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List of abbreviations

DASS-21	Depression Anxiety and Stress Scale – 21
EI	Emotional intelligence
LMICs	Low- and middle-income countries
PBI	Parenting Bonding Instrument
TEIQue-ASF	Trait Emotional Intelligence – Adolescents Short Form
UCLA	UCLA Loneliness Scale
WHO	World Health Organisation

ABSTRACT

Background

Mental health problems among adolescents are prevalent worldwide. Emotional intelligence (EI), defined as a group of perceptions and understandings about their own and other peoples' emotions, has been shown to be associated with mental health problems among adolescents in some high-income countries. However, little is known about this relationship in low- and lower-middle income countries, including Vietnam.

Aims

The aims of this project were: (1) to review the existing evidence about the prevalence of mental health problems among Vietnamese adolescents; and to (2) determine the prevalence of symptoms of mental health problems; (3) investigate determinants of EI; (4) examine the relationship between EI and mental health problems among high school students in Central Vietnam.

Method

This PhD project comprises two major components. The first was a systematic review of existing evidence about the prevalence and determinants of mental health problems among adolescents in Vietnam. The second was a school-based, cross-sectional study. Students aged 15 to 18 were recruited from nine public high schools in rural, urban and coastal areas in Thua-Thien-Hue province. Depression, anxiety, stress, and loneliness were assessed using the Depression-Anxiety-Stress Scale 21 (DASS-21) Vietnam Validated Version and the UCLA Loneliness Scale. Suicidal thoughts were assessed using questions

adapted from the Youth Risk Behaviours Survey 2013. Emotional intelligence was assessed using the Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue-ASF).

Results

Systematic review: In total, 21 papers reporting the experiences of 28,539 adolescents were included in the review. Depression, anxiety, stress and suicidal thoughts were prevalent and were the most common mental health problems reported. Very few studies were conducted in Central Vietnam with only a small group of mental health problems. None of the studies assessed EI or its potential associations with mental health problems.

Cross-sectional survey: 1,593/1,616 students (98.6%) completed the anonymous questionnaire.

Depression, anxiety, stress and lifetime suicidal thoughts were prevalent with high proportion among students in Central Vietnam (54.7%, 56.1%, 37.9%, and 31.6%, respectively). Mental health problems were likely more prevalent among females than males. Parenting styles during childhood had a significant impact on the experience of mental health problems in adolescence.

EI was likely higher in males than females. The warmth of both father and mother positively associated with higher EI while the overprotection and authoritarianism from the mother associated with lower EI.

The multivariable linear regression and the logistic regression showed that EI was a protective factor to mental health problems among adolescents in Vietnam.

Conclusions

In general, mental health problems among adolescents in Central Vietnam were prevalent and influenced by individual, family, school and community factors, reflecting Bronfenbrenner's ecological framework.

This research extends the existing evidence about mental health problems and EI among adolescents in Vietnam and globally. The data are robust and provide reliable evidence for government, policy makers, teachers and parents about mental health problems among adolescents. They can inform strategies to improve mental health of adolescents in Vietnam, addressing EI via prevention and early intervention programs directed at young people, their parents and their teachers.

Keywords

Anxiety, adolescents, depression, emotional intelligence, high school students, loneliness, stress, suicidal thought, suicidal plan, Vietnam.

Manuscripts under review for publication

1. Nguyen, Q-A. N., Tran, T., Fisher, J. (Under review). The prevalence and determinants of mental health problems among adolescents in Vietnam: A systematic review. *BMC Public Health.*
2. Nguyen, Q-A, N., Fisher, J., Tran, T., Holton, S., Le, M. (Under review). Psychometric properties of a shortened Parental Bonding Instrument among a population-based sample of Vietnamese adolescents. *Current Psychology.*
3. Nguyen, Q-A. N., Tran, T., Tran, T-A., Fisher, J. (Under review). Perceived parenting styles and emotional intelligence among adolescents in Vietnam. *Journal of Personality and Individual Differences.*
4. Nguyen, Q-A. N., Tran, T., Tran, T-A., Fisher, J. (Under review). Emotional intelligence and mental health problems among adolescents in Vietnam: A school-based survey. *Journal of Mental health.*
5. Nguyen, Q-A. N., Tran, T., Tran, T-A., Fisher, J. (Under review). Suicidal thought: Prevalence and determinants among adolescents in Central Vietnam. *BMC Public Health.*

Presentations during candidature

1. "Difficulties in validation of the Trait Emotional Intelligence – Adolescent Short Form (TEIQue-ASF) among adolescents in Vietnam", *The 21st International Congress of Applied Psychology (ICAP 2018)*, Canada.
2. "Validation of the Trait Emotional Intelligence – Adolescent Short Form (TEIQue-ASF) among adolescents in Vietnam", *The 11th International Testing Commission (ITC 2018)*, Canada.
3. "Parenting styles and mental health problems among adolescents in Vietnam", *The Asian Conference on Psychology and the Behavioral Sciences (ACP 2018)*, Japan.

Selected awards during candidature

1. Australian Awards Scholarship, Australia, 2014-2019;
2. Young Scholar of the International Test Commission 2018 (ITC2018), Canada;
3. Award for Advanced Research Training Seminar Program of the International Congress of Applied Psychology (ICAP 2018), Canada;
4. Monash University Postgraduate Travel Grant Award 2017, Monash University, Australia;
5. Monash University Postgraduate Travel Grant Award 2018, Monash University, Australia.

Thesis by publication declaration

I hereby declare that this thesis contains materials that have not been previously submitted to meet requirements for an award of other degree, diploma at this or any other university or equivalent institution. To the best of my knowledge and belief, this thesis contains no material previously published or written by another author, excepting where the reference was made in the text of the thesis.

The current thesis includes 05 manuscripts are current under reviewed. The core theme of the thesis is the mental health problems, EI and the association between EI and mental health problems among adolescent in Central Vietnam. The ideas, development and writing up of all the manuscripts in the thesis were the principle responsibility of myself, working within the Global and Women's Health under the supervision of Prof. Jane Fisher and Dr. Thach Tran.

The inclusion of co-authors reflects the fact that the work came from active collaboration between researchers and acknowledges input into the team-based research.

The following table illustrates my contribution to the work in chapters 3, 4, 6, 7, and 8.

Thesis Chapter	Manuscript Title	Status (published /in press/ accepted/submitted)	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution	Co-author(s), Monash student Yes/No*
3	The prevalence and determinants of mental health problems among adolescents in Vietnam: A systematic review	Submitted	70% Protocol preparation, database search, study eligibility, assessment, quality assessment, summary of results, writing the first draft, submission to PROSPERO and submit for publication.	**1.Thach Tran.** Input to protocol preparation, study eligibility assessment, assessment, quality assessment, input to the manuscript 10%. **2. Jane Fisher.** Input to protocol preparation, study eligibility assessment, assessment, quality assessment, input to the manuscript 15%.	None of the co-authors is Monash students.
4	Psychometric properties of a shortened Parental Bonding Instrument among a population-based sample of Vietnamese adolescents	Submitted	60% Study design, ethics application, data collection, data entry and management, data analysis, writing up the paper, submission for publication.	**1. Jane Fisher.** Study design, ethics application, input to manuscript 10% **2. Thach Tran.** Study design, ethics application, input into the manuscript 5% **3. Sara Holton.** Study design, ethics application, input into the manuscript 5% **4. Minh Le.** Translation of the measurement, ethics application, data collection, data entry and management, data analysis, writing up the paper. Input into manuscript 20%.	None of the co-authors is Monash students.

Thesis Chapter	Manuscript Title	Status (published /in press/ accepted/submitted)	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution	Co-author(s), Monash student Yes/No*
6	Perceived parenting styles and emotional intelligence among adolescents in Vietnam	Submitted	65% Study design, ethics application, data collection, data entry and management, data analysis, writing up the manuscript, submission for publication	**1. Thach Tran** Study design, ethics application, data analysis, input into the manuscript 10% **2. Tu-Anh Tran** Data collection, data analysis, input into the manuscript 5% **3. Jane Fisher** Study design, ethics application, input to the manuscript 20%	None of the co-authors is Monash students.
7	Emotional intelligence and mental health problems among adolescents in Vietnam: A school-based survey	Submitted	70% Study design, ethics application, data collection, data entry and management, data analysis, writing up the manuscript, submission for publication	**1. Thach Tran** Study design, ethics application, data analysis, input into the manuscript 10% **2. Tu-Anh Tran** Data collection, data analysis, input into the manuscript 5% **3. Jane Fisher** Study design, ethics application, input to the manuscript 15%	None of the co-authors is Monash students.
8	Suicidal thoughts: Prevalence and determinants	Submitted	70% Study design, ethics application, data collection, data entry	**1. Thach Tran** Study design, ethics application, data	None of the co-authors is

Thesis Chapter	Manuscript Title	Status (published /in press/ accepted/submitted)	Nature and % of student contribution	Co-author name(s) Nature and % of Co-author's contribution	Co-author(s), Monash student Yes/No*
	among adolescents in Central Vietnam		and management, data analysis, writing up the manuscript, submission for publication	analysis, input into the manuscript 10% **2. Tu-Anh Tran** Data collection, data analysis, input into the manuscript 5% **3. Jane Fisher** Study design, ethics application, input to the manuscript 15%	Monash students.

**If no co-authors, leave fields blank*

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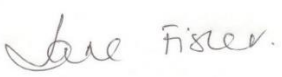
Student's signature: Date 01/07/2019

The undersigned hereby certify that the above declaration correctly reflects the nature and extent of the student's and co-authors' contributions to this work. In instances where I am not the responsible author, I have consulted with the responsible author to agree on the respective contributions of the authors.

Main Supervisor's name: Jane Fisher

Main Supervisor's signature: Date: 02/07/2019



Dedication

To my little son: Thanks for all the hugs, love, and laughs as I pushed through this! I would not be who I am without you. I love you!

To Melbourne and Melbournians: Thanks for making my PhD journey more interesting and memorial. Thanks for all the laughs and tears you brought to me. Thanks for taking care of me even though you do not know who I am.

Four years away from home, living, studying and raising a kid alone without the presence of husband and family, this project was a result of a long string of accumulating miracles and tender mercies.

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PREFACE

This PhD project was undertaken as "thesis by publication", in which the majority of the chapters, including chapters 3, 4, 5, 6, 7 and 8 are comprised of submitted manuscripts. Therefore, the repetition across manuscripts and the chapters within this thesis in unavoidable.

The thesis comprises nine chapters. *Chapter 1* provides definitions of adolescence, mental health problems, introduces the bioecological system theory of Bronfenbrenner about the psychological development of human and summaries prevalence and determinants of depression, anxiety, stress, loneliness and suicidal thoughts among adolescents internationally. This chapter highlights the research gaps in low- and middle-income countries.

Chapter 2 introduces the two different theory of the trait and ability emotional intelligence and well-known measurements. A summary of the literature about the association between emotional intelligence and mental health is presented in this chapter. The research gaps related to this topic is also discussed.

Chapter 3 summaries the methods used in two components this project. The first was a systematic review about prevalence and determinants of mental health problems among adolescents in Vietnam, and the second was a self-completed cross-sectional survey among students in high schools in Thua-Thien-Hue province, Vietnam. Detailed descriptions are presented for each component. A manuscript regarding validation the Parenting Bonding Inventory (PBI), which has been submitted to the *Journal of Current Psychology* for consideration for publication, is presented.

Chapter 4 is the first of the four result chapters. This chapter includes a manuscript regarding findings from a systematic review of the prevalence and determinants of mental health problems among adolescents in Vietnam. The existing evidence, as well as the research gaps related to the topic in the local literature, are discussed. The manuscript is submitted to the *BCM Public Health* for consideration for publication.

Chapter 5 presents the characteristics of the sample in this study. The high prevalence of mental health problems among adolescents in Vietnam, including depression, anxiety, stress and suicidal thoughts is presented.

Chapter 6 reports the findings regarding the determinants of emotional intelligence among adolescents in Vietnam. A manuscript about parenting styles and emotional intelligence is presented. This manuscript has been submitted to Journal of Personality and Individual Differences for consideration for publication.

Chapter 7 examines the association between emotional intelligence and mental health problems among adolescents. A related manuscript, which is under review with the *Journal of Mental Health* is included in this chapter.

Chapter 8 includes the manuscript about the determinants of suicidal thoughts among adolescents. Within this manuscript, the association between emotional intelligence and suicidal thoughts is discussed. The manuscript has been submitted to the *BMC Public Health* for consideration for publication.

Chapter 9 presents a summary of important contributions of the project. Strengths and limitations of the projects are presented. Implications at individual, familial, school, national levels are suggested.

CHAPTER 1. MENTAL HEALTH PROBLEMS AND THEIR DETERMNANTS AMONG ADOLESCENTS GLOBALLY

"Worldwide 10-20% of children and adolescents experience mental disorders."

World Health Organization (WHO, 2014)

1.1. ADOLESCENCE

Adolescence is a developmental period of transition between childhood and adulthood. Definitions of the age range of adolescence vary among countries. The Adolescent-Youth Sexual and Reproductive Health program of the European Union (EU) and the United Nations Population Fund (UNFPA) considers adolescence includes people in the age range from 15 to 24 years. However, many countries around the world define adolescence based on the rules of the national laws in which the minimum legally allowed age for children to participate in some activities, such as participating in the military, voting, marriage, alcohol consumption or taking responsibility for their own activities under the law (United Nations Children's Fund (UNICEF), 2011) varies from that of UNICEF. In research, the age range for adolescence is different. For example, in Australia, adolescence ranges from age 12 to 18 (Australian Insitute of Family Studies, 2006) while in Japan, this range is 14 to 25 years (Nishikawa, 2009). In this research, we follow the World Health Organization's (WHO) definition of adolescence, in which the age range for this period of life is from more than 10 to 19 years of age (WHO, 2014).

Within the stage of adolescence, a person experiences rapid changes not only in their physical bodies but also in cognition and emotion. These challenges

require adolescents to adjust, adapt and transition from being a child into their adult identity and to achieve economic and social independence. All these adaptive challenges are psychologically demanding. Although adolescents are progressing towards adulthood, parents and society can perceive adolescents as lacking preparedness for being an individual with full adult responsibilities. As a consequence, adolescents, from an adult's perception, can still be seen as children. Internal and external conflicts can arise. Adolescence, therefore, is considered as a potentially vulnerable period in life emotionally and as a stage influenced by many aspects of life circumstances (Ivelina, 2015). Adolescents might experience emotional and behavioural problems during these adjustment processes. According to WHO, adolescents:

> *"depend on their families, their communities, schools, health services and their workplaces to learn a wide range of important skills that can help them to cope with the pressures they face and make the transition from childhood to adulthood successfully. Parents, members of the community, service providers, and social institutions have the responsibility to both promote adolescent development and adjustment and to intervene effectively when problems arise*". (WHO, 2014)

In low- and middle-income countries (LMICs), adolescents are considered to be affected by more severe socio-economic, cultural and environmental risk factors than in high-income countries. These include, for example, restricted opportunities to access health and education services, early exposure to work, or the lack of care emotionally and physically due to poverty (R. Blum & Boyden, 2018).

1.2. MENTAL HEALTH PROBLEMS AMONG ADOLESCENTS

1.2.1. Definition of mental health and mental health problems

According to the World Health Organisation (WHO), mental health is "*a state of well-being, perceived self-efficacy, autonomy, intergenerational dependence and recognition of the ability to realize one's intellectual and emotional potential*" (WHO, 2003, 2004). Well-being is understood as the healthy functioning of a person in emotional, psychological and social domains. In plain language, it is an individuals' realization of their capacity to cope with everyday stress, working effectively and fruitfully, and contributing to the community (WHO, 2001). Good mental health is important, and it impacts directly on the health and well-being of a person at every stage of life (Patel, Flisher, Hetrick, & McGorry, 2007).

According to WHO, good mental health is under the influence of various factors including social circumstances in which a person lives and individual psychological and biological factors (WHO, 2005). Huppert's (2009) review of the neurobiological differences among children revealed that early attachment, warm parenting, and supportive family and learning environments influence the development of brain, behaviours and emotions (Huppert, 2009).

Mental illness or mental disorder is understood as a "*diagnosable illness that significantly interferes with an individual's cognitive, emotional or social abilities*" (Commonwealth Department of Health and Aged Care, 2000b). There is a wide range of mental illnesses. The criteria of mental illness are described in two well-known diagnostic systems: The International Classification of Diseases, 10th revision (ICD-10) and the American Psychiatric Association's

Diagnostic and Statistical Manual of Mental Disorders, 5th revision (DSM-V). Both of the two systems attempt to list symptoms and classify all known psychological disorders. However, in many circumstances, most studies used a self-reported questionnaire to identify symptoms rather than diagnosis. Mental health problems are widely used as descriptors, which include mental illness but also conditions in which there are fewer deficiencies in cognitive, emotional or social capacities (Commonwealth Department of Health and Aged Care, 2000a). Mental health problems significantly affect how a person thinks, behaves and interacts with others. The earlier those mental health problems occur without being treated, the more serious and long-lasting they can be in terms of affecting the person's life, family and society such as negative health, unemployment, poverty, lower academic achievement, poor physical health and even disability, which in turn increase the burden on society (Begg, Vos, & al., 2007; Leach & Butterworth, 2012; Schofield, Callander, & al., 2012; D. Scott, Burke, & al., 2012) (WHO, 2005). These burdens have the reverse effect, making the symptoms of mental health problems worse. The vicious circle seems to continue without any way out, in which the consequences of mental health and social life become worse and worse. In this study, the focus is on mental health problems, including clinically significant symptoms, rather than only on diagnoses. Some of the most common mental health problems which are becoming a greater burden among adolescents are considered in this research. Due to the special biological, psychological and social characteristics of teenagers, it can be challenging to identify mental health problems at this stage of life (Michaud & Fombonne, 2005). However, understanding mental health problems and their

determinants is essential to develop and improve the effectiveness of public health interventions to prevent the problems developing in the community.

1.2.2. Mental health problems among adolescents

Mental health problems are prevalent among adolescents worldwide (Erskine et al., 2015; UNICEF, 2018). It is estimated that approximately 20% of adolescents throughout the world experience at least one mental health problem annually (UNICEF, 2018). Nearly 90% of the current evidence comes from studies in high-income countries, from which an overall picture of nature, prevalence and determinants of depression, anxiety, stress, loneliness, aggression and suicidal thoughts among teenagers can be explored. However, research evidence from LMICs remains incomplete.

1.2.2.1. Depression

Depression is defined by WHO as:

> "*a common mental disorder, characterized by sadness, loss of interest or pleasure, feelings of guilt or low self-worth, disturbed sleep or appetite, feelings of tiredness, and poor concentration*" (World Health Organisation, 2012a)

According to this definition, depression is a feeling of depressed mood that causes significant impairment in an individual's daily life. Definitions of this term are similar when it is considered among adults or adolescents. The clinical symptoms of depression are described in the ICD-10 and DSM-V even though the name of this disorder is different between the two systems. Major Depressive Disorder which is named in DSM-V, is identified when an individual experiences five or more symptoms during a two-week period while minor depressive can be only two to three symptoms of the following:

depressed mood, weight loss, reduction of physical movement, feelings of worthlessness, social withdrawal, loss of interest and energy, low self-worth, unusual sleep or appetite, poor concentration, or recurrent thought of death (Ivelina, 2015). Depression may cause a serious health condition that affects an individual's life including in their family, at school and at work. According to the World Health Organization (WHO), depression is one of the leading causes of illness and disability among adolescents (WHO, 2014). Depression can impact on an individual significantly during adolescence; however, in many cases, depression does not appear clearly and only becomes more apparent when an individual enters adulthood (Birmaher, Williamson, Dahl, & al., 1004).

Depression in adolescents is difficult to identify due to the complexity and instability of physical, cognitive, emotional and behavioural changes (Thapar, Collishaw, Pine, & Thapar, 2012). However, depressive symptoms among adolescents are recognized globally. In high-income countries, the prevalence of depression appears to be quite high. A community-based National Survey of Mental Health and Wellbeing among children and adolescents of more than 6,300 Australian families in 2015 reported that 7.7% adolescents aged 11-17 years met the DSM-IV diagnostic criteria for the 12-month Major Depressive Disorder (Lawrence et al., 2015). Costello et al. (2013) conducted a longitudinal community study in 2003 among 1,420 people aged from 9 to 16 years in the United States. Based on the criteria of DSM-IV, the study found that the 3-month prevalence of adolescents' depressive disorders was 9.5% (Costello, Mustillo, Erkanli, Keeler, & Angold, 2003). Hong Kong is a special administrative region of China and is considered as a high-income area due to its GDP meeting the requirement of

the World Bank criteria (while China is ranked as an upper-middle-income country (The World Bank, 2018a)). Results from a 1995 study in this area on 161 secondary students from ages of 15 and 18 revealed that the prevalence among Chinese adolescents who had general depression in a range of moderate to severe was 19.9% (Mean = 24.25, SD = 3.45) and extremely severe exceeded 9.3% (Mean: 37.53, SD = 7.31) (Chan, 1994). Findings of prevalence were based on the standardized Chinese versions of the Beck Depression Inventory (BDI) (A. T. Beck, Steer, & Garbin, 1988; Chan, 1991). The focusing of this study, however, was on students from Arts stream senior classes in four secondary schools, in which the disproportionately female sample led to the under-representation for adolescents in Hong Kong.

The prevalence of depression among this age group in LMICs was similar or even higher than in high-income settings. In a systematic review of 16 original studies in non-referred samples in LMICs about mental health problems among children and adolescents conducted in 2011 by Kieling et al. (2011), the results found the prevalence of 10-20% which is consistent with results from high-income countries. In this review, the prevalence had a wide range from 1.81% to 39.4%. The discrepancy explained by the authors was due to the disparity in methodology approach, cultural context and exposures to risk and protective factors (Kieling et al., 2011). The review, however, did not include studies conducted after the year 2011. For example, in Ghana, a study conducted among students selected randomly from six schools in the area for refugees reported that 41.2% of 139 adolescents aged 12-17 years were above the clinical cut-off for Depression Self-Rating Scale (DSRS) for Children (above 15) (Kolltveit et al., 2012). Another study investigating depression in adolescents living in slums in Bangkok, Thailand,

reported a high prevalence of 34.9% correspondents experiencing depressive symptoms using the Center for Epidemiologic Studies Depression (CES-D) (Somrongthong, Wongchalee, & Laosee, 2013). In 2014, a wide cross-sectional study was conducted in four Caribbean countries: Jamaica, the Bahamas, St. Kitts and Nevis, and St Vincent to understand the levels of depressive symptoms of tenth-grade students. The sample size was 1,955 in total (278 from Jamaica, 217 from the Bahamas, 737 St Kitts and Nevis, and 716 from St Vincent). More than half (52.1%) the adolescents reported experiencing mild to severe symptoms of depression, in which moderate to severe symptoms were experienced by 29.1% (Gillian, Lipps, Gibson, Halliday, & Morris, 2014). However, this study included a small sample size recruited from a refugee beach camp or a small area in each Caribbean country that did not represent the general population. In India, Sandal (2017) reported results of a cross-sectional survey about depression symptoms among 470 adolescents attending school. By self-completing the DASS-21, results in this study revealed the prevalence of depression was very high at 65.5% (Sandal et al., 2017). The study reported that the questionnaire was validated in a pilot study before conducting the main survey. However, the results of the validation and the cut-off point of DASS-21 were not mentioned. Another study conducted in the rural area of India, the prevalence appeared also to be high with a number of 53.9%. This cross-sectional study recruited 461 students with a mean age of 16 years (SD = 0.92) and used DASS-21 to assess mental health symptoms. The problem was the same as the previous study, in which the DASS-21 was translated and back-translated without a validated cut-off point (Shaikh, Doke, & Gothankar, 2018). The prevalence, nonetheless, appears low in Pillai et al.'s study in India (2008). This population-based

study investigated the prevalence of mental illness among adolescents from 12 to 16 years of age. Semi-structured interviews were administered using the translation of the Development and Wellbeing assessment to diagnose depression using the criteria of the DSM-IV. Prevalence of depressive disorder at the point of assessment among 2.048 adolescents' completed data was .5% (Pillai, Patel, Cardozo, Goodman, & Weiss, 2008). This finding was much lower than the results from Australia (Lawrence et al., 2015) and the United States (Costello et al., 2003), which were described earlier. However, because of the high distribution of adolescents living in LMICs, the actual numbers of cases in these countries may still be higher than in high-income countries (Lopez, Mathers, Ezzati, Jaminson, & Murray, 2006).

1.2.2.2. Anxiety

Anxiety is usually characterized by the feelings of fear which is a response to current events and worrying thoughts or a reaction to anticipated events in the future (American Psychiatric Association, 2013). In general, anxiety is described as a subjective unpleasant and uncertain feeling of something that might happen, especially "*if knowledge already possessed indicates the probability of ill fortune*" (Pilgrim, 2014; Sedgwick, 1983). Anxiety as a mood condition is associated with negative emotions (Ivelina, 2015). Anxiety is a normal feeling. Everyone experiences it at some points in life through normal circumstances such as exams, work and life pressure. However, anxiety becomes a mental health problem if its state is intense, frequent and of a sustained duration (American Psychiatric Association, 2013). There are different types of anxiety disorders. One of the most common ones is the Generalized Anxiety Disorders with detailed symptoms are described in DSM-V and ICD-10. An individual who experienced at least three symptoms in 6 months was

diagnosed as Generalized Anxiety Disorder: restlessness, tired, frequently, fatigued poor concentration, being irritable, and stimulating autonomy like sweating, dry mouth, or muscle tension (National Institute of Mental Health, 2013). In some cases, anxiety can appear symptoms such as feelings of choking, nausea, chest pain, losing control or fear of dying (National Institute of Mental Health, 2013). Anxiety is associated with avoidance and reduced participation in social life activities.

Generalized Anxiety Disorder is one of the most common mental health problems among adolescents (Burton, 2009; Q. A. Tran, 2015a). In the National Survey of Mental Health and Well-being among Australian adolescents, diagnostic criteria from the DSM-IV for anxiety was 19.9% in the of 12 months prior to the survey date (Lawrence et al., 2015). Using the same criteria, the prevalence of anxiety disorders among American adolescents who reported symptoms of anxiety that lasted for at least 6 months in the sample of Costello's 2003 study was 9.5% (Costello et al., 2003). The prevalence was found higher in a 2010's national representative interview survey, named the National Comorbidity Survey Adolescent Supplement (NCS-A), conducted on 10,123 American adolescents aged 13-18 years and a self-administrated questionnaire among 6,491 parents. For adolescents, the project used the WHO's modified Composite International Diagnostic Interview Version 3.0 (CIDI) assessing mood disorder, and anxiety disorders, and a structured interview based on DSM-IV diagnoses. For parents, a self-administrated questionnaire was mailed to retrieve information about adolescents' characteristics, developmental history, mental and physical health and other factors. Results from the analysis revealed that 31.9% of American adolescents had symptoms of anxiety disorder (Merikangas et al.,

2010). Although this study involved a representative sample of adolescents in the United States, it is a cross-sectional survey that only provided a picture of mental health among adolescents at a certain time. The combination of data collected from parent and child reports is lacking in supporting evidence. The process of combining data from two different resources was not reported clearly. Furthermore, there was no evidence previously to confirm that this combination method was effective and reliable (Merikangas et al., 2010). Anxiety disorders were examined in a study by Essau et al. (Essau, Conradt, & Petermann, 2000) among German adolescents aged 12-17 based on criteria from DSM-IV. The result revealed a high rate of 18.6% experiencing at least 3 symptoms of anxiety which lasted for at least 6 months (Essau et al., 2000).

In LMICs, investigation about anxiety disorder was not well-researched; however, this condition was found prevalent among adolescents. Along with the finding of depression mentioned previously, the prevalence of anxiety symptoms 59.7% was found among 470 adolescents in rural areas of India in the study of Shaikh et al (Shaikh et al., 2018) based on the self-completed DASS-21. In another study among Indian adolescents, using the same measurement, most of the participants (80.9%) reported that they experienced symptoms of anxiety (Sandal et al., 2017). Also, with the Arabic version of 42-item DASS-42, the prevalence of anxiety among Saudi school male students was 48.9% (Al-Gelban, 2007). The validation process of DASS for use locally was not reported that made the findings were less reliable. Moreover, measurements used in most studies from LMICs were screening tools instead of being based on diagnostic criteria as those from high-income countries. In spite of these limitations, the high occurrence rate is also a worrying sign that we need to pay these findings more attention.

1.2.2.3. Stress

Stress is used in popular literature with plenty of definitions due to its different meanings and experience from the individual to individual (Sedgwick, 1983). According to Sedgwick, stress is "*a physiological and behavioural adaptation in response to environmental or circumstantial change*" (Sedgwick, 1983). This definition covers both physical and psychological adjustments to stressors. Thoits (1995) defined stressors by three types: life events (which requires individual's adjustments in a short period of time), chronic strains (which is persistent and requires individual's replicated adjustments and in long periods of time), and daily hassles (which are small things and requires small adjustments by individuals during the day) (Thoits 1995). According to Folkman and Lazarus (1986), stress is a result of the association between daily life events and emotional outcomes. If stress remains for a long time, and that makes an individual feel worried, down, is unable to concentrate or make decisions, irritable and angry, it becomes a problem. Chronic stress may increase the risk of depression and anxiety (National Institute of Mental Health, 2019). Stress is mentioned in the DSM-V as a disorder caused by trauma and called Acute Stress Disorder. However, stress that is not related to trauma has not been identified in the DSM-V. The most common measurements used to assess symptoms of stress are the Perceived Stress Scale (PSS) (Cohen, Kamarck, & Mermelstein, 1983), Childhood Stress Scale (ESI) (Lipp & Lucarelli, 2005) and Depression, Anxiety and Stress Scale (DASS-21)(Lovibond & Lovibond, 1995).

In the adolescence stage, stress is unavoidable and considered as a natural part of development and adaptation (Terzian, Moore, & Nguyen, 2010). It links to the situations that happen in everyday life (Brobeck, Marklund,

Haraldsson, & Berntsson, 2007). Most adolescents may manage to adapt to stress, however, sometimes stress exists in the long-term and affects health physically and mentally, such as with depression, poor memories and low academic performances (Brooks, Harris, Thrall, & Woods, 2002; Byrne & Mazanov, 2003; Terzian et al., 2010). Stress among adolescents, nonetheless, received less attention than other mental health problems and at another stage of life (Roy, Kamath, & Kamath, 2015).

Globally, studies reported that adolescent stress is quite high. In Brazil, Sbaraini and Schermann conducted a cross-sectional school-based study of 883 students (age ranges from 8 to 14 years). The study used the Childhood Stress Scale (ESI), a tool developed for local use by Lipp & Lucarelli (Lipp & Lucarelli, 2005) to assess stress among students. A separate questionnaire for parents was developed from the Mondardo questionnaire (Sparrenberger, Satos, & Lima, 2004) cited in (Sbaraini & Schermann, 2008) to collect information about family relations, social contact, extracurricular activities, losses, and changes of children's routine and other socio-demographic data of the child. The result was that 18.2% of the Brazilian adolescents presented signs of stress (Sbaraini & Schermann, 2008).

In LMICs, the prevalence of stress was much higher. In Malaysia, Yusoff et al. (2010) conducted a cross-sectional study among 100 students from public secondary school using the validated Malay version 12-item General Health Questionnaire (GHQ-12). The cut-off point of this questionnaire was reported as four point; however, the description about the validation process was not mentioned. Findings revealed that about 26.1% of correspondents had signs of distress (Yusoff, 2010). The lack of clarification on the extent of local adaptation of the GHQ-12 reduced the reliability of the study. Furthermore,

the author confused the readers when using interchangeably the term "stress" and "distress" which have different psychological meaning. The GHQ-12, in addition, is a scale used for identifying minor mental health symptoms rather than only stress or distress (Golderberg & Williams, 1988). Another study related to stress among adolescents was conducted in Saudi Arabia by Al-Gelban (2007). This was a cross-sectional survey of 1,723 participants who were recruited by a systematic sampling method. The prevalence of negative stress symptoms was 35.5% based on the unvalidated Arabic version of DASS (Al-Gelban, 2007). This study only involved male students which limited the representation of the sample. In India, stress symptoms were found to be prevalent among adolescents with the range from 43.8% (Shaikh et al., 2018) to 47.0% (Sandal et al., 2017). This prevalence of stress symptoms was reported with the prevalence of depression and anxiety measured by the DASS-21 in two cross-sectional studies mentioned previously.

1.2.2.4. Loneliness

Loneliness is not named as a disorder in the DSM-V and is listed as one of the symptoms involving the emotional state in the ICD-10. This phenomenon is a term reflecting the connectedness of an individual to others. However, it is not necessarily of being alone, but rather it is "*a state of mind with the perception of being alone and isolated*" (Tiwari, 2013) even though surrounded by many people. Adolescents without close friends might experience the loneliness that in turn increases the risk of developing psychological distress, and behavioural problems (Tiwari, 2013). Nearly everyone experiences loneliness at some points in their life (Kangasniemi, 2008). Some people feel loneliness with stress and are unable to get out of it (Koenig & Abrams, 1999). There was controversy regarding the absence of loneliness in the list of DSM-

V as it has link to numerous emotional and physical problems. However, loneliness has attracted the interest of researchers around the world using one of the most well-known tools named UCLA Loneliness Scale which was developed by a social scientist in 1996 (Russel, 1996).

Although there is a lack of evidence about the negative impact of loneliness on health among adolescents, there have been signals that loneliness can cause negative consequences on mental and physical well-being if it is ignored (Heinrich & Gullone, 2006). For example, in a large-scale survey of the Social and Health Assessment (SAHA) among 2,205 Czech, 1,995 Russian and 2,050 US adolescents from 13 to 15 years old, those with symptoms of loneliness reported higher odds of anxiety and depression symptoms (Stickley et al., 2016). Loneliness can cause headaches, body pain (Stickley et al., 2016) and substance use (Stickley, Koyanagi, Koposov, Schwab-Stone, & Ruchkin, 2014).

In comparison to other mental health problems, loneliness has less priority in research. Most of the studies were conducted in high-income settings among the elderly, rarely being found among adolescents. However, a few pieces of evidence showed that loneliness among adolescents is prevalent. For example, to examine the experience of loneliness of 15- to 16-year-old male and female adolescents, a follow-up study of the children in the North Finland Birth Cohort 1986 (NFBC 1986) was conducted in 2001-2002 when they were 15-16 years old. In this follow-up study, questionnaires were sent to adolescents. The experience of loneliness was identified in the questionnaire through one single-item question "*I feel lonely*" which was chosen from the Youth Self-Report Scale with three options of response: "Not true", "Sometimes true", and "Often true" (Achenbach & Rescorla, 2001).

There were 29.6% of adolescents who reported having a feeling of loneliness (sometimes and often true) in a period of 6 months (Rönkä, Rautio, Koiranen, Sunnari, & Taanila, 2014). Recently, Vancampfort and colleagues (2019) explored the associations between leisure-time sedentary behaviour and loneliness among 148,045 adolescents (aged 12-15 years old) from 52 low, lower-middle, and upper-middle income countries. The study used the data from the Youth Risk Behaviour Survey (YRBS) which is a part of the Global school-based Student Health Survey (GSHS) developed by the WHO, the US Center for Disease Control and Prevention (CDC) and other stakeholders. The core question to assess loneliness was "*During the past 12 months, how often have you felt lonely*?" with options of answers were "Never", "Rarely", "Sometimes" (coded as 0), "Most of the time", "Always" (coded as 1). The questionnaire was translated into local languages; however, the validation of this questionnaire in each country was not reported. The original study recruited participants by the two-stage sampling method in each country. Schools were purposely selected at the first stage and all students in the classrooms which were randomly selected from each selected school were invited to participate. The data collection was conducted from the year 2003 to 2016. The overall prevalence of loneliness of students was 10%. The range varied widely between countries, from 2.3% (Laos) to 28.5% (Afghanistan); however, the prevalence was quite similar within lower-middle-income group (10.2%) (Vancampfort et al., 2019). Although this study was the first study that investigated the loneliness among adolescents in many countries and has proved the existence of loneliness in teenagers attending school, the result was based on the self-report of one simple question which might reduce the accuracy of the finding.

1.2.2.5. Suicidal thoughts

Suicide is understood as an act of violence against oneself that leads to death (McKinnon, Gariépy, Sentenac, & Elgar, 2016). According to WHO, suicidal behaviour is a complicated process that includes: suicidal thoughts without plans, planning suicide, attempting suicide and committing suicide (WHO, 2012b). Planning suicide is defined as suicidal thoughts with preparation in an active status mentally and materially for the act of committing suicide (Comer, 2002; Singh, 2012). The term "suicidal ideation" was used in some studies which indicates both suicidal thoughts and suicidal plans. Recently, suicide has been acknowledged as a significant public health problem with almost one million people dying by suicide worldwide every year (World Health Organisation, 2012b). However, suicide is preventable via intervention (World Health Organisation, 2012c).

Although there are questionnaires developed for measuring suicidal thoughts (such as the Scale for Suicide Ideation (SSI) (A. T. Beck, Kovacs, & Weissman, 1979), the Suicide Intent Scale (SIS) (R. W. Beck, Morris, & Beck, 1974), Suicide Behaviours Questionnaire (Range & Knott, 1997)), most studies used some specific questions from the Youth Risk Behaviour Survey to ask about the prevalence and frequency of suicidal thoughts among participants, such as "*Have you ever thought of killing yourself*?" (T. T. H. Tran, Tran, Jiang, Leenaars, & Wasserman, 2006) or "*In the last 12-month, have you ever thought of taking your own life?*" (Strandheim et al., 2014).

Suicidal thought is prevalent among adolescents in high-income settings. In Australia, the community-based National Survey of Mental Health and Wellbeing in 2015 reported that 7.5% of adolescents in the age range of 12-17

years had thought of suicide in a period of previous 12 months, 5.2% had a plan and 2.4% attempted to kill themselves (Lawrence et al., 2015). In the United States, a large-scale cross-sectional survey of 6,020 adolescents aged 12 to 16 years reported having a lifetime suicidal plan (Hargus, Hawton, & Rodham, 2009). Another report from this country in the 2011 Youth Risk Behaviour Survey (YRBS) indicated that 15.8% of students from ninth- to twelve-grade throughout the country reported seriously attempting suicide and 7.8% of students attempted at least once in a 12-month period (Centers for Disease Control and Prevention (CDC), 2011). In Norway, among 2,399 secondary and high school students aged 13-19 years participated in a population-based cohort study in 1997 revealed a prevalence of lifetime suicidal thoughts of 15.5%. After four years (2001), these students were followed up in the last two years of high school and vocational training school. 80% of the previous participants joined the second phase (age range 17 to 19). The prevalence of lifetime suicide thought increased to 18.5% (Strandheim et al., 2014). Notedly, this study excluded suicide questions for secondary school students at the baseline due to the fear of forming the ideas of suicide for this young age. There was a study proving that suicidal thinking started at the early age of secondary school which was 13 to 18 (Glowinski, Bucholz, & Nelson, 2001). This exclusion might make the prevalence of suicidal thought at the baseline being underestimated. In South Korea, the 12-month suicidal ideation's prevalence was high in a nationwide study in this study using a web-based survey among 72, 623 adolescents aged 12 to 18 years. The prevalence was 19.1% (Kang et al., 2015). All of these studies used a specific question about lifetime or 12-month suicidal thought as mentioned previously.

In LMICs where 79% of global suicides occur globally (World Health Organisation, 2016), suicide behaviours are common with significantly high prevalence. Lifetime suicidal thought rates among adolescents were at 9% in the review of Fisher et al. (2011) which considered 116 resource-constrained countries conducted in the period from 1985 to 2008 (Fisher et al., 2011). In another review of 38 studies (from the years 2003 to 2012) in 32 LMICs among aged 13-15 adolescents, pooled data from 164,770 participants revealed that 15.3% had suicidal thoughts in a period of 12 months (McKinnon et al., 2016). However, there were substantial differences among countries, ranging from 5.1% (95% CI: 2.1-8.1) in Indonesia to 28.1% (95% CI: 22.5-33.7) in Zambia. The African Region had the highest pooled prevalence of suicidal thought with 21.6% (95% CI: 20.4-22.9) while the Southeast Asia and Western Pacific Region had a much lower prevalence of suicidal thought with 10.7% (95% CI: 4.5-5.4) (McKinnon et al., 2016).

1.3. DETERMINANTS OF MENTAL HEALTH PROBLEMS AMONG ADOLESCENTS

1.3.1. Bioecological system theory

Mental health among adolescents is determined by multiple factors. The Ecological Theory (also known as bioecological system theory) developed by Bronfenbrenner (Bronfenbrenner, 1979) – an American psychologist, was applied to understand factors relating to adolescent mental health problems from the human development perspectives.

Bronfenbrenner's ecological system is the most well-known theory examining the essential roles of multiple environmental factors in influencing an individual's development. The author first introduced his theory in 1977

and then revised it in 1979. In Bronfenbrenner's system, an individual is in the centre and is influenced by a wide range of surrounding environments which are organized into five systems (Bronfenbrenner, 1979) (Figure 3.1). The closest environment that impacts directly on an individual is the *Micro-system*. This includes home or school in which the child interacts frequently. For adolescents, contacting parents, teachers, and friends can impact cognition, emotion, mood, interests, and behaviour. The second level is called the *Meso-system* which contains the interactions between different factors in Micro-system. For example, in adolescents, the feeling of academic stress might come from high expectations of teachers and parents. *Exo-system* is the next environment which has an indirect impact on an individual such as social media, surrounding communities or the place where he/she grows up. The next level is *Macrosystem* involving factors of a large context such as cultures or laws, the development of the economy, or the integration of foreign culture. For example, the history of war or the influence of Confucian culture might impact on the personality of a person. The last system called the *Chrono-system* is the essential influence of the environment on an individual that changes his/her life, such as the divorce or death of parents.

Adolescents live and study in a variety of environments that appropriate the theory of Bronfenbrenner. Therefore, the current study applied the ecological system to examine adolescents' mental health.

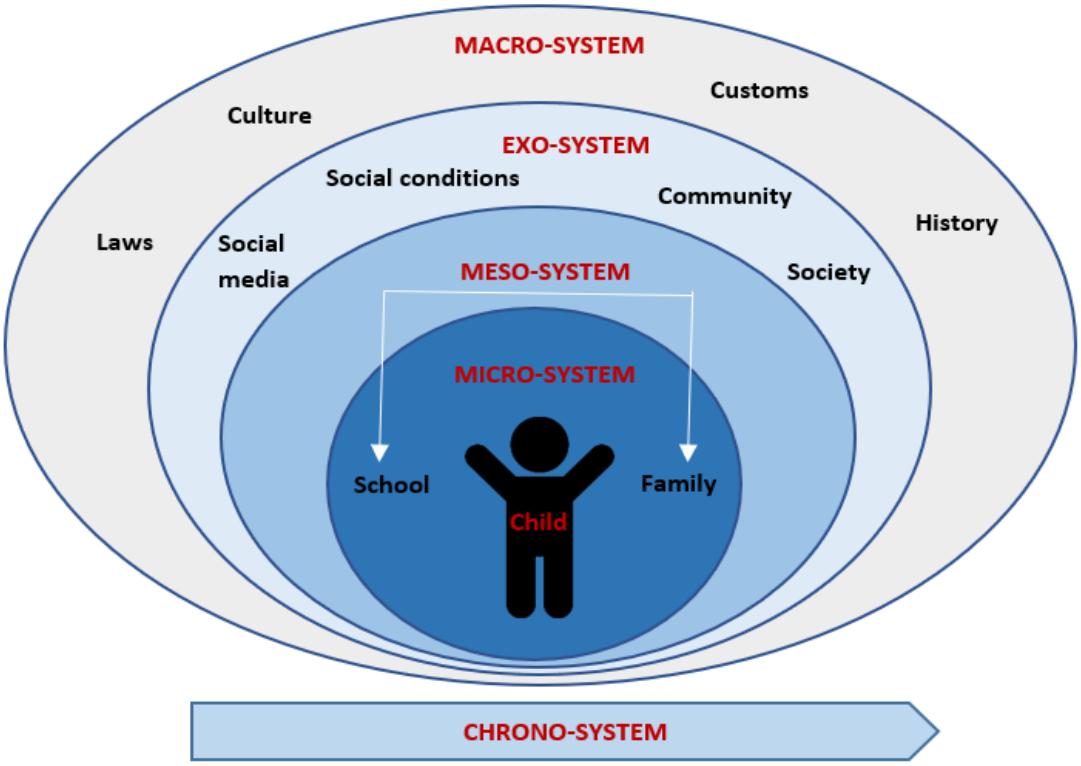

Figure 1. 1 Adaptation from Bronfenbrenner's Bioecological System (Bronfenbrenner, 1979)

1.3.2. Determinants of mental health problems among adolescents

Little evidence was found about the association between a specific risk factor and particular mental disorders or mental health problems. The most acceptable explanation for mental health problems among adolescents might be the interaction of individual, familial and environmental factors (T. Ford, Goodman, & Melzer, 2004). Because these factors are believed to be complexly interrelated, it is particularly important to understand these factors for human development to reduce the nature of mental health problems.

1.3.2.1. Individual level

Sex is the most popular individual level factor that has been examined in most studies. Female teenagers were more likely to have mental health

problems such as depression, anxiety, stress and loneliness but are less likely to have aggression or behavioural disorders. Merikangas et al. (1999) conducted a review on studies in the U.S. using the high-risk design to identify risk factors of anxiety disorders. High-risk design is considered as a strategy of comparison between individuals in a particular condition of developing anxiety disorder with those in a non-risk-factor condition (Merikangas, Avenevoli, Dierker, & C., 1999). The study involved 192 offspring (ages of 7 to 17 years) of adults in the family who had anxiety disorders or substance use or both. These children were then followed up in 6 to 8 years (ages of 13 to 23 years). The main measurements applied were the Kiddie-Schedule for Affective Disorders and Schizophrenia (K-SADS-E) (**Or**vaschel et al. 1982), the DSM-III-R (Chambers et al. 1985) conducted by independent diagnostic interview. Results revealed that females were far more common in anxiety disorders than males (Merikangas et al., 1999). This correlation duplicated in another cross-sectional study of Merikangas in 2010 among 10,123 adolescents aged 13-18 years using the modified version of the World Health Organization Composite International Diagnostic Interview to assess mental disorders based on DSM-IV. This study also found that males had higher rates of behavioural disorders. The trend was the same in Europe. For example, a study was conducted among 1,035 German adolescents from the age of 12 to 17. Using the Composite International Diagnostic Interview to assess mental disorders based on DSM-IV, the correlation between sex and anxiety was significant, in which anxiety was higher among females than males (Essau et al., 2000). In Bulgaria, a cross-sectional study among 700 adolescents attending public schools (13-17 years of age) highlighted the higher prevalence rates of anxiety and depression among female participants

(Ivelina, 2015). In Hungary, data collected from 413 students aged from 15 to 20 years (with 7 students above 19) using The Aggression Questionnaire of Buss and Perry (Buss & Perry, 1992) disclosed that boys were more likely to have physical aggression than girls (Piko & Pinczés, 2013).

In low- and middle-income countries (LMICs), findings disclosed similarly. In Gaza, a country in the Middle East, Kolltveit et al. (2012) examined the relationship between exposure to war stressors and mental health problems among 139 students aged 12-17 years. The study used the Gaza Traumatic Check List (Hein, Qouta, Thabet, & El Sarraj, 1993), the Revised Child Impact of Event Scale (CRIES-13) (Smith, Perrin, Dyregrov, & Yule, 2003), the Revised Children's Manifest Anxiety Scale (RCMAS) (Reynolds & Richmond, 19878), and the Depression Self-Rating Scale for Children (DSRS) (Birleson, 1981). The findings revealed that females had higher levels of depression (Kolltveit et al., 2012). The cross-sectional survey in Indian public schools among 470 students aged 13-18 years, the DASS-21 scores were higher in females (Sandal et al., 2017). The consistency of all these cross-sectional studies might be explained by the disparity in the brain's structure, and the nature of emotional vulnerability of female (Croson & Gneezy, 2009). Especially, female adolescents under the impact of gender discrimination appeared to have higher prevalence (Pillai et al., 2008).

Regarding suicidal ideation, it appears that females were likely to think of killing themselves more frequently than males. Results from 2,317 Chinese students in a cross-sectional study revealed that females had a higher risk of suicidal behaviours (Cheung et al., 2013). This is consistent with other studies in the Chinese population (Shek & Yu, 2012; Yip et al., 2004; You, Leung, Fu, & Lai, 2011) and other studies such as Norway (Larsson & Sund, 2008), Australia

(Moran et al., 2012), the US, Germany (Plener, Libal, Keller, Fegert, & Muchlenkamp, 2009). However, prevalence rates of suicide attempts were comparable between the two sexes (Cheung et al., 2013), in spite of the fact that there were a few studies that found the reverse results, where females also had a higher rate in suicide attempts (Hargus et al., 2009).

Age is found to be significant in some studies, in which adolescents with older age are more likely to experience mental health problems. The study of Merikangas in 2010 also showed the same results, in which older adolescents were more prevalent in anxiety disorders than those who are younger (Merikangas et al., 2010). The conclusion from studies of Kolltveit and Essau was that the prevalence of depression (Kolltveit et al., 2012) and anxiety (Essau et al., 2000) among adolescents increased with age. Sakuja et al. (2004) concluded in their study among 9,863 students attending schools in the US that the depressive symptoms increased with age in both males and females (Saluja, Ronaldo, Scheidt, & al., 2004). The potential explanation for this tendency is that the older teenagers are facing more problems than the younger such as more pressure in study and exams. However, in Parpio et al.'s study, younger adolescents were more vulnerable to stress than the older, especially those who learnt in a highly competitive environment (Parpio et al., 2012).

1.3.2.2. Family level

Evidence has shown one of the most important factors associated with mental health among adolescents was the "Adverse Childhood Experiences" or "Child Maltreatment" which is understood as some intense stress events occurring frequently during childhood. These events were believed to happen mostly within the child's family – the first environment that a child is raised

and educated in. Such factors might include child abuse and neglect, witnessing domestic violence, having parents or family members with mental illness or alcohol/substance abuse, or having one or no parent (World Health Organisation, 2014b). All these family-related factors have a strong influence on adolescents' emotions, thoughts and behaviours.

According to the World Health Organisation (WHO) (World Health Organisation, 2014b), *child abuse and neglect* include physical abuse, sexual abuse, emotional abuse and neglect. *Physical abuse* is defined as intentional acts of physical injury to the child, including hitting, punching, kicking, biting, shaking, burning or poisoning. In many families, physical abuse appears as a type of punishment from parents to their child. *Sexual abuse* is understood as the compulsion for a child to engage in sex-related activities without the consent of the child, or for which the child has not yet reached sexual maturity as prescribed by law. *Emotional abuse* includes activities that negatively impact the development of the child's emotions such as blaming, threatening, frightening, discrimination, criticism, or restriction of movement. *Neglect* is understood as the repetition of various behaviours of family members that affect the child's development and wellbeing. This neglect may involve living conditions (such as shelter, safety), education, nutrition, or emotional development. Neglect happens within the family while the rest might happen either within or outside the family. In this section, only Adverse Childhood Experiences or Child Maltreatment within the family was discussed.

There has been strong evidence to prove the impact of Adverse Childhood Experience on mental health. For example, in the U.S., Lansford et al. (2002) conducted a twelve-year prospective community-based study among 585

children and adolescents (from 1987 to 1999). They found the long-term negative impact of early physical maltreatment on mental health problems, where participants who experienced physical maltreatment in the first five years of age were more likely to prevail with depression, anxiety, stress and aggression (Lansford et al., 2002). In the same country, the Centers for Disease Control and Prevention conducted a survey to examine this association in 2012 among more than 17,000 participants (Centers for Disease Control and Prevention (CDC), 2012). The finding concluded from the data of this survey that experiencing any type of Adverse Childhood Experience increased the risk of lifetime attempts at suicide from two to five times (Centers for Disease Control and Prevention (CDC), 2012). A study was conducted by Bal et al. (2003) in Belgium with the participation of almost 1,000 adolescents with age ranging from 11 to 19 years. Using the Trauma Symptom Checklist for Children, analysis from this study confirms that child maltreatment including sexual abuse, physical neglect, and experiencing violence increased the levels of depression, post-traumatic stress or anger (Bal, Van Oost, De Bourdeauhuij, & Crombez, 2003). The study of Fergusson and Lynskey (1997) among 1,035 children in the 18-year longitudinal study in New Zealand also concluded that physical maltreatment in childhood increased the risk of suicidal attempts (Fergusson & Lynskey, 1997). With respect to *parents' marital status*, parents with marital problems such as being divorced or separated were more likely to have children who are anxious, with more behavioural problems (Parpio et al., 2012) and stress (Sbaraini & Schermann, 2008). A large cross-sectional face-to-face survey among 10,123 American adolescents conducted by Merikangas (2010) also concluded that

adolescents with divorced or separated parents experienced higher rates of anxiety disorders and behavioural disorders (Merikangas et al., 2010).

The association between childhood maltreatment and mental health problems was also found in Asia. In Hong Kong, a survey was conducted among 500 secondary school students using the Child Behaviour Checklist (CBCL) completed by teachers and parents. The finding revealed that students who experienced physical maltreatment had problems in mental health (Lau, Chan, Lam, Choi, & Lai, 2003). Sexual abuse before the age of 16 was found as a factor that increased the appearance of depression among Chinese students (J. Q. Chen, Dunne, & Han, 2004, 2006; J. Q. Chen, Han, & Dunne, 2004). In Japan, physical abuse significantly increased the risk of having Generalized Anxiety Disorder among 119 young people in the age range of 18 to 21 (Yamamoto, Tomoda, Tanaka, Fujimaki, & Kitamura, 1999). A cross-sectional school-based study was conducted in four different countries in Europe (Latvia, Lithuania, Macedonia and Moldova) among 1,145 students (10-14 years of age) using the 20-item Emotional Maltreatment Questionnaire to examine the association between emotional maltreatment and mental health problems. The finding was the same in all four countries, that adolescents who had emotional abuse reported more symptoms of depression, post-traumatic stress disorder, anxiety and anger (Sebre et al., 2004). A longitudinal study from 2010 to 2016 among South Korean adolescents indicated that participants who reported less emotional support from parents were at a higher level of depression (Hong & Min, 2018). The finding was repeated in a study conducted by Pillai and colleagues among Indian adolescents using the Development and Well-being Assessment to diagnose DSM-IV mental disorders (Pillai et al., 2008). In Vietnam, a cross-

sectional by Nguyen in 2006 among 2,581 secondary and high school students in the North area concluded the same findings using the State-Trait Anxiety Inventory (STAI) (Hishinuma et al., 2001), the Centre for Epidemiological Studies-Depression Scale (CES-D) (Radloff, 1977), and the Child Maltreatment Scale developed from previous related scales. The study revealed that neglect during childhood increased the risk of sad feelings, hopelessness, suicidal thoughts and attempts (H. Nguyen, 2006). The conclusion was repeated in Le's school-based cross-sectional study in 2016 conducted among 1,616 students in the North area of Vietnam using the Depression, Anxiety and Stress Scale-21 (DASS-21) and the Juvenile Victimisation Questionnaire Revised-2 (JVQ R2) (M. Le, S. Holton, H. Nguyen, R. Wolfe, & J. Fisher, 2016a).

The combination of different types of Adverse Childhood Experience or child maltreatment increased the risk of having mental health problems. A review by Nguyen in 2006 mentioned previously considered the impacts of multi-child maltreatment on the well-being of adolescents. The result from 38 studies examines the association between more than one type of child maltreatment and well-being showed that experiencing multiple forms of maltreatment during childhood increased the risk of higher symptoms in mental health problems and health risk behaviours (H. Nguyen, 2006). However, there were no studies found in Asian countries in this review. Nguyen's study in 2006 was the first in Vietnam – a Southeast Asia country – to report that the more forms of child maltreatment the higher the risk of mental and physical health problems that the adolescents had (H. Nguyen, 2006). This association was confirmed in Le's 2015 study among Vietnamese adolescents (M. Le et al., 2016a).

Besides Adverse Childhood Experience, other familial factors also impacted mental health among adolescents. Evidence has shown that adolescents who had *parents with low education levels*, such as not graduating from college, were more likely to experience a mental disorder. In 2010, Merikangas concluded that adolescents who have parents with educational levels under college had a higher prevalence of mental health problems (Merikangas et al., 2010). A similar finding was made in a study of 14 to 15-year-old adolescents recruited in a rural area of Denmark, that while controlling for other factors, higher parental education reduces the risk of stress in females (Glasscock, Andersen, Labriola, Rasmussen, & Hansen, 2013). Sbaraini (2008) revealed that adolescents who had parents who had not completed elementary school had a higher prevalence of stress than those whose parents had at least a bachelor's degree (Sbaraini & Schermann, 2008). The same result was found in the cross-sectional study of Merikangas in 2010 among 10,123 adolescents in the United States (mentioned previously in Individual level) (Merikangas et al., 2010). However, in terms of aggression, the study of Jamal among 311 students in India did not find a correlation between parents' educational qualifications and occupations, and aggression among their children (Jamal, Govil, & Gupta, 2018).

Siblings are another factor taken into account in some investigations and revealed an association with mental health problems. For example, the study of Parpio et al. (2012) among 529 adolescents in public schools in Pakistan proved that *having many siblings* in a family increased the risk of being stressed among participants (Parpio et al., 2012). Depressive symptoms (assessed by the Asian Adolescent Depression Scale) increased among females in the study of Yi et al. (2012) among 1,943 students attending

schools in Cambodia when these students had sibling caretaking (Yi et al., 2012). However, there are few studies on sibling as risk factors for mental health problems among adolescents.

1.3.2.3. School level

Adolescence is a period when an individual spends substantial time at school with teachers and peers (Ang & Huan, 2006). Therefore, the school context is considered to have an important environmental impact on adolescents' mental health (Bronfenbrenner & Morris, 1998).

One of the most common risk factors for mental health problems among adolescents at school is *academic pressure*. Many studies in high-income settings revealed the high prevalence of educational stress among adolescents (Anderman, 2002; Ang & Huan, 2006; Bjorkman, 2007; Field, Diego, & Sanders, 2001; Kouzma & Kenedy, 2000). Among 3,983 students from 13-19 years-old in Northern Ireland, the most common source of stress assessed by the "Things I worry about" Scale, was school work (Millar & Gallagher, 1996). About 42% of 1,004 American students from 9-13 years admitted that the school grades made them worry every day, in which the worries were assessed by 18 worries questions developed by the researchers based on literature review (Brown, Teufel, Birch, & HKancherla, 2006). In Australia, studying, career choices, and the workload at school were the main sources of stress among final-year high school students (Kouzma & Kenedy, 2000). School-related pressures as a component of stress were also found in China (Sun, 2012) and Malaysia (Yusoff, 2010).

Peer victimization is one of the serious risk factors impacting the mental health problems among adolescents. For example, Korean students who had

experienced peer victimization reported a higher level of depression in a 6-year-period longitude study (Hong & Min, 2018). Conflicts with peers or teachers, breaking up a romantic relationship were other factors in school contributing to the risk list of mental health problems among the youth generation (Brooks et al., 2002).

1.3.2.4. Community level

The area of residence was a common factor that was considered in association with mental health problems. Evidence showed that adolescents living in urban areas were more likely to have symptoms of mental health problems than those living in rural areas. For example, a population-based study among 2,054 Indian adolescents was conducted to investigate the prevalence and associated factors of mental disorders which were assessed using the Development and Wellbeing Assessment based on the criteria of DSM-IV. This cross-sectional study revealed that urban adolescents with a higher frequency of going to parties, the cinema, or shopping for leisure had higher symptoms of anxiety disorder and depressive disorder (Pillai et al., 2008). The reason was supposed to be the lifestyles in the urban area increased the risk of conflict with traditional values, which in turn increased the stress circumstances for young adults. A study among patients who were at the hospital because of attempted suicide in Vietnam found that it was no different in the proportion of attempted suicides between urban, suburban and rural area (V. T. Nguyen, Dalman, & Thiem, 2009b). A cross-sectional school-based study of Nguyen (2009), on the other hand, revealed that adolescents living in a rural area were at risk for having depression and anxiety in comparison to those living in urban area (H. Nguyen, M. P. Dunne, & A. V. Le, 2009). The potential explanations for this disparity were

the financial and social support challenges that families of adolescents living in rural areas had to deal with. In summary, there was a different conclusion between studies about the prevalence of mental health problems among adolescents in rural and urban areas due to the disparities in cultures, lifestyles, or the impact of social development. Therefore, future studies should consider the impact of the living environment on the child's psychological development.

1.4. CHAPTER SUMMARY

Overall, to date, the majority of studies about mental health problems among adolescents have been completed in high-income countries. In LMICs where 70% of the world's adolescents live (representing a quarter of the global population) (Saxena, Paraje, Sharan, Karam, & Sadana, 2006; United Nations, 2012; World Health Organisation, 2014a), fewer studies have captured the burden of mental health problems among adolescents. In some recognised studies from LMICs, the observations of prevalence were reported the same or even higher than those from high-income countries. Nonetheless, the limitation in unrepresentative samples, and the omission of different types of mental health problems in studies that make many pieces in the picture of mental health problems among adolescents in LMICs was unclear or shortage. Therefore, the expansion of research on the nature, prevalence and determinants of mental health problems is essential to informing local policy responses and international efforts to develop evidence-based interventions for the majority of global adolescents who have their home in LMICs (Global Forum for Health Research & World Health Organisation, 2004).

CHAPTER 2. EMOTIONAL INTELLIGENCE

"In a very real sense, we have two minds, one that thinks and one that feels"

Daniel Goleman (Goleman, 1995)

2.1. EMOTIONAL INTELLIGENCE

Prior to discussing what emotional intelligence (EI) is, it is important first to understand the term "intelligence" which is one of the most popular constructs in research related to human's cognitive ability. For a long period of time, intelligence was believed to be problem-solving and memory capabilities (Cherniss, Goleman, Emmerling, Cowan, & Adler, 1998). In 1958, Weschler described "intelligence" as the "*aggregate of global capacity of the individual to act purposefully, to think rationally, and to deal effectively with his environment*" (Weschler, 1958, cited by Mayer & Salovey, 1990).

Although there has been a long history of contradictory views about the correlation between intelligence and emotion, the term "emotional intelligence" has been accepted widely by researchers. Emotional intelligence is considered to be a domain of intelligence nowadays (P. Salovey & Mayer, 1990). The explanation can be understood as following. First, emotions have been considered as human's first evaluation about an experience or an event (Frijda, 1986; Zajonc, 1980), in which we feel sad or happy automatically (without consciousness). Then, emotions are examined as to whether they affect our well-being (Greenberg, 2007). After all, we understand the impact of emotions, and when emotions come, we decide what to do, whether to follow its flow or steer it, manage it and transform it. The combination of

perception and emotion makes us work and act more appropriately than our cognition alone (J. D. Mayer & P. Salovey, 1997).

Emotional intelligence was first mentioned as a concept of social intelligence by Thorndike in 1920. According to the author, social intelligence "*is a complex of several different abilities or a complex of an enormous number of specific social habits and attitudes*" (p. 284) (Thorndike & Stern, 1937) or in other words, is "*an ability to understand and manage men and women, boys and girls - to act wisely in human relations*" (Thorndike, 1920, cited by Salovey and Mayer, 1990). This definition of Thorndike's included a behavioural component besides the traditional cognitive component. In his 1937 study with Stern (Thorndike & Stern, 1937), social intelligence was examined and identified as having three components: the attitude of individuals toward society; their social knowledge; and their social adjustment ability. This new theory with non-intellectual components changed the traditional concept of intelligence. Thorndike and Stern, however, were unable to persuade researchers and academic professionals at that time as they failed to measure social intelligence. Therefore, they could not distinguish social intelligence from other forms of intelligence. The concept of social intelligence attracted many researchers to exploring this unique domain which is distinct from academic intelligence. However, the difficulty in measuring social intelligence in most of these studies meant that they were not persuasive (Hoepfner & O'Sullivan, 1968; Keating, 1978; Tenopyr, 1967; Walker & Foley, 1973). Two main methodological reasons for the measurement difficulty are proposed. First, there was an inconsistent definition of social intelligence, in which it was unclear whether social intelligence was a kind of social perception (Chapin, 1939; Walker & Foley, 1973) or a multidimensional construct (M. E. Ford &

Tisak, 1983; Jones & Day, 1997; J. D. Mayer & Salovey, 1993; C. T. Wong, Day, Maxel, & Meara, 1995). Second, there was a problem in measuring social intelligence psychometrically, in which there is no distinction between measuring "understanding of others" ability (cognitive domain) and the behavioural element of social intelligence (M. E. Ford & Tisak, 1983).

In 1983, Howard Gardner (H. Gardner, 1983) expanded the term intelligence to multiple intelligences with his Multiple Intelligence Theory, in which he combined cognitive and emotional domains of intelligence. Gardner suggested seven independent types of intelligence. One of them was "Personal Intelligence" which includes "Intrapersonal intelligence" (self-awareness about internal processes and feelings) and "Interpersonal Intelligence" (the ability to understand others' reactions, needs and emotions). Gardner emphasised that intrapersonal and interpersonal can be measured (H. Gardner, 1983).

In 1986, the word "emotional intelligence" (EI) was first used in the unpublished thesis of a liberal arts student in the U.S. In 1987, with the same idea, Keith Beasley published an article in the British Mensa Magazine using the construct "Emotional quotient" (Beasley, 2011). The term of EI was only first officially introduced by Mayer and Salovey - two psychologists from the University of New Hampshire and Yale University in 1990 (P. Salovey & Mayer, 1990). They denied EI as one type of intelligence and identified EI with four different components: identifying emotions through nonverbal signals, using emotions to direct cognitive thinking, understanding the information under the expression of emotions, and regulating one's own emotions to reach the best benefits. This definition had been accepted by some researchers. However, the term EI only became popular in 1995 with

the release of the psychologist and science journalist Daniel Goleman's book "*Emotional Intelligence: Why it can matter more than IQ?*" (Goleman, 1995). Being inspired by the work of Mayer and Salovey, Daniel Goleman broadened the four-component model of Mayer and Salovey to a five-component one:

- Emotional self-awareness: understanding their emotions and the impact of these on others;
- Self-regulation: controlling their own emotions and thinking of consequences before acting;
- Motivation: developing emotions to achieve goals
- Empathy: understanding others' emotions
- Social skills: managing relationships (Goleman, 1995).

According to Goleman, EI is more important than cognitive intelligence. He valued EI in business and education and argued that cognitive abilities can explain only 20% of academic and career success in life while the rest belongs to EI (Goleman, 1995). In 1999, Goleman described further the role of EI in personal and organisational success. Since then, EI started to become a well-known term all over the world (Davies, Stankov, & Roberts, 1998).

Over the past two decades, research on EI has expanded rapidly. However, there are continuing debates about the definition of EI due to the different points of view of researchers about this construct. To date, there are two main theories about EI, including the ability model and trait or mixed-model. These two models consider and explore EI under distinct directions that lead to separate measurement constructs.

2.1.1. Ability emotional intelligence

The ability model was developed in 1990 by Mayer & Salovey who was inspired by Thorndike's concept of social intelligence (P. Salovey & Mayer, 1990). This theory considered EI as a person's ability to identify emotions as a type of academic intelligence (known as intellectual intelligence measured by IQ score):

> *"Emotional intelligence is the subset of social intelligence that involves the ability to monitor one's own and other's feelings and emotions, to discriminate among them and to use this information to guide one's thinking and actions" (P. Salovey & Mayer, 1990)*

According to this definition, there were social rules about emotions that an individual was aware of and regulated emotions according to these rules. (J. D. Mayer & P. Salovey, 1997; P. Salovey & Mayer, 1990). However, this definition focused on understanding, regulating emotions and did not consider the ability to express emotions. In 1997, Mayer & Salovey revised their concept of ability EI:

> *"Emotional intelligence involves the ability to perceive accurately, appraise, and express emotion, the ability to access and/or generate feelings when they facilitate thought, the ability to understand emotion and emotional knowledge, and the ability to regulate emotions to promote emotional and intellectual growth"* (J. D. Mayer & P. Salovey, 1997)

Within the revised definition, EI was conceptualised as four different dimensions, including perception of emotion (perceiving self- and others'

emotions, expression of emotion); emotional facilitation (the emotional abilities of understanding environmental adjustments; changing mood to see situation under variety of views, and explaining emotions); understanding emotions (knowledge of emotions and analysing emotions); and emotional management (managing self- and others' emotions)(J. D. Mayer & P. Salovey, 1997). This model excluded other components of previous conceptualisations of EI such as self-motivation, empathy and interpersonal skills. As an ability-based model, Mayer & Salovey suggested using instruments that measure the ability to measure EI, in which it could access an individual's knowledge about emotions as well as his/her ability to recognize and solve problems related to emotions (Davies et al., 1998).

2.1.2. Trait emotional intelligence

Regarding the trait or mixed model, the most well-known theory was introduced by Reuven Bar-On (1997) who named an Emotional Quotient (EQ). It comprises four main dimensions, including intrapersonal skills (the skill of understanding and expression self-emotions); interpersonal skills (the skill of understanding and relating to others' emotions); stress management; and general mood of happiness and optimism (Bar-On, 1997, 2000). This is an important component regulating success in the life of a person.

> *"Emotionally intelligent people are people who recognize and express their emotions, possess positive self-regard, and are able to actualize their potential capacities and lead fairly happy lives. They are able to understand the way others feel and are capable of making and maintaining mutually satisfying and responsible interpersonal relationships, without becoming dependent on others. These people are generally optimistic, flexible, realistic, and successful in solving problems and coping with stress, without losing control"* (Bar-On, 1997).

