is to check and examine tension, excitement, and negative effects. DASS comprises with the full 42-item and the short 21-item versions, which make assessment to the same realm. The DASS is validly used in both clinical and public fields in countries in which most people are speaking English, including Australia, the United States of America, Canada, and England. Other languages including Chinese, Malay, Italian, and Spanish can be translated and certified by means of this tool. High internal consistency is involved in both English and non-English versions (Cronbach's alpha scores of > 0.7).

2.9 Theory Model

Depression is a complex disorder which can manifest itself under a variety of circumstances and due to a multiplicity of factors. The bio-psychosocial model is useful to understand the causation of depression including: Biological, Sociological and Psychological. The following are various risk factors of depression in adolescent (WHO, 2001c) – Marital status, Family history, Parental deprivation: Parental loss, Social stressors: life events, chronic stress, and daily hassles, social support and family type. My conceptual framework is composed of two theories; Pearlin's stress process model and modification of structural equation modelling.

Pearlin's stress process model

In the model (L. I. Pearlin, 1989; L. I. Pearlin, Menaghan, E. G., Lieberman, M. A., & Mullan, J. T., 1981), stress can be expressed both temporally, depending on the duration, and as concentration, depending on the potential mental effect. Generally, stress is the reference of life matters, long-lasting and constant strains and upset. According to Wheaton (1994), this group (and other stressors) is referred as a universe of nervousness, and there is also the argument that an underestimation of the stress effects on mental and physical health are rooted from the defeat of resulting in the exposure to multiple causes of stress(Turner, Wheaton, & Lloyd, 1995). Exposing of stress can induce the process of stress response and create directly effect on mental health free from other factors, protective behavior is also important because they act as both mediators and arbitrator in this process, emphasized and pointed out by Pearlin. There are two kinds of protective factors, which are known as psychosocial resources. These are internal or personal resources and those that are interpersonal or social.

However, resources can improve positive mental working and well-being. Regarding the stress, there is a complex relationship between stress, psychosocial resources and distress (depression, anxiety), which can be described by many different processes (Pearlin, 1989; Wheaton, 1994). Among them, most common people are affected with stress buffering and stress eroding effects. From the point of the buffering model, it is easy to reduce the impact of stress exposure on distress, possessing the extent or degree to which solving response can be created by mobilizing the

psychosocial resources. When a person encounters with the period of crisis and his stress is keeping on, he or she can utilize psychosocial resources in order to lessen the negative psychological outcomes of stress. Furthermore, those psychological consequences of stress can overwhelm the things namely stress erosion hypothesis, thus making the person sensitive and vulnerable to distress. Moreover, Wheaton made the acknowledgement that a threat for consequent stress contact can derive from the stress itself (Wheaton, 1994).

Another stress exposure is that financial stress can come out of an adverse effect (e.g., job loss). The model helps our purposes to assume interconnections between stress exposures, protective causes or psychosocial resources, and internalized problems in children and adolescents.

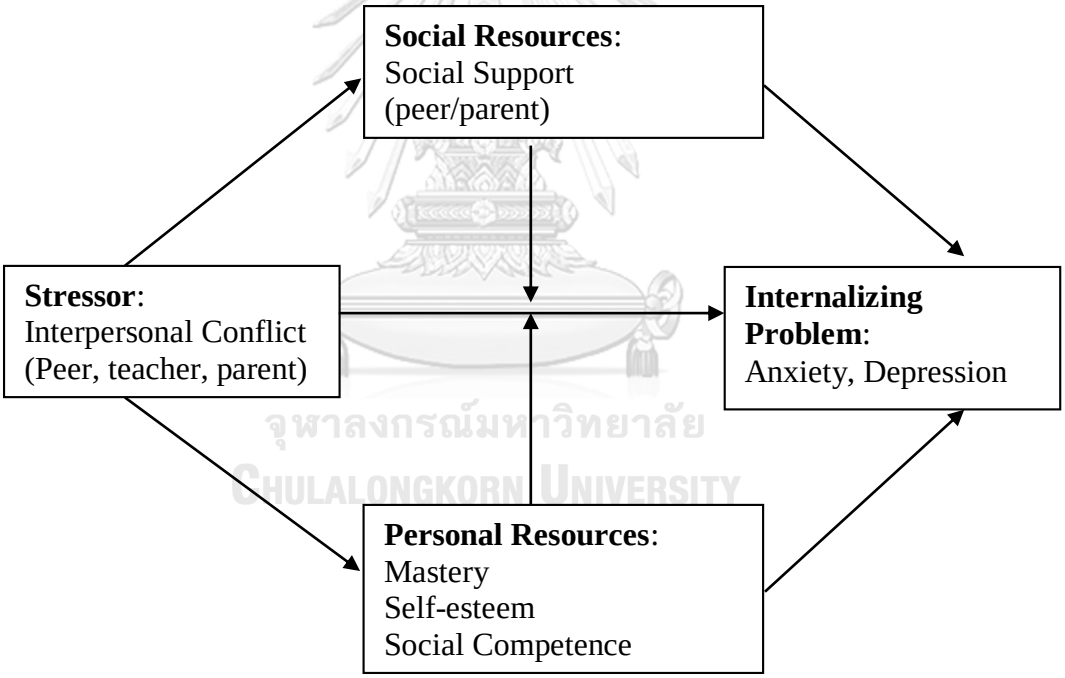


Figure 2 Core components of Pearlin's stress process model. (L. I. Pearlin, 1989; L. I. Pearlin, Menaghan, E. G., Lieberman, M. A., & Mullan, J. T., 1981)

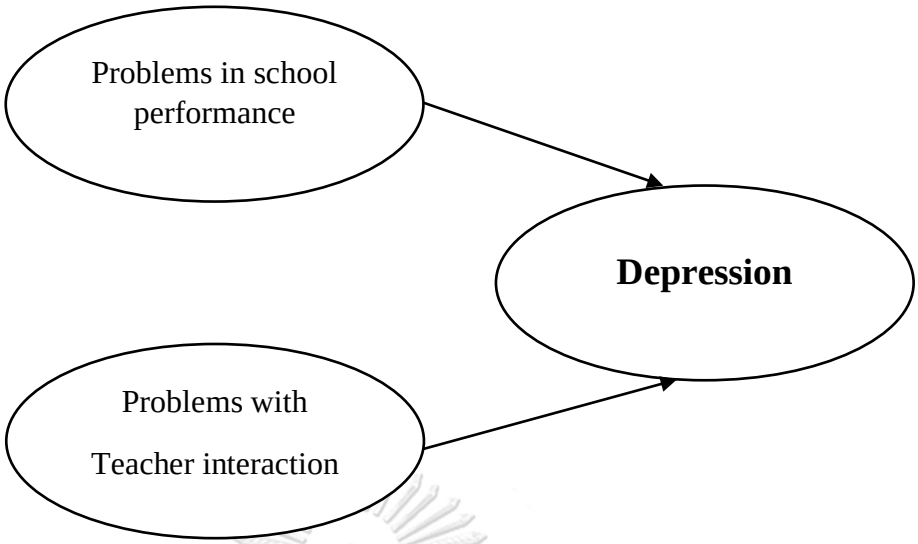


Figure 3 Structural Modelling Equation of Brown Theory (Brown, 2006)
The measurement models were established based on theoretical considerations and validity reliability concerns and tested by CFA (Brown, 2006).

Chapter 3

Methodology

3.1 Study Design

The study design was cross-sectional analytical study for magnitude of depression, anxiety, stress and related factors among adolescents who are living at boarding school.

3.2 Study Area

Study area was boarding schools of Taze which is located in a town in Shwe Bo District, Sagaing Division in Myanmar.

3.3 Study Population

Study population was High School students currently studying and living at boarding schools, Taze Shwe Bo District, Sagaing Division in Myanmar, between 14 and 16 years of age. Even though adolescents were from 10-19 years old we did not include 10-13 years old adolescents because they may not study at boarding school.

3.4 Duration of the Study

The study was conducted from November 2018 to July 2019.

3.5 Sample Size

The Sample size of this study was calculated by using Estimation of finite population proportion formula method. (Daniel, 1995) Population Size (N) which is the number of students 14-19 years old studying at boarding school was 2132 (Taze, 2018). Estimated proportion of adolescents who have depression, anxiety, stress and its related factors (p) = 0.5 (50%) was used because the proportion of adolescents about that studied at boarding school was unknown.

Cochran's formula

$$n = \frac{Z^2\ \alpha/2\ P\ (1-P)}{d^2}$$

$$n = \frac{(1.96)^2\ x0.5x\ (1-0.5)}{(0.05)^2}$$

n = 384

n means sample size

Z means standard value for 95% confidence interval=1.96

D means error allowance= 0.05

P means Proportion of study population expected to be who have depression, anxiety, stress and related factors (unknown recent study = 0.5)

1-p= 1-0.5= 0.5

$$n = \frac{n_0}{1 + \frac{(n_0 - 1)}{N}}$$

Modification for the Cochran Formula for Sample Size,

Here n0 is Cochran's sample size recommendation = 384, N is the population size =2132, and n is the new, adjusted sample size.

385 / [1+(384 / 2132)] = 326

10% for refusal and withdrawal to participate = 32. Therefore, the sample size= 326+32= 358 (rounded off to **360** for equal sampling size in each grade). The 10% was added to sample size to avoid missing vital data, respondent's refusal to questionnaire or withdrawal during the interview, and incomplete answering the questionnaire.

3.6 Inclusion and Exclusion Criteria

Inclusion Criteria

- Adolescents between 14, 15 and 16 years old, both male and female who enrolled in grade 10 and 11 living in eight boarding schools
- Adolescents who were ready to join in the study.
- Students who had chosen by systematically random sampling method and included in the sampling frame.

Exclusion Criteria

- Students who was hospitalized at the time of the survey and absent for other reasons and also who suffered from serious physical illness or acute mental illness by school based health records.
- Cannot write due to hand injuries at the time of interview.
- Students who had been living in boarding school not more than 6 months according to school report.

3.7 Sampling Design

Step 1; Sagaing region was conveniently selected among 7 divisions in Myanmar because the researcher has easy access to divisional educational authority

Step 2; there are 10 districts in Sagaing Region ((MIMU), 2007). Among 10 districts, Shwe Bo District was conveniently selected because the educational authority allowed the researcher to access for the study.

Step 3; In Shwe Bo District, there are four townships totally. Among these, Taze Township was conveniently chosen because the educational authority allowed the researcher to access for the study.

Step 3; there are 8 boarding schools in Taze Township according to the report from Shwe Bo district, Sagaing Division, Ministry of Education, Myanmar (2018-Dec)(Taze, 2018). There are eight boarding schools in Taze, Shwe Bo District, Sagaing Division, Myanmar. Among all eight boarding schools, there were only grade 10 and grade 11 students only. They are as followed.

Table 4 Number of students in Taze boarding schools

No.	School	Number of students	
		Grade 10	**Grade 11**
1	Aung Takhun	151	216
2	Shwe Thayaphoo Takhun	129	210
3	Pyin Nyar Lynn Htet	154	200
4	Myint Myat Pyin Nyar Beik Man Takhun	157	152
5	A Nar Gat Alinnthe Takhun	77	196
6	Myat Pan Thazin Takhun	84	74
7	Aung	82	90
8	Pyin Nyar Gone Takhun	83	77

According to total number of students, there were two groups; five high enrollment boarding schools (around 300 students) and three low enrollment boarding schools (around 150 students)

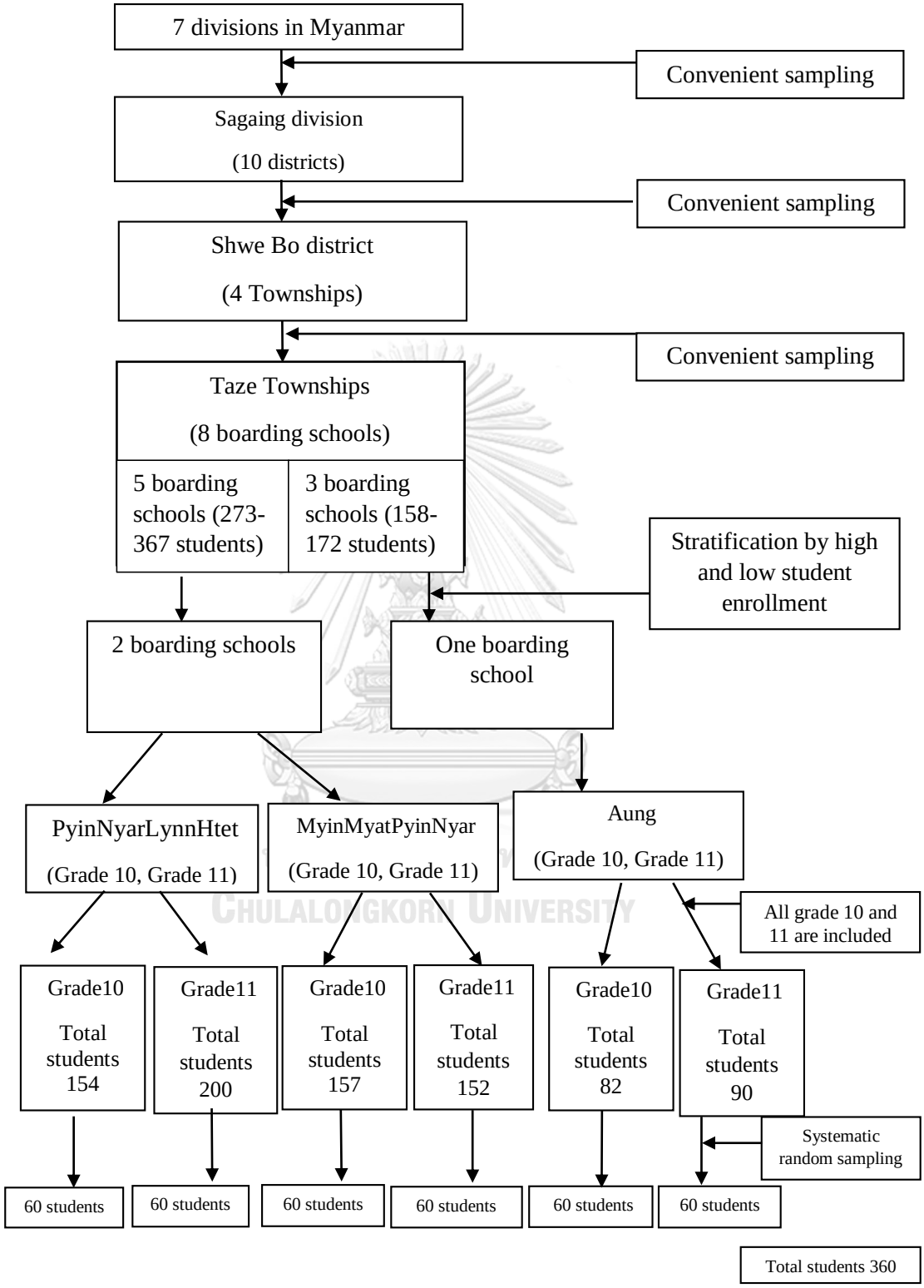
Step 4; Hence, two boarding schools (Pyin Nyar Lynn Htet and Myint Myat Pyin Nyar Beik Man Takhun) were selected randomly from five high enrollment boarding schools by stratification of high and low student size and one boarding school (Aung) was chosen randomly from three low enrollment boarding schools by stratification of high and low student size. After choosing, the researcher contacted the headmaster or headmistress of that three boarding schools. When the permission got from them, the researcher continued the sampling process. The detail taking permission consent from headmaster or headmistress and parents were described fully in data collection part.

Step 5; There were two levels of grade (Grade-10 and Grade-11) in all three boarding schools and were chosen all because these two grades students were having more chance to get depression and anxiety and stress due to entrance examination of University while grade 9 in secondary schools, had "no-failure system". We selected all two grades and list the total number of students learning in two grades (sample frame).

Step 6: Then total numbers were divided by sample size from the result of modified form of Cochran's formula, then choosing one number by excel software randomly and then systematically skipping interval by sampling interval technique.

Students who had chosen by systematically random sampling method but were not at boarding school the survey day and was interviewed at their home by the researcher who gets getting information home address from school registration report. When he or she rejected or refused to answer, the next student in sample frame list was invited to participate.

Figure 4 Sampling technique (Consort) chart



3.8 Measurement Tool

In this study, self-administered structured questionnaires was used for data collection. It was noted that the questionnaire for all the Likert scales measured answers it offers an even (4) number of response options instead of an odd number (e.g.5) because of even number options were linked to increased answers' validity (Jans Losby, 2012). The structured questionnaires consisted of 5 parts.

Part I: Socio demographic characteristics

There are 5 items part about (Question 1 to 5) which are multiple choice including age, grade, sex, religion and ethnicity.

