Account

Chapters 4 to 8 are based on articles that have been published in or submitted to international peer reviewed journals as listed below.

Chapter 4


Chapter 5


Chapter 6


Chapter 7


Chapter 8

### Abbreviations

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>ACE</td>
<td>Adverse childhood experiences</td>
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<tr>
<td>ADHD</td>
<td>Attention deficit hyperactivity disorder</td>
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<td>AIDS</td>
<td>Acquired immunodeficiency syndrome</td>
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<td>APA</td>
<td>American Psychological Association</td>
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<td>CES-D</td>
<td>Centre for Epidemiological Studies Depression Scale</td>
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<td>CDC</td>
<td>Center for Disease Control</td>
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<td>CHC</td>
<td>Commune Health Centre</td>
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<td>CI</td>
<td>Confidence Interval</td>
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<td>CTC</td>
<td>Can Tho City</td>
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<td>CTUMP</td>
<td>Can Tho University of Medicine and Pharmacy</td>
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<td>CVL</td>
<td>Chau Van Liem</td>
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<td>DALYs</td>
<td>Disability adjusted life years</td>
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<td>DSM-5</td>
<td>Diagnostic and Statistical Manual of Mental Disorders version 5</td>
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<td>ESSA</td>
<td>Educational Stress Scale for Adolescents</td>
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<td>EU</td>
<td>European Union</td>
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<td>FGDs</td>
<td>Focus group discussions</td>
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<td>HIV</td>
<td>Human immunodeficiency virus infection</td>
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<td>ICD-10</td>
<td>International Classification of Diseases – revision 10</td>
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<td>IDI</td>
<td>In depth interview</td>
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<td>IGD</td>
<td>Internet Gaming Disorder</td>
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<td>LTT</td>
<td>Ly Tu Trong</td>
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<td>MCNV</td>
<td>Medical Committee Netherlands-Vietnam</td>
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<td>MDD</td>
<td>Major depressive disorder</td>
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<td>MOET</td>
<td>Ministry of Education and Training (MOET)</td>
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<td>MOH</td>
<td>Ministry of Health</td>
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<tr>
<td>MOLISA</td>
<td>Ministry of Labor, Invalids and Social Affairs</td>
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<td>NUFFIC</td>
<td>The Dutch Organisation for Internationalisation in Education</td>
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<td>OR</td>
<td>Odds ratio</td>
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<td>Abbreviation</td>
<td>Organization/Definition</td>
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<tr>
<td>OECD</td>
<td>Organization for Economic Cooperation and Development</td>
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<td>QUT</td>
<td>Queensland University of Technology</td>
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<td>RTCCD</td>
<td>Research and Training Centre for Community Development</td>
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<td>SD</td>
<td>Standard deviation</td>
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<td>SDQ</td>
<td>Strengths &amp; Difficulties Questionnaire</td>
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<td>SES</td>
<td>Socioeconomic status</td>
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<td>SPSS</td>
<td>SPSS™ Statistics Package for Social Science</td>
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<td>TDN</td>
<td>Tran Dai Nghia</td>
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<td>UK</td>
<td>United Kingdom</td>
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<td>UNICEF</td>
<td>United Nations Children’s Fund</td>
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<td>US</td>
<td>United States</td>
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<td>VU</td>
<td>Vrije Universiteit</td>
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<tr>
<td>WHO</td>
<td>World Health Organization</td>
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<td>WHO-AIMS</td>
<td>World Health Organization - Assessment Instrument for Mental Health Systems</td>
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Chapter 1
Introduction

According to the World Health Organization, the prevalence of mental health disorders continues to increase around the world. Their significant impacts on health and their major social, human rights and economic consequences are found in all countries (World Health Organization, 2019b). At least 450 million people are thought to suffer from mental and behavior disorders worldwide and it is estimated that one person in four will develop one or more of these disorders during their lifetime. Neuropsychiatric conditions accounted for 13% of the total disability adjusted life years (DALYs) lost due to all diseases and injuries in the world and this is likely to increase in the coming years. Five of ten leading causes of disability and premature death worldwide are psychiatric conditions. Mental disorders present not only an immense psychological, social and economic burden to society but also increase the risk of physical illnesses (World Health Organization, 2001, 2004a, 2019b).

1.1. Mental health problems among adolescents globally and in Vietnam

1.1.1. Globally

There is a substantial body of literature worldwide about mental health disorders among children and adolescents, with an increasing concern about the high rate of psychiatric disorders in young people (Bor et al., 2014). The prevalence rates of psychiatric disorders ranged from 12% to 29% among children and adolescents visiting primary care facilities in various countries (World Health Organization, 2005, 2019b). It is estimated that one fifth of teenagers under the age of 18 years suffer from developmental, emotional or behavioral problems, one in eight has a mental disorder, and among disadvantaged children the rate can be as high as one in five (World Health Organization, 2001, 2004a, 2019b).

Among the many types of mental health disorders, the most common among children and adolescents around the world are anxiety disorder, ADHD and depression (Ghandour et al., 2019; Kieling et al., 2011; Lu, 2019). Anxiety disorders are the most commonly occurring childhood psychiatric disorders, with a lifetime prevalence of 20% in children and adolescents (Naqvi, 2004). Next, the prevalence of ADHD is also high in youths although the
Co-morbidity of mental health disorders has also been reported in children and adolescents, as is well known for physical disorders (Jensen & Steinhausen, 2015; Plana-Ripoll et al., 2019). Physical and mental disorders can also occur together (Cooper et al., 2015). For example, Ryan and Redding (2004) and Davis (2008) reported that depression occurs in youths with ADHD at a significantly higher rate than in youths without ADHD, as did Wolraich et al. (Wolraich et al., 2005). In a large Danish sample of ADHD patients, more than half had at least one additional disorder and just over a quarter had two or more (Jensen & Steinhausen, 2015). The rate of major depressive disorders (MDD) in youths with ADHD was 5.5 times higher than in those without ADHD, at rates ranging from 12% - 50% (Daviss, 2008; Ryan & Redding, 2004). These reviews also showed that youths with co-occurrence of ADHD and depression, ADHD and anxiety, or depression and anxiety had a more severe course of psychopathology and a higher risk of long-term impairment and suicide than did youths with one of the disorders alone. Mental disorders are also a leading cause of risk behaviors for other health problems, for example, abuse of alcohol, drugs or tobacco, or lead to self-injury or suicide (Naqi, 2004; World Health Organization, 2019b). All of these issues arise in many countries, and Vietnam is no exception.

1.1.2. In Vietnam

Vietnam has been changing rapidly during the past 30 years; economic development and a policy of economic liberalization have stimulated both economic growth and social change (Nguyen, 2011). A side effect of these changes is a transition in disease patterns. For large segments of the population, the main diseases are no longer the diseases of poverty, such as malaria and tuberculosis, but increasingly diseases that are seen in wealthier societies, especially cancer and chronic conditions such as hypertension, as well as mental health problems (Giang & Duong, 2007; Hinh & Minh, 2013; Lee et al., 2015; Luu, 2008). However, the health problems related to a more prosperous lifestyle are not equally distributed across the country; there are increasing gaps between rich and poor, and between urban and rural areas (Giang & Duong, 2007; Lee et al., 2015; Luu, 2008). Awareness of the importance of mental health problems such as stress, anxiety,
depression and suicide is growing in Vietnam and they have received more attention in research than in the past (Do et al., 2019; Giang & Duong, 2007; Lee et al., 2015; Murray et al., 2015; Nguyen Thai & Nguyen, 2018; WHO-AIMS, 2006). Harpham and Tran (2007) reported that 20% of young Vietnamese people experienced mental health problems. As many as 17.6% of secondary school pupils in the north (Ambrosini, 2000) and 34.0% of first year university students in Can Tho City in the south reported having had feelings of sadness and hopelessness every day for two weeks in the year just past (Tran, 2007). In addition, four studies reported a high rate (10%) of students who had, during the past year, considered attempting suicide (Huynh, 2009; Nguyen, 2009; Nguyen, 2006; Tran, 2007). Another study of 1226 secondary school students conducted in Ho Chi Minh City indicated that the percentages of students who had, during the past year, seriously considered suicide, planned to commit suicide or actually attempted suicide were 6.3%, 4.6%, and 5.8%, respectively (Thai, 2010). In the same group, the prevalences of depression, anxiety and psychological distress were 26.3%, 16.2%, and 36%, respectively. The main factors related to these mental health problems were emotional and physical abuse by parents or other adults in the household, or by teachers or other staff at school (Le et al., 2016; Nguyen et al., 2010; Tran, Dunne, et al., 2015). Attitudes and beliefs on mental health are affected by a combination of little knowledge and a mix of traditional and modern views (van der Ham et al., 2011). Stigma related to mental health is widespread in Vietnam (Do et al., 2014; Vuong et al., 2011). Mental illness is seen as a disgrace, bringing stigma to the whole family; the family will be viewed as bad and as one that has not followed a virtuous path (Nguyen, 2012). Respondents stated that “Whenever people think about mental illness, they will certainly think about madness and strange behavior.” (Hong Minh, 2008; Vuong et al., 2011).

Alcohol abuse among university students in Vietnam did lead to harmful behaviors (Diep et al., 2013), while drug use was also significantly associated with higher rates of depressive symptoms and poor family relations (Li et al., 2013). Although these two studies revealed that risk factors in Vietnam may be similar to those in other countries, there is as yet relatively little information about mental health issues among adolescents in Vietnam, very little organized health care for this age group, and scant understanding of the health problems they face in a rapidly changing society. This thesis aims to contribute to the body of evidence in Vietnam on adolescent mental health issues, which may lead to better policies and practices for the young people.
1.2. Effects of Mental Health Problems among Adolescents

Children and adolescents with good mental health are able to achieve and maintain optimal psychological and social functioning and well-being, which is crucial for their active social and economic participation both as youth and later as adults (World Health Organization, 2019b). However, a number of mental health issues can arise during adolescence, the most common of which are anxiety, depression, and ADHD (Bernaras et al., 2019; Canals et al., 2019; Danielson et al., 2018; Ghandour et al., 2019; Kieling et al., 2011; Lu, 2019). These problems can negatively affect growth, development, school performance, and peer and family relationships and may lead to suicide. When young people suffer mental health problems, not only they are affected but also their families and caregivers and society as a whole. As an integral component of health, mental health and psychological well-being make up a valuable part of an individual’s capacity to lead a fulfilling life, including the ability to study, work or pursue leisure interests, and to make day-to-day personal or household decisions about educational, employment, housing or other social choices. Disturbances to an individual’s mental well-being adversely compromise these personal and household capacity and possibilities, often only in small, transient ways, but sometimes in a more fundamental and enduring manner (Chisholm, 2006). Mental health problems first experienced in adolescence may also have consequences for mental health in the adult years (Johnson et al., 2018).

Whether short-term or long-term, the potential consequences of mental ill-health at the household level are numerous, including disturbed mood, thought or functioning among affected individuals or their caregivers, and lost earnings or savings as a result of impaired work ability or health care expenditures. Around the world, it is estimated that at least one in four families has at least one member with a behavioral problem or mental health disorder. The family not only provides physical and emotional support, but also bears the negative impact of stigma and discrimination (World Health Organization, 2019b). If numbers of people with mental ill-health increase, communities and societies come under pressure; health and social services are needed to cope with the problems, which are usually publicly funded, thus competing for and consuming resources that are needed for other health and social issues too (Chisholm, 2006). One of the main consequences of severe mental health problems among young people is the potential loss of their contributions to society as they grow into adulthood. Next we will review how the health system and the society make efforts to reduce, avoid and manage mental health problems among adolescents in Vietnam.
1.3. Management of Mental Health Disorders for Adolescents in Vietnam

1.3.1. Systemic issues - Existing policies for adolescents in Vietnam

Vietnam is still in an early stage of addressing mental health issues, and only in relatively recent years has special attention been paid to adolescents as a population group with its own characteristic health care needs. Therefore, mental health care for adolescents has so far received little attention. In 1999, Vietnam established a national health target program concerning mental health, but it focused only on schizophrenia and depression, and included epilepsy which is usually considered a neurological not a psychiatric condition. This program was called the Community-based Mental Health Program (Vuong & Truong, 2009). It had no provision for mental health diagnosis or care for children or adolescents (WHO-AIMS, 2006).

Vietnam considers protection and care of children the responsibility of the state, the entire society and the family. The Vietnamese Constitution and laws have provisions on the protection of the rights of the child, including the 1992 Constitution, the Law on Protection, Care and Education of Children, and others. The tasks of protection, care and education of children are assigned to the Ministry of Labor, Invalids and Social Affairs (MOLISA), specifically to the Administration of Protection and Care of Children. Planned activities are implemented by a network from central to local level. Each province has a Committee for Protection and Care of Children, then district and commune levels have tasks assigned within the social service, and at village level there should be a social worker. MOLISA collaborates with the health sector (Ministry of Health), education sector (Ministry of Education and Training), and the cultural sector (Ministry of Culture and Information) (Vuong & Truong, 2009; WHO-AIMS, 2006). The Vietnamese Government has made efforts to develop a policy framework to improve general school health services, such as Directive No. 23/2006/CT-TTg aiming to have well-equipped and professionally qualified health officers in schools (Prime Minister of Vietnam, 2006), and Decision No. 401/2009/QD-TTg, which approved the program ‘Preventing and combatting diseases in educational establishments belonging to the national education system’ (Prime Minister of Vietnam, 2009). However, these policies focused on issues such as first aid for injured students and prevention of outbreaks of infectious diseases in schools. Health care related to psychological disorders has not received adequate consideration (Communist Party of Vietnam, 2017).
Since 1999, Vietnam has had a Plan of Action on protecting children in especially difficult situations, which comprises projects to prevent and address the abuse of street children, to prevent offences violating the honor or dignity of children, including sexual abuse, and to prevent drug abuse among children (Vuong & Truong, 2009). The provision of mental health services is the responsibility of a number of ministries, including the Ministry of Health (MOH), the Ministry of Labor, Invalids and Social Affairs (MOLISA), and the Ministry of Education and Training (MOET) (Overseas Development Institute and UNICEF, 2018). The MOH currently plays the most prominent role in delivering mental health services and, as stipulated in Decree No. 36/2012 /ND-CP, is responsible for the management and operation of all of the following: preventive medicine, medical examination and treatment, rehabilitation, medical examiners, forensics, forensic psychiatry, traditional medicine, reproductive health, medical equipment, pharmacy, cosmetics, food safety, health insurance, and family planning (UNICEF & MOLISA, 2015). However, mental healthcare for children and adolescents is not yet developed, and the current role of child psychiatry in Vietnam is very limited, with few specialized practitioners. Treatment is reserved for the most severely afflicted, and for mental retardation and severe behavioral problems. Specialized care is available in only a few major urban centers. In rural areas, treatment is provided by allied health personal, paramedical professionals and community organizations with limited training and expertise (McKelvey et al., 1997; Vuong & Truong, 2009; WHO-AIMS, 2006). Adequate training in the field of mental health is lacking for all the types of health professionals who provide care within the public system, reflecting its low priority within healthcare overall (WHO-AIMS, 2006). There is a need for better policies, but to formulate them requires more concrete information about the current situation and potential solutions, to be developed on a base of evidence generated by relevant research. In this thesis we focus particularly on the mental health of school-going adolescents, and we need to consider how schools deal with such problems.

1.3.2. Contextual issues - Mental health care programs in schools

School-based programs or services can contribute greatly to a school’s ability to ensure a safe and healthy learning environment for all students, address classroom behavior issues and discipline, promote academic success, prevent and respond to crisis, support students’ social-emotional needs, identify and respond to serious mental health problems, and support and partner with at-risk families (Cleveland, 2008; Morrison & Kirby, 2010). Ideally, school-based services dovetail with community-based services so that children
and youth receive the support they need in a seamless, coordinated, comprehensive system of care (Morrison & Kirby, 2010).