Bar-On argued that EI is different from general intelligence. Many studies were conducted in an effort to determine whether EI is independent of intelligence. For example, Derksen's 2002 study conducted on 873 of the Dutch population aged 19-34 using the self-reported EQ-i which was developed by Bar-On (Bar-On, 1997) and the General Adult Mental Ability scale (GAMA). His study found only a weak correlation between the EQ-i and the GAMA by total sample and by sex ($r < 0.13$ for all analyses) and where statistically significant, EQ never accounted for more than 2% of the total variance (Derksen, Kramer, & Katzko, 2002). This means the EQ-i was measuring something different from the GAMA (Derksen et al., 2002). Many researchers, therefore, believe Bar-On's theory that EI is not a part of general intelligence.

To consider regarding Bar-On's theory is that there is an unclear discrepancy between EI and personality (Matthews, Zeidner, & Roberts, 2004), although Bar-On emphasized that the questionnaire he developed (the Emotional Quotient Inventory – EQ-i) was not for measuring personality (Bar-On, 2000). Studies examined the discrimination between Bar-On's EI and the Big Five which is one of the most well-known personality traits measurement (also known as the five-factor model – FFM). The Big Five measured five factors represented by the acronym OCEAN or CANOE: (1) Openness to experience (inventive and curious or consistent and cautious), (2) Conscientiousness (efficient and organized or easy-going and careless), (3) Emotional stability (outgoing and energetic or solitary and reserved), (4) Agreeableness (friendly and compassionate or challenging and detached), and (5) Neuroticism (sensitive and nervous or secure and confident) (De Raad, 1992; Digman, 1990; Goldberg, 1993; John, 1990). Brackett & Mayer (2003) investigated 207

Caucasian American college students revealing that the EQ-I was highly correlated with the Big Five ($R = 0.75$) (Brackett & Mayer, 2003).

To advance this argument, Petrides provided another definition of the trait EI, considering it to be "*a constellation of emotion-related self-perceptions located at the lower levels of personality hierarchies*" (Petrides, Pita, & Kokkinaki, 2007). It is believed that the trait EI does not belong to the realm of cognitive ability (Carroll, 1993) and is distinguishable from personality (Petrides, 2011a). This hypothesis has been verified in a variety of independent studies. To investigate whether the components measured by the Trait Emotional Intelligence Questionnaire (TEIQue) developed by Petrides (Petrides, 2009b) are different from the components measured by the Big Five of personality, Mikolajczak's 2007 study was conducted on 740 French-speaking participants (Mean age = 25.5) in Belgium by recruiting 484 students on campus with course credit or lottery tickets as a reward and 256 people using snowball sample. Students on campus completed the survey on site by paper-and-pencil form while others completed online. The personality was assessed using the Description in Five Dimensions system (D5D) (Rolland & Mogenet, 2001), which is known as a French personality measurement based on the Big Five model (Costa & McCrae, 1992). Results from this study (Petrides, 2009b) confirmed that the TEIQue predicts emotional reactivity to be different from the cognitive ability ($\beta = 0.04$, $p > 0.1$) as well as the Agreeableness and Emotional Stability, which were two components of the Big Five model (Moïra Mikolajczak, Luminet, Leroy, & Roy, 2007). Petrides' trait EI theory concerned the development of emotional behaviours, such as adaptability, assertiveness, emotional appraisal and expression, stress management, and

optimism (Petrides & Furnham, 2000), which were different from the components of personality.

In summary, the ability EI model considers EI as an actual cognitive-emotional ability, in which a person has skills to recognize, process and utilize emotional information and, therefore, EI should be measured using the performance test of ability such as the ability to match correctly facial expression and proper moods. However, it is acknowledged that the expression of emotion might not match the feelings that a person has, such as when a person is crying because of happiness. Hence, matching the crying face with sadness is not always a correct answer. Under this point of view, according to us, the measurement of ability EI has some limitations. Alternatively, those who support the notion of trait EI argue that the ability-based EI is unable to explain why one person is more successful than others in their work. They believe that EI should be thought of as a tendency to react like a personality or a self-perception about their own ability to recognize, process and utilize emotional information and, therefore, EI should be assessed by a self-report questionnaire. Ability EI and trait EI are different in construction and measurement but some of their domains may overlap (Furnham & Petrides, 2003).

Each model has a strong argument to defend their theory, however, the one defining feature that trait EI has in comparison to the other theories, especially in research considering the relationship between EI and health is the trait EI. A review of pooled data from 46 studies based on the response of 19,815 participants which identified a significant and positive association between EI and health was conducted by Martins and colleagues in 2010 (Martins, Ramalho, & Morin, 2010). Two separate analyses were conducted,

one was to consider the relationship between health and the ability EI and then with the trait EI while the other was to consider the relation of each specific measurement with health. The trait task showed a stronger correlation with health ($\bar{r}$= 0.34) than ability EI did ($\bar{r}$= 0.17). Within the trait EI, Trait Emotional Intelligence Questionnaire (Pérez, Petrides, & Furnham, 2005) developed based on Petrides' theory illustrated the strongest association with mental health ($\bar{r}$= 0.50). The EI considered as a trait component, therefore, is a better mental predictor (Martins et al., 2010).

Based on each model of EI, there are different instruments to measure EI. The following section discusses the most popular questionnaires and highlights their strengths and weaknesses.

2.2. MEASURES OF EMOTIONAL INTELLIGENCE

There have been many measurements developed to assess EI. This section introduces some of the most well-known questionnaires. Some other tools are not described in detail due to their unpopularity or their use only in a specific local or locales, such as the Swinburne University Emotional Intelligence Test (SUEIT) (Luebbers, Downey, & Stough, 2007), the Immanuel and Sushamain's EI Inventory (Immanuel & Sushamain, 2003), or the Emotional Clarity Questionnaire (ECQ) (Flynn & Rudolph, 2010).

2.2.1. The Mayer-Salovey-Caruso Emotional Intelligence Test (MSCEIT)

The MSCEIT is based on the ability model of Mayer and Salovey. It comprises 141 items completed by using paper-and-pen format, in which participants are asked to judge diverse emotional situations (J. D. Mayer & P. Salovey, 1997). The MSCEIT provides 15 main scores: Total EI score, two Area scores, four Branch scores, and eight Task scores.

Total score yields two area scores: Experience and Strategic. Experience yields two branch scores: Perceiving (accurately identifying emotions of people and elicited by objects) and Using score (generating an emotion and solving problems with that emotion) while Strategic yields two branch scores: Understanding (understanding the causes of emotions) and Management score (staying open to emotions and integrate emotions with thinking).

Each branch score yields two different task scores. Perceiving includes faces and pictures, Using includes Sensations and Facilitation, Understand includes Blends and Changes, and Management includes Emotion Management and Emotional Relations.

- Faces: asking about emotions expressed on photos of faces,
- Pictures: asking about emotions expressed on photos of designs/landscapes,
- Sensations: describing emotions using non-emotional vocabulary,
- Facilitation: expressing the feelings with a variety of situations about unsuccessful performance,
- Blends: how feelings are created by blends of emotions,
- Changes: changes in emotions over time,
- Emotion Management: identifying the way people regulate their feelings to adapt to,
- Emotional Relations: understanding other people's feelings (Linley & Joseph, 2004).

Although MSCEIT is based on Mayer and Salovey's theory, it does not include all dimensions identified in Mayer and Salovey's ability model. There is a lack of many important components of EI such as emotional regulation skills (Lopes,

Nezlek, Schutz, Sellin, & Salovey, 2004), which are important for both research and applied settings (Matthews et al., 2004), in recognising and interpreting self and others' emotions.

2.2.2. The Emotional Quotient Inventory (EQ-i)

Based on the theory of the trait model, Bar-On developed a self-report instrument consisting of 133 items yielding the total EI score and 15 separate subscale scores: Self-regard, Self-actualisation, Emotional self-awareness, Emotional Expression, Assertiveness, Independence, Interpersonal relationships, Empathy, and Social responsibility, Problem solving, Reality testing, Impulse control, Flexibility, Stress tolerance, Optimism (Bar-On, 1997). A short version was developed for use among children and adolescents (aged 7 to 18) which is called EQ-i-YV. This version consists of 60 items and five scales (Intrapersonal, Interpersonal, Stress Management, Adaptability and General Mood). Internal consistency reported for Lebanese adolescents' version ranges from .65 to .90 and test-retest reliability from .77 to .89 over a three-week period (El-Hasan & El-Sader, 2005) (Bar-On, 2000). Acceptable internal consistency was reported for Spanish and Chinese adolescents with the range from .63 to .88 (Esnaola, Arias, & Freeman, 2017; Esnaola, Freeman, Sarasa, Fernandez-Zabala, & Axpe, 2016).

The problems of the EQ-i have been discussed in the academic world of EI (Grubb & McDaniel, 2007; Palmer, Manocha, Gignac, & Stough, 2003; Petrides & Furnham, 2001). The most critical issue mentioned by Petrides (2009) and Palmer (2003) was the factor structure problems, in which there is no conceptual background for EQ-i subscale scores, only the total score (Palmer et al., 2003; Petrides, 2009b); and the duplication of many items in different subscales

(Petrides & Furnham, 2001). The EQ-i has included dimensions that do not belong to either intelligence or emotion such as Reality testing, Self-actualization, and Independence. Furthermore, it missed some important components of EI such as emotional perception, emotional expression and especially, emotion regulation (Petrides & Furnham, 2001). EQ-i was strongly criticized because of its high correlations with traits of personality which in turn limits its function as an independent measurement for EI (Matthews et al., 2004; Newsome, Day, & Cantano, 2000; O'Connor & Little, 2003) (Grubb & McDaniel, 2007).

2.2.3. Schutte Self-Report Emotional Intelligence Test (SSEIT)

The Schutte Self-Report Emotional Intelligence Test (SSEIT) developed by Nicola Schutte in 1998 is based on the EI theory of Mayer and Salovey (J. D. Mayer & P. Salovey, 1997). This self-completion test yields a total score and four dimensions of EI, including Emotion perception, Utilizing emotions, Managing self-emotions and Managing others' emotions. The SSEIT comprises 33 items with responses applying the five-point Likert scale from 1 (strongly agree) to 5 (strongly disagree). Each sub-scale score is graded by summing all related items and added all together to retrieve the total EI score (Schutte et al., 1998). The most critical problem of this test is its inability to cover all domains of the EI such as Emotional regulation based on the theory from Mayer and Salovey (Petrides, 2009b).

2.2.4. Trait-Meta Mood Scale (TMMS)

The TMMS was developed by Salovey, Mayer et al. (1990) based on their 1990 model of EI to identify the differences in responding to feelings among people. The instrument comprises 30 items measuring three cognitive

dimensions of EI, including the ability to pay attention to self-inner feelings (Attention), the capacity to understand and distinguish different types of feeling (Emotional Clarity in discrimination of feeling) and the ability to regulate moods and overcome negative feelings (Mood Repair) (P. Salovey, Mayer, Goldman, & al., 1995). Correspondents chose the best suitable answer according to their feeling and agreement via a Likert five-point scale from 1 (strongly disagree) to 5 (strongly agree) (Fitness & Curtis, 2005).

The TMMS faces the same limitations with other EI questionnaires as its weak coverage of trait EI's dimensions. In addition, the questionnaire does not yield the total EI score which limits its application in practice settings (Petrides, 2009b).

2.2.5. Wong and Law Emotional Intelligence Scale (WLEIS)

The Wong and Law Emotional Intelligence Scale (WLEIS) is a scale developed for use in Chinese by Chi-Sum Wong and Kenneth S. Law based on the theory of Davies, Stankov, and Roberts (Davies et al., 1998; C.-S. Wong & Law, 2002). The 16-item self-report WLEIS based on the EI model of Mayer and Salovey (J. D. Mayer & P. Salovey, 1997) measures four dimensions of EI: Self-emotion appraisals (ability to understand self-emotions), Others' emotion appraisals (ability to understand and recognize others' emotions), Use of emotion (ability to self-motivate to enhance performance), and Regulation of emotion (the ability to regulate emotions) (Fukuda et al., 2011; C.-S. Wong & Law, 2002). (Fukuda et al., 2011; Fukuda, Saklofske, Tamaoka, & Lim, 2012; Lapalme, Wang, Joseph, & Yan, 2016; T.-W. Li, Saklofske, & Yan, 2008; Whitman, Van Rooy, Viswesvaran, & Kraus, 2009)

The WLEIS has limitations. It is unable to measure all dimensions of the trait. In addition, the connection to its original theory is weak. The scale was popular in use for recruiting employees in organizational settings (C.-S. Wong & Law, 2002), which also adds to the weakness of generalising in academic settings.

2.2.6. Trait Emotional Intelligence Questionnaire (TEIQue)

Based on the trait EI theory, Petrides (2009) developed the Trait Emotional Intelligence Questionnaire (TEIQue) with 153 items to assess EI among general adult populations in the U.K. The study conducted on 1,721 participants (age range from 15 to 77 years) in the U.K. with more than half of them of White U.K. origin, followed by White European, Indian, African and Caribbean and East Asian. The internal consistencies for TEIQue variables were adequate, α was from .69 to .89 and for the Global EI (which is understood as the total EI score) was acceptable with α = .90. This study revealed the psychometric properties of four factors. The TEIQue full form was well regarded and well-established. The psychometric properties repeated the same results among adults in other countries, such as Italy (Di Fabio, Saklofske, & Tremblay, 2016), Germany (Freudenthaler, Neubauer, Gabler, & Scherl, 2008), Spain (Laborde, Allen, & Guillén, 2016), and Belgium (Moïra Mikolajczak et al., 2007). Factors, facets and their meaning are illustrated in Table 2.1 (Petrides, 2009b).

A short version of TEIQue with 30 items (TEIQue-SF) has been developed (Petrides, 2009b) for convenient use in research and applied settings. The author selected two items in each facet based on its highest correlations with its facet score. The short form, therefore, still covers all 15 facets of the

TEIQue and the Global EI score. The TEIQue-SF English version has been validated among adults in several English-speaking countries including Canada (Siegling, Vesely, Petrides, & Saklofske, 2015), and Australia (Perera, 2015; Zampetakis, 2011). The study of Siegling et al. (2015) conducted among 1,089 undergraduate students in a Canadian university concluded that the TEIQue-SF was consistent with incremental effects beyond the personality measurement Big Five (Siegling et al., 2015). The examination of the latent structure underlying TEIQue-SF was conducted in Australia. Based on 476 responses of students in an urban university, the finding revealed the same multidimensionality of the questionnaire (Perera, 2015).

The shortened scale has been translated into local languages and validated in many different cultures. Denz and colleagues (2013) conducted a study in Turkey among 464 students (17 to 34 years of age) to examine the validity and reliability of the form. The questionnaire fits the data well when using the Exploratory Factor Analysis and Confirmatory Factor Analysis. Reliability of internal consistency was acceptable with the Cronbach alpha coefficient ranged from .66 to .81. The test-and 3-week retest reliability was .86 which was satisfactory (Denz, Özer, & Isik, 2013). In Spain, the concurrent validity of the TEIQue-SF against the full form TEIQue and the construct validity were tested among 1,889 young adults (age range from 18 to 37 years). Four-factor model was repeated with the short form in this sample using Confirmatory Factor Analysis. Strong correlation was found between the two forms (r = .69 to .78 for the subscales and r = .83 for the Global score, $p < .001$) (Laborde et al., 2016). The results were repeated in Georgia (Martskvishvili, Arutinov, & Mestvirishvili, 2013), Greece (Stamatopoulou, Galanis, & Prezerakos, 2016), Poland (Szczygieł, Jasielska, & Wytykowska, 2015), Germany (Jacobs, Sim,

& Zimmermann, 2015) and Japan (Abe et al., 2012). Although these studies were cross-sectional in nature, in which the results only reflected one point of data collection time, the test and retest validity in some studies were found stable. Further, the duplication of the psychometric properties across various cultures has proved the reliability of the TEIQue-SF.

2.3. EMOTIONAL INTELLIGENCE AND MENTAL HEATH PROBLEMS AMONG ADOLESCENTS

Adolescents are facing a variety of inevitable challenges due to the rapid changes of globalization, in which the traditional lifestyle is transforming. One of the problems that researchers, educators, parents or anyone who cares about adolescents worry about is emotions (Wootton, 2001). Becoming one of the most well-known terms in positive psychology that focus on humans' potential strengths and encourage them to develop happiness, well-being, and life satisfaction (Seligman, 1998), EI is expected to be a potential protector for the new generation when intelligence quotient has proved to be inadequate to combat the negative moods (Goleman, 1995). There has been growing interest in investigating the role of EI among adolescents' mental health.

2.3.1. Emotional intelligence and depression, anxiety and stress among adolescents

Evidence from certain studies has investigated the association between trait EI and mental health of adolescents, especially depression, anxiety and stress which are considered as the most common symptoms.

In Spain, the relationship between EI and mental health problems among adolescents was well-established. A cross-sectional study conducted in 2006 among 250 high school students from the age of 14 to 19 investigated the relationship between EI and depression, and anxiety using the Spanish version of the self-report TMMS. This measured three dimensions of EI:

Emotional Clarity, Mood Repair and Attention (P. Salovey et al., 1995) which has been explained earlier in this chapter. The results revealed that students with higher Emotional Clarity and Mood Repair scores had fewer symptoms of anxiety (β = -.18 and β = -.42, respectively, $p < .05$); and students with higher Mood Repair scores had lower score of depression (β = -.37, $p < .01$) (Fernnández-Berocal, Alcaide, EExtremera, & Pizarro, 2006). Using the short version TMMS, another study examined the association between EI and depressed mood among 2,182 secondary students from 12 to 18 years in Northern Spain that confirmed that high levels of Emotional Clarity and Mood Repair were associated with lower level of depressive symptoms (β = -.18, β = -.44, respectively, $p < .01$) (Balluerka, Aritzeta, Gorostiaga, Gartzia, & Soroa, 2013). The positive role of EI to psychological adjustment remained the same in a longitudinal study in Spain. The 12-month prospective study was conducted among 358 secondary school students aged between 13 and 17 years using the Behaviour Assessment System for Children (BASC) to assess depression, anxiety and social stress (Reynolds & Kamphaus, 2004). The study concluded that low levels of Emotional Clarity and Mood Repair were associated with higher levels of anxiety, depression, and stress (r ranged from -.12 to -.22 for Emotional Clarity and r ranged from -.16 to -.26 for Mood Repair). The study also found that higher Emotional Clarity and Mood Repair were associated with higher general mental health (r = .19 and r = .23, respectively) (Salguero, Palomera, & Fernández-Berrocal, 2012). Another longitudinal study started in 2015 and completed in 2017 confirmed this relationship among 525 Spanish students between 12 and 15 years old studying in 18 secondary schools. Emotional Clarity and Mood Repair showed a strong negative relationship with depressive symptoms over three times of

measure with β ranged from -.18 to -.26 for Emotional Clarity ($p < .001$) and from -.30 to -.38 for Repair ($p < .001$). However, the distance between the collecting data point was not reported. Notably, Emotional Attention was not found to have a significant correlation with depression, anxiety or stress in these studies, except for the longitudinal study in Spain, in which students with higher Emotional Attention scores had higher depressive symptoms. This association was inconsistent in three times of measurement ($\beta = .1$, $p < .05$ at time one, $\beta = .15$, $p < .01$ at time two and $\beta = .06$, $p > .05$ at time three) (Gomez-Baya, Mendoza, Paino, & Gaspar de Matos, 2017).

In the U.S., a study was completed in 2013 using the Emotional Clarity Questionnaire (ECQ) (Flynn & Rudolph, 2010) as a measurement for Emotional Clarity, and the Children's Depression Inventory (CDI) (Kovacs, 1985) to assess depressive symptoms among 12- and 13-year teenagers. The study ended with the same findings that adolescents with lower Emotional Clarity were at higher depressive symptoms (Stange, Alloy, Flynn and Abramson 2013). All these studies were school surveys and used the same paper-based self-report TMMS or the ECQ. The TMMS and ECQ used in studies in Spain and the U.S, however, do not yield the total EI score. The correlation of each EI's dimension to mental health problems was not enough to conclude the correlation of the total EI to mental health problems (Petrides, 2009b). Further, subscales yield from the TMMS are lacking some important dimensions of EI such as emotion regulation. Using another measurement, which is the Trait Emotional Intelligence Questionnaire-Short Form (TEIQue-SF) (Petrides, 2009a), Davis and Humphrey conducted a survey among students aged 11 to 16 in the UK to investigate the impact of EI on mental health in adolescence. The findings concluded that depression was negatively

associated with EI (β = -1.8, p < .05, 95% CI: -3.18, -.58). EI contributed 8% of the variance in depression. The study also found that students with higher trait EI were more engaged in support seeking coping strategies and less avoidant coping strategies (Sarah K. Davis & Neil Humphrey, 2012; S. K. Davis & N. Humphrey, 2012). Evidence has shown that higher EI prevented youth from developing depression, anxiety and stress in high-income settings.

In LMICs, the association was found to be the same in some studies. For example, a study was conducted in Pakistan in 2009 among 112 students in middle socio-economic status with age range from 16 to 18. The study used the Siddiqui Shah Depression scale (Siddiqui & Shah, 1997) and the TEIQue-ASF (Petrides, 2009b). Findings found was that EI was negatively associated with depression symptoms in this sample (r = -.57, p < .001) (Ahmad, Imran, & Mehmood, 2009). Based on the Youth version of EQ-i (Bar-On, 2000), an investigation of 247 Iranian high school students found that participants with higher EI score had lower scores in anxiety (r = -.44, p < .01) and depression (r = -.50, p < .01) (J Shabani, Hassan, Ahmah, & Baba, 2010). In India, Aroline and Ansia (2017) found the protective role of EI to anxiety (r = -.49, p < .01) among 80 adolescents using the Immanuel and Sushamain's EI Inventory (Immanuel & Sushamain, 2003) and the West Side Test Anxiety Scale (Driscoll, R., 2004). These studies, however, used relatively small sample sizes and recruited from single sites which might limit generalisability.

2.3.2. Emotional intelligence and loneliness among adolescents

Given that EI includes the ability to communicate individual's emotions to others and use the knowledge of emotions to create, remain and develop the

relationships with others, EI is expected to have an association with loneliness. To date, studies linking the conceptual frames of EI and loneliness are limited. Zysberg (2012) conducted a correlational study among 134 undergraduate students In Israel (Mean age = 23.98, *SD* = 2.95). The study used the Hebrew version of the UCLA Loneliness Scale (Russel, 1996; Russell, 1980) and the Audio-Visual Test of Emotional Intelligence (AVEI) (Zysberg, Levy, & Zisberg, 2010) which is a computer-based test based on ability EI theory (J. D. Mayer & P. Salovey, 1997). This study's finding was that there is a correlation between EI and loneliness (Zysberg, 2012). Another study was conducted in England by Wols and colleagues ((Wols, Scholte, & Qualter, 2014). The cross-sectional survey aimed to investigate the relationship between EI and loneliness among 96 young attending-school adolescents (aged 11-13 years) at two-time points T1 and T2. Loneliness was assessed by the Loneliness and Aloneness Scale for Children and Adolescents (LACA) (Marcoen, Goossens, & Caes, 1987) and the EI was assessed by the youth version of the MSCEIT-YV (J. Mayer & Salovey, 2002), in which the study focused on Strategic EI and Experiential EI subscales only. Results found the significant prospective relationship between EI and loneliness. Poor EI increased loneliness among students at high school (Wols et al., 2014).

There was evidence about the association between EI and loneliness, however, the small sample of these study might impact the reliability of this finding.

2.3.3. Emotional intelligence and suicidal thought among adolescents

Suicidal thought is one of the serious problems among adolescents worldwide (World Health Organisation, 2012c, 2018). Many efforts have been made to understand suicidal thought and its determinants among adolescents. However, there is limited evidence about the association between EI and suicidal thought among adults as well as adolescents, in high-income as well as LMICs. Cha et al. (2009) explored the role of EI to suicidal thought among 54 U.S. female adolescents (age range from 12 to 19) in a laboratory-based study. Participants were recruited via public advertisements and then invited to the laboratory for a self-report, structured interview. The instrument used for measuring EI was the Mayer-Salovey-Caruso Emotional Intelligence Test: Youth version, Research Version 1.0 (MSCEIT: YV-R) (J. D. Mayer & P. Salovey, 1997). The study revealed that EI was a protective factor to suicide thoughts and attempts ($\beta = -.40$, $p < .05$; $\beta = -.34$, $p < .95$) (Cha & Nock, 2009). Although the sample size of the study was small, the study has contributed important results to the literature of suicidal intervention.

In Iran, Abdollahi et al. (2016) investigated the role of EI in the relationship between perceived stress and suicidal ideation among 202 depressed adolescents who were recruited from hospitals. Structural equation modelling presented the protective role of EI in this relationship. Depressed inpatients with a high level of stress and a low level of EI were more likely to experience suicidal ideation. However, those who had higher levels of both stress and EI were less likely to have suicidal ideation (Abdollahi, Khanbani, Ghahfarokhi, & Carlbring, 2016). These findings illustrated that EI plays a positive moderative role between perceived stress and suicidal ideation. The protective role of EI in suicidal ideation was also found among 120 secondary students in a cross-sectional study in Kenya where there are 7,000 suicide

cases reported each year according to the World Health Organisation (WHO) (Okello & Aomo, 2018). The small sample size and the collection of participants of only one city limited the representation of adolescents. However, the evidence has shown that EI might be a potential protective factor to suicidal thought among adolescents.

2.4. CHAPTER SUMMARY

EI is an integration of knowledge and emotions, in which a person wisely knows how to use their understanding of their own and others' emotions to react properly. EI has proved as a promising component connecting closely to mental health among adolescents, in which higher EI usually goes with better mental health. However, EI might be different across cultures (Görgens-Ekermans, 2009) and mental health has been proved to be impacted by cultures (Gökçen, Furnham, Mavroveli, & Petrides, 2014). It is important to examine the association between EI and mental health among various settings, especially in LMICs in Asia where the culture is in many ways different from that of Western countries where the EI was generated.

"It is very important to understand that emotional intelligence is not the opposite of intelligence, it is not the triumph of heart over head - it is the unique intersection of both."

David Caruso (Caruso, 2004)

Table 2.1. The factor of the full-form TEIQue (adapted from Petrides' theory (Petrides, 2009b))

Factor	Meaning of factor	Facet	Meaning of each facet
Well-being	General positive feelings about past and future circumstances	Self-esteem Trait happiness Trait optimism	Successful and feel confident about themselves Satisfaction and happy with their lives Confident and optimistic about life
Emotionality	Understanding self- and others' feelings, being able to express emotions and using emotions to develop a good relationship with close people	Emotional perception Relationships Trait empathy Emotional expression	Clear about their own and other people's feelings Ability to maintain fulfilling personal relationships Ability to understand other people's point of views Ability to express their feelings to other people
Self-control	Ability to control over self-urges and desires, ability to regulate external pressures and stress	Emotion regulation Impulsiveness (low) Stress management	Ability to controlling self-emotions Reflective and less likely to give in to their urges Ability to endure the tension and regulating stress
Sociability	Ability to develop and maintain social networks	Social awareness Emotional management Assertiveness	Develop networkers with social skills Ability of impact on other people's feelings Forthright, frank, and willing to stand up for their rights
Independent facets		Adaptability Self-motivation	Flexible and willing to adapt to new conditions Motivated and not surrender any difficulties

CHAPTER 3. RESEARCH METHODS

This project involved multiple methods; each has been described in the papers reporting specific findings in Chapters 3, 4, 6, 7 and 8. In this chapter, the design and methods of the whole project are presented in more details.

3.1. RESEARCH AIMS AND OBJECTIVES

3.1.1. Research aims

The overall aim of this project was to generate evidence about the nature and prevalence of mental health problems among adolescents in the Central area of Vietnam, investigate the determinants of Emotional Intelligence (EI), and the associations between EI, mental health problems, and suicidal ideation experienced by adolescents. The specific objectives of the project are:

3.1.2. Objectives

1. To review the existing evidence about the prevalence of mental health problems among adolescents in Vietnam.
2. To determine the prevalence of symptoms of depression, anxiety, stress, and loneliness, and suicidal thoughts among adolescents attending high schools in Central Vietnam.
3. To investigate the determinants of EI among adolescents attending high schools in Central Vietnam.
4. To examine the relationship between EI and mental health problems among adolescents attending high schools in Central Vietnam.

3.2. CONCEPTUAL FRAMEWORK

Based on Bronfenbrenner's theory, which has been described earlier in Chapter 1 and the literature review globally and locally about the impact of individual, family, school and community on mental health problems and EI among adolescents, a conceptual model was developed for the current study. Description of this conceptual framework for this study is presented in Figure 3.1.

Some individual characteristics increase the risk of experiencing mental health problems among adolescents. The current study examined the following individual factors: sex, age, and ethnicity (Kinh which is the dominant ethnicity in Vietnam and includes 85.7% of the population (CIA World Factbook, 2018) or not Kinh). Factors in family environment that are considered to have an impact on symptoms of mental health problems among adolescents in this project were parental education, parental occupation, parents' marital status, the persons who adolescents are currently living with, having siblings or not, and the person who is the main female and male caregivers in the first 16 years of adolescents. School factors that were included were having quarrels with teacher/school staff/friend or not, having a broken romantic relationship or not, perceived satisfaction about academic achievement, social isolation, and school connectedness. Community factors were also assessed, including rural or urban residence, religion (adhere to Buddhism or not), and cyber-bullying.

The core aim of this study was to identify the relationship between EI and mental health problems. It was hypothesised that EI would be significantly associated with (1) mental health, and (2) suicidal thoughts among high

school students in Vietnam. It was anticipated that the higher the Global EI score, the lower the symptoms of depression, anxiety, stress, loneliness, and suicidal thoughts.

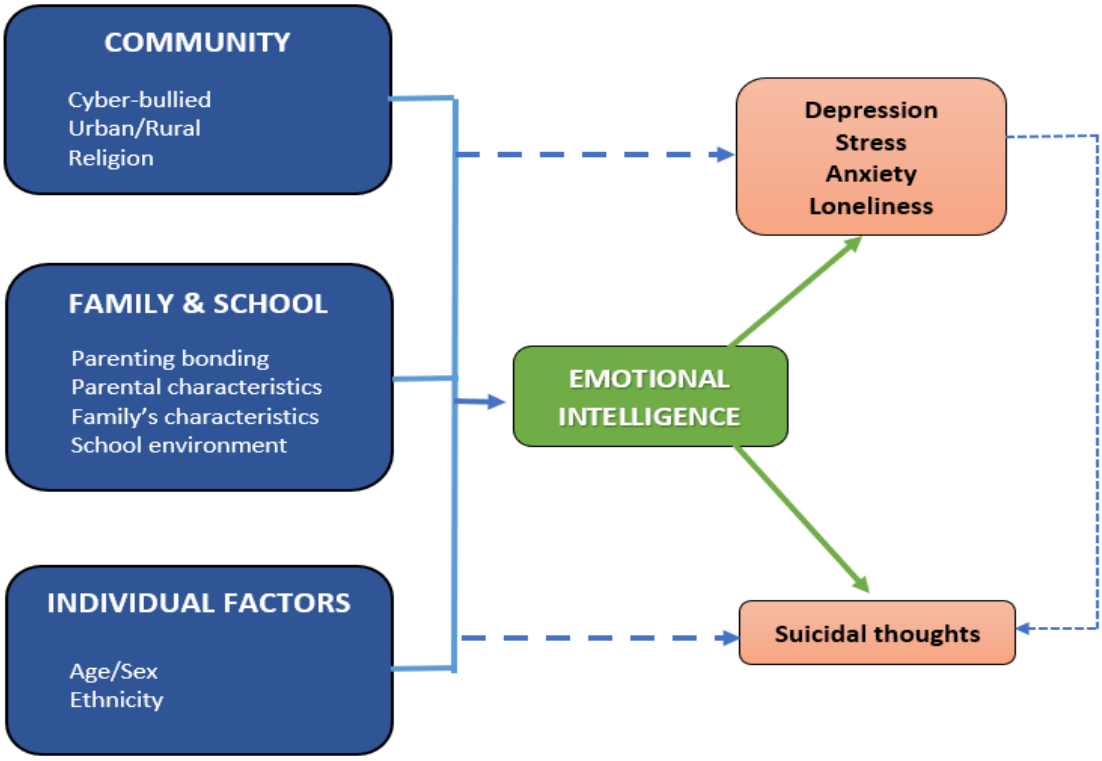

Figure 3. 1 The conceptual framework of this study

3.3. RESEARCH DESIGN

This study comprised two components. The first one was a systematic review of existing evidence about the prevalence and determinants of mental health problems among adolescents. The second component was a cross-sectional school survey conducted on high school students in rural, urban and coastal areas of Thua-Thien-Hue province. The detailed designs applied for each component are described as follows.

3.3.1. Systematic review

3.3.1.1. Search strategies

To review the current evidence on the prevalence and determinants of mental health problems among Vietnamese adolescents, a systematic search was conducted to identify potential studies. Relevant studies were identified by two search strategies. First, the online approach was conducted on seven electronic databases: MEDLINE, EMBASE, CINAHL, PsycINFO, SCOPUS, and Web of SCIENCE for all publications to 1st May 2018. For each database, studies were searched in all fields, including title, abstract, content, text tables and references. The key terms for searching studies covered three concepts: mental health problems, adolescents, and Vietnam, from which, each term was exploded and adapted for use in different databases. Table 3.1 described an example of the main terms and its expanded terms conducted on Ovid MEDLINE.

Second, due to the limitation of Vietnamese language resources available in international electronic databases, printed versions of Vietnamese scientific journals with aims and scopes covering mental health of adolescents were searched manually. Target identified Vietnamese journals were Journal of Psychology, Journal of Social Psychology, Educational Journal, and Hue University Journal. Third, authors of accepted abstracts from international and national conferences were contacted to seed further potential publications in Vietnamese. Fourth, reference lists of papers meeting inclusion criteria were scanned to identify any papers missed in the search on the electrical database.

Concept 1	mental health OR mental problem* OR mental disorder* OR mental issue* OR mental illness OR stress OR anxiety disorder* OR anxious OR depress* OR panic disorder* OR phobias OR post-traumatic stress* OR self-injurious* OR self-harm OR attempt suicide OR suicidal ideation* OR suicidal thought* OR loneliness OR lonely OR sad* OR low mood OR mood disorder* OR emotion* disorder* OR hopeless* OR aggressive OR aggression OR psychiatric* OR behaviour* disorder*
Concept 2	adolescent* OR teen* OR youth* OR young adult* OR child* OR student* OR young male*/female*/person*/people OR high school* OR secondary school* OR undergraduate*
Concept 3	Vietnam* OR Viet nam OR Viet-nam OR Viet Nam
Concept 1 AND Concept 2 AND Concept 3	

Table 3.1. An example of a search strategy in Ovid Medline

3.3.1.2. Eligibility criteria

3.3.1.2.1. Inclusion criteria

Studies that met all three following criteria: (1) were written either in English or Vietnamese; (2) reporting a study investigating the prevalence and/or determinants of any mental health problems among young people aged 10 to 19 years or group of people that included the age group from 10 to 19; (3) participants were living in Vietnam. Mental health problems were limited to common symptoms such as depression, anxiety, stress, loneliness, suicidal thoughts, and suicidal plans.

3.3.1.2.2. Exclusion criteria

This study targeted to mental health problems among adolescents in the general community currently living in Vietnam. Studies of participants drawn from Vietnamese-born or Vietnamese-identified living outside Vietnam were excluded. Adolescents with disabilities or severe mental health problems or having any physical health problems were also excluded. All papers reporting data from the same study with different symptoms and determinants of mental health problems or different component of methodology were included. Therefore, the quality assessment was conducted based on each paper instead of each study.

3.3.1.3. Study selection

All searched papers were initially assessed against the inclusion and exclusion criteria by the primary researcher. The researcher team made the final decision of the included studies.

3.3.1.4. Data extraction and quality assessment

Principle information that was searched in each eligible study for extraction included: name of the project, authors, date of publishing, ethics approval, study site, study setting (school-based, community-based, or institution-based), study type and methods, sample size, age range of participants, recruitment method, response rate, data sources, survey respondents (adolescent or someone else), measurements of outcomes prevalence of mental health problems with its 95% confidence intervals (CIs) (if available), measures of associations (β coefficients or odd ratios (OR)), and determinants of mental health problems.

Based on the data extraction, the quality of each study and risk of bias were assessed using formal tools. Considering the complexity of methodology used in eligible studies, the Standard Quality Assessment Criteria for Evaluating Primary Research Papers "QualSyst" of Kmet et al. (Kmet, Lee & Cook, 2004) and the Critical Appraisal Skills Programme (CASP) (Critical Appraisal Skills Programme, 2017; Orton, Lloyd-Williams, Taylor-Robinson, O'Flaherty, & Capewell, 2011) were chosen.

The "QualSyst" was used for assessing the quality of quantitative studies. The checklist involves 14 questions. Two criteria were added to the checklist due to the frequency of lacking these crucial components in studies in Vietnam: ethics approval and validated tools. Other criteria in the "QualSyst" checklist were: objectives, study design, appropriate method of recruitment, subject characteristics, interventional and random allocation, interventional and blinding of investigators, interventional and blinding of subjects, defined outcomes and robust to measurements, sample size and justification, analytic method described or justified, estimate of variance for the main results, confounding control, detailed results, and conclusions supported by the results (Kmet et al., 2004).

Quality of qualitative studies or the quality component in "mix-method" studies was assessed by an adapted checklist based on the "QualSyst" and the CASP to increase the accuracy. Ten criteria for assessing the quality component of a study included objectives, study design, study context, framework, sampling strategy, data collection methods, use of verification procedure(s) to establish credibility, detailed results, reflexivity of the

account, and ethics approval (Kmet et al., 2004) (Critical Appraisal Skills Programme, 2017).

For both qualitative and quantitative components, each item had four options of assessment, in which "Yes" assessment was scored two, a "Partial" assessment received a score of one, a "No" assessment was scored zero, and an "N/A" classification was given for criteria which were not applicable to the study design. For example, the question "If the interventional and random allocation was possible, was it described?" was not applicable for cross-sectional studies.

The quality was based on the score of each paper, in which the higher the score, the higher qualified was that paper. The final quality score was calculated by summing all scores gaining from each item divided by the total of the maximum possible score which excluded the N/A items. The formula of the final quality score for qualitative and quantitative studies are as below:

$$\text{The final score for quantitative studies} = \frac{\sum scores\ of\ all\ criteria}{13 - \sum number\ of\ criteria\ with\ N/A}$$

$$\text{The final score for qualitative studies} = \frac{\sum scores\ of\ all\ criteria}{10 - \sum number\ of\ criteria\ with\ N/A}$$

3.3.1.5. Data analysis

Included in this review were various quantitative or mixed methods studies; therefore, the method of aggregative synthesis by summarising the data with a narrative summary of the evidence was applied. Determinants of mental health problems, including risk and protective factors, were identified and then grouped into three main domains based on the ecological model of

Bronfenbrenner (Bronfenbrenner, 1979): individual level, family level, school environment and community context.

3.3.2. The cross-sectional survey

The second component of this study was a cross-sectional survey conducted among students attending high schools in Central Vietnam. The process was designed specifically with a pilot survey and the main survey.

3.3.2.1. Study sites

3.3.2.1.1. Vietnam

- **Demographics of Vietnam**

Vietnam is a tropical country located in Southeast Asia, covering a total area of more than 330,000 km2 which is 20 times smaller than Australia (see Figure 3.2 for the map of Vietnam). It has approximately 94.7 million people (General Statisitcs Office of Vietnam, 2018) which is approximately four times more crowded than the Australian population (Australian Bureau of Statistics, 2018). More than 70% of the population is living in rural areas although the urban population has recently increased due to the migration and rapid urbanisation (General Statistics Office of Vietnam, 2009). Basically, the economy of Vietnam depends heavily on agriculture, especially rice cultivation (The World Bank, 2016). Vietnam exports many agricultural products globally, such as cashew nuts, black pepper, tea, rubber, fishery products, and especially rice and coffee which are the second-largest exporter worldwide (The World Bank, 2016).

Vietnam embraces 54 ethnic groups, but the majority of Vietnamese are Kinh (85.7%). The most popular recognised religious communities in the country are Buddhists, Catholics, Protestants, Caodaisms, and Hoahaoism Buddhists, the dominant religion being Buddhism (85.5%) (General Statistics Office of Vietnam, 2016). The formal language of the country is Vietnamese.

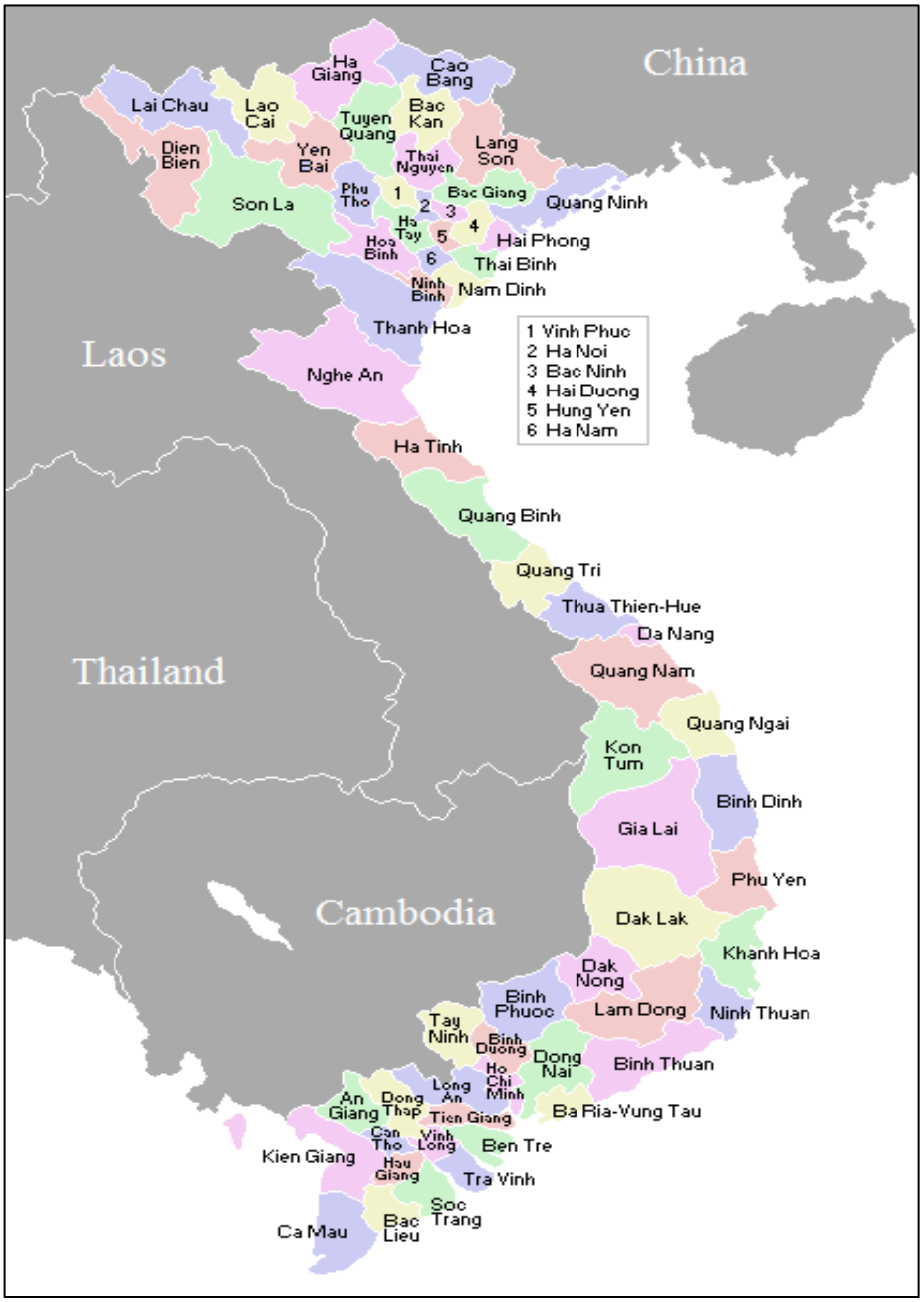

Figure 3.2. The map of Vietnam (Source: https://en.wikipedia.org/wiki/Vietnam)

- **History of Vietnam**

The history of Vietnam started about 2800 B.C. with the legendary Hung Kingdom. The first signs of Chinese occupation appeared at the age of Au Lac Kingdom in 214 B.C. and this colonization is believed to last until 938 A.D. after the victory on the Battle of Bach Dang River by Ngo Quyen. During more than 1,000 years under the control of Chinese, Chinese cultures spread out the country including language and Buddhism, which is believed was brought to Vietnam by the Chinese in 548 A.D.

From 939 to 1407, Vietnam was independent under the lead of Ngo Empire (939-967), Dinh Dynasty (968-980), Former Le Dynasty (981-1009), Ly Dynasty (1009-1225), Tran (1226-1400), and Ho Dynasty (1400-1407) to fight and protect the country from the re-colonization of Chinese. Chinese culture remained in Vietnam during this time and was promoted heavily under the rule of King Ly Nhan Tong (55 years). Chinese occupied Vietnam again in 1407 for 20 years until Le Loi trapped the Chinese army in Thang Long (Hanoi) and found the Later Le Dynasty in 1427. From 1802 to 1945, Vietnam was under the lead of the Nguyen Dynasty. In 1847, the French started to land in Vietnam and colonised the country from 1874 to 1945. France totally ended the colonization in 1954 after the Dien Bien Phu victory of the Vietnamese. Vietnam was politically divided into the North (governed by the Communist Party) and the South (governed by Ngo Dinh Diem) with the borderline in the Quang Tri province. America came to Vietnam in 1955 to support Ngo Dinh Diem and started the plan of colonization. The civil Vietnam war lasted for 31 years and ended with

the victory of the Communist Party. The north and the south were reunified into one state named the Socialist Republic of Vietnam since 30/4/1975 (Shackford, 1992).

After independence, the country experienced many difficulties, especially starvation due to the famine. The country targeted central planning and depended heavily solely on the Soviet Union. Due to the severe damage after a 31-year war, the mistake of focusing on developing industry instead of recovering agriculture, the collapse of Soviet Union, and the post-war trade embargo from the United States, the economy during the period of peaceful development was inefficient and had low productivity with no foreign investment and a shortage of financial resources. Vietnam's economy faced hyperinflation, serious famine and deficiencies in basic needs such as consumer goods, transport, health and education facilities (T. T. Bui, 2000). The turning point of the economy was the transformation to "an open, market-oriented, and globally integrated model" decided on at the Sixth Congress of the Vietnamese Communist Party in 1986. The "Doi moi" – Reform policy and the end of the trade embargo by the United States enabled Vietnam to move from famine starvation and its economy has steadily recovered. Along with the "Doi moi" movement, the bilateral trade agreement with the United States in 2001 and the accession to the World Trade Organization in 2006 have lifted Vietnam from a low-income country in 1986 to a lower-middle income country in 2015 (Odell & Catillo, 2008; The World Bank, 2018b).

- **Vietnam nowadays**

National education system

The general education consists of five levels: kindergarten, primary education (grade one to five for children aged 6 to 10), secondary education (grade six to nine for children aged 11 to 14), high school education (grade 10 to 12 for children aged 15 to 18), and universities. In the last year of each level, students have to sit for a compulsory graduation exam. The permission to the next level and the choice of school depends on the results of this exam. Primary and secondary education are compulsory; however, completion of high school is not. In Vietnam, there are public schools which are supported by the Socialist Republic government, private schools, vocational schools and centres for continuing education. Public schools are usually believed to be better than private schools. Students with high academic achievement usually attend public schools while those who have lower academic performance usually have to pay for studying in private schools. For those who do not meet the academic requirements and finance to be in a private school, centres for continuing education is another option. For those who wish to learn a specific job skill and do not continue studying after secondary graduation education, they can choose vocational schools. There is also a growing number of international schools in Vietnam that teach students bilingual languages; however, the cost of attending these schools are usually expensive; therefore, only for the rich.

The national public health system

After becoming independent in 1975, a new health system was established (Wagstaff, Van Doorslaer, & Watanabe, 2003). A public health system has reached down to the hamlet level. Successful results have been achieved on the fight against malaria, HIV, and tuberculosis (GSO, 2016).

Regarding mental health, there has been an explicit mental health law. Nonetheless, the mental health policy in 1998 has declared to increase and strengthen the community-based mental health care system in a program called National Health Target Program (NHTP) (Vietnam Government, 1998). An important point was the treatment and support of people with schizophrenia (Vietnam Government, 2001). In 2002, depression was added to the program by reducing the prevalence of depressive people and suicide (Vietnam Government, 2002). There is a small fund from the government to support people with mental illness (65,000VND (US$3.6) per month for those living alone or in a poor family and 140,000VND (US$7.7) per month for those living in community services (Vietnam Government, 2004).

Services concerning mental health have been supported by the government. Basically, there are community-based and hospital-based services that provide free medicine for some specific mental illness such as depression, epilepsy and schizophrenia. However, there is no specific policies and governmental services to support other mental health problems.

Some regulations related to psychological counselling for students have been stipulated, yet they have not applied. There is no psychologist and

psychological counselling room at schools. Limited private counselling centres are available to support the community. Nonetheless, they are not well-known. Taking care of mental health in the community, especially mental health within the school system, is still a significant gap in the public health system of the country.

3.3.2.1.2. Thua-Thien-Hue – a province in Central Vietnam

The study was conducted in Thua-Thien-Hue, a province in the North Central Coast region of Vietnam, covering almost 5,000 square kilometres and with a population of 1.1 million people (General Statistics Office of Vietnam, 2009) (Figure 3.3). This province comprises six districts, two district-level towns, and one provincial city, with four different zones of mountainous areas, hills, plains and lagoons. Thua-Thien-Hue has a long development history under a variety of dynasties for more than 2,800 years. The most recent dynasty whose impact remains on local culture and people's characteristics was the Nguyen dynasty who chose this area as the capital of Vietnam until 1945 (T. H. T. Nguyen, 2010).

Thua-Thien-Hue is a centre of culture and education in Vietnam and was considered as the source site for Confucian education of the country.

The educational system in Thua-Thien-Hue province follows the national model of the Socialist Republic of Vietnam with five levels. The academic year starts in late August and lasts continuously until the ending of May with a one-week break for Tet holiday in February. This nine-month period comprises 37 weeks with 19 weeks for semester 1 and 18 weeks for semester 2. Students usually have six days per week at school from Monday to

Saturday. Students attend school a half-day (the morning class or the afternoon class) for the primary curriculum. School time lasts from 7 am to 11.15am for the morning class and from 1 pm to 5.15pm for the afternoon. Some classes such as physical education or social activities might require students to attend extra time at a school outside the main curriculum class. The educational curriculum in Vietnam follows a single structure based on the rules of the Ministry of Education and Training (MOET). There is one unique school in Hue city with higher quality than others, named Quoc Hoc high school. To be admitted to Quoc Hoc, students must pass a competitive entrance exam. Besides the national curriculum, students attend many advanced classes to enhance their knowledge in a specific subject that they choose to specialize in, such as Maths, Chemistry, Physics, English, French, History, Geography or Literature. Students from this school are those who usually represent Thua-Thien-Hue Province or Vietnam to participate in a national and international academic competition such as Mathematics, Physics, and Scientific Olympics. In 2016, Thua-Thien-Hue had 39 public high schools (no private school) and one particular high standard school (Quoc Hoc high school). There are 18 schools with a total of 520 classes from the urban areas and 22 schools with a total of 497 classes from the rural areas. Total students were 36,860 with 18,653 in urban areas and 18,207 in rural areas (Thua Thien Hue Department of Education and Training, 2017). The percentage of adolescents that goes to high school in Thua-Thien-Hue province is 92% (Thua Thien Hue Department of Education and Training, 2017).

Figure 3.3. Map of the Central of Vietnam with the location of Thua-Thien-Hue Province highlighted in red and the selected areas in red texts (adapted from the Internet).

3.3.2.2. Study participants and sample size

3.3.2.2.1. Study participants

Participants in this study were students attending public high schools from Grade 10 to 12 in the 15 to 18 years age range which is considered as the pre-adult period that has a higher impact in domains of individual, family, school and community than other periods of adolescence (Australian Government, 2015). Students were invited from selected schools in urban, rural and coastal areas in Thua-Thien-Hue province.

3.3.2.2.2. Sample size

- The sample size for the main survey was calculated using the following formula to test the hypothesis that students with a higher EI would experience significantly fewer symptoms of mental health problems than those with a lower EI:

$$n_i = 2\left(\frac{Z_{1-\alpha/2} + Z_{1-\beta}}{ES}\right)^2$$

$$ES = \frac{|p_1 - p_2|}{\sqrt{p(1-p)}}$$

n_i: the sample size required for each group (i = 1,2)
α: the selected level of significance
$Z_{1-\alpha/2}$: the value from the standard normal distribution holding 1-α/2 below it
1-β: the selected power
$Z_{1-\beta}$: the value from the standard normal distribution holding 1-β below it
ES: the effect size
p_1, p_2: the proportions in the two comparison populations
p: the overall proportion, based on pooling the data from the two comparison groups

Based on previous studies, the prevalence of mental health problems among adolescents in Vietnam is estimated to be approximately 26.5% (D. Nguyen, Dedding, Pham, Wright, & Bunders, 2013). It is unknown whether differences exist in areas of the country in terms of individual characteristics such as EI. We assumed that the prevalence of mental health problems among adolescents in Central Vietnam with high EI is 23% and that among those with low EI is 30%.

$\alpha = 0.05 \rightarrow Z1\text{-}\alpha/2 = 1.96$; $1\text{-}\beta = 80\% \rightarrow Z1\text{-}\beta = 0.84$

After taking into account the response rate of 80%, a total sample size of 1,693 high school students was required in the study.

3.3.2.3. Recruitment procedure

For the pilot survey, one class of grade 10 in Phu Loc – a rural district was randomly selected.

For the main survey, students at high schools from years 10 to 12 with age ranging from 16 to 18 years were recruited. Students were invited to participate in the study by a multi-stage sampling technique. The sampling process is illustrated in Figure 3.4.

Firstly, the 40 high schools on the list, which was provided by the Thua-Thien-Hue Department of Training and Education, were divided into two

groups including urban and rural. Based on the number of schools and number of students at each school, a total of nine schools, including five from urban, and four schools in rural areas were randomly selected by the researcher. Invitation letters to participate in the study were sent to the director of each school. In each of the schools, four to seven classes were randomly selected depending on the number of students in each class. All students in target classes were then invited to participate in the study.

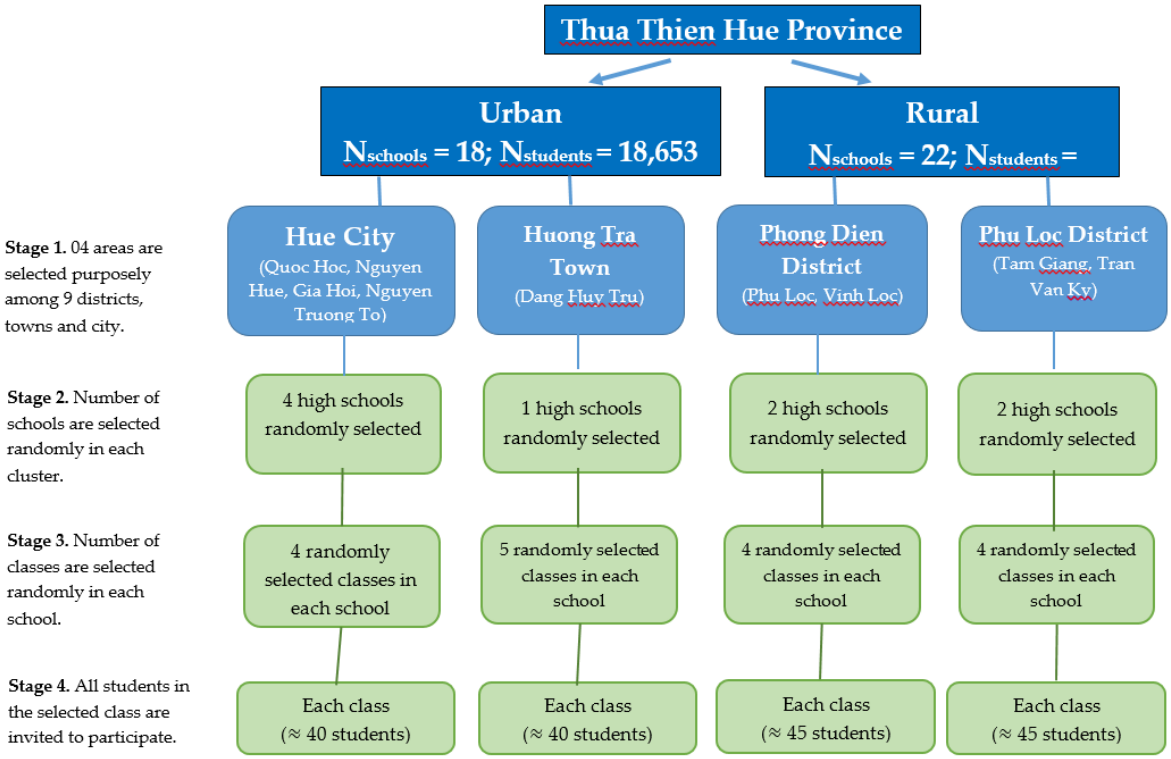

Figure 3.4. The multi-stage sampling for the current study

3.3.2.4. Data sources

3.3.2.4.1. Questionnaire development

The main instrument used for this study was a self-reported questionnaire (see Appendix 1). The specific process was presented in Figure 3.5.

Initially, a critical and careful review of the literature on EI and mental health problems was conducted to identify potentially related factors to the above outcomes. The draft questionnaire was formed in English informed by the results of the systematic review. At stage 2, discussion occurred within the research group to compose the form and check that the logic of the questionnaire accurate. Questionnaire amendment was based on research group discussion.

After amendment based on research group discussion, stage 3 was the translation and cultural verification following the standard guidelines of Borsa's and Sireci's (Borsa, Damásio, & Bandeira, 2012; Sireci, Yang, Harter, & Ehrlich, 2006). First, two authors who are bilingual psychologists translated the questionnaire from English to Vietnamese independently, except the DASS-21, the PBI and the School Connectedness which have already been translated, formally validated, published and used to assess Vietnamese adolescents. A bilingual expert in public health reviewed the two translations. All differences between the two versions were discussed among the three translators to reach an agreement. Second, three potential participants evaluated the first version of the questionnaire (Vietnamese version 1) for appropriateness of language and cultural idioms expression. Any ambiguity or lack of clarity raised by the three adolescents was discussed among the research group and the translators to make further necessary amendments (Vietnamese version 2). At the third step, the revised version (Vietnamese version 2) was back-translated independently by two bilingual and bi-culture experts in public health who were different from those in the first step. The back-translated version was compared with the original questionnaire by an English native speaker public health expert.

The translated and back-translated versions were reviewed and considered for adjustment appropriately in terms of semantic, idiomatic, experiential and conceptual equivalence by the research group and experts in public health and psychology. The Vietnamese validated versions of the DASS-21, the PBI and the School Connectedness that have been used among Vietnamese adolescents were added to the Vietnamese questionnaire version 3.

The full-form of the questionnaire was then used in the pilot test. This process was undertaken with a selected class by the main researcher and trained research assistants. This class was excluded from the main survey. The purpose of this stage was the translation and cultural verification of the questionnaire. The process is based on standard techniques supported by Borsa et al. and Sireci et al. (Borsa et al., 2012; Sireci et al., 2006). The pilot test was conducted among 51 high school students who shared the same characteristics as potential participants for the main survey. The aims of the pilot test were: (1) check survey management procedures, (2) identify the terms, expressions, and questions that might prove difficult for participants to understand, (3) observe the attitudes of participants during the time they were completing the questionnaire, and (4) estimate the minimum and the maximum time required to finish all the questionnaire.

In the pilot testing, the students self-completed the questionnaire under the supervision of the researchers. Students then had time to discuss with the researchers about the comprehensibility and acceptability of the questionnaire as well as the difficulties of completing the questionnaire. The results of the pilot testing were discussed among the research team and the

translators before they made the final amendments (version 4). The questionnaire version 4 was used in the main school survey.

3.3.2.4.2. Questionnaire contents

The key questionnaire of the main survey, besides the instruction and ending parts, contained 39 questions (179 items) divided into six core sections:

- *Participant's characteristics*: This section included five questions about sex, age, ethnicity, religion, and residence.
- *Participant's family and their opinions*: This section included 12 questions about parental status, people who currently live with them, who gave the most care to the correspondent in the first 16 years, parental education, parental occupation, number of siblings, and the order of the child in the family. This section had one scale assessing the participants' feelings about their primary caregiver during the first 16 years of age (the Parenting Bonding Instrument – PBI) (G Parker, Tupling, & Brown, 1979).
- *Participant's school, studying and their opinions*: This section included five questions about perception toward school and people in school, experiences with teachers and school staff, and academic results.
- *Participant's friends and their opinions*: This section consisted of five questions about the popularity among friends, friendship relationships, and bullying.
- *Participant's experience and their opinions*: This section included 11 questions about feelings, emotional experience, seeking help, and satisfaction with life. Used scales were the Trait Emotional Intelligence – Adolescent Short Form (TEIQue-ASF) (Petrides), the

21-item Depression-Anxiety-Stress (DASS-21), and the Loneliness Scale-Revised (UCLA-R).

- *Participant's comments*: This section was blank space for students to write down any other things they would like to share.

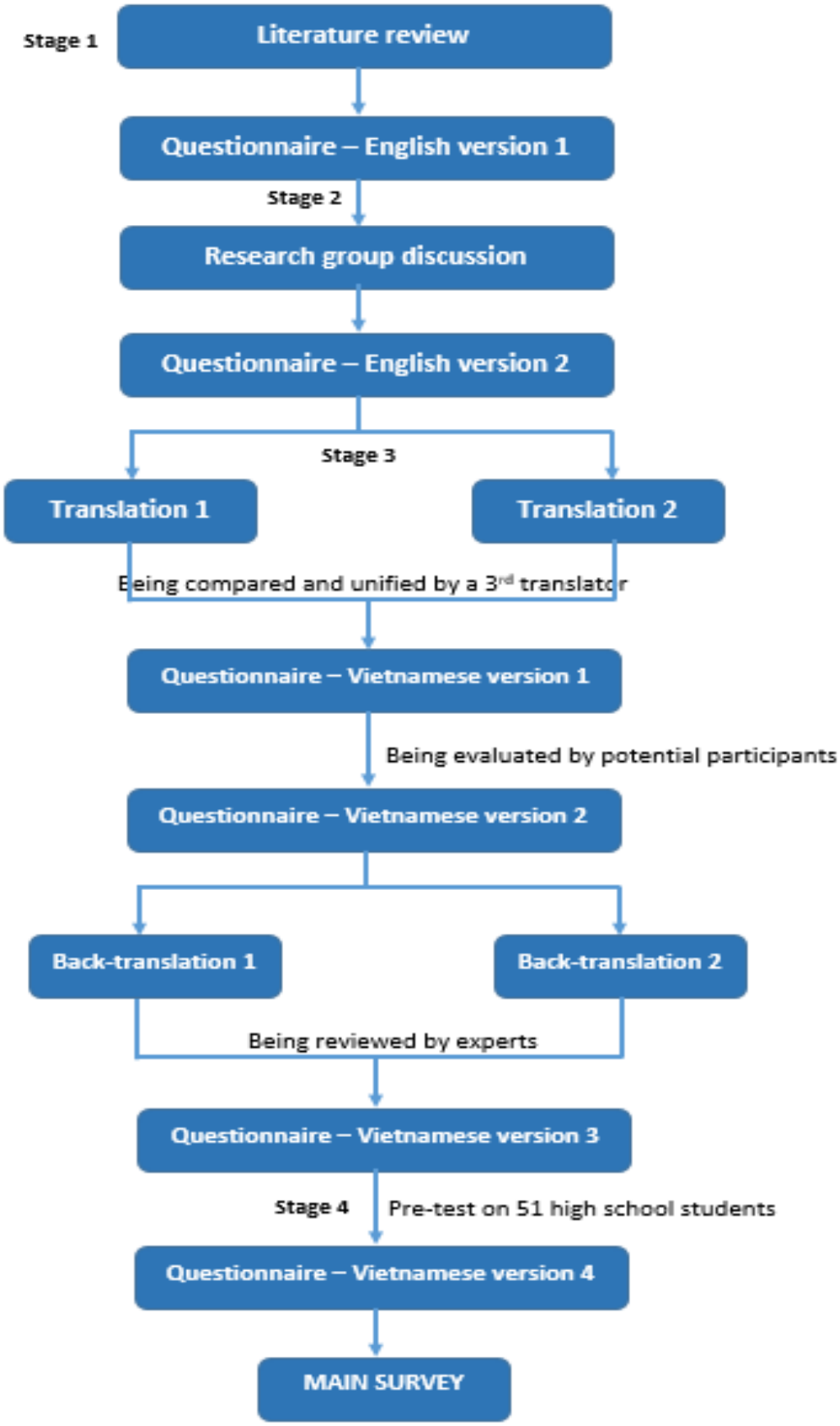

Figure 3.5. Translation and cultural verification of the questionnaire

3.3.2.4.3. Standardised instruments used in the questionnaire

- **Emotional intelligence**

Based on the literature review about the differences between theories of EI which was described in Chapter 3, the ability and the trait (mixed model) were chosen. According to a systematic review based on the combinations of 105 effect sizes and almost 20,000 participants, the trait model and its measurements were more reliable in investigating its association and health (Martins et al., 2010). This conclusion was in line with Schutte's 2007 meta-analysis study (Schutte, Malouff, Thorsteinsson, Bhullar, & Rooke, 2007). Confirmation was duplicated in experimental studies from Mikolajczak et al. using the TEIQue and Affectiveness (PANAS) among 67 students in Belgium to examine the incremental validity of trait EI to predict mood disorders over and above the personality, alexithymia and resilience (M. Mikolajczak, Petride, Coumans, & Lumiet, 2009; M. Mikolajczak, Petrides, & Hurry, 2009). The current study, therefore, followed the trait EI theory of Petrides to measure EI among adolescents in Vietnam. The latest version of the TEIQue-ASF is available, free of charge for education and research purposes from www.psychometriclab.com.

Trait Emotional Intelligence – Adolescents Short Form (TEIQue-ASF) (Petrides) was used. The questionnaire is a simplified version, in terms of wording and syntactic complexity, of the adult short form of the TEIQue. It includes 30 items, followed the seven-point Likert-structured, which ranged from 1 "Strongly Disagree" to 7 "Strongly Agree". The TEIQue-ASF has been used among adolescents in England (M. Mikolajczak,

Petrides, et al., 2009; Petrides, 2006), Greece (Stamatopoulou, Galanis, Tzavella, Petrides, & Prezerakos, 2017), and Holland (Mavroveli, Petrides, Rieffe, & Bakker, 2007) with good internal consistency reliability (Cronbach's alpha of the global score ranged from .81 to .87). The TEIQue-ASF has four dimensions:

- Well-being: the sense of positive, happy and fulfilled feelings about their life;
- Self-control: the ability to control urges and desires healthily, and regulate external stress well;
- Emotionality: the ability to perceive and express their own emotions as well as understand others' feelings which in turns develop relationships with close members; and
- Sociability: the ability to create and maintain social connection and social influence (Petrides, 2009b).

All scores range from 1 to 7 in a positive direction. The subscale scores were derived from 26 of the 30 items. Each subscale's scores were the average of all related items. There were four independent items that only contributed to the EI overall score, which is called the Global EI score. The Global EI score was retrieved by summing all items and divided by the total items of 30. The higher the score is, the better the EI the student has (Petrides, 2009b). The TEIQue-ASF has been validated among adolescents in many countries, such as England (M. Mikolajczak, Petrides, et al., 2009; Petrides, 2006), Greece (Stamatopoulou et al., 2017), and Holland (Mavroveli et al., 2007) with good internal consistency

reliability (Cronbach's alpha of the global score ranged from .81 to .87). In this sample, the Cronbach's alpha for the global TEIQue-ASF was .78.

- **Parenting Styles**

The original self-reported ***Parenting Bonding Instrument (PBI)*** developed by Parker et al. (G Parker et al., 1979) comprises 25 items. In 1996, in a study conducted on 1,698 parents of 1,033 pairs of twins to investigate the relationship between parenting and psychopathology, Kendler shortened the instrument to 16 items due to the limited time for interviewing parents and the duplication completing the questionnaire to each twin (Kendler, 1996). Kendler selected items based on the duplicated information of items and the sensitivity for parents to answer (for example, the item "invaded my privacy" was eliminated). The Kendler's shortened form had two parts with the same items for adolescents to assess attitudes and behaviours of their main male and female primary caregivers toward them during the first 16 years of their life. Kendler's study revealed the three subscales of parental styles were Warmth (7 items), Overprotectiveness (5 items), and Authoritarianism (4 items). Each item is scored from 0 (Strongly disagree) to 3 (Strongly agree). Reversed scores were applied in some items. The total score ranged from 0 to 15 and shared the same for male and female primary caregiver. Higher scores in Warmth meant the parent showed a lot of care, love, trust, and understanding to their children while lower scores indicated that the parent was cold and neglecting. Higher scores in the Overprotectiveness scale suggested parents control their children while lower scores reflect the encouragement of freedom. Higher scores in

Authoritarianism described the discourage autonomy while the lower scores indicate the support of independence.