Part II: Stressors Part

Interpersonal conflict with other students

It was composed of one item (Question 6.1) used on a 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. The score range is 1 to 4, with higher scores indicating greater levels of interpersonal conflict problem with students ***during past 6 months.*** Questions were taken from experimental study in the United States of middle school student (Elizabeth Levy Paluck, 2018). For calculating scores of conflict, the cut-off point was mean scores standard deviation. All individual's answers were summed up. Also, mean and standard deviations was calculated. The level of interpersonal conflict with other students was classified as followed;

- Low level of interpersonal conflict with other students = Scores ≤ mean - standard deviations
- Moderate level of interpersonal conflict with other students = mean –1 standard deviation >scores< mean +1 standard deviations
- High level of interpersonal conflict with other students = Scores ≥ mean + standard deviations

Interpersonal conflict with teachers

It was composed of 4 items (Questions 7.1, 7.2, 7.3 and 7.4) used on a 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. The score ranges from 4-16. Questions were taken from Descriptive survey design in Kenya Certificate of Secondary Education in Kasipul Division (AYOMA, 2015). For calculating scores, the cut-off point was mean scores standard deviation. All individual's answers were summed up. Also, mean and standard deviations was calculated. The level of interpersonal conflict with teachers ***during past six months*** was classified as followed;

- Low level of interpersonal conflict with teachers = Scores ≤ mean - standard deviations
- Moderate level of interpersonal conflict with teachers = mean –1 standard deviation >scores< mean +1 standard deviations
- High level of interpersonal conflict with teachers = Scores ≥ mean + standard deviations

Problems with teacher interaction

Modification form of Adolescent Stress Questionnaire consisted of 4 items (Questions 9.1, 9.2, 9.3, 9.4) used in 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree ***during past six months.*** Questions were taken from a study of total of 1,239 adolescents (13–18 years of age) from public elementary and secondary schools in mid-Norway participated in the school-based survey in Norway (Moksnes, Løhre, Lillefjell, Byrne, & Haugan, 2016). For calculating scores, the cut-off point was mean scores standard deviation. All individual's answers was summed up. The score range from 4-16. Also mean and standard deviations was calculated. The level was classified as followed;

- Low level = Scores ≤ mean - standard deviations
- Moderate level = mean –1 standard deviations>scores< mean +1 standard deviations
- High level = Scores ≥ mean + standard deviations

Problems in school performance

Modification form of Adolescent Stress Questionnaire consists of 3 items (Questions 10.1, 10.2 and 10.3) used on a 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. Questions were taken from a study from a study of total of 1,239 adolescents (13–18 years of age) from public elementary and secondary schools in mid-Norway participated in the school-based survey in Norway in Norway (Moksnes et al., 2016). For calculating scores, the cut-off point was mean scores standard deviation. All individual's answers were summed up. The score range from 3-12. Also, mean and standard deviations was calculated. The level was classified as followed;

- Low level = Scores ≤ mean - standard deviations
- Moderate level = mean –1 standard deviations>scores< mean +1 standard deviations
- High level = Scores ≥ mean + standard deviations

Interpersonal conflict with parents

It was composed of two items (Questions 8.1, 8.2) used on a 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. The score range from 2-8. Questions were constructed by the researcher. For calculating scores, the cut-off point was mean scores standard deviation. All individual's answers was summed up. Also mean and standard deviations was calculated. The level of interpersonal conflict with parents ***during past six months*** was classified as followed;

- Low level = Scores ≤ mean - standard deviations
- Moderate level = mean –1 standard deviations>scores< mean +1 standard deviations
- High level = Scores ≥ mean + standard deviations

Problems in romantic relationship

It consists of only one item (Questions 11.1) used on a 4 Likert's Scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. Questions were taken from the article (Moore, 2016). For calculating scores, the cut-off point was mean scores standard deviation. All individual's answers was summed up. The score range from 1-4. Also mean and standard deviations was calculated. The level was classified as followed;

- Low level = Scores ≤ mean - standard deviations
- Moderate level = mean –1 standard deviations>scores< mean +1 standard deviations
- High level = Scores ≥ mean + standard deviations

Part III: Social Resources

Social support from parents composed of 4 items which are Modified form of MOS Social Support Survey Scale (Questions 12.1, 12.2, 12.3, 12.4) used in 4 Likert's Scales which are (1) None of the time (2) a little of the time (3) most of the time (4) all of the time. These questions were taken from the study in San Francisco (Sherbourne & Stewart, 1991). For calculating scores of social supports, the cut-off point was mean scores standard deviation. All individual's answers for social support was summed up and calculated mean and standard deviations. The score range was from 4-16. The level of social support was classified as followed;

- Low social support = Scores ≤ mean - standard deviations
- Moderate social support = mean –1 standard deviations>scores< mean +1 standard deviations
- High social support = Scores ≥ mean + standard deviations

Social support from peers composed of 5 items which are Modified form of MOS Social Support Survey Scale (Questions 12.5, 12.6, 12.7, 12.8, 12.9) used in 4 Likert's Scales which are (1) None of the time (2) a little of the time (3) most of the time (4) all of the time. These questions were taken from the study in San Francisco. For calculating scores of social support, the cut-off point was mean scores standard deviation. All individual's answers for social support was summed up and calculated mean and standard deviations. The score range was from 5-20. The level of social support was classified as followed;

- Low social support = Scores ≤ mean - standard deviations
- Moderate social support = mean –1 standard deviations>scores< mean +1 standard deviations
- High social support = Scores ≥ mean + standard deviations

Social support from teachers composed of one item (Questions 12.10) used in 4 Likert's Scales which are (1) None of the time (2) a little of the time (3) most of the time (4) all of the time. These questions were taken from the study in San Francisco. For calculating scores of social support, the cut-off point was mean scores standard deviation. All individual's answers for social support was summed up and calculated mean and standard deviations. The score range was from 1-4. The level of social support was classified as followed;

- Low social support = Scores ≤ mean - standard deviations
- Moderate social support = mean –1 standard deviations>scores< mean +1 standard deviations
- High social support = Scores ≥ mean + standard deviations

Part IV: Personal resources

Mastery – The 6-item scale (Questions 13.1-problems solving, 13.2-assertiveness, 13.3-self-confidence in the present, 13.4-decision making, 13.5-self-confidence in future, 13.6-self-efficacy) comprised four negatively worded items and two positively worded items, presented with the four response options: (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree The negatively worded items

require reverse coding prior to scoring, resulting in a score range of 6 to 24, with higher scores indicating greater levels of mastery. (L. I. Pearlin, & Schooler, C., 1978). For calculating scores of mastery, the cut-off point was mean scores standard deviation. All individual's answer was summed up and calculated mean and standard deviations. The level was classified as followed;

- Low mastery = Scores ≤ mean - standard deviations
- Moderate mastery = mean –1 standard deviations>scores< mean +1 standard deviations
- High mastery = Scores ≥ mean + standard deviations

Self-esteem - Rosenberg Self-Esteem Scale (Rosenberg, 1965). The scale is ten items (Questions 14.1, 14.2, 14.3, 14.4, 14.5, 14.6, 14.7, 14.8, 14.9, and 14.10) with 4 Likert scale with items answered on a four point scale - from strongly agree to strongly disagree ***during past six months***. The original sample for which the scale was developed consisted of 5,024 High School Juniors and seniors from 10 randomly selected schools in New York State. Sum the scores for the 10 items. The higher the score, the higher the self-esteem. Scores was calculated as follows:

For items 14.1, 14.3, 14.4, 14.7, and 14.10:

Strongly agree = 3

Agree = 2

Disagree = 1

Strongly disagree = 0

For items 14.2, 14.5, 14.6, 14.8, and 14.9 (which are reversed in valence):

Strongly agree = 0

Agree = 1

Disagree = 2

Strongly disagree = 3

The scale ranged from 0-30. Scores between 15 and 25 were within normal range; scores below 15 suggested low self-esteem.

Social Competence

Social Competence composed of 9 items (Question 15.1, 15.2, 15.3, 15.4, 15.5, 15.6, 15.7, 15.8, 15.9) with a 4 Likert scale (1) Strongly Disagree (2) Disagree (3) Agree (4) strongly Agree. Questions were taken from WHO guideline book (WHO, 1997). For calculating scores of social competence, the cut-off point was mean scores standard deviation. All individual's answers was summed up. The score ranged from 9-36. Also mean and standard deviations was calculated. The level was classified as followed;

- Low level of social competence = Scores ≤ mean - standard deviations
- Moderate level of social competence = mean –1 standard deviations>scores< mean +1 standard deviations
- High level of social competence = Scores ≥ mean + standard deviations

Part V: The Depression, Anxiety and Stress

Scale contains 21 questionnaires (DASS-21) (Questions16.1, 16.2, 16.3, 16.4, 16.5, 16.6, 16.7, 16.8, 16.9, 16.10, 16.11, 16.12, 16.13, 16.14, 16.15, 16.16, 16.17, 16.18, 16.19, 16.20 and 16.21) which is a set of three self-report scales designed to measure the emotional states of depression, anxiety and stress. Each of the three DASS-21 scales included 7 items, divided into subscales with similar content with 4 options (1) Did not apply to me at all, (2) Applied to me to some degree (3) Applied to me to a considerable degree or a good part of time and (4) Applied to me very much or most of the time. The depression scale measures hopelessness, devaluation of life, self-deprecation, lack of interest / involvement, anhedonia and inertia. The anxiety scale measures autonomic arousal, skeletal muscle effects, situational anxiety, and subjective experience of anxious affect. The stress scale is sensitive to levels of chronic non-specific arousal. It measures difficulty relaxing, nervous arousal, and being easily upset / agitated, irritable / over-reactive and impatient. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items and multiply by two to get 42 and to be categorized as following (Lovibond, 1995). For prevalence of depression, anxiety and stress, normal and mild was combined together according to recent study (Werner-Seidler et al., 2017).

Table 5 Severity of depression, anxiety and stress

	Depression	**Anxiety**	**Stress**
Normal	0-9	0-7	0-14
Mild	10-13	8-9	15-18
Moderate	14-20	10-14	19-25
Severe	21-27	15-19	26-33
Extremely Severe	28+	20+	34+

3.9 Construct Validity

The questionnaires which were matched with the conceptual framework using theory, Pearlin's stress process model, objectives of the study and operational which are structured to match with the conceptual framework using theory, Pearlin's stress process model and operational definitions, but were not found in previous literature, will be validated by three psychological experts and exam committee members had been Dr. Ratana Somrongthong, Associate Professor, College of Public Health Sciences, Chulalongkorn University and Dr. Nanta Auamkul, M.D, M.P.H). The questionnaires was revised according to exam committee members' comments and experts' comments.

3.10 Content Validity

Content validity refers to the extent to which the items (questions) on the questionnaire are really measuring the variables the researcher seeks to measure. To obtain content validity, the researcher reviewed literature of already validated questionnaires. Content validity had been consulted from three experts in the field of anxiety, depression and stress.

From the literature applied to the part 2, all questions resources were prepared and modified by literature reviewing on previous studies relevant to this study in which for interpersonal conflict with other students and teachers are from the recent study

(Elizabeth Levy Paluck, 2018). For problems with teacher interaction and problems in school performance were from the recent study (Moksnes et al., 2016)

The Part 3, all questions, are adopted from the already validated questionnaires for social support (Sherbourne & Stewart, 1991).

The Part 4, master and self-esteem questionnaires are adopted from the already validated questionnaires; for mastery (L. I. Pearlin, & Schooler, C., 1978) and for self-esteem (Rosenberg, 1965) but social competence questionnaire were taken from WHO guideline book (WHO, 1997)

The Part 5, all questions, are adopted from the already validated questionnaires for depression, anxiety and stress which were prepared by DASS21. (Semrud-Clikeman, 2007).

Content validity by three experts was ascertained for the overall of the questionnaire in Myanmar language as followings:

(1) Dr. Thit Thit Htwe (Consultant Psychologist at Shwe Bo General Hospital)

(2) Dr. Shwe Moe Moe (Township Medical Officer of Shwe Bo Disrict, Sagaing Division)

(3) Dr. Sein Po (Township Medical Officer Taze, Sagaing Division) who used item-objective congruence (IOC) rating of the items regarding how well they did (or did not) measured the relevant variables. The ratings are

- +1: item clearly taps objective
- 0: unsure/ unclear
- -1: item clearly does not tap objective

In order to validating the questionnaires, IOC were scored by three experts and summed up and divided by three. The results is an index ranging from -1 to +1. Interpret IOC manually. The questions which had less than 0.66, revised according to other experts' comments and advice. As IOC for each question more than 0.66 which means two out of three, questionnaires were accepted. Follow-up evaluations of this item would be needed to determine if the item needs to be reworded or eliminated. But my questionnaire was already validated by the above three experts and all those three experts accepted my questionnaire.

3.11 Face Validity

Face validity of the questionnaire was checked during pre-test for which was done among adolescents who were studying at boarding school with similar characteristics to the study site (Taze Township of Shwe Bo district) for clarification and comprehension of each question.

3.12 Reliability

In this research, the internal consistency reliability was assessed during pretesting of the questionnaire to 36 participants who were similar characteristics with my target population before data collection and again at the end of the research data collection on all 360 students to confirm internal consistency for all the research questionnaires and used it for the interpretation of result.

The researcher used SPSS version 22 to calculate internal consistency reliability. For 36 students, internal consistency reliability for depression, anxiety and stress was 0.788, 0.847 and 0.834. Internal consistency reliability for interpersonal conflict with teachers, problem in school performance, and problems with teacher interaction, social support from parents, peers, mastery, self-esteem and social competence was 0.740, 0.829, 0.802, 0.797, 0.730, 0.866, 0.868, 0.748.

After data collection for 360 students, internal consistency reliability for depression, anxiety and stress was 0.811, 0.848 and 0.704. Internal consistency reliability for interpersonal conflict with, teachers, problems in school performance, and problems with teacher interaction, social support from parents, peers, mastery, self-esteem and social competence was 0.765, 0.739, 0.713, 0.853, 0.712, 0.822, 0.866, 0.714 respectively.

If Cronbach's Alpha level with above 0.70 (J Martin Bland, 1997), it was accepted because it means more than 70 percent of the measured variance is reliable and the remaining less than 30 percent is due to random error.

3.13 Translation, Back-Translation

After content validation and internal consistency reliability testing, the questionnaires were translated into Myanmar Language by professionals who have knowledge on mental health vocabulary and with the competency in English and Myanmar language. First professional who is a Medical Doctor and second year student of faculty of psychology and fluent in English translated the questionnaire in Annex A from English to Myanmar language. The second professional who also is a MD second year of faculty of psychology, fluent in English, and does not know the original English version of the questionnaire, translated the Myanmar version of the first translator back into English. There was some discrepancy between the two translations, the two translators came together to agree on a final wording and solved the problem of the discrepancy. The above process insured that the questionnaire achieved content validity, internal consistency reliability in Myanmar language well.

3.14 Pretest

The researcher and two assistants conducted to 10% of sample size (36). Twenty- four students were collected from randomly not chosen five high population size boarding schools and 12 students were collected from randomly not chosen three low population size boarding schools in Taze to the students with similar characteristics. Pretesting, besides the above-mentioned face validity and internal consistency was used test for internal consistency reliability measured by Cronbach's Alpha. Result of the internal consistency was calculated in SPSS software. Other purpose of pretest is to know the process of conducting research including the respondents' comprehension regarding each question in the questionnaire, the flow of questionnaire and, duration of response time, whether the contents of questionnaires are relevant.

The result of pretesting, the researcher got

(1) Internal consistency reliability

(2) Face validity

(3) Internal consistency According to pilot test's results, some questions will revised or adjusted after pilot test. Then, Cronbach's Alpha was used to test the internal consistency and in SPSS software. Cronbach's Alpha level with above 0.70 (J Martin

Bland, 1997) was accepted because it means more than 70 percent of the measured variance is reliable and the remaining less than 30 percent is due to random error.

(4) Comprehension

(5) Flow of questionnaires

Make adjustments according to the results for the pre-testing to identify problems that was not shown at pre-testing.

3.15 Data Collection

Data collection was performed by self-administered method by principal researcher and two research assistants. Two research assistants who are a local person from Taze and had previous experience of data collection in Taze and one research assistant who is from Yangon and who had previous experience of working as a research assistant recruited for this study. Data collection was started from 21st March 2019 to 28th March 2019. There was two days for each boarding school. Therefore, data collection time was taken for one week.

Before Data Collection Process

The researcher pre-visited the boarding schools for surveying the location and collected the number of the students. Formal letters from the College of Public Health Sciences was sent to obtain a permission from three boarding schools in Taze Township and received the recommendation from Taze township school health authority director and finally obtained the permission from the targeted study area. The researcher visited the registration officer of each boarding school for getting the list of the students and made an appointment for date of data collection.

The principal researcher trained research assistants for one day before data collection to reduce interviewer bias. The contents of the training involved how researchers should administer a questionnaire, introduce themselves, built the rapport, create convenient and friendly environment, getting informed consent, objectives of research, research methodology and detailed information about questionnaires and ethics about conducting research distribution of questionnaires, explaining questionnaires, collection of questionnaires and checking the completeness of the answers. The principal researcher explained all training topics to research assistants

with the related documents. At the end of training, research assistants asked the questions to the principal researcher what they are unclear or want to know more. After question sections, research assistants had to do role-play section as research conducting procedures and performance of research assistants.

Data Collection Day

All the eligible students were gathered in the assembly hall or classroom. The teachers were invited to leave the room before disseminating the questionnaires. The respondents were asked to seat in space far apart to ensure their confidentiality and privacy to answer the questionnaires. The researcher and research assistants explained the aims of the study and convince the confidentiality of respondents were guaranteed. The researcher and research assistants disseminated the questionnaire and consent form. The consent for the respondent who aged less than 18 were waiver (please see appendix C). The respondents full filled the consent form and questionnaire within approximately 45 minutes. When students had any doubt of questions, the researcher and/or research assistants answered appropriately. After all respondents finished to full fill the questionnaire and inform consent, the researcher and research assistants collected the questionnaire and inform consent and checked for avoiding missing data. When found out, the researchers and researcher assistant asked them why they did not answer. Mostly they did not answer was due to not seeing the questions. All respondents were invited to leave the room at the same time. At exit students received correct answers to the knowledge section of questionnaire.

3.16 Data entry and analysis

Before entering the data to the computer, Principle researcher checked the data and code the questionnaire. Then, data entry was done by double entry process and rough data was cleaned before analysis which was used with SPSS software version 22 (licensed from Chulalongkorn University) for windows. The descriptive statistical analysis was performed as frequency, number, mean, SD and percentage in all independent and dependent variables.

Categories for analysis of data

Age was categorized into 2 groups; (i) 14 (ii) 15 according to the general concept in both descriptive and analytic parts. According to the recent study, the more age, the higher level of depression, anxiety and stress (S. Wahab et al., 2013)

Grade was categorized into two groups; Grade(10) and Grade (11) according to general concepts and previous studies that grade(10) students had more depression, anxiety and stress (Praveena Daya A., 2018) in descriptive and analytic part.

Sex characteristics was categorized into two groups; Male and Female according to general concepts and previous studies that females students had more depression, anxiety and stress (c. a. S. W. Chaturaka Rodrigo, 1 Jayantha Gurusinghe,1 Thilina Wijeratne,1 Gamini Jayananda,1 and Senaka Rajapakse2, 2010) in descriptive and analytic part.

Religion was categorized into five groups; Buddhism, Christianity, Islam, Hindu and others in descriptive findings and same as five groups in analytics.