School programs aimed at preventing or reducing mental health problems require active participation by the school nurse, (or equivalent health staff), who must be prepared for that role (Rosvall & Nilsson, 2016). Despite growing concerns about the mental health of school students, both financial and human resources to address mental health issues are limited in Vietnam (Niemi et al., 2010; Vuong et al., 2011). While the school structure as a whole is responsible to support students, a large part of the immediate burden falls upon the health officers, who have daily contact with the students in most school systems (Daya & Karthikeyan, 2018; Garmy et al., 2015; Paschall & Bersamin, 2018; Werner-Seidler et al., 2017). Typically, school nurses are trained to identify basic health conditions and illnesses and to gauge their severity, and either provide basic treatment or, if necessary, refer the students to specialized health services according to their needs. At present, mental health problems appear to be on the rise among students around the world, from stress and anxiety to depression and from self-harm to suicide (Daya & Karthikeyan, 2018; Kumar & Akoijam, 2017; World Health Organization, 2012, 2018). School nurses often do not feel well equipped to provide the support that students with mental health problems may need (Greytak et al., 2019; Rosvall & Nilsson, 2016). In Vietnam, school nurses often do not have a nursing background, and their title is ‘school health officer’. Government regulations require school health officers to have at least a two-year or three-year college degree, but they do not need a university degree in medicine or nursing (Ministry of Health and Ministry of Education and Training, 2016). There is no special training program for school health officers. Most are general assistant physicians, with a three-year college diploma. Their work mainly involves providing first aid in case of minor injuries and taking measures to prevent outbreaks of infectious diseases. The health officer routinely advises the school’s Administration Board and carries out health checks such as height, weight, blood pressure, heart rate, and eyesight for students at the beginning of the school year. They also are tasked with observing and counseling students and their parents on the general health status including the mental health of students during the school year. However, mental health care is not yet included in the detailed list of healthcare communication and campaigns to be implemented in schools (Ministry of Health and Ministry of Education and Training, 2016). Mental health is mentioned in the Joint Circular 13/2016/TTLT-BYT-BGDDT on Regulations on Healthcare Activities in Schools issued on May 12, 2016, by the Ministry of Health and Ministry of Education and Training. It states that school health officers are required to
take part in workshops, trainings, higher education and professional development, but there is no mention of how to assist or support school health officers to participate in such trainings nor any detailed annual plan on such continuous professional development opportunities. There is clearly a gap in the awareness of the role that school health officers could play and their capacity to fulfill that role, in the mental health care of students at school.

We have looked at the existing situation, which will be investigated in more detail in this thesis, and at how the health and school systems are equipped to deal with mental health issues among young people in school. There are, however, issues that were emerging during the time that the research described in this thesis was being done, that may also play a role in the mental health of adolescents; these are described in the following section.

1.4. Emerging issues - Mental Health and the Internet

The Internet provides benefits, particularly in terms of accessibility and sustainability, and as a flexible tool that is becoming more and more popular in everyday life (Mooock, 2014). Studies have suggested a role for the Internet in the combination of positive psychology with health promotion and potentially, reduction of disorder symptoms (Mitchell et al., 2010) and for cognitive development of young people using such resources. However, several previous studies found an association between low psychological well-being and addiction to the Internet (Bahrainian & Khazaei, 2014; Casale et al., 2015; Kormas et al., 2011; Masih & Rajkumar, 2019). A recent review found that more than 10% of Chinese adolescents were dealing with Internet gaming addiction; the main correlates were parental psychological control, physical/verbal abuse by parents, verbal abuse by teachers, and bullying (Wang et al., 2020). Recent studies on gaming and internet addiction in Vietnam revealed a prevalence of more than 20%, and there were significant associations with male gender, problems in self-care, high perceived stress scores as well as anxiety and depression (Tran, Huong, et al., 2017; Tran, Mai, et al., 2017). A report by UNICEF in 2016 also confirmed that addiction to the Internet is considered a common mental health problem among youth in different provinces in Vietnam (UNICEF, 2016).

In Vietnam, the Internet has seen rapid development in the past decades, even compared to other countries in the region. Approximately 50 million Vietnamese, or half the population, were connected to the Internet in 2017, and Vietnam’s penetration rate (54%) was higher than the world average (46.5%) (EU-Vietnam Business Network, 2018). Two thirds of the Internet
users accessed it every day, spending about 2 hours, 20 minutes there on weekdays, less on weekends. Popular places to access the Internet are at home (78%), work (31%) and in an Internet shop or cafes (25%) (Cimigo, 2011).

In recent years it has become commonplace for individuals to seek health information on the Internet. Several websites on mental health in different countries, such as KidsHealth.org, youthbeyondblue.com, and tamlydoisong.wordpress.com, appear to play a significant role in improving understanding of mental health and reducing symptoms of depression (Boydell et al., 2014; Duplaga & Dzida, 2013; Moock, 2014). Most adolescents in urban areas in high-income countries have access to and make use of online information on mental health, especially for disorders that are regarded as behavioral problems. That young people tend to turn to the Internet suggests that they are willing to seek help, and they might be prepared to cooperate or at least share with others having similar mental health problems and contribute to forming peer support networks (Boydell et al., 2014). With the spread of the Internet, it has been recognized that it can contribute to increasing the accessibility of health care (Moock, 2014). There are, however, few reports on combining the Internet with positive psychology for health promotion and reduction of mental health symptoms (Mitchell et al., 2010). In this thesis, we also explore the potential usefulness of providing information online about mental health to secondary school students.

1.5. Motivation for this Study

To date, mental health problems among urban and rural Vietnamese communities have been very little explored. However, awareness of mental health problems in this region is increasing. Recent findings described above showed that young people’s mental health problems should be a major concern for health authorities, schools, communities, and families in Vietnam, both in the north (Nguyen, 2006; Tran, 2007) and in the south (Nguyen, 2009). Adverse childhood experience is known to be associated with poor health (mental and physical), and with risk behaviors (Nguyen, 2009; Nguyen, 2006; Tran, Dunne, et al., 2015). These findings are consistent with international reports (Allen, 2008; Arata et al., 2007; Choo et al., 2009; Schilling et al., 2007).

Although these studies provide evidence on the risks and protective factors for mental health problems among the young people, they also have limitations. For example, the studies by Nguyen (2006) and Nguyen (2009) focused on child maltreatment related to mental health problems and risk
behaviors, and looked at the levels of individuals and relationships, but did not take the community and society levels into account. The community level, such as neighborhoods, workplaces and schools, and the society level, like social norms, social problems, economic changes, and the influence of advanced technology usage, are linked directly and indirectly to mental health status and behaviors (Butchart et al., 2006; World Health Organization, 2019b). Data is lacking on the risk factors for mental health problems among lower and upper secondary school students in the Mekong Delta. One study (Nguyen, 2009) about child maltreatment and mental health was conducted among first-year students in Can Tho University of Medicine and Pharmacy. This population is considered to have many advantages compared to other populations in the society, but it did show that child maltreatment was related to later mental health issues and risk behaviors. To design approaches to prevent and to manage mental health issues among adolescents, it would be necessary first to determine the extent and nature of the problems and then to construct a list of attributable risk factors related to mental health problems among these students in the Mekong Delta, so that interventions could be well-targeted and appropriate.

As we have seen, mental health care in Vietnam has focused mainly on treatment of serious cases in hospital, and mainly on adults. Primary mental health care for problems occurring in childhood and adolescence does not exist, although the primary health care system in Vietnam is quite strong in other ways (Tran et al., 2005; WHO-AIMS, 2006). There is also a lack of legislation for mental health care in Vietnam at the community level for adults and young people. One reason for the gaps in the policies and programs is the lack of evidence to support policy makers to make appropriate legislation and policy to prevent and treat mental health disorders. A first step would be to obtain knowledge on the prevalence of mental health problems in the community of interest. After that, the identification of positive and negative factors affecting mental health is important to inform early interventions that can reduce the burden of these disorders for the individual, the family and the society. Early intervention and prevention offer the hope of avoiding later adult mental health problems and improving personal wellbeing and productivity in the population (Kieling et al., 2011). Therefore, the extent of mental health problems in the study population and the major risk factors associated with them need to be explored to develop and implement interventions to manage and prevent mental health disorders among Vietnamese adolescents.
In response to these problems and to the growing need to find ways to improve the mental health of Vietnamese adolescents, this study aims first to identify the main problems experienced by secondary school students in Can Tho City according to both students themselves and other stakeholders, then to determine the factors influencing those problems. Two potential approaches to address these problems will also be investigated. Ultimately, this study hopes to contribute to developing sustainable, youth-centered, and contextually appropriate interventions that will prevent or at least make more manageable the mental health disorders occurring among students. In this light, we formulated the central question of this research:

*How can the complex field of mental health problems among adolescents in Vietnam be understood and addressed with sustainable and accessible developments at the secondary school-level?*

In the following chapter, I elaborate on the frameworks that form the backbone of this thesis, and outline its main objectives.
Chapter 2
Theoretical Framework

In this chapter, the concepts and theoretical frameworks used to conceptualize the studies in this thesis are presented. First, the definitions of mental health problems common in adolescence are described, then the risk factors and the relevant approaches to adolescent mental health are discussed. Following this review, possible care and treatment models are explored, with special emphasis on the concepts of family and community support. The chapter ends with a presentation of the research objectives.

2.1. Adolescence and Mental Health

Adolescence is usually classified as the phase of life stretching between childhood and adulthood, between 10 and 19 years of age. It is considered a unique and formative stage in human development. Promoting mental health in adolescents has always been held to benefit society as a whole and is considered important for ensuring a healthy and productive future adult population (World Health Organization, 2008, 2013, 2016).

Adolescence is characterized by a sense of increasing independence, emerging adult responsibilities, and the development of decision-making abilities. It can be described as an age of transitions and transformations, as the individual’s physiological, psychological, behavioural, and social relationship characteristics undergo both quantitative and qualitative changes. Such rapid changes in both the body and the brain make the young people vulnerable to both risks and opportunities for growth in cognitive control (Wood et al., 2018).

Although most young people develop into healthy adults, the period of adolescence brings significant vulnerability to mental health problems. Many mental illnesses – including depression, anxiety, eating disorders, substance abuse disorders and psychosis – first appear before the age of 24 years. Many mental illnesses that start in adolescence persist throughout adult life, creating long term morbidity and a substantial burden on society. Depression alone is estimated to become the world’s leading cause of disability-adjusted life years by 2030 (Blakemore, 2019).
However, it is understood that good mental health in childhood and adolescence is a condition for optimal psychological development, good social relationships, successful learning, and increasing ability for self-care, good physical health and effective economic participation as adults (World Health Organization, 2005, 2019b). During adolescence, mental health disorders may make their first appearance, and the type and severity will influence the prospects for the young people, as described in the following section.

2.1.1. Common mental health conditions manifested during adolescence

Worldwide prevalence rates of child and adolescent mental disorders are 10 to 20%, with similar types of disorders, such as anxiety disorder, behavior disorders and mood disorders seen across a wide range of cultures (Bor et al., 2014; Clausen & Skokauskas, 2018). Half of these conditions start by the age of 14 and three-quarters before the age of 25 (Chaulagain et al., 2019). The most common mental health related issues and disorders seen in children and adolescents are anxiety, depression, suicide and eating disorder (Das et al., 2016). Internet gaming disorder and Internet addictions are newer additions to that list (Masih & Rajkumar, 2019; Wartberg et al., 2017). Substance abuse among young people is an increasing global health priority (Degenhardt et al., 2016).

2.1.1.1. Anxiety disorders

These are highly prevalent among children and adolescents and can be associated with serious morbidity. Lifetime prevalence of pediatric anxiety disorders is about 15% (Johnson, 2017). Anxiety disorder can be classified in adolescents into generalized anxiety disorders, panic disorders, social anxiety disorders, phobias, separation anxiety or attachment disorders. According to the references for disease definition, the Diagnostic and Statistical Manual of Mental Disorders, 5th edition (DSM-5) and the 10th Revision of the International Statistical Classification of Diseases (ICD-10), the various anxiety disorders are explained as follows: generalized anxiety disorder is described as excessive, persistent and difficult-to-control worry about specific situations in one or many areas of life such as school, peer relationships, and home life. In panic disorders, children may have sudden anxiety attacks, with physical manifestations of anxiety (such as palpitations, sweating, tremor, dry mouth). Panic attacks can arise unexpectedly, without warning, and those affected start to avoid situations in which they fear that panic attacks might occur. Social anxieties make adolescents afraid of situations in which they are the center of attention and
may be criticized, like public speaking, visits to authorities, or associating with persons of the opposite sex. They tend to be afraid of appearing clumsy, of embarrassing themselves, or being judged negatively (Goldstein & DeVries, 2017).

2.1.1.2. Depressive disorders

The World Health Organization’s global estimates show an increasing prevalence of depressive disorders in children and adolescents, 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. Depression can be long-lasting or recurrent, and can substantially impair an adolescent’s ability to function at school or to cope with daily life. At its most severe, depression can lead to suicide (World Health Organization, 2017). Common symptoms and signs of depression in children and adolescents are similar to those of adults (Bernaras et al., 2019), while younger children may present with refusal to go to school, clinginess, irritability, worry, aches, and pains, or reduced appetite and being underweight. In teenagers, symptoms may include feelings of worthlessness, sadness, irritability, and anger, being very sensitive and feeling misunderstood, leading to self-harm, poor performance at school, avoidance of social interactions, loss of interest, using drugs or alcohol, and eating or sleeping too much (Carvalho & McIntyre, 2017).

For both types of disorders, whether or not a young person will be affected by them in a way that brings them to the notice of teachers, family members or health care staff depends on several factors. As noted earlier, in this thesis we focus only on environmental factors, as the biological and genetic influences are outside the scope of this work.

2.1.2. Risk factors for mental health problems among adolescents

When we look into mental health problems among adolescents, a main concern is to identify the predominant risk factors, which may present opportunities for interventions to reduce or prevent the problem. The risk factors for mental health disorders of adolescents may be divided into two main categories: biological factors and environmental factors. In this thesis, we have not investigated the role of biological factors in the mental health problems of the school-going adolescents, who were the focus of the studies. We wanted to focus on exploring the environmental factors that might be linked to potential interventions in the field of public health.
There are many environmental factors with potential relevance to mental health and illness. Those primarily affecting school-going adolescents are considered mainly to be adverse childhood experiences, the current family environment and characteristics, and the school climate and environment.

2.1.2.1. Adverse childhood experiences

Adverse childhood experiences (ACE) can contribute to vulnerability of adolescents to mental health problems. These may encompass a wide range of experiences, such as physical, mental, or sexual abuse, neglect, exposure to domestic violence, having a household member who was mentally ill, incarceration of a household member, parental separation or divorce, household alcohol abuse, or household drug use (Finkelhor, 2018; Hughes et al., 2017). In a study aimed to investigate the protective effect of good family functioning, social capital, and civic engagement on mental health in adolescents with adverse childhood experiences (ACEs) and current mental health disorders, a significant positive relationship was found between adolescents' ACEs and current mental disorders. Low parental education levels significantly increased adolescents' likelihood of having ACEs (Lu & Xiao, 2019). The effect of adverse childhood experiences was also seen on non-suicidal self-injury among children and adolescents (Baiden et al., 2017). ACEs were also associated with chronic school absenteeism in school-age children (Stempel et al., 2017). Three quarters of medical university students surveyed in eight provinces in Vietnam reported at least one exposure to ACEs, and that these experiences were related to poor mental health, suicidal ideation, and low physical health-related quality of life (Tran, Dunne, et al., 2015). These experiences take place in the context of the family environment, as described in the next section.