The validation of the 16-item PBI was conducted in this study and is presented in the following manuscript which is under review of the *Current Psychology*:

Manuscript 1: Psychometrics properties of a shortened, translated and culturally-verified version of the Parenting Bonding Instrument established in a population-based sample of Vietnamese adolescents

Psychometric properties of a shortened Parental Bonding Instrument among a population-based sample of Vietnamese adolescents

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Abstract

Introduction: The Parental Bonding Instrument (PBI) measures the bond between a child and their mother and father separately from the child's point of view. Its 16-item version has been translated and adapted in many countries. However, there is no evidence about its validity among Vietnamese samples. This study aims to establish the adaptation and validation of the 16-item PBI among Vietnamese adolescents.

Methods: This study was nested within two different cross-sectional studies which each used similar methods, and which were conducted in Hanoi (2013) and Thua Thien Hue (2015). A total of 3,209 Vietnamese high school students aged 15-18 years participated in the study. Half of them were female and lived in a rural area.

A process of translation, back-translation, pilot study and the main survey was followed to culturally adapt the PBI. Exploratory factor analyses and confirmatory factor analyses, and Cronbach's alpha were conducted to assess the reliability and validity of the PBI.

Results: The cultural adaptation and face validity were appropriate. The results showed that the 16-item PBI had the same three-factor structure model for both mothers and fathers, representing Parental Care, Protection and Authoritarianism.

All items were loaded to their factors with factor loadings >0.3, accepting one item in mother's Care (factor loading = 0.27). The three-factor model was similar to Kendler's suggestion and other studies. Cronbach's alphas for each subscale ranged from 0.70 to 0.80 indicating acceptable internal consistency.

Conclusions: The data of this study confirmed the three-factor model of the 16-item PBI, including the parental warmth, overprotection and authoritarianism among adolescents in Vietnam.

Keywords: adolescents, parental styles, Parental Bonding Instrument, validation, Vietnam.

Introduction

Parents play a crucial role in the health and wellbeing of young people. There is consistent evidence worldwide about the impact of parenting styles on adolescents' physical and mental health. Children who have parents who are experienced as over-protective, controlling or providing little care are at an increased risk of having mental health problems. Parental neglect or coercive control is associated with increased risk of eating disorders (Horesh, Sommerfeld, Wolf, Zubery, & Zalsman, 2015), personality disorders (Infurna et al., 2016), social anxiety disorders (Castelli et al., 2015), self-harm behaviours (W. K. Lee, 2016), having suicidal intent (Sharaf, Thompson, & Abd El-Salam, 2016) and suicidal behaviours (Coelho et al., 2014); or being obese (Amianto, Ercole, Abbate Daga, & Fassino, 2016); or engaging in risky health behaviours such as smoking or drinking alcohol (Osaki, Suzuki, Wada, & Hitsumoto, 2011).

The Parental Bonding Instrument (PBI), developed in 1979 by Parker et al. (G Parker et al., 1979), is a scale which assesses the child's perceptions of a parent's caregiving style and is widely used in both English and non-English countries (Arulsubila & Subasree; Georgiou, Ioannou, & Stavrinides, 2016; Martin & Waite, 1994; Minas & Ata, 1992; Sharma, Sharma, & Yadava, 2011; Yterdal, 2016). The PBI consists of 25 statements describing the attitudes and behaviours of a specified parent during the first 16 years of the child's life. Four response options are provided for each item, ranging from "very unlikely" to "very likely" and the respondent is asked to select the option that most closely describes their recalled experience. Separate forms with the same items are developed for mother and father. The PBI yields two subscales: "Care" (12 items) and "Overprotection" (13 items). A higher score on the "Care" subscale indicates that a child thinks their parent cares a lot about them while a higher score on the "Overprotection" subscale reflects a child's perception that their parent limited their freedom and ability to make their own decisions. The scale has been shown to have a good test-retest reliability among Australian students. Parker and Wilhelm, the developers of the PBI tested its reliability over time by administering it in repeat waves to 170 participants who completed it in the original study in 1978, 164 of whom completed it again five years later in 1983 and 163 of them in 1988. The mean correlation coefficients were .74 (1978 with 1983), .77 (1983 with 1988) and .65 (1978 with 1988), demonstrating higher consistency than found in most personality assessments over time (G. Parker, 1990; K. A. Wilhelm & G. Parker, 1990). The mean correlation coefficients were consistency across time with .74, .77 and .65, respectively (K. Wilhelm & G. Parker, 1990).

The PBI has been translated and adapted for use in settings other than English-speaking countries, including Japan (Kitamura & Suzuki, 1993), China (J. Liu, Li, & Fang, 2011), Bangladesh (Karim & Begum, 2017), Iran (Behzadi & Parker, 2015), and the U.S (Lizardi & Klein, 2002). Different factor structures of the PBI have been found, including replications of the two-factor solution (Karim & Begum, 2017; Kitamura & Suzuki, 1993; Mackinnon, Henderson, Scott, & Duncan-Jones, 1989) originally demonstrated by Parker et al. (G Parker et al., 1979) and the three-factor models that include Parental warmth, Protectiveness and Authoritarianism (Cox, Enns, & Clara, 2000; Kendler, 1996; Lizardi & Klein, 2002; Murphy, Brewin, & Silka, 1997; Sato et al., 1999; Terra et al., 2009). Parental warmth indicates the degree of love, trust, care and acceptance that the child experienced from that parent. Protectiveness is the child's experiences of a parent's controlling behaviours while authoritarianism indicates the child's experiences of the parent's discouragement of autonomy and independence (Kendler, 1996). Kendler (Kendler, 1996) suggested a short form of the PBI reducing it from 25 to 16 items. Factor analysis of this shortened form yielded the same three factors as the 25-item version. This three-factor structure has been shown to fit the data in diverse populations. For example, a community-based study conducted in the U.S. among 187 participants to examine whether the three-factor solution identified the relationships between parental styles and depression and dysthymic disorder better than the two-factor model (Lizardi & Klein, 2002) found that the three-factor model was a better fit for the data from this sample. The finding was duplicated in Japan (Sato et al., 1999), the U.S. (Cox et al., 2000), the U.K. (Murphy et al., 1997), Spain (Gomez-

Beneyto, Pedros, Tomas, Aguilar, & Leal, 1993), Brazil (Terra et al., 2009) and Switzerland (Mohr, Preisig, Fenton, & Ferrero, 1999).

Regarding reliability, the internal consistency of the PBI was high. For example, Richman and Flahery (1986) reported high coefficient alphas for the PBI scales among medical students (ranged from .85 to .93). The short-, medium- and longer-term test-retest reliabilities for the PBI were good. For example, the short-term test-retest reliability in a period of three to six weeks ranged from .63 to .96 (G Parker et al., 1979; Plantes, Prusoff, Brennan, & Parker, 1988; Warner & Atkinson, 1988). The medium-term test-retest reliability ranged from .74 to .89 in a period of one to seven months (Mackinnon et al., 1989). The long-term test-retest reliability ranged from .56 to .72 for a 10-year period (K. Wilhelm & G. Parker, 1990).

In Vietnam, the original PBI (25 items) has been previously used in a cross-sectional study examining the factors associated with health risk behaviours among adolescents attending secondary schools in Hanoi. In this study, students were asked to complete the questionnaire about their feelings to mothers and fathers separately. It reported good internal consistency with a Cronbach alpha of 0.83 for mother form and 0.84 for father form (B. P. Tran, Nguyen, Truong, Hoang, & Dunne, 2013). However, details about the translation process and its validity were not provided by the authors. The validity and reliability of the shortened 16-item PBI, which is more time effective and convenient to use when conducting research, have not been tested in a Vietnamese setting. Such evidence is required to inform future use of the scale and research about parenting styles and adolescents' health and wellbeing in this country.

The aims of this study were to establish the: 1) cultural adaptation; 2) face validity; 3) factor structure; 4) internal consistency, and 5) reference values for each subscale score of the shortened 16-item PBI among a sample of Vietnamese adolescents.

Methods

This study combined data from two large cross-sectional studies that used similar methods and were conducted among adolescents in Thua-Thien-Hue province (2015) and Hanoi (Vietnam) (2013). A two-stage process was followed to culturally adapt and assess the reliability and validity of the shortened PBI-V (Borsa et al., 2012; International Test Commission, 2005).

Cultural Adaptation of the Scale

The cultural adaptation of the shortened PBI followed the guidelines established by Borsa (Borsa et al., 2012). The Vietnamese version of the16-item PBI was based on the 25-item version used in the study by Tran, which administered the PBI to a sample of 972 adolescents aged 12-15 in Vietnam (B. P. Tran et al., 2013). Four experienced public health and psychology researchers, who were bilingual and bicultural in Vietnamese and English, reviewed the translated 16-item version. Culturally appropriate modifications regarding terms and expressions were made to the items as required.

The revised 16-item scale was administered to a group of four adolescents aged 17 years, which included both girls and boys. Further modifications were made to the scale items based on the feedback obtained. The translated revised scale was then further pilot-tested among a sample of 70 adolescents aged 17 years in Hanoi and 51

adolescents aged 16 years in Hue city. Additional revisions were made as a result of the pilot-testing and a final culturally adapted 16-item PBI created.

Assessment of Reliability and Validity

Two studies using cross-sectional, anonymous surveys among high school students were conducted. Validation of the shortened PBI was nested within two projects investigating the violence, emotional intelligence and mental health problems among Vietnamese adolescents. Details of these surveys were described elsewhere (M. T. H. Le, Holton, Nguyen, Wolfe, & Fisher, 2015; N. Quynh-Anh Nguyen, Tran, Tran, Nguyen, & Fisher) and are summarised below.

Study areas: The first survey was conducted during 2013-14 in Hanoi – the capital city of Vietnam which had a population of nearly 7 million people in 2013, of whom 59% lived in a rural area (General Statistics Office of Vietnam, 2015).

The second survey was conducted during 2016-17 in Thua Thien Hue - a province in the centre of Vietnam that had a population of more than 1.2 million people in 2016 and comprises urban, rural as well as coastal areas.

Participants

High school students aged 15-18 studying in selected high schools in the two study locations were invited to participate. In Hanoi, the schools included public and private schools and centres for continuing education, which provided formal education to those who did not pass the entrance exam to public and private schools. The schools were purposively chosen from a list of high schools and centres to represent the variety of

schools in rural and urban areas of Hanoi. Four to six classes from grades 10-12 in each school were randomly selected. All students in the selected classes were invited to participate.

In Thua Thien Hue province, public schools were randomly selected in rural, urban and coastal areas. In each school which agreed to participate in the study, four to seven classes were randomly selected based on the consideration of gender balance. All students in the chosen classes were invited to participate.

Procedure

The two studies followed the same procedure that was described below.

Participant information packages were distributed to eligible adolescents and their parents or guardians several days before the survey. The contact details of the researchers were provided for any queries or questions. Adolescents' consent was implied from their completion of the survey. Passive parental consent, in which students' guardians completed and returned a withdrawal form indicating that they were not willing to let their child participate, was sought. This method of parental consent was often used in research among young people in Vietnam.

On the survey day, a questionnaire and an envelope were distributed to each student. Those who did not want to participate or who submitted the parental withdrawal form were allowed to complete academic tasks to prepare for the next school session. Instructions on how to complete the questionnaire were given to the other students who were encouraged to complete all questions without discussing them with each

other. Students were asked to put the questionnaire into the envelope provided and returned it to the data collectors at the end of the class session.

Data sources

Both questionnaires in the two studies included study-specific questions about socio-demographic information and standardised measures of parental styles and bonding (the 16-item PBI)(G Parker et al., 1979), lifetime exposure to poly-victimisation (the Juvenile Victimisation Questionnaire revised – JVQ R-2) (M. T. H. Le et al., 2015), health risk behaviours (the Youth Risk Behaviours Survey – YRBS) (Centers for Disease Control and Prevention, 2013), emotional intelligence (the Trait Emotional Intelligence Questionnaire-Adolescent Short Form) (Petrides), and common mental health problems (the Depression, Anxiety and Stress Scale-21 – DASS-21).

Data Management and Analysis

Data entry was conducted using Epidata 6.0. The dataset was then imported to Stata 14.0. The two datasets from Hanoi city and Thua Thien Hue province were combined in Stata 14.0 in 2017. All analyses on the pooled data were performed in Stata 14.0. Code of specific items was reserved according to the scoring instruction. The analysis was conducted cases only. Uncompleted ones were eliminated from the data analysis.

Exploratory factor analyses (EFA) were conducted to explore the potential number of factors of the shortened PBIs completed about mothers and fathers as rated by the whole adolescents from the two studies. Sensitivity analysis, in which factor structures of the 16-item PBI for mothers and fathers were performed separately for girls and boys and the results compared with those of the previous step, was also conducted. The data about

mothers and fathers were pooled together to assess whether the factor structure of both parents' shortened PBI was similar to that of each parent's shortened PBI. In these factor analyses, orthogonal varimax rotation was applied based on the assumption that factors within the 16-item PBI were not correlated. Only factors with Eigen value of unity or larger were retained.

Confirmatory factor analyses (CFA) of the models found in EFA and the original two-factor model suggested by Parker et al (G Parker et al., 1979) were also performed using Structural Equation Modeling (SEM). The purpose of CFA was to examine the two-factor of Parker et al. or the model explored in EFA was better fit among Vietnamese adolescents. The Goodness of fit indices, including Chi-square, Comparative Fit Index (CFI), Tucker-Lewis Index (TFI), Root Mean Squared Error of Approximation (RSMEA), and Standardized Root Mean Squared Residual (SRMR) were considered. Non-significance of Chi-square statistical test indicated a good fit. However, this test was sensitive to sample size: a large sample size might result in a significant result. Other criteria for a good fit included CFI>0.95; TFI>0.9; RSMEA <0.07 and SRMR <0.08 (Behzadi & Parker, 2015).

Cronbach alphas of items which loaded onto the same factors in the best-fit model were calculated. Internal consistency was assessed using these Cronbach's alphas, in which Cronbach's alpha ranged from 0.7 to 0.8 indicated acceptable internal consistency and that above 0.8 indicated good internal consistency.

Depending on the results found in the factor analysis, scores on the subscales representing these factors were calculated and a reference range suggested for each

subscale. If the scores followed the normal distribution, the traditional use of mean ± 2 standard deviations were applied to identify the reference range. If the score distribution was asymmetric, the reference range was established based on the 2.5th and 97.5th percentile of the score.

Ethics: As suggested by the World Health Organisation, the following procedure was undertaken to ensure the ethical administration of the surveys among students aged 15 years or above. In both studies, letters of approval were obtained from all participating schools. Ethics approval from the Monash University Human Research Ethics Committee (MUHREC) (Project number 2013000897) and the Institutional Review Board of the Hanoi School of Public Health (Project ID 013-148/DD-YTCC) was obtained for the first survey and from the MUHREC (Project number 2016-0610) and the Ethics Committee of the Hue University of Medicine and Pharmacy (01-102016/DHYDH) for the second survey. Contact details of free supporting services for young people in Vietnam were provided to the participants. Students were advised that they could cease participation at any time if they felt distressed.

Results

A total of 1,616 out of 1,745 eligible students participated in the survey in Hanoi and 1,593 out of 1,686 eligible students participated in the survey in Thua Thien Hue. Overall, 128 students were absent on the survey days in Hanoi and 68 students in Thua Thien Hue. None of the parents in Thua Thien Hue refused permission while seven parents in Hanoi did not give consent for their children to participate. Among

the combined sample of 3,209 students, half (50%) were girls and lived in a rural area. The students had a mean age of 16.2 ± 0.93 years (range 15-18.05 years).

Cultural adaptation and face validity

The translated version of the 16-item PBI used by Tran (Phuong, Huong, Tien, Chi, & Dunne, 2013; B. P. Tran et al., 2013) was assessed by the three bilingual public health researchers as appropriate and culturally relevant for young people in Vietnam. No modifications to the translated version were required. The shortened translated Vietnamese version of the 16-item PBI was reported to be easily understood, appropriate and easy to complete by the four adolescents who provided feedback.

Factor structure and construct validity

In this sample, for scales completed by adolescents about both mothers and fathers, exploratory factor analyses revealed a three-factor model, in which the pattern of factor loadings was almost identical between perceptions of mothers and fathers. For perceptions of both parents, five items, items 1, 5, 11, 12, 17 and 18 of the original PBI, loaded strongly on factor 1 (factor loadings >0.3). For perceptions about fathers, item 4 also loaded strongly on this factor (factor loading = 0.34); however, for perceptions about mothers this item did not load as strongly (factor loading = 0.27). All of these items are from the "*Care*" subscale of the original PBI.

In both separated scales, four items, items 7, 15, 21 and 25, loaded strongly on factor 2 named "Authoritarianism" and five items, items 8, 9, 13, 19 and 23 loaded on factor 3 named "Protectiveness". These items are all from the "*Overprotection*" subscale of the original PBI.

Sensitivity analyses, in which data provided by girls and boys were analysed separately, revealed similar factor patterns between the two sexes and for mothers and fathers (results not shown; data available from the authors). In summary, for the subscale asking the participants about their fathers, a three-factor model was found for both boys and girls and the pattern of factor loadings on each factor was identical to those presented in Table 1. For the subscale about mothers, the patterns of factor loadings of factor 1 and factor 3 among boys were similar to those reported in Table 1; however, there was cross loading of item 9 on both factor 2 and factor 3 (factor loading = 0.30 and 0.39, respectively). Data about mothers among girls also showed cross-loading of item 9 on factor 2 and 3 (factor loading = 0.32 & 0.45, respectively). Apart from this cross-loading, the pattern of factor loadings of data about mothers among girls was similar to those presented in Table 1.

Confirmatory factor analyses of a two- and then a three-factor model revealed that the latter provided a more superior fit to the data, for both mothers and fathers (see Table 2). However, even for a three-factor model, only the Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Residual (SRMR) met the criteria for a good fit; the values of CFI and TFI did not meet these criteria.

Internal consistency

The shortened 16-item PBI showed acceptable internal consistency in this sample. Seven items of factor 1 (items 1, 4, 5, 11, 12, 17 and 18) had a Cronbach alpha of 0.80; four items of factor 2 (items 7, 15, 21 & 25) had a Cronbach alpha of 0.70; and five items of factor 3 (items 8, 9, 13, 19 and 23) had a Cronbach alpha of 0.72.

Summary statistics and recommend cut-off score for each subscale

Since the three factors identified in the factor analyses of data about feelings about mothers and fathers were identical to those found in Kendler's study (Kendler, 1996), scores on the three subscales as recommended by Kendler: parental warmth (factor 1), authoritarianism (factor 2), and protectiveness (factor 3) were calculated. For the 'parental warmth' subscale, higher scores indicate a higher level of warmth from mothers or fathers towards their child. For the "authoritarianism", higher scores indicate a higher level of authority of mothers and fathers towards their child and a low level of independence and autonomy for the child. For the "protectiveness", in order to avoid the misunderstanding of the positive effect of appropriate parental protectiveness on adolescents' psychological development (Laursen, Žukauskienė, Raižienė, Hiatt, & Dickson, 2015), we renamed the term of "protectiveness" to "overprotection". Higher scores on this factor indicate a higher level of overprotectiveness.

Means and standard deviations of these subscales are presented in Table 3.

The distribution and recommended cut-off for each of the shortened PBI subscales for mothers and fathers are presented in Figures 1, 2 and 3. For both parents, the scores on the three subscales did not follow a normal distribution. The 97.5th percentile was thus used to identify a cut-off score for shortened PBI parental warmth and the 2.5th percentile for shortened PBI protectiveness and authoritarianism. For shortened PBI parental warmth, a score < 5.00 for mothers and <2.07 for fathers indicates a low level of warmth from the corresponding parent. For shortened PBI

overprotection, a score >14.00 indicates high over-protectiveness among both mothers and fathers. For shortened PBI authoritarianism, a score of >12.00 shows that the corresponding parent is very controlling towards the adolescent, much more than the average parent in the community, for both mothers and fathers.

Discussion

Although the 16-item PBI has been used previously in Vietnam, it was not formally validated among adolescents. This study, therefore, contributes knowledge about the psychometric properties of a translated and culturally adapted 16-item Vietnamese version of the PBI (Kendler, 1996). The findings suggest that this version of the PBI is both reliable and valid and can be used to assess parenting styles among adolescents in Vietnam. Reference scores for the 16-item PBI have also been identified which can be used in subsequent studies among young people in Vietnam.

These results were obtained from two studies that surveyed high school students from two main geographical areas of the country, both of which had large sample sizes and very high response rates. We acknowledge that the inclusion of only adolescents who were attending school may affect the generalisability of the findings. Furthermore, the CFI and TFI of the three-factor model in our study were slightly below the acceptable cut-off of a good fit. However, these indices were approached to the cut-off, and the EFA has identified that all factor loadings were precisely the same as the three-factor model suggested by Kendler (1996). Therefore, it indicates that the three-factor model is a better fit than the two-factor model among Vietnamese adolescents. This study had the analysis performed by sex of adolescents using the EFA, the advanced technique such as

exploratory structural equation modelling (ESEM) with multiple groups should be considered in future studies. Furthermore, analysis was data from two different cross-sectional studies conducted which might impact the results due to the disparities in recruitment methods and data collection process.

The 70 students who pilot tested the scale reported similar findings to Tran et al.'s 2013 study (B. P. Tran et al., 2013) thus, providing evidence of the face validity of the shortened 16-item Vietnamese PBI. It was perceived as appropriate and culturally relevant to adolescents in Vietnam.

The finding of a three-factor structure model, representing *Parental Warmth, Overprotection* & *Authoritarianism* in both exploratory factor and confirmatory factor analyses is consistent with models identified in previous studies (Cox et al., 2000; Gomez-Beneyto et al., 1993; Lizardi & Klein, 2002; Mohr et al., 1999; Murphy et al., 1997; Sato et al., 1999; Terra et al., 2009). Similar to other studies (Cox et al., 2000; Lizardi & Klein, 2002; Sato et al., 1999; Terra et al., 2009), we found that the three-factor model suggested by Kendler (Kendler, 1996) provided the best fit to the data. Factor loadings of items in each of the factors, however, were smaller in our sample (ranging from 0.33-0.73), compared to those in Kendler's (range: 0.54-0.73). The lowest factor loadings were for item 4 (emotionally distant), 19 (was overprotective) and 23 (made child dependent). Whether this was a result of the translation process (which led to adolescents' different understanding of these items, compared to the original English items) or reflected differences in the underlying parenting styles of

Vietnamese parents, compared to English-speaking parents in high-income settings, requires further research.

Results from this study were slightly different from Lizardi et al.'s study in the U.S. on 142 outpatients and 45 healthy participants from the community. Both maternal and paternal PBI parental warmth scores in the shortened version were significantly lower in our study than those reported among healthy controls in the sample of the U.S. individuals (Lizardi & Klein, 2002). However, the shortened PBI overprotection and authoritarianism scores for both mothers and fathers in this sample were significantly higher than those in Lizardi et al's. We acknowledge that the findings were based on a comparison of data generated in two studies, in which the disparities in sample size and study sites might influence the results. Nevertheless, recruitment strategies, data sources and data collection were the same and we believe the similarities greatly outweigh the differences between the two studies and that combining the data enables us to provide more reliable estimates of the instrument's psychometric properties in Vietnam.

Differences with regards to the parenting styles of Vietnamese parents and those elsewhere were identified in our comparison of the mean scores across the three subscales for both mothers and fathers in this sample to Lizardi et al.'s study in the US (Lizardi & Klein, 2002). The findings of this study indicate that Vietnamese adolescents tended to experience their parents as less caring, more overprotective and more authoritarian than adolescents in the US did. This is consistent with observations that Vietnamese parents often spend more time in paid employment or

on household chores than talking or interacting with their children. Many Vietnamese parents also hold beliefs about the need for harsh child discipline (Akmatov, 2011). Many parents in Vietnam are concerned about their adolescent children engaged in risky behaviours, such as smoking, using illicit drugs or unsafe sexual practices. As a result, many parents try to protect their children by preventing them from participating in certain activities (such as partying or dating) (Tatyana, Nguyen, & Shin, 2014; Xiong, Detzner, & Rettig, 2001). Such parenting behaviours reflect the influence of Confucian ideology on the Vietnamese society. In this ideology, in which children are completely dependent on their parents and must obey parents without objection. It is thus possible that Vietnamese parents may believe that being strict or even using harsh punishment is an expression of love and care. Therefore, parents in this country might be more likely to be authoritarian towards and overprotective of their children than parents in other countries.

Conclusions

The shortened adapted 16-item version of the PBI tested in this study has been found to be acceptable for use among adolescents in Vietnam. It is recommended that the three-factor model identified in this study, consisting of the parental warmth, protectiveness and authoritarianism subscales, should be used when assessing parental styles among Vietnamese adolescent samples. In light of the high prevalence of child maltreatment and mental health problems among young people (H. T. Nguyen, Dunne, & Le, 2010; N. K. Tran, Van Berkel, van, & Alink, 2017) and lack of parenting programs in Vietnam, further research examining whether parenting

styles are associated with these experiences and adolescents' health and wellbeing is highly recommended. Whether promoting positive parenting styles is protective of these problems in healthcare and the educational setting is another direction that we should focus on.

Table 1. Factor analysis of a 16-item PBI among a sample of 3,209 adolescents in Vietnam (data about mother N= 3,026 & father N= 3,013)

Item	PBI Scale	Item No.	Factor 1 Parental warmth			Factor 2 - Authoritarianism			Factor 3 - Overprotection		
			Mother	Father	Comparison[a]	Mother	Father	Comparison[a]	Mother	Father	Comparison[a]
Spoke with friendly voice	C	1	**0.57**	**0.64**	0.71	-0.10	-0.13		0.01	0.07	
Understood problems	C	5	**0.62**	**0.64**	0.69	-0.03	-0.09		0.03	0.07	
Enjoyed talking	C	11	**0.64**	**0.71**	0.68	-0.11	-0.11		-0.01	0.00	
Smiled frequently	C	12	**0.60**	**0.69**	0.61	-0.17	-0.09		0.11	0.14	
Made child feel better	C	17	**0.63**	**0.70**	0.68	-0.16	-0.10		0.02	0.05	
Was emotionally distant	C	4	0.27	**0.34**	0.59	0.02	0.05		-0.11	-0.12	
Did not talk much	C	18	**0.41**	**0.41**	0.54	0.05	0.09		-0.13	-0.13	
Did not want child to grow up	OP	8	0.02	0.05		0.09	0.05		**0.67**	**0.74**	**0.67**
Controlled everything	OP	9	-0.08	0.00		0.30	0.20		**0.40**	**0.37**	**0.60**
Babied child	OP	13	0.08	0.11		0.02	0.06		**0.67**	**0.74**	**0.73**
Made child dependent	OP	19	-0.17	-0.08		0.13	0.08		**0.27**	**0.33**	**0.72**
Was overprotective	OP	23	0.05	0.13		0.07	0.02		**0.34**	**0.36**	**0.68**
Liked child to make own decisions	OP	7	-0.28	-0.26		**0.50**	**0.57**	0.58	0.04	0.02	
Let child decide things for self	OP	15	-0.11	-0.11		**0.65**	**0.71**	0.60	0.07	0.08	
Gave the child much freedom	OP	21	-0.13	-0.11		**0.62**		0.75	0.09	0.07	
Let child dress as she wanted	OP	25	0.01	-0.01		**0.40**	**0.53**	0.76	0.04	0.02	
Variance explained											
Variance values			2.26	2.72		1.42	1.71		1.30	1.54	

Table 2. Goodness of fit indices for confirmatory factor analyses of a 16-item PBI related to mothers and fathers among a sample of 3,209 high school students in Vietnam

Goodness of fit indices	**Two-factor model**		**Three-factor model**	
	Mothers	**Fathers**	**Mothers**	**Fathers**
Chi2	3405.40	5095.27	1601.79	2115.75
CFI	0.669	0.639	0.849	0.854
TFI	0.618	0.583	0.819	0.825
RMSEA	0.102	0.126	0.070	0.082
SRMR	0.099	0.119	0.061	0.067

Table 3. Summary statistics for PBI subscale scores among a sample of 3,209 high school students in Vietnam

Subscale	**Mother**				**Father**			
	This sample		***Comparison[a]***		***This sample***		***Comparison[a]***	
	Mean	***SD***	***Mean***	***SD***	***Mean***	***SD***	***Mean***	***SD***
PBI Parental warmth (range: 0-21)**	14.08	4.33	17.3	4.3	11.98	5.00	14.3	5.5
PBI Authoritarianism (range: 0-12)**	6.76	3.01	3.9	2.6	6.17	3.41	4.1	2.9
PBI Overprotection (range: 0-15)	6.05	3.64	4.5	2.8	5.13	3.83	3.9	2.6

[a]: Comparison data from 45 normal controls of Lizardi et al.'s study, conducted in the USA (Lizardi & Klein, 2002)

*** p<0.0001 for comparison between means of this sample and those of Lizardi et al.'s (Lizardi & Klein, 2002) (for both maternal and paternal PBI scores)*

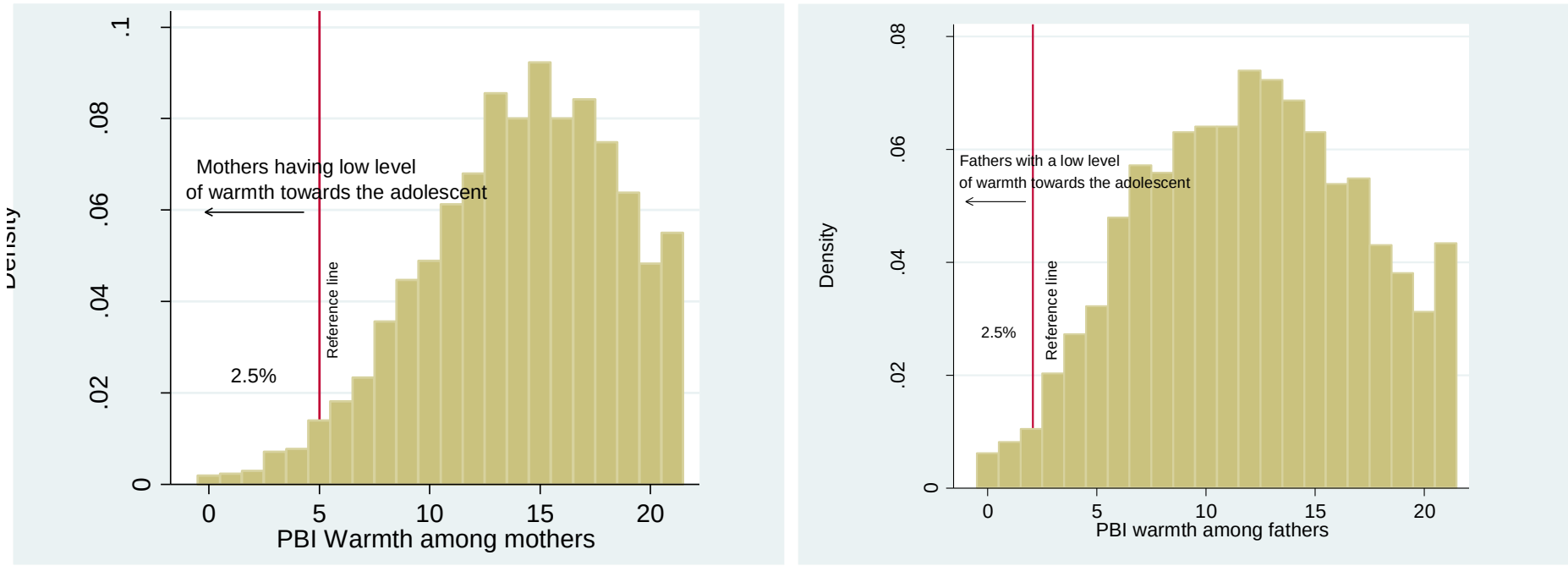

Figure 1. Distribution of PBI warmth scores among mothers and fathers, as rated by a sample of 3,209 high school students in Vietnam

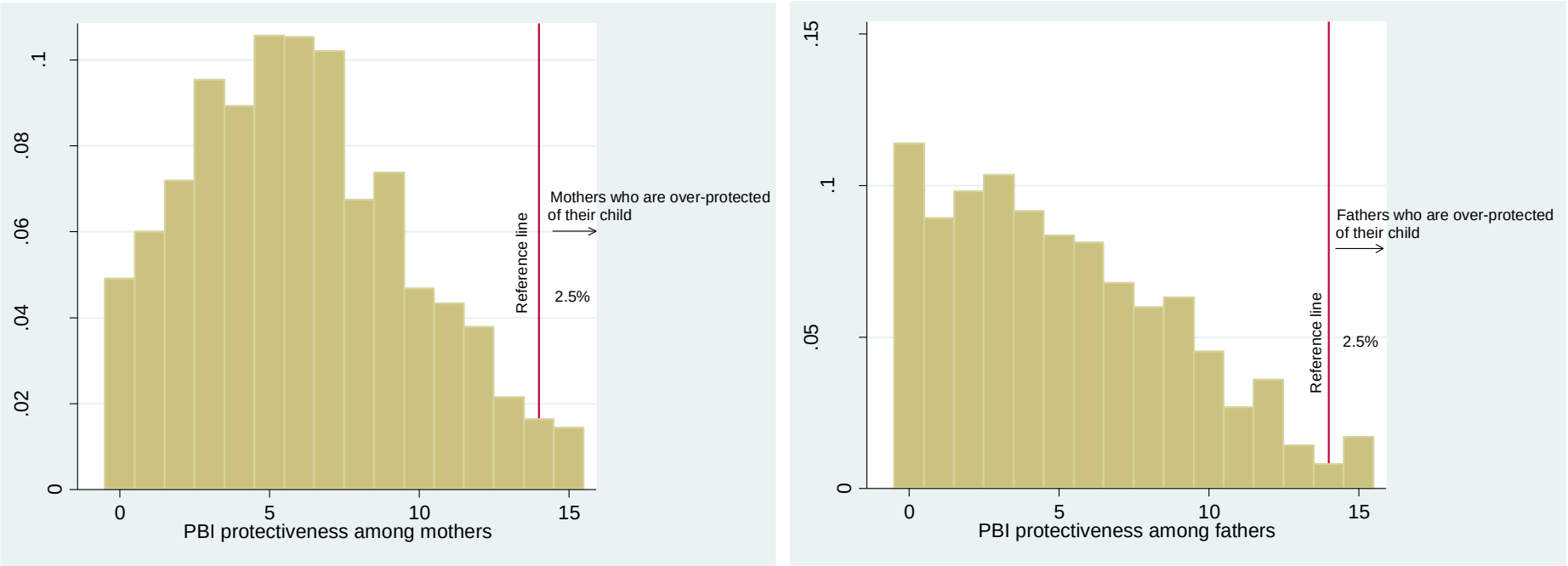

Figure 2. Distribution of PBI protectiveness scores among mothers and fathers, rated by a sample of 3,209 high school students in Vietnam

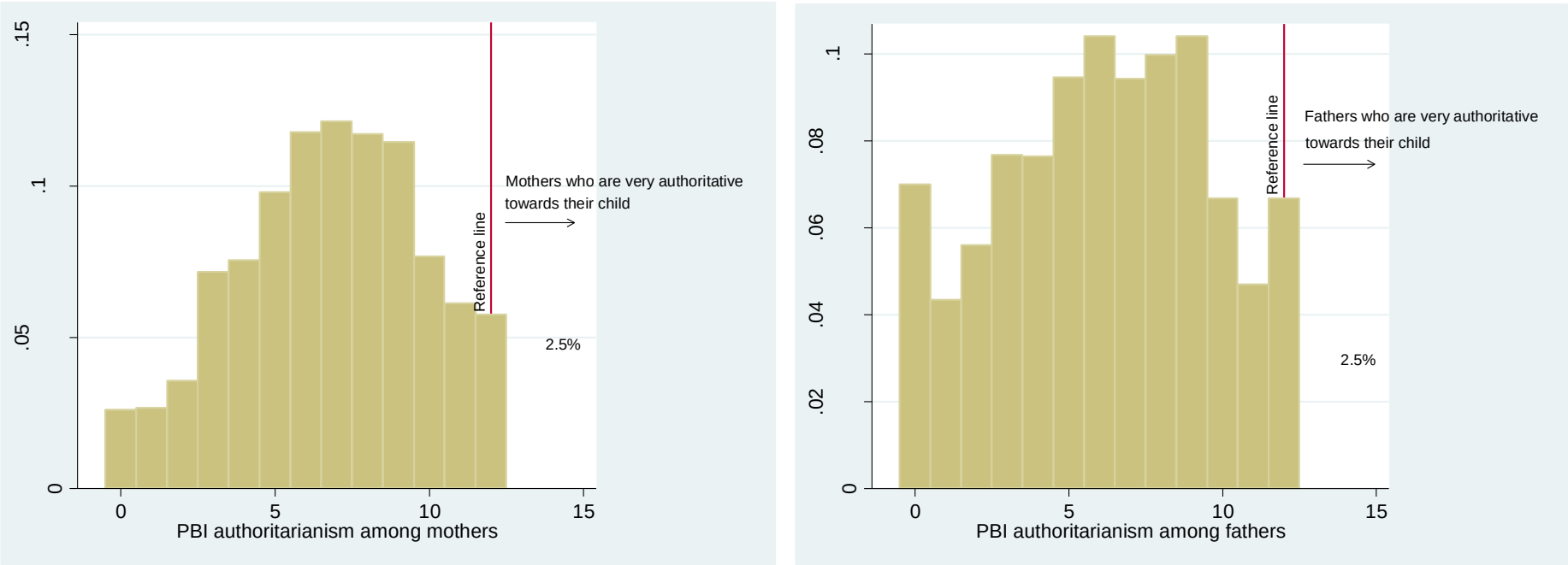

Figure 3. Distribution of PBI authoritarianism scores among mothers and fathers rated by a sample of 3,209 high school students in Vietnam

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- **Mental health problems**

Mental health problems investigated in the current study included depression, anxiety, depression, loneliness scales and four questions about suicidal ideation and behaviours.

Depression-Anxiety-Stress Scale (DASS-21) (Lovibond & Lovibond, 1995) includes 21 items comprising three independent scales, namely, Depression, Anxiety, and Stress. This scale was translated and locally validated for screening the related symptoms among the young population in Vietnam by Tran et al. (T. D. Tran, Tran, & Fisher, 2013). In this study, performed confirmatory factor analyses revealed the four-factor model of the DASS-21 on 1,387 Vietnamese students, including general distress, depression, anxiety, and stress. The internal consistency of the DASS-21 was acceptable with Cronbach's alpha from 0.76 to 0.91 (T. D. Tran et al., 2013). The total score named general distress score was retrieved by summing all 21 items. The range score, therefore, is from 0 to 63. Each subscale, embracing seven items with its score, was gained by summing scores of the relevant items. The higher the score, the higher the level of general distress, depression, anxiety or stress (Lovibond & Lovibond, 1995). In this study, only the scores of three subscales were used for analysis.

Loneliness among adolescents was assessed using the ***8-item UCLA Loneliness Scale*** which is a short version of the well-known 20-item UCLA Loneliness Scale (Russell, 1980). This short form was revised by Hays and DiMatteo based on the eight items loading of the first extracted factors in their exploratory factor analysis (Hays & DiMatteo, 1987). This scale has been widely used and shown good internal consistency and convergent validity (Hays & DiMatteo, 1987; Swami, 2009; Wilson, Cutts, Lees, Mapungwana, & Maunganidze, 1992; Wu & Yao, 2008). Items are rated on a 4-point scale from 1 (Never) to 4 (Always). The

loneliness score was calculated by summing all items, in which two items were reverse-coded. The score range is from 20 to 80. Participants with a higher score were at a higher level of loneliness (Hawkley, Browne, & Cacioppo, 2005; Russel, 1996).

Suicidal ideation was assessed by two single-item questions. Especially, the lifetime prevalence of suicidal ideations was assessed by asking:

"*During your life, have you ever seriously thought about killing yourself?*", and

"*During your life, have you ever made a plan about how you would attempt kill yourself?*".

The remaining two questions were about the last 12-month prevalence and frequency of participants' thoughts about killing themselves. These two questions followed the five-point Likert scale ranging from Never, Rarely (1 time), Sometimes (2 times), Often (3-4 times), and Very often (5 or more times).

- **School Connectedness**

School connectedness, which is understood as the bond and the sense of belonging that students feel about their school, was assessed using the ***School Connectedness Scale (SCS).*** This scale includes five items that were established by Resnick et al. in 1997 from a National Longitudinal Study about American Adolescent Health (Resnick et al., 1997). Using a 5-point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree), participants choose the level which best suits their feeling of connection with the school in general and about people at school. The range of school connectedness score is from 0 to 20 with a higher score indicating the more connection feeling that the student has about their school. This scale has a good internal consistency among adolescents with a reported Cronbach's alpha of 0.79 (McNeely, Nonnemaker, & Blum, 2002) and has been used among Vietnamese

adolescents in Pham's study (B. Pham, 2015), in which the study confirmed the comprehension and well-response from participants.

- **Conflicts with teachers and school staff**

The three following questions were used to assess the conflicts between students and teachers and/or staff at school in a one-year period:

"*Have you ever had a serious quarrel with your teachers or other staff at school in the past 12 months?*",

"*Have you ever been scolded, threatened, or humiliated by your teachers or other staff at school in the past 12 months?*", and

"*Have you ever been physically punished (such as standing punishment, beaten with a fist or other objects, or kicked) by your teachers or other staff at school in the past 12 months?*".

For each question, students choose one of the following options: "Never" (coded with 0), "Sometimes" (coded with 1), and "Often" (coded with 2). The range of total score is from 1 to 6 with a higher score indicating more conflicts with teachers or school staff. The scale has been used among Chinese and Vietnamese high school students (B. Pham, 2015; Sun, Dunne, Hou, & Xu, 2012).

- **Relationship with peers**

Relationship with peers was assessed in this study including conflict with peers, social isolation and breaking up with girlfriend/boyfriend. All related questions and scales regarding the relationship with peers have been used among Chinese and Vietnamese adolescents (B. Pham, 2015; Sun et al., 2012; Thai, 2010).

- Conflict with peers

Conflicts with peers were assessed using the four following questions:

"Have you ever had a serious quarrel with your fellow students at school in the past 12 months?",

"Have you ever been involved in physical fighting with your fellow students at school in the past 12 months?",

"In the past 12 months, have any of your fellow students ever bullied you emotionally at school, such as insulting you, calling your names, teasing you, threatening you, and humiliating you?", and

"In the past 12 months, have any of your fellow students ever bullied you physically at school in any way?".

Each question has three response options, classified as "Never", "Sometimes", and "Often", coded with 1, 2, and 3, respectively. The score ranges from 4 to 12. The higher the score, the more conflict with peers that students experienced. The scale has been used among Chinese and Vietnamese high school students (B. Pham, 2015; Sun et al., 2012).

- Social isolation

One single question was used to assess whether correspondents are socially isolated: "*Do you have one or more close friends you can talk to about your problems?*". There are four options of the answer, in which "None" suggest that students are socially isolated from peers while the rest of three, including "Only one", "A few", and "Many" suggest that students are non-socially isolated. This question has been used among students in Pham's 2015 study (B. Pham, 2015).

- Break up with girl/boyfriend

Breaking up with girl/boyfriend was asked by using one survey question "*In the past 12 months, have you ever experienced a breakup with a girlfriend/boyfriend?*" with three response options: "Never", "Yes" and "Have never had a girl/boyfriend".

- **Perceived study satisfaction**

Perceived study satisfaction was measured using a question: "Last semester, how satisfied are you with your academic results?" with four answer options: "Very satisfied", "Moderately satisfied", "Moderately dissatisfied", "Very dissatisfied". Students who answered the first two options were categorised to satisfaction and the last two options were categorised to dissatisfaction to their last semester's academic achievement.

- **Cyber-bullying**

Cyber-bullying is defined as a type of bullying using digital technology, such as mobile phone, internet or email. Cyber-bullying occurs between people who know each other, such as friends at school; however, the offenders usually hide themselves behind the technology (Donegan, 2012). To assess cyber-bullying among high school students, the ***Cyber-bullying Victimisation Scale*** which was developed by Patchin and Hinduja in 2010 (Patchin & Hinduja, 2010) (Cronbach's alpha among American students was 0.74) and some new items were applied among Vietnamese adolescents from Pham's study (B. Pham, 2015). All questions target whether students experienced any of six forms of cyber-bullying in a one-month period. Options of answer include "Never", "Once or twice", "Two or three times a month", "About once a week" and "Several times a week", coded 0, 1, 2, 3 and 4, respectively. The higher score indicates more experience of cyber-bullying.

The complete version of the measurements used for data collection in this study is presented in Appendix 3 and 4.

3.3.2.5. Data collection procedure

Seven days prior to data collection, explanatory statements for students, parents/guardians were distributed to the students in selected classes. Students handed these letters to their parents/guardians. The objectives, procedures, rights of participants, potential risks and benefits, withdrawal information, and contact details of the research team, as well as psychological support, were explained in plain Vietnamese language.

- For students less than 18 years old, passive parental consent was sought. Parents were advised to complete and sign the withdrawal form if they do not want their children to participate in the research; otherwise, parental consent would be implied. This form then was submitted to the student researcher together at the day of collecting data.
- For those aged 18 years, they were not obligated to participate, and they did not need parental consent. They were informed that consent was implied by their completion of the questionnaire.

Three data collectors, who were research assistants of the Department of Psychology and Pedagogy, University of Education (Hue University, Vietnam), were recruited and participated in a one-day training about the data collection for this study by the student researcher.

On the day of data collection, during a class period assigned by the school, the researcher group approached selected classes, reminded students about the objectives, responsibilities, and consent of participating in the study. Any study-related questions the students raised were addressed in front of the class. To ensure

confidentiality, anonymous questionnaires were delivered to students by trained researchers without the presence of class teachers, parents, or school staff.

Each student presenting in class on the date received an envelope with the questionnaire inside and were encouraged to answer all the items. Students whose parents did not permit them to participate or who did not want to take part in the research were asked to stay in class, received the questionnaire like other students. However, they would leave the questionnaire blank and be allowed to read or complete their academic tasks quietly. They were asked to place the disagreement form from their parent/guardian if they had one, together with their blank questionnaire into the provided envelope and keep it until the end of the session. At the end of the session, all students sealed the envelope with the questionnaire inside and returned to the research student regardless of whether the questionnaire had been completed or not.

3.3.2.6. Data management

All collected questionnaires were checked for completeness by the research student. If a student had left more than half of the items of a standardized instrument uncompleted, data from that student were not included in the analysis related to that instrument.

The data were entered to the computer by the Epi Data version 3.1 (Lauritsen & Bruus, 2003-2005), password-protected and saved in the project folder in the S: drive of Monash University, which is only accessed by the researchers of this study.

Data were cleaned using Stata version 14.0 (StataCorp, 2015) before conducting the analyses. Frequency distributions of all variables were generated and checked for invalid response codes. Inconsistent responses were re-checked with the original questionnaires. All hypotheses were tested with $p < .05$ as the level of statistical significance.

Completed surveys were secured in a locked cabinet at Hue University of Education (Vietnam) during the period of data collection. All questionnaires were then packed and delivered to Australia by aeroplane as cabin luggage. They were all stored in a locked filing cabinet in a locked office at the School of Public Health and Preventive Medicine, Monash University, which is only accessible to the student researcher and supervisors. The paper-based data will be shredded using paper shredders after five-year storage. Data that were in electronic forms including data files will be kept permanently, using Monash University ARROW (Australian Research Repositories Online to the World) Repository or LaRD (Large Research Data Storage).

The DASS-21 yielded three scores for depression, anxiety and stress symptoms. Scores of each subscale were gained by summing all its seven relevant items. The score range for each subscale was from 0 to 21. The higher the score, the higher the level of depression, anxiety or stress (Lovibond & Lovibond, 1995).

Loneliness was evaluated based on the score calculated by summing all eight items after reverse-coding two items. The score ranged from 8 to 32. Students, who self-reported a high score, were at higher risk of being lonely (Hawkley et al., 2005; Russel, 1996).

The TEIQue-ASF included Global EI which is the total EI score and four subscale scores. Global EI score was the average sum of all 30 items with some reverse-coded items. Students who had a higher score were better. Each subscale's scores were the average of all related items. However, there were four independent items which did not belong to any subscale and only contributed to the Global score. The range for the Global score and all its subscale scores were from 1 to 7 (Petrides, 2009b).

The two separated PBI questionnaires for mother and father yielded three subscale scores: Warmth, Overprotectiveness, and Authoritarianism. Each subscale score was

the sum of all related items. The score range of the Warmth subscale was 0 to 21, Overprotectiveness was 0 to 15, and Authoritarianism was 0 to 12 with higher scores indicating a higher experience of each dimension (Kendler, 1996).

The school connectedness total score (ranging from 0 to 20) was the sum of all items with a higher score indicating a greater feeling of connection that student has about his/her school.

The score of conflicts with teachers, school staff (range from 0 to 6) and conflicts with peers (range from 4 to 12) was the sum of all related questions, with the higher score indicating the more conflicts the students had.

Regarding social isolation, “None” suggests a student is socially isolated from peers, while the remaining three "Only one", "A few", and "Many" suggest that a student is non-socially isolated.

The cyber-bullying score (range from 0 to 24) was calculated by summing all items. Higher scores indicate more experiences of cyber-bullying.

3.3.2.7. Data analyses

To examine the research questions, appropriate data analysis was applied and are described in detail in each manuscript in chapter 4, 5, 6 and 7 of this thesis. In summary, the statistics used were:

- Descriptive statistics including mean and standard deviation or mean and interquartile range for continuous variables, frequency and percentages for categorical variables were calculated. Correlation coefficients *(r)* were used as an estimate of the relationship between EI and mental health problems.
- Statistical tests for significance including both parametric and non-parametric were used where appropriate.

- Multiple linear regression was used to examine the associations between EI and symptoms of mental health problems (depression, anxiety, stress, loneliness and aggression score) while controlling for other factors.
- Multiple logistic regression was used to examine the association between EI and suicidal ideation (dichotomous outcome) while controlling for other factors.

3.4. ETHICS APPROVAL

Monash University's Human Research Ethics Committee (Project No.: 2016-0610) and the Institutional Review Board of the Hue University of Medicine and Pharmacy (Project No.: 01-102016/DHYDH) approved this study.

Before conducting the data collection process, written approvals were obtained from the Director of Thua-Thien-Hue Province's Department of Education and Training and principals of all nine participating high schools.

Participating in this study was voluntary. Passive parental consent was obtained by returning the signed withdrawal form to the research team. Otherwise, an agreement for participation was applied. Student consent was implied when they returned their completed questionnaire. All students and their parents/guardians understood that they could withdraw from the study at any time during the date of data collection without explaining any reasons. Their withdrawal would never have any effect on either their studying or teachers' behaviours to them at school.

The questionnaire was anonymous. Students were not allowed to write down their names at any places on the questionnaire as well as the provided envelope. However, students were explained that the code of their school was written on the top right corner of their questionnaire's front cover. It is also made clear that after submitting the questionnaire, the students and their parents were unable to change

their mind and withdraw from the study due to the inability to identify their individual questionnaire.

Students did not have to answer any questions that they did not want to. If students felt uncomfortable during the survey session, they could stop answering the questionnaire, remain in class quietly and return the questionnaire in the sealed envelope at the end of the session.

Students were asked to fold the completed page of the questionnaire under so that others could not see their responses while they were being completed.

If there were a risk that student might experience distress during or after answering the questionnaire, they were encouraged to talk to the research team privately or contact any of the provided free services listed in the Explanatory Statement, which was distributed to them one week before the data collection date.

CHAPTER 4. EXISTING EVIDENCE OF MENTAL HEALTH PROBLEMS AMONG ADOLESCENTS IN VIETNAM: A SYSTEMATIC REVIEW

This chapter describes findings from the first component of this project – a systematic review of prevalence and determinants of common mental health problems among adolescents in Vietnam. The manuscript has been submitted in the *BMC Public Health* for consideration of publishing.

Manuscript 2. The prevalence and determinants of mental health problems among adolescents in Vietnam: A systematic review

The prevalence and determinants of mental health problems among adolescents in Vietnam: A systematic review

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Abstract

Background: Mental health problems among adolescents are prevalent in low and middle-income countries. However, there is limited understanding of this burden in Vietnam where adolescents make up approximately 20% of the total population.

Aim: The aim was to review the current evidence on the prevalence and determinants of mental health problems among adolescents in Vietnam.

Methods: The review followed the PRISMA guideline. Online databases, including Medline, Embase, Cinahl, PsycINFO, Scopus, Web of Science were searched for peer-reviewed papers in English. A manual search of local journals was conducted to identify papers published in Vietnamese. The reference lists of all included papers were searched for further documents that had not been determined. Experts and authors were approached to access the full-text papers or theses. The review included publications published up to 1st May 2018.

Results: In a total of 2,643 retrieved records, 21 papers met the inclusion criteria and were critically reviewed by three researchers. Depression, anxiety, stress and suicidal ideation were the most common mental health problems reported. The proportion of young people experiencing mental health problems was higher than reported in high income and other low and middle-income countries. Suicidal ideation was more prevalent in the North and the South than in Central Vietnam. Poly-maltreatment, emotional and physical abuse, poor emotional support from family, and pressure from the massive academic program were the most consistently identified risk factors for mental health problems.

Conclusion: Mental health problems among adolescents in Vietnam are prevalent and multi-factorially determined. The prevalence varied by regions. There is less evidence in the Central, Highland and islands than other areas of Vietnam.

Keywords: adolescents, low- and middle-income countries, mental health problems, systematic review, Vietnam.

PROSPERO number: CRD42017046486

Introduction

The World Health Organization (WHO) defines mental health as "*a healthy condition of a person's emotional, psychological, and social well-being, in which he/she can cope with stressful situations, work productively and has the ability to contribute to society's development*" (WHO, 2003, 2004). A mental health problem is indicated by abnormal thoughts, behaviours, and interactions. If unassisted, a person, who experiences a mental health problem early in life can experience severe and long-lasting adverse consequences for subsequent health, development and capacity to participate in education, employment and social relationships (WHO, 2005).

Adolescents, defined as people whose ages range from 10 to 19 years, constitute 16.4% of the global population (UNICEF, 2016; WHO, 2014). Adolescence is one of the most vulnerable developmental stages because of the social and emotional demands of progressing from being a dependent child to an independent adult(Keller, Cusick, & Courtney, 2007). Young people with mental health problems have higher rates of health risk behaviours, including substance use; suicidal ideation; poor relationships; difficulties in completing education and securing income-generating work, and they are higher users of health care than all other users (Knopf, Park, & Mulye, 2008).

Globally, many national surveys investigating adolescents' mental health have been conducted with samples representative of the general population. About 10-20% of adolescents experience a mental health problem each year, with lower proportions in high-income countries than in low- and middle-income countries (LMICs) (Kieling et al., 2011). Strong epidemiological evidence about the prevalence of mental disorders among adolescents is available in most high-income countries. In Great Britain, the most recent national survey

on mental health problems in 2005 revealed that 11.5% of children and adolescents aged from 11 to 16 years met the International Classification of Diseases-Tenth Edition (ICD-10) diagnostic criteria for at least one mental disorder (H Green, McGinnity, Meltzer, Ford, & Goodman, 2005). An Australian 2015 national survey, which used the Diagnostic Interview Schedule for Children Version IV (DISC-IV) reported that 7.7% of adolescents aged 11 to 17 met the Diagnostic and Statistical Manual of Mental Disorders-Fourth version *(*DSM-IV) diagnostic criteria for a major depressive disorder in the prior 12 months. In addition, this survey indicated that 19.9% of the adolescents had high or very high levels of psychological distress reflected in scores on the Kessler Psychological Distress Scale (Kessler, Andrews, & Colpe, 2002). Overall, 23.1% of adolescents aged from 12-17 years with a mental disorder had a severe disorder (Lawrence et al., 2015). In a longitudinal study in the United States of America, the 3-month prevalence of at least one psychiatric disorder among children and adolescents aged 9 – 13 years in the community assessed by DSM-IV criteria was 13.3% (Costello et al., 2003). Another national survey conducted in 2010 in this country, using the modified World Health Organization Composite International Diagnostic Interview on school and community adolescents from 13-18 years, reported that 14.3 to 31.9% of the participants met the DSM-IV criteria for a mental health disorder (Merikangas et al., 2010).

Almost 90% of the world's adolescents live in LMICs, and mental health problems were likely to be more prevalent among young people in these nations than in high-income settings. For instance, Kieling and colleagues (2011) reported that the prevalence of teenagers' mental health problems ranged from 10 to 20% (Kieling et al., 2011). In India, Bansal and Barman (2011) measured psychiatric morbidity among school students aged 10-15 years based on the ICD-10 criteria and found that 20.2% of participants met criteria for a current psychiatric illness (Bansal & Barman, 2011). The prevalence was much higher in China, from which the moderate and severe psychological distress among students aged 13-18 using K-10 was 40.1% (Huan, Xia, Sun, Zhang, & Wu, 2009). In Indonesia, a cross-sectional study, conducted in an urban area of a province in West Java, measured psychological distress among 10th-grade students by the Hopkins Symptoms Checklist 25 (HSCL-25) with a cut-off point of 1.75. This study found that 64.7% of students experiencing psychological distress (Utama, 2014). Although most studies in LMICs used screening tools instead of diagnostic measurements like those in high-

income countries, findings from these studies suggested that mental health problems among adolescents constitute a burden in LMICs.

Evidence from literature also showed that mental health problems among adolescents are multi-factorially determined. Bronfenbrenner (1979) formulated the ecological theory of human psychological development. It asserts that the mental health of a person reflects individual characteristics, which include personality factors, capacity for emotion regulation, cognition capability, age, and sex; and interactions of these with external factors including relationships with their families and friends, schools and society (Bronfenbrenner, 1979, 1995). Each element within the three domains of individual, family and community can act to protect against or increase the risk of mental health problems.

Vietnam is a lower-middle-income country (The World Bank, 2011) and the second most populous in Southeast Asia with 92.7 million inhabitants including 54 ethnic groups (General Statistics Office of Vietnam, 2016). Adolescents make up approximately 20% of the total population. Vietnam experienced a long history of more than 1,000 years being dominated by Chinese feudalism and then a one-hundred-year period of the war against France and America. After ending the war of independence and experiencing freedom throughout the country in 1975 and implementing the revolution in 1986, Vietnam turned from a bureaucratic and subsidised economy into a socialist-oriented market economy with the sharp focus on economic, cultural and educational development. Vietnam has achieved impressive economic development recently (Weiss et al., 2011). However, there is limited investment in health, including mental health among adolescents. Although the war ended more than 40 years ago, its impact on the country remains and creates unique Vietnamese characteristics. The mental health of adolescents is worth considering in this country due to the strong dependence of this age on adults who were born and grew up through the war and the existence of feudalism.

This study aims to review the current evidence on the prevalence and determinants of mental health problems among adolescents in Vietnam.

Methods

Search strategy

A systematic search was conducted to identify potential studies in seven electronic databases: MEDLINE, EMBASE, CINAHL, PsycINFO, SCOPUS, and Web of SCIENCE.

Studies were identified by searching all fields: title, abstract, content, text tables, and references. The key-search terms were "mental health problems", "adolescents" and "Vietnam", from which each term was exploded, adapted appropriately and used separately for each database. All the terms were connected with "AND" to filter original potential papers (see Table 1).

Given the limited Vietnamese language resources available in international electronic databases, manual searching of print versions of Vietnamese scientific journals was conducted. Authors of conference abstracts were contacted to seek any further publications in Vietnamese. Scanning the reference lists of papers meeting inclusion criteria was used to identify any papers missed in the search. Retrieved papers were published before the 1st May 2018.

Inclusion and exclusion criteria

Eligible papers were required to meet both the following inclusion criteria:

(1) Written in English or Vietnamese

(2) Reporting a study investigating the prevalence and/or determinants of any mental health problem among people aged 10 to 19 years living in Vietnam.

Exclusion criteria included studies conducted on adolescents with disabilities, or Vietnamese-born or Vietnamese-identified people living outside Vietnam.

Selection of studies

The Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol was used to guide the four stages: identification, screening, eligibility and inclusion in the systematic review (Moher, Liberati, Tetzlaff, Altman, & The PRISMA Group, 2009).

All records' titles identified in the electronic databases or printed papers from manual searches of the Vietnamese literature as potentially meeting inclusion criteria were screened

to exclude duplicates. Titles and abstracts were screened for eligibility, and then full-text articles of those appearing to meet inclusion criteria were retrieved. All publications/studies that did not meet the inclusion criteria were eliminated.

Data extraction

Principle information from each study was extracted and is presented in Table 2 (Appendix 1).

Quality assessment

The quality of each paper was assessed using a formal quality assessment tool. Three authors examined the full texts of all potentially eligible articles independently. Considering the complexity of studies which included both quantitative and qualitative methodology in this review, the checklist of Kmet and the Critical Appraisal Skills Programme (CASP) (Critical Appraisal Skills Programme, 2017; Orton et al., 2011) were chosen respectively for assessing the quality of information in each paper (Kmet, Lee, & Cook, 2004). However, to increase the accuracy in evaluating qualitative studies or the qualitative component of "mixed-method" studies, a new checklist was adapted based on Kmet and CASP. For both quantitative and qualitative assessment, a "Yes" assessment was scored two, a "Partial" assessment received a score of one, and a "No" assessment was scored zero. An "N/A" classification was given for criteria which were not applicable to the study design (Table 3 and 4, Appendix 2). The final quality score for each paper was the sum of scores gained across all relevant items (excluded "N/A" assessment) divided by the total of the maximum possible score. The highest scores for quantitative or qualitative components of a study is one (Kmet et al., 2004).

Data analysis

Included in this review were various quantitative or mixed methods studies; therefore, the method of aggregative synthesis by summarising the data with a narrative summary of the evidence was applied. Determinants of mental health problems, including risk and protective factors, were identified and then grouped into three main domains based on the ecological model of Bronfenbrenner (Bronfenbrenner, 1979): individual characteristics, environmental context (family, school and community), and linkages among environmental settings.

Results

The search yielded 2,616 records from the electronic databases and 27 from other sources. After screening of general contents via titles and abstracts, papers that did not meet the inclusive criteria were eliminated, such as papers not in either English or Vietnamese; duplicates; non-relevant studies on adolescents; studies targeting specific samples such as adolescents who were refugees or adolescents with HIV, or disabilities, investigations of adults; case studies or case reports (Table 4, Appendix 3). In total, 48 papers were selected for retrieval and full-text review. Among these, the full versions of seven papers were not accessible (Anh, Minh, & Phuong, 2006; D. T. K. Le, 2007; Ngo, 2007; Nguyen, 2005, 2010; Thai, 2010; Tran, 2007). Twelve papers did not report the prevalence or determinants of mental health problems among adolescents (Arunachalam, Nguyen, & Quy, 2015; Huynh, 2012; M. Le, S. Holton, H. Nguyen, R. Wolfe, & J. Fisher, 2016b; M. Le, T. Tran, H. Nguyen, & J. Fisher, 2014; D. Nguyen, 2016; T. Nguyen, Le, & Dunne, 2007; T. T. A. Nguyen, 2016; Phan, 2016; L. T. M. Tran, 2014; L. T. M. Tran & Nguyen, 2013; T. T.-A. Tran et al., 2011; Vo et al., 2005a). Eight studies had samples of mixed ages and did not disaggregate the prevalence or determinants of mental health problems among adolescents (T. V. Nguyen et al., 2010; V. T. Nguyen, Dalman, & Thiem, 2009a; T. T. H. Tran, Jiang, Nguyen, Pham, & Hans, 2005) (Robert Blum, Sudhinaraset, & Emerson, 2012) (Dinh, Yasuoka, Poudel, Otsuka, & Jimba, 2013) (Q. A. Tran, 2015b) (Doan, 2011) (Do, 2012) (Figure 1). Finally, 19 papers and two theses reporting data from 18 studies met inclusion criteria for the review. Sample sizes of studies ranged from 55 to 6,508, and in total, the experiences of 28,539 adolescents were included.

Characteristics of reviewed resources

Among the 18 studies reported in 21 publications, twelve were published in English and six in Vietnamese. Fourteen studies used quantitative research methods, including three secondary analyses of data from the *Survey Assessment of Vietnamese Youth* (SAVY) in 2004 and 2009 (Cu & Blum, 2015; Kaljee et al., 2011; M. Le, H. Nguyen, T. Tran, & J. Fisher, 2012), one cross-sectional survey using structured interviews with parents (A. Amstadter et al., 2011), one using parent-report questionnaire (McKelvey, Davies, Sang, Pickering, & Hoang, 1999), eight cross-sectional surveys of young people using self-report questionnaires (M. Le et al., 2016a; M. T. H. Le, S. Holton, H. T. Nguyen, R. Wolfe, & J. Fisher, 2016;

McKelvey et al., 1999; D. Nguyen et al., 2013; H. Nguyen et al., 2009; T. T. P. Pham, 2014; Pradhan, Wynter, & Fisher, 2015; Thai et al., 2015; B. P. Tran et al., 2013; T. N. Tran, 2015a, 2015b), and one using both parent- and self-report questionnaires (Weiss et al., 2014). One paper reported only the qualitative component of a mixed-method study (D. T. Nguyen, Dedding, Pham, & Bunders, 2013). The remaining six studies used mixed quantitative and qualitative methods (B. D. Nguyen, 2014; D. Nguyen et al., 2013; H. Nguyen, 2006; H. Nguyen & Nguyen, 2012; B. Pham, 2015; V. T. Pham, 2016; Stratton et al., 2014).

Of the 21 publications, 15 reported the prevalence of mental health problems, and 18 described risk and/or protective factors for mental health problems among adolescents in Vietnam. Nine out of 18 studies were conducted in the North of the country (M. Le et al., 2016a; McKelvey et al., 1999; B. D. Nguyen, 2014; H. Nguyen et al., 2009; H. T. Nguyen, 2006; T. T. P. Pham, 2014; V. T. Pham, 2016; B. P. Tran et al., 2013; T. N. Tran, 2015a), three in the Centre (A. Amstadter et al., 2011; H. Nguyen & Nguyen, 2012; Stratton et al., 2014), four in the South (D. Nguyen et al., 2013; D. T. Nguyen et al., 2013; Thai et al., 2015; T. N. Tran, 2015b), and five covered all three areas of the country (Cu & Blum, 2015; L. C. Le & Blum, 2011; M. Le, H. Nguyen, T. Tran, & J. Fisher, 2012; B. Pham, 2015; Weiss et al., 2014).

Most reports described the population from which the study samples had been recruited. Two studies recruited participants via a population-based sampling method in urban (McKelvey et al., 1999), or both urban and rural areas (A. Amstadter et al., 2011; Stratton et al., 2014; Weiss et al., 2014). Sixteen studies used school-based sampling methods, in which three recruited students from schools in both rural and urban areas (M. T. H. Le et al., 2016; H. T. Nguyen, 2006; H. T. Nguyen, M. P. Dunne, & A. V. Le, 2009; T. T. B. Pham, 2015), seven were conducted among those from schools in urban and/or suburban areas (D. Nguyen et al., 2013; D. T. Nguyen et al., 2013; H. Nguyen & Nguyen, 2012; T. T. P. Pham, 2014; Thai et al., 2015; B. P. Tran et al., 2013; T. N. Tran, 2015a), one from schools in rural area (B. D. Nguyen, 2014), and one from schools where the location was not made clear (V. T. Pham, 2016). One study selected participants from both community and school (T. N. Tran, 2015b). The remaining three papers reported results from secondary analyses of the data from nationally representative samples recruited through household surveys (Cu & Blum, 2015; L. C. Le & Blum, 2011; M. T. Le, H. T. Nguyen, T. D. Tran, & J. R. Fisher, 2012).

In most papers written in English, multiple stage random sampling methods had been applied for recruiting participants, except for one study, which used convenience sampling (H. T. Nguyen et al., 2009). The six papers in Vietnamese specifically did not report recruitment methods (B. D. Nguyen, 2014; H. Nguyen & Nguyen, 2012; T. T. P. Pham, 2014; V. T. Pham, 2016; T. N. Tran, 2015a, 2015b).

Mental health problems were chosen as the primary outcome in fifteen studies. Among these, six assessed multiple mental health problems (A. Amstadter et al., 2011; M. Le et al., 2012; McKelvey et al., 1999; D. Nguyen et al., 2013; D. T. Nguyen et al., 2013; Weiss et al., 2014) while the other nine investigated only one mental health problem, such as self-harm behaviour (Cu & Blum, 2015; L. C. Le & Blum, 2011; B. P. Tran et al., 2013), anxiety (H. Nguyen & Nguyen, 2012; V. T. Pham, 2016; T. N. Tran, 2015a, 2015b), post-traumatic stress disorder (B. D. Nguyen, 2014), or behavioural disorder (T. T. P. Pham, 2014).

To identify mental health problems among adolescents, twenty-four different questionnaires, scales and checklists were used among studies, including parent-report and self-report measurements. The most commonly used measurement was the Center for Epidemiological Studies Depression Scale (CES-D) for assessing symptoms of depression. This tool has been used in studies by Nguyen (H. T. Nguyen, 2006), Tran (Tran, 2007), and Thai (Thai, 2010) with the good internal consistency of Cronbach's alpha 0.85, 0.82 and 0.86, respectively. The cut-off point that was used in all these studies to classify participants as possibly being depressed was a score of more than 16 (D. Nguyen et al., 2013; H. T. Nguyen, 2006; H. T. Nguyen et al., 2009; T. T. B. Pham, 2015; Thai et al., 2015). However, this cut-off point has not been validated against a gold standard diagnostic measure among adolescents living in Vietnam. The Strengths and Difficulties Questionnaire (SDQ-25) was used in two studies (A. Amstadter et al., 2011; Stratton et al., 2014). Nonetheless, no available information about the SDQ-25 validation among Vietnamese adolescents was provided or is otherwise available. The Depression, Anxiety and Stress Scale – 21 (DASS-21) used by Le (M. Le et al., 2016a) was validated for local use among Vietnamese adults only (D. T. Tran, Tuan, & Fisher, 2013). The Anxiety Scale was reported as a validated measurement in two studies (D. Nguyen et al., 2013; Thai et al., 2015); yet, the validation data about this instrument were not accessible to enable assessment of the quality of validation.