Ethnicity was categorized into seven groups; Burmese, Shan, Karen, Rakhine, Mon, Chinese and Other in descriptive findings and into seven groups in analytics as same as descriptive grouping style according to general concept that there was no association between race and depression, anxiety and stress according to previous literature (S. Wahab et al., 2013)

Stressors (Interpersonal conflict with other students, interpersonal conflict with teachers, problems with teacher interaction, problems in school performance, interpersonal conflict with parents and problems in romantic relationship) was categorized into three groups for descriptive results, low level, moderate level and high level using mean score standard deviation in descriptive findings and re-categorized into low, and high respectively using mean score in analytic findings to avoid redundant levels and to fit in multiple logistic regression to get more meaningful and more straightforward results (F. S. Chen, Lin, Y.M. and Tu, C.A., , 2006; Noora Al-Kaabi1, 2017; Oppenheimer & Hankin, 2011; S. Wahab et al., 2013)

Social resources (social support from parents, peers and teachers) was categorized into three groups for descriptive results, low level, moderate level and high level using mean score standard deviation in descriptive findings and re-categorized into low, and high respectively using mean score) in analytic findings to avoid

redundant levels and to fit in multiple logistic regression to get more meaningful and more straightforward results (Werner-Seidler et al., 2017)

Personal resources (mastery, self-esteem, social competence) was categorized into three groups for descriptive results, low level, moderate level and high level using mean score standard deviation in descriptive findings and re-categorized into low, and high respectively using mean score) in analytic findings to avoid redundant levels and to fit in multiple logistic regression to get more meaningful and more straightforward results (Assari & Caldwell, 2017) (Dilek Ozmen, 2007) (Donovan, 26 June 2013).

Depression, Anxiety and Stress was categorized into five degrees in descriptive parts including normal, mild, moderate, severe and extremely severe by operational definition. For multiple logistic regression model, it was categorized into having depression, anxiety, stress and without them. Depression, anxiety and stress was re-categorized into having and not having to fit in multiple logistic regression for analytic findings by combination of normal and mild degree, it came into without depression, anxiety and stress and by combination of moderate, severe and extremely severe degree came into having depression, anxiety and stress (Pumpuang, 2015).

Table 6 Table of descriptive statistic

Variables	Measurement Scale	Descriptive statistics
Part 1: Socio demographic characteristics		
- Age	Discrete scale	Number, Percentage,
- Grade	Nominal scale	Number, Percentage
- Sex	Nominal scale	Number, Percentage
- Religion	Nominal scale	Number, Percentage
- Ethnicity	Nominal scale	Number, Percentage

Table 6 Continued

Variables	Measurement Scale	Descriptive statistics
Part 2: Stressors		
- Interpersonal conflict with other students	Ordinal scale	Frequency, Percentage
- Interpersonal conflict with teachers	Ordinal scale	Frequency, Percentage
- Problems with teacher interaction	Ordinal scale	Frequency, Percentage
- Problems in school performance	Ordinal scale	Frequency, Percentage
- Interpersonal conflict with parents	Ordinal scale	Frequency, Percentage
- Problems in romantic relationship	Ordinal scale	Frequency, Percentage
Part 3: Social Resources		
- Social support from parents	Ordinal scale	Frequency, Percentage
- Social support from peers	Ordinal scale	Frequency, Percentage
- Social support from teachers	Ordinal scale	Frequency, Percentage
Part 4: Personal resources		
- Mastery	Ordinal scale	Frequency, Percentage
- Self-esteem	Ordinal scale	Frequency, Percentage
- Social competence	Ordinal scale	Frequency, Percentage
Part 5: Depression, anxiety and stress	Ordinal scale	Frequency, Percentage

Inferential Statistics

Association between independent variables and dependent variables were analyzed by bivariate analysis using Chi-square test of association with P value level of 0.05. When cells' frequencies are less than 5, Fisher's exact test was used with P value level of 0.05. To find out the associations between multiple independent variables and a dichotomous dependent variable, the researcher used the multiple logistic regression. In multivariate analysis, the independent variables which are at P value<0.25 in bivariate analysis and the variables which had been associations with dependent variable and confounders (even p-value not less than 0.25 level in the bivariate analysis) were involved in multiple logistic regression.

Table 7 Table of Inferential Statistics

Independent Variable	Dependent Variable	Bivariate analysis	Multivariate Analysis
Part 1: Socio demographic characteristics - Age (14,15, 16 and above) - Sex (male, Female) - Grade (grade 10, grade11) - Religion (Buddhism, Christianity, Islam, Hindu, Others) - Ethnicity (Burmese, Shan, Karen, Rakhine, Mon, Chinese, Others)	Level of depression, anxiety and stress (multiple outcomes)	Chi-square test of association. Fisher's exact test (If the cells frequencies are less than 5	Multiple logistic regression

Table 7 Continued

Independent Variable	Dependent Variable	Bivariate analysis	Multivariate Analysis
Part 2: Stressors			
- Interpersonal conflict with other students (Low, High) - Interpersonal conflict with teachers (Low, High) - Problems with teacher interaction (Low, High) - Problems in school performance (Low, High) - Interpersonal conflict with parents (Low, High) - Problems in romantic relationship	Level of depression, anxiety and stress (multiple outcomes)	Chi-square test of association. Fisher's exact test (when the cells frequencies are less than 5)	Multiple logistic regression
Part 3: Social resources			
- Social support from parents, peers and teachers (Low, High)	Level of depression, anxiety and stress (multiple outcomes)	Chi-square test of association. Fisher's exact test (when the cells frequencies are less than 5)	Multiple logistic regression

Table 7 Continued

Independent Variable	Dependent Variable	Bivariate analysis	Multivariate Analysis
Part 4: Personal resources			
• Mastery (Low, High) • Self-esteem (Low, High) • Social Competence (Low, High)	Level of depression, anxiety and stress (multiple outcomes)	Chi-square test of association. Fisher's exact test (when the cells frequencies are less than 5)	Multiple logistic regression

3.17 Ethical Considerations

Ethical approval for this study was submitted to Ethics Review Committee of Chulalongkorn University and amendments shall make according to comments from the Committee. And the researcher got the approved letter for data collection on 20th March 2019. The researcher requested permission from academic administrators of the University and related authorities. Moreover, the participation of the respondents were all voluntary and the decision to participate in the study was not being disclosed to any authority. The researcher did clear verbal explanation of the study purpose and took informed consent from headmasters of boarding schools and respondents before distributions of the questionnaires. Research ethics was served the whole data collection process. All answer sheets and data reports will be reserved in locked cabinet. The collected data will be placed into the database and then all the answer sheets will be burnt after thesis. When the researcher found students with psychological problems like depression, anxiety and stress, the researcher immediately informed headmaster who is in charge of physical and psychological welfare of students at boarding schools to let him take the appropriate action to help the students in need. Such appropriate action may include the headmaster referring the students to consult with professional psychologists.

CHAPTER IV

Results

4.1 Background Information on the Study Area

This study aimed to describe independent variables, namely, explanatory factors namely socio demographic characteristics, stressors (interpersonal conflict with other students, interpersonal conflict with teachers, interpersonal conflict with parents, problems with teacher interaction, problems in school performance and problems in romantic relationship), social resources (social support from parents, peers and teachers), personal resources (mastery, self-esteem, social competence) ,and dependent variables, depression, anxiety and stress to analyze the relationships between each of these independent variables and each of dependent variables among adolescents who are living at boarding school in Taze Township, Shwe Bo district, Sagaing division, Myanmar. The study population consisted of 360 male and female students 14 and 15 years old from three boarding schools of Taze Township, Shwe Bo district, Sagaing division, Myanmar.

The first section of the chapter contains descriptive statistical results of the above mentioned independent variables and dependent variables and the second sections analytic statistical results of bivariate analysis by chi-square or Fisher exact test and multivariate analysis by multiple logistic.

4.2 Part I Descriptive Findings

4.2.1 Independent Variables

4.2.1.1 Socio-demographic Characteristics

Table 8 showed about the descriptive statistics of socio-demographic characteristics. Minimum, and maximum age of respondents were 14 and 15. There were equal proportion of respondents between 14 and 15 years old as well as grade 10 and grade 11. The percentage of female respondents were higher than that of males with 51.7% and 48.3% respectively. The majority of the respondents were Buddhists (98.6%), and Burmese (97.8%).

Table 8 Descriptive Statistics of Socio-Demographic Characteristics (N=360)

Socio-demographic Characteristics	Number (n)	Percent (%)
Age		
14 years old	180	50.0
15 years old	180	50.0
Sex		
Male	174	48.3
Female	186	51.7
Grade		
Grade 10	180	50.0
Grade 11	180	50.0
Religion		
Buddhism	355	98.6
Christianity	5	1.4
Ethnicity		
Burmese	352	97.8
Shan	8	2.2

4.2.1.2 Stressors

4.2.1.2.1 Interpersonal Conflict with other Students

As shown in table, the majority (68.9%), of respondents answered ‘agree’ of often having conflict with other students in the school. Moreover, the majority of respondents (51.7%) suffered moderate level interpersonal conflict with other students. In addition, with the mean score of interpersonal conflict with other students was 2.82 (± 1.056 1SD) with 111 students reaching the maximum score of 4 and 63 students reaching the minimum score of 1. These results were not shown in table 9.

Table 9 Number and Percent Distribution of Interpersonal Conflict with Other Students (N=360)

Statement of Interpersonal conflict with other students	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
I often have conflicts with other students in the school	63 (17.5)	49 (13.6)	137 (38.1)	111 (30.8)	360 (100.0)
Low level of conflict (=1 score)					63 (17.5)
Moderate level of conflict (2-3)					186 (51.7)
High level of conflict (=4)					111 (30.8)

4.2.1.2.2 Interpersonal Conflict with Teachers

As shown in table, the majority (68.9%) of respondents answered ‘agree’ to the fact that between teachers and students can become conflict because of some teachers treated students harshly, student‘s indiscipline (80.6%), teachers favoring to certain students talking to friends (74.4%) and teacher-students conflict can negatively affect to student’s academic performance (79.5%). Moreover, the majority of respondents (66.7%) suffered moderate level of interpersonal conflict with teachers. In addition with the mean score of interpersonal conflict with teachers was 12.45 (±2.955 1SD) with 70 students reaching the maximum score of 16 and only one student reaching the minimum score of 4. These results were not shown in table 10.

Table 10 Number and Percent Distribution of Interpersonal Conflict with Teachers (N=360)

Statement of Interpersonal conflict with Teachers	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
Teacher-students conflict arise because some teachers treat students harshly	57 (15.8)	55 (15.3)	110 (30.6)	138 (38.3)	360 (100.0)
Student’s indiscipline in my school is a cause of conflict between teachers and students	16 (4.4)	54 (15)	148 (41.2)	142 (39.4)	360 (100.0)
When teachers favor certain students is a cause of teacher student conflict	19 (5.3)	90 (25.0)	86 (23.9)	165 (45.8)	360 (100.0)
Teachers-students conflict negatively affects student‘s academic performance in our school	30 (8.3)	44 (12.2)	83 (23.1)	203 (56.4)	360 (100.0)

Table 10 Continued

Statement of Interpersonal conflict with Teachers	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
Low level of conflict (≤9 scores)					50 (13.9)
Moderate level of conflict (10-15)					240 (66.7)
High level of conflict (≥ 16)					70 (19.4)

4.2.1.2.3 Problem with Teacher Interaction

As shown in table, the majority (63.9%) of respondents answered 'agree' of having problems due to teachers hassling them, not being listened to by teachers (75.9%), lack of respect from teachers (73.1%) and they were not getting along with their teachers (76.4%). Moreover, the majority of respondents (69.4%) suffered moderate level of problems with teacher interaction. In addition with the mean score of problems with teacher interaction was 11.92 (±2.932 1SD) with 14 students reaching the maximum score of 16 and 4 students reaching the minimum score of 4. These results were not shown in table 11.

Table 11 Number and Percent Distribution of Problems with Teacher Interaction (N=360)

Statement of Problems with Teacher Interaction	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
teachers hassling me	54 (15.0)	76 (21.1)	114 (31.7)	116 (32.2)	360 (100.0)
not being listened to by teachers	17 (4.7)	70 (19.4)	170 (47.3)	103 (28.6)	360 (100.0)
lack of respect from teachers	43 (11.9)	54 (15.0)	124 (34.4)	139 (38.7)	360 (100.0)
I am not getting along with my teachers	42 (11.7)	44 (11.9)	83 (30.0)	203 (46.4)	360 (100.0)
Low level (≤8 scores)					56 (15.6)
Moderate level (9-14)					250 (69.4)
High level (≥ 15)					54 (15.0)

4.2.1.2.4 Problems in School Performance

As shown in table, the majority (55.3%) of respondents answered ‘agree’ of having problems due to study things they did not understand, teachers expecting too much from them (64.4%), and having difficulties with some subjects (63%). Moreover, the majority of respondents (49.4%) suffered moderate level of problems in school performance. In addition, with the mean score of problems in school performance was 8.38 (±2.278 1SD) with 8 students reaching the maximum score of 12 and only one student reaching the minimum score of 3. These results were not shown in table 12.

Table 12 Number and Percent Distribution of Problems in School Performance (N=360)

Statement of Problems in School Performance	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
I have to study things I don’t understand	56 (15.6)	105 (29.1)	83 (23.1)	116 (32.2)	360 (100.0)
teachers expecting too much from me	19 (5.3)	109 (30.3)	176 (48.8)	56 (15.6)	360 (100.0)
I have difficulties with some subjects	28 (7.8)	105 (29.2)	98 (27.2)	129 (35.8)	360 (100.0)
Low level (≤6 scores)					106 (29.4)
Moderate level (7-10)					178 (49.4)
High level (≥ 11)					76 (21.1)

4.2.1.2.5 Interpersonal Conflict with Parents

As shown in table, the majority (74.5%) of respondents answered ‘agree’ of having conflict with their parents or guardians after attending boarding school and before joining boarding school (44.4%). Moreover, the majority of respondents (61.7%) suffered moderate level of interpersonal conflict with parents. In addition with the mean score of interpersonal conflict with parents was 5.44 (±1.456 1SD)_with 19 students reaching the maximum score of 8 and 13 students reaching the minimum score of 2. These results were not shown in table 13.

Table 13 Number and Percent Distribution of Interpersonal Conflict with Parents (N=360)

Statement of Interpersonal conflict with Parents	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
Before attending boarding school, you often had conflict with your parents or guardians	70 (19.4)	130 (36.2)	97 (26.9)	63 (17.5)	360 (100.0)
While attending boarding school, you continue to have conflict with your parents or guardians	21 (5.8)	71 (19.7)	148 (41.2)	120 (33.3)	360 (100.0)
Low level of conflict (≤3 scores)					32 (8.9)
Moderate level of conflict (4-6)					222 (61.7)
High level of conflict (≥7)					106 (29.4)

4.2.1.2.6 Problems in Romantic Relationship

As shown in table, the majority (74.8%) of respondents answered ‘disagree’ that they cannot develop romantic relationship with boyfriend or girlfriend. Moreover, the majority of respondents (74.7%) had moderate level of problems in romantic relationship. In addition with the mean score of problems in romantic relationship was 1.7 (±0.16 1SD) with 59 students reaching the maximum score of 4 and 236 students reaching the minimum score of 1. These results were not shown in table 14.

Table 14 Number and Percent Distribution of Problems in Romantic Relationship (N=360)

Statement of Problems in Romantic Relationship	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
I cannot develop romantic relationship with boyfriend or girlfriend.	236 (65.6)	33 (9.2)	32 (8.8)	59 (16.4)	360 (100.0)
Low level (1 score)					236 (65.6)
Moderate level (2-3)					65 (18.1)
High level (4)					59 (16.4)

4.2.1.3 Social Resources

4.2.1.3.1 Social Support from Parents

As shown in table, the majority (59.7%) of respondents answered ‘agree’ that they can count on parents to listen to them when they need to talk, parents showing them love and affection (65.2%), parents giving them good advice about a crisis (66.1%) and parents sharing their most private worries and fears (67.5%). Moreover, the majority of respondents (49.7%) had moderate level of social support from parents. In addition with the mean score of social support from parents was 11.53 (±3.385 1SD) with 32 students reaching the maximum score of 16 and only one student reaching the minimum score of 4. These results were not shown in table 15.

Table 15 Number and Percent Distribution of Social Support from Parents (N=360)

Statement of Social Support from Parents	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
Parents, you can count on to listen to you when you need to talk	73 (20.3)	72 (20.0)	84 (23.3)	131 (36.4)	360 (100.0)
Parents who shows you love and affection	24 (6.7)	101 (28.1)	119 (33.1)	116 (32.1)	360 (100.0)
Parents to give you good advice about a crisis	31 (8.6)	91 (25.3)	117 (32.5)	121 (33.6)	360 (100.0)
Parents to share your most private worries and fears	37 (10.3)	80 (22.2)	105 (29.2)	138 (38.3)	360 (100.0)

Table 16 Continued

Statement of Social Support from Parents	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
Parents, you can count on to listen to you when you need to talk	73 (20.3)	72 (20.0)	84 (23.3)	131 (36.4)	360 (100.0)
Parents who shows you love and affection	24 (6.7)	101 (28.1)	119 (33.1)	116 (32.1)	360 (100.0)
Parents to give you good advice about a crisis	31 (8.6)	91 (25.3)	117 (32.5)	121 (33.6)	360 (100.0)
Parents to share your most private worries and fears	37 (10.3)	80 (22.2)	105 (29.2)	138 (38.3)	360 (100.0)
Low level (≤8 scores)					95 (26.4)
Moderate level (9-14)					179 (49.7)
High level (≥ 15)					86 (23.9)

4.2.1.3.2 Social Support from Peers

As shown in table, the majority (66.1%) of respondents answered ‘agree’ that they can count on peers to listen to them when they need to talk, having good time with peers (65.2%), peers giving them good advice about a crisis (65.9%) and peers sharing their most private worries and fears (62.8%), they talked to friends when they had conflict with other students (74.4%). Moreover, the majority of respondents (66.7%) had moderate level of social support from peers. In addition with the mean score of social support from peers was 14.14 (±3.003 1SD) with 10 students reaching the maximum score of 19 and only one student reaching the minimum score of 6. These results were not shown in table 16.