2.1.2.2. Family characteristics and environment

Related to the issue of ACE is the environment of the family in general. Parenting behaviors (presence or absence of warmth, hostility, monitoring, and involvement in child’s education) and other characteristics of the family environment (quality of parental relationship, positive family values, maternal or paternal depression, economic conditions of the family, and presence of father) have been found to have significant effects on children’s self-esteem. Multiple features of the family environment shape the development of self-esteem during late childhood and adolescence (Krauss et al., 2020). Family support is known to be an important intervention target to decrease suicide risk among anxious youth. Anxiety disorders and symptoms in children are positively associated with suicidal ideation; this
relationship is stronger among youth who experience lower levels of family support. Family conflict is also positively associated with suicidal ideation. Integrating positive parenting techniques (such as paying attention to positive behaviors, providing praise, emotion coaching) and effective parent-child communication are known to promote mental health in children (Machell et al., 2016). Positive parenting determines teenagers’ self-efficacy and mental health and also has a positive effect in mental health in later years (Tabak & Zawadzka, 2017). On the other hand, harsh discipline and parenting are reported to increase depression, anxiety, physical aggression, social aggression, and suicidal ideation among adolescent boys (Kingsbury et al., 2020). Parental mental health is relevant to the recently appearing Internet Gaming Disorder (IGD) in adolescents; studies show that both adolescent and parental mental health should be considered in prevention and intervention programs for IGD in adolescence (Wartberg et al., 2017). Parenting and family environment also have an effect on adolescent substance abuse and smoking habits (Sajjadi et al., 2018). Youth who felt more connected to their parents reported lower levels of depressive symptoms, suicidal ideation, non-suicidal self-injury, and conduct problems, but also higher self-esteem and more adaptive use of free time (Foster et al., 2017). Adolescents spend a great deal of time away from their families, primarily at school, so not only the family but also the school environment should be considered, as in the next section.

2.1.2.3. School performance and environment

Promoting adolescent mental health is a global priority, and schools have an important role to play. There are important associations between the school climate and adolescents’ mental health. The school climate includes social connectedness, school safety, peer connectedness, and the academic environment (Aldridge & McChesney, 2018). Youth who felt more connected to their school reported lower levels of depressive symptoms, suicidal ideation, social anxiety, and sexual activity, as well as higher levels of self-esteem and more adaptive use of free time (Foster et al., 2017). Poor academic performance is directly connected to risk of mental health problems in children depending on how they internalize such failures and poor performances (Deighton et al., 2018). Bullying in schools, which has been described increasingly in recent years, negatively affects self-esteem, academic performance and also increased aggression in adolescents (Evans et al., 2018). The risk factors that are found in and around the schools play a role, but other influences arise from the behavior of the students themselves, as described below.
2.1.2.4. Health risk behaviors

There is evidence that children’s and adolescents’ risk behaviors have a relationship with psychological disorders. Findings from a systematic review of longitudinal studies among adolescents suggested that an association between smoking and depression, in which each influenced the other. Some studies suggested that depression predicts smoking, while others suggested that smoking predicts depression. This needs further studies with longer follow-up time (Chaiton et al., 2009). Other types of risk behaviors that can influence mental health but also be influenced by mental health include using alcohol (Diep et al., 2013) or drugs (Heradstveit et al., 2019).

Figure 2.1. Conceptual framework for adolescent mental health
2.2. Care and Treatment Models

There is a need to identify effective and safe ways to prevent and treat mental health disorders in children and adolescents. According to WHO (2019), four main areas need to be combined to manage mental health disorders: medical treatment, rehabilitation, family, and community (World Health Organization, 2019b).

![Needs of people with mental health](image)

**Figure 2.2. Needs of people with mental health**
*World Health Organization, 2001, 2019b*

2.2.1. Medical - Pharmacological Support

Medical needs of people with mental health issues include early recognition of the condition, providing information about illness and treatment, giving medical care and psychological support, and possibly hospitalization (World Health Organization, 2001, 2019b). Increasing awareness of families, caregivers and service providers, and early identification, assessment of mental health, and intervention for emotional and behavioral problems of adolescence can help to reduce, delay or even prevent more serious problems (Dunne et al., 2017). Patients with serious problems need medical care and psychological support, possibly combined with other sources of
support, to improve their mental health status. Psychological support is considered in the next section.

2.2.2. Psychological support

Psychological support can include psychotherapy, behavioral therapy or cognitive behavioral therapy, which can have significant effects in resolving mental disorders in young people. Cognitive behavioral therapy appears to be an effective treatment for childhood and adolescent anxiety disorders (Hill et al., 2016).

All of these supports also require active participation of the family of the young person, which is considered in the following section.

2.2.3. Family support

Family support involves ensuring that the family has the necessary skills for care, family cohesion, networking with other families, access to crisis support, financial support, and respite care, all part of the first line of prevention and identification of mental health problems for children (World Health Organization, 2001, 2019b).

Community support requires and encourages avoidance of stigma and discrimination, full social participation, and ensuring affected people are able to enjoy their human rights (World Health Organization, 2001, 2019b). As described earlier, the adolescents spend a great deal of time at school, and support from that arena will also be important, as described below.

2.2.4. School support

In a school-based setting, recommended preventive activities include 1) organizational changes to create a safe, secure and positive psychological environment; 2) teaching on mental health and life-skills for students; and 3) training staff in detection and basic management of suicide risk as a priority as well as other signs of mental health issues (World Health Organization, 2018). In Vietnam, a school health officer is positioned to advise the Administration Board of the school and to carry out standard physical health checks. They also are tasked with observing and counseling students and their parents on the general health status, which should include mental health, during the school year. However, mental health care is not yet included in the detailed list of healthcare communication and campaigns to
be implemented in schools (Ministry of Health and Ministry of Education and Training, 2016).

As noted in systematic reviews, there is a need for much more information about school health, especially about mental health, in low- and middle-income countries (Arenson et al., 2019; Kieling et al., 2011; Mina Fazel, 2014). This is the case in Vietnam, where the mental health of adolescents falls within the remit of the Ministry of Health, the Ministry of Labor, Invalids and Social Affairs and the Ministry of Education and Training, but there are limitations in the coordination by the Ministry of Health (Overseas Development Institute and UNICEF, 2018). Adolescent mental health is a complex but currently highly relevant issue, which needs to be addressed from multiple perspectives.

This study focuses on the mental health of secondary school students in Can Tho City, with the aim to examine the nature and numbers of mental health disorders reported by Vietnamese secondary school students from grade 10 to grade 12 (approximately 15 to 18 years of age) in suburban and urban settings in Can Tho City and to determine the extent to which risk factors impact on their self-reported mental health. The aim was also to identify approaches that may be effective in prevention or alleviating mental health problems, from the point of view of different stakeholders. The results can help to support better informed and more comprehensive and effective development policies and programs aimed at the improvement of mental health and quality of life for Vietnamese adolescents.

**Research Objectives**

Based on the information presented above, the objectives of the research are:

**General objective:** To contribute information on how the complex field of mental health problems among adolescents in Vietnam can be understood and addressed with sustainable and accessible developments at the secondary school level.

**Specific objectives:**

1. to explore the perspectives of key stakeholders (students, teachers, parents, experts) about the problems and causes of adolescent mental health problems and possible approaches to mitigate them, in Can Tho City (CTC), Vietnam;
2. to identify common mental health problems and their prevalence among secondary school students in CTC, Vietnam;

3. to identify risk factors for mental health problems among secondary school students;

4. to identify and assess possible approaches to mitigate mental health problems, to improve quality of life of Vietnamese secondary school students.
Chapter 3
Research Methods

Chapter 1 presented general information on mental health problems among adolescents, both across the world and in Vietnam. That chapter focused on factors known to influence mental health problems and their consequences, and articulated an urgent need to investigate mental health problems among adolescents in Can Tho City, Vietnam. Chapter 2 provided detailed information on the theoretical framework and objectives of this study. This Chapter presents the main research questions, the research approach, setting, design, and methods; it concludes with an exploration of validity and ethical considerations.

3.1. Research questions

The main research question for this thesis is:

*How can the complex field of mental health problems among adolescents in Vietnam be understood and addressed with sustainable and accessible developments at the school-level?*

Corresponding to this main question, and to the research objectives outlined in Chapter 2, four research sub-questions were formulated that informed the studies in this thesis. They are as follows:

1) **What are the perspectives of key stakeholders (students, teachers, parents, experts) about the problems and causes of adolescent mental health problems and possible approaches to mitigate them, in Can Tho City, Vietnam?**

2) **What are the prevalences of different types of mental health problems among Vietnamese secondary school students in Can Tho City, Vietnam?**

3) **What are the major risk factors associated with mental health problems among these students?**

4) **How could mental health problems be mitigated to improve quality of life of Vietnamese secondary school students?**
Table 3.1 below presents the research questions and a map of their corresponding chapters in the dissertation.

**Table 3.1. Research questions and corresponding dissertation chapters**

<table>
<thead>
<tr>
<th>Research sub-question</th>
<th>Chapter</th>
<th>4 (perspectives)</th>
<th>5 (depression)</th>
<th>6 (self-esteem)</th>
<th>7 (school health officers)</th>
<th>8 (website)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. What are the perspectives of key stakeholders (students, teachers, parents, experts) about the problems and causes of adolescent mental health problems and possible approaches to mitigate them, in Can Tho City, Vietnam?</td>
<td></td>
<td>X</td>
<td></td>
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</tr>
<tr>
<td>2. What is the prevalence of different types of mental health problems among Vietnamese secondary school students in Can Tho City, Vietnam?</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. What are the major risk factors associated with mental health problems among these students?</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. How to mitigate mental disorders in order to improve quality of life of Vietnamese students?</td>
<td></td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
<td>X</td>
</tr>
</tbody>
</table>
3.2. Research approach

To study the complex and ever-changing field of mental health among adolescents in Vietnam, this study employed a transdisciplinary approach and community based participatory research approach.

As part of the transdisciplinary approach, the first step was to meet and discuss with stakeholders from different sectors, with varying expertise and perceptions, including teachers, students, parents, and mental health experts. These groups jointly identified which areas of mental health and which problems were recognized and which should be addressed in the research. We then applied both quantitative and qualitative methods with the engagement of multiple stakeholders, including teachers, parents, students, health officers and mental health experts, in the different stages of research such as exploration, priority setting, planning based on bottom-up needs identification for intervention, and finally in the dissemination of the information gained. The planned approach is described in Figure 3.1 below.
Figure 3.1. Research approach
3.3. Research setting, population and selection

The study took place in Can Tho City (CTC), the capital of Can Tho province. It is the biggest city in the Mekong Delta region of Southern Vietnam, with a population of about 1.273 million (General Statistics Office of Vietnam, 2017b) living in both urban and peri-urban (rural) areas. CTC has over 95,734 lower and upper secondary school students (General Statistics Office of Vietnam, 2017a) attending about 100 schools in nine districts of the city, including both the rural and the urban areas (General Statistics Office of Vietnam, 2017b).

In the first, qualitative phase of the research, a purposive sample of experts from the Vrije Universiteit Amsterdam, Hanoi School of Public Health, Can Tho University of Medicine and Pharmacy, Can Tho Psychiatric Hospital, and other child health professionals, as well as students from commune and district levels, was recruited from March to May 2010. For the qualitative component of Chapter 4, an exploratory qualitative approach included six in-depth interviews conducted with professionals (researchers, psychiatrists, and secondary school teachers); 13 focus group discussions with teachers, parents, and pupils; and 10 individual in-depth interviews with pupils who did not take part in the FGDs. This study was conducted from September to October, 2010, in CTC.

For the quantitative components of Chapters 5 and 6, a cross-sectional study among 1,161 secondary school students was conducted from September to December, 2011. This allowed us to capture the experiences and ideas of a large sample of secondary school students at one time and allowed us to estimate the size of the problem with mental health among the students.

For the qualitative data in Chapter 7, an investigation using semi-structured interviews was conducted among a number of school health officers from November to December, 2015 in CTC.

For the quantitative component of Chapter 8, a cross-sectional study including 643 secondary school students was conducted in November 2016 in the same secondary schools in Can Tho City.

3.4. Study Design

To address the question about mental health problems among secondary school students in CTC, the activities can be divided into the phases described below, involving different instruments for data collection.
1. **Exploratory interviews with local experts:** This study aimed to explore how stakeholders perceive mental health problems of young people and the related risk factor, to gain insight into their opinions and experiences, and their recommendation on which aspects of mental health problems should be included in the research instruments. Two experts with majors in behavioral science and health education from a university of public health and two psychiatric doctors with knowledge and experience related to adolescent mental health problems and working in a psychiatric clinic participated in these interviews. Depression, anxiety and stress were reported to be the main mental health problems of young people. Game addiction, low concentration in education, attention deficit hyperactivity disorder, low self-esteem, and low self-efficacy were also mentioned. Related risk factors included difficulties in educational performance, family-related problems, school violence, academic pressure, and lack of social skills. Regarding the mental health of young people in CTC, depression, anxiety, low self-esteem and low self-efficacy were suggested as the main problems to be explored. For the research instruments, the experts recommended including the following aspects: i) school related items: school connectedness and studying environment, perspective and academic performance, school violence, mental health program at school, studying plan, teachers’ caring; ii) family related items: family caring, relationships; and iii) surrounding environment related items: physical activities (sports, leisure activities), soft skills (social integration, coping skills), and Internet use (including exposure to violence on the Internet). It was also noted that some mental health problems are affected by more than one factor so it is important to apply a problem tree to identify the main problem and causes. This information was used to guide the next steps in the collection of data, including identification of mental health problems to be studied and the guidelines for interviews and FGDs.

2. **FGDs with students, students’ parents and teachers:** 13 FGDs (4 with teachers, 4 with parents, and 5 with students), with a purposive sample of 8 to 12 participants each, were conducted in three secondary schools in CTC. Pupils aged between 15 and 18 years old attending grades 10 to 12 were invited by head teachers on a day that pupils had available time. The pupils were selected on the basis of the researcher’s request for wide representation with regard to gender and to a range from high to low school performance. Parents were invited by head teachers by letter or by telephone. The focus groups were conducted by two Vietnamese facilitators to take notes and to make
recordings. The aim was to explore their perceptions about the problems and causes of adolescent mental health problems and possible approaches to mitigate them, in Can Tho City, Vietnam.

3. *Exploratory interviews*: three individual exploratory interviews with three students from three different schools (as above). The purpose of this activity was to inform researchers about young people’s familiarity with the mental health problems, and risk factors for these problems; explore sensitive issues which might not appear in the FGD; obtain opinions and suggestions on the structure and words to use when asking about sensitive problems.

Following this step, the questionnaire for the quantitative research was formulated and piloted on one group of 10 students. After they had completed the questionnaire individually, they were invited to discuss in a group. The purposes of this activity were to obtain feedback from the students on the structure, content and wording of the study instruments to guide revisions, and to identify any suggestions for additions to the questionnaire.

4. *Semi-structured interviews*: These were carried out with the school health officers, using an interview guideline but allowing divergence from the questions and probing where it seemed to be helpful, to generate the data used for the paper in Chapter 7. These interviews were done after the data on the main issues experienced and reported by the students had been collected and analyzed, so that the school health officers could be asked about those issues in particular.

5. *Questionnaires*: The first structured questionnaire was formulated based on the research questions, the aims and objectives of the study, the information from the literature, and the results of the investigations described above. The anonymous self-report questionnaires were given to 1260 secondary school students in a classroom setting, to be completed after school without observation, to make the students more comfortable to share information, maximize confidentiality and minimize potential sharing and copying among students, as opposed to filling them in at class in the presence of teachers and researchers. Completed questionnaires were collected and checked for their completion and quality by the researcher. The sampling, stratified for schools and classes, was done according to standard calculations as described in Chapters 5 and 6. The quantitative data from this step was analyzed using SPSS 18.0, and
used to answer the questions identified above, as described in Chapters 5 and 6. The second questionnaire was provided to 643 students who had been introduced to the website providing information about mental health. They were asked to complete the questionnaire three weeks after being introduced to the website. The analysis and results are described in Chapter 8.