Within the 21 reviewed papers meeting inclusion criteria, seventeen used instruments that were not validated in Vietnam at the time of conducting the study. These included the CBCL (McKelvey et al., 1999) (T. T. P. Pham, 2014), the World Health Organization-Five Well-being Index (WHO-5) (T. T. B. Pham, 2015; Thai et al., 2015), the Kessler Psychological Distress Scale (K-10) (B. Pham, 2015; Thai et al., 2015), the Youth Risk Behaviours Survey (YRBS) (M. Le et al., 2016b), the Carl Jung's Anxiety Scale (H. Nguyen & Nguyen, 2012), the H.J. Eysenck Personality Questionnaire (H. Nguyen & Nguyen, 2012), the Muris' and Myers' Anxiety Scale, the Behavioural-Emotional Disorder Youth Self-report (T. N. Tran, 2015b), the Parental Authority Questionnaire (PAQ), the Child's Report of Parental Behaviour Inventory (CRPBI) [16], the Spitzer's General Anxiety Disorder Scale (GAD-7), the Phillip's Anxiety Scale, and Rosenberg's Self-esteem Scale (T. N. Tran, 2015a). The investigators had commenced cultural adaptation of these questionnaires by translating the tool from English to Vietnamese, but no further steps were reported.

The Academic Motivation Scale (T. N. Tran, 2015a), the Self-report Post-Trauma Stress Disorder Scale, the Difficulties Questionnaire for Adolescents, and the Self-Report Domestic Violence Scale (B. D. Nguyen, 2014) were mentioned in two publications; however, the sources, characteristics and psychometric properties of these instruments were not provided. Study-specific questions about suicidal ideation and self-harm behaviours had been developed (H. T. Nguyen et al., 2009) or adapted for use from international questionnaires (H. T. Nguyen, 2006; B. P. Tran et al., 2013) or from other studies in Vietnam (M. T. H. Le et al., 2016; D. Nguyen et al., 2013). Some measures were used to detect general psychological symptoms but did not distinguish the difference in symptoms of specific types of mental health problems, such as CBCL (McKelvey et al., 1999), SDQ-25 (A. Amstadter et al., 2011; Stratton et al., 2014), DASS-21 (M. T. H. Le et al., 2016).

Quality assessment

Overall, the quality of reviewed studies ranged from below average to above average. Compromised quality for most studies was due to the use of non-validated measurements with unclear or non-validated cut-off points. None of the six studies in Vietnamese reported either the method of justifying the sample size or obtaining ethical approval during the recruitment process, data analysis and data storage (Table 2 and 3, Appendix 2).

The estimated prevalence of mental health problems among adolescents in Vietnam

Prevalence of mental health problems among adolescents in Vietnam was reported in ten papers published after 1999. The prevalence of adolescents in central Vietnam having symptoms of at least one mental health problem based on the SDQ completed by a parent was 9.1% (A. Amstadter et al., 2011). This proportion from a national study based on the SDQ completed by adolescents was 10.7% (Weiss et al., 2014). Using the same assessment of CBCL and the American cut-off (total *T* scores > 60), the prevalence in the North was 9.5-10.1% based on parent-report (McKelvey et al., 1999); while the national prevalence was 12.4% based on adolescent self-report (Weiss et al., 2014). The information about each type of mental health problems, however, was not explicitly described in most studies, in which only the mean and standard deviation scores of continuous outcomes were reported without any further details. The most common types of mental health problems investigated were depression, suicidal ideation and anxiety.

Depressive symptoms

Only one study in the South (D. Nguyen et al., 2013) revealed the prevalence of depressive symptoms among adolescents. Within this study, students aged from 15 to 19 years attending secondary schools were screened for symptoms of depression one week before the data collection date using the CES-D scores with the international cut-off point of 16. To make a comparison, this study used an international cut-off of 21-points to indicate the presence of high-level depressive symptoms and of 25 for the major depressive disorder. The prevalence of this mental health problem among school students was 41.1%, of which, 25.9% of the participants had symptoms of high-level depression and 18.7% had symptoms of major depressive disorder (D. Nguyen et al., 2013).

Based on the same measure, the mean score for symptoms of depression among adolescents in Hanoi and Ho Chi Minh city was 14.84 (SD = 8.72) and 15.10 (SD = 9.90), respectively (H. T. Nguyen, 2006; Thai et al., 2015); while the mean in a study conducted in three cities (Hanoi, Hue and Can Tho) was 16.77 (SD = 8.19) (T. T. B. Pham, 2015). No prevalence, range or IQR of depression was reported in these records.

Anxiety symptoms

Three studies considered the prevalence of *anxiety symptoms*. Significant anxiety symptoms were reported among 23% of secondary school students in a study in southern Vietnam [36]. A 2012 study from the Centre of Vietnam using Carl Jung's Anxiety Scale, revealed 24.1% of high school participants had symptoms indicating an anxiety disorder, among which 3.2% had severe symptoms, and 15.2% had moderate symptoms (H. Nguyen & Nguyen, 2012). In the North, Tran et al.'s study reported 25.1% of high school students having symptoms of anxiety disorder according to the GAD-7 (T. N. Tran, 2015a). The other two reported mean anxiety score among adolescents in Hanoi and Ho Chi Minh city without information about the prevalence (H. T. Nguyen, 2006) (Thai et al., 2015).

Intentional self-harm behaviours and suicidal behaviours

Intentional self-harm behaviour among Vietnamese adolescents was the mental health problem that has received the most research attention. Two secondary analyses based on national surveys in 2003 (SAVY I) revealed that the highest proportion of adolescents with a lifetime history of self-inflicted harm was found among urban female participants aged from 14 to 17 years (3.4%), followed by rural males (2.9%) and urban males and rural females with 2.3% for each (Kaljee et al., 2011). Five years later, in the second national survey (SAVY II) using the same questions, the highest percentage was identified among rural males (10.9%), followed by urban males (10.6%) (Linh Cu Le & Blum, 2015). Further analyses of SAVY I and II selecting data of participants aged 14 to 19 years old, the percentage of self-harm behaviours was 2.8% in 2004 and increased to 9.2% in 2009 (M. T. H. Le, H. T. Nguyen, T. D. Tran, & J. R. W. Fisher, 2012).

Suicidal behaviours including suicidal thoughts, suicide plans, and attempted suicide, were reported in five of 21 publications. Two national surveys (SAVY I and II) that shared the same method and questions reported the highest proportion of lifetime suicidal thought was among urban females, and it increased from 6.5% in 2004 to 9.6% in 2009. Recent studies, which used specific questions collected from the SAVY I and II, showed higher percentages of Vietnamese students in high school experienced lifetime suicidal thoughts or having plans for committing suicide (M. Le et al., 2012). The highest figures were found in Nguyen's study (2013), in which 26.3% of participating students in the South admitted contemplating

suicide at least once, 12.9% had made a suicide plan, and 3.8% attempted suicide in their life (D. Nguyen et al., 2013). Recently, a 2016-study conducted among students attending high schools (aged 16 to 18) in the North of Vietnam reported that 14.1% of respondents had experienced suicidal thoughts and 5.7% having plans for committing suicide over the past year (M. T. H. Le et al., 2016).

Psychological distress and academic stress

Experiencing uncomfortable emotions in difficult situations is conceptualised in some studies as *psychological distress* (B. Pham, 2015; Ridner, 2004) and was mentioned in one study among adolescents from years 16 to 19 using the K-10. The mean score reported was 22.62 (SD = 7.80) (T. T. B. Pham, 2015). Mean of the total DASS-score on depression, anxiety and stress were recorded as 15.40 (SD = 11.20) in Le et al. 's study when examining the relationship between mental health problems and poly-victimisation among adolescents in Vietnam (M. T. H. Le et al., 2016). However, there was no record of mean score for the stress subscale in this study.

Academic stress that is defined as stress associated with academic failure or the self-awareness of the possibility of failure related to academic performance was another mental health problem investigated among adolescents in Vietnam. However, as it was considered as a covariant and only the mean and standard deviation for academic stress, which was measured by means of the ESSA, were presented in the two studies. The mean score among adolescents in Thai's (2015) and Pham's study (2015) was quite similar with (54.5 (SD = 9.7) and 53.6 (SD = 9.6), respectively).

Other mental health problems

There are also investigations of less specific mental health problems. *Lifetime experience of low mood* appeared to be highly prevalent with 34.1% of adolescents reporting that they experienced hopelessness about the future in SAVY I. Five years later, with the same method and questions, the prevalence was increased with 37.3% in SAVY II (Linh Cu Le & Blum, 2015).

Aggressive behaviours, which were conceptualised as intended actions that harm other people physically or mentally in Pham's study, were prevalent among secondary school students in the North. This 2016 study identified the percentage of students with lifetime having

aggressive behaviours as a perpetrator and showed that the percentage of students who reported harming other people, including physical, verbal aggression, bullying, cyberbullying, and harassment, ranged from 1.0% to 87.0% (V. T. Pham, 2016).

One study about *behavioural disorders* was conducted in 2014 at a private secondary school in the North. Using the Child Behaviour Checklist (CBCL) completed by students, the study reported that 35.5% of participants had symptoms of behavioural disorders (T. T. P. Pham, 2014). Although they had used the CBCL (McKelvey et al., 1999; Weiss et al., 2014), other studies did not report prevalence related to this mental health problem.

Determinants of mental health problems among adolescents in Vietnam

In total 90.5% (19/21) of reviewed papers investigated determinants of mental health problems among Vietnamese teenagers. All these papers reported risk factors while only eight of them reported protective factors. Types of statistical analysis varied between studies. Four studies used logistic regression (M. Le et al., 2012; D. Nguyen et al., 2013; B. P. Tran et al., 2013) (Linh Cu Le & Blum, 2015), eight used multivariable linear regression (L. C. Le & Blum, 2011; M. Le et al., 2016a; H. Nguyen, 2006; H. Nguyen et al., 2009; B. Pham, 2015; T. N. Tran, 2015a, 2015b; Weiss et al., 2014), four used univariable analyses (including Pearson's correlation, Chi-square test) (A. Amstadter et al., 2011; A. B. Amstadter et al., 2011; B. D. Nguyen, 2014; V. T. Pham, 2016; Stratton et al., 2014), two provided proportional differences as percentages (H. Nguyen & Nguyen, 2012; T. T. P. Pham, 2014), and one was a qualitative study (D. T. Nguyen et al., 2013).

Some determinants were reported for general mental health problems while most of them were for specific non-psychotic problems. Aligned with the ecological theory of Bronfenbrenner, this review described all explored determinants at four levels: individual, family, school, and community. Maltreatment is all forms of abuse including physical, emotional, or sexual abuse, neglect or exploitation (H. Nguyen, 2006; World Health Organisation, 1999). Due to the unclear situations in which the maltreatment happened among adolescents in reported studies, it was treated as a separate factor and was not assigned to one of the four levels.

Individual level

Risk factors. Five main risk factors were identified at the individual level. First, there were sex-specific differences in prevalence. Vietnamese *female* students were described in Le's study to have a significantly higher mean score of DASS-21 than their male counterparts (95% CI female: 18.90; 25.0; male: 6.7; 10.4) (M. T. H. Le et al., 2016). They also had more symptoms of depression (D. Nguyen et al., 2013; H. Nguyen, 2006; B. Pham, 2015), anxiety (D. Nguyen et al., 2013; H. Nguyen, 2006), low mood (M. T. H. Le et al., 2012), emotional problems (Stratton et al., 2014; Weiss et al., 2014), mental aggressive behaviours (V. T. Pham, 2016), psychological distress, academic stress (B. Pham, 2015), and higher risk of suicide ideations (M. Le et al., 2016a) or attempting suicide (L. C. Le & Blum, 2011). However, *males* were at higher risk of having academic stress (B. Pham, 2015), breaking rules (Weiss et al., 2014) and being hyperactive (Stratton et al., 2014). A study in Khanh Hoa and Da Nang provinces, in which the measurement used to assess mental health problems was the overall score of the SDQ, found no differences between males and females in the prevalence of mental health problems.

The second driver of mental health problems was *age*, which was identified in six studies. Older teens had higher symptoms of anxiety (M. Le et al., 2012; H. Nguyen, 2006; H. Nguyen et al., 2009) and aggressive behaviours (V. T. Pham, 2016), while the other two revealed that older age lowered risk of having emotional difficulties (Stratton et al., 2014) and mental health problems in general(A. Amstadter et al., 2011).

The three other key risk factors for comprised psychological well-being were *body image dissatisfaction*, *history of mental health problems* or *substance abuse*, and *self-awareness about general health conditions*. Findings indicated that dissatisfaction with the body significantly increased the risk of anxiety and depressive symptoms among adolescents (H. Nguyen, 2006; H. Nguyen et al., 2009). Adolescents who had a history of experiencing hopelessness, emptiness, no future career plans, unhappy emotion, anxiety, depression or using alcohol were more likely to have self-harm behaviours, suicidal thought (Cu & Blum, 2015; D. Nguyen et al., 2013), and attempt suicide (95% CI: 3.3-13.6) (L. C. Le & Blum, 2011; M. Le et al., 2012). Students who self-rated poor general health had a higher score of depression and anxiety symptoms (H. Nguyen, 2006; H. Nguyen et al., 2009).

Protective factors. Studies found that the first critical protective factor was self-efficacy. The higher self-efficacy students had, the fewer mental health problems they experienced (B. Pham, 2015). The second significant protective factor was adhering to a religious belief. Students adhering to any religious faith, including Buddhism, or Christianity were more likely to have better mental health (A. Amstadter et al., 2011; Stratton et al., 2014). The maturity and high awareness of life's value was the third critical protective factor (M. Le et al., 2012). The good health conditions or regularly having physical exercise was the fourth protector that was worth mentioning among studies (B. Pham, 2015).

Family level

Risk factors. Twelve reviews identified risks to mental health problems among teenagers at the family level, including family characteristics and relationship with family members (Cu & Blum, 2015; L. C. Le & Blum, 2011; M. Le et al., 2012; B. D. Nguyen, 2014; D. Nguyen et al., 2013; D. T. Nguyen et al., 2013; H. Nguyen, 2006; H. Nguyen et al., 2009; B. Pham, 2015; T. T. P. Pham, 2014; B. P. Tran et al., 2013; T. N. Tran, 2015b).

The first was *lack of emotional support from parents and low family cohesion.* Lack of emotional support increased the likelihood of experiencing low mood among adolescents in both the 2003 and 2009 national surveys (SAVY I and SAVY II) (M. T. Le et al., 2012), as well as risk for depressive symptoms (H. Nguyen, 2006; H. Nguyen et al., 2009). Similar observations were made in a southern secondary school focus group discussion which concluded that the lack of care from parents increased the risk of having mental health problems among students at their school (D. T. Nguyen et al., 2013). Nguyen (2013) and Le (2012) both showed that teenagers living away from home who might have insufficient emotional support from family were more likely to have symptoms of low mood (M. Le et al., 2012), and depression (D. Nguyen et al., 2013).

Parenting style was the second critical risk factors for mental health problems among adolescents. Baumrind (1967) theorises that there are four categories of parenting styles: authoritative (demanding and responsive), totalitarian (demanding and unresponsive), indulgent (undemanding and responsive), and neglectful (undemanding and unresponsive). From these categories, Baumrind identified four aspects of parenting behaviours: warmth, strict control, encouraging independence, and consistent behaviours (T. N. Tran, 2015b).

Based on this theory, Tran (2015) identified three parenting styles and three parenting behaviours among Vietnamese parents, including: indulgent, totalitarian, authoritative, warm, emotional control and consistent, that were included in a 2015 cross-sectional study to examine the relationship with mental health problems among adolescents in Northern Vietnam. Parents with indulgent styles were more likely to have adolescents with anxiety, low body satisfaction, social and cognitive problems, aggressive and rule-breaking behaviours. Parents with a totalitarian style were more likely to have adolescents with symptoms of anxiety, depression, low body satisfaction, attention problems and behaviours of breaking rules (T. N. Tran, 2015b). Another study in the North of Vietnam considered the other two dimensions of perceived parental styles, including care and overprotection based on Parker's theory (G Parker et al., 1979). This study concluded that the *overprotection* of a father was likely to put their daughters in a higher risk of having suicidal thoughts (OR 1.1, 95% CI 1.0-1.2) (B. P. Tran et al., 2013).

The third factor was the *conflict between adolescents and parents.* Having this conflict fuelled the risk of experiencing depressive symptoms, distress and low psychological well-being (B. Pham, 2015). Focus group discussions with adolescents also found that parents preventing girls from having a boyfriend was a cause of having mental health problems for female students (D. T. Nguyen et al., 2013).

Parental problems were also found to predict mental health problems. Nguyen's study revealed that living with parent(s) who had a mental illness (OR 1.93, 95% CI 1.03-3.61) or problems with substance abuse (OR 1.63, 95% CI 1.13-2.34) contributed to the risk of depressive symptoms among adolescents (D. Nguyen et al., 2013). Exposure to parents' quarrels increased the risk of anxiety among male students (H. Nguyen et al., 2009). The same observations were described in a focus group discussion with parents of adolescents in Nguyen's qualitative study, which stated that parental problems in general and unhappy family life in particular contributed to higher levels of anxiety among students (D. T. Nguyen et al., 2013).

Family characteristics and mental health were examined in most studies. A divorced or separated family was significantly associated with having more symptoms of anxiety and/or depression or behavioural disorder among students (H. Nguyen, 2006; H. Nguyen et al., 2009;

T. T. P. Pham, 2014). Household income did not affect mental health among adolescents in Vietnam (Cu & Blum, 2015; L. C. Le & Blum, 2011; M. Le et al., 2016a; M. Le et al., 2012; D. Nguyen et al., 2013; H. Nguyen et al., 2009; T. N. Tran, 2015a); however, it increased the risk of attention problems, rule-breaking behaviours, aggression, hyperactivity and conduct problems among adolescents (Weiss et al., 2014).

Protective factors. *Strong family cohesion* was an important protective factor for adolescents' well-being (M. Le et al., 2012). Tran et al. (B. P. Tran et al., 2013) concluded that receiving emotional support from the parent(s) or sibling(s) was associated with lower risk of suicidal thoughts among female students. Care from fathers protected young men against suicidal thought while for females, it was care from their mothers (B. P. Tran et al., 2013). Consistent parenting behaviours protected adolescents from experiencing symptoms of depression, anxiety, social problems, aggression and rule-breaking behaviours. Parents spending more time talking with adolescents reduced the risk of mental health problems among their children (Weiss et al., 2014). Overall, the *proper mental health of parents* limited distress symptoms among adolescents (B. Pham, 2015; Stratton et al., 2014). No studying at home or having a personal tutor at home were other critical shield factors that prevented adolescents from being depressed (D. Nguyen et al., 2013; B. Pham, 2015).

School level

Risk factors. School-level factors including the learning environment and relationship with friends, teachers or staff were explored concerning teenagers' mental health problems in seven publications (M. Le et al., 2012; D. Nguyen et al., 2013; D. T. Nguyen et al., 2013; H. Nguyen, 2006; H. Nguyen et al., 2009; B. Pham, 2015; B. P. Tran et al., 2013). Two main risk factors were found in the school environment.

The most crucial school-based risk factor was the *pressure of studying* at school, in which the heavy academic pressure increased the risk of emotional problems, such as low mood (M. Le et al., 2012), anxiety (D. Nguyen et al., 2013; T. N. Tran, 2015a), depressive symptoms (D. Nguyen et al., 2013), and behavioural disorder (T. T. P. Pham, 2014). Nguyen (2013) recorded that medium and high academic stress significantly positively correlated with depression (OR 1.59, 95% CI 1.12-2.25; OR 5.02, 95% CI 3.57-7.07, respectively) (D. Nguyen et al., 2013). Focus group discussions within separate groups of students, teachers and parents drew similar

conclusions (D. T. Nguyen et al., 2013). Concerning academic outcomes, students with low achievement at school had worse symptoms of depression (D. Nguyen et al., 2013; H. Nguyen, 2006; H. Nguyen et al., 2009), and anxiety (T. N. Tran, 2015a). Having to repeat a grade also increased the risk of depression among male students (H. Nguyen, 2006).

The second school-based risk was the *relationship with friends and teachers.* Studies revealed that quarrelling with peers or breaking up with a boy/girlfriend or having problems in the relationship with teachers and school staff were added to the risk for depression, distress, academic stress (D. Nguyen et al., 2013; B. Pham, 2015; T. N. Tran, 2015a), and behavioural disorders (T. T. P. Pham, 2014).

Protective factors. A functional linkage between school and family mitigated female and male students from distress, depression (B. Pham, 2015), and males from suicidal thoughts (B. P. Tran et al., 2013).

Community level

Risk factors. Five papers reported the relationship between the environment where an adolescent lived and studied and their mental health problems. Three showed that participants *living in urban areas* were more likely to have symptoms of mental health problems (B. Pham, 2015), higher risk of having self-harm behaviours (Cu & Blum, 2015), and suicidal thoughts (B. P. Tran et al., 2013) than those living in rural areas. However, two other studies revealed that living in a rural area was a risk of having depression and anxiety (H. Nguyen, 2006; H. Nguyen et al., 2009).

Protective factors. No protective factors were investigated or found to operate at the community level.

Maltreatment

Maltreatment was a critical **risk factor** ascertained in eight papers. *Child emotional maltreatment* predicted depression and anxiety risk for both sexes (D. Nguyen et al., 2013; H. Nguyen, 2006; H. Nguyen et al., 2009), and suicide attempts for females (H. Nguyen, 2006). *Physical abuse* predicted depression symptoms for both sexes, anxiety for females (D. Nguyen et al., 2013; H. Nguyen et al., 2009), and attempting suicide for males (H. Nguyen, 2006). *Sexual abuse* predicted experiencing depressive symptoms for both males and females

(H. Nguyen et al., 2009). *Being neglected* was associated with an increased risk of depressive symptoms (H. Nguyen, 2006; H. Nguyen et al., 2009), suicide attempt (H. Nguyen, 2006), and anxiety among male adolescents (H. Nguyen et al., 2009). Studies also reported that experiencing violence in the family increased the risk of experiencing low mood (M. Le et al., 2012), symptoms of depression (OR 2.76, 95% CI 1.84-4.16) (D. Nguyen et al., 2013), suicidal behaviours (SAVY I: OR 2.04, 95% CI 1.21-3.45; SAVY II: OR 2.01, 95% CI 1.48-2.75) (M. Le et al., 2012)(OR 3.3, 95% CI 1.1 -11.5) (L. C. Le & Blum, 2011), and post-traumatic stress disorder (B. D. Nguyen, 2014). *Multiple types of maltreatment* were found to be associated with an even higher risk of having symptoms of depression, anxiety (H. Nguyen, 2006), and suicidal ideations (M. Le et al., 2016a; H. Nguyen, 2006).

The impact of *bullying* on mental health problems was mentioned in two papers (B. Pham, 2015; B. P. Tran et al., 2013), in which one investigated the association with cyberbullying. The findings indicated that bullying increased the risk of having suicidal thoughts among male students (OR 1.2, 95% CI 1.1-1.4) while bullying and cyberbullying are risk factors of academic stress, depression and distress among both sexes (B. Pham, 2015).

Discussion

This is the first systematic review of the prevalence and determinants of mental health problems among adolescents in Vietnam. Its particular strength is the inclusion of English and Vietnamese publications. Together all reports demonstrate that mental health problems among young people in Vietnam are common and reflect their circumstances, some of which are potentially modifiable and might be addressed in public health initiatives in schools and by improved clinical services. Beside the influence of a long history of experiencing war and feudalism, Vietnam is in an important stage of economic development, in which the integration with international culture might conflict with the traditional one. The young generation in Vietnam might face difficulties that the previous generation has not had. Understanding mental health problems among adolescents and their determinants in this country is important to improve mental health for Vietnamese youth.

We acknowledge the limitation that some studies might have been missed because electronic journals are not yet available in Vietnam and we were restricted to using accessible hard copies. Some local evidence was only available as internal technical reports and was not

publicly accessible. Nevertheless, we believe that our search and synthesis strategies provided a comprehensive and contemporary account of the burden and determinants of common mental health problems among young people in Vietnam.

The prevalence of mental health problems among adolescents in Vietnam

The available studies had high response rates (over 90% for all studies) which indicate that the findings provide an accurate indication of the prevalence of mental health problems among adolescents. However, most studies in this review used screening tools that had not been formally validated against a gold standard. Cut-off points for some symptoms of mental health problems were based on scores established in other settings, and not locally culturally verified or established in formal validations (Hinton, Kredlow, Pich, Bui, & Hofmann, 2013). This might lead to underestimating or overestimating the level of measured mental health problems among adolescents on a nation-wide basis.

Participants in the national epidemiology study that included ten cities covered most areas in Vietnam. This study recruited participants based on the registered population lists from local authorities that covered adolescents who were attending schools and who had left school early to work in the community, overcoming the limitation of most other studies, which included only school-going adolescents. They use the SDQ and CBCL which had been validated in Vietnam at the time of conducting the survey. The results from this study, therefore, give strong evidence about the prevalence of mental health problems among Vietnamese adolescents. The found prevalence (10.7%) is higher than those from other developing countries, such as Serbia (5.8%), India (7.6%), and Indonesia (7.9%) using the same questionnaire and cut-off point (Atilola, Balhara, Stevanovic, Avicenna, & Kandemir, 2013).

The highest prevalence appeared in the Southern area, followed by the Centre and the North. The differences among areas might be explained by the variability in methodology, including sample size, age ranges of the participant, measurements used and the representative adequacy of the samples in some studies. Other possible potential reasons might come from the disparity in economic and social characteristics between the South, Centre and North of Vietnam. Cantho - the city where the Southern study was conducted, is the most modern and developed city in the Mekong River Delta area of Vietnam. However, in comparison to other cities included in Central and Northern studies, the economy of Cantho is lower due to livelihoods

dependent on rivers and canals that lead to significant difficulties in daily life for the population of this city. Parents focus on earning money for daily living; therefore, the investment for education and the time spent with children is less than in other areas. The distribution of proportions of mental health problems based on a gradient of economic disadvantage across society was similar to other studies (Araya, Lewis, Rojas, & Fritsch, 2003; Campion, Bhugra, Bailey, & Marmot, 2013; Lund et al., 2010).

The most common types of mental health problems among adolescents studied in Vietnam are those of internalising (such as depression, anxiety, stress and loneliness) and externalising problems (such as aggression, and hyperactivity) (M. Le et al., 2016a; D. Nguyen et al., 2013; H. Nguyen et al., 2009; H. Nguyen & Nguyen, 2012; H. T. Nguyen, 2006; B. Pham, 2015; V. T. Pham, 2016; Tan, Christine, Thi, & Joske, 2013; Thai et al., 2015; T. N. Tran, 2015a). The prevalence of these symptoms was inconsistently reported across studies in Vietnam that suggests there is variability in the prevalence of common mental health problems in the population. Prevalence of depressive symptoms in schools in the South of Vietnam (41.1%) was much higher than both children and adolescents in Great Britain (0.9% (Hazel Green, McGinnity, Melzer, Ford, & Goodman, 2004) to 2.5% (Meltzer, Gatward, Corbin, & al., 2000)) and United States (2.1% (Roberts, Roberts, & Xing, 2007) to 3.4% (Canino et al., 2004)). A similar tendency was found regarding anxiety symptoms. While the highest rates of children and adolescents experiencing the feeling of anxious symptoms in Great Britain and the United States were 3.3% (Hazel Green et al., 2004) and 9.5% (Canino et al., 2004), respectively; that among adolescents in Vietnam was much higher (23%) (D. Nguyen et al., 2013). Possible causes for the variability are the increasing challenges that adolescents are facing to adapt to the rapid changes of globalisation and industrialisation. Besides, the poverty in a developing country such as Vietnam that impels parents to work hard for a living results in a lack of time to care for and talk to their children (Phan, 2016; Stratton et al., 2014). Further, the awareness of the Vietnamese community, including parents and adolescents, about mental health or psychological well-being is limited; therefore, stigma and discrimination about mental health problems have prevented adolescents from seeking help from outside family. Mental health support services, such as a school psychologist or psychological counselling services for adolescents in Vietnam has not developed; there has been no opportunity for the young generation to receive professional support.

The rates of self-harm behaviours, including suicide among adolescents in Vietnam, were of grave concern. The national proportion of self-harm and suicide among adolescents in Vietnam was higher than global estimates. Data from the WHO Mortality Database from 90 countries, indicated that the mean suicide rate among adolescents aged from 15-19 years of age was 7.4/100,000 (Wasserman, Cheng, & Jiang, 2005), while that in Vietnam ranged from 3.4% - 26.3% (Cu & Blum, 2015; M. Le et al., 2016a; D. Nguyen et al., 2013). Within the country, the prevalence of lifetime suicidal thoughts in Southern (26.3%) (D. Nguyen et al., 2013) was much higher than in Northern provinces (14.1%) (M. Le et al., 2016a), perhaps due to the higher life stresses and economic competition in the South.

Determinants of mental health problems among adolescents in Vietnam

Aside from presenting evidence on some common mental health problems among adolescents in Vietnam, many studies made great efforts to investigate risk and protective factors. Even though the findings were inconsistent among studies, it was apparent that Vietnamese adolescents' mental health problems were multi-factorially determined by individual, family, school and community level factors.

It is notable that at an individual level, the high awareness of life's value, high self-efficacy and physical exercise appear to protect adolescents from the risk of mental health problems. Regarding family level, the strong connection between parents and children was an essential component affecting the mental health of adolescents that was expressed via different parenting styles and behaviours. The strong influence of Confucian tradition has formed in Vietnamese parents a firm conviction that being strict and using punishment is necessary for raising children. They believe that it is the responsibility of children to follow instructions and any rules established by adults. This belief has formed the totalitarian parenting style that increased the pressure among adolescents and led to increased vulnerability to mental health problems among them in Vietnam. Furthermore, under the impact of more than 100 years of feudalism, the unique role of a man in the family is that of a decision maker, a leading financial supporter and a strict father. Educating children, talking to and taking care of them are mother's responsibility. Adolescents in Vietnam, therefore, are extremely lacking in care and warmth from fathers. However, evidence from this review has shown that the care of the father was an important protective factor for mental health among adolescents in Vietnam,

especially suicidal ideation. School was another essential component that strongly affected mental health among adolescents. In Vietnam, the education system is highly exam-oriented (Dang, 2007) and the stigma of failing examination is serious. To improve academic performance and pass exams to avoid shame for self and family, students must take extra classes or study with private tutors that prevents them from having relaxing weekends, attending social, physical or leisure activities (B. Pham, 2015). Also, the extremely high expectation from parents, teachers as well as self-expectation about academic performance has increased the risk of exposure to mental health problems.

Regarding ethical aspects, no Vietnamese studies reported ethical approval. Most of the Vietnamese journals do not require ethics approval as a compulsory element for publishing; therefore, the clearance of ethics for those studies might not have been obtained. To increase the benefit, limit the harm and protect participants as well as researchers (Newson & Lipworth, 2015), especially in mental health research, ethical approval needs to be taken into account by law in this country.

In general, this review of the literature produced several key findings. First, there was sufficient evidence for the fact that the prevalence of mental health problems among adolescents in Vietnam was high; but it has not been well-recognised. Second, the estimated prevalence was slightly different across the country and was higher than those in high-income countries and other LAMICs. These variations might due to the methodological approach and/or cultural aspects. Third, mental health problems among adolescents in Vietnam were under the effects of multi-factors at different levels, including individual, family, school and community.

Conclusions

Mental health problems among adolescents were prevalent in Vietnam; however, it was underestimated. By drawing a current picture, this review has shown evidence that Vietnamese teenagers – like those in other cultures, are at risk of experiencing mental health problems, which might affect their lives, their families, and the whole society. It also suggests that policymakers need to pay more attention and undertake urgent action to care for the mental health among the younger generation in Vietnam. This review has identified evidence gaps and sheds light on the needs for future research about mental health problems among adolescents. Future research should consider examining the prevalence of mental health problems among

adolescents in many other areas, especially in the central, highland and island areas of Vietnam, including a wider geographical spread. Measurements used for evaluating mental health problems should be formally validated in the context of Vietnam for each specific population. The prevention of mental health problems or any policy related to mental health of adolescents should consider the variability of mental health prevalence as well as the predominant types of mental health problems in different areas. It is worth considering developing the prevention system and early intervention for adolescents' mental health focusing on the investigated protective factors. To identify which protective factor should be the priority for investigation, we recommend that the future studies compare the contribution of protective factors to mental health problems among Vietnamese adolescents. Further investigation about the prevalence of severe mental disorders or other types of mental health problems such as loneliness and aggression, as well as other protective factors and risk factors are highly recommended.

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Table 1. Search terms

Column 1		Column 2		Column 3
"mental health" OR "mental problem*" OR "mental disorder*" OR "mental issue*" OR "mental illness" OR "stress" OR "anxiety disorder*" OR "anxious" OR "depression" OR "panic disorder*" OR "phobias" OR "post-traumatic stress*" OR "self-injurious*" OR "self-harm" OR "attempt suicide" OR "suicidal ideation*" OR "suicidal thought*" OR "loneliness" OR "sadness" OR "low mood" OR "mood disorder*" OR "emotion* disorder*" OR "hopelessness" OR "aggressive" OR "aggression" OR "psychiatric*" OR "behaviour* disorder*"	**AND**	"adolescent*" OR "teen*" OR "youth*" OR "young adult*" OR "child*" OR "student*" OR "young male*/female*/person*/people" OR "high school*" OR "secondary school*" OR "undergraduate*"	**AND**	"Vietnam" OR "Viet nam" OR "Viet-nam" OR "Viet Nam" OR "Vietnamese"

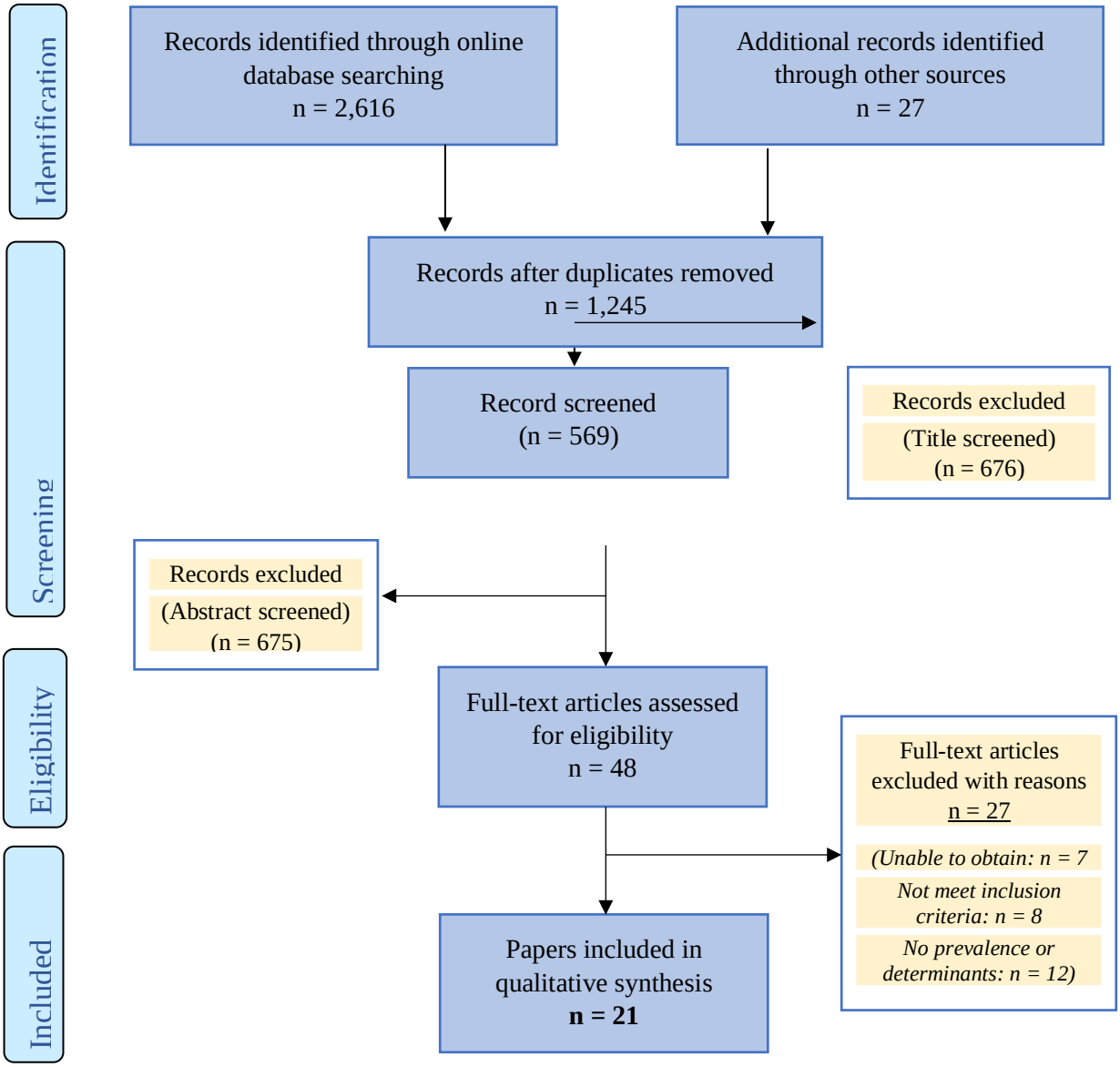

Figure 1. Selection of records

Appendix 1. Table 2. Information extraction from 21 reviewed papers

Study/Ethics approval	Study site	Study type and Method	Sample size	Response rate	Recruitment method	Outcomes measurements	Co-variants	Prevalence	Determinants of MHP
McKelvey 1999 [1] Ethics approval: Not mentioned	Hanoi: Urban	Cross-sectional survey on parents	1,526 (59.9% adolescents) Age: 12-18	96.2%	Community -based	- Mental health problems: CBCL (parent form)*	- Age - Sex	- 9.5% of boys and 10.1% of girls: in clinical range (*T* scores > 60).	Not investigated
Nguyen 2006 (Thesis) [2] Ethics approval: + Queensland University of Technology, Australia + Hanoi School of Public Health, Vietnam	Hanoi: Rual and Urban	Qualitative: in-depth interviews and focus group discussions Quantitative : cross-sectional	In-depth interviews: 4 teachers, 4 parents, and 64 students Focus group discussions: 8 discussions, 6-8 students for each. Quantitative: 2,737 students	94.7%	School-based	- Shortened Anxiety scale of Muris (2002) and Myers (2002)*, - Depression: CES-D*	- Physical health problem - Self-esteem: RSES* - Health risk behaviour: adapted from the YRBS* - Child maltreatment scales* + The Revised Conflict Tactics Scale*, + Maltreatment : JVQ*, + The Childhood Trauma Questionnaire*	- Means ± SD) + Depression: 14.84 ± 8.72, + Anxiety: 20.05 ± 4.09	- **Risk factors to attempting suicide** + *To male* * severe neglected, * physical maltreatment * poly-maltreatment + *To female* * severe and minor neglected, * severe emotional maltreatment, * poly-maltreatment - **Risk factors to suicide plan**: poly-maltreatment (both gender) - **Risk factors to depression** + Being female, + Living in rural area, + Poly-maltreatment - **Risk factors to anxiety** + Being female, + Living in rural area, + Being older, + Body image dissatisfaction, + Poly-maltreatment - **Risk factors to depression in female** + Father's low-income occupation + Low self-perception of health status + Body dissatisfaction, + Low academic achievement, + Being neglected, + Emotional maltreatment - **Risk factors to depression in male** + Lack of emotional support, + Low self-perception of health status, + Low academic achievement, + Repeat class, + Being neglected + Emotional maltreatment - **Risk factors to anxiety in female** + Father's low-income occupation + History of chronic diseases + Low self-perception of health status + Physical maltreatment, + Emotional maltreatment - **Risk factors to anxiety in male** + Frequent parent quarrel, + History of child chronic diseases, + Low self-perception of health status, + Being neglected + Emotional maltreatment

Nguyen 2009 (H. Nguyen et al., 2009) Ethics approval: + Hanoi School of Public Health + Queensland University of Technology	Hanoi: urban; Hai Duong: rural	Cross-sectional	2,591 Age: 12-18	94.7%	School-based	- Depression: CES-D* - Anxiety: study specific questions	- Adapted the Revised Conflict Tactics Scale, the JVQ*, the Childhood Trauma Questionnaire* and others - Self-esteem RSES* - Region, - Age, - Gender, - Ethnicity, - Religion, - Family economic, - Family characteristics, - Family environment - Educational performance, - Physical health, - Body satisfaction.	Not investigated	**- Risk factors to depression** + Living in rural area, + Low home emotional support, + Self-rated poor general health, + Low academic achievement + Father's low-income occupation, + Body dissatisfaction + Emotional abuse + Physical abuse + Sexual abuse + Being neglected **- Risk factors to anxiety in males** + Living in rural area, + Self-rated poor general health, + Diagnosed chronic disease, + Body dissatisfaction, + Frequent parental quarrell, + Emotional abuse, + Being neglected. **- Risk factors to anxiety in females** + Being older, + Living in rural area, + Father's low-income occupation, + Self-rated poor general health, + Diagnosed chronic disease, + Body dissatisfaction + Emotional abuse, + Physical abuse.
Amstadter 2011 (A. Amstadter et al., 2011) Ethics approval: Not reported	Danang; Khanh Hoa	Semi-structured interviews	1,368 adolescents and their parents in 1,914 households. Age: 11-18	99.5%	Community -based	- Mental health problems: SDQ-25 (Parent form)	- Age, - Gender, - Ethnic, - Religious, - Social capital.	- Mental health problems: 9.1%	**- Risk factors to mental health problems** + Being younger **- Protective factors** + Adhere any religion

Le 2011 (L. C. Le & Blum, 2011) Ethics approval: Scientific Council of the Ministry of Health of Vietnam	42 provinces across country	Secondary analysis	7,584 Age: 14-25	Not reported	Community -based	- SAVY I questionnaire: + Intentionally injured, + Suicide thought, + Suicide attempt.	- Violence inside and outside home, - Age, - Gender, - Residence, - Ethnicity, - Education level, - Household economic, - Family domain, - Peer and Friend and Community domain, - Emotional life - Personal behaviours	- Self-injured: 2.8% - Suicide thought: 3.4%, (among those, 14.7% had attempted suicide).	**- Risk factors to attempted suicide** + Being female, + Past inebriation, + Past injury by family members, + Past feelings of hopelessness, emptiness and of having no future career path.
Le 2012 (M. T. H. Le et al., 2012) Ethics approval: the Institutional Research Board of the Hanoi School of Public Health	42 provinces across country	Secondary analysis based on SAVY I and II	4,609 (SAVY I) 6,508 (SAVY II) Age: 14-19	Not reported	Community -based	Mental health problems: + Sadness, + Helplessness, + Hopelessness, + Substance abuse, + Self-harm, + Suicide thoughts, + Suicide attempts.	- Household Wealth, - Gender, - Residence, - Ethnicity, - Religion, - Family circumstances - Literacy, - Educational attainment, - Substance use, - Experiences of violence and sexual abuse, - Help seeking within family.	- Lifetime experience of low mood: + SAVY I: 34.1% + SAVY II: 37.3% - Lifetime experience of self-harm behaviours: + SAVY I: 2.8% + SAVY II: 9.2% - Lifetime experience of suicide thoughts: + SAVY I: 5.3% + SAVY II: 12.2% - Suicide attempts: + SAVY I: 0.003% + SAVY II: 0.01%	**- Risk factors to low mood in SAVY I and II** + Being female, + Heavy academic program, + Exposed to violence inside and outside family, + Being older, **- Risk factors to low mood in SAVY I** + Living in urban area, + Being illiterate. **- Risk factors to low mood in SAVY II** + Following no religion, + Following a religion other than Buddhism, + Not living with father, + Feelings of helplessness and hopelessness. **- Protective factors to mental health problems** + Good family cohesion.

Nguyen 2012 (H. Nguyen & Nguyen, 2012) Ethic approval: not reported	Buon Ma Thuot: urban	Cross-sectional and interview	518	Not reported		Jung's Anxiety Scale*	The Eysenk's Personality Questionnaire*	24.1%: anxiety, in which 3.2%: serious symptoms, 15.2%: medium and 81.6%: mild	**- Order of high risk to anxiety disorder** + Melancholic (introverted and unstable): sad, gloomy; 34.6% with anxiety symptoms + Choleric (extroverted and unstable): hot-tempered, irritable: 29.7% with anxiety symptoms + Phlegmatic (introverted and stable): sluggish, calm: 1.5% with anxiety symptoms + Sanguine (extroverted and stable): cheerful, hopeful: None with anxiety symptoms
Tran 2013 (B. P. Tran et al., 2013) Ethics approved: + Queensland University of Technology, Australia + Hanoi School of Public Health, Vietnam	Hanoi: Urban	Cross-sectional	972 Age: 12-15	Not reported	School-based	- Suicidal thoughts	- Bullying, - Parenting bonding: PBI* - School connectedness: adapted from the California Healthy Kids Survey 2004, - Inter-parent and Sibling conflicts: Study specific questions, - Academic achievement: study specific questions. - Alcohol consumption YRBS* - Underage motorbike driving	Not investigated	**- Risk factors to suicidal thoughts in males** + Being bullied, + Inner city school location **- Risk factors to suicidal thoughts in females** + Father's over-protection, + Less emotion support from home, + Inner city school location **- Protective factors to suicidal thoughts in males** + Father's care, + School-family connection **- Protective factors to suicidal thoughts in females** + Mother's care

- Nguyen 2013 (D. T. Nguyen et al., 2013) Ethics approval: Cantho University of Medicine and Pharmacy	Cantho: urban	Qualitative: + In-depth interviews, + Focus group discussion	- In-depth interview: 2 researchers, 2 psychiatrists, 2 teachers - Focus group discussion: 34 teachers, 34 parents, 55 pupils (age: 15-18)		School-based	- Mental health problems: + Stress, + Anxious, + Worried		- 10-15 pupils complained of feeling stressed, anxious, and often worried.	**- Risk factors to mental health problems according to pupils** + Academic pressure, + Problems with pleasure seeking, + The preventing of parents from having boyfriend + Early intercourse and pregnant + Being refused of love + Homosexuality **- Risk factors to mental health problems according to parents** + Academic pressure, + Parental problems, + Economic conditions, + Unhappy family + Unhappy learning environment at school: strict teachers, lack of concern for pupils' well-being. **- Risk factors to mental health problems according to teachers** + Academic pressure, + Parents' lack of concern about children.

Nguyen 2013 (D. Nguyen et al., 2013) Ethics approval: Cantho University of Medicine and Pharmacy	Cantho: urban	Cross-sectional	1,159 Age: 15-19	92.0%	School-based	- Depression: CED-D - Anxiety: The Anxiety Scale* - Educational stress: ESSA - Suicide: specific study questions	- Parental education, - Parental occupation, - Parental marital status, - Family Financial, - Style of upbringing	- Anxiety: 23% - Depression: 41.1% - Suicide thoughts: 26.3% - Suicidal plan: 12.9% - Suicidal attempt: 3.8%	**- Risk factors to anxiety** + Experience physical and emotional abuse in family, teachers, school staff members, + High educational stress, + Being female. **- Risk factors to depression** + Being female, + Not living with both parents, + Living with alcohol or drug abuser or mental illness person, + Being physically or emotionally abused, + Having serious quarrels with teacher/school staff, + Poor academic performance, + High educational stress. **- Protective factor for depression** + a personal tutor **- Risk factors to suicidal ideation** + Anxiety + Depression
Nguyen 2014 (B. D. Nguyen, 2014) - Ethic approval: not reported	Phu Tho and Hai Duong	Cross-sectional and semi-structured interview	374 Age: 12-15	Not reported	School-based	- Self-report Post-Trauma Stress Disorder Scale** - Difficulties Questionnaire for Adolescents about school, social adapt, and solve problem skills: Unclear information about the source.	- Self-report Domestic Violence Scale** - Age - Which child in family		57.5% of students living in family with domestic violence had symptoms of post-trauma stress disorder.

Pham 2014 (T. T. P. Pham, 2014) Ethic approval: not reported	Hanoi	Cross-sectional	141 Age: not reported	Not reported		Mental health problems: CBCL*		Behavioural disorder: 35.5%	**- Risk of behavioural disorder** + Introverted + Being female **- Factors associated with behavioural disorder** (unclear about direction) + Uncompleted family + Low parental education and occupation + Studying stress, exams and negative relationship with friends
Weiss 2014 (Weiss et al., 2014) Ethics approval: not reported	10 provinces across country	Cross-sectional	591 adolescents aged 12-16 1,314 adults having children of 6-16 years old	Not reported	Community -based	Mental health problems: - CBCL (Parent and adolescent form) - SDQ (Parent and Adolescent form)	- Age - Gender - Family structure - Number of siblings - Total time parent talking to the child - Family income - Parent education	10.7% caseness (adolescent report based on SDQ) 12.4% caseness (adolescent report base on CBCL)	- Risk factors: + High Family outcome, high attention problems, rule breaking behaviour and aggression, hyperactivity and conducting problems + High parent education, high hyperactivity + Females: higher in emotional problems + Males higher in breaking rule - Protective factors: + Parent spend more time talking with child + High parent education, less peer problems and emotional symptoms
Stratton 2014 (Stratton et al., 2014) - Ethics approval: Not reported	Danang and Khanh Hoa	Cross-sectional Structured Interview	1,300 Aged 11 – 18	99.5%	Community -based	- Youth mental health: SDQ	- Caretaker health status: + Item #1 of WHO-SF-36*, + SRQ-20 - Age - Sex - Ethnic - Religious - Interviewer-assessed wealth	Not investigated	- Risk factors to emotional problems: + Being female + Younger age - Risk factors to prosocial behaviour: + Being female + Younger age - Risk factors to hyperactivity: + Being male + Poor + Poor physical health of caretaker - Protective factors: mental health of caregiver, religious belief

- Le 2015 (Linh Cu Le & Blum, 2015) Ethics approval: the Institutional Research Board of the Hanoi School of Public Health.	42 provinces across the country	- Secondary analysis based on SAVY I and II	7,584 Aged 14-25 years			- Intentionally injured, - Suicide thought, - Suicide attempt.	- Age, - Gender, - Residence, - Ethnicity, - Edu level, - Household economic, - Family domain, - Peer and Friend and Community domain, - Emotional life - Personal behaviours - Violence in family and outside home	- Self-injured: + SAVY I: 2.8% + SAVY II: 7.5% - Suicidal thoughts: + SAVY I: 3.4%, among these 0.55% attempted suicide, + SAVY II: 4.1%, among these 1% attempted suicide.	- Risk factors to self-harm behaviours: + Urban area, + Alcohol used. - Risk factors to suicide ideation: + Domestic violence, + Unhappy emotional life

- Pham 2015 (Thesis) (B. Pham, 2015) - Ethics approved: + Queensland University of Technology, Australia + Hanoi School of Public Health, Vietnam	Hanoi, Thua Thien Hue and Can Tho Rural and Urban	- Qualitative study - Quantitative study	1,609 Aged: 16-19 years		School-based	- Academic stress: ESSA - Depression: CES-D* - Psychological distress: K-10* - Mental Well-being: WHO-5*	- Sex - Age - Grade - Geographic location - Sibling status - Parents' occupation - Parental education - Parents' marital status	+ Academic stress scores: 53.56 ± 9.62 + CES-D mean score (SD) 16.77 (8.19) + K10 mean score (SD): 22.62 ± 7.80 + WHO-5 mean score (SD): 12.56 ± 6.04	- Academic stress: + Risk factors: * Being male * Grade 11 * Conflict with teachers * Quarrel with peers * Peer's bullying * Being cyber bullied + Protective factors: * School in urban area * Good health status * High self-efficacy * School connectedness * Mode of tutoring - Depression: + Risk factors: * Being female * Conflicts with parents * Breakup with girl/boyfriend * Quarrel with peers * Peers' bullying * Being cyber bullied + Protective factors: * Good health status * Self-efficacy * School connectedness * No time for self-study * Having time for private tutoring - Psychological distress: + Risk factors: * Being female * Grade 12 * Conflicts with parents * Conflicts with teachers * Breakup with boy/girlfriend * Quarrel with peers * Peers' bullying * Being cyber bullied + Protective factors: * Father's high education * Father's occupation is a farmer

									* Good health status * Do physical exercises * Self-efficacy * School connectedness * Social isolation - Mental well-being: + Risk factors: * School in urban area * Conflicts with parents * Quarrel with peers + Protective factors: * Good health status * Do physical exercise * School connectedness * Social isolation

- Thai 2015 (Thai et al., 2015) - Ethics approved: + Queensland University of Technology, Australia + Ho Chi Minh City University of Medicine and Pharmacy, Vietnam	Ho Chi Minh Urban	- Cross-sectional school survey	1,226 Aged: 13-19 years	Not reported	School-based	- Educational Stress: the Educational Stress Scales for Adolescents – ESSA → validated in this study - Mental health problems + Depression: The Center for Epidemiological Studies-Depression Scale (CES-D) – has been used in Vietnam + Anxiety: The Anxiety Scale – has been used in Vietnam + Distress: The Kessler Psychological Distress Scale (K-10) – not validated + General Well-being: The World Health Organization (WHO-5) – not validated	- Age, - Gender, - Residence, - Grade, - Parent marital status, - Number of siblings, - After school study hours, - Personal tutors, - Attending classes during weekends or holidays in the last 12 months.	- Mean and SD of: + Depression: 15.10 ± 9.9, + Anxiety: 21.3 ± 4.1, + Psychological Distress: 22.8 ± 7.2, + Mental Well-being: 14.0 ± 6.6, + Educational Stress: 54.5 ± 9.7 - The ESSA is a suitable measure for school-based mental health research in Asia.	

Tran 2015 (T. N. Tran, 2015b) Ethics approval: not reported	Dong Nai	Cross-sectional survey	344 boys	Not reported	School-based No information about sampling method	- Behavioural-Emotional disorders: YSR	- Parental styles : Parental Authority Questionnaire – PAQ - Child's report of parental behaviour Inventory - CRPBI		- Risk factors to mental health problems: + Easy-going + Authoritarian + Emotional control of parent - Protective factors to mental health problems: + Consistent behaviour + High family income
Tran 2015 (T. N. Tran, 2015a) - Ethic approval: not reported	Hanoi	Cross-sectional study	235	Not reported	School-based	- GAD-7* - Anxiety Scale of Phillip	- Age - Sex - Academic achievement - Parental marital status - Parental education, occupation - Household income. - Self-esteem: RSES* - Academic motivation Scale*	25.1%: anxiety 47.2%: in risk of anxiety	Anxiety increased the risk of low self-esteem, low academic achievement Anxiety increased studying motivation
- Le 2016 (M. Le et al., 2016a) Ethics approval: + Monash University + The Institutional Research Board of the Hanoi School of Public Health.	Hanoi: rural and urban	- Cross-sectional school survey	1,616 Aged: 16-18 years		School-based Multiple-stage cluster	- Stress, anxiety and depression: DASS-21 - 12-month Suicidal thoughts and plans	- Poly-victimisation: JVQ reversion-2 - Youth Self-reported Screener Version* - Health risk behaviours: YRBS - Sex, - Residential area, - Family compositions, - Family wealth and relationship, - Chronic disease - School sector - Experience of adverse life events (by Turner and Butler)*	- Total mean score of DASS-21-V: 15.4 ± 11.2 - Suicidal thoughts: 14.1% - Suicidal plan: 5.7%	- Risk factors to MH problems: + Being female, + Being poly-victimised - Risk factors to suicidal ideations: + Being female + Being poly-victimised

Pham 2016 (V. T. Pham, 2016) Ethics approval: not reported	- Hanoi - Hai Duong - Thai Nguyen - Quang Ninh - Bac Ninh	Cross-sectional survey on students and teachers In-depth interview	900 students and 100 teachers	Not reported	School-based No information about sampling method	Aggressive behaviours No information about measurements	- Sex - Class - Reaction when experiencing aggressive behaviours	Aggressive behaviours are prevalent at 3 forms of aggressive behaviours, ranged from 1.0% to 20.6%	Boys had higher physical aggressive behaviours while Girls had higher mental aggressive behaviours. Grade 7 had less aggressive behaviours than Grade 8 and 9.

* Has not validated at the time of conducting the study ** Not reported detailed information

The Center for Epidemiological Studies-Depression Scale (CES-D); The Juvenile Victimisation Questionnaires (JVQ); The Rosenberg self-esteem scale (RSES); Questionnaire of Youth Risk Behaviour Survey (YRBS); Child Behaviour Checklist (CBCL); The Strengths and Difficulties Questionnaire (SDQ-25); Parental Bonding Instrument (PBI); The Educational Stress Scale for Adolescents (ESSA); World Health Organization, Short Form 36 (WHO-SF-36); The Kessler Psychological Distress Scale (K-10); The World Health Organization (WHO-5); General Anxiety Disorder (GAD-7); Depression, Anxiety and Stress Scale-21 (DASS-21)

Appendix 2

Table 3. Methodological quality assessment of quantitative research papers

PUBLICATION	Objective sufficiently described	tudy design evident and appropriate	Appropriate method of recruitment	Subject characteristics sufficiently described	Well defined outcomes and robust to measurements of assessment reported	Validated tools	Appropriate sample size and justification	Analytic method describe or /justified and appropriate	Some estimate of variance is reported for the main results	Controlled for confounding	Results reported in sufficient detail	Conclusions supported by the results	Ethics approval	Quality appraisal score
McKelvey (1999)	1	1	1	1	2	0	1	2	2	N/A	2	1	0	.58
Nguyen (2006)	2	2	2	2	2	0	2	2	2	N/A	2	2	2	.92
Nguyen (2009)	2	2	1	1	2	1	2	2	1	N/A	2	2	1	.79
Amstadter (2011)	2	2	2	1	2	1	2	2	2	N/A	2	2	0	.83
Le (2011)	2	2	2	2	1	2	2	2	2	N/A	2	2	2	.96
Le (2012)	2	1	2	2	1	2	1	2	2	N/A	1	2	2	.83
Nguyen (2012)	2	0	1	1	0	0	1	1	0	N/A	1	2	0	.38
Nguyen (2013)	2	2	1	1	2	2	1	2	2	N/A	2	2	2	.88
Tran (2013)	2	2	2	1	2		1	1	2	N/A	1	2	2	.75
Stratton (2014)	2	2	2	2	2	1	2	2	1	N/A	1	2	1	.83
Pham (2014)	0	0	0	0	1	0	1	0	0	N/A	1	2	0	.21
Nguyen (2014)	2	1	1	1	2	0	1	1	0	N/A	1	2	0	.50
Weiss (2014)	2	2	2	2	2	1	2	2	2	N/A	2	2	0	.87
Tran (2015)	2	1	1	0	2	0	0	0	1	N/A	1	2	0	.42
Thai (2015)	2	2	1	2	2	N/A	1	2	2	N/A	2	2	1	.86
Pham (2015)	2	2	1	2	2		1	2	2	N/A	2	2	1	.79
Le (2015)	2	1	2	2	1	2	1	2	2	N/A	1	2	2	.83
Le (2016)	2	1	1	1	2		1	2	2	N/A	2	2	2	.75
Pham (2016)	1	1	1	0	1	0	1	0	0	N/A	1	1	0	.29

0: No 1: Partial 2: Yes N/A: Not applicable

Table 4. Methodological quality assessment of the qualitative component of "mixed method" papers

Study	Objective sufficiently described	Study design evident and appropriate	Context for the study clear	Connection to a theoretical framework/wider body of knowledge	Sampling strategy described, relevant and justified	Data collection methods clearly described and systematic	Use of verification procedure(s) to establish credibility	Results reported in sufficient detail	Reflexivity of the account	Ethics approval	Quality appraisal score
Nguyen (2006)	2	2	2	2	2	2	1	2	2	2	.95
Nguyen (2012)	2	0	1	0	1	1	0	1	0	0	.30
Nguyen (2013)	2	2	2	1	2	2	0	2	2	2	.85
Nguyen (2014)	1	1	1	0	0	1	0	1	0	0	.25
Stratton (2014)	2	2	2	1	2	1	0	0	0	0	.50
Pham (2015)	2	2	2	2	2	2	0	2	2	2	.90
Pham (2016)	1	1	1	0	1	0	0	1	1	0	.30

0: No 1: Partial 2: Yes N/A: Not applicable

Appendix 3

Table 5. List of excluded studies

Reasons for exclusion	No. of publications	Articles information
Study included inappropriate sample (adults, refugee, adolescents with disabilities or unclear age ranges)	08	- Attempted suicide in Hanoi, Vietnam (Tran 2005) (T. T. H. Tran et al., 2005) - Suicide attempts by poisoning in Hanoi, Vietnam: Methods used, Mental problems, and History of mental health care (Nguyen 2009) (V. T. Nguyen et al., 2009a) - Suicide attempt in a rural area of Vietnam: Incidence, methods used and access to mental health care (Nguyen et al., 2010) (T. V. Nguyen et al., 2010) - Youth at risk: Suicidal thoughts and attempts in Vietnam, China and Taiwan (Blum 2011) (Robert Blum et al., 2012) - What explains the association between socioeconomic status and depression among Vietnamese adults? (Doan, 2011) (Doan, 2011) - Massive multiplayer online role-playing games (MMORPG): Association between its addiction, self-control and mental disorders among young people in Vietnam (Dinh 2012) (Dinh et al., 2013) - Teaching stress management skills for students in credit training stream (Do 2012) (Do, 2012) - Factor associated with mental health of medical students in Vietnam: A national study (Tran 2015) (Q. A. Tran, 2015b)

Reasons for exclusion	No. of publications	Articles information
Study did not reveal the nature, prevalence and determinants of MH problems	12	- Health related quality of life of adolescents in Vietnam: cross-cultural adaptation and validation of the Adolescent Duke Health Profile (Vo, 2005) (Vo et al., 2005b) - Validity and reliability of depression and anxiety scales using community-based adolescent research (Nguyen 2007) (T. Nguyen et al., 2007) - Coping skills for psychological problems experienced by adolescents in Hue city (T. T.-A. Tran et al., 2011) - Constructing behaviour-cognition model in treatment for adolescents with anxiety disorders (Huynh, 2012) (Huynh, 2012) - Early detection of suicide risk in adolescents (Tran & Nguyen, 2013) (L. T. M. Tran & Nguyen, 2013) - Early marriage and intimate partner violence among adolescents and young adults in Vietnam (Le, 2014) (M. T. H. Le, T. D. Tran, H. T. Nguyen, & J. Fisher, 2014) - School violence and aggressive behaviour under psychological approaches (Tran, 2014) (L. T. M. Tran, 2014) - Family connectedness, school attachment, peer influence and health-compromising behaviours among young Vietnamese males (Arunachalam, 2015). - Victimisation, poly-victimisation and health-related quality of life among high school students in Vietnam: a cross-sectional survey (Le, 2016) (T. H. M. Le, S. Holton, T. H. Nguyen, R. Wolfe, & J. R. W. Fisher, 2016). - Teaching life skills: an intervention for children with Post-Trauma Stress Disorders (Nguyen, 2016) (D. Nguyen, 2016) - Emotionless in family among adolescents (Phan, 2016) (Phan, 2016) - Emotional self-report among secondary school students (Nguyen, 2016) (T. T. A. Nguyen, 2016)
Unable to obtain	07	- Screening anxiety disorders by Zung's scale among students at high schools in Hanoi (Nguyen, 2005) (Nguyen, 2005) - Initial investigation of factors affecting mental health among students at some secondary schools in some cities (Le, 2007) (D. T. K. Le, 2007) - Study on epidemiological investigation of mental health problems among students at primary and secondary schools in Hanoi (Ngo, 2007) (Ngo, 2007) - Improving knowledge of factors that influence the mental health of school children in Vietnam (Tran, 2007) (Tran, 2007) - Educational stress and mental health among secondary and high school students in Ho Chi Minh city, Vietnam (Thai, 2010) (Thai, 2010) - Social and behavioural problems among high school students in Ho Chi Minh city (Anh, 2006) (Anh et al.) - School counselling model at high schools in Hanoi (Nguyen, 2010) (Nguyen, 2010)

CHAPTER 5. PREVALENCE OF MENTAL HEALTH PROBLEMS AMONG ADOLESCENTS IN CENTRAL VIETNAM

5.1. CHARACTERISTICS OF THE SAMPLE

5.1.1. Individual characteristics

In total, there were 1,686 eligible students, 70 of them were absent on the data collection date. Of 1,616 returned questionnaires, 23 (1.4%) were blank or "almost blank". There were 1,593 questionnaires used for data analysis.

The background information of the participants was illustrated in Table 5.1.

The sample had an equivalent number of males and females. Nearly all of participants were Kinh ethnicity.

Table 5 1. Individual characteristics of the sample (n = 1,593)

Individual characteristics	Results
Age	
Mean (SD*)	**15.4 (0.90)**
Min – Max	**15 – 18**
Sex (n, %)**	
Female	**871 (55.4)**
Male	**722 (45.3)**
Ethnicity (n, %)	
Kinh	**1,581 (99.3)**
Others	**12 (0.8)**

*: *Standard Deviation* **: *Number of participants*

5.1.2. Familial characteristics

Participants' familial characteristics are presented in Table 5.2.

More than half of the respondents' parents achieved basic education (completed high school or secondary school). Most parents were manual workers, and only a small number of parents were jobless (< 8%). Almost students currently shared the same house with their biological parents and had at least one sibling. Majority of them received the care of birth mother and father during their first 16 years of life.

Table 5 2. Familial characteristics of the sample (n = 1,593)

Familial Variables	Results
Parents' marital status (n, %)	
Living together	**1,449 (90.9)**
Not living together	**141 (8.9)**
Currently living with (n, %)	
Both birth parents	**1,397 (87.7)**
Not with both birth parents	**194 (12.2)**
A woman who gave the most care in childhood (n, %)	
Birth mother	**1,526 (95.8)**
Not birth mother	**67 (4.2)**
A man who gave the most care in childhood (n, %)	
Biological father	**1,481 (93.0)**
Not the biological father	**112 (7.0)**
Maternal education (n, %)	
High education	**258 (16.2)**
Basic education	**898 (56.4)**
No school	**437 (27.4)**
Paternal education (n, %)	
High education	**305 (19.2)**
Basic education	**900 (56.5)**

Familial Variables	Results
No school	**388 (24.4)**
Maternal occupation (n, %)	
Manual labor	**248 (15.6)**
Not manual labor	**1,303 (81.8)**
Jobless	**42 (2.6)**
Paternal occupation (n, %)	
Manual labor	**311 (19.5)**
Not manual labor	**1,169 (73.4)**
Jobless	**113 (7.1)**
Order of child in the family (n, %)	
Having at least one sibling	**1,352 (84.9)**
No sibling	**241 (15.1)**

5.1.3. School characteristics

As illustrated in Table 5.3, most students had at least one friend to share their problems. A significant proportion of students reported that they had a broken romantic relationship last year.

About one-fifth students often quarrelled with peers during the past year while another one-third quarrelled sometimes. Peer physical fighting and emotional and physical bullied by peers were relatively rare, although a small number of them involved in these peer conflicts sometimes or often.

Regarding conflict with teachers or staff at school, around one-fifth of students were punished emotionally, more than 15% of them were punished physically, and more than 13% had quarrels with teachers or staff last year.

More than half of respondents satisfied with their academic performance in the last term.

5.1.4. Community characteristics

Table 5.4 summaries data regarding characteristics at the community level. More than students were living in a rural area. More than half of the participants adhered a religion, in which the majority was Buddhism.

Table 5.3. School characteristics of the sample (n = 1,593)

School characteristics	Results
School connectedness	
Mean (SD)	**13.6 (3.7)**
Min – Max	**0 - 20**
Social isolation (n, %)	
No	**217 (13.6)**
Yes	**1,376 (86.4)**
Breakup girl/boyfriend last year (n, %)	
No	**333 (20.9)**
Yes	**1,260 (79.1)**
Last term academic achievement satisfaction (n, %)	
No	**756 (47.5)**
Yes	**837 (52.5)**
Conflicts with peers	
Quarrel with peers during the past year (n, %)	
Never	**686 (43.1)**
Sometimes	**570 (35.8)**
Often	**337 (21.2)**
Peer physical fighting past year (n, %)	
Never	**1,478 (92.8)**

School characteristics	Results
Sometimes	**68 (4.3)**
Often	**47 (2.9)**
Peer emotional bullying past year (n, %)	
Never	**1,323 (83.0)**
Sometimes	**175 (11.0)**
Often	**95 (6.0)**
Peer physical bullying past year (n, %)	
Never	**1,523 (95.6)**
Sometimes	**45 (2.8)**
Often	**25 (1.6)**
Conflicts with teachers/staff	
Quarrel with teachers/school staff past year (n, %)	
Never	**1,365 (85.7)**
Sometimes	**123 (7.7)**
Often	**105 (6.6)**
Teacher's emotional punishment past year (n, %)	
Never	**1,236 (77.6)**
Sometimes	**192 (12.1)**
Often	**165 (10.4)**
Teacher's physical punishment past year (n, %)	
Never	**1,180 (74.1)**
Sometimes	**231 (14.5)**
Often	**182 (11.4)**

Table 5.4. Community characteristics of the sample (n = 1,593)

Community characteristics	Results
Residence (n, %)	
Urban	**710 (44.6)**
Rural	**883 (55.4)**
Religion (n, %)	
Buddhism	**739 (46.4)**
Not Buddhism	**854 (53.6)**
Cyber-bullied during the past month	
Mean (SD)	**.83 (2.1)**
Min - Max	**0 - 17**

5.2. PREVALENCE OF MENTAL HEALTH PROBLEMS AMONG ADOLESCENTS IN CENTRAL VIETNAM

Table 5.5. Descriptive Statistics for mental health problems among adolescents (n = 1,593)

Mental health problems	Mean (SD)	Min-Max	Skewness	Kurtosis	Cronbach's alpha
Depression	6.3 (5.2)	0-21	.80	2.87	.85
Anxiety	5.1 (4.4)	0-21	1.04	3.75	.77
Stress	6.6 (4.5)	0-21	.60	2.92	.78
Loneliness	17.1 (5.3)	8-106	3.19	50.77	.54

Descriptive statistics for continuous variables of mental health problems were shown in Table 5.5.