Table 17 Number and Percent Distribution of Social Support from Peers (N=360)

Statement of Social Support from Peers	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
Peers you can count on to listen to you when you need to talk	36 (10.0)	86 (23.9)	138 (38.3)	100 (27.8)	360 (100.0)
Peers to share your most private worries and fears with	29 (8.1)	105 (29.1)	136 (37.8)	90 (25.0)	360 (100.0)
Peers to give you good advice about a crisis	39 (10.8)	84 (23.3)	143 (39.7)	94 (26.2)	360 (100.0)
Peers to have good time with	29 (8.1)	96 (26.7)	138 (38.3)	97 (26.9)	360 (100.0)

Table 16 Continued

Statement of Social Support from Peers	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
I talk to friends when I have conflict with other students	24 (6.7)	68 (18.9)	207 (57.5)	61 (16.9)	360 (100.0)
Low level (≤11 scores)					88 (24.4)
Moderate level (12-17)					240 (66.7)
High level (≥ 18)					24.4 (8.9)

4.2.1.3.3 Social support from Teachers

As shown in table, the majority (70.6%) of respondents answered ‘agree’ that the school teachers helped them to solve conflict among themselves when they had conflicts. Moreover, the majority of respondents (50.3%) had moderate level of social support from teachers. In addition, with the mean score of social support from teachers was 2.99 (±1.003 1SD) with 140 students reaching the maximum score of 4 and 39 students reaching the minimum score of 1. These results were not shown in table 17.

Table 18 Number and Percent Distribution of Social Support from Teachers (N=360)

Statement of Social Support from Teachers	**Strongly disagree n (%)**	**Disagree n (%)**	**Agree n (%)**	**Strongly agree n (%)**	**Total n (%)**
The school teachers help students to solve conflict among themselves when we have conflicts	39 (10.8)	67 (18.6)	114 (31.7)	140 (38.9)	360 (100.0)
Low level of social support (1 score)					39 (10.8)
Moderate level of social support (2-3)					181 (50.3)
High level of social support (4)					140 (38.9)

4.2.1.4 Personal Resources

4.2.1.4.1 Mastery

As shown in table, some respondents answered ‘agree’ that there was really no way they can solve some of the problem (35.5%), sometimes they felt that they were being pushed around in life (37.5%), they had little control over the things that happen to them (40.8%), they can do just about anything they really set their mind to (53.1%), what happened to them in the future mostly depends on them (46.4%) and there was little they can do to change many of the important things in their life (39.2%). Moreover, the majority of respondents (59.4%) had moderate level of mastery. In addition, with the mean score of mastery was 14.19 (±4.402 1SD) with 2 students reaching the maximum score of 24 and 2 students reaching the minimum score of 6. These results were not shown in table.

Table 19 Number and Percent Distribution of Mastery (N=360)

Statement of Self-esteem	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
There is really no way I can solve some of the problem I have*	141 (39.2)	91 (25.3)	62 (17.2)	66 (18.3)	360 (100.0)
Sometimes I feel that I’m being pushed around in life*	52 (14.4)	173 (48.1)	96 (26.7)	39 (10.8)	360 (100.0)
I have little control over the things that happen to me*	71 (19.8)	142 (39.4)	104 (28.9)	43 (11.9)	360 (100.0)
I can do just about anything I really set my mind to	77 (21.3)	92 (25.6)	122 (33.9)	69 (19.2)	360 (100.0)

Table 19 Continued

Statement of Self-esteem	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
What happens to me in the future mostly depends on me	54 (15.0)	139 (38.6)	73 (20.3)	94 (26.1)	360 (100.0)
There is little I can do to change many of the important things in my life*	99 (27.5)	120 (33.3)	79 (21.9)	62 (17.3)	360 (100.0)
Low level (≤9 scores)					56 (15.6)
Moderate level (10-18)					214 (59.4)
High level (≥ 19)					90 (25.0)

*Negative Statement

4.2.1.4.2 Self-esteem

As shown in table, some respondents answered ‘agree’ that they were satisfied with themselves (48.1%), they thought they were no good at all (39.2%), they felt that they had a number of good qualities (51.4%), they were able to do things as well as most other people (57%), they felt they did not have much to be proud of (47.5%), they certainly felt useless at time (40.8%), they felt that they were person of worth, at least on an equal plane with others (55.3%), they wished they could have more respect for themselves (43.4%), they felt that they were failures (41.7%), they took positive attitude toward themselves (44.5%). Moreover, the majority of respondents (49.4%) had low level of self-esteem. In addition, with the mean score of self-esteem was 24.59 (+ 6.855 1SD) with only one student reaching the maximum score of 28 and also one student reaching the minimum score of 2. These results were not shown in table 20.

Table 20 Number and Percent Distribution of Social Competence (N=360)

Statement of Social Competence	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
I am being able to keep good relationship with family members	90 (25.0)	50 (13.9)	109 (30.3)	111 (30.8)	360 (100.0)
I am being able to keep good relationship with peers/my friends.	19 (5.3)	82 (22.8)	183 (50.8)	76 (21.1)	360 (100.0)
I am being able to keep good relationship with teachers	37 (10.3)	95 (26.4)	140 (38.9)	88 (24.4)	360 (100.0)
I am being able to keep good relationship with family members	90 (25.0)	50 (13.9)	109 (30.3)	111 (30.8)	360 (100.0)

Table 20 Continued

Statement of Social Competence	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
I am being able to keep good relationship with peers/my friends.	19 (5.3)	82 (22.8)	183 (50.8)	76 (21.1)	360 (100.0)
I am being able to keep good relationship with teachers	37 (10.3)	95 (26.4)	140 (38.9)	88 (24.4)	360 (100.0)
I am being able to express opinions in speaking	39 (10.8)	56 (15.6)	159 (44.2)	106 (29.4)	360 (100.0)
I am being able to express desires in speaking	22 (6.1)	90 (25.0)	146 (40.6)	102 (28.3)	360 (100.0)
I am being able to express needs in speaking	19 (5.3)	71 (19.7)	165 (45.8)	105 (29.2)	360 (100.0)
I am being able to express opinions in writing	43 (11.9)	73 (20.3)	138 (38.4)	106 (29.4)	360 (100.0)
I am being able to express desires in writing	21 (5.8)	69 (19.2)	149 (41.4)	121 (33.6)	360 (100.0)
I am being able to express needs in writing	34 (9.4)	43 (11.9)	152 (42.3)	131 (36.4)	360 (100.0)

Table 20 Continued

Statement of Social Competence	Strongly disagree n (%)	Disagree n (%)	Agree n (%)	Strongly agree n (%)	Total n (%)
I am being able to express needs in writing	34 (9.4)	43 (11.9)	152 (42.3)	131 (36.4)	360 (100.0)
Low level (≤21 scores)					59 (16.4)
Moderate level (22-30)					233 (64.7)
High level (≥31)					68 (18.9)

4.2.2 Dependent Variables

4.2.2.1 Depression (DASS-21)

As shown in table, 54.2% of total respondents answered ‘agree’ that they had not positive feeling, 52.8% of total respondents found that they were so difficult to work up the initiative to do things, 61.7% of total participants answering that they had nothing to look forward to, 46.9% of participants did not feel down-hearted and blue as well as 41.2% of them was able to become enthusiastic about anything, the number of percentage of adolescents who felt they were not worth much as a person was 55.6% and the proportion of 63.1% of total participants answered that their life was meaningless. Moreover, the majority of respondents (42.5%) suffered extremely severe level of depression. In addition with the mean score of depression was 23.96 (±9.89 1SD) with only one student reaching the maximum score of 42 and 22 students reaching the minimum score of 0. These results were not shown in table. Prevalence of depression is combination of moderate, severe and extremely severe degree and no depression is combination of normal and mild depression degree.

Table 21 Number and Percent Distribution of Depression (DASS-21*) of Respondents (N=360)

Statement of Depression (DASS-21)	**Did not apply to me at all n (%)**	**Applied to me some of the time n (%)**	**Applied to me a good part of time n (%)**	**Applied to me most of the time n (%)**	**Total n (%)**
I couldn't seem to experience any positive feeling at all	59 (16.4)	106 (29.4)	112 (31.1)	83 (23.1)	360 (100.0)
I found it difficult to work up the initiative to do things	50 (13.9)	120 (33.3)	118 (32.8)	72 (20.0)	360 (100.0)
I felt that I had nothing to look forward to	61 (16.9)	77 (21.4)	103 (28.6)	119 (33.1)	360 (100.0)
I felt down-hearted and blue	40 (21.3)	91 (25.6)	98 (33.9)	131 (19.2)	360 (100.0)
I was unable to become enthusiastic about anything	64 (17.8)	84 (23.4)	133 (36.9)	79 (21.9)	360 (100.0)
I felt I wasn't worth much as a person	67 (18.6)	93 (25.8)	108 (30.0)	92 (25.6)	360 (100.0)
I felt that life was meaningless	49 (13.6)	84 (23.3)	95 (26.4)	132 (36.7)	360 (100.0)

Table 21 continued

Statement of Depression (DASS-21)	**Did not apply to me at all n (%)**	**Applied to me some of the time n (%)**	**Applied to me a good part of time n (%)**	**Applied to me most of the time n (%)**	**Total n (%)**
No depression					28 (7.8)
Mild depression level					25 (6.9)
Moderate depression level					68 (18.9)
Severe depression level					86 (23.9)
Extremely severe depression level					153 (42.5)

*7 questions out of DASS-21

Table 22 Prevalence of Depression

Depression	n (%)
No	53 (14.7)
Yes	307 (84.7)

4.2.2.2 Anxiety (DASS-21)

As shown in table, the majority (60.8%) of respondents answered ‘agree’ that they had dryness of mouth, 55% of total paricipants experiecned difficult breathing which is excessively rapid breathing, breathlessness in the absence of physical exertion, they experienced trembling as an example in the hands as same as worried about situations in which they might (53.1%), 56.3% of total respondents who felt that they were close to panic, around 62% of total respondents who were aware of the action of my heart in the absence of physical exertion (e.g. increase, heart missing a beat) and the majority (63.6%) of respondents agreed that they felt scared without any good reason. Moreover, the majority of respondents (72.5%) suffered exttremely severe level of anxiety. In addition with the mean score of anxiety was 23.04 (±10.214 1SD) with five students reaching the maximum score of 40 and 3 students reaching the minimum score of 0. These results were not shown in table. Prevalence of anxiety is combination of moderate, severe and extremely severe degree and no anxiety is combination of normal and mild anxiety degree.

Table 23 Number and Percent Distribution of Anxiety (DASS-21*) (N=360)

Statement of Anxiety	Did not apply to me at all n (%)	Applied to me some of the time n (%)	Applied to me a good part of time n (%)	Applied to me most of the time n (%)	Total n (%)
I was aware of dryness of my mouth	51 (14.2)	90 (25.0)	159 (44.2)	60 (16.6)	360 (100.0)
I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	56 (15.6)	106 (29.4)	108 (30.0)	90 (25.0)	360 (100.0)
I experienced trembling (e.g. in the hands)	58 (16.1)	111 (30.8)	104 (28.9)	87 (24.2)	360 (100.0)
I was worried about situations in which I might	64 (17.8)	105 (29.2)	117 (32.5)	74 (20.6)	360 (100.0)
I felt I was close to panic	65 (18.1)	92 (25.6)	127 (35.2)	76 (21.1)	360 (100.0)

Table 22 Continued

Statement of Anxiety	**Did not apply to me at all n (%)**	**Applied to me some of the time n (%)**	**Applied to me a good part of time n (%)**	**Applied to me most of the time n (%)**	**Total n (%)**
I felt scared without any good reason	66 (18.3)	65 (18.1)	123 (34.2)	106 (29.4)	360 (100.0)
No anxiety					51 (14.2)
Mild anxiety level					4 (1.1)
Moderate anxiety level					3 (0.8)
Sever anxiety level					41 (11.4)
Extremely severe anxiety level					261 (72.5)

*7 questions out of DASS-21

Table 24 Prevalence of Anxiety

Anxiety	n (%)
No	55 (15.3)
Yes	258 (84.7)

4.2.2.3 Stress (DASS-21)

As shown in table, the majority (59.5%) of respondents answered ‘agree’ that they were so hard to wind down, they tended to over-react to situations (65.3%), they felt that they were using a lot of nervous energy (62.8%), they found themselves getting agitated at 61.7%, they were so difficult to relax (68.3%), they were intolerant of anything that kept them from getting on with what they were doing (50%) and they felt they were rather touchy (58.3%). Moreover, the majority of respondents (34.2%) suffered severe level of stress. In addition with the mean score of stress was 24.86 (±8.285 1SD) with 6 students reaching the maximum score of 40 and only one student reaching the minimum score of 4. These results were not shown in table. Prevalence of stress is combination of moderate, severe and extremely severe degree and no stress is combination of normal and mild stress degree.

Table 25 Number and Percent Distribution of Stress (DASS-21*) (N=360)

Statement of Stress (DASS-21)	Did not apply to me at all n (%)	Applied to me some of the time n (%)	Applied to me a good part of time n (%)	Applied to me most of the time n (%)	Total n (%)
I found it hard to wind down	76 (21.1)	70 (29.4)	77 (21.4)	137 (38.1)	360 (100.0)
I tended to over-react to situations	34 (9.4)	91 (25.4)	148 (41.1)	87 (24.2)	360 (100.0)
I felt that I was using a lot of nervous energy	45 (12.5)	89 (24.7)	131 (36.4)	95 (26.4)	360 (100.0)
I found myself getting agitated	21 (5.8)	117 (32.5)	122 (33.9)	100 (27.8)	360 (100.0)
I found it difficult to relax	14 (3.9)	100 (27.8)	122 (33.9)	124 (34.4)	360 (100.0)
I was intolerant of anything that kept me from getting on with what I was doing	81 (22.5)	99 (27.5)	70 (19.4)	110 (30.6)	360 (100.0)
I felt that I was rather touchy	54 (15.0)	96 (26.7)	116 (32.2)	94 (26.1)	360 (100.0)

Table 25 Continued

Statement of Stress (DASS-21)	Did not apply to me at all n (%)	Applied to me some of the time n (%)	Applied to me a good part of time n (%)	Applied to me most of the time n (%)	Total n (%)
No stress					55 (15.3)
Mild stress level					47 (13.1)
Moderate stress level					66 (18.3)
Severe stress level					123 (34.2)
Extremely stress level					69 (19.2)

*7 questions out of DASS-21

Table 26 Prevalence of Stress

Stress	n (%)
No	102 (28.4)
Yes	258 (71.0)

4.3 Analytic Findings

For running into bivariate and multivariate analysis of dependent variable, the five degree of depression, anxiety and stress have been classified as no depression - yes depression, no anxiety – yes anxiety, no stress – yes stress. All normal and mild degree were into No group while moderate, sever and extremely severe were into Yes group.

For running into bivariate and multivariate analysis of independent variable, three level of stressors, personal resources and personal resources were classified into low level and high level.

4.3.1 Bivariate Analysis between Independent Variables and Dependent variable, Depression

Bivariate Analysis between Socio Demographic Characteristics and Depression

Table 4.17 shows the bivariate analysis results between five socio-demographic characteristics, and depression among participants. Among these, sex was highly statistically significantly associated with depression at p value 0.001. Moreover, for counter check with running simple logistic regression, the results showed that female students were more likely to have depression than males.

Table 27 Bivariate Analysis between Socio Demographic Characteristics and Depression (N=360)

Socio-demographic Characteristics	Depression				Chi-square	p-value
	Yes		No			
	n (307)	% (85.3)	n (53)	% (14.7)		
(1) Age					0.553	0.457
14	151	83.9	29	16.1		
15	156	86.7	24	13.3		
(2) Grade					0.553	0.457
10	151	83.9	29	16.1		
11	156	86.7	24	13.3		
(3) Sex					11.481	**0.001****
Male	137	78.7	37	21.3		
Female	170	91.4	16	8.6		
(4) Religion					0.875	0.349
Buddhism	302	85.1	53	14.9		
Christian	5	100.0	0	4.8		
(5) Ethnicity					1.412	0.235
Burmese	299	84.9	53	15.1		
Shan	8	100.0	0	0.0		

**p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Stressors and Depression

Table 28 shows the bivariate analysis between stressors and depression among participants. Among these, level of interpersonal conflict with other students, level of problems with teacher interaction and level of problems in school performance and levels of interpersonal conflict with parents were highly statistically significantly associated with depression at p-value of 0.000. Levels of problems in romantic relationship was statistically significant association with depression with p-value 0.023. Moreover, for counter check with running simple logistic regression, the result showed that students with high level of interpersonal conflict with other students, with parents, problems with teacher interaction, problems in school performance and problems in romantic relationship were more likely to have depression than those of their counterparts.

Table 28 Bivariate Analysis between Stressors and Depression (N=360)

Stressors	Depression				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	307	85.3	53	14.7		
(1) Level of Interpersonal conflict with other students					11.406	0.001**
Low level	85	75.9	27	24.1		
High level	222	89.5	26	10.5		
(2) Level of Interpersonal conflict with teachers					0.096	0.756
Low level	132	84.6	24	15.4		
High level	175	85.8	29	14.2		
(3) Level of Interpersonal conflict with parents					14.738	0.000**
Low level	150	78.5	41	21.5		
High level	157	92.9	12	7.1		
(4) Level of problems with teacher interaction					29.286	0.000**
Low level	86	71.1	35	28.9		
High level	221	92.5	18	7.5		

Table 28 Continued

Stressors	Depression				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	307	85.3	53	14.7		
(5) Level of problems in school performance					24.699	0.000**
Low level	119	74.8	40	25.2		
High level	188	93.5	13	6.5		
(6) Level of problems in romantic relationship					5.185	0.023*
Low level	119	82.2	42	17.8		
High level	113	91.1	11	8.9		

**p-value<0.01=Highly Statistically Significant, *p-value<0.05=Statistically Significant

Bivariate Analysis between Social Resources and Depression

Table 29 shows the bivariate analysis results between social resources and depression among participants. As shown in table below, there was highly statistically significant associations between levels of social support from parents and teachers with depression at p-value 0.000. Moreover, for counter check with running simple logistic regression, the result showed that students with low social support from parents and teachers were more likely to have depression than those of their counterparts.

Table 29 Bivariate Analysis between Social Support from Parents, Peers and Depression (N=360)

Social Resources	Depression				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	307	85.3	53	14.7		
(1) Level of Social Support from Parents					22.782	0.000*
Low Level	142	95.9	6	4.1		
High Level	165	77.8	47	22.2		
(2) Level of Social Support from Peers					0.872	0.350
Low Level	137	87.3	20	12.7		
High Level	170	83.7	33	16.3		
(3) Level of Social Support from Teachers					13.827	0.000*
Low Level	79	74.5	27	25.5		
High Level	228	89.8	26	10.2		

*p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Personal Resources and Depression

Table 30 shows the bivariate analysis between personal resources and depression among participants. Among these, all personal resources were highly statistically significantly associated with depression at p-value 0.000 level. Moreover, for counter check with running simple logistic regression, the result showed that students with low level of self-esteem, mastery and social competence were more likely to have depression than those of their counterparts.