Table 3.2. Methods used in each chapter

<table>
<thead>
<tr>
<th>Chapter</th>
<th>Methods for data collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>4: perspectives of pupils, parents, teachers</td>
<td>Exploratory interviews, FGDs</td>
</tr>
<tr>
<td>5: occurrence of anxiety, depression, suicidal ideation</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>6: low self-esteem related to mental health issues</td>
<td>Cross-sectional survey</td>
</tr>
<tr>
<td>7: role of school health officers</td>
<td>Semi-structured interviews</td>
</tr>
<tr>
<td>8: role for Internet-based information</td>
<td>Cross-sectional survey</td>
</tr>
</tbody>
</table>

3.5. Validity

Exploratory interviews with two experts with major in behavior science and health education from a university of public health and two psychiatrists with knowledge and experience related to adolescent mental health problems and working in a psychiatric clinic were conducted to gain insight into which aspects of mental health problems should be included in the qualitative research instruments and design. In addition, the focus group discussion questions and guidelines were revised by a supervisor with more than 30 years’ experience of public health research in Vietnam and were pre-tested with first-year students of CTUMP before being applied in the field. Revisions to the guideline were made after the pilot testing to produce the final version applied in the schools.

The key tests used to measure potential issues with mental health were drawn from the international literature. For the quantitative components of Chapters 5 and 6, the Center for Epidemiology Studies Depression test was employed, which has a high internal consistency with Cronbach’s alpha coefficients ranging from 0.85 to 0.90 among general population samples (Radloff, 1977). This scale has been validated in Vietnam using confirmatory factor analysis (Nguyen et al., 2007). The Anxiety Scale also showed a high level of internal consistency (Cronbach’s alpha ranged from 0.76 to 0.81) and has also been validated for use among Vietnamese students (Nguyen et al., 2007). The Educational Stress Scale for Adolescents (ESSA) used to measure educational stress has been also validated to measure the educational stress of adolescents.
in Vietnam, with a high level of internal consistency, Cronbach’s alpha of 0.83 (Thai et al., 2012). Our international data collection tools had been translated into Vietnamese and validated in previous studies in Vietnam, so they would be as good as possible to obtain the information we needed (Nguyen et al., 2007).

Using different methods to gain information about the priority questions and key issues, and obtaining that information from a wide range of stakeholders increased the likelihood that the results were an accurate reflection of reality.

**3.6. Ethical considerations**

This study was approved by the Scientific and Training Committee of the Can Tho University of Medicine and Pharmacy. All participants and the parents of student respondents (as well as the students themselves) were informed about the study and given the option of participating. They were all informed that they could withdraw from the study at any time they wished, with no explanation and no consequences. Data were kept confidential; the records from surveys and interviews were numbered, with no names linked to the data. The students completed the questionnaires anonymously.

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Chapter 4
Perspectives of pupils, parents, and teachers on mental health problems among Vietnamese secondary school pupils

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Abstract

**Background:** Secondary school can be a stressful period for adolescents, having to cope with many life changes. Very little research has been conducted on the mental health status of secondary school pupils in South East Asian countries, such as Vietnam.

**Objectives:** The study aimed to explore perceptions of mental health status, risk factors for mental health problems and strategies to improve mental health among Vietnamese secondary school students.

**Methods:** Exploratory qualitative methods were used to address the main study question including: six in-depth interviews conducted with professionals (with two researchers, two psychiatrists, and two secondary school teachers) to learn about their experience of mental health problems among secondary school pupils; 13 focus group discussions (four with teachers, four with parents, and five with pupils); and 10 individual in-depth interviews with pupils who did not take part in the FGDs, to reflect on the collected data and to deepen the authors’ understanding. The data was analysed using the process of indexing to bring together all extracts of data.

**Results:** Our study confirms the need to pay attention to mental health of pupils in Vietnam. Depression, anxiety, stress, suicidal thoughts and suicide attempts were seen as major problems by all stakeholders. Mental health problems were mainly associated with academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed. The study found that pupils’ mental health demands interventions at many levels, including at the level of government (Ministry of Education and Training), schools, communities, families and pupils themselves.
Conclusion: Vietnamese secondary school pupils feel that their mental health status is poor, because of many risk factors in their learning and living environment. The need now is to investigate further to identify and apply strategies to improve students’ mental health.

Keywords: Mental health, depression, anxiety, stress, academic pressure, secondary school, pupil, youth, Vietnam

Background

Vietnam has changed rapidly over the past two decades; economic development and an open door policy of economic liberalization have stimulated both economic growth and social change (Nguyen, 2011). A side effect of these changes is a transition in disease patterns. For large segments of the population, the main diseases are no longer the diseases of poverty, but increasingly diseases that are seen in wealthier societies (Giang & Duong, 2007; Luu, 2008; Ministry of Health, 2007). However, the health problems related to a more prosperous lifestyle are not equally distributed across the country; there are increasing gaps between rich and poor, and between urban and rural areas (Luu, 2008; World Bank et al., 2001). There has been a rapidly growing public awareness of mental health problems, such as stress, anxiety, depression and suicide among adolescents (Giang & Duong, 2007; World Bank et al., 2001). Psychopathology and life stress may play major roles in suicidal behaviours, especially among rural adolescents. Some 17.6% of secondary school pupils in a study in the north and 34.0% of first year university students in another study in Cantho City in the south reported feelings of sadness and hopelessness every day for two weeks in the past 12 months (Ambrosini, 2000). Four studies reported a high rate (10%) of students who had considered attempting suicide in the past 12 months (Huynh, 2009; Nguyen, 2009; Nguyen, 2006; Tran, 2007). Prevalence rates of suicidal behaviour increased significantly with age, and female adolescents were more likely to report suicidal feelings than males. Other studies reported an association between smoking/substance abuse and emotional/behavioural problems among adolescents (Giannakopoulos et al., 2010). Those involved in physical fights and/or attacks had higher levels of alcohol problems and poor mental health (Murphy et al., 2010).

Although these studies revealed a high prevalence of poor mental health among Vietnamese adolescents, there is very little organized health care for this age group as yet and also very little understanding of the health
problems they are facing. Up to now, no studies have explored the perspectives of pupils, teachers and parents about mental health, or school-related factors contributing to mental health problems of Vietnamese youth. The aim of our study was to explore perceptions of mental health status, risk factors for mental health problems and strategies to improve mental health among Vietnamese secondary school students. The results can help to develop interventions that fit the needs of these pupils.

Methodology

Methodological Approach: Explorative qualitative approach.

Time and Study Site: This study was conducted from September to October, 2010, in Cantho City, a city with a population of 1.2 million (2010) in southern Vietnam (Central Population and Housing Census Steering Committee, 2010).

Participants and methods:

The main informants included teachers, pupils, parents, researchers, and psychiatrists. Data was collected by means of in-depth interviews and focus group discussions (FGDs). The data collection process followed three stages. Firstly, six in-depth interviews were conducted with professionals to learn about their experience of mental health problems among secondary school pupils. Interviewees comprised two researchers at the Hanoi School of Public Health; two psychiatrists; and two high school teachers in Cantho City. Interviews lasted 40-60 minutes and were recorded.

Secondly, 13 FGDs (4 with teachers, 4 with parents, and 5 with students), with a purposive sample of 8 to 12 participants for each FGD, were conducted in three secondary schools: 1) Ly Tu Trong (LTT), a specialized school which recruits pupils with an excellent scholastic record, 2) Chau Van Liem (CVL), the largest and oldest secondary school, located in the inner city, and 3) Tran Dai Nghia (TDN), a new school located in a suburban area. The majority of the TDN students come from suburban and rural areas, and they have lower study grades. For the FGDs, a structured group process was used, based on concept mapping (Trochim, 1989) which describes both concepts and integration of conceptual relationships (Kane & Trochim, 2007; Trochim, 1989). The focus groups were conducted by two Vietnamese facilitators to take notes and to make recordings, and lasted from 100-150 minutes.

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The purposive sampling aimed to compose groups representing the range of gender, age, study results and urban/rural characteristics. Head teachers invited teachers of grade 10 to 12 students to participate in each FGD, according to the researcher’s instructions on wide representation with regard to gender, age, and teaching experience. Of the 46 teachers invited, 36 participated; the others said they had other appointments in their out-of-class time.

Pupils aged between 15 and 18 years old attending grades 10 to 12 were invited by head teachers on a day that pupils did not have classes all day. The pupils were selected on the basis of the researcher’s request for wide representation with regard to gender and to a range from high to low school performance. In the LTT specialized school, the 12 students in one FGD included three from each of the four specializations: mathematics and physics, English, biology and social sciences, from grades 10, 11 and 12. In the two bigger schools, CVL and TDN, the classes are divided into two groups: one with higher scores and one with lower scores in grade 10 entrance examinations. Therefore, in these two schools we had two FGD, one with lower scoring and one with higher scoring students. In each FGD, students also were considered for invitation with regard to gender, among those in grades 10 to 12. All invited students were selected from the class lists; of 60 who were invited, 55 participated. We do not know the reasons for the five not to participate.

Parents were invited by head teachers by letter or by telephone because teachers had closer contract with parents and they would be more likely to respond than if the researchers invited them. In each FGD, parents were invited based on wide representation with regard to having children in grades 10 to 12, with low and high school performance, different parental backgrounds and living locations (urban and suburban areas), and gender. Out of 48 parents invited, 34 agreed to participate. We do not know whether the others could not make time or did not wish to join the discussions.

Finally, after the FGD, in-depth interviews were conducted outside the schools with ten pupils who did not take part in the FGD, to reflect on the collected data and to deepen the authors’ understanding. In each school, the researcher invited one student of each grade from 10 to 12 to join as they left school. Not all students had time, however, due to extra classes or appointments with their parents; then another student was invited, from the same grade. The interviewees were informed about the purposes of the study and their parents gave permission for them to join the interview; all the interviews were conducted in quiet coffee shops outside the schools.
Data Analysis: The process of indexing was applied to bring together all extracts of data that were pertinent to the particular theme. In this approach, the analyst reads and re-reads the text and assigns index codes related to the content of the data and of interest to the researcher’s analytic framework (Bloor et al., 2001). Before data analysis, each interview and FGD was transcribed verbatim, and then translated from Vietnamese into English word by word. The translation was double checked by the researcher and a Dutch professor who can understand Vietnamese language and Vietnamese culture because of her long time working in Vietnam. With respect to data analysis, firstly, key passages in the transcripts were highlighted. Words and phrases were grouped by similarities to develop initial categories and recurring concepts. The next stage of the analysis, axial coding, involved refining this list by deleting or combining categories, followed by making connections between the categories and defining properties, for instance, context or preconditions. The final stage, selective coding, involved the identification of core categories. This was extended by deliberately seeking out negative cases which do not fit the theory and producing explanations for them.

Ethics: This study was approved by the Scientific and Training Committee of the Cantho University of Medicine and Pharmacy. All respondents and parents of student respondents were informed about the study and given the option of participating; they were also informed that they could withdraw from the interview or FGD at any time if they did not wish to continue. Two parents stopped in the middle of the FGD because they had to leave early due to other duties.

Results

In this section, the perspectives of pupils, teachers, and parents on mental health problems and causes, as well as first ideas for intervention strategies, are described. Most attention is paid to the pupils’ perspectives and the mental health problems they face. After describing the pupils’ perspectives, we consider whether parents and teachers recognize pupils’ stories.

Study participants

The study participants included 36 teachers, 55 pupils, 34 parents, two researchers, and two psychiatrists who were invited to participate in the study. Most of those invited to participate agreed to do so. The male: female ratio was 40:60 for each group. The pupils ranged from 15 to 18 years of age. The teachers had 2-22 years’ experience of teaching at secondary schools.
Pupils’ perspectives

Occurrence of mental health problems

According to the pupils, mental health was a large problem among them. At least a quarter of the 10-15 pupils in each FGD complained that they felt very stressed, anxious, and often worried. For example, one girl from CVL stated,

“I get a stomach ache, feel anxious, and find it difficult to concentrate when I have examinations or tests. My parents are over-anxious for me. I feel pressured and worry too much.”

Many students remembered other students with symptoms of depression. A group in an FGD concluded, “About 10% to 20% students are often quite silent and seldom speak to anyone. They did not want to do anything in class even when they were asked to do something, and they did not care if they had good or bad results.”

Poor mental health may lead to poor somatic health, as one boy illustrated:

“I felt dizzy when I sat or lay down and then stood up immediately. It was more severe when I had insomnia. I often have it because I worry about my examination and test results.”

Another girl added: “I sometimes feel very sad and could not study anymore and do not want to have lunch or dinner anymore.”

Though exact numbers were not available, in all three schools there have been several suicide attempts in recent years. Suicide is a sensitive topic for both family and school, but the number of reported suicides among pupils has apparently increased. Some pupils shared their personal story in the FGD. For example, one girl recounted:

“When my parents quarrelled, my study declined because I kept thinking about my parents’ conflict and couldn’t focus on study. Sometimes I was scolded by my parents with no legitimate reasons and with very strong language. Some weeks ago, I felt very sad and had suicidal thoughts. I took sleeping pills and was admitted to hospital for about 1 week... I think if my parents keep acting like this, my study will not improve any more. Also, I often have insomnia because of worrying. Currently, I feel better and my parents pay more attention to me.”
In this case, parental conflict seemed to have caused the problems, but most pupils reported that academic pressure is the main cause for (thoughts of) suicide among students.

Factors contributing to poor mental health

According to the pupils, the following factors contribute to poor mental health 1) academic pressure, 2) indulging in pleasures like online gaming, and internet, tobacco smoking and substance use, and 3) love-life, especially homosexuality.

1. Academic Pressure

The pupils consider academic pressure to be a huge problem. They pointed to an overloaded academic curriculum and to pressure from teachers, parents, peers, and themselves to do well. One girl commented:

“There are 13 subjects in school, and I have to study the whole day (morning and afternoon) on even days (Monday, Wednesday, Friday) and half the day on the other days (Tuesday, Thursday, Saturday). In addition, I have extra lessons from private centres or from my teachers from 6:00 pm to 9:00 pm, and then I study by myself up to 11.00- 12.00 pm at night. During examinations, I have to get up especially early around 4:30 am to revise lessons.”

Unfortunately, this is not an exceptional case, as teachers explained, but rather a common reality.

High expectation of their teachers increases the pressure, as one boy reported: “The numbers of subjects and lessons are too many and the demands from teachers are too high. Therefore, students cannot satisfy teachers’ demands.” A girl explained: “Sometimes, we get high results from examinations but teachers are still not satisfied or think that high grades are a coincidence and not due to pupils’ skills or hard work.” Other students confirmed that pressure from teachers distress pupils, and could lead to despondency and loss of confidence. One girl explained: “Because of fear, some students did not dare to look at the teacher’s face when they were reciting lessons in class. This fear impacts student’s ability.” Pressure from teachers can have serious consequences, as described by one boy:
“Last year, a very good student in this school attempted suicide by jumping from the second floor. We think the reason was pressure from teachers. She was a specialized biology student and attended a provincial competition for two subjects - biology and using a calculator. However, her marks in class were not high. Teachers were not fair to her in class and often openly complained about her.”

Along with concerns about the demands of teachers, parental pressure was raised as a common and serious problem; parents are very keen for their children to have a good career. One girl explained:

“My parents put pressure on me, like I have to do better than other people. My parents also want me to be equal to or even better than my brother who is excellent at school work. When my results did not reach my parents’ expectations, they were very sad, angry and dissatisfied so that I feel very sad too.”

In Vietnam, parents are very focused on their children’s success and future career. One girl commented: “Parents are less interested in care for their children but have high expectations of them. They require their children to study well like other children.”

Pupils also experience pressure from their peers, as competition is fierce. A girl from LTT stated, “If we have low marks, we have to leave the specialized class or to leave the group of excellent students, eligible for provincial and national competitions.” Finally, academic pressure also comes from students themselves. A school girl from CVL, in answer to a question about why she easily gets upset and quarrels with other students, frankly said:

“Because of myself, I feel jealous of some friends whose study was less successful than mine before, but now they study better than me. I put high pressure on myself to be better than my friends. My study results used to be very good but now they are not as good as before. Therefore, I feel angry with myself. I don’t want to be inferior to my friends in any way.”

2. Problems associated with pleasure seeking

Although entertainment is part of normal life, most of the pupils thought that too much pleasure seeking could have a negative impact on students’ study and health (Tran, 2008). Pleasure seeking behaviour that they thought
could lead to problems included following media personalities, friendship, gaming, internet, and cigarette smoking. They also thought that these problems mostly occurred among pupils from rich families because they could use money for pleasure instead of needing it all for their study. According to the respondents, pupils who indulge in pleasures also often break school rules and show resistance to school regulations.