Table 5.6 presents the prevalence of symptoms of depression, anxiety, stress and suicidal thoughts.

Table 5.6. Prevalence of symptoms of depression, anxiety, stress and suicidal thoughts among adolescents in Central Vietnam (n = 1,593)

Mental health problems	n*	%
Depression		
Normal	721	45.3
Mild and Moderate	542	34.0
Severe and Extremely severe	330	20.7
Anxiety		
Normal	699	43.9
Mild and Moderate	485	30.4
Severe and Extremely severe	409	25.7
Stress		
Normal	989	62.1
Mild and Moderate	433	27.1
Severe and Extremely severe	171	10.8
Suicidal thoughts		
Lifetime suicidal thoughts	504	31.6
Lifetime suicide plan	201	12.6
12-month suicidal thoughts	391	24.5

**: number of participants*

5.3. CHAPTER SUMMARY

This chapter describes the characteristics of the whole sample and the prevalence of some common mental health problems. Findings showed that mental health problems are prevalent among attending-school adolescents in Central Vietnam. In general, the prevalence was extremely high in comparison with other areas of the country.

CHAPTER 6. PARENTING STYLES AND EMOTIONAL INTELLIGENCE AMONG ADOLESCENTS IN VIETNAM

Emotional intelligence (EI) is an inner characteristic that belongs to the individual level. EI was proved to have a role in helping young generation to monitoring their own feelings and emotions as well as those of other people. Based on these knowledge of emotions, an individual is able to express their emotions appropriately and apply emotional information from observing others to navigate their thoughts and behaviours (P. Salovey & Mayer, 1990). As the role of EI has uncovered, it is essential to understand determinants that affect the development of EI, from which potential strategies to enhance EI might be created and implemented. This chapter includes a manuscript reporting the findings regarding determinants of EI, in which the role of parenting styles was emphasized. The manuscript has been submitted to the *Journal of Personality and Individual Differences* for consideration of publication.

Manuscript 3. Parenting styles and emotional intelligence among adolescents in Vietnam

Perceived Parenting Styles and Emotional Intelligence among adolescents in Vietnam

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Abstract

Emotional intelligence (EI) has a significant role in psychological well-being and is affected by parenting styles. There is no evidence about this relationship in countries with the impact of Confucianism and feudalism, in which parents use authoritarian caregiving to foster their children. The aim of the current study was to examine the association between parenting styles and EI among Vietnamese adolescents. This is a cross-sectional school survey using the Trait Emotional Intelligence Questionnaire – Adolescent Short Form (TEIQue-ASF) and the Parental Bonding Instrument (PBI). Results from 1,593 students revealed that boys had significantly higher overall EI, Well-being and Self-control subscale scores than girls. The Warmth of parents during childhood associated with higher EI while Overprotectiveness and Authoritarianism from mothers associated with lower EI among adolescents. This study supports the impact of parenting styles on EI. The warmth and care from both mother and father will benefit the emotional development of Vietnamese children.

Keywords: adolescents, emotional intelligence, parental styles, Vietnam.

Introduction

Emotional intelligence (EI), a construct first introduced by Salovey and Mayer in 1990 (P. Salovey & Mayer, 1990), is the ability of individuals to perceive, understand and manage their own emotions and to be aware of and react appropriately to other people's emotions

and experience (Petrides, 2011b). EI varies among individuals (Caspi & Roberts, 2001) and plays a significant role in the development of psychological well-being (Hoffenaar & Hoeksma, 2002; Poulou, 2014). There is consistent evidence that high EI is associated with better mental health among adolescents (Ahmad et al., 2009; Sarah K. Davis & Neil Humphrey, 2012; Fernnández-Berocal et al., 2006; Gomez-Baya et al., 2017), and that EI can be improved via psycho-educational interventions (Goldman, 1995; Nelis, Quoidbach, Mikolajczak, & Michel, 2009; Ruttledge & Petrides, 2012).

Bronfenbrenner (1979, 1995) argued that the psychological development of a person, including emotions, is governed by multiple factors. His ecological theory asserts that individual characteristics (such as age, gender, and personality) and external environments (such as family, neighbours, friends, schools, and society) interact to shape emotional wellbeing, including among adolescents (Bronfenbrenner, 1979, 1995). Although EI can be trained, it is also believed that human interaction plays important role in nurturing emotions (Alberto Alegre, 2011). For adolescents, the interactions with parents during the first years of their life play a crucial role to their emotional development.

Family is the first school of children, in which most of emotional lessons are learnt from parents. Children listen to parents, observes attitudes, behaviours, emotional expressions and reactions that parents do directly to them or to people surround them. Parents' emotions provide the child guidelines of controlling impulses, expressing feelings, managing their ups and downs, reading and reacting to others' emotions. The emotional development of a child, therefore, is affected by parents and familial cultures. Within family, parenting style, which is defined as a set of attitudes and behaviours parents have towards their children, can play an essential role in mediating the emotional development of a child (Calkins & Hill, 2007;

Darling & Steinberg, 1993). Kendler, in his 1996 study, has suggested three different types of parenting styles which has been used widely in research: Parental Warmth, Protectiveness, and Authoritarianism (Kendler, 1996). According to the author, warmth is the degree of love, trust and acceptance of parents to children, in which parents put care at the heart of the child's activities and friends (Kendler, 1996; Suchman, Rounsaville, DeCoste, & Luthar, 2007). Protectiveness is reflected in controlling behaviours while authoritarianism describes the parenting style of discouraging autonomy and independence (Kendler, 1996).

Parenting styles shaped the development of EI among adolescents. Reconsideration many studies related to how behaviours of parents affected their child's emotions, Goldman concluded that parents who shared healthy and warm relationships with children were more likely to develop emotional and communication skills among their children (Mehta, 1995). EI among children, therefore, depends on parents' love and affection (Devi & Rayal, 2004). A study conducted among 293 Australian primary school students revealed that the care of parents increased the capacity of their adolescents to use positive emotion regulation strategies (Jaffe, Gullone, & Hughes, 2010). Results from a study among HIV-affected adolescents in Thailand also reported that those had high care from parents had higher EI while those had over-protective parents had lower EI (S.-J. Lee, Li, & Thammawijaya, 2013; Thammawijaya, 2012). Evidence about the impact of parenting styles on the development of adolescents' EI, however, are limited in various cultures, especially in countries where the development of Confucianism has had an incisive effect on parenting styles.

Vietnam is an Asian country which is strongly influenced by Confucianism due to thousand years of being invaded by the Chinese (Vu, 1997) and the feudal system that emerged under

local regal leaders. In Vietnamese culture, family has the most important and influential impact on children's development mentally. Within families, children's obedience is expected and signifies respect of their parents (Bernstein, Harris, Long, Iida, & Hans, 2005; Xu et al., 2005). There is as yet no evidence about the relationship between parenting behaviors experienced by young people in Vietnam and their EI. The aim of this study, therefore, is to examine this association among adolescents in Vietnam.

Methods

Study design

This is a cross-sectional survey among high school students conducted during November and December 2016.

Setting

Vietnam is a lower-middle-income country (Cao et al., 2016; The World Bank, 2011) located in Southeast Asia with more than 90 million inhabitants (General Statistics Office of Vietnam, 2016). Thua-Thien-Hue is a central province of Vietnam, which the Nguyen feudal dynasty chose as the capital of the country in the 19th and 20th Century (Wikipedia, 2012). The province includes an area of about five thousand squares kilometres and has a population of 1,200 million people of whom 555,000 live in urban areas. There are 40 high schools in Thua-Thien-Hue province embracing more than 37,000 students (General Statistics Office of Vietnam, 2016).

Participants

The inclusion criterion for this study was to be a student enrolled in the selected high schools in rural and urban areas in Thua-Thien-Hue Province. Participants were recruited by

a multi-stage sampling method. Firstly, the 40 high schools in Thua-Thien-Hue province were divided into urban and rural groups. A total of nine schools (five urban and four rural) were randomly selected for inclusion in this study. In each of the selected schools, we randomly selected four to seven classes depending on the number of students in each class. All students in target classes were then invited to participate in the study.

Measures

An anonymously self-completed questionnaire including both standardized instruments and study-specific questions was developed in English. It was then translated to Vietnamese, culturally adapted for meaning by four independent psychologists and public health experts, and back-translated to English. The Vietnamese version was pilot tested with 51 young people who were similar to the intended participants to ensure the comprehensibility of terms, expressions, and questions, before implementation of the main survey.

Outcome

EI was assessed using *the Trait Emotional Intelligence Questionnaire – Adolescents Short Form (TEIQue-ASF)* (Petrides & Furham, 2006). The questionnaire is a simplified version, regarding wording and syntactic complexity, of the adult short form of the TEIQue. It includes 30 items, followed the seven-point Likert-structured, which ranged from 1 "Strongly Disagree" to 7 "Strongly Agree". The TEIQue-ASF has been used among adolescents in England (M. Mikolajczak, Petrides, et al., 2009; Petrides, 2006), Greece (Stamatopoulou et al., 2017), and Holland (Mavroveli et al., 2007) with good internal consistency reliability (Cronbach's alpha of the global score ranged from .81 to .87). The TEIQue-ASF has 4 dimensions: (1) Well-being (the sense of positive, happy and fulfilled feelings); (2) Self-control (the ability to control urges and desires healthily, and regulate

external stress well); (3) Emotionality (the ability to perceive and express their own emotions as well as understand others' feelings which in turn lead to the development of relationships with close members); and (4) Sociability (the ability to create and maintain social connection and social influence) (Petrides, 2009b). The validation of this questionnaire, however, has not been examined among Vietnamese adolescents.

Determinants

Parenting styles were assessed using *The Parental Bonding Instrument (PBI)* (Kendler, 1996). Developed in 1979, the PBI is a self-completed questionnaire to assess experiences about attitudes and behaviours of a person's main female and male caregivers toward them during the first 16 years of their life (G Parker et al., 1979). The shortened form suggested by Kendler (Kendler, 1996) has two separate parts with the same 16 items each for the primary male and female caregivers. It yields three sub-scales each reflecting one aspect of parental styles: Warmth (7 items); Overprotectiveness (5 items); and Authoritarianism (4 items). Adolescents respond to each statement about a parent's behaviour using a four-point Likert scale: "very unlikely", "unlikely, "likely", and "very likely". The 16-item scale has been validated among 3,209 Vietnamese adolescents and revealed the same three-factor structure as Kendler had found. The internal consistency of the three factors of the Vietnamese version is from acceptable to high (Cronbach's alpha ranged from 0.70 to 0.80) (Ngoc Quynh-Anh Nguyen, Fisher, Tran, Holton, & Le, 2018, unpublished).

School's factors that were assessed within this study included school connectedness, conflicts with teachers and school staff, conflict with peers, social isolation, breaking up romantic relationship, and study satisfaction. School connectedness, which is the connection feeling that the students have toward their school, was assessed using the 5-item *School*

Connectedness Scale (SCS) which is developed by Resnick et al. (Resnick et al., 1997). Students choose answer from 0 (Strongly disagree) to 4 (Strongly agree). The total score range is from 0 to 20 with the higher score indicates the more connection that students feel about their school. The scale has been used among American and Vietnamese adolescents (B. Pham, 2015; Resnick et al., 1997). *Conflict with teachers/staff* was assessed using three questions asking whether students experienced serious quarrels, being physically punished or scolded, threatened or humiliated by teachers/staff. Each question has three response options, classified as "Never", "Sometimes", and "Often" coded with 0, 1 and 2, respectively. *Conflict with peers* was assessed using questions asking whether students experience serious quarrel, involve in physical fighting, being bullied physically and emotionally by their fellow students. Each question has three response options, classified as "Never", "Sometimes", and "Often" coded with 1, 2 and 3, respectively. The score range for conflict with teachers/staff is from 0 to 6 and for conflict with peers is from 4 to 12 with the higher score, the more conflict students have with teacher/staff or peers. Each question was used to assess social isolation, breaking up with girlfriend/boyfriend, and study satisfaction with two answer options "Yes" and "No". All these questions have been used among Chinese and Vietnamese adolescents (B. Pham, 2015; Sun et al., 2012).

Cyber-bullying was assessed using the *Cyber-bullying Victimisation Scales* (Patchin & Hinduja, 2010), which was developed for use among American adolescents and some questions for Vietnamese adolescents from Pham's study (B. Pham, 2015). The higher score indicates more experience of cyber-bullying.

Covariates were collected using closed-ended study-specific questions informed by the available evidence about factors that have significant effects on adolescents' emotional

well-being, including parental status, parents' education, family structure, age, gender, geography, and religion.

Procedure

Potential participants from selected classes were given an explanatory statement and a consent form and a set of these forms to give to and discuss with their parent one week before the data collection date. Students who agreed to participate and received permission from their parent completed an anonymous questionnaire in their class under the supervision of a trained research assistant. All questionnaires, including uncompleted ones, and the refuse letter from parent or guardian (if any) were returned to the research assistant in provided sealed envelopes.

Data management

Data were entered into a password-protected database using EpiData software 3.1 (Lauritsen & Bruus, 2003-2005) and cleaned using Stata version 14.0 (StataCorp, 2015).

For the TEIQue-ASF, the score for each item ranges from 1 to 7 in a positive direction. The subscale scores were derived from 26 of the 30 items. These subscales include Well-being (6 items), Self-control (6 items), Emotionality (8 items), and Sociability (6 items). Each subscale score was the average sum of all items within that subscale (Perera, 2015; Petrides, 2006). The remaining four items did not belong to any subscale but contributed to the Global EI score that is derived as the average of all 30 items. The higher the score is, the better the student's EI (Petrides, 2009b).

The score for each PBI item ranges from 0 to 3. The two questionnaires (one about their mother and one about their father) for each student yield three subscale scores: *Warmth*,

Protectiveness, and *Authoritarianism*. Each subscale score was calculated by summing all items in the subscale. The score range of Warmth is 0 to 21, Protectiveness 0 to 15, and Authoritarianism 0 to 12. Higher score indicates higher perceived warmth, overprotectiveness or authoritarianism (Kendler, 1996).

Data analyses

The analyses only included data from participants who had completed the questionnaire and were undertaken using Stata version 14.0 (StataCorp, 2015).

Initially, *descriptive statistics* including mean, standard deviation or median, interquartile range for continuous variables, and frequency and percentages for categorical variables were calculated.

In the next step, *multiple linear regressions* were performed to investigate the relationship between parental styles and the EI. Standard errors were controlled for cluster (school) effects using clustered sandwich estimator. Socio-demographic characteristics were included in the models. The analyses were repeated with each subscale and the global score of the TEIQue-ASF.

Ethics

The Monash University's Human Research Ethics Committee *(Project No.: 2016-0610)* and the Institutional Review Board of the Hue University of Medicine and Pharmacy *(Project No.: 01-102016/DHYDH)* approved this study.

Results

Sample

Among 1,686 eligible participants, 1,593 (98.3%) completed the questionnaire and their data were included in the analyses. Data from the other 93 students could not be used as only part of the questionnaire had been completed. The demographic characteristics of participants are summarised in Table 1. Over half of them were females. Participants were from urban and rural areas in Central of Vietnam. The age range of this sample was from 15 to 18 years. Majority of them were Kinh peoples and had parents living together. Most students received main care from their birth father and mother in their first 16 years of age (We, from now on, use "father" for "main male caregiver" and "mother" for "main female caregiver"). Most mothers and fathers had a primary education between elementary to secondary and worked as manual laborers.

Emotional Intelligence among adolescents

The distributions of the EI and parenting styles scores among students are illustrated in Figure 1 and 2. The Global EI score among Vietnamese high school students ranged from 0 to 7. The mean scores and standard deviations (SD) of the EI and its subscales were shown in Table 2. Students self-scored highest in Well-being and least in Emotionality.

Association between socio-demographic, school characteristics and Emotional Intelligence

When other characteristics were controlled, being males and adhering to Buddhist beliefs were associated with higher Global EI. The most significant disparity between the scores of males and females was that boys ranked higher than girls in Well-being, Self-control, and

Emotionality subscales. Those who were living separately from parents significantly had a lower mean score in Emotionality than those did not. Students at aged of 16 had lower mean scores in Sociability than those at aged 15 but higher mean scores in Emotionality; however, this difference did not repeat with students at aged 17 and 18.

School connectedness associated positively with Global EI and its subscales, excepting Emotionality. Conflict with friends correlated negatively to Well-being but not the Global EI and other subscales.

Association between parenting styles and Emotional Intelligence

The results of the multiple linear regression (Table 3) demonstrated that the warmth of both mothers and fathers was significantly associated with higher Global EI scores and Well-being, Self-control, Emotionality and Sociability subscales when socio-demographic variables were controlled.

Overprotectiveness of mothers was significantly negatively correlated with Global EI and Well-being scores. There was no evidence of an association between these behaviours in fathers and Global EI or Well-being. Overprotectiveness of fathers negatively affected Emotionality scores. The authoritarianism of mothers was associated negatively with Global EI and Sociability scores. This correlation with the authoritarianism of fathers was not significant.

Discussion

This study is the first providing evidence of the relationship between adolescents' EI and their experience of parenting styles in a South-Est Asian context while taking into account other possible determinants of EI. With a large and rigorously selected sample of high school students and appropriate statistical analyses, we found that the Warmth students

experienced from their parent was positively related to their EI while Overprotection and Authoritarianism had negative impacts. In this context, males reported a higher level of EI than females.

The mean Global EI score of Vietnamese adolescents (4.3, SD = 0.7) was lower than that from Greek adolescents (4.8, SD = 0.7) (Argyriou, Bakoyannis, & Tantaros, 2016). There are no reports of mean EI's subscales scores among adolescents from other countries. The difference of Global EI means scores between the two samples might be due to the less confidence of Asian students in self-assessment about EI than those from Western countries (Görgens-Ekermans, 2009). The cultural difference in parenting styles between Asian and Western parents which is explained more later in this paper might contribute to the disparity of EI in this sample.

These data indicate that young men had a higher level of EI than young women. The potential reason might come from the disparity in self-assessment between Vietnamese males and females, in which males were likely more confident in their capabilities than females (Beyer 1990)(Moïra Mikolajczak et al., 2007). The males' confidence rose from the strong influence of feudalism. In a family, males play a core role and have greater influence in deciding everything for all family members while the preferred role of females is to obey males unconditionally. Furthermore, females leave her family after marriage and obey their husbands who live with their parents. Hence, females are considered as the daughter of their husbands' families, as a consequence, considered unreliable caretakers of their original families. Due to this mindset, families in Vietnam tend to son-preference which in turn affects parents' attitudes and priority in raising and educating their children. A result of this difference in attitude on the part of parents might well be to increase the confidence in self-

assessment among boys and limit it among girls. Furthermore, girls are taught to be the main person building happiness for the family by obeying males, doing housework, controlling feelings and hiding their own emotions and thoughts, taking care of children, and teaching children to behave and understand other people's feelings. Vietnamese females, therefore, are more likely demanding about themselves higher in understanding and controlling emotions than their males counterparts (Moïra Mikolajczak et al., 2007) that might lead to their low self-assessment in EI. Previous studies have already shown evidence that gender stereotypes had a significant impact on emotions and the ability to interpret their own emotional experience (Brody & Hall, 2008; Brody & Hall, 2000; Fischer, 1993).

Adherence to Buddhism appeared to have a positive impact on EI. The core values of Buddhism involve focusing on one's inner feelings in order to understand one's relationship. People who have faith in Buddha believe that life is replete with suffering, and the only way to avoid pain is to face one's unpleasant feelings and thoughts. Buddhism encourages people to concentrate on their inner feelings and separate these feelings from surrounding influences. The ability to focus in a given moment and to value one's current emotions, helps one to accept the presence of negative emotions, and prevent these emotions from affecting one's behaviour, and thus take effective actions (Ciarrochi; Hanh, 1987). Understanding the ideas of Buddha, people are more likely better in emotional regulation and understanding their own emotions that are essential components of EI. This finding is supported by the ideas from psychologists in the US and Nepal, Ekman et al. and Geula, who stated that the religious belief, especially in Buddha, could improve the development of emotional maturity (Ekman, Davidson, Ricard, & Wallace, 2005; Geula, 2004). They believed that Buddhism's theory that teaches people to focus on the emotional,

cognitive balance of mind had helped the ability to control their own emotional and attentional stability (Ekman et al., 2005).

Our study found that adolescents' Global EI and its subscales were significantly positively associated with the Warmth of both mothers and fathers (the only non-significant association was between Self-control and the mother's warmth). This correlation was supported by the theory of attachment emphasizing the role of parent-child bonding in the development of a personality and emotion regulation. According to the theory, when a child experiences being loved, trusted and cared for by his/her parents, he/she internalizes this caring attitude toward self and others (Ainsworth & Bowlby, 1991). This finding was aligned with Asghari's study (Asghari & Besharat, 2011) that confirmed the constructive role of Warmth from parents to the development of EI among adolescents. The same findings were also found in many other studies (Egeland, Weinfield, Bosquet, & Cheng, 2000; Hoskins, 2014). It seems that the influence of parental warmth on adolescents' EI is consistent across culture. It, therefore, suggests that parental warmth is an essential parenting behaviour for developing EI and its dimension, including Well-being, Self-control, Emotionality, and Sociability.

Notably, our study indicated that adolescents with a feeling of being overprotected by their mothers had lower Global EI. Overprotectiveness is believed in Asian cultures to be a way in which a parent shoes love and care by preventing children from being hurt, unhappy or acting antisocially (N. T. Tran, 2013). However, overprotective parenting has adverse effects on adolescents' emotions (Năstasă & Sala, 2012; Oregon State University, 2012). In this sample, the more students felt that their mothers overprotected and did not give them enough freedom, the lower was their EI score. Nonetheless, the overprotectiveness of father

did not affect adolescents' Global EI. The explanation for this difference between mother and father might come from the differences in the amount of time they spend with their children. Research has shown that mother spends more time with children than father (Baxter, 2002; Craig, 2006; Guryan, Hurst, & Kearney, 2008; Pleck, 1997; Stephens, 2009; Yeung, Sandberg, Davis-Kean, & Hofferth, 2001). Mothers spend twice or three times more with their children than do fathers (Baxter, 2002; Tatyana et al., 2014; Yeung et al., 2001). Especially in Vietnamese culture, raising and taking care of children are the main responsibility of a mother from infancy to adolescent years (Locke, Nguyen, & Nguyen, 2012) while the role of father is to earn money, usually away from family and child-care duties (Pohl, Bender, & Lachmann, 2005). The responsibility of mothers is helping their children to recognize and understand other's emotions and develop good social relationships (A. Alegre & Benson, 2004). The role remains the same when the mother has a full-time job (Craig, 2006). With a closer relationship and spending more time with mothers during the first 16 years, the child felt the overprotective from mother more clearly than that of their father. The controlling of the mother, therefore, affected negatively on adolescents' confidence, positive thoughts, satisfaction with life and EI in general. In Western cultures, the mentioned roles were usually divided among mothers and fathers. They tended to encourage children to make their own decisions and to do things that they were interested in, rather than controlling and setting strict rules (Smithstein, 2011).

Interestingly, even though the father did not spend as much time with children as the mother, the overprotectiveness of father affected negatively on the ability of emotions among adolescents and sociability (Emotionality and Sociability subscales, respectively). Specifically, the more children felt a lack of freedom from the father, the lower was their

ability to understand their own and others' feelings; and the lower ability of connecting to other people outside family. Adolescents who received the protectiveness from father more than their expectation, had more difficulty in recognizing their internal emotions and expressing it to others, and found difficult to maintain fulfilling relationships with friends. The reason for this can be explained by the role of the father in a family and the differences in parenting between father and mother. Vietnamese culture values the tradition of male superiority, in which father has the highest position in a family and is the one who makes the final decisions in all matters. His decisions are obeyed by other members in the family, especially children (N. T. Tran, 2013). Unlike mother who usually shares love, care without punishment to children, Vietnamese father is associated with disciplinarian type (Locke et al., 2012) which is acceptable remedies and considered as a love expression. At the teenager stage, choosing and making friends are under the strict supervision of parents, especially of the father, due to the worries of early love relationships affecting their child's studying negatively. Physical punishment is sometimes used to encourage compliance (Tatyana et al., 2014). The harsh discipline from father might negatively affect the development of Emotionality in children (A. Alegre & Benson, 2004).

In our sample, the Authoritarianism of mother affected Global EI among Vietnamese adolescents in a negative way. Adolescents who felt being controlled by mother and lack of opportunities to have their own decisions were more likely to have lower EI. Studies from Mathibe and Năstasă shared the same findings (Mathibe, 2015; Năstasă & Sala, 2012). The authoritarianism of fathers did not affect EI and any of its aspects. The limitation of sharing time with children mentioned above might be an explanation for this difference.

This original study obtained a large sample size and a high response rate. However, we acknowledge that the participants in this study were only students attending schools that were not representative of all adolescents in Vietnam. Adolescents who left school early and participated in vocational training, stayed at home or were working, were not included. Another limitation worth considering was the invalidated measurement of the TEIQue-ASF for Vietnamese adolescents professionally although the translation and back-translation was strictly followed standard guidelines. Finally, both measurements for assessing EI and parenting styles were based on an adolescent's self-report; therefore, the responses might be strong in personal feelings. Students might over- or under-evaluated their EI and their assessment of their parents' behaviours might be affected by personal emotions and feelings towards their parents.

Conclusions

The current study contributes to the literature about EI among adolescents globally and in Vietnam particularly. It confirms the essential role of the family as an environmental aspect in children's EI development. The results showed that warmth and caring of parents could ease the path towards improving EI for adolescents. Hence, the strategies to promote warm and sensitive, rather than distant or disapproving caregiving, including the important role of father in Vietnam in bringing up children will benefit the emotional development of their children. Parents should be more cautious about their parenting styles to benefit the adolescents' emotional wellbeing. Also, the behaviours and attitudes of parents in caregiving and nurturing emotions between boys and girls should be cautious to eliminate the gender inequity in Vietnamese society. The gender gap in self-reported EI, therefore, has the potential to improve.

As EI can be improved by practicing and training (Nelis et al., 2009; Ruttledge & Petrides, 2012), the findings from this study suggest intervention programs enhance EI among adolescents, especially the confidence of young women in the abilities to control, manage and express emotions. Co-curricular emotion-related activities should be integrated into Vietnam's high schools. The findings also suggest that parental training targeting parenting styles for both mothers and fathers should be considered to include in the EI intervention programs for adolescents in this area of Vietnam. The parental training conducting at the early stage of child's development can improve EI at the adolescent stage. Within these educational programs, gender differences in perceived EI should be taken into account.

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Table 1. Summary of participants' characteristics.

Variables	*Values*	*Variables*	*Values*
Gender (n*, %)		**Age (in years)**	
Male	722 (45.3)	Mean (SD**)	15.94 (0.90)
Female	871 (54.7)	Min-Max	15 - 18
Ethnicity (n, %)		**Residence**	
Kinh	1,581 (99.3)	Rural and coastline	883 (55.4)
Others	12 (0.8)	Urban	710 (44.6)
Religion		**Which child in family**	

Buddhism	729 (45.8)	Eldest	418 (26.2)
Others	125 (7.9)	Younger	935 (58.7)
None	739 (46.4)	No sibling	240 (15.1)
Parents' marital status		**Currently living with**	
Living together	1,452 (91.2) 141	Both birth parents	1,397 (87.7)
Not living together	(8.9)	Only one birth parent	143 (9.0)
		None of birth parent	53 (3.3)
Woman provided most care in first 16 years		**Man provided most care in first 16 years**	
Birth mother	1,526 (95.8)	Birth father	1,481 (93.0)
Not birth mother	67 (4.2)	Not birth father	112 (7.0)
Mother's highest education		**Father's highest education**	
High education	258 (16.2)	High education	305 (19.2)
Basic education	898 (56.4)	Basic education	900 (56.5)
No schooling	437 (27.4)	No schooling	388 (24.4)
Mother's job		**Father's job**	
Mental labour	248 (15.6)	Mental labour	306 (19.2)
Manual labour	1,303 (81.8)	Manual labour	1,168 (73.3)
No job	42 (2.6)	No job	119 (7.5)

**: Number of students*

***: Standard Deviation*

Table 2. Mean, Standard Deviation (SD) and Min-Max of the Global EI and parenting styles scores among adolescents in Vietnam (n = 1,593)

	Mean	SD	Min - Max
Emotional Intelligence			
Global score	4.3	0.7	1.8 – 6.6
Well-being	4.8	1.2	1.0 – 7.0
Self-control	4.2	1.0	1.0 – 7.0
Emotionality	4.0	0.8	1.3 – 6.8
Sociability	4.4	0.9	1.0 – 7.0
Parenting styles			
Warmth of mother	12.3	3.8	0 – 18
Protectiveness of mother	5.8	3.5	0 – 15
Authoritarianism of mother	6.5	3.0	0 – 12
Warmth of father	10.2	4.3	0 – 18
Protectiveness of father	4.9	3.7	0 – 15
Authoritarianism of father	6.1	3.4	0 – 12

Table 3. Multiple linear regression for Global EI, Well-being, Self-control, Emotionality, and Sociability among Vietnamese adolescents

	Global EI		Well-being		Self-control		Emotionality		Sociability	
	Coef.	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**
Gender (Male: 1; Female: 0)	**0.15****	**0.08; 0.24**	**0.16***	**0.02; 0.29**	**0.19***	**0.05; 0.32**	0.10	-0.10; 0.19	0.01	-0.08; 0.11
Age										
15	Ref.									
16	0.04	-0.02; 0.10	-0.01	-0.11; 0.08	0.02	-0.12; 0.15	0.08	-0.01; 0.17	**-0.11***	**-0.22; -0.01**
17-18	-0.03	-0.12; 0.06	-0.05	-0.18; 0.08	0.01	-0.15; 0.16	0.03	-0.14; 0.19	-0.14	-0.29; 0.01
Ethics (Kinh: 1; Others: 2)	0.01	-0.51; 0.53	-0.24	-1.12; 0.65	-0.09	-0.63; 0.45	0.25	-0.02; 0.53	0.11	-0.59; 0.81
Religion										
None	Ref.									
Buddhism	**0.48***	**0.01; 0.09**	0.06	-0.04; 0.16	0.02	-0.09; 0.12	0.03	-0.05; 0.11	0.08	-0.04; 0.20
Others	0.04	-0.15; 0.22	0.05	-0.15; 0.24	-0.01	-0.22; 0.19	-0.01	-0.15; 0.13	0.08	-0.14; 0.30
Residence (Rural: 2; Urban: 1)	-0.02	-0.12; 0.09	-0.04	-0.20; 0.11	-0.02	-0.17; 0.13	-0.01	-0.12; 0.11	0.01	-0.09; 0.11
Parents' marital status (Not living together: 2; Living together: 1)	0.05	-0.16; 0.26	0.20	-0.16; 0.56	-0.18	-0.46; 0.09	0.21	-0.13; 0.55	0.04	-0.31; 0.39
Current living with										
Both birth parents	Ref.									
Only one birth parent	-0.05	-0.31; 0.21	-0.31	-0.69; 0.07	0.11	-0.25; 0.47	-0.14	-0.44; 0.16	0.16	-0.19; 0.51
None of birth parent	-0.12	-0.41; 0.17	-0.08	-0.55; 0.39	-0.19	-0.71; 0.34	**0.29****	**-0.45; -0.12**	0.11	-0.26; -0.48
Woman most care in first 16 years (Not birth mother: 2; Birth mother: 1)	0.01	-0.16; 0.19	0.03	-0.30; 0.36	0.08	-0.18; 0.34	-0.05	-0.36; 0.26	0.03	-0.20; 0.26
Mother' highest education										
University degree and above	Ref.									

	Global EI		Well-being		Self-control		Emotionality		Sociability	
	Coef.	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**	**Coef.**	**95% CI**
Basic education	-0.11	-0.24; 0.01	-0.12	-0.36; 0.12	-0.16	-0.34; 0.02	-0.06	-0.27; 0.14	0.01	-0.19; 0.21
No schooling	-0.09	-0.24; 0.07	-0.09	-0.43; 0.26	-0.06	-0.24; 0.11	-0.05	-0.25; 0.15	-0.01	-0.26; 0.26
Mother' job										
Mental labour	Ref.									
Manual labour	0.06	-0.05; 0.16	0.07	-0.09; 0.23	0.14	-0.09; 0.37	-0.01	0.20; 0.20	-0.05	-0.19; 0.09
No job	-0.04	-0.27; 0.19	0.08	-0.30; 0.47	-0.06	-0.33; 0.21	-0.13	-0.42; 0.16	-0.12	-0.47; 0.23
Man most care in first 16 years (Not birth father: 2; Birth father: 1)	-0.04	-0.24; 0.17	-0.23	-0.58; 0.13	0.07	-0.27; 0.41	-0.06	-0.30; 0.18	0.02	-0.29; 0.33
Father's highest education										
University degree and above	Ref.									
Basic education	0.08	-0.07; 0.22	0.08	-0.19; 0.34	0.23	-0.03; 0.50	0.01	-0.22; 0.23	-0.08	-0.24; 0.09
No schooling	-0.02	-0.17; 0.13	-0.03	-0.30; 0.24	0.16	-0.09; 0.42	-0.10	-0.35; 0.14	-0.16	-0.34; 0.12
Father's job										
Mental labour	Ref.									
Manual labour	-0.11	-0.29; 0.07	-0.11	-0.39; 0.16	-0.14	-0.36; 0.08	-0.11	-0.36; 0.15	-0.04	-0.28; 0.20
No job	-0.05	-0.29; 0.19	-0.12	-0.43; 0.19	-0.03	-0.32; 0.27	0.07	-0.21; 0.34	-0.13	-0.56; 0.29
Sibling										
Elder	Ref.									
Younger	-0.04	-0.14; 0.05	-0.11	-0.29; 0.06	-0.04	-0.15; 0.07	-0.03	-0.10; 0.05	-0.03	-0.16; 0.09
No sibling	-0.05	-0.20; 0.10	-0.11	-0.34; 0.11	-0.05	-0.25; 0.15	-0.01	-0.14; 0.14	-0.11	-0.34; 0.13
Parenting styles										
Mother's warmth	**0.03*** **	**0.02; 0.04**	**0.06*** **	**0.04; 0.08**	**0.02***	**0.01 ; 0.03**	**0.03** **	**0.02; 0.04**	**0.03** **	**0.01; 0.05**
Mother's overprotectiveness	**-0.02***	**-0.03; -0.01**	**-0.02***	**-0.05; -0.01**	-0.03	-0.05; -0.01	-0.01	-0.03; 0.01	-0.01	-0.02; 0.01
Mother's authoritarianism	**-0.03***	**-0.05; -0.01**	-0.04	-0.08; 0.01	**-0.03***	**-0.06; -0.01**	-0.02	-0.05; 0.01	-0.02	-0.05; 0.01
Father's warmth	**0.04** **	**0.02; 0.05**	**0.05** **	**0.03; 0.08**	**0.04** ** -	**0.02; 0.05**	**0.03** **	**0.01; 0.04**	**0.02***	**0.01; 0.04**
Father's overprotectiveness	-0.01	-0.03; 0.01	-0.01	-0.03; 0.01	0.01	-0.03; -0.01	**-0.02***	**-0.04; -0.01**	-0.02	-0.04; 0.01
Father's authoritarianism	0.01	-0.01; 0.02	0.01	-0.01; 0.01	0.01	-0.02; 0.03	0.01	-0.01; 0.02	0.01	-0.01; 0.03

*$p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

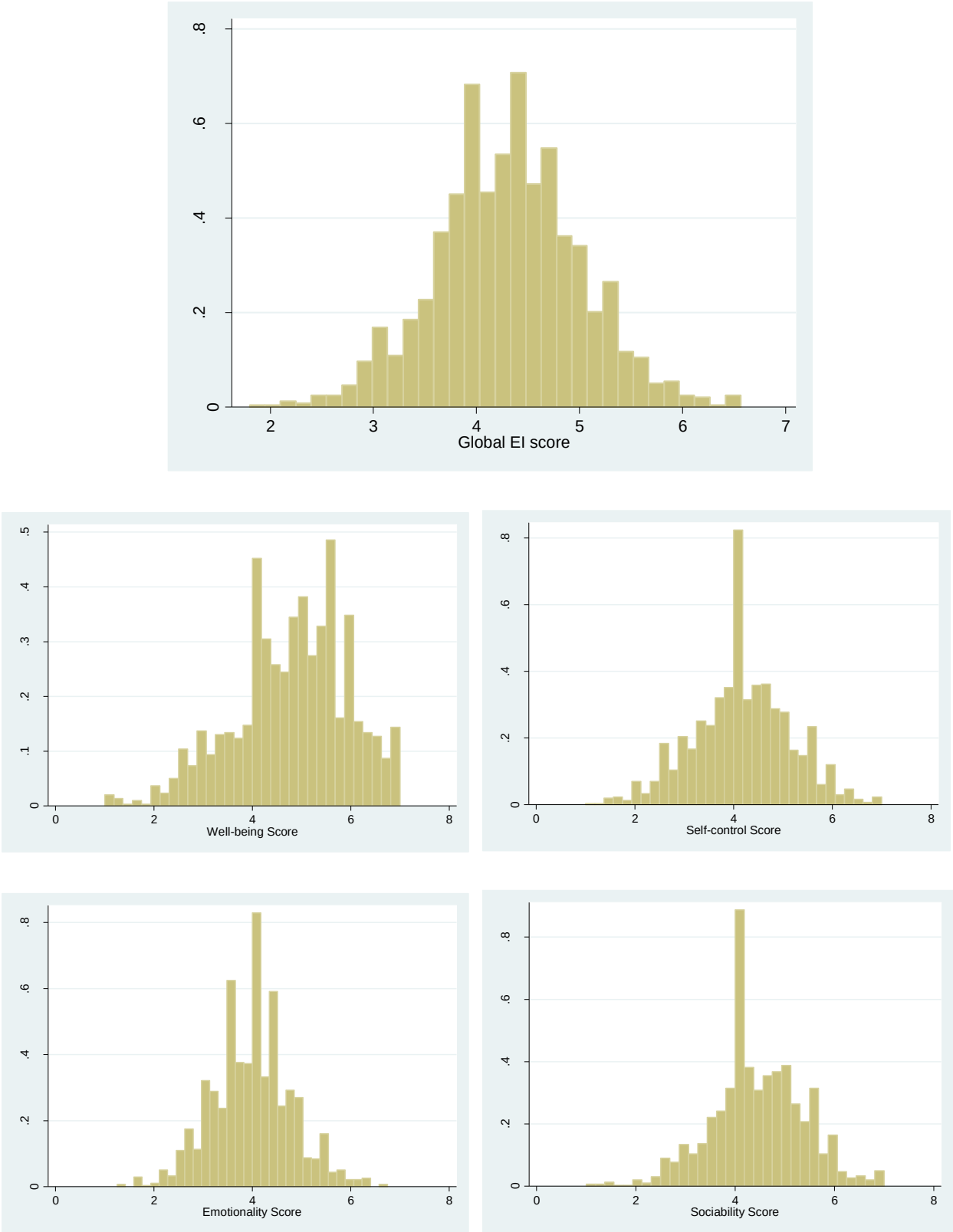

Figure 1. Distribution of the EI Scores among Vietnamese adolescents (n = 1,593 students)

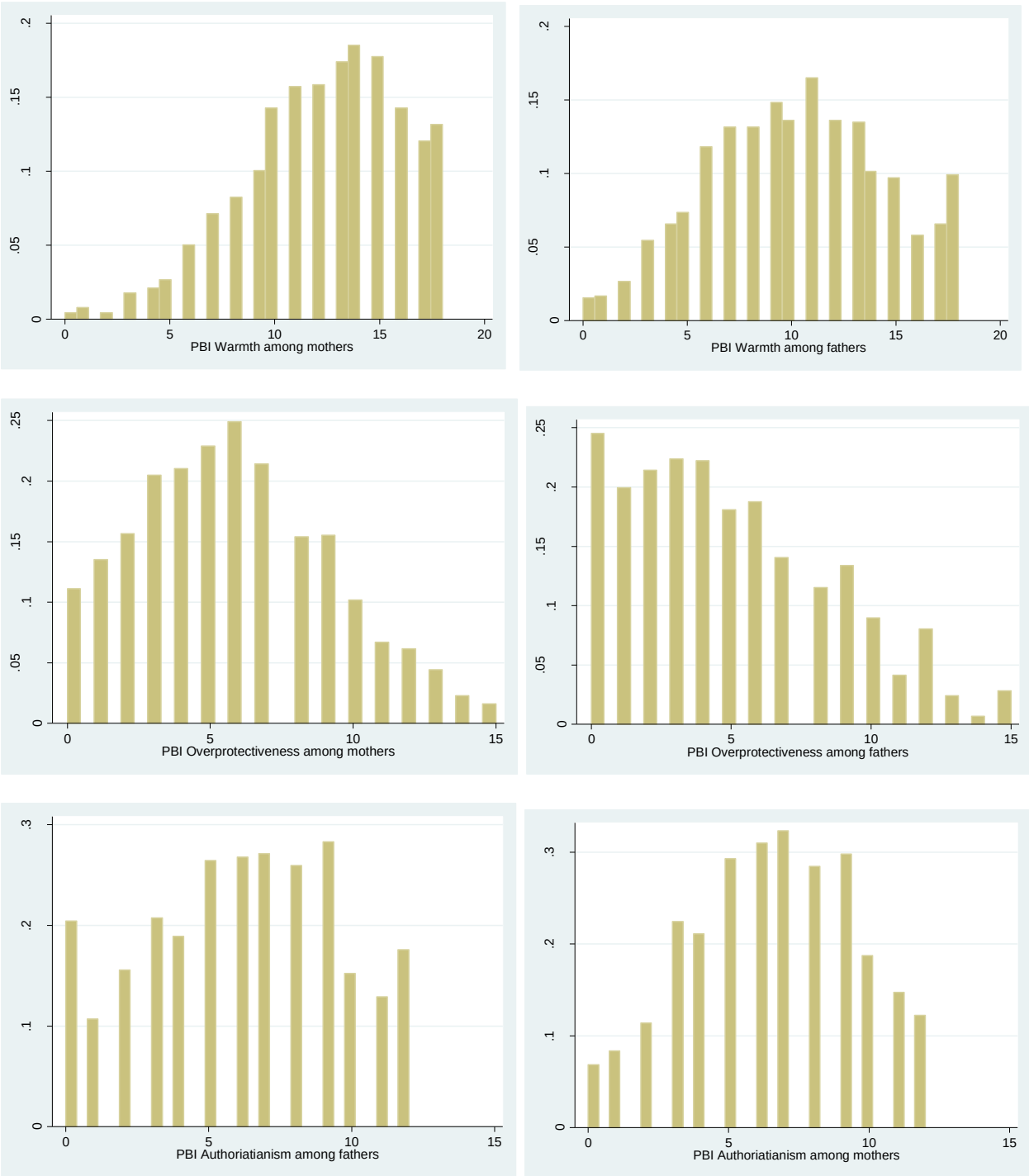

Figure 2. Distribution of the parenting styles among Vietnamese adolescents (n = 1,593 students)

CHAPTER 7. EMOTIONAL INTELLIGENCE AND SYMTOMPS OF DEPRESSION, ANXIETY, STRESS AND LONELINESS AMONG ADOLESCENTS IN VIETNAM

Psychological literature has proved that EI plays an essential role in human life and affect significantly to mental health. High EI was associated with better mental health while low EI was associated with the higher risk of experiencing mental health problems (Ahmad et al., 2009; Martins et al., 2010). This chapter includes a manuscript describing the results of the association between EI and mental health problems among adolescents in Central Vietnam. The manuscript is under the review of the *Journal of Mental Health*.

Manuscript 4. Emotional intelligence and mental health problems among adolescents in Vietnam.

Emotional intelligence and mental health problems among adolescents in Vietnam: a school-based survey

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Abstract

Background: The burden of mental health problems among adolescents is substantial and apparent globally. There are fewer data and nature, prevalence and determinants of these problems available from low- and middle-income countries (LMICs). Emotional intelligence (EI), an individual characteristic that is shaped by experience, can protect adolescents from mental health problems in high-income countries, but this relationship has not been investigated extensively in LMICs and not at all in South East Asian countries.

Aim: The aim was to investigate the relationship between EI and symptoms of mental health problems among adolescents in Vietnam.

Methods: This is a cross-sectional survey of adolescents attending schools in rural and urban areas of Central Vietnam. Data were collected using an anonymous, self-completed questionnaire, which included study-specific questions about demographic characteristics and the Vietnam-validated Depression-Anxiety-Stress Scale-21 (DASS-21), the UCLA Loneliness Scale (UCLA), the Trait Emotional Intelligence Questionnaire – Adolescents Short Form (TEIQue-ASF), which yields four sub-scale scores and a Global EI score, the Parenting Bonding Instrument (PBI).

Results: A total of 1,593/1,616 (98.6%) students completed the questionnaire. Students with higher Global EI scores and Well-being, Self-control and Emotionality subscale scores had significantly fewer symptoms of depression, anxiety and stress and a lower risk of having symptoms of loneliness. Well-being, Emotionality, and Sociability protected against loneliness. Being female and

cyber-bullied were risk factors while the warmth of parents was protective factors to mental health problems among adolescents in Vietnam.

Conclusion: Higher EI is associated with better mental health among Vietnamese adolescents. Structured interventions to assist parents to provide care that fosters EI and school-based programs to enhance EI are potentially promising approaches reducing the burden of mental health problems experienced by young people in Vietnam. Prevention programs including parenting and cyber safety training are recommended.

Keywords: adolescents, emotional intelligence, mental health problems, depression, anxiety, stress, loneliness, low- and middle-income, Vietnam.

Introduction

Adolescence is a developmental phase characterised by rapid changes in physical growth, cognition, and emotions (Nielsen, 1987). Adolescents are no longer children but not yet adults (WHO, 2014). The changes in social relationships, responsibilities, roles, and expectations can have a significant influence on individual moods and emotions which in turn affect adolescents' well-being (Martins et al., 2010).

Mental health problems are prevalent among adolescents (age 10-19) throughout the world (Erskine et al., 2015; UNICEF, 2018). According to the World Health Organization (WHO), as infectious diseases and malnutrition causes of premature death are being addressed, mental health problems are one of the leading causes of mortality among adolescents globally (WHO, 2014; World Health Organisation, 2012b). It is estimated that approximately 20% of adolescents worldwide experience a mental health problem annually (UNICEF, 2018). There is increasing recognition of this public health problem in low- and middle-income countries (LMICs) where 70% of the world's adolescents (representing a quarter of the global population) live (Saxena et al., 2006; United Nations, 2012; World Health Organisation, 2014a). In China, the prevalence of symptoms of depression assessed by the Epidemiologic Studies Depression Scale (CES-D) among community-based adolescents was 20.3% (Zhou, Zhang, Rozelle, Kenny, & Xue, 2018). Based on the Childhood Psychopathology Measurement Schedule (CPMS) clinical interview and diagnosis according to International Classification of Diseases-10 (ICD-10), the prevalence of psychiatric illness among 3,928 Indian adolescents aged 10-15 was 20.2% (Bansal &

Barman, 2011). However, this burden is poorly recognised in most LMICs, which lack data about the nature, prevalence and determinants of mental health problems among adolescents which are essential to informing local policy responses and international efforts to develop evidence-based interventions (Global Forum for Health Research & World Health Organisation, 2004).

Bronfenbrenner formulated the Ecological Systems Theory to explain the connection between individual characteristics and the multiple surrounding environments that affect the development of a child (Bronfenbrenner, 1979, 1995). Using this theory, the psychological growth of adolescents can be considered as being influenced by individual factors and external contexts, including family, friends, school, and community. Bronfenbrenner stressed that it is essential to consider the child and the child's interactions with environmental systems to understand and help the child to grow and develop healthily. There is substantial evidence to support Bronfenbrenner's theory (Adubale, 2017; Kersten et al., 2016; Millings, Buck, Montgomery, Spears, & Stallard, 2012; Song, Hong, Kim, & Lee, 2016; Van Loon, Van de Ven, Van doesum, Hosman, & Witterman, 2017; Wang et al., 2018; Yen et al., 2014; Yterdal, 2016). Considering individual factors, there is evidence of potential protective role of characteristics like resilience, coping skills, self-esteem, and optimism for adolescents' mental health (Ames, Rawana, Gentile, & Morgan, 2015; Dumont & Provost, 1999; Huang & Mossige, 2015; J. Li, Delvechio, Di Riso, Salcuni, & Mazzeschi, 2015; Millings et al., 2012; Jy Shi et al., 2016; Wang et al., 2018).

Emotional intelligence (EI) is conceptualized as the ability to understand, regulate and control emotions as well as the capacity to empathize with and adjust to the emotions of others (J. Mayer & P. Salovey, 1997). There is evidence that higher EI can protect a person from mental health problems (Ahmad et al., 2009); for example, by increasing positive mood as well as the ability to regulate negative mood (Schutte et al., 2002). People with higher EI are happier and develop greater life satisfaction than those with low EI (K. Gardner, 2009). In contrast, low EI has been associated significantly with depression, anxiety, loneliness, stress, higher alcohol consumption, drug use and personality disorder (K. Gardner, 2009; Martinez-Pons, 1997; Schutte, Malouff, Simunek, McKenley, & Hollander, 2002; Schutte et al., 1998). Among adolescents in high-income settings, higher EI has been shown to prevent the development of emotional problems. A 2006 study from Spain found that adolescents aged 14 to 19 years with higher EI had a lower risk of

experiencing depressive and anxiety symptoms (Fernnández-Berocal et al., 2006). A two-year longitudinal study, also in Spain, started in 2015, confirmed this negative correlation among school students between 12 and 15 years (Gomez-Baya et al., 2017). An American study in 2013 had similar findings that 12- and 13-year-old with lower emotional self-awareness were at risk of developing higher depressive symptoms (Stange, Alloy, Flynn, & Abramson, 2013). Davis and Humphrey's study in the UK concluded that higher EI predicted a lower level of depression and disruptive behaviours among school students aged 11 to 16 years (Sarah K. Davis & Neil Humphrey, 2012). These findings are consistent with those from studies conducted among adolescents in LMICs. For instance, an investigation of 247 Iranian high school students using the Emotional Intelligence Inventory, Youth Version (EQ-I, YV) (Bar-On, 2000) revealed that there was a significant negative relationship between EI and anxiety or depression. Specifically, the lower the score in EI, the higher the anxiety or depression scores (Jafar Shabani, Hassan, Ahmad, & Baba, 2010). The same correlation was concluded in Ahmad et al.'s study among 112 students aged from 16 to 18 in Pakistan (Ahmad et al., 2009). In India, using Immanuel and Sushamain's EI Inventory, Aroline and Ansia (2017) revealed the negative association between EI and test anxiety among 80 adolescents (Aroline & Ansia, 2017). While providing consistent and promising evidence, these studies used relatively small samples and recruited from single sites which might limit generalisability. Most LMICs, including those in South East Asia, have no local evidence on EI among adolescents on which to base policy or health promotion strategies.

Vietnam is a lower-middle-income, Southeast Asian country in which one-fifth of the national population is adolescents (The World Bank, 2011). The prevalence of mental health problems among young people appears to be higher than world averages. Based on a self-report school survey conducted in 2013, it was found that 41.1% of adolescents had symptoms of mental health problems (D. Nguyen et al., 2013).

The aim was to describe the association between EI and symptoms of common mental health problems, including depression, anxiety, stress and loneliness among adolescents in Vietnam.

Methods

Study design

A cross-sectional survey of adolescents attending schools in the Centre of Vietnam.

Setting

The study was conducted in Thua-Thien-Hue province in Central Vietnam, where the ancient capital – Hue City - of Vietnam, and the centre of an old feudal tradition is located. Thua-Thien-Hue is approximately 5,100 kilometres square with a total population of 1.1 million (General Statistics Office of Vietnam, 2009) and covers six districts, two district-level towns, and one capital city. The province has 40 public high schools, of which 18 are located in urban and 22 in rural areas. High schools include grade 10 to 12 and enrol adolescents aged 15 to 19 years (Thua Thien Hue Province Government).

Participants

The estimated number of invitations to potential participants was calculated based on the prevalence of the previous study about mental health problems among adolescents in Vietnam. The research team invited nine public high schools, which were randomly selected from the list of high schools provided by the Province's Department of Training and Education. From each school, four to six classes at Grades 10, 11 and 12 levels were selected randomly. All students in target classes were invited to participate in this study.

Measures

Data were collected using an anonymous, self-completed questionnaire which included study-specific questions about sociodemographic characteristics and standardized measurements.

Outcomes

Symptoms of common mental health problems, including *depression, anxiety, and stress*, were assessed using the Depression-Anxiety-Stress Scale-21 (DASS-21) (Lovibond & Lovibond, 1995). The Depression subscale contains seven items measuring life dissatisfaction, hopelessness, social involvement, desperation, experiences of pleasure and the tendency to do nothing. The seven-item Anxiety subscale assesses cognitive and somatic symptoms of anxiety. The Stress subscale includes seven items assessing difficulty in relaxing, nervousness, agitation, and irritability. All items are assessed on 4-point scales about how frequently each has been experienced over 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) (Lovibond &

Lovibond, 1995). The scale has been validated in terms of reliability, convergent validity and factor structure, for use among adolescents in Vietnam with high internal consistency (Cronbach's Alpha of the total DASS score was 0.91). The validation study supports using the three subscale scores to investigate the symptoms of depression, anxiety, and stress among Vietnamese adolescents (Cronbach's Alpha was 0.84 for the Depression subscale, 0.74 for the Anxiety subscale and 0.76 for the Stress subscale)(M. T. Le, Tran, Holton, Nguyen, & Wolfe, 2017).

Loneliness was assessed using the 8-item UCLA Loneliness Scale (UCLA-8), which is a short version of the well-known 20-item UCLA Loneliness Scale (Russell, 1980). Hays and DiMatteo developed this short form based on the eight items loading to the first extracted factor in exploratory factor analysis (Hays & DiMatteo, 1987). This scale has been widely used and shown good internal consistency and convergent validity (Hays & DiMatteo, 1987; Swami, 2009; Wilson et al., 1992; Wu & Yao, 2008). It has not, however, yet been validated for use in Vietnam. Items are rated on a 4-point scale from 1 (Never) to 4 (Always).

Main dependent variables

Emotional Intelligence. High school students reported their EI using the Trait Emotional Intelligence Questionnaire – Adolescents Short Form (TEIQue-ASF) (Petrides & Furham, 2006), which these authors had shortened from the full form of 185 items to 30 items. The TEIQue-ASF followed the seven-point Likert-structured, which ranged from 1 "Strongly Disagree" to 7 "Strongly Agree". The questionnaire yields four subscales. Well-being (6 items) assesses happiness and positive feelings about their life. High scores in Self-control (6 items) indicate a healthy capability to regulate emotions, and control impulses while low scores indicate greater impulsivity and more difficulty regulating emotions in stressful situations. High scores on the Emotionality subscale (8 items) indicate awareness of their own and others' emotions and capacity to use this ability to maintain relationships with family members and friends. The subscale of Sociability (6 items) focuses on the ability to manage social interactions, with higher scores indicating better listening skills and confidence in communicating with others. The TEIQue-ASF has been translated and validated on adolescents in many countries with Cronbach's Alpha ranged from 0.81 to 0.87

(Mavroveli et al., 2007; M. Mikolajczak, Petrides, et al., 2009; Petrides, 2006; Stamatopoulou et al., 2017).

Parenting styles were assessed using the 16-item Parenting Bonding Instrument (PBI) (G Parker et al., 1979). The participants were asked to complete two separated parts about their feeling towards their mothers and fathers. Each part included 16 questions, which were the same for mothers and fathers. The questionnaire has been validated for use among adolescents in Vietnam and yielded three factors for mothers and fathers: Warmth, Overprotection and Authoritarianism (N. Q.-A. Nguyen, J. Fisher, D. T. Tran, S. Holton, & T. M. Le, Unpublished).

School connectedness, Conflicts with teachers and peers, Social isolation, Perceived study satisfaction, Break up a romantic relationship, and cyber-bullied were assessed in this study. These questions have been used among adolescents in Vietnam and China (B. Pham, 2015; Sun, 2012).

Covariates

Study-specific questions were used to collect data about demographic characteristics: age, gender, rural (including coastal area) or urban residence, religion (Buddhism or other religion or no religion), marital status of parents, parental highest education, parental occupation, current living with parents or not, and having sibling or not.

Procedure

The questionnaire was designed in English, and then cross-culturally adapted based on Borsa et al. 's standard technique (Borsa et al., 2012). Two bilingual psychologists translated the English version independently into Vietnamese, cultural validation was made before being back-translated independently by another two bilingual and bicultural experts in public health and psychology. Minor amendments were made after discussion and agreement among translators. The questionnaire was then pilot tested on 51 young people representative of the target population, but not attending the selected schools and adjusted based on students' feedback. Agreement of the research group on the final Vietnamese version was achieved before it was used for the main survey.

All of the nine randomly-selected high schools from rural and urban areas that had been invited agreed to participate in the study. Within these schools, randomly selected classes

were approached. All students in these classes and their parents were informed and received written explanatory statements about the study's aims, potential risks, and benefits to participants and researchers' contact numbers, and invited to be respondents of the survey one week before the date of the survey.

On the day of data collection, after a trained research assistant introduced the questionnaire and answered all students' questions, each student in the class received a questionnaire in an envelope. They completed the paper questionnaire in class individually, anonymously, and quietly under the supervision of the research assistants. At the end of the session, all participants were asked to place the questionnaires whether or not they had been completed, back into the provided envelope and seal it before submitting it to the research assistants. The teacher and other school staff were asked not to be present in the class during the period in which the questionnaire was completed. Data collection was carried out in October and November 2016.

There was no individual payment for those who participated in the study, but a small gift to the value of USD10 was given to each class's fund which is spent on study materials, excursions, or class events.

Data management

EpiData software 3.1 was used to enter the collected data (Lauritsen & Bruus, 2003-2005). All analyses were conducted using Stata version 14.0 (StataCorp, 2015). Only data from fully completed questionnaires were included in the analyses.

The DASS-21 yielded three scores for depression, anxiety and stress symptoms. Scores of each subscale were gained by summing all its seven relevant items. The range score, therefore, for each item was from 0 to 21. The higher the score, the higher the level of depression, anxiety or stress (Lovibond & Lovibond, 1995).

Loneliness was evaluated based on the score calculated by summing all items, in which two items were reverse-coded. Total loneliness score ranged from 8 to 32. Participants with a higher score were at a higher level of loneliness (Hawkley et al., 2005; Russel, 1996).

The TEIQue-ASF includes Global EI, which is the total EI score and four subscales scores. Each subscale's scores were the average of all related items. There were four independent items which do not belong to any subscale and only contribute to the Global score that was

retrieved by summing all items and divide by 30. The higher the score was, the better the EI the student recorded. All scores ranged from 1 to 7 (Petrides, 2009b).

The PBI yields three subscale scores for mother and three subscale scores for father. Higher scores in Warmth indicate the child felt higher of warmth and care from their mothers/fathers. Higher scores in Overprotection meant the child felt parents controlled them and discouraged of freedom, while higher scores in Authoritarianism suggest that the child felt being discouraged autonomy from mothers/fathers.

Regarding social isolation, those who have no close friends to share feelings or problems with were considered to be socially isolated.

School connectedness, conflicts with teachers and peers, and cyber-bullied scores were achieved by summing all items. Others were categorical variables.

All the scores of continuous variables, including scores of depression, anxiety, stress, loneliness, Global EI, EI's subscales, PBI subscale, school connectedness, conflicts with teachers/peers, and cyber-bullied were converted to standard scores for some analyses. The standard score illustrates how far a raw score, which is the score retrieved from the data collection, is above (positive standard score) or below (negative standard score) the mean value (Yin, 1994). The standard score allows researchers to compare scores that are from different tests on a standard scale and determine which of the predictor variables have the most substantial relative impact on the criterion variable (Hunter & Hamilton, 2002). The standard score was calculated by subtracting the mean score from the raw score and then divided the result by the SD (Adeyemi, 2011).

Data analyses

Descriptive statistics were used to understand the distribution or each variable.

To examine the relationship between EI and symptoms of mental health problems and find out whether EI is a predictor of mental health problems of adolescents, the multiple linear regression models were conducted. First, four multiple regression models were conducted with the Global EI as a predictor, and the outcomes were depression, anxiety, stress, and loneliness scale scores. Second, in order to understand the role of each dimension of EI to mental health problems, another four multiple regression models were conducted with four EI subscales as predictors of those four outcomes. All of those eight models used the

standard scores for depression, anxiety, stress, loneliness, EI, and EI's subscales, while controlling for cluster effects (school) using clustered sandwich estimator and other demographic characteristics.

Ethics

Approval to conduct the study was provided by the Monash University Human Research Ethics Committee (Project No.: 2016-0610) and the Institutional Review Board of the Hue University of Medicine and Pharmacy (Project No.: 01-102016/DHYDH). Permission was received from the Thua Thien Hue Province's Department of Education and Training, as well as from all target schools' directors and participants' parents or guardians. Parents who did not agree to have their child participate in the study were asked to sign and return a Withdrawal Form.

Results

All of the invited schools agreed to participate in the study. A total of 1,616 students were eligible and invited to participate. All parents supported their children in participating in the research, and no student refused to participate. Of those, 1,593 students (98.6%) provided complete data and were included in the analyses; and data from 23 (1.4%) could not be included because more than half the questions were not completed. About 55% of students were females, and more than half of the participants were from the rural area (55.4%). The majority of the students were Kinh people and almost half of them adhered to Buddhism. Most of the students were living with both birth parents. Approximately a quarter of the students had parents who had never been to school. Most of the participants' parents were working in manual labour. About 15% of the students had no siblings or cousins.

The descriptive statistics of the distributions of the scores of global EI, four EI subscales, symptoms of mental health problems are provided in Table 1.

Emotional intelligence and mental health problems

There were significant associations between Global EI and symptoms of common mental health problems. Students who self-reported higher Global EI had significantly fewer symptoms of depression, anxiety, and stress. Specifically, Global EI increases of one standard deviation, the symptoms of depression, anxiety, stress and loneliness decreased by .57, .41 and .45 standard deviations, respectively (Table 2). Looking further to the

relationship between EI's dimensions and the symptoms of mental health problems, it was found that students who had higher Well-being, Self-control and Emotionality scores had lower scores in Depression, Anxiety and Stress. Sociability subscale as negatively associated with depression scores; however, the association did not repeat with either anxiety or stress scores (Table 3).

Data in Table 2 show that students with higher Global EI score had a lower mean score of the loneliness scale. Increasing one standard score in Global EI reduced the loneliness standard score by .53. Loneliness scores were negatively correlated with Well-being, Emotionality and Sociability subscales scores. Loneliness was reduced by .18, .15 and .16 standard score when increasing one standard subscale score of Well-being, Emotionality, and Sociability, respectively. The ability of Self-control, however, did not associate with the feeling of loneliness among Vietnamese adolescents (Table 3).

Other factors and mental health problems

Results from the multiple linear regression are illustrated in Table 2.

Notably, female students were more likely to experience more symptoms of depression, anxiety, stress and loneliness.

Regarding the family level, students who did not live with any of birth parent were more likely to have symptoms of anxiety and stress. Students with warm mothers were fewer experience symptoms of depression, while students with warm fathers were fewer experience symptoms of depression, anxiety, and stress. Overprotective mothers had adolescents with higher symptoms of depression and anxiety, stress; however, these associations did not repeat with overprotective fathers.

In terms of school level, conflicts with peers increased the risk of experiencing symptoms of all included mental health problems. However, breaking up a romantic relationship was not significantly associated with mental health problems. Students with higher satisfaction with academic achievement were less likely to have depressive symptoms or stress.

At the community level, residence and religion were not significantly associated with any types of mental health problems. Students with higher cyber-bullied score were found to have higher scores of depression, anxiety, stress and loneliness.

Discussion

This study, the first from Vietnam, examined the associations between EI and symptoms of mental health problem among adolescents that included various factors at individual, family, school and community level. The main finding is that EI was a recognisable construct and was clearly and consistently related significantly to symptoms of mental health problems. Sex, parenting styles, conflicts with friends, satisfaction in academic achievement and cyber-bullied were significantly correlated with mental health problems. This finding fit Bronfenbrenner's theory about the role of individual factors and the surrounding environment in a person's psychological development.

The current study was robust in having a large, randomly selected-sample with a high recruitment fraction and including students from rural, urban and coastal areas. The questionnaire was comprehensible and meaningful, and almost all students completed it. However, we acknowledge some limitations. First, it was conducted in one province in the Centre of Vietnam and did not include adolescents in the North or South of the country or members of ethnic minority groups, including those living in highland areas. Moreover, as attending high school is not compulsory in Vietnam, some young people of this age have already left school and are working. The study was unable to reach out-of-school adolescents. The results cannot be generalised to these groups. Second, these are cross-sectional data, and therefore, we can only report associations not causal relationships. Third, the TEIQue-ASF and the UCLA used in this study have not been validated in Vietnam; however, the cultural adaptation in this study based on standard guidelines was conducted to ensure the acceptability, comprehensibility, and suitability of these scales for use among adolescents in Vietnam. We were confident that the results of this study could be generalized to adolescents attending high schools in Central Vietnam.

Emotional Intelligence and mental health problems

These data indicated that EI was a protective factor against depression, anxiety, and stress. This finding was in line with previous studies in Pakistan, India, Spain and Australia (Ahmad et al., 2009; Aroline & Ansia, 2017; Balluerka et al., 2013; Downey, Johnston, & Hansen, 2008; Fernandez-Berrocal, Alcaide, & Extremera, 2006; K. Gardner, 2009; Gomez-Baya et al., 2017; Narender & Lal Joshi, 2016). This significant result contributes to the

consistent protective role of EI to mental health problems among young people across countries and cultures.

These data indicated that among this group of Vietnamese young people, characteristics of optimism, cheerfulness, satisfaction with life, self-confidence and self-belief (EI dimension of Well-being) (Petrides, 2009b) were associated with fewer symptoms of depression, anxiety, and stress. In addition, students who had an ability to be aware of their own emotions and communicate them with others, as well as the capability to understand others' perspectives, recognise others' feelings and maintain fulfilling personal relationships with family or close friends (EI dimension of Emotionality) (Petrides, 2009b), were less likely to experience these mental health problems (Fernández-Abascal & Martín-Díaz, 2015). This finding further supports the notion that low emotional awareness increased the risk of having symptoms of mental health problems (Cejudo, Rodrigo-Ruiz, López-Delgado, & Losada, 2018; Flynn & Rudolph, 2010; P Salovey, Stroud, Woolery, & Epel, 2002). Also, the EI dimension of Self-control, which indicates the good ability to regulate impulses and emotions, pressure and stress from outside (Petrides, 2009b), protected adolescents from the risk of emotional problems. Notably, Sociability, which involves the ability to communicate effectively with people other than a family member and close friends played a protective role against depression; however, this relationship was not found to reduce stress and anxiety significantly.

In this study, it was found that EI played an essential role in preventing adolescents from being lonely. Loneliness is a specific feeling which is due to a significant gap between social expectations of a person and their real social interactions; and it is one of the vital components of EI (Peplau & Perlman, 1982). In the literature, there was consistent evidence of the protective role of EI against loneliness (Cejudo et al., 2018; Palmer, Donaldson, & Stough, 2002; Shaheen, Jahan, & Shaheen, 2014; J. Shi & Wang, 2007; Zou, 2014; Zysnerg, 2012). The dimension of EI, including Well-being, Emotionality, and Sociability prevented adolescents from the feeling of loneliness. However, Self-control, which is the ability to self-manage and control emotions, did not contribute to this set of protective factors.

Other factors and mental health problems

Female students were likely to be more vulnerable than their counterparts, in which they were higher experience with symptoms of depression, anxiety, stress and loneliness. Our

findings were in line with studies internationally such as in the US (Marcus et al., 2008; Ryba & Hopko, 2011), Singapore (Picco, Subramaniam, Abdin, Vaingankar, & Chong, 2017), Pakistan (Yousaf, Daud, & Shafique, 2016). Duplicated results were also found in studies within Vietnam (M. Le et al., 2016a; D. Nguyen et al., 2013; H. Nguyen, 2006; B. Pham, 2015; Stratton et al., 2014). There were explanations for this disparity. In Thua-Tien-Hue province, where the influence of 1,000-year feudalism remains, parents usually restrict and control girls more than boys. Besides, the main responsibilities of females were doing housework and taking care of children while those of males were being the one who makes all decisions for the family and going out to earn money. Therefore, parents have lower expectations in girls than boys in achievements. Girls were taught in the family that they are not allowed to express their thoughts and emotions. Boys, nonetheless, were more likely to be encouraged to express their opinions.