Table 30 Bivariate Analysis between Personal Resources and Depression (N=360)

Personal Resources	Depression				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	307	85.3	53	14.7		
(1) Level of mastery					39.391	0.000*
Low level	189	95.9	8	4.1		
High level	118	72.4	45	27.6		
(2) Level of self-esteem					36.136	0.000*
Low level	172	96.6	6	3.4		
High level	135	74.2	47	25.8		
(3) Level of social competence					14.429	0.000*
Low level	162	92.6	13	7.4		
High level	145	78.4	40	21.6		

*p-value<0.01=Highly Statistically Significant

4.3.2 Bivariate Analysis between Independent Variables and Dependent variable, Anxiety

Bivariate Analysis between Socio Demographic Characteristics and Anxiety

Table 31 shows the bivariate analysis results between five socio-demographic characteristics and anxiety among participants. Among these, sex was highly statistically significant associated with anxiety at p value 0.006. Moreover, for counter check with running simple logistic regression, the result showed that female students were more likely to have anxiety than males.

Table 31 Bivariate Analysis between Socio Demographic Characteristics and Anxiety (N=360)

Socio-demographic Characteristics	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(1) Age					0.193	0.660
14	151	83.9	29	16.1		
15	154	85.6	26	14.4		
(2) Grade					0.193	0.660
10	151	83.9	29	16.1		
11	154	85.6	26	14.4		
(3) Sex					7.620	0.006**
Male	138	79.3	36	20.7		
Female	167	89.8	19	10.2		
(4) Religion					0.914	0.339
Buddhism	300	84.5	55	15.5		
Christian	5	100.0	0	0.0		

Table 31 Continued

Socio-demographic Characteristics	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(5) Ethnicity					1.475	0.224
Burmese	297	84.4	55	15.6		
Shan	8	100.0	0	0.0		

*p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Stressors and Anxiety

Table 32 shows the bivariate analysis results between stressors and anxiety among participants. Among these, level of interpersonal conflict with other students, level of problems with teacher interaction, level of problems in school performance, and level of interpersonal conflict with parents were highly statistically significant associated with anxiety at p value 0.000 while level of problems in romantic relationship was statistically significant associated with anxiety at p value 0.032. Moreover, for counter check with running simple logistic regression, the result showed that students with high level of interpersonal conflict with other students, with parents, problems with teacher interaction, problems in school performance, and problems in romantic relationship had more anxiety than those of their counterparts.

Table 32 Bivariate Analysis between Stressors and Anxiety (N=360)

Stressors	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(1) Level of Interpersonal conflict with other students					52.46	0.000**
Low level	72	64.3	40	35.7		
High level	233	94	15	6.0		
(2) Level of Interpersonal conflict with teachers					2.630	0.187
Low level	120	76.9	36	23.1		
High level	185	90.7	19	9.3		
(3) Level of Interpersonal conflict with parents					30.517	0.000**
Low level	143	74.9	48	25.1		
High level	162	95.9	7	4.1		
(4) Level of problems with teacher interaction					57.794	0.000**
Low level	78	64.5	43	35.5		
High level	227	95.0	12	5.0		

Table 32 Continued

Stressors	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(5) Level of problems in school performance					18.827	0.000**
Low level	120	75.5	39	24.5		
High level	185	92.0	16	8.0		
(6) Level of problems in romantic relationship					4.583	0.032*
Low level	193	81.8	43	18.2		
High level	112	90.3	12	9.7		

*p-value <0.05=Statistically Significant, **p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Social Resources and Anxiety

Table 33 shows the bivariate analysis result between levels of social support from parents, peers, teachers and anxiety among participants. Among these, social support from teachers was highly statistically significant associated with anxiety with p value 0.000. Moreover, for counter check with running simple logistic regression, the result showed that students with low social support from teachers had more likely to get anxiety than those of high level.

Table 33 Bivariate Analysis between Social Support from Parents, Peers, Teachers and Anxiety (N=360)

Social Resources	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(1) Level of Social Support from Parents					0.230	0.631
Low Level	127	85.8	21	14.2		
High Level	178	84.0	34	16.0		
(2) Level of Social Support from Peers					0.085	0.771
Low Level	134	85.4	23	14.6		
High Level	171	84.2	32	15.8		
(3) Level of Social Support from Teachers					63.563	0.000*
Low Level	65	61.3	41	38.7		
High Level	240	94.5	14	5.5		

*p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Personal Resources and Anxiety

Table 34 shows the bivariate analysis results between personal resources and anxiety among participants. Among these, Level of mastery was statistically significant associated with anxiety at p value 0.037. Moreover, for counter check with running simple logistic regression, the result showed that students with low level of mastery had more likely to get anxiety than those of high level.

Table 34 Bivariate Analysis between Personal Resources and Anxiety (N=360)

Personal Resources	Anxiety				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	305	84.0	55	16.0		
(1) Level of mastery					4.363	0.037*
Low level	174	88.3	23	11.7		
High level	131	80.4	32	19.6		
(2) Level of self-esteem					2.316	0.128
Low level	156	87.6	22	12.4		
High level	149	81.9	33	18.1		
(3) Level of social competence					0.643	0.423
Low level	151	86.3	24	13.7		
High level	154	83.2	31	16.8		

*p-value <0.05=Statistically Significant

4.3.3 Bivariate Analysis between Independent Variables and Dependent variable, Stress

Bivariate Analysis between Socio Demographic Characteristics and Stress

Table 35 shows the bivariate analysis results comparing five socio-demographic characteristics explanatory factors and stress among participants. Among these, Age and grade were statistically significant associated with stress at p value 0.035 respectively while sex was highly statistically significant associated with stress at p value 0.000. Moreover, for counter check with running simple logistic regression, the result showed that participants who were female, 14 years old and Grade 10 students had more likely to get stress when compared to their counterparts

Table 35 Bivariate Analysis between Socio Demographic Characteristics and Stress (N=360)

Socio-demographic Characteristics	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(1) Age					4.432	0.035*
14	138	76.7	42	23.3		
15	120	66.7	60	33.3		
(2) Grade					4.432	0.035*
10	138	76.7	42	23.3		
11	120	66.7	60	33.3		
(3) Sex					17.162	0.000**
Male	107	61.5	67	38.5		
Female	151	81.2	35	18.8		
(4) Religion					0.173	0.173
Buddhism	254	71.5	101	28.5		
Christian	4	80.0	1	20.0		

Table 35 Continued

Socio-demographic Characteristics	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(5) Ethnicity					1.010	0.315
Burmese	251	71.3	101	28.7		
Shan	7	87.5	1	12.5		

**p value<0.01=Highly Statistically Significant, *p value<0.05=Statistically Significant

Bivariate Analysis between Stressors and Stress

Table 3 shows the bivariate analysis between stressors and stress among participants. Among these, level of interpersonal conflict with other students, levels of problems with teacher interaction, level of problems in school performance and level of interpersonal conflict with parents, were highly statistically significant association with stress at p-value less than 0.000. The association between levels of interpersonal conflict with teachers and stress were statistically significant with p-value of 0.021. Moreover, for counter check with running simple logistic regression, the result showed that students with high level of interpersonal conflict with other students, with teachers and with parents, problems with teacher interaction and in school performance were more likely to have stress than those of their counterparts.

Table 36 Bivariate Analysis between Stressors and Stress (N=360)

Stressors	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(1) Level of Interpersonal conflict with other students					40.749	0.000**
Low level	55	49.1	57	50.9		
High level	203	81.9	45	18.1		
(2) Level of Interpersonal conflict with teachers					5.350	0.021*
Low level	102	65.4	54	34.6		
High level	156	76.5	48	23.5		
(3) Level of Interpersonal conflict with parents					23.953	0.000**
Low level	116	60.7	75	39.3		
High level	142	84.0	27	16.0		
(4) Level of problems with teacher interaction					50.556	0.000**
Low level	58	47.9	63	52.1		
High level	200	83.7	39	16.3		

Table 36 Continued

Stressors	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(5) Level of problems in school performance					26.728	0.000**
Low level	92	57.9	67	42.1		
High level	166	82.6	35	17.4		
(6) Level of problems in romantic relationship					3.083	0.079
Low level	162	68.6	74	31.4		
High level	96	77.4	28	22.6		

*p-value <0.05=Statistically Significant, **p-value<0.01=Highly Statistically Significant

Bivariate Analysis between Social Resources and Stress

Table 37 shows the bivariate analysis results between social resources and stress among participants. Among these, level of social support from teachers was highly statistically significant association with stress at p-value 0.000. Moreover, for counter check with running simple logistic regression, the result showed that lower social support from teachers had more likely to get stress than those of their counterparts.

Table 37 Bivariate Analysis between Social Support from Parents, Peers and Stress (N=360)

Social Resources	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(1) Level of Social Support from Parents					0.874	0.350
Low Level	110	74.3	38	25.7		
High Level	148	69.8	64	30.2		
(2) Level of Social Support from Peers					1.135	0.287
Low Level	108	68.8	49	31.2		
High Level	150	73.9	53	26.1		
(3) Level of Social Support from Teachers					28.947	0.000*
Low Level	55	51.9	51	48.1		
High Level	203	79.9	51	20.1		

*p value<0.01=Highly Statistically Significant

Bivariate Analysis between Personal Resources and Stress

Table 38 shows the bivariate analysis between personal resources and stress among participants. Among these, Level of mastery was highly statistically significant association with stress at p-value 0.000 while level of self-esteem was statistically significant with p-value 0.027. Moreover, for counter check with running simple logistic regression, the result showed that students with low level of mastery and self-esteem had more likely to have stress than those of their counterparts.

Table 38 Bivariate Analysis between Personal Resources and Stress (N=360)

Personal Resources	Stress				Chi-square	p-value
	Yes		No			
	n	%	n	%		
Total	258	71.0	102	29.0		
(1) Level of mastery					13.812	0.000**
Low level	157	79.7	40	20.3		
High level	101	62.0	62	38.0		
(2) Level of self-esteem					4.870	0.027*
Low level	137	77.0	41	23.0		
High level	121	66.5	61	33.5		
(3) Level of social competence					2.255	0.133
Low level	119	68.0	56	32.0		
High level	139	75.1	46	24.9		

*p-value <0.05=Statistically Significant, **p-value<0.01=Highly Statistically Significant

4.4 Multivariate Analysis

Multiple logistic regression model included all independent variables with significant p value less than 0.05, p values less than 0.25 in bivariate analysis and those variables found signifcant in previous studies tested against depression, anxiety and stress.

4.4.1 Multivariate Analysis between Independent Variables and Depression (n=360)

To find out the associations with depression in the multivatiarte logistic regressin model, the following vatiables were included. ‘Eleven independent variables with p value <0.05 namely: sex, interpersonal conflict with other students, with parents, problems with teacher interaction, in school performance, in romantic relaitonship, social support from parents and teachers, mastery, self-esteem, and social competence. One variable with p value=0.05-0.25 (ethnicity) and finally five variables which were reported with signifcant association in previous studies namely age (Shamsuddin et al., 2013), grade (K Sathish Kumar, 2017), religion (P. C. Chen, Lee, Wong, & Kaur, 2005), interpersonal conflict with teachers (Khan, 2015), and social support from peers (Q. X. Ren P, Zhang Y, Zhang R. , 2018)’. Seven variables lossing significance in multiple logistic regression were sex, interpersonal conflcit with other students, with parents, problems in romantic relationship, social support from teachers, self–esteem and social competence. The variables that maintained significance were presented below. Among these variables, the following were positively and statistically significantly associated with depression: level of problems with teacher interaction, and in school performance while level of mastery and parental support were negatively statistically significantly associated with depression

Students with high level of problems with teacher interaction and in school performance were 4 times more likely to have depression than those with low level. Students with high level of mastery was 0.2 times less likely to have depression than those with low level. Student with high social support from parents were 0.2 times less likely to have depression than those with low level.

Table 39 Indpendente variables maitianing signivicance by Multiple Logistic Regression against Depression (N=360)

Variables	B	S.E.	p-value	AOR (95%CI)	95% CI	
					Lower	Upper
Level of Problems with Teacher Interaction						
Low (Ref:)						
High	1.402	0.559	0.012*	4.065	1.359	12.157
Level of Problems in School Performance						
Low (Ref:)						
High	1.397	0.445	0.002*	4.042	1.691	9.661
Level of Social support from Parents						
Low (Ref:)						
High	-1.420	0.589	0.016*	0.242	0.076	0.767
Level of Mastery						
Low (Ref:)						
High	-1.780	0.539	0.001**	0.169	0.059	0.485

*p value <0.05=Statistically Significant, **p value <0.01=Highly Statistically Significant, Method =Enter method, Hosmer and Lemeshow Test $\chi 2$ =2.223 (df= 8, p= 0.973), Nagelkerke R Square=0.528, Overall Percentage of correct classification = 90%, AOR=adjusted odd ratio

4.4.2 Multivariate Analysis between Independent Variables and Anxiety (n=360)

To find out the associations with anxiety in the multivatiarte logistic regressin model, the following vatiables were included. 'Nine independent variables with p value <0.05 namely: sex, interpersonal conflict with other students, with teachers, with parents, problems with teacher interaction, in school performance, in romantic relationship, social support from teachers, and mastery. One variable with p value=0.05-0.25 (ethnicity) and finally seven variables which were reported with signifcant association in previous studies namely: age (Shamsuddin et al., 2013) grade (Rodrigo et al., 2010), religion (Abdel-Khalek, 2011), social support from parents and peers (Glozah & Pevalin, 2014) , social competence (Olivares-Olivares PJ, 2019)'. Six variables losing significance in multiple logistic regression were sex, interpersonal conflict with other students, with teachers, problems in school performance, in romantic relationship, social support from teachers and mastery. The variables that maintained significance were presented below. Among these, the following were positively and statistically significantly associated with anxiety: interpersonal conflict with parents and problems with teacher interaction while social competence was negatively and statistically significant associated with anxiety.

Students with high level of problems with teacher interaction were 5 times more likely to have anxiety than those with low level. Students with high level of interpersonal conflict with parents were 3 times more likely to have anxiety than those with low level. Students with high level of social competence were 0.4 times less likely to have anxiety than those with low level.

Table 40 Independent variables maitianing significant by Multiple Logistic Regression against Anxiety (n=360)

Variables	B	S.E.	p-value	AOR (95%CI)	95% CI	
					Lower	Upper
Level of Problems with Teacher Interaction						
Low (Ref:)						
High	1.778	0.446	**0.000****	5.918	2.471	14.171
Level of Interpersonal Conflict with Parents						
Low (Ref:)						
High	1.293	0.491	**0.008****	3.644	1.391	9.543
Level of Social Competence						
Low (Ref:)						
High	-0.920	0.466	**0.048***	0.399	0.160	0.994

**p value<0.01=Highly Statistically Significant, *p value<0.05=Statistically Significant, Method =Enter method, Hosmer and Lemeshow Test $\chi 2$ = 14.496 (df =8, p= 0.070), Nagelkerke R Square=0.468, Overall Percentage of correct classification = 84.7%, AOR=adjusted odd ratio

4.4.3 Multivariate Analysis between Independent Variables and Stress (N=360)

To find out the associations with stress in the multiple logistic regressin model the following vatiables were included. ‘Ten independent variables with p value<0.05 namely: age, grade, sex, interpersonal conflict with other students, with parents, problems with teacher interaction, in school performance, social support from teachers, mastery and self-esteem. Two variables with p value=0.05-0.25 (religion and social competence) and five variables which were reported with signifcant association in previous studies namely: ethnicity (Shamsuddin et al., 2013), interpersonal conflict with teachers (Khan, 2015), problems in romantic relationship (Pinto et al., 2017) and social support from parents and peers (Glozah & Pevalin, 2014)’. Four variables lossing significane in multiple logistic regression were interpersonal conflict with other students, social support from teachers, mastery and self-esteem. The variables that maintained significance were presented below. Among these variables, the followings were positively and statistically significantly associated with stress namely: age, grade, sex, problems with teacher interaction, in school performance and interpersonal conflict with parents

Students who were 14 years old, Grade 10 students and female were 2 times more likely to have stress than those of their counterparts. Respondents with high level of problems with teacher interaction were 3 times more likely to have stress than those with low level. Respondents with high level of problems in school performance and interpersonal conflict with parents were 1.9 times more likely to have stress than those with low level.

Table 41 Independent variables maitianing significance by Multiple Logistic Regression against Stress (n=360)

Variables	B	S.E.	p-value	AOR (95%CI)	95% CI	
					Lower	Upper
Age						
15 (Ref:)						
14	1.039	0.328	**0.002****	2.827	1.486	5.379
Grade						
Grade 11 (Ref:)						
Grade 10	1.039	0.328	**0.002****	2.827	1.486	5.379
Sex						
Male (Ref:)						
Female	0.720	0.298	**0.016***	2.054	1.146	3.682
Level of Problems with teacher interaction						
Low (Ref:)						
High	1.129	0.334	**0.001****	3.093	1.606	5.955
Level of Problems in school performance						
Low (Ref:)						
High	0.683	0.300	**0.023***	1.980	1.099	3.567

Table 41 Continued

Variables	B	S.E.	p-value	AOR (95%CI)	95% CI	
					Lower	Upper
Level of Interpersonal Conflict with Parents						
Low (Ref:)						
High	0.691	0.320	**0.031***	1.996	1.066	3.738

**p value<0.01=Highly Statistically Significant, *p value<0.05=Statistically Significant, Method =Enter method, Hosmer and Lemeshow Test $\chi 2$ = 12.625 (df =8, p= 0.125), Nagelkerke R Square=0.393, Overall Percentage of correct classification = 80.8%, AOR=adjusted odd ratio

Table 42 Comparative Table of Associations between independent and Three Dependent Variables in bivariate and multivariate analysis

Independent variables	Analysis Results of Dependent Variables					
	Depression		Anxiety		Stress	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Age	-	-		-	SA	HSA
Grade	-	-	-	-	SA	HSA
Sex	SA	-	SA	-	SA	SA
Interpersonal conflict with other students	SA	-	SA	-	SA	-
Interpersonal conflict with teacher	-	-	SA	-	-	-
Problems with teacher interaction	SA	SA	SA	HSA	SA	HSA
Problems in school performance	SA	HSA	SA	-	SA	SA
Interpersonal conflict with parents	SA	-	SA	HSA	SA	SA
Problem in romantic relationship	SA	-	SA	-	-	-
Social support from parents	SA	SA	-	-	-	-
Social support from peers	-	-	-	-	-	-
Social support from teachers	SA	-	SA	-	SA	-
Mastery	SA	HSA	SA	-	SA	-

Table 42 Continued

Independent variables	Analysis Results of Dependent Variables					
	Depression		Anxiety		Stress	
	Bivariate	Multivariate	Bivariate	Multivariate	Bivariate	Multivariate
Self-esteem	SA	-	-	-	SA	-
Social competence	SA	-	SA	SA	-	-

SA=Significant Association ($p < 0.05$), HSA= Highly Significant Association ($p < 0.01$)

CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATION

The main purpose of this research was to measure the characteristics and degree of depression, anxiety, stress and to find out the associations with (1) socio-demographic characteristics namely: age, grade, sex, religion and ethnicity, (2) stressors namely: interpersonal conflict with other students, with teachers, with parents, problems with teacher interaction, in school performance, in romantic relationship, (3) social resources namely: social support from parents, peers and teachers, (4) personal resources namely: mastery, self-esteem, and social competence among adolescents who were living at boarding school Taze, Shwe Bo District, Sagaing Division, Myanmar.