Students said that addiction to online computer games is high. According to one boy (CVL), “The rate of online gaming is about 50% among boy pupils, [and this has] a negative impact on study results, due to spending too much time on it.” Another girl remarked: “Consequently, they did not spend enough time to study and received low results. Finally, they felt despondent and let things run their course.” The main reason for game addiction is said to be academic pressure. Because of the overloaded academic curriculum, pupils have little time to reduce stress and gaming is an easy and quick way to relax.

Although smoking and substance abuse are prohibited in schools, some boys smoke. They usually smoke tobacco in the coffee shops close to schools and in the toilets. The students said that those who smoke tend to break school rules often and show resistance toward school and teachers.

3) Love and Sex

Some parents do not allow their children to be involved in relationships before finishing secondary school, especially girls, since they are afraid that their children will not focus on their studies. A girl from TDN:

“My parents did not allow me to go out with friends and have a boyfriend because they were afraid that I would not concentrate on my studies. Sometimes I want to have a boyfriend to share things with and confide in, but I have to refuse many boys.”

According to the pupils, relationships may have negative consequences for scholastic success, and may lead to fighting, early sexual intercourse, unwanted pregnancy, and even suicide attempts. A girl from TDN School said: “I know some friends who had boyfriends and started to have sexual intercourse. Some then had less study success. One girl became pregnant but her boyfriend’s family didn’t agree for them to marry. Then she had the baby, but the child died after birth.”
Another girl, from CVL, stated, “Some good students’ study results declined because of love problems and attempted suicide.” A girl from TDN recounted: “A girl student attempted suicide because her boyfriend didn’t want to marry her. He was still a secondary school pupil. This girl left her home after she was rescued from the suicide attempt.”

Homosexuality was also mentioned in most interviews and FGDs with pupils, and was seen to be linked to mental health problems. Pupils considered that homosexual relations are appearing more frequently among young people, linked to greater personal freedom and a modern life style, far from the concepts of the feudal society of the past. Homosexuality was linked by pupils to early sexual intercourse, lost concentration on studies, and even suicide attempts. In a FGD among CVL students, a girl explained:

“It happens in both boy and girl students, but boys manifest it more clearly. I think the rate of boys who have homosexual orientation is about 5%. Some students’ families did not approve of their children’s sexual orientation, and some of those students attempted suicide.”

There have never been laws against homosexual activity in Vietnam. However, in May, 2002, state-run media declared that homosexuality was a social evil on par with drug use and prostitution and suggested laws to allow the arrest of same sex couples (U.S. Centers for Disease Control and Prevention, 2002). Although tolerance for homosexuality seems to be increasing nowadays, these pupils’ stories suggest that intolerance still causes serious problems for young people.

**Parents’ Perspectives**

Parents agree that academic pressure is the main cause of mental health problems among students. They consider that Vietnamese youth has to study too much. According to the parents, the government has not developed good academic curricula. One male parent of an LTT pupil stated: “Innovation is lacking in the policies on education and training, especially in academic curricula and teaching methods.” Academic pressure seems to be higher for academically poorer pupils. “Depression often happens in students who have low study results because they are often scolded and under pressure from teachers, friends, and parents.” according to the father of a CVL pupil. But, as the mother of a CVL pupil explained: “The level of anxiety also depends on factors in the student’s home environment, including economic conditions, parental problems, and unhappy family.”
Pleasure seeking, put on the agenda by the students, was also recognized. A father remarked:

“Indulging in watching TV and playing games – if a pupil’s brain spends too much energy on playing games, they do not have enough energy to study. Consequently, children lose the focus on their study, sleep late, and get bored with studying.”

Although parents admitted that parental pressure contributed partly to student’s mental health problems, they put the main blame on teachers and the government. As one mother of a CVL pupil complained: “Parents share the teaching role for children only at home; children spend half or more of their time in schools.” In addition, parents are of the opinion that schools and teachers do not provide a happy learning environment for pupils. Schools are very strict, requiring that students listen to teachers but not promoting discussion with fellow students or working in groups, as the father of a CVL pupil explained:

“Pupils have little time and opportunity to communicate in class because they have to listen to teachers and they have no permission to talk in class during study time. They will be scolded by teachers if they talk in class.”

Some parents accused teachers of not being interested in the wellbeing of pupils. As one mother expressed it, “In schools, teachers lack concern for their pupils. There is poor teaching capacity and schools do not create suitable recreation grounds including sport facilities for students to help reduce stress.”

Parents also reported quarrels and fights between students during and after school, and within and between schools. Fighting among students is apparently a rapidly increasing phenomenon in Vietnamese society (Huynh, 2010). This might be a result of poor mental health, academic pressure and mutual competition.

Like the students, parents related suicide to the high academic pressure. The father of a CVL student explained: “About two months ago, a girl jumped from the second floor in the morning at school, after she had been scolded by her father. She was under academic pressure but no one around, including parents and teachers took care of her; teachers and parents put her under academic pressure. They still argue about the causes of her suicide. She had already tried to commit suicide once before, last year.”
**Teachers’ perspectives**

Teachers admit that academic pressure due to an overloaded academic curriculum is a main cause for mental health problems and unhealthy behaviours, such as addiction to games and internet and fighting among students. A female teacher from TDN said:

“Most pupils are severely stressed (even depressed) because of the heavy burden of knowledge required after the curriculum reform. Time in class is not enough to acquire the knowledge and students have to have private tuition to enter and stay in good schools and to pass university entrance examinations. Consequently, some students are often in a state of anxiety and do not know how to do simple work at home, then they do not totally integrate into society.”

Teachers are obliged to follow the regulations of the Ministry of Education and Training; the heavy curriculum puts high pressure on students, but also on teachers. This pressure on teachers is increased because they also receive low salaries. A female teacher explained:

“Teachers’ salaries are too low. They have to find other jobs or run extra classes at home to support themselves. If teachers’ salaries were high enough, they could pay more attention to teaching.”

Teachers also complained about the parents’ role in teaching their children manners and good behaviour, and about parents’ lack of concern. One middle aged female teacher from TDN complained: “Nowadays, young people don’t know how to restrain their temper, they lack problem-solving skills, and feel heavy stress, and therefore they get angry easily and are quarrelsome, even fighting among themselves.”

All of the teachers are familiar with this serious problem, as the painful example given by a male teacher illustrates:

“We had a boy student who was very excellent at biology. He was chosen to enter the competition in biology for excellent students at provincial level. However, because of the pressure, he chose to commit suicide by cutting his wrists when the competition date was near.”
Thinking of solutions

There were few differences among pupils, parents and teachers in the proposed solutions to reduce pupils’ mental health problems and the results are combined in this section. The students would like reduced academic pressure, more attention from their family, more recreational activities supported by schools, and a friendlier learning environment. Parents would like teachers and schools to take more responsibility for the quality of teaching and to find better ways to teach their children. The teachers would like to see pressure on them reduced by lowering academic pressure and increasing salaries, and they also want the parents to take some responsibility for teaching children. Combining their ideas, the solutions outlined below were proposed to reduce students’ mental health problems. The following actors need to play a role in these solutions: 1) the Ministry, 2) schools, 3) local government and community 4) parents and 5) students themselves.

Firstly, it is thought that the Ministry of Education and Training needs to revise and renew the academic curricula. One boy at CVL School suggested key strategies:

“Reduce the pressure from the academic curriculum and develop good methods to teach students. Choose the key subjects and invest enough time in them. Reduce less important subjects to leave time for students to study what they want.”

In addition to reducing the curriculum load, the Ministry could play a role in establishing regulations relating to gaming, alcohol, and violence. It could promote new, modern ways of teaching. Raising the salary for teachers is also considered important, since it would reduce pressure on teachers to find extra sources of income and increase their commitment to their teaching in the schools.

Secondly, the schools could play a role in reducing academic pressure and creating a friendlier learning environment: “Create a friendly environment between teachers and students in study and examinations.” was the suggestion from a girl at LTT. Having a playground was considered important. The schools have a few sport facilities and music lessons, but not enough for the large numbers of students. The academic schedules also leave pupils little time to use the few facilities available. Some students suggested that schools should organize extra activities to strengthen social cohesion, provide social and life skills, reduce academic stress, increase
friendship, and reduce discrimination and disunity among students. One boy student at CVL stated,

“Pupils need extra courses about sexual education, student relationships, students and family, adolescence and school health. These activities could improve the understanding among students and between students and teachers. That could reduce study pressure on pupils, and reduce discrimination among them. They would feel less isolated, especially those with sexual issues like homosexuality. Sexual education would increase pupils’ understanding of sexual health and help them to avoid doing the wrong thing. I also joined a group to promote education on sexual health. I think it is effective. I hope the school will create good conditions for pupils to develop.”

Pupils also proposed that schools should organize meetings to bring teachers, parents and pupils together, and organize short training courses for them, to provide knowledge about adolescent psychology: “Schools should have a group to support pupils and recognize problems that arise.” According to the parent of a TDN pupil, “Psychologists are needed to train students in life skills and problem-solving skills.” Many parents and teachers remarked on the necessity to “combine activities of school and family.”

Thirdly, the community should take part in teaching and educating young people. “Local government should control online gaming and ban alcohol and tobacco consumption of pupils, with strict laws on violation.” according to one male parent of a TDN pupil. Collaboration among associations and unions, such as the Parents’ Association, Women’s Union and Youth Union, were also suggested to strengthen support for students, teachers and parents. A teacher from TDN stated: “We should create a forum for students to exchange ideas and a psychological counselling group to support students when they have problems.”

Fourth, parents should create a friendly environment so that children feel comfortable to share their cares, and they should let children decide some things for themselves, as one boy recommended:

“I think we should tell our parents that they should not forbid children to go out with friends. Because if children only stay at home they will not understand what is happening outside and they will not adapt to the social environment.”
Finally, pupils need to find ways to cope with stress. One boy in TDN noted:

“I often write a blog. I put my sadness and my emotion in the blog, and then my friends can share and give me advice. Then I can find solutions and think less about the bad things. I also reduce stress by listening to music and watching movies online.”

Seeking advice or help outside the family is also necessary because pupils cannot easily share their feelings with their parents. Schools do have Secretary Boards, Youth Unions and Parents’ Associations, and some schools have medical professionals that can be consulted, but these institutions do not yet function well. One reason is that pupils have little knowledge and skills on mental health and psychology. In addition, pupils with mental health problems may not recognize their own problems and may not seek help.

**Discussion**

The most prominent findings of this qualitative descriptive study were the perceptions of the students that mental health problems occur frequently and those different stakeholders need to pay attention to the mental health of pupils. Depression, anxiety, stress, suicidal thoughts and suicide attempts were seen as major problems by all stakeholders and many painful examples were shared. Mental health problems were mainly associated with academic pressure, associated with an overloaded academic curriculum and pressure to perform well, from teachers, parents, and pupils, but also from the family environment and pupils’ recreational activities. The findings from this study also suggested that mental health problems among pupils should be addressed at many levels in Vietnamese society including government, school, community and family levels.

Our findings suggest that mental health problems in Vietnamese youth are a concern, which is consistent with the two previous studies of Vietnamese adolescents, which reported that approximately 9% had mental health difficulties (Amstadter et al., 2011), and of first year medical and pharmacology students in Ho Chi Minh, of whom about 40% had depressive symptoms (Do, 2007). Some commentators have posited that the cultural influence of collectivism compared to individualism, or the cultural influences of authority figures may be more repressive in Vietnam than in Western countries and that these factors are responsible for a high prevalence of mental health disorders (Amstadter et al., 2011; McKelvey RS...
et al., 1999). Others argue that the negative effect of rapid social change may be to blame (Liu & Shuzhuo, 2011).

**Academic pressure associated with mental health problems**

University entrance is based on the scores achieved in the entrance examination and prospective students require high scores to be admitted to universities. Securing a place in a public university is considered a major step towards a successful career, especially for those from rural areas or disadvantaged families. The pressure on the candidates is very high. It is estimated that nearly one million students take the exam annually but, on average, only 20% pass (National High School, 2012).

Given the highly competitive nature of the education system, many school pupils spend a great deal of time on extra classes after school and even during weekends and holidays. A study done in Ho Chi Minh City found that nearly 30% of secondary school pupils spent more than three hours a day on additional studies; 47% reported attending classes during weekends or holidays (Thai, 2010). In the same study, two thirds of pupils were found to experience medium or high educational stress, based on the Educational Stress Scale for Adolescents (Thai, 2010). It can be concluded that pressure to succeed in school education is intense in Vietnam, and appears to be increasing as society becomes more competitive.

Competitive stress can be a positive stimulus for achievement for young people but, if this stress is severe and prolonged, it can have a major impact on health and well-being. Educational pressure on young people is discussed widely in the media and society but much of this discussion is based on case studies and anecdotes, rather than systematic research, and there has been little research published from Vietnam regarding academic stress and youth mental health. A recent cross-sectional study revealed that educational stress was strongly associated with depression, anxiety, psychological distress, poor well-being and other behavioural factors (Thai, 2010). These findings are also consistent with a study of Chinese adolescents showing that educational stress was the most predictive variable for depression, and had a strong association with suicide ideation among Chinese adolescents (Sun et al., 2010).

**School and social factors associated with mental health problems**

This study has revealed potentially important school and social factors related to mental health problems among Vietnamese secondary school...
pupils. According to pupils’ perceptions, school-related factors, including school cohesion and school environment, had an influence not only on risk-taking behaviours but also on the mental health of pupils. This trend is consistent with data from Hanoi City and Ho Chi Minh City, Vietnam (Huynh, 2009; Tran, 2007). According to parents and teachers, society also plays an important role in pupils’ risk-taking behaviours because young people are exposed to internet shops, coffee shops, bars, clubs, online games and sex websites. Such shops are often located near schools and, at present, the Vietnamese government does not have appropriate legislation or control mechanisms to reduce those risks.

Violence among adolescents has been reported to be increasing, especially fighting and bullying among girl students outside of school. Increasing numbers of video clips of fighting among pupils have been posted on the internet by other pupils witnessing the fights. In Cantho City, the media reported 252 fights among school pupils in 2011 (Huynh, 2010). Although fighting was mentioned by most of the respondents, in this study we did not explore fighting between pupils in detail; more data would be needed to compare the situation in Cantho City with other regions in Vietnam and other countries.

Family environment associated with mental health problems

Previous studies conducted in the USA show that the family environment can be a strong source of support for developing adolescents, when providing close relationships, strong parenting skills, good communication, and modelling positive behaviours (Herman & Ostrander, 2007; Sheeber et al., 1997). A lack of family support and negative adult behaviours can have a negative impact on adolescent mental health. Our results are similar to those reported from Vietnam and Malaysia, in which an unhappy family environment, difficult family events like the death of a parent, regular conflict in the family, poor parental relationships, and economic difficulties were predictors of poor mental health and risk-taking behaviours (Nguyen, 2009; Nguyen, 2006; Tran, 2007; Yuen, 2007).

Pupils’ leisure activities

According to pupils and parents in this study, playing computer games or accessing the internet were activities undertaken by pupils to release stress. However, addiction to computer games or the internet had a negative impact on academic achievement and could raise the level of academic stress. Poor academic achievement and academic stress could be linked to poor mental
health among pupils. That was the finding in a study of Turkish university students, where internet addiction was found to have a direct impact on depression, anxiety, and stress (Akin & Iskender, 2011). Research on internet addiction demonstrated that greater use of the internet is associated with social and psychological variables such as a decline in the size of social circles, depression, loneliness, lower self-esteem and life satisfaction, sensation seeking, poor mental health, and low family function (Akin & Iskender, 2011; Cao & Su, 2006). However, there are no published papers about the impact of gaming and internet addiction on mental health among adolescents in Vietnam. Further study to look at this relationship needs to be undertaken.