Another striking finding in this study was the role of parenting styles to mental health problems among adolescents. The maternal warmth reduced the risk of experience depressive symptoms. This result was supported by a study conducted among Korean American adolescents (11 to 17 years of age) in the US (E. Kim & Cain, 2008). Notably, the critical role of paternal warmth in protecting adolescents in this sample from symptoms of depression, anxiety and stress was revealed in this study. This result was duplicated to that from a study among 298 adolescents (Mean age 17.4) in the US. However, it is noticed that as mentioned previously, the father in Vietnamese culture is the one who makes all important decisions for other members and usually the strictest person in the family. In addition, the father tends to go out for earning money and even stays away from home. Therefore, fathers are rarely close to and express care and warmth to their children. Findings from this study suggest a change in opinion about the role of fathers to protect adolescents from mental health problems.

Cyber-bullied contributed to the list of risk factors to mental health problems among adolescents in Vietnam. A study conducted among 1,015 Spanish adolescents (Mean age = 15.43, SD = 1.09) also found the same conclusion (Calvete, Orue, & Gamez-Guadix, 2015).

Findings from the study are consistent with Bronfenbrenner's theory, in which the development of mental health problems is under the influence of various factors from

individual factors (sex and emotional intelligence), family (parenting styles), school (conflicting with friends) and community (cyber bullied).

Conclusions

EI and its dimensions are associated with better mental health among adolescents including in Vietnam. Findings in this study suggest that EI may play a particularly salient role in protecting mental health problems as Vietnamese children emerge into adolescence. As EI is potentially modifiable and can be learned and improved (Nelis et al., 2009; Ruttledge & Petrides, 2012), school-based structured interventions focusing on enhancing EI or including EI improvement programs in school curriculums are worth considering for the development of mental well-being for students. The importance protective role of the warmth from parents, especially from the fathers, was confirmed in this study. It is essential to change the attitude about the role of parents in taking care of their children. Training programs regarding parenting skills in which promote the care and warmth of parents to children are highly recommended. This study also suggests that parents and schools should be more cautious in teaching adolescents about cyber safety, which in turns might protect them from experiencing unexpected mental health problems.

Table 1. Mean, SD, Min and Max scores of continuous variables

	Mean (SD)	Median (IQR)	Min - Max
Emotional Intelligence			
Global EI score	4.3 (0.7)	4.3 (3.9 – 4.8)	1.8 – 6.6
Well-being	4.8 (1.2)	4.8 (4.0 – 5.7)	1.0 – 7.0
Self-control	4.2 (1.0)	4.2 (3.5 – 4.8)	1.0 – 7.0
Emotionality	4.0 (0.8)	4.0 (3.5 – 4.5)	1.3 – 6.8
Sociability	4.4 (0.9)	4.4 (3.8 – 5.0)	1.0 – 7.0
DASS-21			
Depression	6.3 (5.2)	5.0 (2.0 – 10.0)	.0 – 21.0
Anxiety	5.1 (4.4)	4.0 (2.0 – 8.0)	.0 – 21.0
Stress	6.6 (4.5)	6.0 (3.0 – 9.0)	.0 – 21.0
Loneliness			
Total score	17.1 (5.3)	17.1 (13.0 – 21.0)	8.0 – 106.0

SD: Standard Deviation *IQR: Interquartile Range*

Table 2. Multiple linear regressions predicting symptoms of common mental health problems from Global EI and other factors among adolescents in Vietnam (n = 1,593 students)

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
Individual level								
Sex								
(Male: 1, Female: 0)	**-.11***	**-.21; -.01**	**-.09****	**-.15; -.04**	**-.15***	**-.27; -.03**	**-.12****	**-.19; -.05**
Age								
15	Ref.							
16	.05	-.11; .21	.03	-.11; .17	-.01	-.17; .14	-.07	-.26; .13
17-18	.04	-.13; .20	.01	-.15; .16	.04	-.16; .24	.03	-.08; .14
Ethnicity								
(Kinh: 1, Others: 0)	-.05	-.49; .40	.05	-.41; .52	.03	-.60; .65	.18	-.41; .78
Emotional Intelligence								
Global EI	**-.57*****	**-.65; -.48**	**-.41*****	**-.48; -.34**	**-.44*****	**-.52; -.37**	**-.53*****	**-.63; -.44**
Familial level								
Parental marital status								
(Living together: 0, Not living together: 1)	-.01	-.23; .22	.05	-.25; .34	-.18	-.44; .09	-.02	-.30; .27
Current living with								
Both birth parents	Ref.							
One birth parent	.15	-.06; .37	.08	-.15; .30	**.26***	**.06; .45**	.04	-.11; .20
None of birth parent	.04	-.19; .27	**.34***	**.07; .61**	**.40***	**.02; .78**	.03	-.29; .35
Woman most care								
(Birth mother: 0, Not birth mother: 1)	-.01	-.23; .24	-.04	-.28; .20	-.10	-.29; .08	-.08	-.25; .10
Maternal education								
Higher education	Ref.							
Basic education	-.06	-.24; .12	.05	-.16; .26	.08	-.14; .30	.09	-.04; .21
No school	-.09	-.25;.07	-.05	-.21; .11	-.01	-.19; .17	-.01	-.18; .16

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
Maternal occupation								
Mental labour	Ref.		Ref.		Ref.		Ref.	
Manual labour	.14	-.05; .34	.06	-.14; .27	-.03	-.25; .20	-.04	-.18; .10
Jobless	**0.33****	**.09; .56**	.06	-.35; .46	.07	-.22; .36	-.09	-.39; .21
Man most care								
(Birth father: 0, Not birth father: 1)	.06	-.08; .21	.12	-.15; .40	.10	-.05; .25	**.17***	**.01; .33**
Paternal education								
Higher education	Ref.		Ref.		Ref.		Ref.	
Basic education	-.05	-.20; .10	-.06	-.20; .08	.03	-.16; .22	-.02	-.15; .11
No school	-.06	-.29; .16	-.05	-.19; .10	-.05	-.20; .10	.05	-.20; .29
Paternal occupation								
Mental labour	Ref.		Ref.		Ref.		Ref.	
Manual labour	.02	-.14; .18	-.05	-.22; .12	**-.16***	**-.31; -.01**	-.06	-.24; .11
Jobless	-.05	-.29; .20	-.17	-.44; .11	**-.30****	**-.5-; -.10**	-.04	-.32; .24
Having sibling or not								
(Yes: 0, No: 1)	.06	-.03;.14	-.02	-.15; .11	-.02	-.12; .08	.04	-.07; 15
Parenting styles								
Mother's Warmth	**-.07***	**-.13; -.01**	-.03	-.07; .02	-.02	-.08; .04	-.05	-.12; .01
Mother's Overprotection	**.14****	**.07; .21**	**.15*****	**.12; .19**	**.14****	**.08; .21**	.01	-.06; .07
Mother's Authoritarianism	-.02	-.07; .03	-.05	-.12, .02	-.03	-.08; .03	-.02	-.08; .05
Father's Warmth	**-.08****	**-.12; -.04**	**-.08****	**-.11; -.05**	**-.10****	**-.17; -.04**	-.01	-.16; .01
Father's Overprotection	.03	-.07; .13	.02	-.04; .08	.04	-.05; .13	.03	-.06; .13
Father's Authoritarianism	-.05	-.11; .02	.01	-.04; .05	**-.05***	**-.09; -.01**	-.01	-.09; .08
School level								
School connectedness	-.02	-.09; .05	.01	-.06; .09	.01	-.08; .09	-.03	-.07; .01
Conflicts with teachers	.03	-.02; .08	.06	-.01; .12	.03	-.02; .07	**-.04***	**-0.8; -.01**
Conflicts with friends	**.07***	**.01; .12**	**.10***	**.02; .19**	**.10***	**.03; .18**	**.8***	**.01; .14**
Breakup romantic relationship								

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
(Yes: 1; No: 0)	.04	-.04; .11	-.07	-.23; .09	-.10	-.19; .01	-.04	-.19; .11
Social isolation								
(Yes: 1; No: 0)	.01	-.15; .15	.11	-.04; .27	**.15***	**.02; .27**	**-.30*** **	**-.39; -.21**
Academic achievement satisfaction								
(Yes: 1: No: 0)	**-.15***	**-.26; -.04**	-.07	-.20; .06	**-.10***	**-.18; -.01**	-.09	-.20; .03
Community level								
Residence								
(Urban: 1; Rural: 0)	.06	-.06; .17	.05	-.10; .20	.04	-.07; .15	-.02	-.17; .14
Religion								
(Yes: 1; No: 0)	.06	-.07; .19	.13	-.01; .26	.10	-.04; .24	.03	-.06;.11
Cyber-bullied	**.10****	**.04; .16**	**.12****	**.05; .19**	**.11****	**.05; .17**	**.07****	**.03; .12**

*$p < .05$ ** $p < .01$ *** $p < .001$

Table 3. Multiple linear regressions predicting symptoms of common mental health problems from EI's subscales and other factors among adolescents in Vietnam (n = 1,593 students)

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
Individual level								
Sex								
(Male: 1, Female: 0)	**-.11***	**-.22; -.01**	**-.09****	**-.15; -.04**	**-.14***	**-.26; -.02**	**-.14****	**-.22; -.06**
Age								
15	Ref.		Ref.		Ref.		Ref.	
16	.05	-.11; .21	.04	-.11; .19	-.01	-.16; 16	-.07	-.28; .13
17-18	.04	-.13; .20	.01	-.15; 16	.05	-.14; .24	.02	-.10; .14
Ethnicity								
(Kinh: 1, Others: 0)	-.03	-.53; .47	.07	-.43; .56	.04	-.62; .71	.15	-.49; .79
Emotional Intelligence								
Wellbeing	**-.29*****	**-.38; -.21**	**-.17*****	**-.23; -.10**	**-.18*****	**-.23; -.12**	**-.18*****	**-.24; .12**
Self-control	**-.06***	**-.11; -.01**	**-.09****	**-.14; -.05**	**-.14*****	**-.19; -.09**	-.01	-.09; .06
Emotionality	**-.13****	**-.18; -.07**	**-.10***	**-.17; -.02**	**-.12****	**-.19; -.06**	**-.15*****	**-.18; -.13**
Sociability	**-.07***	**-.12; -.02**	**-.04**	**-.09; .02**	.01	-.04; .04	**-.16*****	**-.23; -.10**
Familial level								
Parental marital status								
(Living together: 0, Not living together: 1)	.04	-.17; .25	.06	-.24; .37	-.16	-.46; .13	.03	-.27; .33
Current living with								
Both birth parents	Ref.		Ref.		Ref.		Ref.	
One birth parent	.10	-.09; .29	.06	-.18; .30	**.23***	**.02; .43**	.03	-.16; .22
None of birth parent	.05	-.18; .27	**.33***	**.07; .59**	**.37***	**.02; .72**	.05	-.27; .37
Woman most care								

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
(Birth mother: 0, Not birth mother: 1)	.01	-.26; .27	-.04	-.27; .20	-.10	-.29; .09	-.08	-.24; .08
Maternal education								
Higher education	Ref.		Ref.		Ref.		Ref.	
Basic education	-.05	-.22; .13	.06	-.15; .27	.08	-.15; .31	**.12***	**.01; .23**
No school	-.08	-.23; .08	-.04	-.19; .11	-.01	-.18; .17	.01	-.15; .18
Maternal occupation								
Mental labour	Ref.		Ref.		Ref.		Ref.	
Manual labour	.13	-.06; .33	.06	-.13; .26	-.02	-.25; .20	-.07	-.20; .07
Jobless	**.35****	**.13; .56**	.06	-.35; .47	.07	-.24; .38	-.10	-.39; .20
Man most care								
(Birth father: 0, Not birth father: 1)	.02	-.14; .19	.10	-.17; .37	.08	-.06; .22	.15	-.01; .30
Paternal education								
Higher education	Ref.		Ref.		Ref.		Ref.	
Basic education	-.07	-.22; .08	-.06	-.20; .08	.04	-.14; .22	-.06	-.17; .05
No school	-.08	-.33; .16	-.05	-.19; .09	-.04	-.19; .11	.01	-.23; .23
Paternal occupation								
Mental labour	Ref.		Ref.		Ref.		Ref.	
Manual labour	.03	-.12; 18	-.05	-.21; .12	**-.16***	**-.30; -.03**	-.05	-.23; .13
Jobless	-.05	-.29; .19	-.16	-.42; .09	**-.29***	**-.50; -.09**	-.05	-.33; .25
Having sibling or not								
(Yes: 0, No: 1)	.06	-.03; .14	-.02	-.16; .11	-.03	-.12; .07	.04	-.06; .15
Parenting styles								
Mother's Warmth	**-.05**	**-.11; .02**	-.02	-.06; .03	-.01	-.07; .04	-.04	-.11; .02
Mother's Overprotection	**.14****	**.08; .21**	**.15*****	**.11; .19**	**.14****	**.08; .20**	.01	-.05; .08
Mother's Authoritarianism	-.02	-.07; .02	-.05	-.12; .02	-.03	-.09; .03	-.02	-.08; .05
Father's Warmth	**-.08****	**-.11; -.05**	**-.08****	**-.11; -.04**	**-.10****	**-.16; -.04**	**-.09***	**-.17; -.01**
Father's Overprotection	.03	-.06; .12	.02	-.12; .02	.04	-.04; .13	.03	-.07; .12
Father's Authoritarianism	-.05	-.12; .02	.01	-.11; -.04	**-.05***	**-.09; -.01**	-.01	-.09; .08

Variables	Depression		Anxiety		Stress		Loneliness	
	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI	Coef.	95% CI
School level								
School connectedness	-.01	-.07; .06	.02	-.05; .08	.01	-.08; .09	-.02	-.06; .02
Conflicts with teachers	.03	-.02; .08	.06*	.01; .11	.02	-.02; .06	**-.04***	**-.08; -.01**
Conflicts with friends	**.06***	**.01; .12**	**.10***	**.01; .18**	**.10***	**.02; .18**	**.08***	**.02; .14**
Breakup romantic relationship (Yes: 1; No: 0)	.03	-.04; .09	-.07	-.23; .08	-.09	-.19; .01	-.05	-.19; .09
Social isolation (Yes: 1; No: 0)	.03	-.10; .16	.12	-.04; .28	**.15***	**.02; .27**	**-.26*****	**-.33; .19**
Academic achievement satisfaction (Yes: 1: No: 0)	**-.15***	**-.26; -.03**	-.07	-.20; .06	**-.10***	**-.18; -.01**	-.09	-.21; .03
Community level								
Residence (Urban: 1; Rural: 0)	.06	-.03; .16	.06	-.09; .20	.04	-.06; .15	-.02	-.16; .12
Religion (Yes: 1; No: 0)	.06	-.07; .19	.13	-.01; .26	.10	-.06; .25	.03	-.04; .11
Cyber-bullied	**.09****	**.03; .16**	**.12****	**.05; .19**	**.11****	**.05; .17**	**.07****	**.03; .11***

*$p < .05$ ** $p < .01$ *** $p < .001$

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CHAPTER 8. EMOTIONAL INTELLIGENCE AND SUICIDAL THOUGHTS AMONG ADOLESCENTS IN VIETNAM

Chapter 8 includes the manuscript about the determinants of suicidal thoughts among adolescents in Vietnam. All potential dependent variables at various levels were included: individual, family, school and community. Within the manuscript, the association between emotional intelligence and suicidal thoughts is discussed. The manuscript has been submitted in the BMC Public Health for consideration for publication.

Manuscript 5: Suicidal ideation: Prevalence and determinants among adolescents in Central Vietnam

Suicidal ideation: Prevalence and determinants among adolescents in Central Vietnam

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Abstract

Background: Multiple individual, family, school, and community protective and risk factors for suicidal ideation among adolescents have been identified. However, almost all this evidence is from high-income countries, and few studies have been conducted in low- and middle-income countries especially in Southeast Asia.

Aim: To describe the prevalence of suicidal ideation and protective and risk factors associated with suicidal thoughts among adolescents in Vietnam.

Methods: This is a cross-sectional school-based self-report survey conducted in the Centre of Vietnam among attending-school students from the age of 15 to 18. The anonymous questionnaire included questions about suicidal thoughts and plans from the Youth Risk Health Survey to measure the outcome, and the following measures which have been culturally validated in Vietnam to assess potential determinants: Trait Emotional Intelligence – Adolescent Short Form, Depression-Anxiety-Stress Scale-21, UCLA Loneliness Scale, Parenting Bonding Instrument, School Connectedness Scale, Cyber-bullying Victimisation Scale, conflicts with teacher/staff, conflicts with peers, socially isolated, and breakup of romantic relationships.

Results: In total 1,593/1,616 (98.6%) of eligible young people provided complete data (response rate 98.6%). There were 31.58% who reported ever having experienced suicidal thoughts, and 12.6% reported having a suicidal plan at least once in their life. The 12-month suicidal thoughts were 24.55%. Lifetime suicidal thoughts were significantly less common among young people with higher Global Emotional Intelligence scores, and mothers reported as warm and caring. Suicidal thoughts were more common among females than males, and among those with more symptoms of depression or anxiety.

Conclusion: By world standards, the prevalence of suicidal ideation among young people in Vietnam is high. The data indicated that strategies to strengthen parenting skills and promote

warm caregiving, and programs to increase emotional intelligence among young people are needed to address this problem.

Keywords: adolescents, emotional intelligence, suicide, low- and middle-income, Vietnam.

Introduction

Suicide is an act of violence against the self that leads to death (McKinnon et al., 2016). It has become the second most common cause of death among young people aged 15 to 29 worldwide (World Health Organisation, 2018) and is the leading cause of death among adolescents in some countries, including Korea and Australia (Australian Institute of Health and Welfare (AIHW), 2018; Statistics Korea, 2013). Suicide among young people not only ends a life but is a profoundly traumatic experience for the family and friends who survive and can then experience lifetime grief (Cerel, Jordan, & Duberstein, 2008). McKinnon (2016) and Patton (2009) described that suicide is a severe global public health problem that demands urgent action (McKinnon et al., 2016; Patton et al., 2009).

According to the World Health Organization (WHO), suicide is a complicated process starting with thinking about it, following up with plans, attempting suicide and committing suicide (World Health Organisation, 2012c). Suicidal ideation comprises thoughts and plans of intentional self-harm to end life (Comer, 2002; Singh, 2012). Suicidal thought is the thought of killing oneself or the feelings of wanting to end their own life without thinking of any plan; while the suicidal plan is a more serious circumstance, in which a clear method, time and steps to kill themselves have formed. Suicidal ideation is prevalent in adolescence, which is a transformative life stage from childhood to adulthood with rapid changes in biological, emotional, social, moral, psychological and sexual development (Hawton, Rodham, & Evans, 2006; Nock, Borges, Bromet, et al., 2008; Nock, Borges, J., & al., 2008). A study among 1,600 adolescents in Paris revealed that 23% of girls and 24% of boys had experienced suicidal thoughts in their lifetimes (Choquet & Menke, 2007). A population-based cohort study in Norway among 2,399 secondary school students aged 17-19 years revealed that the prevalence

of lifetime suicidal thoughts had increased from 15.5% to 18.5% in a 4-year follow up (Strandheim et al., 2014). In the US, the population-based study among 1,170 adolescents (13 to 17 years of age) reported that the prevalence was 7.5% (Joe, Baser, Neighbors, Caldwell, & Jackson, 2009). The 12-month prevalence of suicidal ideation (19.1%) was higher in a nationwide study using a web-based survey in South Korea among 72, 623 adolescents aged 12 to 18 years (Kang et al., 2015).

In low- and middle-income countries (LMICs) where 73% of global suicides occur, suicidal thoughts are common with prevalence similar to or higher than in high-income countries (McKinnon et al., 2016). In a review of the available evidence from LMICs, lifetime suicidal ideation among adolescents ranged from 12.5% to 33% (Fisher et al., 2011). In a subsequent review of data contributed by 13- to 15-year-old adolescents in 49 LMICs, 15.3% had suicidal thoughts in the prior 12 months (McKinnon et al., 2016). Evidence has proved that there is a continuum of these thoughts from fleeting to persistent among adolescents. Although not all suicidal ideation is associated with an intention to end life but rather with finding life unmanageable, identifying the determinants of these experiences is essential to create and develop prevention strategies (Grossman, 1992; McKinnon et al., 2016; L. N. Scott, Pilkonis, Hipwell, Keenan, & Stepp, 2015).

Suicidal ideation is a multidimensional problem with various risk and protective factors at individual, family, school, and community levels. At the individual level, being female, experiencing loneliness, depression, high stress, and hopelessness are commonly reported as potential factors that trigger suicidal ideation (Im, Oh, & Suk, 2017; Kang et al., 2015; Kirkcaldy, Siefen, Urkin, & Merrick, 2006). A recently identified factor is emotional intelligence (EI) which is a constellation of emotional perceptions, including the knowledge, beliefs, and attitudes of an individual about emotions as well as the ability to regulate emotion to understand self and others (Petrides, 2011a). Cha et al. found among 54 U.S. female adolescents (age range from 12 to 19) in a laboratory-based study that EI was a protective factor against suicidal ideation and attempts (Cha & Nock, 2009). This result was duplicated among secondary-school students in a recent cross-sectional study in Kenya (Okello & Aomo, 2018) and depressed adolescents in Iran

(Abdollahi et al., 2016). However, the correlation between EI and suicidal ideation in other cultures is not yet known.

Family-related factors may increase the risk; for example, not living with one or both parents, history of suicide in the family, conflict with family, being rejected by or separated from parents (Im et al., 2017; Kirkcaldy et al., 2006; X. Liu, Tein, Zhao, & Sandler, 2005). A large-scale study was conducted among 44,610 students in Germany to investigate the determinants of suicidal ideation. Results were that the warmth of mother and father during childhood protected adolescents from suicidal attempts while authoritative (OR = .79, $p < .001$) and rejecting-neglecting parenting (OR = 1.63, $p < .001$) were predictors to a higher risk of suicidal attempts (Donath, Graessel, Baier, Bleich, & Hillemacher, 2014). A study in Hong Kong revealed that suicidal ideation is associated with perceived Authoritarian parenting (Lai & McBride-Chang, 2001). Duplicated findings were found in a study in Australia, from which adolescents with Authoritarian parents doubled the risk of suicidal ideation (Martin & Waite, 1994). Friendship misunderstandings, broken romantic relationships, disappointment in academic achievements or conflict with teachers are potential risk factors within the school environment (Kang et al., 2015; Kirkcaldy et al., 2006; X. Liu et al., 2005; Tørmoen, 2016). Cyber-bullying is defined as a type of bullying using digital technology, such as mobile phone, internet or email. John et al.'s systematic review about self-harm, suicidal behaviours and cyberbullying in youth using meta-analysis on 16 studies with 103,774 participants found that cyber-victimization was associated with more than double risk of suicidal ideation(OR = 2.57; 95% CI 1.69-3.90). All these factors, however, were rare in considering its relationship with suicidal ideation among adolescents in Vietnam.

In this study, the first aim was to identify the prevalence of suicidal ideation (including suicidal thoughts and suicidal plans) among adolescents. We believe that if prevention works with suicidal thoughts, suicidal plans and attempting suicide would be then eliminated. The second aim of this study, therefore, was to examine the determinants of lifetime suicidal thoughts among adolescents in the Centre of Vietnam.

Methods

A cross-sectional school-based survey of high school students in Thua-Thien-Hue Province, Vietnam.

Settings

Vietnam is a Southeast Asia country categorized by the World Bank as a lower-middle-income country (Cao et al., 2016; The World Bank, 2011). It covers a total area of more than 330,000 km^2 and has more than 90 million inhabitants (General Statistics Office of Vietnam, 2016). Vietnam is divided into three different regions: the North, Centre and South. Thua-Thien-Hue is located in the Centre region and is where the Nguyen feudal dynasty chose to establish the capital of the country in the 19th and 20th Century (CIA World Factbook, 2018). The province includes an area of about five thousand squares kilometres and has a population of 1,200 million people of whom 555,000 live in urban areas. There are 40 public high schools (years 10 to 12) in Thua-Thien-Hue province, which provide education to more than 37,000 students (General Statistics Office of Vietnam, 2016).

Participants and recruitment

Participants were selected randomly from nine among a total of 40 public high schools in rural, urban and coastal areas of Thua-Thien-Hue. Four to five classes were then selected randomly in each school based on the number of students in each class. The number of students in each class ranged from 30 to 45. All students in the selected classes were invited to participate.

Measures

An anonymous, self-completed questionnaire was designed to gather information about age, sex, region (rural or urban areas), religion (Buddhism or others or no religion), parents' marital status, parental highest education, parental occupation, current living with parents or not, having a sibling or not in the family, breaking up with girl/boyfriend in a 12-month period (Yes or No or Have not had one), satisfaction with academic achievement or not. The following scales were included in the questionnaire.

Two single-item questions from the Youth Risk Survey assessed ***suicidal ideation***: "During your life, have you ever seriously thought about killing yourself?", and "During your life, have you ever made a plan about how you would attempt kill yourself?". Response options for these questions were dichotomous, yes or no. It should be noted that use of a single-item measure is common in suicidal research due to its consistency in estimating prevalence (Gandhi et al., 2016; Muehlenkamp, Claes, Havertape, & Plener, 2012). The third question was about the last 12-month frequency of participants' thoughts about killing themselves. This question followed the five-point Likert scale ranging from None, Rarely (1 time), Sometimes (2 times), Often (3-4 times), and Very often (5 or more times). These questions have been used among adolescents in Vietnam (M. Le et al., 2016a, 2016b).

Symptoms of common mental health problems. The Depression-Anxiety-Stress Scale-21 (DASS-21) is a 21-item self-report measure of three separate emotional problems, including depression, anxiety, and stress. Each subscale contains seven items and designs by a 4-point scale, asking the frequency of relevant symptoms over the past week (Lovibond & Lovibond, 1995). The scale has been validated among adolescents in Vietnam in Le's 2017 study with acceptable Cronbach's alpha of .84, for the depression subscale, .74 the anxiety, and .76 the stress subscales.

***Loneliness*.** The 8-item UCLA Loneliness Scale (UCLA) was revised from the 20-item UCLA Loneliness Scale (Russell, 1980) by Hays and DiMatteo (Hays & DiMatteo, 1987). The scale has shown good internal consistency and convergent validity for use among adolescents and youth in a variety of settings (Hays & DiMatteo, 1987; Swami, 2009; Wilson et al., 1992; Wu & Yao, 2008). Participants self-reported the frequency (Never, Rarely, Sometimes and Often) they felt about each of specific situations (for instance "How often do you feel that you lack companionship").

Emotional Intelligence (EI). The Trait Emotional Intelligence – Adolescent Short Form (TEIQue-ASF) (Petrides & Furham, 2006) was used for students to self-report their EI. Students chose the most appropriate answer from 1 "Strongly Disagree" to 7 "Strongly Agree" for each of 30 statements in four domains, including well-being (the positive feeling about life), self-control (the ability to manage stress and control impulsive

behaviours), emotionality (the ability in applying the understanding of their own and others' emotions to build smooth relationships with family members and friends), and sociability (the confidence in social communication including listening skills) (Petrides, 2009b). The total score, Global EI, indicates EI in general. The TEIQue-ASF has shown a good internal consistency among adolescents in many countries with Cronbach's Alpha ranged from 0.81 to 0.87 (Mavroveli et al., 2007; M. Mikolajczak, Petrides, et al., 2009; Petrides, 2006; Stamatopoulou et al., 2017).

Experience of their parents' caregiving styles. The Parenting Bonding Instrument (PBI) was used to assess young people's experiences in their first 16 years of life of their parent's attitudes and behaviours towards them. The scale includes two parts with the same 16 questions about the mother and the father and is completed by the child (G Parker et al., 1979). Responses to each question comprise four options, ranging from "very unlikely", "unlikely, "likely", and "very likely". It yields scores on three different dimensions of parental caregiving: Warmth, Overprotectiveness, and Authoritarianism. The PBI has been validated among Vietnamese adolescents and has acceptable internal consistency with Cronbach's alpha from 0.70 to 0.80 (N. Q.-A. Nguyen, J. Fisher, D. T. Tran, S. Holton, & M. Le, Unpublished).

School Connectedness is the feeling of belonging that students have about their school. It was assessed using the 5-item School Connectedness Scale (SCS) by Resnick and colleagues (Resnick et al., 1997). Participants choose one from a 5-point Likert scale ranging from 0 (Strongly Disagree) to 4 (Strongly Agree). This scale has a good internal consistency among adolescents with Cronbach's alpha reported to be .79 (McNeely et al., 2002) and has been used among Vietnamese adolescents by Pham et al. (B. Pham, 2015).

Three questions were used to assess ***conflicts with teachers and school staff*** in the past 12 months. There are three response options, including "Never", "Sometimes", and "Often". Four other questions were used to assess ***conflicts with peers*** in the past 12 months. Participants chose one in three options: "Never", "Sometimes", and "Often". The higher sum of four questions indicates the higher conflict with peers that students

experienced. These scales have been used in studies among Chinese and Vietnamese high school students (B. Pham, 2015; Sun et al., 2012).

Social isolation was assessed using one single question: "Do you have one or more close friends you can talk to about your problems?". The answer has four options “None”, “Only one”, “A few”, and “Many”. This question has been used among adolescents in Pham’s 2015 study (B. Pham, 2015).

This study used the ***Cyber-bullying*** Victimisation Scale developed by Patchin and Hinduja (Patchin & Hinduja, 2010) (Cronbach's alpha among American students was 0.74) and some new items applied among Vietnamese adolescents from Pham's study (B. Pham, 2015). All questions target whether students experienced any of six forms of cyber-bullying in a month. Options of answer include "Never", "Once or twice", "Two or three times a month", "About once a week" and "Several times a week.

Procedure

The anonymous questionnaire was cross-culturally adapted applying Borsa’s standard guideline (Borsa et al., 2012). Four independent bilingual experts in psychology and public health translated the questionnaire from English to Vietnamese and back-translated. Amendments were made based on discussion and agreement among translators. Two bilingual adolescents were asked to check the questionnaire regarding words, phrases, and explanations. The adjustment was made on the questionnaire before conducting the pilot test on 51 target participants. The final discussion was conducted among researchers and translators to conclude the final version of the questionnaire based on comments and suggestions from students in the pilot test. The final version was then used for collecting core data. Students in the pilot test were excluded from the primary survey.

All students in the selected classes were approached during their free-activity class session one week before the survey date to provide the full description of the study and deliver the study information sheet and objection letter for parent or guardian. On the main survey date, a researcher and research assistants supervised student completion of

the questionnaire. Class teachers were asked to be absent during the survey time. Students who did not receive permission from parent/guardian or were not interested in participating in the study still received the questionnaire but did their academic tasks while their friends did the questionnaires. At the end of the class period, all students put the questionnaire regardless of whether it was blank or uncompleted, objection letter (if any) in a provided blank envelop and submitted it to the research assistant. All procedures were approved and supported by the Thua-Thien-Hue Department of Education and Training and all involved schools' Board Committee. Data collections were conducted from November to December 2016.

Data management

Data were entered using EpiData software 3.1 (Lauritsen & Bruus, 2003-2005) and cleaned utilizing Stata Version 14.0 (StataCorp, 2015).

The scores of depression, anxiety and stress symptoms were calculated by summing all relevant items. The score range for each subscale was from 0 to 21. The higher the score, the higher the level of depression, anxiety or stress (Lovibond & Lovibond, 1995). After reverse-coding two items, the loneliness score was gained by summing all eight items, which yield the range from 8 to 32. Students who self-reported a high score were at higher risk of being lonely (Hawkley et al., 2005; Russel, 1996). The Global EI score was the average sum of all 30 items with some reverse-coded items. The range for the Global score was from 1 to 7. Students who had a higher score were better in EI (Petrides, 2009b).

The two separated PBI questionnaires for mother and father yielded three subscale scores: Warmth, Overprotectiveness, and Authoritarianism. Each subscale score was the sum of all related items. The score range of the Warmth subscale was 0 to 21, Overprotectiveness was 0 to 15, and Authoritarianism was 0 to 12 with higher scores indicating a higher experience of each dimension (Kendler, 1996).

The school connectedness total score (ranging from 0 to 20) was the sum of all items with a higher score indicating a greater feeling of connection that student has about his/her school. The score of conflicts with teachers, school staff (range from 0 to 6) and conflicts

with peers (range from 4 to 12) was the sum of all related questions, with the higher score indicating the more conflicts the students had. Regarding social isolation, “None” suggests a student is socially isolated from peers, while the remaining three "Only one", "A few", and "Many" suggest that a student is non-socially isolated.

The cyber-bullying score (range from 0 to 24) was calculated by summing all items. Higher scores indicate more experiences of cyber-bullying.

Data analyses

Descriptive statistics were used to identify the prevalence of lifetime suicidal thought, lifetime suicidal plan and the frequency of suicidal thoughts in the last 12 months. The multiple logistic regression model was used to identify predictors of having any lifetime suicidal thought among Vietnamese adolescents. Independent variables included factors at individual level (age, sex, ethnicity, religion, depression, anxiety, stress, and loneliness), family level (parental status, parental education and occupation, with whom current living, number of siblings, and perceived feelings about parents’ attitudes in the first 16 years of life), school level, breaking up with girlfriend/boyfriend in the past 12 months or not, social isolation, study satisfaction), and community level (region, cyber-bullying). Intra-school correlation (cluster effects) were controlled using the clustered sandwich estimation (Nichols & Schaffer, 2007).

All analyses were conducted using Stata Version 14.0 (StataCorp, 2015). Only students with complete data were included in the analyses.

Ethics approval

Approvals for the study were obtained from the Human Research Ethics Committee of Monash University (Project No.: 2016-0610) and the Institutional Review Board of the Hue University of Medicine and Pharmacy (Project No.: 01-102016/DHYDH). All students and their parents or guardians received written information about the study. It was made clear to them that participation was voluntary. It was also made clear that the questionnaires were to be completed anonymously and that students were asked not to

write their names on them. Psychological counselling services were available to provide support to any students experiencing distress after completing the questionnaire.

Results

Sample characteristics

Among 1,616 students recruited, 1,593 provided complete data and were included in the analyses (response rate of 98.3%). The mean age of participants was 15.94 years (SD = 0.90). More than half of the respondents were female (55%) and living in rural areas (55.4%). Overall, 87.7% of students living with both birth parents. Most students were Kinh peoples (99.3%) and more than half of them adhered to Buddhist beliefs (45.8%). Approximately a quarter of mothers (27%) and fathers (24%) had never gone to school. About 82% of mothers and 73% of fathers were working as manual labourers. Only 15% of students had no sibling or cousins.

Prevalence of suicidal ideation among Vietnamese adolescents

The prevalence of lifetime suicidal thought and plan and the frequency of 12-month suicidal thought are described in Table 1.

Determinants of lifetime suicidal thought

Results of multiple logistic regression model to investigate risk and protective factors for lifetime suicidal thought were illustrated in Table 2.

Individual-level factors and lifetime suicidal thoughts

The proportion of lifetime suicidal thoughts was higher among females than males. There was a negative correlation between Global EI and lifetime suicidal thoughts. Adolescents who had higher Global EI scores were less likely to have any suicidal thoughts. Symptoms of depression and anxiety were associated with higher odds of suicide thoughts.

Family-level factors and lifetime suicidal thought

Differences in the odds of lifetime suicidal thoughts were found between adolescents who had parents with different parenting styles. Specifically, students who self-reported

receiving warmth from their mothers during childhood were less likely to have lifetime suicidal thoughts. Associations were not found, however, with the fathers' caregiving or overprotection and authoritarianism of either mother or father (Table 2).

Students who received primary care from their birth mothers during their first 16 years of life were less likely to have any suicidal thoughts. There was no association with birth fathers' primary care.

School-level and community-level factors and lifetime suicidal thought

Having any conflict with teachers was significantly associated with suicidal thoughts. Students studying in schools in urban area were more likely to experience lifetime suicidal thought than those in rural areas. No significant associations were found between having lifetime suicidal thought and any of following factors: having a breakup with girlfriend/boyfriend, conflict with peers, school connectedness, social isolation, academic achievement satisfaction, cyber-bullying and the religion that students adhere to.

Discussion

This robust original study identified for the first time the prevalence of suicidal thoughts and plans and risk and protective factors for suicidal thoughts among school-attending adolescents in Central Vietnam. It identified the role of the individual as well as family, school and community factors associated with suicidal thoughts and plans among adolescents and that these are a significant public health concern in Vietnam.

We acknowledge several limitations of this study. Firstly, it did not include adolescents in highlands and islands as well as those who were out-of-school. Secondly, although the questionnaire has been culturally adapted based on standard guidelines in this study, some scales have not been validated among adolescents in Vietnam, such as the UCLA Loneliness Scale (UCLA-8) and the TEIQue-ASF. Thirdly, the cross-sectional design allows for an understanding of the correlation at a specific point in time; the causal relationships between the factors and suicidal thoughts are warranted to be examined in the future.

Prevalence of suicidal thoughts and plans among adolescents in Vietnam

Lifetime suicidal thoughts were found to be prevalent among adolescents, with more than one-third of participants reporting these behaviours. This is a higher prevalence than reported in a population-based study in the U.S. among 1,170 adolescents from 13 to 17 years old (7.5%) (Joe et al., 2009).

The prevalence of 12-month suicidal thoughts in this study was also higher than among adolescents in the U.S. (3.2% to 14.5%) (Cash & Bridge, 2009; Joe et al., 2009; J. Kim, Fan, Liu, Kerner, & Wu, 2011), Brazil (14%) (Santos Silva, Santos, Soares, & Pardono, 2014), Nigeria (20%) (Omigbodun, Dogra, Esan, & Adedokun, 2008) and in other Asian countries, such as China (7% to 19.3%) (X. Liu et al., 2005; J. P. Wong, Stewart, Ho, Rao, & Lam, 2005), Malaysia (7%) (P. C. Chen, Lee, Wong, & Kaur, 2005). A possible explanation might be due to differences in the methods used among studies. For example, the 2009 U.S. study (Joe et al., 2009) recruited adolescents from nation-wide households while our study is based on students attending school. The questions used to ask about suicidal thoughts in other studies were "During the past 12 months, has there been a time when you thought seriously about killing yourself?" (J. Kim et al., 2011) or "During the past 12 months, did you seriously consider ending your life?" (P. C. Chen et al., 2005). These questions employed words and expressions which were different from those used in our study: "During the past 12 months, have you ever thought of killing yourself?". The word "seriously" in other studies might direct participants to recall serious suicidal thoughts with a suicidal plan; while the question in our study might include fleeting suicidal thoughts among participants.

The lifetime suicidal thoughts prevalence, however, was not only more prominent among this sample than in other countries, but also more widespread than those from other studies in Vietnam, for example, a study in the Southern area (26.3%) (D. Nguyen et al., 2013) or the two national surveys in 2005 and 2009 (SAVY I and II) (3.4 to 12.21%) (Cu & Blum, 2011; M. T. H. Le et al., 2012). The 12-month reports of suicidal thoughts were also higher in comparison with findings from Le's 2016 study in the North of Vietnam (21.4%) (M. Le et al., 2016a). The higher prevalence of suicidal thoughts among students

in the Centre compared to those in the North and South might be explained by some differences in culture among the regions. Thua-Thien-Hue province is the base of more than a thousand years of history of Vietnamese feudalism and Confucianism (T. H. T. Nguyen, 2010), which framed the cultural norm affecting family and individual members. The impact of feudalism and Confucianism, which was formed from the history of 1,000-year domination by Chinese remains stronger here than in other areas of Vietnam. Firstly, adolescents in Thua-Thien-Hue remain living in traditional extended families that share the same house with parents, grandparents, aunts, uncles and sometimes great grandparents. In other regions, people tend to live in nuclear families due to economic development and, in general, the impact of Western cultures (T. B. Nguyen, 2011). The risk of generational conflicts might increase, which in turn contributes to stress and depression among adolescents (Ozdemir, 2014). Secondly, family regulation, which is understood as rules and habits to maintain a stable order in the family's daily life (D. T. Bui, 2002), is stringent in Central Vietnam. In Hue, family members must adhere to extended family norms: children have to listen to and obey adults; younger members listen to older members. Daughters are usually under the strict control of the father who directs them to be gentle, meek, discreet and resigned; while sons, the "hope" of the family, are under high pressure to fulfil expectations of being a strong, intelligent man with high social position (Phung et al., 2016). Children understand that their failure is their family's failure; disappointing one's family is shameful and unacceptable. The welfare, the pride and the continuity of the family are much more important than any individual's interest and needs (Cima, 1987). Therefore, children tend to try their best in studying as well as in life and tend to avoid talking about their problems (Hoang, 2001; Phung et al., 2016). Finally, Thua-Thien-Hue is the most peaceful place in Vietnam, where the local people in general, and the local adolescents in particular, are more "quiet, profound and discreet" than people from other areas. They prefer to hide emotions and thoughts. This tendency makes other people feel confused and find it hard to communicate with people in Thua-Thien-Hue province (Ho, 2013; Phung et al., 2016). With this trait, adolescents within this area try to solve their problems by themselves rather than talking about them or sharing them with family or seeking help from others.

In sum, these family characteristics in Thua-Thien-Hue might account for the higher incidence of suicidal thoughts among adolescents in this area than one found in the North or South of the country. To put it colloquially, adolescents in this area are more likely to feel trapped in a family web from which they cannot easily extricate themselves; suicide, in turn, can seem like a way out.

Determinants of lifetime suicidal thoughts

Individual-level factors and lifetime suicidal thoughts

Similar to previous international and national studies, gender differences were found in lifetime suicidal thoughts. Females were more likely to think of killing themselves than their male counterparts (L. C. Le & Blum, 2011; M. Le et al., 2016a; X. Liu et al., 2005; Tørmoen, 2016). This correlation was also found in Fong's study in China, which has a culture similar to that in Vietnam (Fong, 1993).

Findings from this study indicate that depression and anxiety, but not stress and loneliness, emerge as a predictor of lifetime suicidal thoughts. The results related to depression and anxiety, which were in line with studies conducted among school-attending adolescents and university students or adults in Spain and the U.S. (Aradilla-Herrero, Tomás-Sábado, & Gómez-Benito, 2013) (Cash & Bridge, 2009). Similar evidence was also found among adolescents in some LMICs (Page & West, 2011; Pillai, Andrews, & Patel, 2009). Different from other studies (Pillai et al., 2009; Qualter, Brown, Munn, & Rotenberg, 2010), in which loneliness is an important predictor of adolescents' suicidal thoughts, our study revealed that there was no association between these variables. The possible explanation for this difference might derive from the unique characteristic of preference among Thua-Thien-Hue youth for hiding emotions and solving problems individually. Similarly, there was no correlation between stress and suicidal thoughts among Vietnamese adolescents while other studies conducted among Indian adolescents concluded that stress contributed to suicidal thoughts (Arun & Chavan, 2009; Arun, Garg, & Chavan, 2017). The reason might be due to the difference in measurement used for assessing stress (DASS-21 in our study and the Mooney Problem Checklist – High School Form in India's studies).

Notably, the data of our study suggests that Global EI played the role of a protective factor against lifetime suicidal thoughts among adolescents. Several previous studies have also found this association. The self-reported of healthy well-being and good ability in EI predicted less suicidal thoughts among adolescents in the U.S., Spain, Kenya (Cha & Nock, 2009; Mamani-Benito, Brousett-Minaya, Ccori-Zuniga, & Villasante-Idme, 2018; Okello & Aomo, 2018; Zlotnick, Donaldson, Spirito, & Pearlstein, 1997) and among adults in Hong Kong (Kwok, 2014). This finding fits the local culture, in which the individual tends to manage and solve problems by themselves. Hence, if an individual had a good capacity of understanding their own and others' emotions, using this knowledge to control their emotions and be in harmony with others, the risk of suicidal thoughts might be reduced.

Family-level factors and lifetime suicidal thought

The maternal but not parental warmth was proved to be a significant protective factor to suicidal thoughts among Vietnamese adolescents. A probable explanation might be due to the traditional division of labour in a Vietnamese family. The primary role of a mother is doing housework and taking care of children while that of a father is going out or even away from home to earn money. During childhood, the mother is busy almost full-time to feed, care, play with, solve problems and listen to their children. Children, therefore, even find it hard to communicate with parents but are more likely to feel closer to their mother. They usually share thoughts, express emotions and communicate feelings with their mother if they want to. The sensation of warmth and care which is expressed to the child actively by the mother is essential to support children when they tackle difficulties during the stage of puberty, and thus provides some safeguard against suicidal thought. In contrast, overprotection and authoritarianism, which involve a discouragement of autonomy and independence in children, usually create the distance, rebelliousness and fear in children towards their parents (Phung et al., 2016). Being unable to communicate with overprotective or authoritarian parents and sometimes receiving pressure from adults might lead adolescents to develop suicidal thoughts.

School- and community-level factors and lifetime suicidal thoughts

There was a positive correlation between conflicts with teacher or staff and lifetime suicidal thoughts among our sample. In Vietnam, under the influence of Confucianism, the teacher-student relationship is similar to a “father-son” relationship. Students show high respect to the teacher and accept the demands and requests from the teacher unconditionally. Because of this educational moral code, students might choose to keep silent rather than speak against the teacher when they are scolded, threatened, humiliated or physically punished by teachers; that silence might increase the risk of having lifetime suicidal thoughts. This study found that other factors related to the school environment included in this study had no association with lifetime suicidal thoughts. These factors consist of the breakup of romantic relationships, conflicts with friends, feeling of belonging to the school (school connectedness), social isolation, and academic achievement satisfaction.

Regarding the community level, students in urban school thought of suicide more than those in a rural school. The pressure from higher expectation from teachers and parents in education in urban areas might be an explanation for this finding.

The prevalence of suicidal thoughts is still increasing among adolescents (Cash & Bridge, 2009; Santos Silva et al., 2014). Many risk factors to suicidal thoughts have been identified, and efforts to prevent suicide by isolating and reducing risk factors have been conducted (Cha & Nock, 2009; King, Price, Telljohann, & Wahl, 2000). Our study identifies potential protective and risk factors to lifetime suicidal thoughts, especially recognizing the protective role of EI, and the mother’s warmth and care during childhood. Intervention programs which focus on parenting education, especially for mothers, offers some promise in preventing suicidal thoughts during the adolescent stage. As EI is potentially modifiable (Nelis et al., 2009; Ruttledge & Petrides, 2012), and EI can prevent adolescents from experiencing depression and anxiety (Fernnández-Berocal et al., 2006; Q.-A. N. Nguyen, Tran, Tran, & Fisher, unpublished), it is worth considering the significant impact of EI to create positive emotional capacities for adolescents.

Conclusions

Suicidal thoughts and plans are becoming a serious public health issue among Vietnamese adolescents. It is evident from this study that depression and anxiety contributed to the risk of experiencing suicidal thoughts. The positive attitude and behaviours of parents during the first 16 years of a child's life, as well as the strength of inner characteristics of EI, strongly protected adolescents against the thoughts of suicidal ideation in Vietnam. Besides reducing risk factors, enhancing protective factors are potential prevention strategies that we can use to make a difference between life and death for our young generations. Including intervention programs on EI and on managing emotions in school is worth considering by educators and government locally and nationally. It is also necessary to educate parents in Thua-Thien-Hue province about choosing an effective parenting style, and in particular, the role of maternal warmth in protecting the lives of their children.

Table 1. Prevalence of suicidal ideation (n = 1,593)

	N/n	%
Lifetime suicidal thought	504/1,593*	31.64
Lifetime suicidal plan	201/504**	39.88
	(201/1,593)	(12.62)
12-month suicidal thought	391/504**	77.60
	(391/1,593)	(24.54)

** Total participants*
***Total participants who experienced lifetime suicidal thought at least once*
N: Number of cases
n: Total of participants (n = 1,593)

Table 2. Multiple logistic regression for lifetime suicidal thoughts reported by Vietnamese adolescents (n = 1,593)

Predictors	OR	95% CI
Individual level		
Sex		
Female	Ref.	
Male	**.52*** **	**.41 – .66**
Symptoms of mental health problems		
Depression	**1.10*** **	**1.07 – 1.14**
Anxiety	**1.04** **	**1.01 – 1.07**
Stress	1.04	.98 – 1.09
Loneliness	1.01	.99 – 1.04
Emotional Intelligence		
Global EI	**.81***	**.67 – .99**
Family level		
Parenting styles		
Mother's warmth	**.95** **	**.90 – 1.00**
Mother's overprotection	.99	.97 – 1.02
Mother's authoritarianism	.97	.90 – 1.05
Father's warmth	.99	.97 – 1.02
Father's overprotection	1.01	.98 – 1.05
Father's authoritarianism	1.03	.98 – 1.09
School level		
Conflicts with teachers/school staff	**1.09***	**1.01 – 1.18**
Community level		
Residence		
Urban	Ref.	
Rural	1.23*	**1.01 – 1.51**

**p < 0.05* *** p < 0.01* **** p < 0.001*

Controlled for Age, Ethics, Religion, Region, Parental Status, Parental education, Parental occupation, Woman/Man most care in the first 16 years, Currently living with both birth parents or not, Having a sibling or not in the family, conflicts with teachers/staff, conflicts with friends, breaking up romantic relationship, social isolation, academic achievement satisfaction, and cyber-bullied.
Only factors significantly associated with lifetime suicidal thoughts are presented. The full model can be found in Supplementary File 1.

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SUPPLEMENTAL DOCUMENT

Full table of multiple logistic regression for lifetime suicidal thought and Global EI reported by Vietnamese adolescents (n = 1,593)

Predictors	OR	95% CI of OR
Sex		
Female	Ref.	
Male	**.52*** **	**.41 – .66**
Age		
15	Ref.	
16	.92	.68 – 1.24
17 and 18	.96	.68 – 1.37
Symptoms of mental health problems		
Depression	**1.10*** **	**1.07 – 1.14**
Anxiety	**1.04***	**1.01 – 1.07**
Stress	1.03	.98 – 1.09
Loneliness	1.01	.99 – 1.04
Ethnicity		
Kinh	Ref.	
Not Kinh	4.42	.50 – 39.02
Religion		
Buddhism		
Not Buddhism	1.09	.82 – 1.46
Residence		
Rural	Ref.	
Urban	**1.21***	**.99 – 1.48**
Parental status		
Living together	Ref.	
Not living together	.72	.40 – 1.28
Currently living with		
Both birth parents	Ref.	
Only one birth parent	1.54	.75 – 3.16
None of birth parent	1.16	.83 – 1.62
Woman most care in the first 16 years		
Birth mother	Ref.	
Not birth mother	**1.56*** **	**1.26 – 1.92**
Woman most care's highest education		
Higher education	Ref.	
Basic education	1.13	.55 – 2.35
No school	1.05	.61 – 1.81
Woman most care's job		
Not manual labour	Ref.	
Manual labour	.79	.38 – 1.71

Predictors	OR	95% CI of OR
Jobless	.78	.35 – 1.74
Man most care in the first 16 years		
Birth father	Ref.	
Not birth father	1.28	.69 – 2.40
Man most care's highest education		
Higher education	Ref.	
Basic education	.99	.60 – 1.64
No school	.84	.57 – 1.25
Man most care's job		
Not manual labour	Ref.	
Manual labour	.94	.66 – 1.34
Jobless	1.06	.48 – 2.31
Sibling		
Having at least one sibling	Ref.	
No sibling	.82	.61 – 1.11
Parenting styles		
Mother's warmth	**.95***	**.90 – 1.00**
Mother's overprotection	.99	.96 – 1.02
Mother's authoritarianism	.98	.91 – 1.05
Father's warmth	.98	.95 – 1.01
Father's overprotection	1.01	.98 – 1.03
Father's authoritarianism	1.02	.97 – 1.08
School Connectedness		
Yes	Ref.	
No	.98	.94 – 1.02
Conflicts with teachers/staff		
No	Ref.	
Yes	1.09	1.00 – 1.18
Conflicts with friends		
No	Ref.	
Yes	1.12	.94 – 1.34
Last year breaking up romantic relationship		
No	Ref.	
Yes	.91	.70 – 1.20
Social isolation		
No	Ref.	
Yes	1.07	.69 – 1.65
Academic achievement satisfaction		
Yes	Ref.	
No	1.25	.96 – 1.64
Cyber-bulling		
No	Ref.	
Yes	1.05	.96 – 1.15
Global EI	**.81***	**.67 – .99**

*$p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

CHAPTER 9. DISCUSSION AND CONCLUSION

This study is the first large-scale study to date investigating emotional intelligence (EI) and its associations with mental health problems among adolescents in Vietnam. It contributes to the evidence base about the nature, prevalence and determinants of mental health problems among adolescents attending schools in Central Vietnam. For the first time in Vietnam, it has been established that high EI is a protective factor against mental health problems among adolescents and is a promising entry point for school-based prevention and early intervention programs in Vietnam.

9.1. STRENGTHS AND LIMITATIONS OF THE PROJECT

9.1.1. Strengths

This project has several noteworthy strengths. First, the systematic review about the nature, prevalence and determinants of mental health problems among adolescents in Vietnam was conducted follow the standard PRISMA protocol (Moher et al., 2009). The quality assessment was based on the standard of the well-known checklist Kmet and the Critical Appraisal Skills Programme (CASP) (Critical Appraisal Skills Programme, 2017; Orton et al., 2011). This review included both English-language peer-reviewed and Vietnamese-language evidence.

Second, the cross-sectional study recruited adolescents in Central Vietnam where studies were limited in investigating different types of mental health problems in comparison with other areas of the country. Thua-Thien-Hue province, from which the study was conducted, is a special province where the Confucianism and feudalism of the old Nguyen dynasty affected inhabitants' characteristics more strongly and for longer than in other areas of the country.

Third, this project was the application of a comprehensive conceptual framework. Various potential variables that were rarely focused previously, including inner characteristics (EI) and surrounding factors (parenting styles, cyber-bullying, broken romantic relationships, and social isolation) were examined in relationship to mental health problems in this study.

Forth, the cross-sectional survey included a systematically-recruited sample of 1,593 students from high schools in rural, urban and coastline areas in Central Vietnam. This addressed the limitation in most of the previous studies that had focused mostly in urban areas.

Fifth, the response rate of the cross-sectional survey was high at 98.6%. None of the invited high schools refused to support this study. All parents agreed for their children to participate in the survey. The sample, therefore, was representative for adolescents attending schools in Central Vietnam. With a large scale, the power for statistical analyses in this project, therefore, was reliable.

Fifth, the questionnaires used to measure common mental health problems (depression, anxiety, and stress) were locally formally validated measures. The scale measured parenting styles during childhood, the PBI, was validated in this study for use among adolescents in Vietnam. The psychometric properties of the PBI with a three-factor explanatory model were consistent with previous studies. Other measurements used in the questionnaire were culturally adapted by standard criteria.

Sixth, data collection was conducted carefully with close supervision of the researchers and well-trained data collection assistants. Potential problems during the data collection process were controlled, including answering questions from participants or dealing with any mental health problems occurred to participants due to completing the questionnaire.

Finally, the questionnaire used in this study was anonymous. The completion progress was supervised strictly by the researcher team and all completed questionnaires were put in an provided envelop and sealed by participants before submitting to the researchers. These ensured the confidentiality of all information among students, teachers and the researcher team.

9.1.2. Limitations

Although this study had its strengths, findings reported within this project should be interpreted in the context of a number of limitations.

First, measurements used in this study to measure common mental health problems were screening tools and therefore, did not provide diagnoses.

Second, this study only focused on the most common mental health problems among adolescents due to the limitation of time and budget of a PhD project.

Third, the psychometric properties of the the TEIQue-ASF has not been validated for use among Vietnamese adolescents. As the TEIQue-ASF was developed in England, the different in culture of expression emotion and personality might impact the level of EI among adolescents in Vietnam. Furthermore, there is no study conducted in Asia regarding psychometric properties of TEIQue-ASF among adolescents.

Fourth, this is a cross-sectional study, directions of associations could be speculated about but not established. Although the association between EI and mental health problems was significant and duplicated the findings of other studies, the direction of causation cannot be concluded with certainty.

Fifth, this study included students attending high schools in rural, urban and coastline areas, students who were out of school or living in highland areas were excluded that could impact the conclusion of our results on sample outside this study.

In spite of the identified limitations, the data are robust and can be generalized with considerable confidence for adolescents in Central Vietnam.

9.2. CONTRIBUTIONS TO LOCAL LITERATURE

Findings from this study provide significant knowledge to the existing literature on mental health problems among adolescents attending schools in Vietnam. It adds information about various symptoms of mental health problems among adolescents in Centre of Vietnam which had not been investigated previously in comparison to the availability of evidence from the Northern and Southern areas. It also adds to the list of investigated mental health problems in Vietnam by including loneliness which has not been noticed in this country. Whilst mental health problems among adolescents appear to be universal, it is important to conduct research with diverse communities within a country and diverse in types of mental health problems to provide deeper understanding and detailed epidemiological knowledge.

Our study found that mental health problems, including depression, anxiety, stress and suicidal thoughts in Central Vietnam were prevalent among adolescents in this area with an extremely high proportion in comparison with those from Northern and Southern areas of Vietnam as well as other LMICs. This finding has raised an emergency warning bell about the status mental health among adolescents locally and nationally.

This project confirmed the Ecological theory about the determinants of individual psychological functioning which was proposed by Bronfenbrenner (Bronfenbrenner, 1979). Results showed that mental health problems among students in Central Vietnam are determined by multiple factors at several levels: individual, family, school and community. Among these, the most notable point was the strong and important influence of parents' caregiving, including the care

of fathers during childhood on mental health problems among adolescents. This is an important evidence for future intervention strategies to improve mental health and wellbeing among school-attending adolescents in Vietnam. In terms of the school level, our results revealed that conflict with friends, including having quarrels with peers, being emotional and physically bullied by peers, was more likely to increase the risk of having depression, anxiety, stress, loneliness and suicidal thoughts. In addition, the impact of cyber-bullying to mental health problems found in the current study has raised an awareness of cyber safety among adolescents in the modern technological society.

This is the first large-scale study in Vietnam, to our knowledge, investigating EI that is an inner characteristic that empowers the strength from within an individual. It has been considered worldwide but not as yet in Vietnam. From the large and rigorously selected sample, the study found that EI was shaped by individual (sex), familial (parenting styles) and community characteristics (religion). Factors affecting the development of this emotional capacity were consistent with the psychological development structure suggested in the Ecological theory (Bronfenbrenner, 1979). Notably, our study revealed that the development of EI was under the strong influence of the parenting styles of the family in which the adolescents were born and where they grew up. Postive behaviours and attitudes from parents such as warmth and care towards their children during childhood were associated with higher EI in adolescence. In contrast, overprotectiveness or authoritarianism appeared to affect the development of EI negatively.

It is essential to notice the influence of the long-term existence of feudalism in the history on parenting styles, which in turns might affect the development of EI among Vietnamese adolescents. Although feudalism, nowadays, no longer exists and many

of its values have faded over time, its underlying effects on modern life remain, especially in Thua-Thien-Hue province where the base of feudalism was located.

In addition, the focus of our study was examining the association between EI and mental health problems among high school adolescents. This addressed a limitation of most of previous studies in Vietnam which investigated risk and protective factors of mental health problems from surrounding environments. This is the first study in Vietnam to provide evidence about the role of another potential inner factor that can influence mental health among adolescents. Results from this study provide a positive signal for policymakers, researchers and educators to follow the direction of prevention and early intervention focusing on EI to lessen the burden of mental health problems among the youth generation in Vietnam.

Finally, the contribution of this study was the validation of the Parenting Bonding Invention (PBI) as a measure of behaviours and attitudes of parents towards children during the child's first 16 years of life. Confirmatory factor analysis demonstrated the four-factor model among Vietnamese adolescents had good internal consistency. The scale measured parenting styles during childhood, the PBI, was validated in this study for use among adolescents in Vietnam. The psychometric properties with the three-factor model were consistent with many previous studies globally.

Globally, our study contributes to the existing evidence about mental health among adolescents and EI. Our study also contributes to informing strategies to improve mental health among adolescents by strengthening the emotional intellience of individuals through prevention and early intervention programs.

9.3. IMPLICATIONS OF THE PROJECT

9.2.1. Implications for young people

The findings from this study improved the knowledge about mental health problems among individual members of the young generation. Self-awareness of mental health and having a positive attitude in protecting themselves from mental health problemts are essential for each student. Nurturing emotions, including developing EI should be considered as a strategy for better mental health.

9.2.2. Implications for families

The high prevalence of mental health problems among adolescents is an alarm for parents about their children's health. Given the importance of Confucianism and feudalism on parenting styles in Asian culture and the influence of the parents in emotional development as well as the mental health of their child, this study raised an awareness among parents about the best methods of taking care of their children. A better choice of parenting in which using more care and warmth instead of controlling, overprotection and punishment should be seriously considered among parents in Vietnam. Especially, fathers should be aware of their important role in raising and nurturing emotions to children in family.

In addition, the differences in attitude and behaviours of parents towards daughters and sons should be cautioned. Parents should encourage the confidence in daughters and release the burden of high expectations on sons.

9.2.3. Implications for schools

It is important for schools to understand the status of mental health among their students and its relationship with different factors which originate within schools. Prevention and early intervention programs focusing on improving EI are highly recommended. The involment of teachers and parents in these programs at school should benefit the outcomes. Prevention or training programs focusing on cyber safety among adolescent should be considered in Vietnam.

9.2.4. Implications for national policies and programs

Findings from this study provide a number of important implications for legislation, policy, practice and programs at the national level in Vietnam regarding improving mental health for adolescents.

In term of legislation, the recognition of mental health care has been made in the Decision 1215/QD-TTg of the Prime of Minister of Vietnam in 2011. Within this document, the importance of mental health and care services for people with mental disorders was emphasized. However, this recognition was restricted to patients with severe psychiatric illness. The Circular regarding *Guiding the management process of people with mental illness at social assistance facilities* of the Ministry of Labor, Invalids and Social Affairs has regulations on public and private social support facilities to serve people with severe, medium and mild mental illness. However, in fact, due to the limitations of infrastructure, human resources and funding, most of these facilities provide support only for people with schizophrenia. Common mental health problems such as depression, anxiety, stress and suicidal thought have not yet been focused on. In December 2017, the Vietnamese Ministry of Education and Training issued the Circular 31/2017/TT-BGDDT, provided the instruction for psychological counselling for students at schools. However, the regulation for a psychologist at school has not yet been implemented. The high prevalence of many different types of mental health problems among adolescents in this study will raise the awareness of the Government and policymakers. Establishing national laws or policies related to mental health, including common mental health problems for the community and for schools is needed, in which training professional fulltime social workers and psychologists along with appropriate infrastructure (such as psychological counselling centre or room) should be a priority.

The provided evidence in this study about the core risk and protective factor to mental health problems was a guidance for the Government and policymakers in considering appropriate public health approach in preventing mental health problems among adolescents. Programs to improve knowledge about mental health problems need to be developed for adolescents, teachers and parents.

For students, these programs could be included in the main curriculum or in the compulsory extra-activities at schools. Vietnamese educational programs have focused on developing academic and intellectual capacities and are not yet adequate in considering the emotional development of students. Establishing an appropriate and balanced curriculum between academic and emotion development is important to help students in preventing mental health problems and to improve the quality of life of adolescents.

For parents, parenting programs are necessary, especially for young parents or pre-marriage couples to help them have a better choice of parenting. These programs should focus on the direction of encouraging using care, warmth and minimizing harsh punishments in educating and raising children at home.

For teachers, conpulsory training courses or related workshop enhancing knowledge about mental health among adolescents should be conducted at school level.

Mental health should become an important responsibility of the National Ministry of Health. Information about mental health can be spread into the community and among adolescents via social media, such as Facebook, Instagram, Twitter, television, newspapers, radio or website. Community-based or school-based campaigns about mental health at national level are good approaches to raise awareness about mental health. A national free helpline specialised in mental health problems for adolescents should be considered.

9.4. DIRECTIONS FOR FUTURE RESEARCH

Findings for this project recommend directions for future investigation. First, it is needed to have a consistent definition of EI. Definition consistency will contribute to the stability of the research results related to the correlation between EI and mental health problems across cultures.

Second, the psychometric properties of the TEIQue-ASF should be examined in Vietnam as well as other Asian countries to prove the stability of latent factors of this questionnaire not only in Western cultures but also in Eastern cultures.

Third, the findings recommend a longitudinal research about the effects of EI on mental health problems. This would help confirm causal pathways between EI and outcomes.

Forth, a randomised controlled trial between a group receiving usual education and a group that participate in a EI improvement program should be considered. Such research would identify whether EI programs are a potential solution for prevention and intervention to mental health problems among adolescents.

Fifth, further studies including a nationally-representative sample is highly recommended in Vietnam, in which adolescents living in highland areas, islands or adolescents who are not attending schools are included.

Sixth, one important dimension of EI is the relationship with others, examining the influence of EI on relationship with parents, teachers and peers should be considered as these relationships might protect adolescents from mental health problems. Findings from these study will confirm the mediator role of EI in prevention and intervention against mental health problems.

Seventh, an attempt to examine whether ability EI and trait EI have different impact on mental health problems among Vietnamese adolescents should be

considered. This would help indentify which types of EI should be suitable for intervention and prevention approaches.

9.5. CONCLUSIONS

Many Vietnamese adolescents experience various types of mental health problems. The findings were consistent with those in previous studies internationally. The sample in this study reported a substantial proportion having clinically significant symptoms of mental health problems which raises concern about wellbeing of the future generation in Vietnam.

EI is a promising protective factor for the mental health of adolescents in Vietnam. EI increases the inner strength of each individual in which it can help adolescents tackle on their own the inevitable problems they will encounter in life, but also prevent them from putting themselves into situations that harm their mental health and wellbeing.

As EI is potential modifiable and can be learned and improved (Nelis et al., 2009; Ruttledge & Petrides, 2012), a school-based structured intervention focusing on improving EI is worth considering. Improving EI among adolescents should not be separated from training parenting styles.

The mental health promotion, the prevention and early intervention program start with developing EI - the inner power of indiviudal, parallel with parents and family besides the school and community would reduce the burden of mental health problems among adolescents in Vietnam.

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APPENDIX 1 – PUBLISHED PROTOCOL

UNIVERSITY of York
Centre for Reviews and Dissemination

NHS
National Institute for Health Research

PROSPERO International prospective register of systematic reviews

Review title and timescale

1 Review title
Give the working title of the review. This must be in English. Ideally it should state succinctly the interventions or exposures being reviewed and the associated health or social problem being addressed in the review.
The prevalence and determinants of mental health problems among adolescents in Vietnam

2 Original language title
For reviews in languages other than English, this field should be used to enter the title in the language of the review. This will be displayed together with the English language title.
The prevalence and determinants of mental health problems among adolescents in Vietnam

3 Anticipated or actual start date
Give the date when the systematic review commenced, or is expected to commence.
01/08/2017

4 Anticipated completion date
Give the date by which the review is expected to be completed.
30/06/2018

5 Stage of review at time of this submission
Indicate the stage of progress of the review by ticking the relevant boxes. Reviews that have progressed beyond the point of completing data extraction at the time of initial registration are not eligible for inclusion in PROSPERO. This field should be updated when any amendments are made to a published record.

The review has not yet started ×

Review stage	Started	Completed
Preliminary searches	Yes	Yes
Piloting of the study selection process	Yes	Yes
Formal screening of search results against eligibility criteria	Yes	Yes
Data extraction	Yes	No
Risk of bias (quality) assessment	No	No
Data analysis	No	No

Provide any other relevant information about the stage of the review here.

Review team details

6 Named contact
The named contact acts as the guarantor for the accuracy of the information presented in the register record.
Anh Nguyen

7 Named contact email
Enter the electronic mail address of the named contact.
ngoc.a.nguyen@monash.edu

8 Named contact address
Enter the full postal address for the named contact.
4D-15, Lelvel 4 553 St Kilda Road, Melbourne, VIC 3004

9 Named contact phone number
Enter the telephone number for the named contact, including international dialing code.
+61 3 9903 0626

10 Organisational affiliation of the review
Full title of the organisational affiliations for this review, and website address if available. This field may be completed as 'None' if the review is not affiliated to any organisation.

Monash University

Website address:

11 Review team members and their organisational affiliations
Give the title, first name and last name of all members of the team working directly on the review. Give the organisational affiliations of each member of the review team.

Title	First name	Last name	Affiliation
Ms	Anh	Nguyen	Jean Hailes Research Unit, School of Public Health and Preventive Medicine
Professor	Jane	Fisher	Jean Hailes Research Unit,School of Public Health and Preventive Medicine
Dr	Thach	Tran	Jean Hailes Research Unit, School of Public Health and Preventive Medicine
Ms	Anh	Nguyen	Department of Psychology and Pedagogy, Hue University of Education
Mr	Anh-Tuan	Nguyen	School of Population and Global Health, University of Melbourne

12 Funding sources/sponsors
Give details of the individuals, organizations, groups or other legal entities who take responsibility for initiating, managing, sponsoring and/or financing the review. Any unique identification numbers assigned to the review by the individuals or bodies listed should be included.
Anh Nguyen is a PhD candidate and is supported by an Australian Awards Scholarship. Jane Fisher is supported by a Monash Professional Fellowship and the Jean Hailes Fellowship which receives funding from the H & L Hetch Trust managed by Perpetua Trustees Pty Ltd. Thach Tran is supported by supported by a National Health and Medical Research Council Early Career Fellowship.

13 Conflicts of interest
List any conditions that could lead to actual or perceived undue influence on judgements concerning the main topic investigated in the review.
Are there any actual or potential conflicts of interest?
None known

14 Collaborators
Give the name, affiliation and role of any individuals or organisations who are working on the review but who are not listed as review team members.