5.1 Discussion on Descriptive Findings

5.1.1 Socio-demographic Characteristics

Among respondents, there were only two aged groups; 14 years old and 15 years old and it was equal proportion with about (50%) of respondents as same as educational status which were grade 10 and grade 11. This was due to using of systematic random sampling technique.

Regarding to sex, female (51.7%) were more than males (48.3%). From WHO data of Myanmar population in 2004, there was around 5% for male adolescents and 4.9% for female adolescents. But according to school-based study among 2502 students (13-17 years old) in 2016 in Myanmar (World Health Organization, 2018), the number of female students (39.1%) were more than males (35.1%). This may be due to female adolescents were also more interested in attending private schools than males. In relation to religion, the majority (98.6%) of respondents were Buddhists while others were Christian not including Hindu and Islam. In the cross-sectional study on 246 Myanmar adolescents (15-19 years old) (Khine, 2010), Buddhist adolescents were at 86.3% followed by 10% Christian while others were Hindu and Muslims. Based on Myanmar population data, there was 89% Buddhism, 5% Christian, 4% Muslim, 0.5% Hindu (Lahmeyer, 2004). In relation to ethnicity, the majority (97.8%) of participants

were Burmese whereas only 2.2% were Shan. As a result of whole Myanmar data, 68% were Burmese, 9% Shan, 7% Karen, 4% Rakhine and 3% Chinese (Leighton, 2008).

5.1.2. Stressors

Interpersonal Conflict with other Students

Most of the respondents had moderate level of interpersonal conflict with other students (51.7%). It may be due to sharing things (food) and living areas (halls, classrooms, toilets). Another reason may be due to teachers creating competition between students.

Interpersonal Conflict with Teachers

Most of the respondents had moderate level of conflict with teachers (66.7%). This may be due to some teachers treating students harshly, student's indiscipline that requires teacher intervention, and teachers favoring certain students as reported by 68%, 80% and 68 % respectively. These reasons may point to a need for developing skills in teachers on how to reduce conflict with their students. The consequent of conflict with teachers were poor academic performance in the cross-sectional study among 399 students of 9th and 10th class in secondary schools of tehsil Matta, district Swat, Khyber Pakhtunkhwa (Touseef Ahmad, 2014).\

Problems with Teacher Interaction

Most of the respondents (69.4%) had moderate level of problems with teacher interaction. This was linked to 76.4% not getting along with teachers, 73.1% lacking respect from teachers, teachers hassling them 63.9%, and not listen to students (75.9%). This number indicated that relationship between teachers and students at boarding school should improve and make a plan to travel or go to picnic during holidays not only focusing too much only on education and stuck in busy schedules.

Problems in School Performance

Almost half of respondents had moderate level of problems in school performance (49.4%). This was linked to teachers expecting too much from students (64%). Since the school expects at least three or four distinctions in their final exam as shown in the school brochure and not understanding the taught subjects (63%).

Problems in Romantic Relationship

The Majority (65.6%) of respondents had low level of problems in romantic relationship because rules and regulations of boarding schools do not allow them to make relationship (Lwin, 2017). Therefore, there was lower chance to get romantic problems at three boarding schools. This result was contrary to one study among adolescent students showing that the romantic relationship affect to mental health (Shrout, 2018).

Interpersonal Conflict with Parents

Most of the respondents (61.7%) had in moderate level of conflict with parents. The conflict with parents increased after joining the boarding school (74.5%). This may be due to student's poor academic performance as reported in a USA cross-sectional study among 10-16 y old students (Nebel-Schwalm, 2006). Even though we cannot confirm this for our respondents because the study did not investigate the causes of parental conflict. The level of conflict with parents was so high because it is normal for adolescents to seek independence and separation from their parents (Elizabeth Scott, 2019). Around the world, about 1 in 5 young people said they are concerned about family conflict (Reachout., 2019).

5.1.3 Social Resources

Social Support from Parents and Peers and Teachers

Regarding social support from parents, moderate level was the largest percent with 49.7%. Regarding social support from peers, moderate level was the largest percent with 66.7%. Regarding social support from teachers, moderate level was the largest percent with 50.3%. This may be due to they had good advice, sharing their private worries and fears, parents, and peers were being there when they were needed and having good time. Teachers came to solve when they had conflicts or problems. Generally, percentage of social support from peers were greater than those from teachers followed by parents. This may be due to during adolescent period, there is a shift from familial relationship to peer relationship (Sturman and Moghaddam, 2011).

5.1.4 Personal Resources

Mastery

In relation to mastery, most of the participants were in moderate level (59.4%); solving some of the problems and controlling over the things that happen to them. This is because of national policy in school curriculum about learning not only natural science but also moral and civics, painting and music, physical education and school activities for having mastery skills starting from 2001 national policy plan to start to study since primary education level (J. Hays, 2014). And the researcher saw many posters at all three boarding schools for encouraging their mind with pictures and words during data collection.

Self-esteem

A large proportion of the respondents were at low level of self-esteem (49.4%). This may be due to many influences namely negligent peers, negative peers, trauma, body image, past history of bad choice, negative thought patterns (LaTour, 2014). Even though teachers and school lessons teach students to be stronger and cleverer, self-esteem is simply how you feel about yourself and how you judge your worth.

Social Competence

The majority (64.7%) of respondents had moderate level of social competence which are abilities required to successfully interact and communicate with others, both verbally and non-verbally through gestures, body language and personal appearance (Health, 2019). Their social skill level was high because school lessons including life skill program since primary education level (J. Hays, 2014) and Myanmar culture is warmly welcome and always communicate.

5.1.5 Depression, Anxiety and Stress

The prevalence of depression, anxiety and stress was very high in this study with 85%, 84% and 71% respectively. One reason was that the measurement tool was just screening test. Therefore, as all screening test are designed for higher sensitivity (with fewer false negative results) and lower specificity (with higher false positive results). The most important reason, however, is most likely due to data collection time one week before final exam. Therefore, students were in stressful condition and also did not give enough time to think about questionnaires carefully. According to pretest result, the prevalence of depression, anxiety and stress was only at 20%, 33% and 53% respectively. This showed that the study result was affected obviously by data collection time.

Depression

A large proportion of the participants were in extremely severe depressive mood at 42.5%. This result is very different from other cross-sectional studies. For instance, among 750 public school students in Imphal, Manipur, prevalence of students without depression were 81.5% and extremely severe level were with 2% (K., 2007) and among 2927 students in Malaysia (E. T. Latiffah Abdul Latiff, Normala Ibrahim, Azrin Shah Abubakar and Shirin Shameema Binti Albar Ali., 2012), extremely sever level was at 3% and among 1723 male students in Saudi Arabia (K., 2007), extremely severe level was 6.4% and among 545 female students in Saudi Arabia (Al-Gelban, 2009), extremely severe level at 3.3%. The prevalence of depression was so high due to the data collection time was near the final exam and living at boarding school that environment was so stressful with less relaxation, tight study schedules and living far away from parents, friends and relatives during the whole year. It is well known that chronic stress can provoke a depression (Hildebrandt, 2012). Adolescence which is the transitional period from childhood to adulthood is a stage of emotional instability making them vulnerable to depression (Naushad S, 2014).

Anxiety

Most of respondent had at extremely severe level of anxiety with 72.5%. In contrast in the above mentioned study, extremely severe anxiety was at 5.2% (Kunal Kishor Jha, 2017). 7.1% (K., 2007) and 11.2% (Al-Gelban, 2009). This may be due to of data collection near the final exam and pressures to fit in and the pressure to achieve is high in private school then public schools.

Stress

Most of the students had severe stress level with 34.2%. In contrast in the above mentioned study, severe level at 5.5% (Kunal Kishor Jha, 2017) and severe level was at 6.9% (K., 2007), and severe level was at 9.2%.(Al-Gelban, 2009). This may be due to data collection time one week before final exam. Another reason was that they were living in stressful environment (boarding school) in which rules and regulations were so strict and high competitive environment about education. Third, they had a lot of monthly exams. Fourth, there was too much homework (they were overwhelmed or frustrated by homework, there will be stressful cycle where homework piles and did not have the time or energy to complete it. When not finished, stress level was increased). Fifth, it may be due to transitioning to a new environment (New classes, new routines, new friends can all be stressful for students). Last but not least, because of busy schedule can quickly become overwhelmed because they were left with no free time to relax. If students without good time management skills, they can easily experience more stress (Oxford Learning Centres, 2018).

5.2 Discussion on Analytic Findings

5.2.1. Association between Socio-demographic Characteristics and Depression, Anxiety, Stress

Association between Socio-demographic Characteristics and Depression

Among socio demographic characteristics, only sex was statistically significantly associated with depression at bivariate analysis. However, sex variable became lost significance at multivariate analysis.

Association between Socio-demographic Characteristics and Anxiety

Among the socio demographic characteristics, only sex was statistically significant associated with anxiety in bivariate but became insignificant in multivariate analysis.

Association between Socio-demographic Characteristics and Stress

Among socio demographic characteristics, age, sex and grade were statistically significant associated with stress at bivariate analysis. Those variables maintained their significance at multivariate analysis.

Age and Stress

Age was strongly and positively associated with stress (statistical significant). Students of 14 years old were almost 3 times more likely to have stress than 15 years old students. This result was consistent with one cross-sectional study (Bayram & Bilgel, 2008) among 1,617 students in Bursa, Turkey in 2008 showing that the younger age group scored higher level of stress. It may be due to older students were more likely to use problem-solving, cognitive restructuring and express emotion coping strategies. When people older, they are better able to adopt a range of behavioral, cognitive and emotional strategies to cope with stressful life events (Monteiro NM, 2014).

Grade and Stress

Grade was strongly and positively associated with stress (statistical significance) at multivariate analysis. Grade 10 students were almost 3 times more likely to get stress than Grade 11 students. This study result was consistent with one

cross-sectional study among 242 students in in Greater Noida, Uttar Pradesh, a township within the National Capital Region in 2014 , it showed that stress ($p<0.001$) was highly statistically significant higher among Grade 10 as compared to Grade 11 (S. K. Bhasin, Sharma, & Saini, 2010). It may be due to grade 11 students coped with difficult situations in a mature manner in stressful conditions more than grade 10 students (Shahmohammadi, 2011).

Sex and Stress

Sex was positively associated with stress (statistical significance) at multivariate analysis. Female students were 2 times more likely to have stress than males. This study result was consistent with some cross sectional studies. For instance, among 445 Sri Lanka aged (14-18) from two randomly selective schools in 2010 (c. a. S. W. Chaturaka Rodrigo, Jayantha Gurusinghe, Thilina Wijeratne, Gamini Jayananda, and Senaka Rajapakse., 2010), among 350 students (15-17 years old) who were living in secondary boarding school of Malaysia in 2013 (S. Wahab, Rahman, F. N., Wan Hasan, W. M., Zamani, I. Z., Arbaiei, N. C., Khor, S. L., & Nawi, A. M., 2013) and among 4599 girls and boys (17 and 18 years old) selecting from high schools in Tehran by a stratified cluster random sampling method in 2007(Emami, Ghazinour, Rezaeishiraz, & Richter, 2007).

It may be due to females were more sensitive and more likely to report symptoms. Women rated their life events as more negative and less controllable than the men (Herscher, 2019). Female are kind of people sharing their feelings to others less than male and the situation for them at boarding school which was far away from parents, relatives and friends and also stressful for their academic performance. Another reason may be due to social difficulties, physiological factors, caused by environment which was the important risk factors for having stress in female, high self-expectations, feeling lack of competence, over-reported medical and psychological symptoms (Vrana & Lauterbach, 1994).

5.2.2 Association between Stressors and Depression, Anxiety, Stress

Association between Stressors and Depression

Between stressors and depression, interpersonal conflict with other students, with parents, problems with teacher interaction, in school performance, in romantic relationship were statistically significant associated with depression in bivariate analysis. When running to multiple logistic regression, problems with teacher interaction and in school performance were positively and statistically significantly associated with depression.

Problems with teacher interaction and Depression

Problems with teacher interaction was positively associated with depression (statistical significance) in multivariate analysis. Students with high level of problems with teacher interaction were 4 times more likely to have depression than those with low level. This study was supported by one standard focus group study on 32 people under 18 years in Canberra in 2007 (D. G. Byrne, Davenport, & Mazanov, 2007) in which problems with teacher interaction was positively associated with depression. This may be due to positive relationships with members of the intimate group (teachers) will likely help to protect against depression while a negative relationship is likely to increase the risk for depression (Berk, 2007). The interpersonal relationship with teachers play a vital role to get the right information, suggestions, advices that will shape future career (Sadhoo, 2016). Another thing was that teachers paly as guardian role in the boarding schools. If the students received higher level of problems with teachers reactions like hassling, not being listened to them, lack of respect, not getting along with them, it leads to students getting depression because of unhealthy relationship with teachers for the whole year. Positive teacher–student relationships protected adolescents against depression (Wang, 2016).

Problems in school performance and Depression

Problems in school performance was positively and strongly associated with depression (statistical significance) in multivariate analysis. Moreover, students with high level of problems in school performance were 4 times more likely to have depression than those with low level. This study result was same with other studies. For instance, a cross-sectional study (S. Wahab et al., 2013) among 350 students in a selected boarding school of Kuala Lumpur in 2012, a longitudinal study (Suldo, Shaunessy, Thalji, Michalowski, & Shaffer, 2009) on 162 students in southeastern state of USA in 2005 and one standard focus group study on 32 people under 18 years in Canberra in 2007 (D. G. Byrne et al., 2007). A reason may be due to poor performance in boarding school leading to a decrease in self-esteem and consequently, to the occurrence of depressive symptoms according to Brown Theory (Brown, 2006).

Association between Stressors and Anxiety

Between stressors and anxiety, all variables were statistically significant in bivariate analysis. However, interpersonal conflict with parents and problems with teacher interaction were positively and strongly associated with anxiety (statistical significance) in multiple logistic regression.

P**roblems with teacher interaction and Anxiety**

Problems with teacher interaction was strongly and positively associated with anxiety (statistical significance) in multivariate analysis. Moreover, students with high level of problems with teacher interaction were 5 times more likely to have anxiety than those with low level. This study result was consistent with one standard focus group study on 32 people under 18 years in Canberra in 2007 (D. G. Byrne et al., 2007). When the students received higher level of problems with teachers reactions like hassling, not being listened to them, lack of respect, not getting along with them and not comfortable around with teachers for the whole year during boarding school period, it leaded to students getting anxiety. World Health Organization (WHO): “A positive psycho-social environment at school can affect the mental health and well-being of young people” (WHO., 2003). Anxious students in the classroom with lack of interest in learning may

lead to a poor academic performance (Vitasari, Wahab, Othman, Herawan, & Sinnadurai, 2010) and sever case was kick out from the school.

Interpersonal conflict with parents and Anxiety

Interpersonal conflict with parents was strongly and positively associated with anxiety (statistical significance) in multivariate analysis. Students with high level of interpersonal conflict with parents were 3 times more likely to have anxiety than those of their counterparts. This study result was supported by one cross-sectional study using data from the New England Study of Suburban Youth (NESSY) including 262 adolescents. It may be due to increases in alienation from both parents and decreasing less trust between them were related to higher levels of anxiety. Another reason may be due to having conflict with parents make the stressful condition for adolescents and it can lead to anxiety stage (Hurst, 2015).

Association between Stressors and Stress

Between stressors and stress, problems with teacher interaction, in school performance and interpersonal conflict with parents were statistically significant associated at bivariate analysis. When running to multivariate analysis, they all maintained their significance.

P**roblems with teacher interaction and Stress**

Problems with teacher interaction was strongly and positively associated with stress (statistical significance). Moreover, students with high level of problems with teacher interaction were 3 times more likely to have stress than those with low level. This study was supported by one standard focus group study on 32 people under 18 years in Canberra in 2007 (Byrne et al., 2007). When the students received higher level of problems with teacher reactions like hassling, not being listened to them, lack of respect, not getting along with them and not comfortable around with teachers for the whole year during boarding school period, it leads to students getting stress and stress. In a recent poll that asked tens of thousands of high school students how often they feel stressed, nearly 45% said “all the time,” citing relationships and teachers as the primary reasons why (Collins, 2018). World Health Organization (WHO): “A positive psycho-

social environment at school can affect the mental health and well-being of young people" (WHO., 2003).

Problems in school performance and Stress

Problems in school performance was positively associated with stress (statistical significance) in multivariate analysis. Moreover, students with high level of problems in school performance were 1.9 times more likely to have stress than those with low level. This study result was supported by some studies. For instance, (S. Wahab et al., 2013) a cross-sectional study among 350 students in a selected boarding school of Kuala Lumpur in 2012 and another cross-sectional study among 209 students in Penang (H.M.H, 2007), the combination of difficult lessons and high parental expectations may lead to a high level of stress in students and (Suldo et al., 2009) longitudinal study on 162 students in southeastern state of USA in 2005 also showed that among 7 different categories of stress, poor school performance was a primary source of stress and another cross-sectional study involving 100 secondary school students from a Malaysian government secondary school (Yusoff, 2010) proved that the main stressors was from school performance. This may be due to students had learning difficulties at boarding school and it may lead to get stress.