Finally, love-life and sexuality were found to contribute to mental health problems in different ways. Young people may be anxious about their romantic and sexual relationships and parental prohibition of such relationships, but the processes involved have not been clearly explained in this or in previous studies. However, our results do reveal that love-life could be associated with poor mental health among Vietnamese secondary school students, especially for those who have had sexual intercourse with or without pregnancy. This is consistent with the findings of a study of US high school students in which depression was associated with sexual intercourse, intercourse before the age of 14, and non-condom-use (Milhausen et al., 2003).

Homosexuality among young people appears to be increasing in Vietnam, also in school settings. One female student estimated that about 5% of students are homosexual but the basis of that estimate was not explored. However, in Vietnam, homosexuality is not yet a clear concept to everyone, because patterns and practices have changed rapidly in past decades. The Vietnamese language is still adapting to the ‘new’ reality of homosexuality, especially in the countryside (Blanc, 2005). Therefore, a student with feelings of sexual attraction to the same sex might have poor mental health and even attempt suicide because homosexuals face stigmatization and discrimination in Vietnamese society. This link between the stigmatization and discrimination of homosexuals and poor mental health has been documented in studies in the USA and other countries (D’augelli, 2002), but yet not in Vietnam. Clinicians and staff of community-based agencies need to enhance their awareness of the possibilities of suicide attempts among homosexual and bisexual youth, undertake screening for risk and actively seek to reduce stress related to homosexuality (Rotheram-Borus, 1994).
Strengths and limitations

The strengths of this study include the fact that different stakeholders contributed their perspectives, experiences and suggestions for improvement of mental health of pupils during the interviews and FGD and that the numbers of respondents were relatively large for a qualitative study. Data from multiple informants are often more reliable than data from single informants (Amstadter et al., 2011; Goodman et al., 2000). Although the large number of informants in each focus group, 8 to 12, could provide rich information with confirmation, the large group could also discourage participants from sharing information about sensitive subjects like mental health problems and suicide. The fact that this was a largely urban study may have given urban parents more opportunities to express their ideas in FGD, although the researchers tried to ensure that all parents were able to give comments. In addition, the use of purposive sampling by head teachers might affect the generalizability of the findings. The selected participants might have had more than average concern and responsibility for the topic. Then the study may have over- or under-estimated the importance of mental health problems among secondary school students. However, this was an exploratory study, providing background for a larger survey, which we expect to provide representative data among a larger number of respondents and as such, the insights gained are valuable.

Conclusion

Vietnamese secondary school pupils feel that their mental health status is poor. Depression, anxiety, stress, suicidal thoughts and suicide attempts were perceived to be major problems. Academic pressure, including an overloaded academic curriculum and pressure from teachers, parents, and pupils, a stressful family environment, and excess attention to recreational activities were reported as the main factors associated with students’ poor mental health. Pupils, teachers, and parents should all take part in reducing academic pressure and enhancing mental health of students, collaborating with Vietnamese authorities, communities and schools to design effective interventions.
List of abbreviations used:

CTC : Cantho City
CTUMP : Cantho University of Medicine and Pharmacy
CVL : Chau Van Liem School
IDI : In depth interview
LTT : Ly Tu Trong School
TDN : Tran Dai Nghia School
FGD : Focus group discussion

Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

NTD, BJ and CD devised the idea of study. NTD coordinated the study and analyzed data with assistance of CD. NTD produced the first draft with assistance of CD. All authors revised and contributed to the final version of the manuscript.

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References


Chapter 5
Depression, anxiety, and suicidal ideation among Vietnamese secondary school students and proposed solutions: a cross-sectional study
Depression, anxiety, and suicidal ideation among Vietnamese secondary school students and proposed solutions: a cross-sectional study


Abstract

Background: There is a rapidly growing public awareness of mental health problems, such as stress, anxiety, depression and suicide, among pupils at Vietnamese secondary schools. This study aims to determine the prevalence of anxiety, depression, and suicidal ideation; identify risk factors related to depression and anxiety; and explore students’ own proposals for improving their mental health.

Methods: A cross-sectional study was conducted among 1161 secondary students during September-December 2011. A structured questionnaire was used to assess anxiety, depression, suicidal ideation, and proposed solutions based on feedback from youth. Depression was measured using the Center for Epidemiology Studies Depression Scale.

Results: The prevalence estimates of symptoms reaching a threshold comparable to a diagnosis of anxiety and depression were 22.8% and 41.1%, respectively. Suicide had been seriously considered by 26.3% of the students, 12.9% had made a suicide plan while 3.8% had attempted suicide. Major risk factors related to anxiety and depression were physical or emotional abuse by the family and high educational stress. As solutions, nearly 80% of students proposed that the academic workload should be reduced and that confidential counselors should be appointed at schools. About half of the students considered that the attitudes of their parents and teachers needed to change. The great majority of students said that they would visit a website that provided mental health support for students.

Conclusions: Anxiety, depression, and suicidal ideation are common among Vietnamese secondary school students. They have strong significant associations with physical or emotional abuse in the family and high educational stress. Academic curricula and attitudes of parents and teachers need to be changed from a punitive to a more supportive approach to reduce
the risk of poor mental health. An internet-based mental health intervention could be a first step to improve students’ mental health.

**Keywords:** mental health, depression, anxiety, suicide, academic pressure, adolescents, students, Vietnam, secondary schools

**Background**

Mental health disorders are among the most important public health issues globally. Estimates of the global burden of disease place mental illness in the top three of diseases in terms of years lost due to disability (Silva et al., 2005). The mental health of adolescents and young people is a crucial issue because of the general burden of mental illness and because mental illness has the potential to affect the rest of their adult lives and the future lives of the next generation (Ford et al., 2003; Mental Health Europe, 2001). The mental health problems that adolescents and young people encounter interfere with the way they think, feel, and act. Such problems cause distress and limit young people’s academic achievements and ability to be economically productive. They can also lead to family conflicts, substance abuse, violence, eating disorders and, sometimes, even suicide. Mental health problems are also expensive for families, communities, and the health and social systems as a whole (Mental Health Europe, 2001).

There has been a rapidly growing public awareness of mental health problems, such as stress, anxiety, depression and suicide, among Vietnamese students (Giang & Duong, 2007; Nguyen, Dedding, Pham, & Bunders, 2013; World Bank et al., 2001). In the *Bulletin of the World Health Organization* 2006, Harpham and Tran reported that a fifth of young Vietnamese people experience mental health problems (Harpham & Tran, 2006). A cross-sectional study of 972 secondary school students (13 to 16 years old) in the north of Vietnam showed that a high proportion of students had poor mental health with 17.6% of adolescents having felt sad and hopeless every day for two weeks during the past 12 months (Tran, 2007). In addition, the number of students that had considered suicide was high, with 6.6% of students having seriously considered suicide during the past 12 months, 1.2% having made a suicide plan, and 0.4% having attempted suicide (Nguyen, 2009). Three recent studies conducted among 2591 adolescents (2006) in Hanoi City (Nguyen, 2006), approximately 1000 adolescents (2007) in Hanoi (Tran, 2007), and among 410 university students (2009) in Ho Chi Minh City (Huynh, 2009) also revealed that the
prevalence of suicide ideation ranged from 9.2-10.6%. Another study of 1226 secondary school students conducted in Ho Chi Minh City indicated that the percentages of students that had seriously considered a suicide attempt, planned to commit suicide or actually attempted suicide during the past 12 months was 6.3%, 4.6% and 5.8% respectively (Thai, 2010). In addition, the prevalence of depression, anxiety and psychological distress was 26.3%, 16.2% and 36% respectively. Thai's study demonstrated the high prevalence of depression, anxiety and educational stress amongst adolescents, as well as the strong association between educational stress and poor mental health. However, risk factors for depression and anxiety, and students’ perspectives on how to reduce depression or anxiety, have not been investigated.

Although depression and anxiety among students are prevalent disorders, very few studies have examined the prevalence of depression and anxiety, their related factors, and solutions to reduce them. Therefore, the aim of this research was to determine the prevalence of anxiety, depression and suicide ideation in Vietnamese secondary school students, to identify risk factors related to their symptoms, and to explore possible solutions to improve their mental health.

Methods

Study design and population

A cross-sectional study design was applied. All data were collected during the first academic semester (September to December, 2011). The population was purposively selected from the three secondary schools in urban and suburban areas, comprising specialized and general secondary schools. In each school, three classes, one from each grade from 10 to 12, were chosen randomly. In total, 1260 students were invited to participate in the study by sending them an anonymous self-reporting questionnaire. No exclusion criteria, such as demographic and/or socioeconomic characteristics, were applied. However, of the 1260 students, 99 (7.85%) were excluded from our analysis due to insufficiently complete responses.

Data collection

Self-completed questionnaires were distributed to all participants, who were requested to complete the questionnaire anonymously after class or at home to minimize potential sharing while filling in the forms and to keep information confidential. The questionnaire consisted of 5 components:
(1) demographic information including student’s family characteristics (student’s parent educational and occupational profiles, student’s parental marital status, parental upbringing, and family financial situation); (2) mental health scales (the Center for Epidemiology Studies Depression Scale – CES-D, and an anxiety scale); (3) the Educational Stress Scale for Adolescents (ESSA); (4) questions on suicide; and (5) questions on possible solutions.

The Center for Epidemiology Studies Depression Scale consists of 20 calibrated items, with high internal consistency with Cronbach’s alpha coefficients ranging from 0.85 to 0.90 among general population samples (Radloff, 1977). Items are scored either 0-3 or 3-0, with a range of total scores from 0-60; a higher score indicates increasing depressive symptomatology. This scale has been validated in Vietnam using confirmatory factor analysis (Nguyen et al., 2007). The Center for Epidemiology Studies Depression Scale has a four-factor structure including depressed affect (7 items), somatic and retarded activity (7 items), positive affect (4 items) and interpersonal activity (2 items) (Radloff, 1977). The standard cut-off score of 16 was used to detect possible cases of depression (McDowell, 2006). For comparison with other studies, two other cut-off points were also used: scores over 21 (for depressive symptoms) and over 25 (for depression) (Kim et al., 2007; Mikolajczyk et al., 2007).

The anxiety scale (Nguyen et al., 2007) consists of 13 items using a 3-point scale (never, sometimes, often). The scale showed a high level of internal consistency (Cronbach’s alpha ranged from 0.76 to 0.81) and has also been validated for use among Vietnamese students. The scale was assessed as providing a highly reliable measure of anxiety when used in a community survey of Vietnamese adolescents, showing a high internal consistency (Cronbach’s alpha = 0.82) (Nguyen et al., 2007). A receiver operating characteristic (ROC) analysis was done in a study by Thai (Thai, 2010) to choose a cut-off point for further analysis using the Kessler 10 – Psychological Distress Scale as a reference standard. The chosen threshold was 26 with specificity of 92.2% and sensitivity of 31.3% (AUC = 0.72) (Thai, 2010) which was similar to psychometric properties of Kessler 10 (Kessler et al., 2002; Kessler et al., 2003).

The Educational Stress Scale for Adolescents (ESSA) consists of 16 items and uses a 5-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). The scale was used to measure educational stress with higher scores indicating greater stress. The scale covered five dimensions of educational stress including pressure from study (4 items), worry about
grades (3 items), despondency (3 items), self-expectation (3 items) and workload (3 items) (Thai, 2010). The ESSA has been validated to measure the educational stress of adolescents in Vietnam with a high level of internal consistency with a Cronbach’s alpha of 0.83 (Thai et al., 2012). The internal consistency in the present study has a Cronbach’s alpha of 0.86. The cut-off points suggested by for Vietnam by Thai comprise <50 (low stress), 51-58 (medium stress) and >58 (high stress) (Thai, 2010).

In order to address the issue of suicide, additional questions about ever having seriously considered suicide and the making of a suicide plan consisted of a scale ranging from never, sometimes and often. A yes/no question was also used to identify students who had attempted suicide. Additionally, some closed-open questions about possible solutions were used to explore students’ perspectives on improving mental health.

**Statistical analysis**

Data are presented as means ± standard deviation (SD) and analyzed descriptively to determine the demographic and basic characteristics of the study population. The Chi squared test ($\chi^2$) was used to assess the significance of differences in the distribution of selected socio-demographic characteristics, risk factors, and outcome variables among the participants. In addition to the descriptive analyses, logistic regression analysis was performed to identify associations between depression or anxiety and family characteristics, educational stress, and academic achievement. Univariate independent predictors of anxiety (including often being physically or emotionally abused by adults in the household, often being physically or emotionally abused by teachers or other staff members at school, academic performance from the previous semester, educational stress), and depression (including growing up and living with biological parents, living with a mentally ill person, often being physically or emotionally abused by adults in the household, study results from the previous semester, often having a serious quarrel with teachers in school, often being physically or emotionally abused by teachers or other staff at school) with $p<0.10$ were entered in a multivariate logistic regression model, applying the Backward Wald method to study their influence on the presence of anxiety and depression. All tests were 2-tailed and a $p$-value <0.05 was considered statistically significant. The 95% confidence intervals of Odds Ratios (OR) were also calculated. To address the issue of validity of Chi-square results, all the variables in all models must also have an expected cell frequency above 10 before entering them into the logistic regression model. Each model was also checked for Goodness of Fit by checking the significant
value of the Hosmer-Lemeshow which must be higher than 0.05. All analyses were performed with SPSS, Version 16.0.

Ethics

Ethical approval for the study was obtained from the Scientific and Technical Committee of the Cantho University of Medicine and Pharmacy, which has authority to approve both technical content and ethical aspects of studies done by its staff and students.

Results

The research population consisted of 1159 secondary school students including 424 (36.5%) boys and 737 (63.5%) girls, ranging in age from 15-19 years (overall mean age 16.1 years). The difference in the number of girls and boys reflects the actual situation in the classes selected. The number of students for each grade from 10 to 12 was equal among the three grades, with a response rate of about 33% (grade 10: 33.5%, grade 11: 33.9%, and grade 12: 32.6%). The majority of students (95.3%) were ethnically Kinh (ethnic majority in Vietnam); other ethnic groups included Chinese and Khmer.

Mental Health

Anxiety

Scores on the 13-item anxiety scale based on current feeling range from 13-39, with a mean score (±SD) of 22.6 (± 4.19). 23% of students demonstrated anxiety symptoms at a clinically significant level. Female students were three times more likely to have anxiety symptoms than their male counterparts (29% vs. 12.1%) (OR=2.94; 95% CI OR = 2.13-4.15, p<0.001).

Depression

Scores on the 20-item CES-D Scale during the past week ranged from 0-55, with a mean score (±SD) of 15.7 (±10.5). Among the total sample, the prevalence of being in a ‘category at risk for clinical depression’ (a CES-D score of ≥ 16) was approximately 41.1%. In comparison with other studies, two other cut-off points were also used: scores over 21 (for an elevated level of depressive symptoms) and over 25 (for a level of depressive symptoms comparable with major depressive disorder) (Kim et al., 2007; Mikolajczyk et al., 2007). According to these cut-off points, approximately one fourth
(25.9%) of the students were classified as having an elevated level of depressive symptoms, while 18.7% demonstrated a level of depressive symptoms comparable with major depressive disorder. The results also suggested that female students had a significantly higher level of depressive symptoms comparable with major depressive disorder and an elevated level of depressive symptoms (Table 1).