Title	First name	Last name	Organisation details

Review methods

15 Review question(s)
State the question(s) to be addressed / review objectives. Please complete a separate box for each question.
What is the prevalence of mental health problems among adolescents in Vietnam?

What are risk and protective factors for mental health problems among adolescents in Vietnam?

16 Searches
Give details of the sources to be searched, and any restrictions (e.g. language or publication period). The full search strategy is not required, but may be supplied as a link or attachment.
The following database will be individually searched to identify the relevant papers: PsyInfo (using the Ovid platform - Ovid to Present), Medline (using the Ovid platform), CINAHL, Web of Science core collection, Embase, and Scopus. Contacting experts and author collection are also done to reach more relevant papers. The primary search terms were used separately for each database and are outlined in a table. Review papers and the reference lists of eligible papers is manually searched to identify further suitable papers. Language and time were unrestricted. Restrictions: refugee adolescents or adolecents who were living outside Vietnam, and adolescents with disability are excluded.

17 URL to search strategy
If you have one, give the link to your search strategy here. Alternatively you can e-mail this to PROSPERO and we will store and link to it.

I give permission for this file to be made publicly available
No

18 Condition or domain being studied
Give a short description of the disease, condition or healthcare domain being studied. This could include health and wellbeing outcomes.
Mental health problems: Depression, Anxiety, Stress, Aggressiveness, Loneliness, Suicide thoughts, Suicide attempts, Self-harm behaviours

19 Participants/population
Give summary criteria for the participants or populations being studied by the review. The preferred format includes details of both inclusion and exclusion criteria.
Inclusion - Papres reporting results from adolescents and youth Exclusion - Papers reporting results from adolescents who were living outside Vietnam and adolescents with disabilities.

20 Intervention(s), exposure(s)
Give full and clear descriptions of the nature of the interventions or the exposures to be reviewed
Of interest are studies that examined the prevalence of mental health problems and its risk and protective factors among adolescents who are living in Vietnam.

21 Comparator(s)/control
Where relevant, give details of the alternatives against which the main subject/topic of the review will be compared (e.g. another intervention or a non-exposed control group).
N/A

22 Types of study to be included
Give details of the study designs to be included in the review. If there are no restrictions on the types of study design eligible for inclusion, this should be stated.
The review will include research in both qualitative and quantitative methodologies which report the prevalence and determinants of mental health problems among adolescents in Vietnam. Acceptable studies for the review includes cross-sectional, case-control, cohort studies, intervention studies, and qualitative research if prevalence or determinants of mentalhealth problems were also reported, second analysis papers.

23 Context
Give summary details of the setting and other relevant characteristics which help define the inclusion or exclusion criteria.
There is no restriction on type of setting.

24 Primary outcome(s)
Give the most important outcomes.
The primary outcomes for this review: - The prevalence of any types of mental health problems among adolescents in Vietnam. - The risk and protective factors of mental health problems among adolescents in Vietnam.

Give information on timing and effect measures, as appropriate.

25 Secondary outcomes
List any additional outcomes that will be addressed. If there are no secondary outcomes enter None.
None

Give information on timing and effect measures, as appropriate.

26 Data extraction (selection and coding)
Give the procedure for selecting studies for the review and extracting data, including the number of researchers involved and how discrepancies will be resolved. List the data to be extracted.
The data extracted will include details about the following: • The study aim; * The study design; • The country in which

the research was conducted; • The sample size and recruitment; • The mental health outcomes; • The outcome measures used; • The co-variants; • The results.

27 Risk of bias (quality) assessment
State whether and how risk of bias will be assessed, how the quality of individual studies will be assessed, and whether and how this will influence the planned synthesis.
The quality of each selected study and its risk of bias are assessed using Critical Appraisal Skills Programme (CASP) tool (Critical Appraisal Skills Programme, 2017), from which qualitative and quantitative studies were assessed by separate checklists. Studies with secondary analyses of existing data were considered by the adapted checklist for qualitative studies (Pradhan, Wynter, & Fisher, 2015) (Table 4). "Yes" answer was received one score and "No" answer was received zero score. The final score for each study's quality assessment was the total of all answer, from which the highest score for quantitative, qualitative and secondary analyses studies was seven, five, and five, respectively. Risk of bias across studies is examined in terms of study design, sample selection, data collection, analyses or reporting.

28 Strategy for data synthesis
Give the planned general approach to be used, for example whether the data to be used will be aggregate or at the level of individual participants, and whether a quantitative or narrative (descriptive) synthesis is planned. Where appropriate a brief outline of analytic approach should be given.
- Firstly, a brief overview of the study characteristics, study setting, study designs, sample size, sample characteristics, study methods will be reported. - Secondly, a narrative (descriptive) synthesis will be conducted.

29 Analysis of subgroups or subsets
Give any planned exploration of subgroups or subsets within the review. 'None planned' is a valid response if no subgroup analyses are planned.
Based on the finding, differences between groups will be explored by location, study method, severity.

Review general information

30 Type and method of review
Select the type of review and the review method from the drop down list.
Systematic review

Child health

31 Language
Select the language(s) in which the review is being written and will be made available, from the drop down list. Use the control key to select more than one language.
English

Will a summary/abstract be made available in English?
Yes

32 Country
Select the country in which the review is being carried out from the drop down list. For multi-national collaborations select all the countries involved. Use the control key to select more than one country.
Vietnam

33 Other registration details
Give the name of any organisation where the systematic review title or protocol is registered together with any unique identification number assigned. If extracted data will be stored and made available through a repository such as the Systematic Review Data Repository (SRDR), details and a link should be included here.
None

34 Reference and/or URL for published protocol
Give the citation for the published protocol, if there is one.
Give the link to the published protocol, if there is one. This may be to an external site or to a protocol deposited with CRD in pdf format.

I give permission for this file to be made publicly available
Yes

35 Dissemination plans
Give brief details of plans for communicating essential messages from the review to the appropriate audiences.
Do you intend to publish the review on completion?
Yes

36 Keywords
Give words or phrases that best describe the review. (One word per box, create a new box for each term)
Systematic review, Adolescents, Mental health problems, Vietnam

37 Details of any existing review of the same topic by the same authors
Give details of earlier versions of the systematic review if an update of an existing review is being registered, including full bibliographic reference if possible.
None

38 Current review status
Review status should be updated when the review is completed and when it is published.
Ongoing

39 Any additional information
Provide any further information the review team consider relevant to the registration of the review.

40 Details of final report/publication(s)
This field should be left empty until details of the completed review are available.
Give the full citation for the final report or publication of the systematic review.
Give the URL where available.

APPENDIX 2 – ETHICS APPROVALS

MONASH University

Monash University Human Research Ethics Committee

Approval Certificate

This is to certify that the project below was considered by the Monash University Human Research Ethics Committee. The Committee was satisfied that the proposal meets the requirements of the *National Statement on Ethical Conduct in Human Research* and has granted approval.

Project Number: 0610
Project Title: Emotional Intelligence and Mental Health Problems Among Adolescents in Vietnam
Chief Investigator: Professor Jane Fisher
Expiry Date: 12/10/2021

Terms of approval - failure to comply with the terms below is in breach of your approval and the *Australian Code for the Responsible Conduct of Research*.

1. The Chief Investigator is responsible for ensuring that permission letters are obtained, if relevant, before any data can occur at the specified organisation.
2. Approval is only valid whilst your hold a position at Monash University.
3. It is responsibility of the Chief Investigator to ensure that all investigators are aware of the terms of approval and to ensure the project is conducted as approved by MUHREC.
4. You should notify MUHREC immediately of any serious or unexpected adverse effects on participants or unforeseen events affecting the ethical acceptability of the project.
5. The Explanatory Statement must be on Monash letterhead and the Monash University complaints clause must include your project number.
6. Amendments to approved projects including changes to personnel must not commence without written approval from MHUREC.
7. Annual Report - continued approval of this project is dependent on the submission of an Annual Report.
8. Final Report - should be provided at the conclusion of the project. MUHREC should be notified if the project is discontinued before the expected completion date.
9. Monitoring - project may be subject to an audit or any other form of monitoring by MUHREC at any time.
10. Retention and storage of data - The Chief Investigator is responsible fo the storage and retention of the original data pertaining to the project for a minimum period of five years.

Thank you for your assistance.

Professor Nip Thomson

Chair, MUHREC

Page 1 of 1

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Ms. NGUYEN NGOC QUYNH ANH
Hue University of Education, Hue, Vietnam

Subject: Approval of the study – "Emotional Intelligence and Mental Health Problems among Adolescents in Vietnam".

Dear Ms. Nguyen Ngoc Quynh Anh,

The Institutional Ethics Committee of Hue University of Medicine and Pharmacy has reviewed and approved the following study:

Study title: **Emotional Intelligence and Mental Health Problems among Adolescents in Vietnam.**

Principal Investigator: Nguyen Ngoc Quynh Anh, PhD candidate

This study is approved for the research period from October 15th 2016 to December 31st 2017.

It is your responsibility to ensure that all people associated with the study are made aware of what has been actually approved.

Please note that the following conditions apply to your approval. Failure to abide by these conditions may result in suspension or discontinuation of approval and/or disciplinary action.

a. Limit of Approval: Approval is limited strictly to the study as submitted in your application
b. All procedures within this study must follow what have been submitted in your ethics application.
c. Approval is for the above mentioned period. Research must be renewed (if needed) until it is complete.

Yours Sincerely,

The Institutional Ethics Committee of
Hue University of Medicine and Pharmacy

CHAIR	SECRETARY
A/PROF. VO TAM	DR. NGUYEN MINH TAM

APPENDIX 3 – THE QUESTIONNAIRE (English version)

MONASH UNIVERSITY

School of Public Health and Preventive Medicine

QUESTIONNAIRE

Print Record

This document was printed on November 2016

Thank you so much for your participation in this survey. Your time and contribution are greatly appreciated. Participation is voluntary and whether you participate or not will not affect your grade or the way you are treated in your class and school.

The aims of this study are to understand what experiences that you have had, what emotional experiences are associated with them, how you understand those emotions and how those understandings affect your quality of life and relationships with other people. These questions may involve your parents, friends, teachers, sisters/brothers or other people. Your contribution in completing this questionnaire will help us achieve these aims which in turns, will develop the school educational programs and health services for adolescent in Vietnam.

The questionnaire is anonymous. Your answers are used for research purpose only. Your identification will not be identified through your answers. Any background information we collect is to describe the types of adolescents who participate this study. ***Please do not write your name anywhere on this questionnaire or the envelop***. Your completion of the questionnaire is considered your consent to participate.

How to answer the questionnaire

This is not a graded test. There are no right or wrong answers to any of the questions and everyone will have different answers. It is important that you attempt to answer all the questions by yourself. **PLEASE DO NOT TALK ABOUT OR DISCUSS YOUR ANSWERS WITH ANYONE ELSE.** Of you are unsure how to answer a question, mark the response which corresponds most closely to how you feel.

The questions may refer to DIFFERENT TIME PERIODS, so please read the instructions for each sections, and each questions carefully. The questionnaire will take approximately 45 minutes to complete.

When you are ready to begin, please read each sentence carefully, decide your answer and respond by ticking (☑) at the appropriate box or writing in the space provided.

Examples

Example 1: **What is your sex?** *(Please tick ONE box only)*

Male ☑
Female ☐

You would tick this box if you are male.

Example 2: **What is your date of birth?** *(Please specific on the line)*

— *26/03/2000* ——

You would write "26/03/2000" on the line if you were born on this date.

Example 3: **Which of the following does your family own?** *(Please tick all that apply)*

- Television ☑
- CD, VDC & DVD players ☐
- Bicycle ☑
- Car ☐
- Air condition ☐
- Refrigerator ☑
- Washing machine ☐
- Wash dishes machine ☐
- Computer ☑
- Internet ☐
- Home phone ☐
- Cell phone ☐

You would tick these boxed if your family owns a television, bicycle, motorbike, refrigerator, and computer.

Example 4:

Question 6: **Have you ever feel sad?** *(Please tick ONE box only)*

- Yes ☐
- No ☑ => **Skip to question 10**

If you tick YES, please go to the next question (Question 7 in this case)

If you tick No, please skip question 7, 8, 9, and continue to answer question 10 as instruction.

If you want to CHANGE YOUR ANSWER to a question, simply cross it out, and write or choose a new option you feel is more suitable.

Example

Example 1: **What is your date of birth?** *(Please specific on the line)*

~~26/03/2000~~ 26/03/1999

You should cross "26/03/2000" out and write "26/03/1999" on the line if you were born in 1999 instead of 2000.

Example 2: **What is your grade?** *(Please tick one box only)*

- 10 ~~☑~~
- 11 ☑
- 12 ☐

You should cross this option out, place a tick on "11" if you are at grade 11 instead of 10.

SECTION A. YOURSELF

In this section, we are going to ask you some information about yourself and your circumstances.

1. What is your gender? *(Please tick ONE box only)*

   Male ☐1

   Female ☐2

2. What is your date of birth? *(Please write on the line)*: _____/_____/_____

   or How old are you (if you do not know your date of birth)? _____ (years)

3. What is your ethnicity?

   Kinh ☐1

   Other *(Please specific on the line)*: ☐2

   _____

   I do not know ☐3

4. What is your religion? *(Please tick ONE box only)*

   No religion ☐1

   Buddhism ☐2

   Christianity ☐3

   Protestant ☐4

   Other *(Please specify on the line)*: ☐8

   _____

   I do not know ☐9

5. What is your residence type?

   Urban area of big city ☐1

   Outskirt area of the city ☐2

   Town ☐3

   Rural area ☐4

   Coastline area ☐5

   Other *(Please specify on the line)*: ☐6

   _____

SECTION B. YOUR FAMILY

In this section, we are interested in some information about your parents/caregivers, the way they took care of you; and your opinion about your family in general.

6. **What is your parents' marital status?**

Living together ☐1
Divorced ☐2
Separated ☐3
Death (one or both) ☐4

7. **Are you currently living together with?** *(Please tick ONE box only)*

Both of your birth parents ☐1
Only your birth mother ☐2
Only your birth father ☐3
Your birth mother and a stepfather ☐4
Your birth father and a stepmother ☐5
None of your birth parents. If so, who have you lived with? *(Please specify on the line)*: ☐6

_____

8. **Who was the woman providing the most care to you IN THE FIRST 16 YEARS of life?** *(Please tick ONE box only)*

Birth mother ☐1
Step mother ☐2
Adoptive mother ☐3
Older sister ☐4
Other family member (grandmother, aunt) ☐5
Other *(Please specify on the line)*: ☐6

_____

9. **What is the highest education of this woman?** *(Please tick ONE box only)*

University degree or higher ☐1
TAFE, diploma, technical ☐2
High school (years 10-12) ☐3
Secondary school (years 6-9) ☐4
Primary school (years 1-5) ☐5
No schooling ☐6
I do not know ☐7

10. **What is the occupation of this woman?** *(Please tick ONE box only)*

Government officer ☐1
Professional (Doctor, teacher, engineer, etc.) ☐2
Private sector officer (private companies, foreign owned companies, non-governmental organisations) ☐3
Manual worker ☐4
Self-employed business ☐5
Farmer ☐6
Home maker ☐7
Retired ☐8
Other *(Please specify on the line)*: ☐9

_____

I do not know ☐10

11. **Who was the man providing the most care to you IN THE FIRST 16 YEARS of life?** *(Please tick ONE box only)*

Birth father ☐1
Step father ☐2
Adoptive father ☐3
Older brother ☐4
Other family member (grandfather, uncle) ☐5
Other *(Please specify on the line)*: ☐6

_____

12. What is the highest education level of this man? *(Please tick ONE box only)*

University or higher ☐1
TAFE, diploma, technical ☐2
High school (years 10-12) ☐3
Secondary school (years 6-9) ☐4
Primary school (years 1-5) ☐5
No schooling ☐6
I do not know ☐7

13. What is the occupation of this man? *(Please tick ONE box only)*

Government officer ☐1
Professional (Doctor, teacher, engineer, etc.) ☐2
Private sector officer (private companies, foreign owned companies, non-governmental organisations) ☐3
Manual worker ☐4
Self-employed business ☐5
Farmer ☐6
Home maker ☐7
Retired ☐8
Other *(Please specify on the line)*: ☐9

_____

I do not know ☐10

14. How many siblings (including full/half/step/adoptive brothers and sisters) do you have?

I have no sibling at all ☐1 => Skip to Question 16
One ☐2 => Skip to Question 16
Two ☐3
Three or more ☐4

15. Which child are you in your family?

Eldest ☐1
Middle ☐2
Youngest ☐3

16. **Please think about the woman who provided the most care for you IN THE FIRST 16 YEARS. As you remember this man, please tick in the most appropriate box for each statement.**

		A lot like her	Somewhat like her	A little like her	Not at all like her
a.	Spoke to me in a warm and friendly voice	☐1	☐2	☐3	☐4
b.	Seemed emotionally distant to me	☐1	☐2	☐3	☐4
c.	Appeared to understand my problems and worries	☐1	☐2	☐3	☐4
d.	Liked me to make my own decisions	☐1	☐2	☐3	☐4
e.	Did not want me to grow up	☐1	☐2	☐3	☐4
f.	Tried to control everything I did	☐1	☐2	☐3	☐4
g.	Enjoyed talking things over with me	☐1	☐2	☐3	☐4
h.	Frequently smiled at me	☐1	☐2	☐3	☐4
i.	Tended to baby me	☐1	☐2	☐3	☐4
j.	Let me decide things for myself	☐1	☐2	☐3	☐4
k.	Could make me feel better when I was upset	☐1	☐2	☐3	☐4
l.	Did not talk with me very much	☐1	☐2	☐3	☐4
m.	Tried to make me feel dependent on her	☐1	☐2	☐3	☐4
n.	Gave me as much freedom as I wanted	☐1	☐2	☐3	☐4
o.	Was overprotective of me	☐1	☐2	☐3	☐4
p.	Let me dress in any way I pleased	☐1	☐2	☐3	☐4

(PBI, Parker et al.)

17. **Please think about the man who provided the most care for you IN THE FIRST 16 YEARS. As you remember this man, please tick in the most appropriate box for each statement.**

		A lot like her	Somewhat like her	A little like her	Not at all like her
a.	Spoke to me in a warm and friendly voice	☐1	☐2	☐3	☐4
b.	Seemed emotionally distant to me	☐1	☐2	☐3	☐4
c.	Appeared to understand my problems and worries	☐1	☐2	☐3	☐4
d.	Liked me to make my own decisions	☐1	☐2	☐3	☐4
e.	Did not want me to grow up	☐1	☐2	☐3	☐4

f.	Tried to control everything I did	☐1	☐2	☐3	☐4
g.	Enjoyed talking things over with me	☐1	☐2	☐3	☐4
h.	Frequently smiled at me	☐1	☐2	☐3	☐4
i.	Tended to baby me	☐1	☐2	☐3	☐4
j.	Let me decide things for myself	☐1	☐2	☐3	☐4
k.	Could make me feel better when I was upset	☐1	☐2	☐3	☐4
l.	Did not talk with me very much	☐1	☐2	☐3	☐4
m.	Tried to make me feel dependent on her	☐1	☐2	☐3	☐4
n.	Gave me as much freedom as I wanted	☐1	☐2	☐3	☐4
o.	Was overprotective of me	☐1	☐2	☐3	☐4
p.	Let me dress in any way I pleased	☐1	☐2	☐3	☐4

(PBI, Parker et al.)

SECTION C. YOUR SCHOOL AND STUDY

Now we are going to ask you about some experience you may have had while you are at school.

18. The following statements are about your perception toward your school and people in the school. Please choose the answer that suits you best and tick the proper box.

		Strongly disagree	Disagree	Neutral	Agree	Strongly agree
a.	I feel safe in my school	☐1	☐2	☐3	☐4	☐5
b.	The teachers at this school treat students fairly	☐1	☐2	☐3	☐4	☐5
c.	I am happy to be at this school	☐1	☐2	☐3	☐4	☐5
d.	I feel like I am part of this school	☐1	☐2	☐3	☐4	☐5
e.	I feel close to people at this school	☐1	☐2	☐3	☐4	☐5

19. The following questions are about your experiencing with your teachers and school staff IN THE PAST 12 MONTHS. Please choose the answer that suits you best and tick the proper box.

	Never	Sometimes	Often
a. IN THE PAST 12 MONTHS, have you ever had a serious quarrel with your teachers or other staff at school?	☐1	☐2	☐3
b. IN THE PAST 12 MONTHS, have you ever been scolded, threatened, or humiliated by your teachers or other staff at school?	☐1	☐2	☐3
c. IN THE PAST 12 MONTHS, have you ever been physically punished (such as standing punishment, beat by fist or other objects, or kicked) by your teachers or other staff at school?	☐1	☐2	☐3

20. LAST SEMESTER, what was your average grade in your class? *(Please tick ONE box only)*

Very bad ☐1
Bad ☐2
Moderate ☐3
Good ☐4
Very good ☐5

21. LAST SEMESTER, how satisfied are you with your academic results? *(Please tick ONE box only)*

Very satisfied ☐1
Moderately satisfied ☐2
Moderately dissatisfied ☐3
Very dissatisfied ☐4

22. Have you ever repeated any class since you started going to school? *(Please tick ONE box only)*

No ☐1
Repeat one time ☐2
Repeat one time or more ☐3

SECTION D. FRIENDS

In this section, we are going to ask you about some experience you may have had with your peers and friends.

23. How do you think about your popularity among your friends?

- Very low ☐1
- Low ☐2
- Moderate ☐3
- High ☐4
- Very high ☐5

24. Do you have one or more close friends you can talk to about your feelings or problems?

- None ☐1
- Only one ☐2
- A few ☐3
- Many ☐4

25. IN THE PAST 12 MONTHS, have you ever experienced a breakup with a girlfriend/boyfriend?

- Never ☐1
- Yes ☐2
- Never had a girlfriend/boyfriend ☐3

26. The following questions are about experiences with your friends and other students IN THE PAST 12 MONTHS. Please choose the answer that suits you best and *tick ONE proper box only*.

		Never	Sometimes	Often
a.	IN THE PAST 12 MONTHS, have you ever had serious quarrels with your fellow students at school?	☐1	☐2	☐3
b.	IN THE PAST 12 MONTHS, have you ever been involved in physical fighting with your fellow students at school?	☐1	☐2	☐3
c.	IN THE PAST 12 MONTHS, have any of your fellow students ever bullied you emotionally at school, such as insulting you, calling your names, teasing you, threatening you, and humiliating you?	☐1	☐2	☐3

	Never	Sometimes	Often
d. IN THE PAST 12 MONTHS, have any of your fellow students ever bullied you physically at school in any kind. It is not bullying when 2 students of about the same strength or power fight each other.	☐1	☐2	☐3

27. **The following statements are about your experiencing with cyber bullying IN THE PAST 30 DAYS.** *(Please tick ONE proper box only).*

Cyber bullying: When you are bullied or you bully someone using information and communication technologies (cell phone, computers, email, and the internet, etc.)

	Never	Once or twice	2 or 3 times a month	About once a week	Several times a week
a. IN THE PAST 30 DAYS, have you been called mean names or made me fun of, or teased in hurtful way	☐1	☐2	☐3	☐4	☐5
b. IN THE PAST 30 DAYS, have any rude messages/pictures sent to you	☐1	☐2	☐3	☐4	☐5
c. IN THE PAST 30 DAYS, have you been left out or ignored by a group of friend	☐1	☐2	☐3	☐4	☐5
d. IN THE PAST 30 DAYS, have any lies or rumours spread about you	☐1	☐2	☐3	☐4	☐5
e. IN THE PAST 30 DAYS, have any messages/photos/video about you put online	☐1	☐2	☐3	☐4	☐5
f. IN THE PAST 30 DAYS, have you been threatened	☐1	☐2	☐3	☐4	☐5

SECTION E. YOUR EXPERIENCE

In this section, we are interested in the feelings and experience you may have had in the past. Please read the instructions carefully as each question may refer to different time periods.

28. *The following statements will ask about your emotional experience. Please tick ONE box that suits you best.*

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree.

		Strongly Disagree						Strongly Agree
a.	It's easy for me to talk about my feelings to other people.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b.	I often find it hard to see things from someone else's point of view	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c.	I'm a very motivated person.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d.	I find it hard to control my feelings.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e.	My life is not enjoyable.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
f.	I'm good at getting along with my classmates	☐1	☐2	☐3	☐4	☐5	☐6	☐7
g.	I change my mind often.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
h.	I find it hard to know exactly what emotion I'm feeling.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
i.	I'm comfortable with the way I look.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
j.	I find it hard to stand up for my rights.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
k.	I can make other people feel better when I want to	☐1	☐2	☐3	☐4	☐5	☐6	☐7
l.	Sometimes, I think my whole life is going to be miserable.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
m.	Sometimes, others complain that I treat them badly.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
n.	I find it hard to cope when things change in my life.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
o.	I'm able to deal with stress	☐1	☐2	☐3	☐4	☐5	☐6	☐7
p.	I don't know how to show the people close to me that I care about them.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
q.	I'm able to "get into someone's shoes" and feel their emotions.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
r.	I find it hard to keep myself motivated.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
s.	I can control my anger when I want to.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
t.	I'm happy with my life.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

		Strongly Disagree						Strongly Agree
u.	I would describe myself as a good negotiator.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
v.	Sometimes, I get involved in things I later wish I could get out of.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
w.	I pay a lot of attention to my feelings.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
x.	I feel good about myself.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
y.	I tend to "back down" even if I know I'm right	☐1	☐2	☐3	☐4	☐5	☐6	☐7
z.	I'm unable to change the way other people feel.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
aa.	I believe that things will work out fine in my life	☐1	☐2	☐3	☐4	☐5	☐6	☐7
bb.	Sometimes, I wish I had a better relationship with my parents	☐1	☐2	☐3	☐4	☐5	☐6	☐7
cc.	I'm able to cope well in new environments	☐1	☐2	☐3	☐4	☐5	☐6	☐7
dd.	I try to control my thoughts and not worry too much about things.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

(TEIQue-SF, Petrides)

The following questions are about behaviours or feelings that adolescents at your age may have experienced. We understand that some questions may be difficult to talk about. Please remember that all the information you provide is completely confidential and we are unable to identify anyone from their answers to the questions. If you have never experienced any of these, you don't need to answer.

29. DURING YOUR LIFE, **have you ever seriously thought about killing yourself?** *(Please tick ONE box only)*

Never ☐1 => Skip to question 32

Yes ☐2

30. IN THE PAST 12 MONTHS, **how often have you thought about killing yourself?** *(Please tick ONE box only)*

None ☐1

Rarely (1 time) ☐2

Sometimes (2 times) ☐3

Often (3-4 times) ☐4

Very often (5 or more times) ☐5

31. DURING YOUR LIFE, have you ever made a plan about how you would attempt kill yourself? *(Please tick ONE box only)*

No ☐1

Yes ☐2

32. DURING YOUR LIFE, have you ever intentionally, or on purpose, done anything that harm to yourself (Eg: Overdosed, skipped medicine, cut yourself, burn yourself, banged your head, scratched yourself, starved yourself, tortured yourself with self-defeating thoughts...)? *(Please tick ONE box only)*

Never ☐1 => Skip to question 34

Yes ☐2

33. IN THE PAST 12 MONTHS, how often have you intentionally, or on purpose, done anything that harm to yourself? *(Please tick ONE box only)*

None ☐1

Rarely (1 time) ☐2

Sometimes (2 times) ☐3

Often (3-4 times) ☐4

Very often (5 or more times) ☐5

34. The following statements are about your feelings DURING THE LAST WEEK. Please tick on ONE box that suits you best.

	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
a. DURING THE LAST WEEK, I found it hard to wind down	☐1	☐2	☐3	☐4
b. DURING THE LAST WEEK, I was aware of dryness of my mouth	☐1	☐2	☐3	☐4
c. DURING THE LAST WEEK, I couldn't seem to experience any positive feeling at all	☐1	☐2	☐3	☐4
d. DURING THE LAST WEEK, I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	☐1	☐2	☐3	☐4
e. DURING THE LAST WEEK, I found it difficult to work up the initiative to do things	☐1	☐2	☐3	☐4
f. DURING THE LAST WEEK, I tended to over-react to situations	☐1	☐2	☐3	☐4
g. DURING THE LAST WEEK, I experienced trembling (eg, in the hands)	☐1	☐2	☐3	☐4

31. DURING YOUR LIFE, have you ever made a plan about how you would attempt kill yourself? *(Please tick ONE box only)*

No ☐1

Yes ☐2

32. DURING YOUR LIFE, have you ever intentionally, or on purpose, done anything that harm to yourself (Eg: Overdosed, skipped medicine, cut yourself, burn yourself, banged your head, scratched yourself, starved yourself, tortured yourself with self-defeating thoughts...)? *(Please tick ONE box only)*

Never ☐1 => Skip to question 34

Yes ☐2

33. IN THE PAST 12 MONTHS, how often have you intentionally, or on purpose, done anything that harm to yourself? *(Please tick ONE box only)*

None ☐1

Rarely (1 time) ☐2

Sometimes (2 times) ☐3

Often (3-4 times) ☐4

Very often (5 or more times) ☐5

34. The following statements are about your feelings DURING THE LAST WEEK. Please tick on ONE box that suits you best.

	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
a. DURING THE LAST WEEK, I found it hard to wind down	☐1	☐2	☐3	☐4
b. DURING THE LAST WEEK, I was aware of dryness of my mouth	☐1	☐2	☐3	☐4
c. DURING THE LAST WEEK, I couldn't seem to experience any positive feeling at all	☐1	☐2	☐3	☐4
d. DURING THE LAST WEEK, I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion)	☐1	☐2	☐3	☐4
e. DURING THE LAST WEEK, I found it difficult to work up the initiative to do things	☐1	☐2	☐3	☐4
f. DURING THE LAST WEEK, I tended to over-react to situations	☐1	☐2	☐3	☐4
g. DURING THE LAST WEEK, I experienced trembling (eg, in the hands)	☐1	☐2	☐3	☐4

35. Tick ONE box that indicates how often you feel this way.

		Never	Rarely (1 time)	Sometimes (2-3 times)	Often (3 or more times)
a.	I lack companionship	☐1	☐2	☐3	☐4
b.	There is no one I can turn to	☐1	☐2	☐3	☐4
c.	I feel part of a group of friends	☐1	☐2	☐3	☐4
d.	I am an outgoing person	☐1	☐2	☐3	☐4
e.	I feel left out	☐1	☐2	☐3	☐4
f.	I feel isolated from others	☐1	☐2	☐3	☐4
g.	I can find companionship when I want it	☐1	☐2	☐3	☐4
h.	I am unhappy being so withdrawn	☐1	☐2	☐3	☐4
i.	People are around me but not with me	☐1	☐2	☐3	☐4

(UCLA-R)

36. The following items is about how characteristic they are of you. Please tick ONE box that suits you best using the following scale:

1	2	3	4	5
Extremely uncharacteristic of me				Extremely characteristic of me

		Extremely uncharacteristic of me				Extremely characteristic of me
a.	Once in a while, I can't control the urge to strike another person.	☐1	☐2	☐3	☐4	☐5
b.	Given enough provocation, I may hit another person.	☐1	☐2	☐3	☐4	☐5
c.	If someone hits me, I hot back.	☐1	☐2	☐3	☐4	☐5
d.	I get into fights a little more than the average person.	☐1	☐2	☐3	☐4	☐5
e.	If I have to resort to violence to protect my rights, I will.	☐1	☐2	☐3	☐4	☐5
f.	There are people who pushed me so far that we came to blows.	☐1	☐2	☐3	☐4	☐5
g.	I can think of no good reason for ever hitting a person.	☐1	☐2	☐3	☐4	☐5
h.	I have threatened people I know	☐1	☐2	☐3	☐4	☐5
i.	I have become so mad that I have broken things.	☐1	☐2	☐3	☐4	☐5
j.	I tell my friends openly when I disagree with them.	☐1	☐2	☐3	☐4	☐5
k.	I often find myself disagreeing with people	☐1	☐2	☐3	☐4	☐5
l.	When people annoy me, I may tell them what I think of them.	☐1	☐2	☐3	☐4	☐5

		Extremely uncharacteristic of me				Extremely characteristic of me
m.	I can't help getting into arguments when people disagree with me.	☐1	☐2	☐3	☐4	☐5
n.	My friends say that I'm somewhat argumentative.	☐1	☐2	☐3	☐4	☐5
o.	I flare up quickly but get over it quickly.	☐1	☐2	☐3	☐4	☐5
p.	When frustrated, I let my irritation show.	☐1	☐2	☐3	☐4	☐5
q.	I sometimes feel like a powder keg ready to explode.	☐1	☐2	☐3	☐4	☐5
r.	I am an even-tempered person.	☐1	☐2	☐3	☐4	☐5
s.	Some of my friends think I'm a hothead.	☐1	☐2	☐3	☐4	☐5
t.	Sometimes I fly off the handle for no good reason.	☐1	☐2	☐3	☐4	☐5
u.	I have trouble controlling my temper.	☐1	☐2	☐3	☐4	☐5
v.	I am sometimes eaten up with jealous.	☐1	☐2	☐3	☐4	☐5
w.	At times I feel I have gotten a raw deal out of life.	☐1	☐2	☐3	☐4	☐5
x.	Other people always seem to get the breaks.	☐1	☐2	☐3	☐4	☐5
y.	I know that "friends" talk about me behind my back.	☐1	☐2	☐3	☐4	☐5
z.	I am suspicious of overly friendly strangers.	☐1	☐2	☐3	☐4	☐5
aa.	I sometimes feel that people are laughing at me behind my back.	☐1	☐2	☐3	☐4	☐5
bb.	When people are especially nice, I wonder what they want.	☐1	☐2	☐3	☐4	☐5

(TAQ, Buss and Durkee)

37. If you were having a <u>personal-emotional problem</u>, how likely is it that you would seek help from the following people?

1 = Extremely Unlikely
2 = Rather Unlikely
3 = Unlikely
4 = Neutral
5 = Likely
6 = Rather Likely
7 = Extremely Likely

		Extremely Unlikely						Extremely Likely
a.	Boyfriend, or girlfriend	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b.	Friend	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c.	Parent	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d.	Other family member	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e.	Mental health professional (eg, counsellor, psychologist, psychiatrist)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
f.	Media help (phone help line, internet resources)	☐1	☐2	☐3	☐4	☐5	☐6	☐7

		Extremely Unlikely						Extremely Likely
g.	Doctor/GP	☐1	☐2	☐3	☐4	☐5	☐6	☐7
h.	I would not seek help from anyone	☐1	☐2	☐3	☐4	☐5	☐6	☐7
i.	Other not listed above (*please specify on line provided*) _____	☐1	☐2	☐3	☐4	☐5	☐6	☐7

(GHSQ, Deane and Wilson)

38. **The five statements below are about your feelings about your life.** ***Please tick ONE box that suits you best.***

1 = Strongly Disagree
2 = Disagree
3 = Slightly Disagree
4 = Neither Agree or Disagree
5 = Slightly Agree
6 = Agree
7 = Strongly Agree.

		Strongly Disagree						Strongly Agree
a.	In most ways my life is close to my ideal.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b.	The conditions of my life are excellent.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c.	I am satisfied with life.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d.	So far I have got the important things I want in life.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e.	If I could live my life over, I would change almost nothing.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

(TSLS, Diener)

Section F. YOUR COMMENTS

We do not have any more question for you, but there may be OTHER THINGS that you would like to tell us. *(Eg, describe the things or events which had the great effect on your life, or something that you really care, worry about, or just your feelings about something you have experienced, or how you feel when you answer this questionnaire…)*

If you need more space, please continue on the back of this page.

_____

_____

_____

_____

This is the end of the questionnaire.

Thank you very much for your time and contribution.

Please place the completed questionnaire in the envelope provided to you and return it to our researchers.

If you feel distressed because of the issues raised in the questionnaire or you would like to discuss them further, please contact the free *Helpline for Consulting and Supporting of Children in Vietnam* at **18001567**, or *the free Psychology and Special Education Counselling Centre of Hue University of Education* at **0166 9600 430/** tuvantamly.hue@gmail.com.

If you have any questions or concerns about this project, please contact us at:

Phone number: 0935 579 030

Email: ngoc.a.nguyen@monash.edu

Address: The Jean Hailes Research Unit, School of Public Health and Preventive Medicine, Faculty of Medicine, Nursing, and Health Sciences, Monash University, Level 1, 549 St Kilda Road, Melbourne, Victoria 3004, Australia.

APPENDIX 4 – THE QUESTIONNAIRE (Vietnamese version)

1

TRƯỜNG ĐẠI HỌC MONASH
Khoa Y tế Công cộng và Y tế dự phòng

BẢN CÂU HỎI

Bộ câu hỏi này được in vào tháng 11 năm 2016

Cảm ơn bạn đã tham gia vào nghiên cứu của chúng tôi. Bạn có quyền lựa chọn tham gia vào nghiên cứu hay không và quyết định của bạn hoàn toàn không ảnh hưởng đến điểm số hay mối quan hệ của các thầy cô với bạn. Chúng tôi cũng cảm ơn bạn đã dành thời gian trả lời bản câu hỏi này.

Mục đích của nghiên cứu này là tìm hiểu về những trải nghiệm cảm xúc mà bạn đã trải qua và ảnh hưởng của những trải nghiệm này đến chất lượng cuộc sống cũng như mối quan hệ của bạn với những người xung quanh. Các câu hỏi trong bản hỏi này có thể bao gồm cả bố mẹ, anh chị em, thầy cô giáo hoặc bạn bè của bạn. Câu trả lời của bạn cho những câu hỏi trong bản câu hỏi này sẽ giúp chúng tôi đạt được những mục tiêu nghiên cứu trên và sẽ góp phần cho quá trình xây dựng chương trình giáo dục cảm xúc và phát triển các dịch vụ chăm sóc sức khỏe về tâm trí cho học sinh trung học phổ thông ở Việt Nam.

Bản câu hỏi này là vô danh. Những câu trả lời của bạn chỉ dành cho mục đích nghiên cứu. Danh tính của bạn sẽ không bị phát hiện qua các câu trả lời của các bạn. Bất cứ thông tin cá nhân nào chúng tôi thu thập trong bản câu hỏi này đều nhằm mục đích xác định các đặc điểm của nhóm tham gia nghiên cứu. ***Xin bạn đừng viết tên của mình vào bất cứ đâu trong bản câu hỏi này.*** Việc hoàn thành bản câu hỏi sẽ được hiểu là bạn đã đồng ý tham gia vào nghiên cứu.

Cách trả lời bản câu hỏi

Đây không phải là bài kiểm tra chấm điểm. Không có câu trả lời đúng hay sai cho các câu hỏi của chúng tôi và mỗi người sẽ có những câu trả lời khác nhau. Điều quan trọng nhất là bạn phải tự trả lời tất cả các câu hỏi này và **KHÔNG THẢO LUẬN CÂU TRẢ LỜI VỚI BẤT CỨ NGƯỜI NÀO KHÁC**. Nếu có câu hỏi nào mà bạn không chắc chắn chọn phương án trả lời nào, hãy chọn phương án trả lời gần đúng với cảm nhận của bạn nhất.

Các câu hỏi có thể hỏi về những **khoảng thời gian khác nhau trong quá khứ**, vì vậy hãy đọc kỹ hướng dẫn cho từng câu hỏi trước khi trả lời. Bạn sẽ cần khoảng 45 phút để trả lời hết bản câu hỏi này.

Khi bạn đã sẵn sang để bắt đầu, hãy đọc từng câu hỏi cẩn thận, quyết định câu trả lời và trả lời bằng cách đánh dấu tích (☑) vào ô tương ứng hoặc viết vào chỗ trống chúng tôi tạo sẵn.

Ví dụ

Ví dụ 1: **Giới tính của bạn là gì?** *(Chỉ đánh dấu vào MỘT ô)*

Nam ☑ *Bạn hãy đánh dấu vào ô này nếu bạn là nam*

Nữ ☐

Ví dụ 2: **Bạn sinh ngày tháng năm nào?** *(Hãy ghi rõ vào dòng kẻ dưới đây)*

26/03/2000

Bạn hãy viết 26/03/2000 vào dòng kẻ nếu bạn sinh ngày 26 tháng 03 năm 2000

Ví dụ 3: **Gia đình bạn có những thứ nào dưới đây?** *(Hãy đánh dấu vào tất cả các ô phù hợp với bạn)*

- Tivi ☑
- Dàn CD, VDC & DVD ☐
- Xe đạp ☑
- Xe ô tô ☐
- Điều hòa nhiệt độ ☐
- Tủ lạnh ☑
- Máy giặt ☐
- Máy rửa chén ☐
- Máy vi tính ☑
- Internet ☐
- Máy điện thoại bàn ☐
- Điện thoại di động ☐

Bạn hãy đánh dấu vào những ô này nếu gia đình bạn có tivi, xe đạp, xe máy, tủ lạnh và máy vi tính.

Ví dụ 4: **6. Bạn đã bao giờ cảm thấy buồn chưa?** *(Chỉ đánh dấu vào MỘT ô)*

Có ☐

Chưa ☑ **=> Chuyển đến câu số 10**

Bạn hãy đánh dấu vào ô "Có" và trả lời câu hỏi tiếp theo nếu bạn đã từng cảm thấy buồn.

Bạn hãy đánh dấu vào ô "Chưa", bỏ qua câu hỏi số 7, 8, 9 và chuyển đến câu hỏi số 10 nếu bạn chưa từng cảm thấy buồn.

Nếu bạn muốn **THAY ĐỔI CÂU TRẢ LỜI** của mình, hãy gạch câu trả lời cũ và viết hoặc đánh dấu vào lựa chọn mới mà bạn muốn.

Ví dụ

Ví dụ 1: **Bạn sinh ngày tháng năm nào?** *(Hãy ghi rõ vào dòng kẻ dưới đây)*

~~26/03/2000~~ 26/03/1999

Bạn hãy gạch "26/03/2000" đi và viết "26/03/1999" vào dòng kẻ nếu bạn sinh ra vào ngày 26 tháng 03 năm 1999, chứ không phải ngày 26 tháng 3 năm 2000.

Ví dụ 2: **Bạn học lớp mấy?** *(Hãy đánh dấu vào MỘT ô)*

- ~~10~~ ☑
- 11 ☑
- 12 ☐

Bạn hãy gạch chéo vào lựa chọn này, đánh dấu vào lựa chọn "11" nếu bạn học lớp 11, không phải lớp 10.

PHẦN A. VỀ BẢN THÂN BẠN

Trong phần này, chúng tôi sẽ hỏi một số thông tin chung về bản thân bạn và hoàn cảnh gia đình bạn.

1. **Giới tính của bạn là gì?** *(Chỉ đánh dấu vào một ô)*

   Nam ☐1
   Nữ ☐2

2. **Bạn sinh vào ngày tháng năm nào?** *(Ghi vào dòng kẻ dưới đây):*

   _____/_____/_____

   Hoặc: **Bạn bao nhiêu tuổi** (nếu bạn không nhớ ngày tháng năm sinh của bạn): _____tuổi

3. **Bạn là người dân tộc gì?**

   Kinh ☐1

   Khác *(Ghi rõ vào dòng kẻ dưới đây):* ☐2

   _____

   Tôi không biết ☐3

4. **Bạn theo tôn giáo nào?** *(Chỉ đánh dấu vào một ô)*

   Không tôn giáo ☐1
   Phật giáo ☐2
   Thiên chúa giáo ☐3
   Tin Lành ☐4
   Khác *(Ghi rõ vào dòng kẻ dưới đây):* ☐8

   _____

   Tôi không biết ☐9

5. **Bạn thuộc khu vực dân cư nào?**

   Khu vực thành thị của thành phố lớn ☐1
   Vùng ngoại ô của thành phố ☐2
   Thị xã ☐3
   Vùng nông thôn ☐4
   Vùng ven biển ☐5
   Khác *(Ghi rõ vào dòng kẻ dưới đây):* ☐6

   _____

PHẦN B. VỀ GIA ĐÌNH BẠN

Trong phần này, chúng tôi muốn tìm hiểu về bố mẹ (hoặc người chăm sóc bạn), về cách bố mẹ bạn chăm sóc bạn và ý kiến của bạn về gia đình bạn nói chung.

6. Tình trạng hôn nhân của bố mẹ bạn?

Đang sống cùng nhau ☐1

Đã li hôn ☐2

Đã li thân ☐3

Đã mất (Bố/Mẹ hoặc cả bố lẫn mẹ) ☐4

7. Hiện tại bạn đang sống cùng ai? *(Chỉ đánh dấu vào MỘT ô)*

Với cả bố và mẹ đẻ ☐1

Chỉ với mẹ đẻ ☐2

Chỉ với bố đẻ ☐3

Với mẹ đẻ và bố dượng ☐4

Với bố đẻ và mẹ kế ☐5

Không sống với cả bố và mẹ đẻ. Vậy bạn đang sống với ai? *(Ghi rõ vào dòng kẻ dưới đây):* ☐6

_____

8. TRONG 16 NĂM ĐẦU ĐỜI, ai là người phụ nữ đã chăm sóc bạn nhiều nhất? *(Chỉ đánh dấu vào MỘT ô)*

Mẹ đẻ ☐1

Mẹ kế ☐2

Mẹ nuôi ☐3

Chị gái ☐4

Họ hàng (Bà nội/ngoại, o, dì, hoặc bác gái) ☐5

Người khác *(Ghi rõ vào dòng kẻ dưới đây):* ☐6

_____

9. Trình độ học vấn cao nhất của người phụ nữ này là gì? *(Chỉ đánh dấu vào MỘT ô)*

Đại học hoặc Sau đại học ☐1

Cao đẳng, Trung cấp, Kỹ thuật dạy nghề ☐2

Tốt nghiệp trung học phổ thông (Lớp 10-12) ☐3

Tốt nghiệp trung học cơ sở (Lớp 6-9) ☐4

Tốt nghiệp tiểu học (Lớp 1-5) ☐5

Chưa đi học bao giờ ☐6

Tôi không biết ☐7

10. Người phụ nữ này làm nghề gì? *(Chỉ đánh dấu vào MỘT ô)*

Nhân viên nhà nước ☐1

Chuyên gia (Bác sĩ, giáo viên, kỹ sư, v.v…) ☐2

Nhân viên tư nhân (Công ty tư nhân, công ty nước ngoài hoặc tổ chức phi chính phủ) ☐3

Công nhân ☐4

Kinh doanh buôn bán ☐5

Nông dân ☐6

Nội trợ ☐7

Nghỉ hưu ☐8

Khác *(Ghi rõ vào dòng kẻ dưới đây)*: ☐9

_____

Tôi không biết ☐10

11. TRONG 16 NĂM ĐẦU ĐỜI, ai là người đàn ông đã chăm sóc bạn nhiều nhất? *(Chỉ đánh dấu vào MỘT ô)*

Bố đẻ ☐1

Bố dượng ☐2

Bố nuôi ☐3

Anh trai ☐4

Họ hang (Ông nội/ngoại, chú, cậu, hoặc bác trai) ☐5

Người khác *(Ghi rõ vào dòng kẻ dưới đây)*: ☐6

_____

12. Trình độ học vấn cao nhất của người đàn ông này là gì? *(Chỉ đánh dấu vào MỘT ô)*

Đại học hoặc Sau đại học	☐1
Cao đẳng, Trung cấp, Kỹ thuật dạy nghề	☐2
Tốt nghiệp trung học phổ thông (Lớp 10-12)	☐3
Tốt nghiệp trung học cơ sở (Lớp 6-9)	☐4
Tốt nghiệp tiểu học (Lớp 1-5)	☐5
Chưa đi học bao giờ	☐6
Tôi không biết	☐7

13. Người đàn ông này làm nghề gì? *(Chỉ đánh dấu vào MỘT ô)*

Nhân viên nhà nước	☐1
Chuyên gia (Bác sĩ, giáo viên, kỹ sư, v.v…)	☐2
Nhân viên tư nhân (Công ty tư nhân, công ty nước ngoài hoặc tổ chức phi chính phủ)	☐3
Công nhân	☐4
Kinh doanh buôn bán	☐5
Nông dân	☐6
Nội trợ	☐7
Nghỉ hưu	☐8
Khác *(Ghi rõ vào dòng kẻ dưới đây):*	☐9
_____	
Tôi không biết	☐10

14. Bạn có bao nhiêu anh chị em (kể cả anh chị em ruột, cùng bố khác mẹ, cùng mẹ khác bố, và anh chị em nuôi)?

Tôi không có anh chị nào	☐1	**=> Chuyển đến câu số 16**
Một	☐2	**=> Chuyển đến câu số 16**
Hai	☐3	
Ba trở lên	☐4	

15. Bạn là con thứ mấy trong gia đình?

Con đầu ☐1

Con giữa ☐2

Con út ☐3

16. Hãy nghĩ về người phụ nữ chăm sóc bạn nhiều nhất TRONG 16 NĂM ĐẦU ĐỜI và đánh dấu vào ô thích hợp nhất cho mỗi câu dưới đây. *(Chỉ đánh dấu vào MỘT ô cho mỗi câu)*

		Rất giống	Tương đối giống	Hơi giống	Không giống chút nào
a.	Nói với bạn bằng giọng nói dịu dàng và thân thiện	☐1	☐2	☐3	☐4
b.	Tỏ ra lạnh nhạt trong tình cảm với bạn	☐1	☐2	☐3	☐4
c.	Tỏ ra hiểu những vấn đề và nỗi lo âu của bạn	☐1	☐2	☐3	☐4
d.	Muốn bạn tự đưa ra quyết định của mình	☐1	☐2	☐3	☐4
e.	Luôn xem bạn là trẻ con	☐1	☐2	☐3	☐4
f.	Cố kiểm soát mọi thứ bạn làm	☐1	☐2	☐3	☐4
g.	Quan tâm thảo luận mọi việc với bạn	☐1	☐2	☐3	☐4
h.	Thường xuyên cười với bạn	☐1	☐2	☐3	☐4
i.	Thường cư xử với bạn như một đứa trẻ	☐1	☐2	☐3	☐4
j.	Để bạn tự quyết mọi việc	☐1	☐2	☐3	☐4
k.	Có thể làm bạn cảm thấy dễ chịu hơn khi bạn buồn	☐1	☐2	☐3	☐4
l.	Không nói chuyện với bạn thường xuyên	☐1	☐2	☐3	☐4
m.	Cố gắng làm cho bạn cảm thấy bạn phụ thuộc vào bố/mẹ	☐1	☐2	☐3	☐4
n.	Cho phép bạn được tự do như bạn muốn	☐1	☐2	☐3	☐4
o.	Bảo vệ bạn quá mức cần thiết	☐1	☐2	☐3	☐4
p.	Để bạn ăn mặc theo ý thích	☐1	☐2	☐3	☐4

(PBI, Parker và cộng sự)

17. Hãy nghĩ về người đàn ông chăm sóc bạn nhiều nhất TRONG 16 NĂM ĐẦU ĐỜI và đánh dấu vào ô thích hợp nhất cho các câu dưới đây. *(Chỉ đánh dấu vào MỘT ô cho mỗi câu)*

		Rất giống	Tương đối giống	Hơi giống	Không giống chút nào
a.	Nói với bạn bằng giọng nói dịu dàng và thân thiện	☐1	☐2	☐3	☐4
b.	Tỏ ra lạnh nhạt trong tình cảm với bạn	☐1	☐2	☐3	☐4
c.	Tỏ ra hiểu những vấn đề và nỗi lo âu của bạn	☐1	☐2	☐3	☐4
d.	Muốn bạn tự đưa ra quyết định của mình	☐1	☐2	☐3	☐4
e.	Luôn xem bạn là trẻ con	☐1	☐2	☐3	☐4
f.	Cố kiểm soát mọi thứ bạn làm	☐1	☐2	☐3	☐4
g.	Quan tâm thảo luận mọi việc với bạn	☐1	☐2	☐3	☐4
h.	Thường xuyên cười với bạn	☐1	☐2	☐3	☐4
i.	Thường cư xử với bạn như một đứa trẻ	☐1	☐2	☐3	☐4
j.	Để bạn tự quyết mọi việc	☐1	☐2	☐3	☐4
k.	Có thể làm bạn cảm thấy dễ chịu hơn khi bạn buồn	☐1	☐2	☐3	☐4
l.	Không nói chuyện với bạn thường xuyên	☐1	☐2	☐3	☐4
m.	Cố gắng làm cho bạn cảm thấy bạn phụ thuộc vào bố/mẹ	☐1	☐2	☐3	☐4
n.	Cho phép bạn được tự do như bạn muốn	☐1	☐2	☐3	☐4
o.	Bảo vệ bạn quá mức cần thiết	☐1	☐2	☐3	☐4
p.	Để bạn ăn mặc theo ý thích	☐1	☐2	☐3	☐4

(PB, Parker và cộng sự)

PHẦN C. VỀ TRƯỜNG HỌC CỦA BẠN

Trong phần này chúng tôi sẽ hỏi về cảm nhận của bạn đối với việc học và một số điều bạn có thể gặp ở trường.

18. Dưới đây là những câu diễn tả về cảm nhận ở trường học. Hãy đánh dấu vào ô phù hợp với cảm nhận của bạn nhất.

		Rất không đồng ý	Không đồng ý	Không rõ	Đồng ý	Rất đồng ý
a.	Tôi cảm thấy an toàn khi ở trường của mình	☐1	☐2	☐3	☐4	☐5

		Rất không đồng ý	Không đồng ý	Không rõ	Đồng ý	Rất đồng ý
b.	Giáo viên ở trường tôi đối xử công bằng với các học sinh	☐1	☐2	☐3	☐4	☐5
c.	Tôi thấy vui khi ở trường tôi	☐1	☐2	☐3	☐4	☐5
d.	Tôi thích mình là học sinh của trường này	☐1	☐2	☐3	☐4	☐5
e.	Tôi thấy gần gũi với mọi người trong trường tôi	☐1	☐2	☐3	☐4	☐5

19. Dưới đây là những câu hỏi về trải nghiệm của bạn với giáo viên và cán bộ nhân viên trường học TRONG 12 THÁNG VỪA QUA. Hãy đánh dấu vào ô phù hợp với cảm nhận của bạn nhất.

		Không bao giờ	Thỉnh thoảng	Đôi khi
a.	TRONG 12 THÁNG VỪA QUA, bạn đã bao giờ cãi gay gắt với giáo viên hoặc cán bộ nhân viên trong trường không?	☐1	☐2	☐3
b.	TRONG 12 THÁNG VỪA QUA, bạn đã bao giờ bị giáo viên hoặc cán bộ nhân viên trong trường mắng chửi, đe dọa, sỉ nhục không?	☐1	☐2	☐3
c.	TRONG 12 THÁNG VỪA QUA, bạn đã bao giờ bị giáo viên hoặc cán bộ nhân viên trong trường phạt về mặt thể chất (bắt phạt đứng, đánh đòn hoặc đấm đá) không?	☐1	☐2	☐3

20. TRONG HỌC KỲ VỪA QUA, kết quả học tập của bạn như thế nào? *(Chỉ đánh dấu vào MỘT ô)*

Rất kém ☐1

Kém ☐2

Trung bình ☐3

Khá ☐4

Giỏi ☐5

21. TRONG HỌC KỲ VỪA QUA, bạn có hài lòng với kết quả học tập của bạn không? *(Chỉ đánh dấu vào MỘT ô)*

Rất hài lòng ☐1

Tương đối hài lòng ☐2

Tương đối không hài lòng ☐3

Rất không hài lòng ☐4

22. Bạn đã bao giờ bị đúp/lưu ban chưa? *(Chỉ đánh dấu vào MỘT ô)*

Chưa ☐1

Có, 1 lần ☐2

Có, 2 lần hoặc nhiều hơn ☐3

PHẦN D. VỀ BẠN BÈ CỦA BẠN

Trong phần này, chúng tôi muốn biết về những trải nghiệm có thể có của bạn với bạn bè của bạn.

23. Bạn thấy mức độ bạn được yêu mến trong nhóm bạn của bạn như thế nào?

Rất thấp ☐1

Thấp ☐2

Trung bình ☐3

Cao ☐4

Rất cao ☐5

24. Bạn có một hay nhiều bạn thân mà bạn có thể chia sẻ cảm xúc của mình hoặc thổ lộ những vấn đề mà bạn gặp phải?

Không có ai ☐1

Chỉ một ☐2

Một vài ☐3

Nhiều ☐4

25. TRONG 12 THÁNG VỪA QUA, bạn có chia tay người yêu không?

Không ☐1

Có ☐2

Tôi chưa có người yêu ☐3

26. Dưới đây là những mô tả về trải nghiệm của bạn với bạn bè và các học sinh khác TRONG 12 THÁNG VỪA QUA. Hãy đánh dấu vào MỘT ô phù hợp với cảm nhận của bạn nhất.

	Không bao giờ	Thỉnh thoảng	Đôi khi
a. TRONG 12 THÁNG VỪA QUA, bạn có cãi nhau gay gắt với bạn bè ở trường không?	R1	☐2	☐3
b. TRONG 12 THÁNG VỪA QUA, bạn có tham gia đánh nhau với bạn bè ở trường không?	☐1	☐2	☐3
c. TRONG 12 THÁNG VỪA QUA, bạn có bị bạn bè bắt nạt về tinh thần ở trường không (lăng mạ, bêu tên, trêu chọc, đe dọa, sỉ nhục)?	☐1	☐2	☐3
d. TRONG 12 THÁNG VỪA QUA, bạn có bị bạn bè bắt nạt về thể chất bằng bất kỳ hình thức nào ở trường không? (Nếu hai học sinh ngang sức đánh nhau thì không xem là bắt nạt).	☐1	☐2	☐3

27. Dưới đây là những mô tả về những trải nghiệm của bạn với việc bắt nạt bằng phương tiện công nghệ TRONG 30 NGÀY VỪA QUA. Hãy đánh dấu vào MỘT ô phù hợp với cảm nhận của bạn nhất.

(Bắt nạt bằng công nghệ: Khi bạn bắt nạt hoặc bị bắt bạt bằng công nghệ thông tin (điện thoại di động, máy tính, thư điện tử, internet…)

	Chưa bao giờ	1-2 lần/tháng	2-3 lần/tháng	Khoảng 1 lần/tuần	Vài lần/tuần
a. TRONG 30 NGÀY VỪA QUA, tôi bị gọi bằng tên long, bị làm trò cười, trêu ghẹo trên mạng hoặc bằng điện thoại	☐1	☐2	☐3	☐4	☐5
b. TRONG 30 NGÀY VỪA QUA, tôi nhận được tin nhắn/hình ảnh khiếm nhã	☐1	☐2	☐3	☐4	☐5
c. TRONG 30 NGÀY VỪA QUA, tôi bị cô lập hoặc tách biệt khỏi nhóm bạn	☐1	☐2	☐3	☐4	☐5
d. TRONG 30 NGÀY VỪA QUA, tôi bị đặt điều, bị rêu rao những điều không	☐1	☐2	☐3	☐4	☐5

	Chưa bao giờ	1-2 lần/tháng	2-3 lần/tháng	Khoảng 1 lần/tuần	Vài lần/tuần
đúng sự thật trên mạng hoặc bằng điện thoại					
e. **TRONG 30 NGÀY VỪA QUA**, tin nhắn/hình ảnh/đoạn phim về tôi bị đưa lên mạng	☐1	☐2	☐3	☐4	☐5
f. **TRONG 30 NGÀY VỪA QUA**, tôi bị đe dọa trên mạng hoặc bằng điện thoại	☐1	☐2	☐3	☐4	☐5

PHẦN E. VỀ TRẢI NGHIỆM CUỘC SỐNG CỦA BẠN

Trong phần này, chúng tôi muốn biết về những trải nghiệm có thể có của bạn. Xin hãy đọc kỹ các câu hỏi, vì chúng tôi có thể hỏi bạn về những khoảng thời gian khác nhau.

28. ***Dưới đây là những mô tả về trải nghiệm cảm xúc của bạn. Chỉ đánh dấu vào MỘT ô phù hợp với cảm nhận của bạn nhất.***

1 = Rất không đồng ý
2 = Không đồng ý
3 = Tương đối không đồng ý
4 = Lưỡng lự
5 = Tương đối đồng ý
6 = Đồng ý
7 =Rất đồng ý.

	Rất không đồng ý						Rất đồng ý
a. Tôi dễ dàng nói về cảm xúc của mình với người khác.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b. Tôi thường thấy khó mà hiểu được quan điểm của người khác.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c. Tôi là người rất có động lực.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d. Tôi khó kiểm soát cảm xúc của mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e. Cuộc sống của tôi thật buồn tẻ	☐1	☐2	☐3	☐4	☐5	☐6	☐7
f. Tôi rất hòa đồng với bạn bè trong lớp.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

		Rất không đồng ý						Rất đồng ý
g.	Tôi rất hay thay đổi kiến.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
h.	Tôi khó biết được chính xác cảm xúc tôi đang có là gì.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
i.	Tôi thoải mái với diện mạo của mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
j.	Tôi thấy khó khan khi đấu tranh cho quyền lợi của mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
k.	Tôi có thể khiến người khác cảm thấy tốt hơn khi tôi muốn.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
l.	Đôi khi tôi nghĩ cuộc đời tôi thật khổ sở.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
m.	Đôi khi nhiều người phàn nàn rằng tôi đối xử với họ quá tệ.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
n.	Tôi thấy khó khăn khi đối mặt với những thay đổi trong cuộc sống của tôi.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
o.	Tôi có thể đối phó với căng thẳng.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
p.	Tôi không biết cách thể hiện cho những người quanh tôi biết rằng tôi quan tâm đến họ.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
q.	Tôi có thể đặt mình vào hoàn cảnh của người khác để hiểu cảm xúc của họ.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
r.	Tôi thấy khó khăn để giữ động lực cho chính mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
s.	Tôi có thể kiểm soát cơn giận khi tôi muốn.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
t.	Tôi hạnh phúc với cuộc sống của tôi.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
u.	Tôi có thể mô tả bản thân như là một người đàm phán tốt.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
v.	Đôi khi tôi tham gia vào những chuyện mà sau này tôi ước gì tôi có thể thoát ra khỏi nó.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
w.	Tôi chú ý nhiều đến cảm xúc của mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
x.	Tôi cảm thấy tốt về bản thân mình.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
y.	Tôi có xu hướng rút lui ngay cả khi tôi biết là tôi đúng.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

		Rất không đồng ý						Rất đồng ý
z.	Tôi không thể thay đổi được cảm xúc của người khác	☐1	☐2	☐3	☐4	☐5	☐6	☐7
aa.	Tôi tin rằng mọi chuyện trong cuộc đời tôi rồi sẽ được giải quyết	☐1	☐2	☐3	☐4	☐5	☐6	☐7
bb.	Đôi khi tôi ước tôi có mối quan hệ tốt hơn với bố mẹ của tôi.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
cc.	Tôi có thể ứng phó tốt trong môi trường mới.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
dd	Tôi cố kiểm soát suy nghĩ của mình và không lo lắng quá nhiều về mọi chuyện.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

(TEIQue-SF, Petrides)

Những câu hỏi dưới đây mô tả những hành vi và cảm xúc mà các bạn trẻ ở tuổi bạn có thể có. Chúng tôi biết rằng bạn có thể cảm thấy ngại trả lời một số câu hỏi. Xin hãy nhớ rằng rất cả các thông tin bạn cung cấp cho chúng tôi hoàn toàn được giữ kín và chúng tôi không thể xác định được danh tính của ai dựa trên câu trả lời của họ. Nếu bạn chưa bao giờ trải nghiệm bất cứ điều nào dưới đây, bạn không cần phải trả lời các câu hỏi.

29. TỪ TRƯỚC ĐẾN NAY, có bao giờ bạn nghĩ đến việc sẽ tự tử không? *(Chỉ đánh dấu vào MỘT ô)*

Không bao giờ ☐1 **=> Chuyển đến câu số 32**

Có ☐2

30. TRONG 12 THÁNG QUA, mức độ thường xuyên bạn nghĩ đến việc tự tử? *(Chỉ đánh dấu vào một ô)*

Không ☐1

Hiếm khi (1 lần) ☐2

Đôi khi (2 lần) ☐3

Thỉnh thoảng (3-4 lần) ☐4

Thường xuyên (5 lần hoặc nhiều hơn) ☐5

31. **TỪ TRƯỚC ĐẾN NAY, có bao giờ bạn lên kế hoạch để tự tử không?** *(Chỉ đánh dấu vào MỘT ô)*

Không bao giờ ☐1

Có ☐2

32. **TỪ TRƯỚC ĐẾN NAY, bạn đã bao giờ chủ định hoặc cố ý làm điều gì đó gây hại cho bản thân bạn chưa** (Ví dụ: dùng thuốc quá liều, bỏ uống thuốc, tự cắt da, tự đốt bản thân, tự đánh hoặc tự đập đầu, lạm dụng chất cồn, cố ý nhịn đói…)? *(Chỉ đánh dấu vào MỘT ô)*

Không bao giờ ☐1 **=> Chuyển đến câu số 34**

Có ☐2

33. **TRONG 12 THÁNG QUA, mức độ thường xuyên bạn chủ định hoặc cố ý làm hại bản thân?** *(Chỉ đánh dấu vào Một ô)*

Không ☐1

Hiếm khi (1 lần) ☐2

Đôi khi (2 lần) ☐3

Thỉnh thoảng (3-4 lần) ☐4

Thường xuyên (5 lần hoặc nhiều hơn) ☐5

34. **Dưới đây là những mô tả về cảm xúc của bạn TRONG TUẦN TRƯỚC. Xin hãy đánh dấu vào MỘT ô phù hợp với cảm nhận của bạn nhất.**

		Không đúng	Đúng một phần hoặc đôi khi có xảy ra	Khá đúng và cũng thường xảy ra	Rất đúng và thường xuyên xảy ra
a.	TRONG TUẦN TRƯỚC, tôi rất khó kiềm chế bản thân.	☐1	☐2	☐3	☐4
b.	TRONG TUẦN TRƯỚC, tôi thường hay khô miệng.	☐1	☐2	☐3	☐4
c.	TRONG TUẦN TRƯỚC, tôi dường như không có những cảm giác vui vẻ.	☐1	☐2	☐3	☐4
d.	TRONG TUẦN TRƯỚC, tôi thấy khó thở (thở nhanh, khó thở khi không làm việc mệt).	☐1	☐2	☐3	☐4

		Không đúng	Đúng một phần hoặc đôi khi có xảy ra	Khá đúng và cũng thường xảy ra	Rất đúng và thường xuyên xảy ra
e.	**TRONG TUẦN TRƯỚC,** tôi thấy khó bắt tay vào một việc gì đó.	☐1	☐2	☐3	☐4
f.	**TRONG TUẦN TRƯỚC,** tôi thường có xu hướng phản ứng thái quá với sự việc.	☐1	☐2	☐3	☐4
g.	**TRONG TUẦN TRƯỚC,** tôi cảm thấy mình hơi run (ví dụ, run tay).	☐1	☐2	☐3	☐4
h.	**TRONG TUẦN TRƯỚC,** tôi thấy khó thư giãn.	☐1	☐2	☐3	☐4
i.	**TRONG TUẦN TRƯỚC,** tôi thường lo lắng về những tình huống mà tôi thấy hoảng sợ và bị mất mặt với người khác.	☐1	☐2	☐3	☐4
j.	**TRONG TUẦN TRƯỚC,** tôi thấy mình chẳng có gì để mong đợi.	☐1	☐2	☐3	☐4
k.	**TRONG TUẦN TRƯỚC,** tôi thấy mình bồn chồn.	☐1	☐2	☐3	☐4
l.	**TRONG TUẦN TRƯỚC,** tôi cảm thấy khó thư giãn.	☐1	☐2	☐3	☐4
m.	**TRONG TUẦN TRƯỚC,** tôi thấy buồn và chán.	☐1	☐2	☐3	☐4
n.	**TRONG TUẦN TRƯỚC,** tôi không chịu nổi khi công việc đang làm bị ngăn cản.	☐1	☐2	☐3	☐4
o.	**TRONG TUẦN TRƯỚC,** tôi cảm thấy lo sợ.	☐1	☐2	☐3	☐4
p.	**TRONG TUẦN TRƯỚC,** tôi thấy mình mất hết hứng thú với mọi thứ.	☐1	☐2	☐3	☐4
q.	**TRONG TUẦN TRƯỚC,** tôi thấy mình là người vô dụng.	☐1	☐2	☐3	☐4
r.	**TRONG TUẦN TRƯỚC,** tôi thấy mình rất nhạy cảm.	☐1	☐2	☐3	☐4
s.	**TRONG TUẦN TRƯỚC,** tôi thấy tim mình đập nhanh, loạn nhịp khi không hoạt động mạnh.	☐1	☐2	☐3	☐4

		Không đúng	Đúng một phần hoặc đôi khi có xảy ra	Khá đúng và cũng thường xảy ra	Rất đúng và thường xuyên xảy ra
t.	**TRONG TUẦN TRƯỚC**, tôi thấy sợ hãi vô cớ.	☐1	☐2	☐3	☐4
u.	**TRONG TUẦN TRƯỚC**, tôi thấy cuộc sống không còn ý nghĩa gì.	☐1	☐2	☐3	☐4

(DASS-21, Gomez)

35. Hãy đánh dấu vào MỘT ô phù hợp với cảm nhận của bạn nhất.

		Không bao giờ	Hiếm khi	Đôi khi	Thỉnh thoảng
a.	Tôi thiếu bạn đồng hành.	☐1	☐2	☐3	☐4
b.	Tôi không có ai để hướng về.	☐1	☐2	☐3	☐4
c.	Tôi cảm thấy mình là một phần của nhóm bạn.	☐1	☐2	☐3	☐4
d.	Tôi là người cởi mở.	☐1	☐2	☐3	☐4
e.	Tôi cảm thấy bị bỏ rơi.	☐1	☐2	☐3	☐4
f.	Tôi thấy bị cô lập với những người khác.	☐1	☐2	☐3	☐4
g.	Tôi có thể tìm thấy bạn đồng hành khi tôi muốn.	☐1	☐2	☐3	☐4
h.	Khi bị rút khỏi một hoạt động tập thể nào đó, tôi cảm thấy không vui.	☐1	☐2	☐3	☐4
i.	Mọi người ở xung quanh tôi nhưng không kết nối với tôi	☐1	☐2	☐3	☐4

(UCLA)

36. Những mệnh đề dưới đây mô tả những tính cách của bạn. Hãy đánh dấu vào MỘT ô phù hợp với tính cách của bạn nhất theo mức độ thang đo dưới đây:

1	2	3	4	5
Cực kỳ KHÔNG giống tính cách của tôi				**Cực kỳ giống tính cách của tôi**

		Cực kỳ KHÔNG giống tính cách của tôi				Cực kỳ giống tính cách của tôi
a.	Một khi đã ở trong tình huống, tôi không thể kiểm soát sự thôi thúc đánh người khác.	☐1	☐2	☐3	☐4	☐5

		Cực kỳ KHÔNG giống tính cách của tôi				Cực kỳ giống tính cách của tôi
b.	Nếu bị khiêu khích, tôi có thể đánh người khác.	☐1	☐2	☐3	☐4	☐5
c.	Nếu ai đó đánh tôi, tôi sẽ đánh trả lại.	☐1	☐2	☐3	☐4	☐5
d.	Tôi dễ dàng đánh nhau hơn mức bình thường.	☐1	☐2	☐3	☐4	☐5
e.	Nếu cần tôi sẽ dùng bạo lực để bảo vệ quyền lợi của mình.	☐1	☐2	☐3	☐4	☐5
f.	Có những người đã từng ép tôi đến mức tôi phải đấm họ.	☐1	☐2	☐3	☐4	☐5
g.	Tôi không nghĩ được bất kỳ lí do hợp lý nào để đánh người khác.	☐1	☐2	☐3	☐4	☐5
h.	Tôi đã từng hăm dọa những người mà tôi biết.	☐1	☐2	☐3	☐4	☐5
i.	Có lúc tôi trở nên phát khùng và đã phá hỏng hết mọi thứ.	☐1	☐2	☐3	☐4	☐5
j.	Tôi nói với bạn bè của tôi một cách cởi mở khi tôi bất đồng với họ.	☐1	☐2	☐3	☐4	☐5
k.	Tôi thấy tôi thường bất đồng ý kiến với người khác.	☐1	☐2	☐3	☐4	☐5
l.	Khi người khác làm phiền tôi, tôi có thể nói với họ về những điều tôi nghĩ về họ.	☐1	☐2	☐3	☐4	☐5
m.	Khi mọi người bất đồng ý kiến với tôi, tôi không thể không tranh cãi.	☐1	☐2	☐3	☐4	☐5
n.	Các bạn của tôi cho rằng tôi hơi hay tranh cãi.	☐1	☐2	☐3	☐4	☐5
o.	Tôi bùng phát một cách nhanh chóng nhưng cũng vượt qua một cách nhanh chóng	☐1	☐2	☐3	☐4	☐5
p.	Khi thất vọng, tôi hay bực bội, cáu gắt và mất bình tĩnh.	☐1	☐2	☐3	☐4	☐5
q.	Đôi khi tôi thấy mình như thùng thuốc nổ sẵn sàng phát nổ bất cứ lúc nào.	☐1	☐2	☐3	☐4	☐5
r.	Tôi là một người điềm tĩnh.	☐1	☐2	☐3	☐4	☐5
s.	Một vài người bạn nghĩ rằng tôi là người có máu nóng.	☐1	☐2	☐3	☐4	☐5
t.	Thỉnh thoảng tôi mất kiểm soát mà không có nguyên nhân hợp lý.	☐1	☐2	☐3	☐4	☐5
u.	Tôi có vấn đề trong việc kiểm soát cơn giận.	☐1	☐2	☐3	☐4	☐5
v.	Đôi khi tôi gặm nhấm sự ghen tuông.	☐1	☐2	☐3	☐4	☐5
w.	Có những lúc tôi cảm thấy tôi bị đá ngầm ra khỏi cuộc sống.	☐1	☐2	☐3	☐4	☐5
x.	Những người khác có vẻ như luôn luôn vi phạm điều gì đó.	☐1	☐2	☐3	☐4	☐5

		Cực kỳ KHÔNG giống tính cách của tôi				Cực kỳ giống tính cách của tôi
y.	Tôi biết rằng "bạn bè" thường nói xấu tôi sau lưng.	☐1	☐2	☐3	☐4	☐5
z.	Tôi luôn nghi ngờ sự thân thiện của những người lạ.	☐1	☐2	☐3	☐4	☐5
aa.	Đôi khi tôi cảm thấy rằng người ta đang cười sau lưng tôi.	☐1	☐2	☐3	☐4	☐5
bb.	Khi người khác đặc biệt tốt với tôi, tôi luôn tự hỏi rằng họ thật sự muốn gì.	☐1	☐2	☐3	☐4	☐5

(TAQ, Buss and Durkee)

37. Nếu bạn gặp một <u>vấn đề cảm xúc cá nhân,</u> mức độ khả năng nào bạn sẽ tìm kiếm sự giúp đỡ từ những người dưới đây?