Interpersonal conflict with parents and Stress

Interpersonal conflict with parents was positively associated with stress (statistical significance) in multivariate analysis. Moreover, students with high level of interpersonal conflict with parents was 1.9 times more likely to have stress than those with low level. This result with consistent with other studies. For instance, one standard focus group study on 32 people under 18 years in Canberra in 2007 (D. G. Byrne, Davenport, S. C., & Mazanov, J., 2007) and one cross-sectional study among 242 students in in Greater Noida, Uttar Pradesh, a township within the National Capital Region in 2014 (S. K. Bhasin, Sharma, R., & Saini, N. K., 2010) and one cross-sectional study of 650 students in Portland (Elizabeth Scott, 2019). There are many reasons for conflict with parents. Especially, this period is characterized by significant changes in social behavior and attachment, with increasing parent-adolescent conflicts and a shift from familial to peer relationships (Sturman and Moghaddam, 2011). As a result, this

is a very stressful period in the life of adolescent with parental relationship. The adolescence period is also characterized by a much stronger and longer lasting response to stressors namely interpersonal conflict with parents (McCormick and Mathews, 2010).

5.2.3 Association between Social Resources and Depression, Anxiety, Stress

Association between social resources and depression

Between social resources and depression, social support from parents and teachers were statistically significant associated at bivariate analysis. When running to multivariate analysis, only social support from parents was negatively associated with depression (statistical significance).

Social support from parents and Depression

Social support from parents was negatively associated with depression (statistical significance) in multivariate analysis. Students with high level of social support from parents were 0.2 times less likely to have depression than those with low level. This study was supported by some studies. For instance, one cross-sectional study among 165 Ghana students (S. O.-B. Nuworza Kugbey, Ethel Akpene Atefoe, 2015) and another supportive study was a case-control study (J. Arul, 2018) between 560 case and 560 control group of 14 to 17 years of students in higher secondary schools in South India in which inadequate social support from parents were 1.9 more risk of developing depression than those without adequate social support from parents. The reason of social support from parents was better than from adolescents in prevention of depression may be due to culture. In South-east Asia including Myanmar, parents have more powerful among their children than American parents do and children should respect and obey their parents. (Thompson, 2017). But one systematic search method from Western countries, including the USA, Canada and Europe (EU and member states of the European Free Trade Association), Australia and New Zealand, Parents and family were sources of support and protective against depression in adolescents (80%, 86%) while less support from friend with 56% (Genevie` ve Garie´ py, 2015). Therefore, social support was very important for reducing depression during living

stressful environment like boarding school. When students got suggestions, advice, receiving love care from parents, this will protect from getting depression.

Association between social resources and anxiety

Between social resources and anxiety, only social support from teachers was statistically significant associated at bivariate analysis but lost significant in multivariate analysis.

Association between social resources and stress

Between social resources and stress, only social support from teachers was statistically significant associated at bivariate analysis but not significant in multivariate analysis.

Social support from peers and depression, anxiety, stress

Unexpectedly, social support from peers was not statistically significant associated with depression, anxiety and stress in this study. This result was supported partially by (Samuel Osei-Boadi Nuworza Kugbey, Ethel Akpene Atefoe, 2015) among 165 students in Ghana, social support from peers was not statistically significant associated with anxiety and stress except depression. This result was opposite from one longitudinal study among 2453 students (11-17 years old) (Q. X. Ren P, Zhang Y, Zhang R., 2018) in which depression was significantly associated with lack of support from peers. it may be due to culture. In South-east Asia including Myanmar, adolescents are more influenced from parents than peers. (Thompson, 2017). But one systematic search method from Western countries, including the USA, Canada and Europe (EU and member states of the European Free Trade Association), Australia and New Zealand, Parents and family were sources of support and protective against depression in adolescents (80%, 86%) while less support from friend with 56% (Genevie` ve Garie´ py, 2015). Another reason may be because peers were competitors at boarding school and competed each other to get high exam marks. Therefore their competition was so high at boarding school when compared to public school.

5.2.4 Association between Personal Resources and Depression, Anxiety, Stress

Association between personal resources and depression

Between personal resources and depression, all personal resources were statistically significant associated at bivariate analysis. When running to multivariate analysis, only mastery was highly and negatively statistically significantly associated with depression

Mastery and Depression

Mastery was negatively associated with depression (statistical significance) in multivariate analysis. Moreover, students with high level of mastery was 0.2 times less likely to have depression than those with low level. This study result was consistent with some cross-sectional studies. For instance, among 810 African-American and 360 Caribbean Black youth (age 13 to 17) in the United States, a higher sense of mastery was associated with a lower risk of depression (Assari S, 2017), and among 444 adolescents (10-16 years old) in a rural Iowa (Conger KJ, 2009), mastery was a significant protective factor for depression of adolescents. Mastery is seen as central to how well individuals respond to challenges and situations encountered in everyday life during boarding school. Therefore, low mastery skill leaded to getting depression among boarding school adolescents.

Association between personal resources and anxiety

Between personal resources and anxiety, mastery and social competence were statistically significant associated with anxiety at bivariate analysis. When running to multivariate analysis, only social competence maintained significance.

Social competence and Anxiety

Social competence was negatively associated with anxiety (statistical significance) at multivariate analysis. Moreover, students with high level of social competence were 0.4 times less likely to have anxiety than those with low level. This may be due to most boarding school students having low level of skills in keeping relationship with parents, peers and teachers, could not be able to express needs, desires

and opinions in writing and speaking. This can lead to get anxiety. In one intervention study among 14-16 years old adolescents in Netherland (Jackson, 1998), their anxiety was reduced after social skill training.

Association between personal resources and stress

Between personal resources and stress, mastery and self-esteem were statistically significant associated at bivariate analysis. When running to multivariate analysis, all personal resources lost significant.

5.3 Conclusion

In general, the results showed that most of the respondents were equal distribution of age group (14 and 15 years old), educational status (Grade 10 and Grade 11), just 1.7% more female than male, Buddhism, Burmese who had high prevalence of depression, anxiety and stress regarding to moderate level of interpersonal conflict with other students, teachers, parents, moderate level of problems with teacher interaction, in school performance, in romantic relationship, moderate level of social support, mastery, social competence and low level of self-esteem.

In bivariate analysis,

- With depression, eleven independent variables namely sex, interpersonal conflict with other students, with parents, problems with teacher interaction, in school performance, in romantic relationship showed statistically significant associated.

- With anxiety, ten independent variables namely interpersonal conflict with other students, with teachers, with parents, problems with teacher interaction, in school performance, social support from teachers, mastery and social competence were statistically significant associated.

- With stress, ten independent variables namely age, grade, sex, interpersonal conflict with other students, with parents, problems with teacher interaction, problems in school performance, social support from teachers, mastery and self-esteem showed statistically significant associated.

In multivariate analysis with multiple logistic regression as final models at 0.05 level,

- For depression, four variables, namely, problems with teacher interaction, in school performance, social support from parents and mastery maintained their significant associations especially problems in school performance and mastery were strongly associated (statistical significance). Respondents who had high level of problems with teacher interaction, in school performance, low level of social support from parents and low level of mastery were more likely to have depression than those of their counterparts.

- For anxiety, three independent variables namely interpersonal conflict with parents and problems with teacher interaction, and social competence maintained their significance. Respondents who had high level of problems with teacher interaction and high level of interpersonal conflict with parents and low level of social competence were more likely to have anxiety than those of their counterparts.

- For stress, six independent variables namely age, grade, sex, problems with teacher interaction, in school performance and interpersonal conflict with parents maintained their significance. Respondents who were 14 years old, Grade 10 students, female, high level of interpersonal conflict with parents, high level of problems with teacher interaction and in school performance were more likely to get stress than those of their counterparts.

5.4 Strengths and Limitations

Strengths

- As we mentioned in introduction part of the study, after searching articles via google scholar, Pub Med, Pro Quest, Science direct and electronic library of College of Public Health Sciences with keywords namely “depression” “anxiety” “stress” “Taze Township” “Sagaing Division” “Myanmar”, this is the first study using the Pearlin’s stress process model to evaluate depression, anxiety and stress and find out its associations among boarding school students in Taze Township in Myanmar.

- The research about adolescent depression, anxiety and stress in boarding school is first time in Taze Township, Shwe Bo district, Sagaing division, Myanmar and also the questionnaire of DASS 21 is also the first time using in Myanmar which is already validated by all three experts.

- The internal consistency reliability were assessed during the pilot testing on 36 questionnaire and again at the end of the research data collection on all 360 students. The Cronbach’s alpha were repeated on all questionnaires in order to confirm internal consistency in all the research questionnaire and all were above 0.7 which were good reliability except questionnaire for interpersonal conflict with other students, stress from romantic relationship and social support from teachers which were only one questionnaire.

- Moreover, it also explore the condition of sources of stress namely interpersonal conflict with other students, with parents, with teachers, problems with teacher interaction, problems in school performance, problems in romantic relationship, social resources namely social support from parents, peers and teachers and personal resources namely mastery, self-esteem and social competence which had not been studied in previous quantitative studies among boarding school students in Myanmar and it also showed requirements of counselling of mental health regarding health education and health talk specifically focus on how to deal with other people, if some problems happen with them, how to solve, listen and give advice, encouraging social support, improving personal skills namely mastery, social skills and upgrading of self-esteem level according to results.

- In my study, questions progressed logically from the least sensitive to the most sensitive, from the factual and behavioral to the cognitive, and from the more general to the more specific and it was not influenced by previous questions. To prevent answering all the same for lazy participants, some question order was randomly.

- For the above facts, it not only increases the availability of data necessary to support but also guide effective mental health policies and will be helpful for the institute to provide appropriate health education intervention programs for boarding school students and adolescents.

Limitation

- This study was only made in boarding school students in Taze Township. Hence, it cannot represent mental health condition of the whole population of adolescents in Myanmar. This is school-based study which might therefore miss adolescents in the community who do not attend school. Only on adolescents who are living at boarding school. Study population is 14 years and 15 years old.

- Being a cross-sectional study, it cannot provide information about cause and effect of depression, anxiety and stress in adolescents.

- As the respondents' answer was only self-reported and no observation was done due to time and budget limitation, the real situation of interpersonal conflict with parents, teachers, other students, social support from parents, peers and teachers and personal resources namely mastery, self-esteem and social skills of respondents cannot be represented by this study.

- Due to limited time and limited skill of researchers in statistics, the data cannot be analyzed in a specific level of depression, anxiety and stress, thus did not get specific information of each level so the results may be a little different from reality. If there is time available to do and learn advanced statistical analysis, it would be better to use multiple ordinal regression analysis to assess each level to get specific information.

- Some bias may be introduced by the systematic random sampling option of replacing a student who will not in the school at the day of the survey with a student who is next in the sample frame list. It is possible that the replaced student has different characteristics from the students who were at the school that day. But it is expected to have few of these instance because the students were in a boarding school. However, a problem with questionnaire was that respondents may lie due to social desirability. Most people wanted to present a positive image of themselves and so may lie or bend the truth to look good.

- The self-reported measurement may lead to bias due to the untruth answers from respondents.

- Causes of parental conflict were not investigated.

- For religion questionnaire, this study did not include practice of religion.

- Data collection time was my limitation because it was collected near final exam before one week.

- The duration of questionnaires asking was around 15 minutes. This short time duration was due to students did not have enough time to focus on my questionnaires for having final exam one week after data collection time.

-Prevalence of depression, anxiety and stress was so high when compared to previous studies. It was due to screening test. It gave high sensitivity and low specificity that means high false positive.

-Bullyism were not investigated.

5.5 Recommendations

According to the findings of the study, recommendation for improving depression, anxiety and stress among boarding school students in Taze Township, Sagaing Division were divided into program level and research.

Recommendations for program level

- School directors should develop skills among teachers on how to deal with students less harshly, appropriate correction of indiscipline, avoiding favoring among students.

- Teachers should develop skills among students on how to reduce conflict but talking to parents, teachers and peers.

- There should be event for boarding school students for relaxation and developing relationship with peers or teachers to go to short trip or sports event or picnic. (that relationship between teachers and students at boarding school should improve and make a plan to travel or go to picnic during holidays not only focusing too much only on education and stuck in busy studying schedules).

- This study will be helpful for local and national health provider in planning for mental health services in schools and will be useful in adolescent mental health policy.

- This study will give the betterment of reviewing and planning of mental health promotion and counselling for adolescents in Taze, Shwe Bo District.

- To improve self-esteem, the researcher recommended that teachers should praise them in the classroom or somewhere at boarding school when they make some good things, or answer the questions in the classroom well and should not punish or shout in front of other people.

Recommendations for further research

- We would like to recommend further quantitative studies testing the effectiveness of intervention using health education sessions depression, anxiety and stress reduction to boarding school students using Pearlin's Stress Process Model.

- We would like to suggest to do qualitative studies that focus on boarding school students to know the reasons behind high level of depression, anxiety and stress to finds out the causal effects.

- Further research assessing the condition among boarding school students should do the observation for these variables with a check list to know the real conditions of boarding schools.

- Data analysis should be done with multiple ordinal logistic regression analysis by categorizing dependent variables into three groups to get more specific information and to be matched with reality.

- In this study, DASS questionnaire is already validated in Myanmar language. Therefore, it will be useful for future researcher.

- The prevalence of depression, anxiety and stress among Taze boarding school students were so high. Further studies were needed to detect suicidal ideation and suicidal attempt.

- Further studies should be careful on data collection time. If not, this will be like my study which was so obviously affect to study result.

-The duration of questionnaires asking should be at least 25-30 minutes enough for focusing on questionnaires carefully.

- There are seven types of conflict including relationship, interests, values, leadership, personality, style and ethics. For this study, the instrument used to detect conflict was for relationship type. Therefore, further studies should detect more for underlying causes or associations.

- Spend more time before delivering the questionnaire in order to develop more trust among the respondents and by increasing the trust to reduce the rate of social desirable answers.

- For further study, practice of religion should be included in the further questionnaire to find association between religion and depression, anxiety, stress. Also, the questionnaire for parental conflict should be improved to investigate the causes.

- For further study, bullyism should be investigated.

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APPENDICES

Appendix A

PRISMA searching strategy

(1) (((((("schools"[MeSH Terms] OR "schools"[All Fields] OR "school"[All Fields]) AND ("students"[MeSH Terms] OR "students"[All Fields] OR "student"[All Fields])) AND (("depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depression"[All Fields] OR "depression"[MeSH Terms]) AND ("anxiety"[MeSH Terms] OR "anxiety"[All Fields]) AND ("Stress"[Journal] OR "stress"[All Fields]))) AND ("adolescent"[MeSH Terms] OR "adolescent"[All Fields])) AND ("myanmar"[MeSH Terms] OR "myanmar"[All Fields])) AND (Taze[All Fields] AND district[All Fields] AND Sagaing[All Fields] AND Division[All Fields])

(2) (("depressive disorder"[MeSH Terms] OR ("depressive"[All Fields] AND "disorder"[All Fields]) OR "depressive disorder"[All Fields] OR "depression"[All Fields] OR "depression"[MeSH Terms]) AND ("anxiety"[MeSH Terms] OR "anxiety"[All Fields]) AND ("Stress"[Journal] OR "stress"[All Fields])) AND (("schools"[MeSH Terms] OR "schools"[All Fields] OR ("secondary"[All Fields] AND "school"[All Fields]) OR "secondary school"[All Fields]) AND ("students"[MeSH Terms] OR "students"[All Fields] OR "student"[All Fields]))

Appendix B

Participant Information Sheets

Title of Research: "DEPRESSION, ANXIETY AND STRESS ASSOCIATIONS AMONG TAZE BOARDING SCHOOL ADOLESCENTS, SHWEBO DISTRICT, SAGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY"

Name of Principal Researcher: Mr. Nanda Win

Contact Address: No.15-H, YTU Campus, Insein, Yangon.

Telephone: 0946523316

Email Address: nandawin285@gmail.com

1. **Introduction**

You are warmly being invited to participate in this research project. But you can decide freely whether you want to participate or not in this study after reading this document and knowing information about the study that why this research is conducted and what are the benefits and risks of this study. You also have right to withdraw from the study at any time without explaining any reason. After you read this document, you can ask whatever you want to know and about the facts that are not unclear in your mind.

2. Contents of the survey question

The survey involves self-administered type and the questionnaires will contain about different factors such as socio demographic characteristics (age, grade, sex, religion and ethnicity), Stressors (Interpersonal conflict with other students, Interpersonal conflict with teachers, Interpersonal conflict with parents, Stress of school performance, Stress of teacher interaction, Stress of romantic relationship), Social resources (social support), Personal resources (Mastery, Self-esteem, Social competence) and depression, anxiety and stress of Taze boarding school students.

3. Participants Selection

In this research, the participants will be 14, 15 and 16 years old students who are living and studying at three Taze boarding schools, Shwe Bo District, Sagaing Division, Myanmar. This study will need at least 360 participants. Participants who meet inclusion criteria and who do not meet the exclusion criteria will be involved in this study.

Inclusion Criteria	Exclusion Criteria
- Adolescents between 14, 15 and 16 years old , both male and female who enrolled in grade 10 and 11 living in eight boarding schools - Adolescents who are ready to join in the study. - Students who had chosen by systematically random sampling method and included in the sampling frame	- Students who will be hospitalized at the time of the survey and absent for other reasons and also who will suffer from serious physical illness or acute mental illness by school based health records. - Cannot write due to hand injuries at the time of interview. - Students who have been living in boarding school not more than 6 months

4. Objectives of the research

- To assess the prevalence and degree of depression, anxiety and stress among adolescents who are living at boarding school.
- To describe socio demographic characteristics and their associations with depression, anxiety and stress among adolescents who are living at boarding school.
- To describe stressors and their associations with depression, anxiety and stress among adolescents who are living at boarding school.

- To describe social resources and their associations with depression, anxiety and stress among adolescents who are living at boarding school.
- To describe personal resources and their associations with depression, anxiety and stress among adolescents who are living at boarding school.

5. **Procedure of taking consent**

The researcher will pre-visit the boarding schools for surveying the location and collected the number of the students. Formal letters from the College of Public Health Sciences will be sent to obtain a permission from three boarding schools in Taze Township and receive the recommendation from Taze township school health authority director and finally obtain the permission from the targeted study area. The researcher will visit the registration officer of each boarding school for getting the list of the students and make an appointment for date of data collection and then sending the informed consent to the list of parents of students who will be systematically selected.