Table 1. Prevalence of depression among secondary school students

<table>
<thead>
<tr>
<th></th>
<th>Total N (%)</th>
<th>Females N (%)</th>
<th>Males N (%)</th>
<th>OR (95% CI)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Risk of depression (CES-D score of ≥ 16)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>476 (41.1)</td>
<td>324 (44.1)</td>
<td>152 (35.9)</td>
<td>1.41 (1.10-1.80)</td>
<td>&lt;0.007</td>
</tr>
<tr>
<td>No</td>
<td>682 (58.9)</td>
<td>411 (55.9)</td>
<td>271 (64.1)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Depressive symptoms (CES-D score of &gt; 21)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>300 (25.9)</td>
<td>209 (28.4)</td>
<td>91 (21.5)</td>
<td>1.45 (1.09-1.92)</td>
<td>0.010</td>
</tr>
<tr>
<td>No</td>
<td>858 (74.1)</td>
<td>526 (71.6)</td>
<td>332 (78.5)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Depression (CES-D score of &gt; 25)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>216 (18.7)</td>
<td>151 (20.5)</td>
<td>65 (15.4)</td>
<td>1.42 (1.04-1.96)</td>
<td>0.029</td>
</tr>
<tr>
<td>No</td>
<td>942 (81.3)</td>
<td>584 (79.5)</td>
<td>358 (84.6)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

*The Odds ratios with a CI not including 1.00 (before round-off) are given in bold.*

**Factors associated with anxiety and depression**

**Factors associated with anxiety**

Multivariate logistic regression analysis was performed to study the relationship between anxiety and several familial and educational characteristics. Anxiety was shown to be independently associated with: experiencing physical and emotional abuse from parents or other adults in the family; physical and emotional abuse from teachers or other staff members at school; and high educational stress (Table 2).
Table 2. Risk factors for anxiety

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Anxiety</th>
<th>Univariate logistic regression</th>
<th>Multivariate logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n (%)</td>
<td>No n (%)</td>
<td>OR (95% CI)</td>
</tr>
<tr>
<td><strong>Being abused by parents, or other adults in the household</strong>* (n = 1152)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>223 (21.4)</td>
<td>819 (78.6)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>39 (35.5)</td>
<td>71 (64.5)</td>
<td>2.02 (1.33-3.06)</td>
</tr>
<tr>
<td><strong>Being abused by teachers or other staff members at school</strong>* (n = 1150)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>175 (20.4)</td>
<td>681 (79.6)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>88 (29.6)</td>
<td>209 (70.4)</td>
<td>1.64 (1.22-2.21)</td>
</tr>
<tr>
<td><strong>Educational stress (n = 1148)</strong>*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low stress</td>
<td>44 (13.3)</td>
<td>288 (86.7)</td>
<td>-</td>
</tr>
<tr>
<td>Medium stress</td>
<td>66 (16.8)</td>
<td>328 (83.2)</td>
<td>1.32 (0.87-1.99)</td>
</tr>
<tr>
<td>High stress</td>
<td>153 (36.3)</td>
<td>269 (63.7)</td>
<td>3.72 (2.56-5.41)</td>
</tr>
<tr>
<td><strong>Total (1155)</strong>*</td>
<td>263 (22.8)</td>
<td>892 (77.2)</td>
<td></td>
</tr>
</tbody>
</table>

* Participants were physically or emotionally abused by parents or other adults in the household, or by teachers or other staffs at school in the past 12 months. The Odds ratios with a CI not including 1.00 (before round-off) are given in bold.

Risk factors associated with risk of depression

Logistic regression was also used to explore the relation between depression and risk factors. The standard cut-off score of 16 in CES-D was used to identify possible cases of depression. Based on univariate logistic regression analysis, 12 variables significantly increased the risk of depression, while one variable (having a personal tutor) significantly decreased the risk of depression (Table 3). Students were likely to show higher depressive symptoms when they were not living with both biological parents, living with alcohol or drug abusers, living with a mentally ill person, often being physically or emotionally abused at home or at school, and often having serious quarrels with teachers or other staff members at school. Those with poor academic performance and high educational stress also showed more depressive symptoms. In contrast, having personal tutors reduced the likelihood of having depressive symptoms by 28%.
### Table 3. Risk factors for possible case of depression

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Depression</th>
<th>Univariate logistic regression</th>
<th>Multivariate logistic regression</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Yes n (%)</td>
<td>No n (%)</td>
<td>OR (95% CI)</td>
</tr>
<tr>
<td>Growing up and living with both natural parents (n = 1158)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>430 (40.0)</td>
<td>645 (60.0)</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>46 (55.4)</td>
<td>37 (44.6)</td>
<td>1.86 (1.19-2.92)</td>
</tr>
<tr>
<td>Living with a substance abuser (n = 1154)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>373 (38.5)</td>
<td>597 (61.5)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>101 (54.9)</td>
<td>83 (45.1)</td>
<td>1.94 (1.42-2.68)</td>
</tr>
<tr>
<td>Living with a depressed or mentally ill person (n = 1154)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>442 (40.2)</td>
<td>657 (59.8)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>32 (58.2)</td>
<td>23 (41.8)</td>
<td>2.07 (1.19-3.58)</td>
</tr>
<tr>
<td>Being abused by parents or other adults in the household (n = 1155)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>405 (38.8)</td>
<td>640 (60.2)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>70 (63.6)</td>
<td>40 (36.4)</td>
<td>2.76 (1.84-4.16)</td>
</tr>
<tr>
<td>Academic performance from the last semester (n = 1138)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent/good</td>
<td>77 (33.6)</td>
<td>152 (66.4)</td>
<td>-</td>
</tr>
<tr>
<td>Fairly Good/average</td>
<td>350 (40.8)</td>
<td>508 (59.2)</td>
<td>1.36 (1.00-1.85)</td>
</tr>
<tr>
<td>Below average/ Very poor</td>
<td>39 (76.5)</td>
<td>12 (23.5)</td>
<td>6.42 (3.18-12.95)</td>
</tr>
<tr>
<td>Academic stress (n = 1151)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low stress</td>
<td>86 (25.7)</td>
<td>248 (74.3)</td>
<td>-</td>
</tr>
<tr>
<td>Medium stress</td>
<td>129 (32.9)</td>
<td>263 (67.1)</td>
<td>1.41 (1.02-1.95)</td>
</tr>
<tr>
<td>High stress</td>
<td>259 (60.9)</td>
<td>166 (39.1)</td>
<td>4.50 (3.29-6.15)</td>
</tr>
<tr>
<td>Having personal tutors (n = 1151)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>103 (47.7)</td>
<td>113 (52.3)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>370 (39.6)</td>
<td>565 (60.4)</td>
<td>0.72 (0.53-0.97)</td>
</tr>
<tr>
<td>Serious quarrel with teachers or other staff at school in the past 12 months</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>367 (38.1)</td>
<td>597 (61.9)</td>
<td>-</td>
</tr>
<tr>
<td>Sometimes/often</td>
<td>107 (56.0)</td>
<td>84 (44.0)</td>
<td>2.07 (1.51-2.84)</td>
</tr>
<tr>
<td>It is acceptable for students to have premarital sex (n = 1151)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>394 (38.8)</td>
<td>622 (61.2)</td>
<td>-</td>
</tr>
<tr>
<td>Yes</td>
<td>80 (59.3)</td>
<td>55 (40.7)</td>
<td>2.30 (1.59-3.31)</td>
</tr>
<tr>
<td>Total</td>
<td>476 (41.1)</td>
<td>682 (58.9)</td>
<td></td>
</tr>
</tbody>
</table>

* Participants were physically or emotionally abused by parents or other adults in the household, or by teachers or other staffs at school in the past 12 months. The Odds ratios with a CI not including 1.00 (before round-off) are given in bold.
In multivariable logistic regression analysis, not accounting for effect modification, nine variables still remained associated with possible depression. Study results that were considerably below average and high educational stress were the two strongest characteristics that increased the risk of depressive symptoms (odds ratios were 3.95 and 5.02, respectively). A personal tutor remained a protective factor for depression (reduced the odds by 34% when compared with students who had no personal tutor) (Table 3).

The consequences of poor mental health

Suicidality

About one fifth of the students had seriously considered attempting suicide (24.7% indicated sometimes and 1.6% indicated often) and about one eighth (12% sometimes and 0.9% often) had made a suicide plan at some time. Forty-four (3.8%) of the 1144 students had attempted suicide at least once.

Association between suicidal ideation and poor mental health

Students with anxiety and depression were at a higher risk of suicidal ideation. Depression was the strongest predictor of suicide planning according to both univariate and multivariate logistic analysis, and anxiety and depression were the main predictors of suicide attempts (Table 4).

<table>
<thead>
<tr>
<th>Table 4. Association between suicidal ideation and poor mental health</th>
</tr>
</thead>
<tbody>
<tr>
<td>Suicidal behaviors</td>
</tr>
<tr>
<td>Sometimes/often n (%)</td>
</tr>
<tr>
<td>---------------------</td>
</tr>
<tr>
<td><strong>Seriously considered suicide</strong> (n = 1152)</td>
</tr>
<tr>
<td>Anxiety</td>
</tr>
<tr>
<td>Low anxiety</td>
</tr>
<tr>
<td>High anxiety</td>
</tr>
<tr>
<td>Depression (n = 1154)</td>
</tr>
<tr>
<td>Low depressive risk</td>
</tr>
<tr>
<td>Possible case of depression</td>
</tr>
<tr>
<td>Sex (n = 1157)</td>
</tr>
<tr>
<td>Male</td>
</tr>
<tr>
<td>Female</td>
</tr>
<tr>
<td>Drinking alcohol (n = 1153)</td>
</tr>
<tr>
<td>None drinker</td>
</tr>
<tr>
<td>Drinker</td>
</tr>
<tr>
<td>Being abused by parents or other adults in the household (n = 1154)</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td>247 (23.7)</td>
</tr>
<tr>
<td>797 (76.3)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>56 (50.9)</td>
</tr>
<tr>
<td>54 (49.1)</td>
</tr>
<tr>
<td><strong>Schools (n = 1157)</strong></td>
</tr>
<tr>
<td><strong>TDN</strong></td>
</tr>
<tr>
<td>84 (21.6)</td>
</tr>
<tr>
<td>305 (78.4)</td>
</tr>
<tr>
<td><strong>CVL</strong></td>
</tr>
<tr>
<td>114 (27.2)</td>
</tr>
<tr>
<td>305 (72.8)</td>
</tr>
<tr>
<td>1.36 (0.98-1.88)</td>
</tr>
<tr>
<td>0.064</td>
</tr>
<tr>
<td>1.55 (1.08-2.24)</td>
</tr>
<tr>
<td>0.019</td>
</tr>
<tr>
<td><strong>LTT</strong></td>
</tr>
<tr>
<td>106 (30.4)</td>
</tr>
<tr>
<td>234 (69.6)</td>
</tr>
<tr>
<td>1.58 (1.14-2.21)</td>
</tr>
<tr>
<td>0.007</td>
</tr>
<tr>
<td>2.11 (1.45-3.10)</td>
</tr>
<tr>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Having tutor after school (n = 1150)</strong></td>
</tr>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td>45 (21.0)</td>
</tr>
<tr>
<td>160 (79.0)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>257 (27.5)</td>
</tr>
<tr>
<td>679 (72.5)</td>
</tr>
<tr>
<td>1.42 (0.99-2.04)</td>
</tr>
<tr>
<td>0.054</td>
</tr>
<tr>
<td>1.52 (1.02-2.26)</td>
</tr>
<tr>
<td>0.040</td>
</tr>
<tr>
<td><strong>Serious quarrel with teachers or other staff at school in the past 12 months (n=1154)</strong></td>
</tr>
<tr>
<td><strong>Never</strong></td>
</tr>
<tr>
<td>236 (24.5)</td>
</tr>
<tr>
<td>726 (75.5)</td>
</tr>
<tr>
<td><strong>Sometimes and often</strong></td>
</tr>
<tr>
<td>68 (35.4)</td>
</tr>
<tr>
<td>124 (64.6)</td>
</tr>
<tr>
<td><strong>Planning suicide</strong></td>
</tr>
<tr>
<td><strong>Low depressive risk</strong></td>
</tr>
<tr>
<td>36 (5.5)</td>
</tr>
<tr>
<td>621 (94.5)</td>
</tr>
<tr>
<td><strong>Possible case of depression</strong></td>
</tr>
<tr>
<td>108 (23.5)</td>
</tr>
<tr>
<td>351 (76.5)</td>
</tr>
<tr>
<td><strong>Depression (n = 1116)</strong></td>
</tr>
<tr>
<td><strong>Sex (n = 118)</strong></td>
</tr>
<tr>
<td><strong>Male</strong></td>
</tr>
<tr>
<td>40 (9.8)</td>
</tr>
<tr>
<td>369 (90.2)</td>
</tr>
<tr>
<td><strong>Female</strong></td>
</tr>
<tr>
<td>104 (14.7)</td>
</tr>
<tr>
<td>605 (85.3)</td>
</tr>
<tr>
<td><strong>Grade (n = 118)</strong></td>
</tr>
<tr>
<td>10</td>
</tr>
<tr>
<td>44 (11.8)</td>
</tr>
<tr>
<td>330 (88.2)</td>
</tr>
<tr>
<td>11</td>
</tr>
<tr>
<td>62 (16.5)</td>
</tr>
<tr>
<td>314 (83.5)</td>
</tr>
<tr>
<td>1.48 (0.98-2.45)</td>
</tr>
<tr>
<td>0.064</td>
</tr>
<tr>
<td>1.44 (0.92-2.29)</td>
</tr>
<tr>
<td>0.112</td>
</tr>
<tr>
<td>12</td>
</tr>
<tr>
<td>38 (10.3)</td>
</tr>
<tr>
<td>330 (89.7)</td>
</tr>
<tr>
<td>0.86 (0.55-1.37)</td>
</tr>
<tr>
<td>0.532</td>
</tr>
<tr>
<td>0.77 (0.46-1.27)</td>
</tr>
<tr>
<td>0.300</td>
</tr>
<tr>
<td><strong>Drinking alcohol (n = 1116)</strong></td>
</tr>
<tr>
<td><strong>None drinker</strong></td>
</tr>
<tr>
<td>97 (11.3)</td>
</tr>
<tr>
<td>758 (88.7)</td>
</tr>
<tr>
<td><strong>Drinker</strong></td>
</tr>
<tr>
<td>47 (18.0)</td>
</tr>
<tr>
<td>214 (82.0)</td>
</tr>
<tr>
<td><strong>Serious quarrel with teachers or other staff at school in the past 12 months (n = 1115)</strong></td>
</tr>
<tr>
<td><strong>Never</strong></td>
</tr>
<tr>
<td>103 (11.1)</td>
</tr>
<tr>
<td>828 (88.9)</td>
</tr>
<tr>
<td><strong>Sometimes and often</strong></td>
</tr>
<tr>
<td>41 (22.3)</td>
</tr>
<tr>
<td>143 (77.7)</td>
</tr>
<tr>
<td><strong>Being abused by parents or other adults in the household (n = 1115)</strong></td>
</tr>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td>106 (10.5)</td>
</tr>
<tr>
<td>903 (89.5)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>37 (34.9)</td>
</tr>
<tr>
<td>69 (65.1)</td>
</tr>
<tr>
<td><strong>Having tutor after school (n = 1111)</strong></td>
</tr>
<tr>
<td><strong>No</strong></td>
</tr>
<tr>
<td>123 (13.7)</td>
</tr>
<tr>
<td>778 (86.3)</td>
</tr>
<tr>
<td><strong>Yes</strong></td>
</tr>
<tr>
<td>20 (9.5)</td>
</tr>
<tr>
<td>190 (90.5)</td>
</tr>
<tr>
<td>** Attempted suicide**</td>
</tr>
<tr>
<td><strong>Anxiety (n = 1139)</strong></td>
</tr>
<tr>
<td>44 (3.9)</td>
</tr>
<tr>
<td>1095 (96.1)</td>
</tr>
</tbody>
</table>
### Student’s proposed solutions

Students proposed a number of measures to improve mental health. First, nearly four fifths of the students thought that the demands of the academic curricula should be reduced (79.8%), and that schools should have a confidential counselor to help them (78.8%). About half thought their parents’ (47.6%) and teachers’ (43.9%) attitudes and behaviors toward them needed to change and that teacher should take a supportive rather than punitive approach. Approximately 64% of respondents strongly agreed that students would share private problems and seek help on a suitable website. Most (90%) of the respondents said they would visit such a website if it existed. Finally, some students wanted parents and teachers to be supported in gaining counseling skills so that they could better sympathize with and help students at risk for mental health problems.