1 = Chắc chắn không
2 = Đa phần là không
3 = Có thể không
4 = Lưỡng lự
5 = Có thể có
6 = Đa phần là có
7 = Chắc chắn có

		Chắc chắn không						Chắc chắn có
a.	Bạn trai/Bạn gái	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b.	Bạn bè	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c.	Bố/Mẹ	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d.	Anh chị em/Họ hàng	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e.	Chuyên gia (nhà tư vấn, nhà tâm lý học, nhà trị liệu)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
f.	Sự hỗ trợ từ truyền thông (đường dây nóng trực tuyến, nguồn internet)	☐1	☐2	☐3	☐4	☐5	☐6	☐7
g.	Bác sĩ	☐1	☐2	☐3	☐4	☐5	☐6	☐7
h.	Tôi sẽ không tìm kiếm sự giúp đỡ từ ai cả	☐1	☐2	☐3	☐4	☐5	☐6	☐7
i.	Người khác không thuộc danh sách kể trên *(Ghi rõ ở dòng kẻ bên dưới)* _____	☐1	☐2	☐3	☐4	☐5	☐6	☐7

38. Các mệnh đề dưới đây mô tả về cảm giác của bạn về cuộc sống của bạn. ***Hãy đánh dấu vào MỘT ô phù hợp với bạn nhất.***

1 = Hoàn toàn không không ý
2 = Không đồng ý
3 = Hơi không đồng ý
4 = Lưỡng lự
5 = Hơi đồng ý
6 = Đồng ý
7 = Hoàn toàn đồng ý.

		Hoàn toàn không đồng ý						Hoàn toàn đồng ý
a.	Trong hầu hết phương diện thì cuộc sống của tôi gần với lý tưởng tôi muốn.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
b.	Các điều kiện của cuộc sống tôi tuyệt vời.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
c.	Tôi hài lòng với cuộc sống.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
d.	Đến giờ tôi đã có những điều quan trọng tôi muốn trong cuộc sống.	☐1	☐2	☐3	☐4	☐5	☐6	☐7
e.	Nếu tôi có thể sống lại cuộc sống của tôi, tôi sẽ không thay đổi bất cứ điều gì.	☐1	☐2	☐3	☐4	☐5	☐6	☐7

(GHSQ, Deane and Wilson, 2005)

PHẦN F. NHỮNG Ý KIẾN CỦA BẠN

Chúng tôi không còn câu hỏi nào cho bạn, nhưng bạn có thể có NHỮNG ĐIỀU KHÁC muốn cho chúng tôi biết. *(Ví dụ, kể về một sự kiện hoặc một câu chuyện đã ảnh hưởng sâu sắc đến cuộc sống của bạn, hoặc kể về điều khiến bạn lo lắng, điều bạn đang thực sự quan tâm, hoặc cảm nhận của bạn về những trải nghiệm mà bạn đã có trong quá khứ...)*

Nếu bạn cần thêm giấy, xin vui lòng sử dụng mặt sau của tờ giấy này.

_____

_____

_____

_____

_____

_____

Bản câu hỏi kết thúc tại đây.

Chúng tôi xin chân thành cảm ơn bạn đã dành thời gian trả lời các câu hỏi.

Bạn hãy để bản câu hỏi đã trả lời của bạn vào phong bì chúng tôi cung cấp và nộp lại cho nghiên cứu viên của chúng tôi.

Nếu những vấn đề chúng tôi hỏi khiến bạn cảm thấy buồn/không thoải mái hoặc bạn muốn nói chuyện thêm về những vấn đề này, bạn có thể gọi điện cho đường dây *Tư vấn và hỗ trợ trẻ em* miễn phí tại Việt Nam theo số điện thoại 1800 1567, hoặc *Trung tâm tư vấn Tâm lý và Giáo dục đặc biệt* của trường Đại học Sư phạm Huế theo số điện thoại 0166 9600 430 hoặc email tuvantamly.hue@gmail.com.

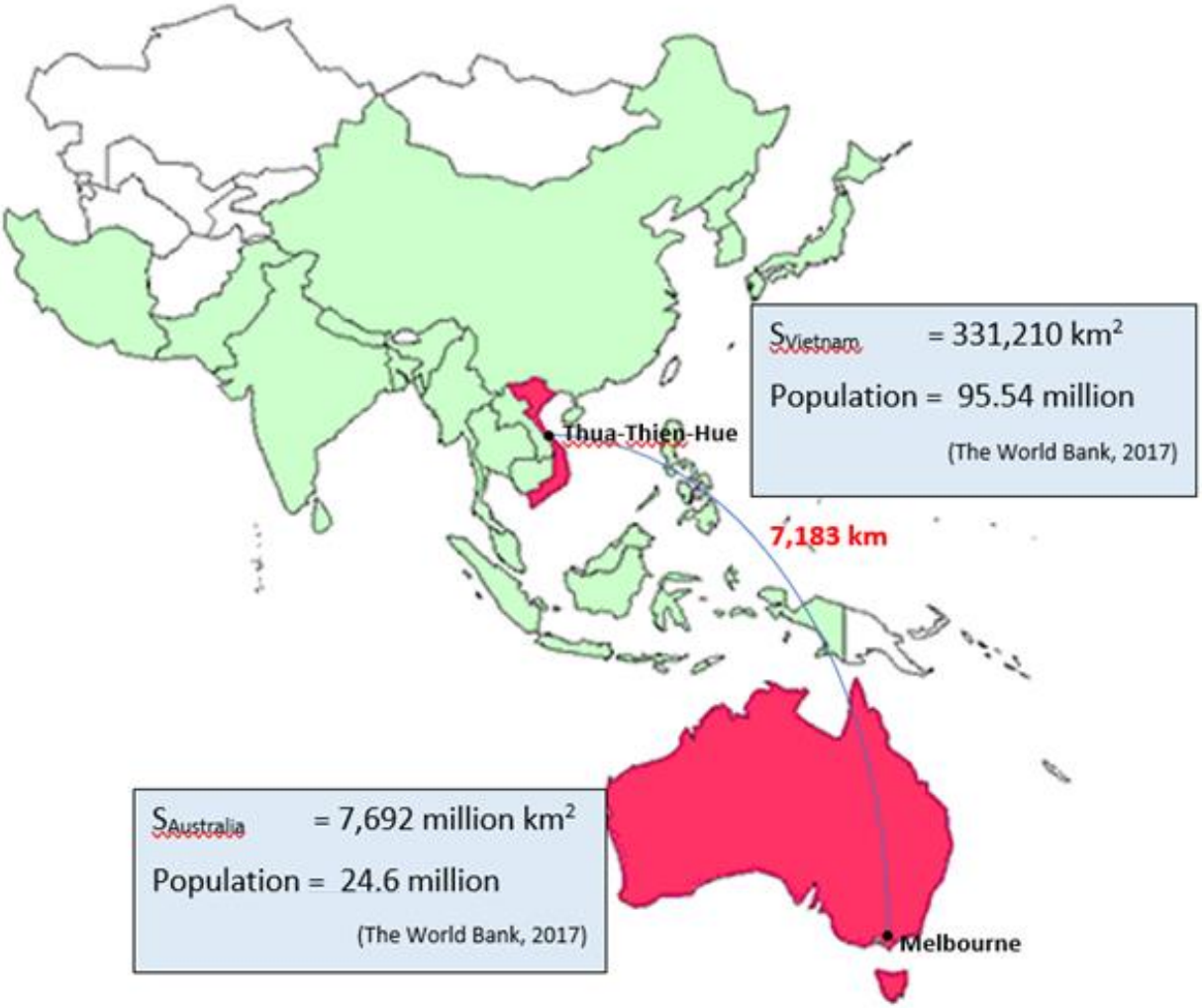
Nếu bạn có thắc mắc liên quan đến nghiên cứu này, xin hãy liên hệ với chúng tôi theo:

Số điện thoại: 0935 579 030

Địa chỉ Email: ngoc.a.nguyen@monash.edu

Địa chỉ liên lạc: Trung tâm nghiên cứu Jean Hailes, Bộ môn Y tế Công cộng và Dự phòng, Khoa Y học, Điều dưỡng và Khoa học Sức khỏe, trường Đại học Monash, Tầng 1, 549 đường St Kilda, thành phố Melbourne, bang Victoria 3004, Úc.

APPENDIX 4 – VIETNAM AND AUSTRALIA MAP



APPENDIX 5 – PERMISSION FROM THUA-THIEN-HUE DEPARTMENT OF EDUCATION AND TRAINING

SỞ GIÁO DỤC VÀ ĐÀO TẠO THỪA THIÊN HUẾ

22 Lê Lợi, thành phố Huế, Việt Nam
Điện thoại: +84 54 3823 057
Fax: +84 54 3820 942
Email: sgddt@thuathienhue.gov.vn

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
Độc lập – Tự do – Hạnh phúc

Huế, ngày 05 tháng 4 năm 2016

THƯ ỦNG HỘ DỰ ÁN NGHIÊN CỨU

Kính gửi: *Hội đồng Đạo đức – Trường Đại học Monash, bang Victoria, Úc*
Hội đồng Đạo đức – Trường Đại học Y dược Huế, Việt Nam

Về việc: Ủng hộ và cho phép thực hiện dự án nghiên cứu của bà Nguyễn Ngọc Quỳnh Anh tại các trường THPT trên địa bàn tỉnh Thừa Thiên Huế, Việt Nam.

Thay mặt Ban giám đốc Sở Giáo dục và Đào tạo tỉnh Thừa Thiên Huế, tôi viết lá thư này bày tỏ sự ủng hộ và đồng ý của chúng tôi đối với bà **Nguyễn Ngọc Quỳnh Anh** (Số hộ chiếu: C0155372) và nhóm nghiên cứu tiến hành điều tra/nghiên cứu trên học sinh của các trường THPT trên địa bàn tỉnh Thừa Thiên Huế.

Với sự hạn hẹp về kinh phí, thời gian và nguồn nhân lực, chúng tôi không có điều kiện tìm hiểu về sức khỏe tâm thần và trí tuệ cảm xúc của học sinh trong tỉnh. Vì vậy, những dự án nghiên cứu như của bà Nguyễn Ngọc Quỳnh Anh là rất cần thiết và chúng tôi đề cao việc tiến hành những dự án như vậy.

Dự án có thể giúp chúng tôi hiểu hơn về trí tuệ cảm xúc, sức khỏe tâm thần, và mối quan hệ có thể có giữa chúng, cũng như tác động của trí tuệ cảm xúc đến chất lượng mối quan hệ giữa học sinh với những người xung quanh và chất lượng cuộc sống của các em. Chúng tôi tin rằng kết quả của nghiên cứu sẽ có những đóng góp quan trọng trong nỗ lực bảo vệ các em trước những nguy cơ rối loạn tâm lý, góp phần cải thiện sức khỏe và chất lượng cuộc sống của trẻ vị thành niên.

Chúng tôi hoàn toàn ủng hộ bà Nguyễn Ngọc Quỳnh Anh trong việc tiến hành nghiên cứu này ở tỉnh Thừa Thiên Huế. Về phía Sở Giáo dục và Đào tạo, chúng tôi sẽ tạo mọi điều kiện thuận lợi cho nhóm nghiên cứu viên trong việc tiếp cận các trường THPT và làm việc với học sinh ở các trường. Các trường THPT trên địa bàn tỉnh Thừa Thiên Huế sẽ được thông báo về dự án nghiên cứu này và về quyền được tự nguyện tham gia hoặc không tham gia vào nghiên cứu. Chúng tôi sẽ hỗ trợ các trường THPT trong suốt quá trình diễn ra nghiên cứu nếu cần thiết.

Học sinh tại tỉnh Thừa Thiên Huế không có nhiều cơ hội được tham gia vào nghiên cứu. Chính vì vậy, đây sẽ là một hoạt động ngoại khóa bổ ích và một cơ hội tốt để các em có được những kinh nghiệm thực tế của việc tham gia vào nghiên cứu. Các em sẽ học hỏi được nhiều điều và nhận thức của các em về trí tuệ cảm xúc và sức khỏe tâm thần cũng có thể được nâng lên.

Chúng tôi tin rằng dự án nghiên cứu của bà Nguyễn Ngọc Quỳnh Anh là cần thiết và sẽ mang lại nhiều lợi ích cho các em học sinh tại các trường THPT nói riêng và học sinh Việt Nam nói chung. Thay mặt Ban giám đốc Sở Giáo dục và Đào tạo, tôi hoàn toàn ủng hộ và cho phép bà Nguyễn Ngọc Quỳnh Anh tiến hành nghiên cứu tại các trường THPT ở tỉnh Thừa Thiên Huế. Nếu dự án được duyệt, chúng tôi sẽ tạo mọi điều kiện cho việc thực hiện dự án diễn ra thuận lợi.

Kính thư

Giám đốc Sở Giáo dục và Đào tạo,

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM
SỞ GIÁO DỤC VÀ ĐÀO TẠO
TỈNH THỪA THIÊN HUẾ

Phạm Văn Hùng

TTH DEPARTMENT OF EDUCATION AND TRAINING

22 Le Loi Street, Hue city, Vietnam
Telephone: +84 54 3823 057
Fax: +84 54 820 942
Email: sgđt@thuathienhue.gov.vn

SOCIALIST REPUBLIC OF VIETNAM
Independence – Freedom - Happiness

Hue, 5th April 2016

SUPPORTING LETTER

To: *Human Research Ethics Committee – Monash University, Victoria, Australia*

Human Research Ethics Committee – Hue University of Medicine, Vietnam

Re: Support and authorize Ms Anh Ngoc Quynh Nguyen conducting her Ph.D. research at High Schools within Thua Thien Hue Province, Vietnam

On behalf of the administrators of Thua Thien Hue Department of Education and Training, I am writing to express our support and agreement to Ms Anh Ngoc Quynh Nguyen (Passport number: C0155372) and her research members to conduct her research on our students.

With the limitation of the fund, time and human resources, there is no opportunity for us to investigate the status of our students' mental health and emotional intelligence which are believed to be essential in education. Therefore, we really appreciate Ms Anh and her research team for investing time and effort to conduct this study.

This project helps us understand more about the level of emotional intelligence among high school students in Thua Thien Hue Province, mental health, the relationship might have between emotional intelligence and mental health, and the correlation between emotional intelligence and students' quality of relationships with adults, peers, and satisfaction of life. We believe that research results will contribute to our efforts in protecting our adolescents from mental disorders; as well as improving mental health and quality of life of our young generation in Thua Thien Hue province.

We definitely support Ms Anh Ngoc Quynh Nguyen in conducting this research. Throughout her collecting data time at Thua Thien Hue Province, we will create all favourable conditions for her and her team in reaching high schools and working with students. Administrators of high schools will be informed of the project and the right to voluntarily participate in the study. We will support all high schools which have agreed to participate in the project when necessary.

Students in Thua Thien Hue Province have not had many opportunities to take part in such study. This, in our belief, is a useful extra program for our students to gain experiences of being involved

in an academic research. They can benefit some interesting things including understanding about emotional intelligence and mental health.

We strongly believe that Ms Anh's project is essential and will bring many benefits for our students and Vietnamese students in general. On behalf of Thua Thien Hue Department of Education and Training, I totally support and give permission for Ms Anh to conduct her study at our school. If her project is approved, essential conditions will be applied to ensure her study run smoothly.

Yours sincerely,

Director of Thua Thien Hue Department of Education and Training,
(Signed and Stamped)

Hung Van Pham

APPENDIX 6 - PERMISSION FROM NINE SCHOOLS

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 07 tháng 4 năm2016 / Hue city, 07/4/2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Đặng Huy Trứ

Tôi (họ và tên)/I (fullname): NGUYỄN HỐI

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG ĐẶNG HUY TRỨ

Nguyễn Hối

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 07 tháng 4 năm2016 / Hue city, 07/ 4/ 2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Gia Hội

Tôi (họ và tên)/I (fullname): PHÙNG ĐĂNG KHÁNH

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG GIA HỘI

Phùng Đăng Khánh

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 6 tháng 4 năm2016 / Hue city, 06/4/2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Hai Bà Trưng

Tôi (họ và tên)/I (fullname): NGUYỄN THỊ HOÀI THU

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PT HAI BÀ TRƯNG

Nguyễn Thị Hoài Thu

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 06 tháng 4 năm2016 / Hue city, 06/ 4/ 2016

Thay mặt Ban giám hiệu/On behalf of the school:Trường trung học phổ thông Nguyễn Trường Tộ

Tôi (họ và tên)/I (fullname): NGUYỄN HƯỚNG

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG NGUYỄN TRƯỜNG TỘ

ThS. Nguyễn Hướng

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 09 tháng 4 năm2016 / Hue city, 09 / 4 / 2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Phú Lộc

Tôi (họ và tên)/I (fullname): NGUYỄN KHẢ

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG PHÚ LỘC

NGUYỄN KHẢ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 7 tháng 4 năm 2016 / Hue city, April 7th, 2016

Thay mặt Ban giám hiệu/On behalf of the school Trung học phổ thông Chuyên Quốc Học

Tôi (họ và tên)/I (fullname): NGUYỄN PHÚ THỌ

Chức danh/Title: Phó Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

PHÓ HIỆU TRƯỞNG

TRƯỜNG TRUNG HỌC CHUYÊN QUỐC HỌC HUẾ

Nguyễn Phú Thọ

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 08 tháng 4 năm2016 / Hue city, 08/4 / 2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Tam Giang

Tôi (họ và tên)/I (fullname): HOÀNG ĐỨC DIỄN

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG TAM GIANG

Hoàng Đức Diễn

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM / SOCIALIST REPUBLIC OF VIETNAM

Độc lập – Tự do – Hạnh phúc / Independence – Freedom - Happiness

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Huế, ngày 09 tháng 4 năm2016 / Hue city, 09/ 4 / 2016

Thay mặt Ban giám hiệu/On behalf of the school: Trường trung học phổ thông Trần Văn Kỷ

Tôi (họ và tên)/I (fullname): NGUYỄN THỊ HẢI VÂN

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG TRUNG HỌC PHỔ THÔNG TRẦN VĂN KỶ

Nguyễn Thị Hải Vân

CỘNG HÒA XÃ HỘI CHỦ NGHĨA VIỆT NAM/SOCIALIST REPUBLIC OF VIETNAM
Độc lập – Tự do – Hạnh phúc/Independence – Freedom - Happiness
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Huế, ngày 06 tháng 4 năm 2016/Hue city, 06/4/ 2016

Thay mặt Ban giám hiệu/On behalf of the school

Trường Trung học phổ thông Vinh Lộc, tỉnh Thừa Thiên Huế, Việt Nam

Tôi (họvàtên)/I (fullname): PHAN VĂN LẬU

Chức danh/Title: Hiệu trưởng

CHO PHÉP/GIVE PERMISSION FOR

Bà Nguyễn Ngọc Quỳnh Anh, nghiên cứu sinh tại Đại học Monash, Victoria, Úc

Anh Ngoc Quynh Nguyen, PhD student of Monash University, Victoria, Australia

Thực hiện đề tài nghiên cứu/To conduct the research title

"Trí tuệ cảm xúc và sức khỏe tâm thần của trẻ vị thành niên Việt Nam"

"Emotional Intelligence and Mental Health problems among adolescents in Vietnam"

Tại trường trong thời gian từ 15/09/2016 đến 15/12/2016.

At the school from 15/09/2016 to 15/12/2016.

Ký tên và đóng dấu/Signature and stamp

TRƯỜNG THPT VINH LỘC

Phan Văn Lâu

APPENDIX 7 – EXPLANATORY STATEMENTS FOR STUDENTS

MONASH University
Medicine, Nursing and Health Sciences

School of Public Health and Preventive Medicine
Monash University

EXPLANATORY STATEMENT

For Students

Project: **How young people in Vietnam understand their experiences and emotions.**

Dear Students,

My name is Anh Nguyen - a Psychology lecturer at Psychology and Pedagogy Department of Hue University. I am conducting a research project as a part of my Ph.D. program under the supervision of Professor Jane Fisher and Dr Thach Tran from the Jean Hailes Research Unit, in the School of Public Health and Preventive Medicine at Monash University, Victoria, Australia. My study is sponsored by the Government of Australia (Australian Awards Scholarship).

The aim/purpose of the research

This research aims to describe the experiences that teenagers in Vietnam have had, and what emotional experiences are associated with them, how they understand those emotions and how those understandings affect their quality of life and relationship with other people. For example, young people at your age may have experienced occasions in which they are worry too much about something or feel stress, sad, and uncomfortable. They may sometimes disagree with adults or friends. Understanding these experiences will provide an evidence for us to create emotional education programs in the future to help you deal better with situations that can make you feel bad.

Who are the target participants for the research?

You have received this Explanatory Statement because you are a student in one of the classes which have been chosen to participate in this study. In total, approximately 1,600 students are being invited to participate. Nine high schools in Thua Thien Hue province, Vietnam, are selected from Hue city, Huong Tra town, Phong Dien, and Phu Loc Districts. For each of these schools, four to five classes from Grades 10 to 12 will be selected randomly, which means that each class has an equal chance of being selected. All students in the selected classes are being invited to participate.

What does the research involve?

You will be asked to answer on your own, an anonymous questionnaire which contains 39 questions about your age, gender, family characteristics, schools, experiences and relationships, emotions and quality of life. This will take place during one class session in your normal school hours (about 45-50 minutes). Questionnaires will be distributed to you in blank envelopes, and then put back in the provided envelope, sealed and returned to the researcher at the end of the class session. You WILL NOT write your name anywhere on the questionnaire or the envelope.

Possible benefits

The information you provide by answering the anonymous questionnaire will help us understand about how young people in Vietnam understand their experiences and relationships with others and emotions, and in what ways these might be linked to their quality of life. This will provide the evidence to improve education programs about emotions and health services for adolescents in Vietnam which will help them to be happier and healthier.

Inconvenience/discomfort

You do not have to answer any questions you does not want to. If you feel uncomfortable during the survey session, you may stop answering the questions, put the survey back in the envelope, remain in the classroom and read or do your homework quietly, and return the envelope to the researchers at the end of the class session as other students. If you feel any distress, please to talk to your parents or any of the researchers in your class and/or you may contact to any of the free services listed below for help and support:

#	Services	Address	Contact number	Email
1	**Free helpline for consulting and supporting Children in Viet Nam**	Online	+ 84 18001567	
2	**Psychological and Special Education Counselling Centre**	Hue University of Education 34 Le Loi Street, Hue city, Vietnam	+84 166 9600 430	tuvantamly.hue@gmail.com
3	**Thua Thien Hue Children and Adolescent Centre**	57 Lam Hoang Street, Vy Da suburb, Hue city, Vietnam	+84 54 3846 530 +84 54 3897 479 +84 54 3897 424	thanhthieunhihue@gmail.com
4	**Thua Thien Hue Province Youth Union**	32 Tran Thuc Nhan street, Hue city, Vietnam	+ 84 54 383 4443	tinhdoanhue@gmail.com

Consenting to participate in the project?

You will receive the Explanatory statements for Students and for Parents/Guardians at least seven days before the data collection day. You will be asked to give the Explanatory statements and a Withdrawal form to your Parents/Guardians and discuss with them about the participation in this research.

Participation in this study is voluntary and you are under no obligation to participate. Whether or not you participate in this survey will not affect your marks or the way you are treated at school in any way.

- If your Parents/Guardians DO NOT want you to participate in this survey, your Parent/Guardian need to complete the Withdrawal Form you have given them, let you know about their decision. You will return it to the researcher on the day of the survey. You may place this form in the envelope provided to you as well as all other students, leave the questionnaire blank, seal the form and the blank questionnaire in the envelope, and return it to the research team at the end of the class session like other students. If no Withdrawal Form is returned, parental consent will be implied.
- If your parents/guardians agree to have you participate in this survey, but you do not want to, you have the right to decide not to participate. You will remain in class at the data collection day, receive the envelope with the questionnaire, but will not complete it and do your own work quietly. At the end of the class session, you will seal the envelope and return it to the research like other students.

Can you withdraw from the research?

All questionnaires are completed anonymously without names or coded identifiers. It is therefore not possible to withdraw data from the research once it has been provided.

Payment

There will be no payments to individual students. However, in recognition of participants' time and contribution, we will donate an amount of VND 200,000 (≈ AUD 15) to the fund of your class which can be used to celebrate excursions, and purchase books or other learning materials for the whole class.

Privacy and Confidentiality

The questionnaire is anonymous and no names are to be collected. You will be asked to fold the completed page of the questionnaire under so that others cannot see your responses while they are being completed. No identifiable information will be collected and only pooled data will be reported. Completed questionnaires will be sealed envelopes and handed back to the researchers. About 1,600 questionnaires will be completed; and only the researchers will be able to access the data.

Storage of data

Storage of the data collected will adhere to Monash University regulations. Completed paper questionnaires will be stored securely in a locked filing cabinet at Hue University of Education and retained for five years. The data will be entered and stored in a password-protected database on Monash University's secure server which will only be accessible to the researcher and her supervisors.

Results

Findings from the research will be presented in a PhD thesis and published in peer-reviewed papers in English and Vietnamese journals. A summary report of the results in Vietnamese will be available to you and your parents/guardians via your schools. You and your parents/guardians can request a copy of this summary personally via email, please contact me at ngoc.a.nguyen@monash.edu. The findings will be available after the student has finished her thesis in 2019.

If there is anything you do not understand, please contact the Chief Investigator or the Student Researcher:

Professor JANE FISHER
Director Jean Hailes Research Unit
School of Public Health and Preventive Medicine
Faculty of Medicine, Nursing, and Health Sciences
Monash University
549 St Kilda Road, Melbourne, Victoria 3004, Australia
Phone: + 61 3 990 30290
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Anh Ngoc Quynh NGUYEN
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School of Public Health and Preventive Medicine
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549 St Kilda Road, Melbourne, Victoria 3004, Australia
Phone : +61 4 112 33540 (in Australia)
+84 905 579 030 (in Vietnam)
Email: ngoc.a.nguyen@monash.edu

Concerns/Complaints regarding the conduct of the project

Monash University and Hue University of Medicine and Pharmacy are committed to research integrity and the ethical conduct of this research project. However, if you and your parents/guardians do have any concerns about this research, or have complaints about the manner in which the research is conducted, please contact:

Dr. VINH TUAN NGUYEN
Vice-dean of Pre-School Education Department, Hue University of Education
34 Le Loi street, Hue city, Vietnam
Phone: +84 989.078.179
Email: nguyentuanvinh.huce@gmail.com

Thank you for helping with this research project. Please keep this sheet for your information.

Yours sincerely,

Professor Jane Fisher	**Dr Thach Tran**	**Ms. Anh Ngoc Quynh Nguyen**
Supervisor	***Co-supervisor***	***PhD Student***

MONASH University
Medicine, Nursing and Health Sciences

School of Public Health and Preventive Medicine
Monash University

PHIẾU THÔNG TIN NGHIÊN CỨU

Dành cho Học sinh

Dự án nghiên cứu: **Khả năng trẻ vị thành niên Việt Nam hiểu về cảm xúc của bản thân**

Các em học sinh thân mến,

Tôi tên là Nguyễn Ngọc Quỳnh Anh, giảng viên Khoa Tâm lý – Giáo dục, trường Đại học Sư phạm Huế. Hiện tại, tôi đang tiến hành dự án nghiên cứu Tiến sĩ dưới sự hướng dẫn của Giáo sư Jane Fisher và Tiến sĩ Trần Đức Thạch thuộc Trung tâm nghiên cứu Jean Hailes, Khoa Y tế Cộng đồng và Y học dự phòng, trường Đại học Monash, bang Victoria, Úc. Dự án của tôi do Chính phủ Úc tài trợ.

Mục đích nghiên cứu

Nghiên cứu này nhằm mục đích khám phá trẻ vị thành niên hiểu như thế nào về cảm xúc của chính mình và khả năng hiểu này ảnh hưởng như thế nào đến chất lượng cuộc sống cũng như quan hệ của các em với những người xung quanh. Chẳng hạn, các em có thể đôi khi trải qua những tình huống, những giai đoạn khiến các em lo lắng quá mức, cảm thấy căng thẳng, mệt mỏi và buồn chán. Đôi khi các em bất đồng quan điểm với người lớn và bạn bè. Hiểu những trải nghiệm này của các em sẽ là bằng chứng giúp chúng tôi đề xuất các chương trình giáo dục cảm xúc trong tương lai để giúp các em ứng phó tốt hơn với những tình huống khiến các em cảm thấy căng thẳng.

Ai được mời làm người tham gia nghiên cứu?

Các em nhận được Phiếu Thông tin nghiên cứu này vì các em đang học trong một những lớp học được lựa chọn tham gia nghiên cứu. Tổng cộng có khoảng 1.600 học sinh được mời tham giam dự án nghiên cứu này. 09 trường Trung học phổ thông trên địa bàn tỉnh Thừa Thiên Huế, Việt Nam sẽ được lựa chọn tham gia vào nghiên cứu, bao gồm thành phố Huế, thị xã Hương Trà, huyện Phong Điền và Phú Lộc. Ở mỗi trường Trung học phổ thông, 4-5 lớp học từ lớp 10, 11 và 12 sẽ được lựa chọn ngẫu nhiên. Tất cả các học sinh trong các lớp được chọn này đều được mời tham gia nghiên cứu.

Các em sẽ làm gì khi tham gia vào nghiên cứu này?

Các em sẽ được yêu cầu tự trả lời một bản câu hỏi vô danh (không điền họ tên) mà không được thảo luận với các bạn khác. Bản câu hỏi này bao gồm 39 câu hỏi về tuổi, giới tính, thành phần và đặc điểm gia đình, về trường học, bạn bè, về những cảm xúc đã từng có, về các mối quan hệ với người khác và về cảm nhận cuộc sống. Các em sẽ trả lời phiếu điều tra ngay tại lớp học, trong một giờ học bình thường đã được nhà trường cho phép (khoảng 45-50 phút). Bản câu hỏi phát cho các em được để trong phong bì trắng. Sau khi trả lời

xong, các em bỏ lại bản câu hỏi vào trong phong bì, dán lại và nộp cho nhà nghiên cứu vào cuối tiết học đó. Các em KHÔNG ĐƯỢC viết tên mình vào bất cứ chỗ nào trên bản câu hỏi và phong bì.

Lợi ích tiềm năng của việc tham gia vào nghiên cứu

Những thông tin các em cung cấp thông qua việc trả lời bản câu hỏi sẽ giúp chúng tôi hiểu trẻ vị thành niên Việt Nam hiểu như thế nào về cảm xúc của chính mình, cũng như sự ảnh hưởng của điều này đến các mối quan hệ với người khác và chất lượng cuộc sống của các em. Đây sẽ là cơ sở để nhà trường cũng như các cơ quan giáo dục có thể xây dựng và triển khai các chương trình giáo dục phát triển cảm xúc cho trẻ vị thành niên Việt Nam, giúp các em có cuộc sống tinh thần khỏe mạnh, hạnh phúc.

Những khó chịu/ bất tiện có thể có nếu tham gia vào nghiên cứu

Các em không nhất thiết phải trả lời những câu hỏi mà các em không muốn. Nếu các em cảm thấy không thoải mái trong quá trình trả lời bản câu hỏi, các em có thể dừng trả lời, bỏ bản câu hỏi vào trong phong bì, ngồi yên trong lớp học hoặc đọc/làm bài tập các môn học khác một cách yên lặng. Cuối tiết học, các em vẫn sẽ nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu như những bạn khác. Nếu các em cảm thấy căng thẳng, các em nên nói chuyện với bố mẹ, người lớn hoặc tôi hoặc có thể liên hệ với các dịch vụ MIỄN PHÍ dưới đây để yêu cầu sự giúp đỡ, hỗ trợ và cho lời khuyên:

#	Dịch vụ miễn phí	Địa chỉ	Điện thoại	E-mail
1	**Dịch vụ tư vấn và hỗ trợ Trẻ em Việt Nam**	Online	+ 84 18001567	
2	**Trung tâm Tư vấn Tâm lý và Giáo dục đặc biệt, trường Đại học Sư phạm Huế**	Đại học Sư phạm Huế 34 đường Lê Lợi, thành phố Huế	+84 166 9600 430	tuvantamly.hue@gmail.com
3	**Trung tâm Thanh Thiếu niên tỉnh Thừa Thiên Huế**	57 đường Lâm Hoằng, phường Vỹ Dạ, thành phố Huế	+84 54 3846 530 +84 54 3897 479 +84 54 3897 424	thanhthieunhihue@gmail.com
4	**Tỉnh Đoàn Thừa Thiên Huế**	32 đường Trần Thúc Nhẫn, thành phố Huế	+ 84 54 383 4443	tinhdoanhue@gmail.com

Các em đồng ý tham gia vào nghiên cứu bằng cách nào?

Ít nhất 7 ngày trước ngày phát bản câu hỏi, tất cả các em sẽ nhận Phiếu Thông tin Nghiên cứu dành cho Học sinh và dành cho Phụ huynh/Người giám hộ hợp pháp. Các em sẽ đưa phiếu Thông tin Nghiên cứu này và Phiếu xin rút khỏi nghiên cứu cho Bố hoặc Mẹ hoặc Người giám hộ hợp pháp.

Các em nên thảo luận với Bố/Mẹ/Người giám hộ hợp pháp về việc tham gia và nghiên cứu này. Tham gia vào nghiên cứu là tự nguyện và các em không bị bắt buộc tham gia. Việc có tham gia hay không vào dự án nghiên cứu sẽ không ảnh hưởng đến điểm số cũng như quan hệ của các em với giáo viên và nhà trường.

- Nếu Bố mẹ/Người giám hộ hợp pháp không đồng ý cho các em mình tham gia vào nghiên cứu, Bố mẹ/Người giám hộ hợp pháp cần nói cho các em biết quyết định của mình, sau đó điền vào Phiếu xin

rút khỏi nghiên cứu và đưa lại cho các em để các em nộp lại cho nhà nghiên cứu vào ngày phát bản câu hỏi. Các em sẽ để Phiếu xin rút khỏi nghiên cứu cùng với bản câu hỏi chưa trả lời vào trong phong bì, dán lại và nộp cho nhà nghiên cứu vào cuối tiết học như các bạn học sinh khác. Nếu nhà nghiên cứu không nhận được Phiếu xin rút khỏi nghiên cứu trong phong bì, nhà nghiên cứu sẽ ngầm hiểu Bố mẹ/Người giám hộ hợp pháp đã đồng ý cho các em tham gia vào nghiên cứu này.

- Nếu Bố mẹ/Người giám hộ đồng ý cho các em tham gia vào nghiên cứu nhưng các em không muốn, các em có quyền quyết định không tham gia. Các em vẫn ở tại lớp, nhận bản hỏi đựng trong phong bì như các bạn khác; tuy nhiên, các em để nguyên bản hỏi trong phong bì, ngồi yên lặng và làm việc cá nhân. Cuối giờ, các em nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu như các bạn khác.

Các em có thể xin rút khỏi nghiên cứu không?

Nếu Bố mẹ/Người giám hộ cho phép các em tham gia vào nghiên cứu nhưng sau đó các em không muốn nữa, các em có thể dừng trả lời bản câu hỏi mà không cần đưa ra bất kỳ lí do nào. Các em để lại bản câu hỏi vào trong phòng bì, ngồi yên lặng trong lớp học và nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu vào cuối tiết học như các bạn học sinh khác.

Chi trả cho việc tham gia vào nghiên cứu

Để ghi nhận sự đóng góp của các em học sinh vào nghiên cứu, chúng tôi sẽ tặng 200.000 đồng vào quỹ lớp của các lớp được chọn vào nghiên cứu. Chúng tôi sẽ không trả tiền trực tiếp cho từng cá nhân tham gia vào nghiên cứu.

Tính bảo mật của các thông tin mà con quý vị cung cấp

Bản câu hỏi là bản câu hỏi vô danh, không thu thập thông tin về tên của bất cứ ai. Vì vậy, sẽ không có bất kỳ thông tin nào có thể xác định danh tính các em trong các báo cáo khoa học. Bản câu hỏi đã hoàn thành sẽ được đặt trong các phong bì riêng biệt, dán lại và nộp lại cho nhà nghiên cứu. Bản câu hỏi của các em sẽ nằm trong số gần 1.600 bản câu hỏi khác. Chỉ có các thành viên trong nhóm nghiên cứu mới được tiếp cận những số liệu của nghiên cứu. Vì vậy không ai có thể xác định được các em là ai qua các câu trả lời của em trong bản câu hỏi.

Lưu giữ thông tin thu thập được

Việc lưu giữ thông tin thu thập được sẽ tuân theo các quy định của trường đại học Monash và được giữ trong các tủ có khóa ở trường đại học Sư phạm Huế trong vòng 5 năm sau khi bài báo cuối cùng của nghiên cứu được xuất bản. Chìa khóa của các tủ này chỉ do cô Quỳnh Anh và các giảng viên hướng dẫn của cô giữ.

Kết quả nghiên cứu

Kết quả từ nghiên cứu này sẽ được trình bày trong luận án tiến sỹ của cô Quỳnh Anh và có thể được xuất bản trong các tạp chí quốc tế. Nhóm nghiên cứu sẽ gửi một bản báo cáo tóm tắt về kết quả nghiên cứu cho

quý trường và các em thông qua trường. Bố mẹ/Người giám hộ hợp pháp cũng có thể liên lạc trực tiếp với cô Quỳnh Anh qua địa chỉ email ngoc.a.nguyen@monash.edu để nhận bản báo cáo. Nhóm nghiên cứu sẽ cung cấp các kết quả này cho đến năm 2020.

Nếu có nội dung nào chưa rõ hoặc có bất kỳ thắc mắc nào liên quan đến dự án này, các em vui lòng liên hệ với Giáo sư hướng dẫn hoặc Sinh viên nghiên cứu theo địa chỉ cung cấp dưới đây:

Giáo sư JANE FISHER
Giám đốc Trung tâm Nghiên cứu Jean Hailes
Bộ môn Y tế công cộng và Dự phòng
Khoa Y học, Điều dưỡng và Khoa học sức khỏe
Trường Đại học Monash University
549 đường St Kilda, thành phố Melbourne
Bang Victoria 3004, Úc
Điện thoại: + 61 3 990 30290
Email: jane.fisher@monash.edu

Anh Ngoc Quynh NGUYEN
Nghiên cứu sinh
Bộ môn Y tế công cộng và Dự phòng
Khoa Y học, Điều dưỡng và Khoa học sức khỏe
Trường Đại học Monash
549 đường St Kilda, thành phố Melbourne
Bang Victoria 3004, Úc
Điện thoại : +61 4 112 33540 (ở Úc)
+84 905 579 030 (ở Việt Nam)
Email: ngoc.a.nguyen@monash.edu

Thắc mắc/Phàn nàn về cách thức tiến hành dự án nghiên cứu

Trường Đại học Monash ở Úc và trường Đại học Y Dược Huế cam kết về tính liêm chính và đạo đức của nghiên cú này. Tuy nhiên, nếu các em hoặc Bố mẹ/Người giám hộ hợp pháp có bất kỳ thắc mắc nào về quyền của phụ huynh của người tham gia nghiên cứu, hoặc muốn phàn nàn về cách thức tiến hành nghiên cứu này, xin vui lòng liên hệ với sinh viên nghiên cứu Nguyễn Ngọc Quỳnh Anh. Nếu quý vị muốn liên lạc với người không hưởng lợi trực tiếp từ nghiên cứu, xin vui lòng liên hệ:

Tiến sĩ NGUYỄN TUẤN VĨNH
Phó trưởng khoa Giáo dục Mầm non
Trường Đại học Sư phạm Huế
Địa chỉ: 34 Lê Lợi, thành phố Huế, Việt Nam
Điện thoại: +84 989.078.179
Email: nguyentuanvinh.huce@gmail.com

Chúng tôi xin chân thành cảm ơn quý vị đã hỗ trợ dự án nghiên cứu. Quý vị có thể giữ phiếu thông tin nghiên cứu này.

Trân trọng,

Giáo sư Jane Fisher	**Tiến sĩ Trần Đức Thạch**	**Thạc sĩ Nguyễn Ngọc Quỳnh Anh**
Người hướng dẫn	***Người hướng dẫn***	***Nghiên cứu sinh***

APPENDIX 8 – EXPLANATORY STATEMENTS FOR PARENTS/GUARDIANS

MONASH University
Medicine, Nursing and Health Sciences

School of Public Health and Preventive Medicine
Monash University

EXPLANATORY STATEMENT

For Parents/Guardians

Project: **How young people in Vietnam understand their experiences and emotions.**

Dear Parents/Guardians,

My name is Anh Nguyen - a Psychology lecturer at Psychology and Pedagogy Department of Hue University. I am conducting a research project as a part of my Ph.D. program under the supervision of Professor Jane Fisher and Dr Thach Tran from the Jean Hailes Research Unit, in the School of Public Health and Preventive Medicine at Monash University, Victoria, Australia. My study is sponsored by the Government of Australia (Australian Awards Scholarship).

The aim/purpose of the research

This research aims to describe the experiences that teenagers in Vietnam have had, and what emotional experiences are associated with them, how they understand those emotions and how those understandings affect their quality of life and relationship with other people. For example, young people at your child's age may have experienced occasions in which they are worry too much about something or feel stress, sad, and uncomfortable. They may sometimes disagree with adults or friends. Understanding these experiences will provide an evidence for us to create emotional education programs in the future to help your child deal better with situations that can make them feel bad.

Who are the target participants for the research?

You have received this Explanatory Statement because your child is a student in one of the classes which have been chosen to participate in this study. In total, approximately 1,600 students are being invited to participate. Nine high schools in Thua Thien Hue province, Vietnam, are selected from Hue city, Huong Tra town, Phong Dien, and Phu Loc Districts. For each of these schools, four to five classes from Grades 10 to 12 will be selected randomly, which means that each class has an equal chance of being selected. All students in the selected classes are being invited to participate.

What does the research involve?

Your child will be asked to answer on their own, an anonymous questionnaire which contains 39 questions about their age, gender, family characteristics, schools, experiences and relationships, emotions and quality of life. This will take place during one class session in normal school hours (about 45-50 minutes). Questionnaires will be distributed to your child in blank envelopes, and then put back in the provided envelope, sealed and returned to the researcher at the end of the class session. Your child is asked not to write his/her name anywhere on the questionnaire or the envelope.

Possible benefits

The information your child provide by answering the anonymous questionnaire will help us understand about how young people in Vietnam understand their experiences and relationships with others and emotions, and in what ways these might be linked to their quality of life. This will provide the evidence to improve education programs about emotions and health services for adolescents in Vietnam which will help them to be happier and healthier.

Inconvenience/discomfort

Your child do not have to answer any questions he/she does not want to. If your child feels uncomfortable during the survey session, he/she may stop answering the questions, put the survey back in the envelope, remain in the classroom and read or do his/her homework quietly, and return the envelope to the researchers at the end of the class session as other students. If your child feels any distress, the researcher will encourage him/her to talk to you and/or he/she may contact to any of the free services listed below for help and support:

#	Services	Address	Contact number	Email
1	**Free helpline for consulting and supporting Children in Viet Nam**	Online	+ 84 18001567	
2	**Psychological and Special Education Counselling Centre**	Hue University of Education 34 Le Loi Street, Hue city, Vietnam	+84 166 9600 430	tuvantamly.hue@gmail.com
3	**Thua Thien Hue Children and Adolescent Centre**	57 Lam Hoang Street, Vy Da suburb, Hue city, Vietnam	+84 54 3846 530 +84 54 3897 479 +84 54 3897 424	thanhthieunhihue@gmail.com
4	**Thua Thien Hue Province Youth Union**	32 Tran Thuc Nhan street, Hue city, Vietnam	+ 84 54 383 4443	tinhdoanhue@gmail.com

Consenting to participate in the project?

Your child will receive the Explanatory statements for Students and for Parents/Guardians at least seven days before the data collection day. Your child will be asked to give the Explanatory statements and a Withdrawal form to you and discuss with you about the participation in this research.

Participation in this study is voluntary and your child is under no obligation to participate. Whether or not your child participates in this survey will not affect his/her marks or the way he/she is treated at school in any way.

- If you DO NOT want your child to participate in this survey, you need to complete the Withdrawal Form which is given by your child, let him/her know about your decision and have him/her return it to the researcher on the day of the survey. Your child may place this form in the envelope provided to him/her as well as all other students, leave the questionnaire blank, seal the form and the blank questionnaire in the envelope, and return it to the research team at the end of the class session like other students. If no Withdrawal Form is returned, parental consent will be implied.
- If you agree to have their child participate in this survey, but your child does not want to, he/she has the right to decide not to participate. Your child will remain in class at the data collection day, receive the envelope with the questionnaire, but will not complete it and do his/her own work quietly. At the end of the class session, he/she will seal the envelope and return it to the research like other students.

Can students withdraw from the research?

All questionnaires are completed anonymously without names or coded identifiers. It is therefore not possible to withdraw data from the research once it has been provided.

Payment

There will be no payments to individual students. However, in recognition of participants' time and contribution, we will donate an amount of VND 200,000 (≈ AUD 15) to the fund of each selected class which can be used to celebrate excursions, and purchase books or other learning materials for the whole class.

Privacy and Confidentiality

The questionnaire is anonymous and no names are to be collected. Your child will be asked to fold the completed page of the questionnaire under so that others cannot see their responses while they are being completed. No identifiable information will be collected and only pooled data will be reported. Completed questionnaires will be sealed envelopes and handed back to the researchers. About 1,600 questionnaires will be completed; and only the researchers will be able to access the data.

Storage of data

Storage of the data collected will adhere to Monash University regulations. Completed paper questionnaires will be stored securely in a locked filing cabinet at Hue University of Education and retained for five years. The data will be entered and stored in a password-protected database on Monash University's secure server which will only be accessible to the researcher and her supervisors.

Results

Findings from the research will be presented in a PhD thesis and published in peer-reviewed papers in English and Vietnamese journals. A summary report of the results in Vietnamese will be available to you and your child via their schools. You and your child can request a copy of this summary personally via email, please contact me at ngoc.a.nguyen@monash.edu. The findings will be available after the student has finished her thesis in 2019.

If there is anything you do not understand, please contact the Chief Investigator or the Student Researcher:

Professor JANE FISHER
Director Jean Hailes Research Unit
School of Public Health and Preventive Medicine
Faculty of Medicine, Nursing, and Health Sciences
Monash University
549 St Kilda Road, Melbourne, Victoria 3004, Australia
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Phone : +61 4 112 33540 (in Australia)
+84 905 579 030 (in Vietnam)
Email: ngoc.a.nguyen@monash.edu

Concerns/Complaints regarding the conduct of the project

Monash University and Hue University of Medicine and Pharmacy are committed to research integrity and the ethical conduct of this research project. However, if you and your child do have any concerns about this research, or have complaints about the manner in which the research is conducted, please contact:

Dr. VINH TUAN NGUYEN
Vice-dean of Pre-School Education Department, Hue University of Education
34 Le Loi street, Hue city, Vietnam
Phone: +84 989.078.179
Email: nguyentuanvinh.huce@gmail.com

Thank you for helping with this research project. Please keep this sheet for your information.

Yours sincerely,

Professor Jane Fisher	**Dr Thach Tran**	**Ms. Anh Ngoc Quynh Nguyen**
Supervisor	***Co-supervisor***	***PhD Student***

MONASH University
Medicine, Nursing and Health Sciences

School of Public Health and Preventive Medicine
Monash University

PHIẾU THÔNG TIN NGHIÊN CỨU

Dành cho Phụ huynh/Người giám hộ hợp pháp

Dự án nghiên cứu: **Khả năng trẻ vị thành niên Việt Nam hiểu về cảm xúc của bản thân**

Kính gửi Quý Phụ Huynh/Người giám hộ hợp pháp,

Tôi tên là Nguyễn Ngọc Quỳnh Anh, giảng viên Khoa Tâm lý – Giáo dục, trường Đại học Sư phạm Huế. Hiện tại, tôi đang tiến hành dự án nghiên cứu Tiến sĩ dưới sự hướng dẫn của Giáo sư Jane Fisher và Tiến sĩ Trần Đức Thạch thuộc Trung tâm nghiên cứu Jean Hailes, Khoa Y tế Cộng đồng và Y học dự phòng, trường Đại học Monash, bang Victoria, Úc. Dự án của tôi do Chính phủ Úc tài trợ.

Mục đích nghiên cứu

Nghiên cứu này nhằm mục đích khám phá trẻ vị thành niên hiểu như thế nào về cảm xúc của chính mình và khả năng hiểu này ảnh hưởng như thế nào đến chất lượng cuộc sống cũng như quan hệ của các em với những người xung quanh. Chẳng hạn, học sinh có thể đôi khi trải qua những tình huống, những giai đoạn khiến các em lo lắng quá mức, cảm thấy căng thẳng, mệt mỏi và buồn chán. Đôi khi các em bất đồng quan điểm với người lớn và bạn bè. Hiểu những trải nghiệm này của các em sẽ là bằng chứng giúp chúng tôi đề xuất các chương trình giáo dục cảm xúc trong tương lai để giúp các em ứng phó tốt hơn với những tình huống khiến các em cảm thấy căng thẳng.

Ai được mời làm người tham gia nghiên cứu?

Quý vị nhận được Phiếu Thông tin nghiên cứu này vì con của quý vị đang học trong một những lớp học được lựa chọn tham gia nghiên cứu. Tổng cộng có khoảng 1.600 học sinh được mời tham giam dự án nghiên cứu này. 09 trường Trung học phổ thông trên địa bàn tỉnh Thừa Thiên Huế, Việt Nam sẽ được lựa chọn tham gia vào nghiên cứu, bao gồm thành phố Huế, thị xã Hương Trà, huyện Phong Điền và Phú Lộc. Ở mỗi trường Trung học phổ thông, 4-5 lớp học từ lớp 10, 11 và 12 sẽ được lựa chọn ngẫu nhiên. Tất cả các học sinh trong các lớp được chọn này đều được mời tham gia nghiên cứu.

Con quý vị sẽ làm gì khi tham gia vào nghiên cứu này?

Các em sẽ được yêu cầu tự trả lời một bản câu hỏi vô danh (không điền họ tên) mà không được thảo luận với các bạn khác. Bản câu hỏi này bao gồm 39 câu hỏi về tuổi, giới tính, thành phần và đặc điểm gia đình, về trường học, bạn bè, về những cảm xúc đã từng có, về các mối quan hệ với người khác và về cảm nhận cuộc sống. Các em sẽ trả lời phiếu điều tra ngay tại lớp học, trong một giờ học bình thường đã được nhà trường

cho phép (khoảng 45-50 phút). Bản câu hỏi phát cho các em được để trong phong bì trắng. Sau khi trả lời xong, các em bỏ lại bản câu hỏi vào trong phong bì, dán lại và nộp cho nhà nghiên cứu vào cuối tiết học đó. Các em không được viết tên mình vào bất cứ chỗ nào trên bản câu hỏi và phong bì.

Lợi ích tiềm năng của việc tham gia vào nghiên cứu

Những thông tin học sinh cung cấp thông qua việc trả lời bản câu hỏi sẽ giúp chúng tôi hiểu trẻ vị thành niên Việt Nam hiểu như thế nào về cảm xúc của chính mình, cũng như sự ảnh hưởng của điều này đến các mối quan hệ với người khác và chất lượng cuộc sống của các em. Đây sẽ là cơ sở để nhà trường cũng như các cơ quan giáo dục có thể xây dựng và triển khai các chương trình giáo dục phát triển cảm xúc cho trẻ vị thành niên Việt Nam, giúp các em có cuộc sống tinh thần khỏe mạnh, hạnh phúc.

Những khó chịu/ bất tiện có thể có nếu tham gia vào nghiên cứu

Con quý vị không nhất thiết phải trả lời những câu hỏi mà em không muốn. Nếu em cảm thấy không thoải mái trong quá trình trả lời bản câu hỏi, em có thể dừng trả lời, bỏ bản câu hỏi vào trong phong bì, ngồi yên trong lớp học hoặc đọc/làm bài tập các môn học khác một cách yên lặng. Cuối tiết học, em vẫn sẽ nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu như những bạn khác. Nếu em cảm thấy căng thẳng, nhà nghiên cứu sẽ khuyến khích em nói chuyện với quý vị hoặc tôi hoặc có thể liên hệ với các dịch vụ MIỄN PHÍ dưới đây để yêu cầu sự giúp đỡ, hỗ trợ và cho lời khuyên:

#	Dịch vụ miễn phí	Địa chỉ	Điện thoại	E-mail
1	**Dịch vụ tư vấn và hỗ trợ Trẻ em Việt Nam**	Online	+ 84 18001567	
2	**Trung tâm Tư vấn Tâm lý và Giáo dục đặc biệt, trường Đại học Sư phạm Huế**	Đại học Sư phạm Huế 34 đường Lê Lợi, thành phố Huế	+84 166 9600 430	tuvantamly.hue@gmail.com
3	**Trung tâm Thanh Thiếu niên tỉnh Thừa Thiên Huế**	57 đường Lâm Hoằng, phường Vỹ Dạ, thành phố Huế	+84 54 3846 530 +84 54 3897 479 +84 54 3897 424	thanhthieunhihue@gmail.com
4	**Tỉnh Đoàn Thừa Thiên Huế**	32 đường Trần Thúc Nhẫn, thành phố Huế	+ 84 54 383 4443	tinhdoanhue@gmail.com

Con quý vị đồng ý tham gia vào nghiên cứu bằng cách nào?

Ít nhất 7 ngày trước ngày phát bản câu hỏi, tất cả học sinh trong các lớp được chọn sẽ nhận Phiếu Thông tin Nghiên cứu dành cho Học sinh/Phụ huynh/Người giám hộ hợp pháp. Các em sẽ đưa phiếu Thông tin Nghiên cứu này và Phiếu xin rút khỏi nghiên cứu cho quý vị.

Quý vị sẽ thảo luận với con quý vị về việc tham gia và nghiên cứu này. Tham gia vào nghiên cứu là tự nguyện và con quý vị không bị bắt buộc tham gia. Việc có tham gia hay không vào dự án nghiên cứu sẽ không ảnh hưởng đến điểm số cũng như quan hệ của con quý vị với giáo viên và nhà trường.

- Nếu quý vị không đồng ý cho con em mình tham gia vào nghiên cứu, quý vị cần cho con quý vị biết quyết định của mình, sau đó điền vào Phiếu xin rút khỏi nghiên cứu và đưa lại cho con quý vị để các em nộp lại cho nhà nghiên cứu vào ngày phát bản câu hỏi. Các em sẽ để Phiếu xin rút khỏi nghiên cứu cùng với bản câu hỏi chưa trả lời vào trong phong bì, dán lại và nộp cho nhà nghiên cứu vào cuối tiết học như các bạn học sinh khác. Nếu nhà nghiên cứu không nhận được Phiếu xin rút khỏi nghiên cứu trong phong bì, nhà nghiên cứu sẽ ngầm hiểu quý vị đã đồng ý cho con quý vị tham gia vào nghiên cứu này.
- Nếu quý vị đồng ý cho con quý vị tham gia vào nghiên cứu nhưng các em không muốn, các em có quyền quyết định không tham gia. Con quý vị vẫn ở tại lớp, nhận bản hỏi đựng trong phong bì như các bạn khác; tuy nhiên, các em để nguyên bản hỏi trong phong bì, ngồi yên lặng và làm việc cá nhân. Cuối giờ, các em nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu như các bạn khác.

Con quý vị có thể xin rút khỏi nghiên cứu không?

Nếu quý vị cho phép con mình tham gia vào nghiên cứu nhưng sau đó các em không muốn nữa, các em có thể dừng trả lời bản câu hỏi mà không cần đưa ra bất kỳ lí do nào. Các em để lại bản câu hỏi vào trong phòng bì, ngồi yên lặng trong lớp học và nộp lại phong bì có bản câu hỏi cho nhà nghiên cứu vào cuối tiết học như các bạn học sinh khác.

Chi trả cho việc tham gia vào nghiên cứu

Để ghi nhận sự đóng góp của các em học sinh vào nghiên cứu của chúng tôi, chúng tôi sẽ tặng 200.000 đồng vào quỹ lớp của các lớp được chọn vào nghiên cứu. Chúng tôi sẽ không trả tiền trực tiếp cho từng cá nhân tham gia vào nghiên cứu.

Tính bảo mật của các thông tin mà con quý vị cung cấp

Bản câu hỏi là bản câu hỏi vô danh, không thu thập thông tin về tên của bất cứ ai. Vì vậy, sẽ không có bất kỳ thông tin nào có thể xác định danh tính con quý vị trong các báo cáo khoa học. Bản câu hỏi đã hoàn thành sẽ được đặt trong các phong bì riêng biệt, dán lại và nộp lại cho nhà nghiên cứu. Bản câu hỏi của con quý vị sẽ nằm trong số gần 1.600 bản câu hỏi khác. Chỉ có các thành viên trong nhóm nghiên cứu mới được tiếp cận những số liệu của nghiên cứu. Vì vậy không ai có thể xác định được con quý vị là ai qua các câu trả lời của em trong bản câu hỏi.

Lưu giữ thông tin thu thập được

Việc lưu giữ thông tin thu thập được sẽ tuân theo các quy định của trường đại học Monash và được giữ trong các tủ có khóa ở trường đại học Sư phạm Huế trong vòng 5 năm sau khi bài báo cuối cùng của nghiên cứu được xuất bản. Chìa khóa của các tủ này chỉ do cô Quỳnh Anh và các giảng viên hướng dẫn của cô giữ.

Kết quả nghiên cứu

Kết quả từ nghiên cứu này sẽ được trình bày trong luận án tiến sỹ của cô Quỳnh Anh và có thể được xuất bản trong các tạp chí quốc tế. Nhóm nghiên cứu sẽ gửi một bản báo cáo tóm tắt về kết quả nghiên cứu cho quý trường và các em học sinh thông qua trường. Quý vị cũng có thể liên lạc trực tiếp với cô Quỳnh Anh qua địa chỉ email ngoc.a.nguyen@monash.edu để nhận bản báo cáo. Nhóm nghiên cứu sẽ cung cấp các kết quả này cho đến năm 2020.

Nếu có nội dung nào chưa rõ hoặc có bất kỳ thắc mắc nào liên quan đến dự án này, quý vị vui lòng liên hệ với Giáo sư hướng dẫn hoặc Sinh viên nghiên cứu theo địa chỉ cung cấp dưới đây:

Giáo sư JANE FISHER
Giám đốc Trung tâm Nghiên cứu Jean Hailes
Bộ môn Y tế công cộng và Dự phòng
Khoa Y học, Điều dưỡng và Khoa học sức khỏe
Trường Đại học Monash University
549 đường St Kilda, thành phố Melbourne
Bang Victoria 3004, Úc
Điện thoại: + 61 3 990 30290
Email: jane.fisher@monash.edu

Anh Ngoc Quynh NGUYEN
Nghiên cứu sinh
Bộ môn Y tế công cộng và Dự phòng
Khoa Y học, Điều dưỡng và Khoa học sức khỏe
Trường Đại học Monash
549 đường St Kilda, thành phố Melbourne
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Điện thoại : +61 4 112 33540 (ở Úc)
+84 905 579 030 (ở Việt Nam)
Email: ngoc.a.nguyen@monash.edu

Thắc mắc/Phàn nàn về cách thức tiến hành dự án nghiên cứu

Trường Đại học Monash ở Úc và trường Đại học Y Dược Huế cam kết về tính liêm chính và đạo đức của nghiên cú này. Tuy nhiên, nếu quý phụ huynh có bất kỳ thắc mắc nào về quyền của phụ huynh của người tham gia nghiên cứu, hoặc muốn phàn nàn về cách thức tiến hành nghiên cứu này, xin vui lòng liên hệ với sinh viên nghiên cứu Nguyễn Ngọc Quỳnh Anh. Nếu quý vị muốn liên lạc với người không hưởng lợi trực tiếp từ nghiên cứu, xin vui lòng liên hệ:

Tiến sĩ NGUYỄN TUẤN VĨNH
Phó trưởng khoa Giáo dục Mầm non
Trường Đại học Sư phạm Huế
Địa chỉ: 34 Lê Lợi, thành phố Huế, Việt Nam
Điện thoại: +84 989.078.179
Email: nguyentuanvinh.huce@gmail.com

Chúng tôi xin chân thành cảm ơn quý vị đã hỗ trợ dự án nghiên cứu. Quý vị có thể giữ phiếu thông tin nghiên cứu này.

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School of Public Health and Preventive Medicine
Monash University

Trân trọng,

Giáo sư Jane Fisher	**Tiến sĩ Trần Đức Thạch**	**Thạc sĩ Nguyễn Ngọc Quỳnh Anh**
Người hướng dẫn	***Người hướng dẫn***	***Nghiên cứu sinh***

APPENDIX 9 – WITHDRAWAL FORMS

MONASH University
Medicine, Nursing and Health Sciences

School of Public Health and Preventive Medicine
Monash University

WITHDRAWAL FORM

Project: How young people in Vietnam understand their experiences and emotions.

Chef Investigator: **Professor JANE FISHER**
Director of Jean Hailes Research Unit
School of Public Health and Preventive Medicine
Faculty of Medicine, Nursing, and Health Sciences
Monash University
549 St Kilda Road, Melbourne, Victoria 3004, Australia
Phone: + 61 3 990 30290
Email: jane.fisher@monash.edu

Student researcher: **ANH NGOC QUYNH NGUYEN**
PhD Candidate
School of Public Health and Preventive Medicine
Faculty of Medicine, Nursing, and Health Sciences
Monash University
549 St Kilda Road, Melbourne, Victoria 3004, Australia
Phone : +61 4 112 33540 (in Australia)
+84 905 579 030 (in Vietnam)
Email: ngoc.a.nguyen@monash.edu

I have been asked to give permission for my child, [PRINT NAME], _____

_____, to take part in the Monash University research project

specified above. I have read and understood the Explanatory Statement, however, I would like

my child *not* to participate in this project.

Name of Parent/Guardian: _____

Parent/Guardian Signature: _____ **Date:** _____

MONASH University
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School of Public Health and Preventive Medicine
Monash University

PHIẾU XIN RÚT KHỎI DỰ ÁN NGHIÊN CỨU

Dự án nghiên cứu: **Khả năng trẻ vị thành niên Việt Nam hiểu về cảm xúc của bản thân**

Giáo sư hướng dẫn chính: **Giáo sư JANE FISHER**
Giám đốc Trung tâm nghiên cứu Jean Hailes
Bộ môn Y tế công cộng và Dự phòng
Khoa Y học, Điều dưỡng và Khoa học Sức khỏe
Đại học Monash
549 đường St Kilda, thành phố Melbourne
Bang Victoria 3004, Úc
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Tôi đã được hỏi ý kiến về việc cho phép con tôi, _____

[HỌ VÀ TÊN – VIẾT HOA], tham gia vào dự án nghiên cứu nói trên của trường Đại học Monash, Úc. Tôi đã đọc và hoàn toàn hiểu các nội dung trình bày trong Phiếu thông tin nghiên cứu, tuy nhiên, tôi **KHÔNG** đồng ý cho phép con tôi tham gia vào dự án nghiên cứu này.

Tên của Phu huynh/Người giám hộ hợp pháp: _____

Chữ ký của phu huynh/Người giám hộ hợp pháp: _____

Ngày/tháng/năm: _____

APPENDIX 10 – LETTER OF APPROVAL FROM RECIPIENT OF COMPLAINTS

TRƯỜNG ĐẠI HỌC SƯ PHẠM HUẾ
HUE UNIVERSITY OF EDUCATION

5 June, 2016

Professor Jane Fisher
Director Research
The Jean Hailes Research Unit
School of Public Health and Preventive Medicine, Monash University
Level 1 – the Spotless building
549 St Kilda Road, Melbourne, VIC 3004
Australia

Dear Professor Fisher,

Re: **Request to receive participants' complaints on behalf of Monash University Human Research Ethics Committee for project entitled "Emotional Intelligence and Mental Health Problems among Adolescents in Vietnam"**

Thank you for your invitation to receive participants' complaints on behalf of Monash University Human Research Ethics Committee (MUHREC) for the above-named research.

As a lecturer and a researcher at the Department of Pre-school Education, Hue University of Education, Vietnam, I am pleased to take on this role. Every complaint or ethics-related concern I receive from participants about the way the project has been conducted will be informed to MUHREC.

Yours sincerely,

Vinh Tuan Nguyen, Dr.
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