6. Procedure of research

All the eligible students will be gathered in the assembly hall or classroom. The teacher will be invited to leave the room before disseminating the questionnaires. The respondents will be asked to seat in space far apart to ensure their confidentiality and privacy to answer the questionnaires. The researcher and research assistants will explain the aims of the study and convince the confidentiality of respondents will be guaranteed. The researcher and research assistants will first explain about the research objective, research questionnaires and research benefits, tell them about not damage to education performance and class grading if they do not want to join and will be invited to leave the students who do not want to join from room. After that, the researcher and two assistants disseminate the questionnaire and consent form. The consent for the respondents who aged less than 18 will be waiver. The respondents will full fill the consent form and questionnaire within approximately 45minutes. If students have any doubt of questions, the researcher and/or research assistants will

answer appropriately. After all respondents finished to full fill the questionnaire and inform consent, the researcher and research assistants will collect the questionnaire and inform consent. All respondents will be invited to leave the room at the same time.

7. Benefits

As your participation is voluntary and no special compensation for participation in this study will be done. Nevertheless, the researcher will give you a small present such as stationery items such as books and pens as appreciation for your participation.

8. Confidentiality

Any information that is linked to you will be kept confidentially. Even though the study will be published, your names or other identifying information will not be mentioned in the report or summaries of the study. The final report can be available from principal researcher and the report will not be used with another intension. The data will be kept confidentially during the process of report and research and all data files together with the participants' answer on questionnaires will be destroyed after final report has been done.

9. Right of participant

You have the right to choose or refuse for giving consent and participating in this study. Even after giving consent, you can withdraw from the study at any time. There will not be any bad consequence to you for this reason. You can also ask anything you want to know before, during and after the study conduct any time. You can contact the principal researcher with given address mentioned above or you can make report to the Research Ethics Review Committee, Chulalongkorn University (RECCU)., Jamjuree 1 Bldg., 2nd floor., 254 Phayathai Road., Pathuwam District, Bangkok 10330, Thailand, Tel/Fax 02218-3202 E-mail: eccu@chula.ac.th at any time if you have any questions or complaints about this study or the researcher does not treat the participant according to the items.

Appendix C

Informed Consent Form

Address……

Date……..

The code number of participant …….

I who have signed here below do agree to participate in this research project.

Title: "DEPRESSION, ANXIETY AND STRESS ASSOCIATIONS AMONG TAZE BOARDING SCHOOL ADOLESCENTS, SHWEBO DISTRICT, SAGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY"

Name of Principal Researcher: Mr. Nanda Win

Contact Address: No (15-H), YTU Campus, Insein, Yangon

Telephone: 0946523316I

I have read or been informed in details about the rationale and objectives of this research study what I will be engaged with, risk and benefits of the study and the rights of the participants. I have already received the contact details of the principal researcher. I have been explained by the researcher in information sheet and I clearly understand with satisfaction.

I am willing to participate in this research and to response the questionnaires which are focusing on socio-demographic characteristics, Stressors, Social resources, Personal resources and depression, anxiety, stress. I am acknowledged that I might feel not being comfortable in answering the questions which are included in this research questionnaire. I have been informed that the interview will take about 30-35minutes, and will be done only 1 time.

I have my right to withdraw from this study at any time if I wish and I would not need to give any reason for withdrawal. This withdrawal will not have any negative impact on me. The researcher has guaranteed that procedures acting upon me would be exactly the same as identified in participant information sheet. All personal information about me will be kept in confidential. Results of the study will be described by using the overall picture. Any of personal information which could be able to identify me will not be described in the report.

If I am not treated as mentioned in the participant information sheet, I have known that I can report to Mr. Nanda Win, principal researcher, Master Student at College of Public Health

Sciences, Tel: 0946523316, email address: nandawin285@gmail.com, or to the Research Ethics Review Committee for Research Involving Human Research Participants, Health Sciences Group, Chulalongkorn University (CCU). Jamjuree 1 Bldg., 2nd floor, 254 Phayathai Road, Pathumwan district, Bangkok 10330, Thailand, Tel./fax, 0-2218-3202 email: eccu@chula.ac.th.

I have read the information in this consent form, or it has been read to me. Furthermore, I have received a copy of participant's information sheet and informed consent form.

Researcher's Name …… Participant's Name ……

Signature of researcher …… Signature of participant ……

Date ___/ ___/ ___/ Date ___/ ___/ ___/

(Day /month /year) (Day /month /year)

If illiterate

The participant should include their thumb-prints as well. If participant refuses to give a fingerprint in the consent form, he or she can write down one word (initial name) of their names, as a traditional way of singing for illiterates in those rural areas. A literate witness must sign (this person should be selected by the participant and should have no connection to researchers).

I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely.

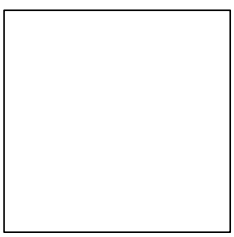
Witness's Name ……..

Signature of witness …….

Date __/ __/ __/

(Day /month /year)

Thumb print of participant



Appendix D

Waiver for Parental Request

ERB to the Research Ethics Review Committee, Chulalongkorn University (RECCU)., Jamjuree 1 Bldg., 2nd floor., 254 Phayathai Road., Pathuwam District, Bangkok 10330, Thailand, Tel/Fax 02218-3202 E-mail: eccu@chula.ac.th

Subject: Waiver for Parental Request

Dear Sir/Madam,

My study is about "DEPRESSION, ANXIETY AND STRESS ASSOCIATIONS AMONG TAZE BOARDING SCHOOL ADOLESCENTS, SHWEBO DISTRICT, SAGAING DIVISION, MYANMAR: A CROSS-SECTIONAL STUDY". My target population is adolescents who are 14, 15 and 16 years of age. I would like to request to waiver for parental request due to the following reasons.

Reason for waiver parental request

1) We use the anonymous questionnaires, so the researcher use only code for the respondents, therefore no one cannot access the bio data of the respondents.
2) This research has no biological or physical harm toward the respondents because there is no specimen collection such as blood test or injection.
3) According to the Child Law 1993 Sec 24, children have the right to engage voluntarily in work allowed by law. According to Factory Act 1951 Sec 75-78, children under the age of 14 cannot work in any factory. According to Shops and Establishments Act 2016 Section 13(a), children under the age of 14 are not permitted to work at a shop. According to the Child Law 1993 Sec 15(c), every child has the right to participate in organizations relating to children, social organization or religious organizations permitted under the Law. According to the Child Law 1993 Sec 15(a), every child has the right to freedom of speech and expression in accordance within the law. They need medical health report only without parental consent form. Also the age of 14 years old adolescent can decide the medical treatment without parental consent.
4) For this research about depression, anxiety, stress, sources of stress, personal resources such as mastery, self-esteem, social competence and social support it may not be possible to obtain the necessary sample size of participants within the research timeframe if we request the consent of parents of these teens living boarding schools far away from their families. A good number of these parents will not be easily accessible and therefore the requirement of parental consent may become a barrier to conduct the study.

   According to the above reasons, adolescents especially starting from 14 years of age can decide and work labor at factories, shops and can choose medical decision without parental consent. Therefore, my target population who are adolescents at 14, 15 and 16 years old age can easily decide and answer my research questionnaire which is less risk than labor and medical decision for them.

Best regards,
Nanda Win (MPH student of Chulalongkorn University, ID-6178829753)

APPENDIX E

Self-Administered Questionnaires

Part 1 Socio Demographic Characteristics

1. Age…….year

2. Sex
   2.1. [ ] Male 2.2. [ ] Female

3. Grade
   3.1 [ ] Grade 10 3.2 [ ] Grade 11

4. Religion
   4.1 [ ] Buddhism 4.2 [ ] Christianity 4.3 [ ] Islam
   4.4 [ ] Hindu
   4.5 [ ] Others

5. Ethnicity
   5.1 [ ] Burmese 5.2 [ ] Shan 5.3 [ ] Karen
   5.4 [ ] Rakhine 5.5 [ ] Mon 5.6 [ ] Chinese
   5.7 [ ] Others

Part 2 Stressors

(6) Interpersonal conflict with other students

Read the following 3 situations and for each situation *during past six months,* answer tick the blank box corresponding to your level of experience.

		Strongly disagree	Disagree	Agree	Strongly Agree
6.1	I often have conflicts with other students in the school	6.1.1	6.1.2	6.1.3	6.1.4

(7) <u>Interpersonal conflict with teachers</u>
Read the following 4 situations and for each situation *during past six months,* answer tick the box corresponding to your level of experience.

		Strongly disagree	Disagree	Agree	Strongly Agree
7.1	Teacher-students conflict arise because some teachers treat students harshly.	7.1.1	7.1.2	7.1.3	7.1.4
7.2	Student‘s indiscipline in my school is a cause of conflict between teachers and students	7.2.1	7.2.2	7.2.3	7.2.4
7.3	When teachers favor certain students is a cause of teacher student conflict	7.3.1	7.3.2	7.3.3	7.3.4
7.4	Teachers-students conflict negatively affects student‘s academic performance in our school	7.4.1	7.4.2	7.4.3	7.4.4

(8) <u>Interpersonal conflict with parents</u>
Read the following two situations and for each situation *during past six months,* answer tick the box corresponding to your level of experience.

		Strongly disagree	Disagree	Agree	Strongly Agree
8.1	Before attending boarding school, you often had conflict with your parents or guardians	8.1.1	8.1.2	8.1.3	8.1.4
8.2	While attending boarding school, you continue to have conflict with your parents or guardians	8.2.1	8.2.2	8.2.3	8.2.4

(9) <u>Stress from student-teacher interaction</u>

Read the following three situations and for each situation *during past six months*, answer tick the box corresponding to your level of experience.

		not at all stressful (or has not happened)	a little stressful	quite stressful	very stressful
9.1	I feel stress because teachers hassling me	9.1.1	9.1.2	9.1.3	9.1.4
9.2	I feel stress not being listened to by teachers	9.2.1	9.2.2	9.2.3	9.2.4
9.3	I feel stress because of lack of respect from teachers	9.3.1	9.3.2	9.3.3	9.3.4
9.4	I feel stress because I am not getting along with my teachers	9.4.1	9.4.2	9.4.3	9.4.4

(10) <u>Stress from school performance</u>

Read the following three situations and for each situation, answer tick the box corresponding to your level of experience.

		not at all stressful (or has not happened)	a little stressful	quite stressful	very stressful
10.1	I feel stress because of having to study things I don't understand	10.1.1	10.1.2	10.3.3	10.1.4
10.2	I feel stress because teachers expecting too much from me	10.2.1	10.2.2	10.2.3	10.2.4
10.3	I feel stress because of having difficulties with some subjects	10.3.1	10.3.2	10.3.3	10.3.4

(11)Stress from romantic relationship

Read the following situation and answer tick the box corresponding to your level of experience.

		not at all stressful (or has not happened)	a little stressful	quite stressful	very stressful
11.1	I feel stress because I cannot develop romantic relationship with boyfriend or girlfriend.	11.1.1	11.1.2	11.1.3	11.1.4

Part 3 Social Resources

(12)Social Support: We are interested in how you feel about the following statements. Read each statement carefully. Indicate how you feel about each statement.

		None of the time	a little of the time	most of the time	all of the time
12.1	Parents, you can count on to listen to you when you need to talk	12.1.1	12.1.2	12.1.3	12.1.4
12.2	Parents who shows you love and affection	12.2.1	12.2.2	12.2.3	12.2.4
12.3	Parents to give you good advice about a crisis	12.3.1	12.3.2	12.3.3	12.3.4
12.4	Peers you can count on to listen to you when you need to talk	12.4.1	12.4.2	12.4.3	12.4.4
12.5	Peers to share your most private worries and fears with	12.5.1	12.5.2	12.5.3	12.5.4

12.6	Peers to give you good advice about a crisis	12.6.1	12.6.2	12.6.3	12.6.4
12.7	Peers to have good time with	12.7.1	12.7.2	12.7.3	12.7.4
12.8	Parents to share your most private worries and fears with	12.8.1	12.8.2	12.8.3	12.8.4
12.9	I talk to friends when I have conflict other students	12.9.1	12.9.2	12.9.3	12.9.4
12.10	The school teachers help students to solve conflict among themselves	12.10.1	12.10.2	12.10.3	12.10.4

Part 4 Personal Resources

(13)Mastery

Read the following six situations and for each situation, answer tick the box corresponding to your level of experience.

		Strongly Disagree	Disagree	Agree	Strongly agree
13.1	There is really no way I can solve some of the problem I have	13.1.1	13.1.2	13.1.3	13.1.4
13.2	Sometimes I feel that I'm being pushed around in life	13.2.1	13.2.2	13.2.3	13.2.4
13.3	I have little control over the things that happen to me	13.3.1	13.3.2	13.3.3	13.3.4
13.4	I can do just about anything I really set my mind to	13.4.1	13.4.2	13.4.3	13.4.4
13.5	What happens to me in the future mostly depends on me	13.5.1	13.5.2	13.5.3	13.5.4
13.6	There is little I can do to change many of the important things in my life	13.6.1	13.6.2	13.6.3	13.6.4

(14)Self-Esteem

Read the following ten situations and for each situation *during past six months,* answer tick the box corresponding to your level of experience.

		Strongly disagree	Disagree	Agree	Strongly agree
14.1	On the whole, I am satisfied with myself.	14.1.1	14.1.2	14.1.3	14.1.4
14.2	At times, I think I am no good at all	14.2.1	14.2.2	14.2.3	14.2.4
14.3	I feel that I have a number of good qualities	14.3.1	14.3.2	14.3.3	14.3.4
14.4	I am able to do things as well as most other people	14.4.1	14.4.2	14.4.3	14.4.4
14.5	I feel I do not have much to be proud of.	14.5.1	14.5.2	14.5.3	14.5.4
14.6	I certainly feel useless at time	14.6.1	14.6.2	14.6.3	14.6.4
14.7	I feel that I'm a person of worth, at least on an equal plane with others	14.7.1	14.7.2	14.7.3	14.7.4
14.8	I wish I could have more respect for myself	14.8.1	14.8.2	14.8.3	14.8.4
14.9	All in all, I am inclined to feel that I am a failure.	14.9.1	14.9.2	14.9.3	14.9.4
14.10	I take a positive attitude toward myself.	14.10.1	14.10.2	14.10.3	14.10.4

(15)Social Competence

Read the following nine situations and for each situation, answer tick the box corresponding to your level of experience.

		Strongly disagree	Disagree	Agree	Strongly agree
15.1	I am being able to keep good relationship with family members.	15.1.1	15.1.2	15.1.3	15.1.4
15.2	I am being able to keep good relationship with peers/my friends.	15.2.1	15.2.2	15.2.3	15.2.4
15.3	I am being able to keep good relationship with teachers	15.3.1	15.3.2	15.3.3	15.3.4
15.4	I am being able to express opinions in speaking	15.4.1	15.4.2	15.4.3	15.4.4
15.5	I am being able to express desires in speaking	15.5.1	15.5.2	15.5.3	15.5.4
15.6	I am being able to express needs in speaking	15.6.1	15.6.2	15.6.3	15.6.4
15.7	I am being able to express opinions in writing	15.7.1	15.7.2	15.7.3	15.7.4
15.8	I am being able to express desires in writing	15.8.1	15.8.2	15.8.3	15.8.4
15.9	I am being able to express needs in writing	15.9.1	15.9.2	15.9.3	15.9.4

Part 5 Depression, Anxiety and Stress

(16)Scale items: Below is a list of some ways you may have felt or behaved. Please indicate how often you have felt this way during last two weeks by checking the appropriate space. Please only provide one answer to each question.

	During the past week:	Did not apply to me at all	Applied to me to some degree, or some of the time	Applied to me to a considerable degree or a good part of time	Applied to me very much or most of the time
16.1	I found it hard to wind down	16.1.1	16.1.2	16.1.3	16.1.4
16.2	I was aware of dryness of my mouth	16.2.1	16.2.2	16.2.3	16.2.4
16.3	I couldn't seem to experience any positive feeling at all	16.3.1	16.3.2	16.3.3	16.3.4
16.4	I experienced breathing difficulty (e.g. excessively rapid breathing, breathlessness in the absence of physical exertion)	16.4.1	16.4.2	16.4.3	16.4.4
16.5	I found it difficult to work up the initiative to do things	16.5.1	16.5.2	16.5.3	16.5.4
16.6	I tended to over-react to situations	16.6.1	16.6.2	16.6.3	16.6.4
16.7	I experienced trembling (e.g. in the hands)	16.7.1	16.7.2	16.7.3	16.7.4
16.8	I felt that I was using a lot of nervous energy	16.8.1	16.8.2	16.8.3	16.8.4
16.9	I was worried about situations in which I might panic and make a fool of myself	16.9.1	16.9.2	16.9.3	16.9.4
16.10	I felt that I had nothing to look forward to	16.10.1	16.10.2	16.10.3	16.10.4

16.11	I found myself getting agitated	16.11.1	16.11.2	16.11.3	16.11.4
16.12	I found it difficult to relax	16.12.1	16.12.2	16.12.3	16.12.4
16.13	I felt down-hearted and blue	16.13.1	16.13.2	16.13.3	16.13.4
16.14	I was intolerant of anything that kept me from getting on with what I was doing	16.14.1	16.14.2	16.14.3	16.14.4
16.15	I felt I was close to panic	16.15.1	16.15.2	16.15.3	16.15.4
16.16	I was unable to become enthusiastic about anything	16.16.1	16.16.2	16.16.3	16.16.4
16.17	I felt I wasn't worth much as a person	16.17.1	16.17.2	16.17.3	16.17.4
16.18	I felt that I was rather touchy	16.18.1	16.18.2	16.18.3	16.18.4
16.19	I was aware of the action of my heart in the absence of physical exertion (e.g. sense of heart rate increase, heart missing a beat)	16.19.1	16.19.2	16.19.3	16.19.14
16.20	I felt scared without any good reason	16.20.1	16.20.2	16.20.3	16.20.4
16.21	I felt that life was meaningless	16.21.1	16.21.2	16.21.3	16.21.4

Annex E Time Frame Gant chart

No	Administration	Time Line									
		2018				2019					
		9	10	11	12	1	2	3	4	5	6
1	Preparation and Literature review										
2	Proposal Development										
3	Questionnaire Development, including validity and reliability										
4	Ethical Consideration										
5	Prepare and Data collection										
6	Data Analysis										
7	Conclude and write report										

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