### Discussion

This study demonstrated that according to their own responses to standard questionnaires, nearly one fourth (22.8%) of secondary school students in Cantho were at risk of anxiety, and two fifths (41.1%) at risk of depression. Female students reported a higher level of signs of anxiety and depression. Key risk factors were physical and emotional abuse within the household, low study results and high educational stress. Anxiety and depression were found to be the main predictors of suicide ideation among these students. As many as 26.3% of students had seriously considered suicide, 12.9% had made a suicide plan and 3.8% had attempted suicide. A majority of students thought that reducing the demands of the academic curriculum, appointing...
confidential counselors and sharing their concerns on an appropriate website would help to improve their mental health.

The prevalence of anxiety among this group of students was higher than in previous studies of secondary school students in Ho Chi Minh City (16.2%) (Thai, 2010). The prevalence of depressive symptoms was 25.9% based on CES-D scores with the cut-off point >21, and 18.7% using the cut-off point >25. The prevalence of depressive symptoms in this study was quite similar to Thai’s findings (2010) (26.3%) but much higher than that of a study of adolescents (12-17 years) in California, USA, in which approximately 10% of the adolescents reported more than 10 depression symptoms (Bazargan-Hejazi et al., 2010). However, a further US study reported a higher level of depressive symptoms among young people (mean age 19.7) with 38.5% and 10.4% scoring at or above 16 and 28 CES-D total scale cutoffs respectively (Herman et al., 2011). Regional and national differences in the mental health scores of children and adolescents may be explained by several factors including individual, familial, and environmental/cultural aspects. Environmental stressors, such as poverty, traumatic events and illness, have been consistently linked to poor mental health among youth across the globe (Nikapota, 1991). The socio-economic development status in Cantho City, the location of this study, is much lower than in Ho Chi Minh City or the USA, which may explain the higher levels of anxiety and depressive symptoms among our study population.

The results of this study revealed one potentially important difference between the prevalence of mental health problems among Vietnamese students in Cantho City (South of Vietnam) and in Da Nang and Khanh Hoa provinces (Central Vietnam). In this study, female students had a significantly higher risk of anxiety and depression while the study of Da Nang and Khanh Hoa provinces, undertaken in 2006, found that gender was not significantly associated with overall rates of anxiety and depression among Vietnamese youth (Amstadter et al., 2011). However, it is important to note that the previous study only evaluated gender difference in relation to adolescents’ total Strengths & Difficulties Questionnaire (SDQ) scores. The present study showed a trend consistent with prevalence estimates of mental health problems among adolescents in Vietnam and in Western countries.

The prevalence of suicidal thoughts (26.3%) and suicide plans (12.9%) among this study population was higher than in the Ho Chi Minh City (6.3% suicidal thoughts and 4.6% suicidal plans) and Hanoi studies (10.6% suicidal thoughts) (Tran, 2007), but similar to levels found among
Malaysian secondary students (25.3% with suicidal thoughts and 10.5% with suicide plans) (Yuen, 2007). The prevalence of suicide attempts (3.8%) in this study was however lower than those in Ho Chi Minh City (5.8%) (Thai, 2010) and Hanoi (9.2%) (Nguyen, 2006). Suicide featured more prominently among these students than among first year university students at Cantho University of Medicine and Pharmacy (Nguyen, 2009), although both study populations were living in the same environment. Lifestyle differences between Cantho City, Ho Chi Minh City and Hanoi may be responsible for differences in mental health status (e.g. economic status and other factors as mentioned above). The higher rate of suicide ideation among secondary school students in this study compared to medical university students may reflect the higher education and income of university students’ parents. Another interpretation could be that the medical students are farther along in their studies and may be more confident of the outcomes, whereas the secondary school students may still be uncertain what may happen in their studies, potentially causing greater education-related anxiety.

Previous research (Thai, 2010) found that high academic pressure and recent poor academic performance were associated with higher levels of depressive symptoms. In this study, high educational stress was also a main predictor of anxiety and depression among students, consistent with findings from a national study (Nguyen, Dedding, Pham, & Bunders, 2013; Thai, 2010) and from international studies (Ang & Huan, 2006; Lipps et al., 2010; Park et al., 2011).

Overall, our findings also suggest, perhaps not surprisingly, a relationship between abuse and mental health problems. Our results also confirmed that frequent physical or emotional abuse from adults (parents or other adults in the family, teachers or other staff members at school) was an independent predictor of anxiety. This finding was similar to other recent studies in Ho Chi Minh City (Thai, 2010) and in Hanoi and rural Hai Duong (Nguyen et al., 2010). This is also consistent with findings from other studies in Western countries that demonstrate that maltreatment in childhood predicted difficulties in psychological adjustment in adolescence (Balsam et al., 2011; Sesar et al., 2008).

Nearly 80% of students thought that mental health problems could be improved by reducing the academic curriculum and by the appointment of a confidential counselor for students at school. These are new findings for which we did not find comparable results. Reducing the academic curriculum is not a quick and easy matter because it is a process involving
thousands of schools around the country, not only the schools in the study. The appointment of confidential counselors for students is also difficult to implement because schools in Vietnam lack staff and financial support to provide such skilled counselors. However, most of the students reported that they would share their private problems and seek help from a website if it was available. Developing such a website should be feasible in order to provide an internet-based psycho-educational intervention for students in Vietnam.

**Limitations of the study**

Several limitations of the study need to be considered. First, the CES-D scale, like other screening instruments, cannot be viewed as a diagnostic tool but only as a screening instrument to identify members of groups at risk of depression because it has relatively low specificity, 77% in primary care patients using the cut-off point of 16 (McDowell, 2006; Mulrow et al., 1995). Second, the temporal sequence of covariates and depression, for example, cannot be ascertained because it was a cross-sectional study.

Third, non-response bias should also be taken into account. In general, people who participate in health surveys are healthier than those who do not (Bobak et al., 2006). Thus, the levels of depressive symptoms, anxiety, and suicide ideation are probably underestimated. However, the difference between respondents and non-respondents were similar in all subgroups in the study sample so the comparisons between populations are valid, even if the absolute prevalence rates may be underestimated (Bobak et al., 2006). The low non-respondent bias should not affect the association between depressive symptoms or anxiety and risk factors within the study sample.

Four, the study population may not be representative of all youth of secondary school age throughout the country, given that some youth do not attend secondary school. However, compared with the national average, rates of depression and anxiety were quite similar to national studies (Thai, 2010). Another limitation is that the cut-off scores were not validated among youth in Vietnam which means they should be used with caution. Finally, the low sensitivity of the anxiety measure (31%) may have resulted in an underestimate of the burden of anxiety.
Conclusions

The rates of anxiety and depression among the students who participated in the study confirm the findings of other studies that this prevalence is high among Vietnamese secondary school students. Research shows that anxiety and depression have significant effects on students’ quality of life, and are major risk factors for suicide. Emotional abuse within the family and high educational stress were the main causes of anxiety and depressions. The most feasible strategy to contribute to reducing mental health problems and promoting mental health among secondary school students in Vietnam today would be the development of a website to provide psycho-educational interventions designed to meet the needs identified in this study. In addition, schools should establish school-based counseling services for students, possibly by collaborating with volunteers from the Youth Union, the largest social-political organization of Vietnamese youth, at local universities. Teachers and parents should also participate in psychological education programs to raise awareness of the effect of their approach to the students and how it may be counterproductive. This may help to address some of the issues related to teacher and parent attitudes rose by the students and may allow for discussion of physical or emotional abuse which parents and teachers may consider to be appropriate punishment for bad behavior or poor academic performance.

Competing interests

The authors declare that they have no competing interests.

Authors’ contributions

NTD, JB, JB, and CD jointly produced the idea and the study design. NTD, CD, PTT and PW developed the survey tools. NTD and PTT coordinated the surveys and data collection in the field. Data analysis was done by NTD, PTT, CD and PW. NTD was guided by CD and PW to produce the first draft and all authors contributed to the final version of the manuscript.

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Medicine and Pharmacy for their kind support, and Prof. Wim Brandsma and Prof. Wim van Brakel for their kind advice on the data analysis.

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References


Chapter 6
Low self-esteem and its association with anxiety, depression, and suicidal ideation in Vietnamese secondary school students: a cross-sectional study
Low self-esteem and its association with anxiety, depression, and suicidal ideation in Vietnamese secondary school students: a cross-sectional study


Abstract

**Background:** There is a correlation between self-esteem in adolescents and risks and protective factors for their health and welfare. The study was conducted to determine the prevalence of low self-esteem and socio-demographic features related to anxiety, depression, educational stress, and suicidal ideation in secondary school students in Vietnam.

**Method:** A cross-sectional design was employed for this study with a participation of 1149 students in Cantho City in Vietnam. A structured questionnaire was applied to ask about self-esteem, depression, anxiety, educational stress, and suicidal ideation.

**Results:** Students with low self-esteem were detected at a prevalence of 19.4%. High educational stress, and physical and emotional abuse by parents or other adults in the household were major risk factors correlated to low self-esteem, while a protective factor for low self-esteem was attending supplementary classes. An association among lower self-esteem and increased anxiety, depression, and suicidal ideation was detected.

**Conclusions:** Self-esteem is associated with anxiety, depression, and academic stress, which significantly effects students’ quality of life and links to suicidal ideation. These results therefore suggested the need for a school-based or web-based provision aimed at proactively increasing students’ self-esteem, and skills for dealing with academic stress.

**Keywords:** self-esteem, anxiety, depression, suicide, adolescents, Vietnam
Introduction

It is well-recognized that adolescence is one of the most rapid phases of human development (World Health Organization). It is characterized by a rapid physical, social, and cognitive growth as well as changes in self-esteem. Self-esteem is reported to have a significant impact on important life outcomes including health and social outcomes during adolescence and adulthood. For example, there is a clear connection between higher self-esteem and positive outcomes, such as occupational success, better social relationships, a sense of well-being, and positive perceptions by peers, academic achievement, and good coping skills (Boden et al., 2008; Trzesniewski et al., 2003). Low self-esteem is causally related to depression, substance abuse, antisocial behaviour and suicide (Choo et al., 2017; Crocker & Wolfe, 2001; McClure et al., 2010). The literature demonstrates that social functioning, such as acceptance by peers, is lower in children with low self-esteem (Bos et al., 2006).

Extensive research has explored risk and protective factors related to low self-esteem development during adolescence. Reported risk factors include being a girl (Kling et al., 1999; McClure et al., 2010; Schraml et al., 2011), the family’s low socio-economic status (Veselska et al., 2009), parents’ education level, family eligibility for public assistance, eligibility for free or reduced-cost school meals, the parents’ employment status (Berg et al., 2010), and school performance and grades (Birndorf et al., 2005; McClure et al., 2010) as well as obesity (Mak et al., 2013).

Academic achievement is known to be affected by self-esteem while self-esteem may also influence academic achievement (Bos et al., 2006). High self-esteem is reported as an important factor in predicting students’ academic achievement (Aryana, 2010). Another study found, however, that high self-esteem resulted in many positive outcomes and benefits, but did not necessarily lead to good school performance (Baumeister et al., 2003). On the other hand, adolescents with poor academic results did not always have low general self-esteem (Pullmann & Allik, 2008).

There is an association between low self-esteem and negative outcomes for young people’s behavioural and mental health problems, including health-compromising behaviours such as substance abuse, early sexual activity, and eating problems (Keane & Loades, 2017). A longitudinal study among a large sample of young New Zealanders found, however, that while low self-esteem significantly predicted adolescent eating and other health-compromising behaviours, it was not related to substance abuse and early
sexual activity (McGee & Williams, 2000). With regard to mental health, a correlation has detected between low self-esteem and (Millings et al., 2012; Weber et al., 2010); anxiety (Rosenberg et al., 1995; Veselska et al., 2009) and adolescents’ suicidal ideation and attempts (McGee & Williams, 2000; Wild et al., 2004).

Currently, the literature presents a strong relationship between academic pressure and stress, depression, anxiety, low self-esteem, and suicidal ideation among students in secondary or high school and young adults (Ghatol, 2017; Kumari & Gartia, 2012; Nguyen, Dedding, Pham, Wright, et al., 2013). A study describing perceptions about mental illness in Hue in Vietnam, noted that ‘studying or thinking too much’ is a cause of mental health problems (van der Ham et al., 2011). In Vietnamese culture, the pressure from parents and schools might be expected to have an unintended effect, leading to lower self-esteem and associated outcomes seen elsewhere among high school students. There are as yet no reports of systematic studies on this issue in Vietnam and there are few reports of descriptive or analytical research into adolescent self-esteem.

This is particularly relevant since we found high levels of depression, anxiety, and suicidal ideation among secondary school students in Vietnam (Nguyen, Dedding, Pham, Wright, et al., 2013). This paper reports on a study that aimed to determine 1) the prevalence of low self-esteem; 2) the characteristics associated with low self-esteem; and 3) the relationships among self-esteem and anxiety, depression, educational stress, and suicidal ideation in secondary school students. We hypothesized that low self-esteem would be associated with a greater risk of poor mental health status.

**Materials and methods**

**Study design and participants**

A cross-sectional study design was used to recruit 1260 students at three secondary schools in urban and suburban areas in Cantho City in Vietnam. All data were collected during the first academic semester, from September to December 2011. A more detailed description of the sampling and its participants can be found elsewhere (Nguyen, Dedding, Pham, Wright, et al., 2013).
Measures

All participants were invited to do self-reporting following a questionnaire. The process was done after class or at home anonymously to minimize potential reporting bias and to keep information confidential. The detailed components of the questionnaire have been described elsewhere (Nguyen, Dedding, Pham, Wright, et al., 2013).

The 10-item Rosenberg Self-Esteem Scale (Rosenberg, 1965; Rosenberg, 1989) was used to assess global self-esteem, with higher scores indicating more positive self-regard. Each item asked for response using a 4-point Likert scale ranging from 1 (strongly agree) to 4 (strongly disagree). The scale is generally reliable, with test–re-test correlations value between 0.82 and 0.88 (Rosenberg, 1965) The Cronbach’s alpha of the scale in the present study was 0.77. The scale ranges from 0-30; a score of over 25 suggests high self-esteem, scores between 15 and 25 are considered to be within normal range while scores below 15 suggest low self-esteem (Morris Rosenberg).

A more detailed method description on employing the Center for Epidemiology Studies Depression (CES-D), the anxiety scale, and the Educational Stress Scale for Adolescents (ESSA) for this study can be obtained elsewhere (Nguyen, Dedding, Pham, Wright, et al., 2013).

To address the issue of suicidal ideation, additional questions on whether the student had ever seriously considered suicide or made a suicide plan used a 3-point scale (never, sometimes, and often). A yes/no question was also used to identify students who had attempted suicide.

To define risks and protective factors, we explore the variables listed in Table 1, including mother’s education, physical and emotional abuse by parents or other adults in the household, school, academic performance in the last semester, educational stress, attendance at a supplementary class, and use of personal tutor.

Data analysis

Demographic data were analysed descriptively to determine basic characteristics of the sample population and presented as means ± standard deviations (SD). The Chi squared test ($\chi^2$) was used to assess the significance of differences in the distribution of participants by selected socio-demographic characteristics, risk factors, and outcome variables.
Associations between low self-esteem and family characteristics, educational stress, and academic achievement were explored by logistic regression analysis. Univariate independent predictors of low self-esteem with $p<0.10$ were entered in a multivariate logistic regression model and the Backward Wald method was applied to study their influence on the presence of low self-esteem. Univariate logistical analyses were also applied to determine the relationships among low self-esteem and anxiety, depression, and suicidal ideation, and Pearson correlation coefficients were used to measure the correlations among these. All analyses were carried out with a significance level of $5\%$ and all tests were two-sided. The $95\%$ confidence intervals of Odds Ratios (OR) were also calculated. All analyses were analysed by using SPSS, Version 16.0.

**Results**

**Demographics**

Of the 1260 students invited to participate, 111 (7.3%) were excluded from analysis because they did not adequately complete the questionnaire; for example, they did not provide answers to five or more items in the CES-D. The final sample comprised 1149 senior high school students with the mean age of 16.1 years. Participated students were fairly evenly distributed in terms of sex: 36.5% males and 63.5% females (Table 1). This proportion also reflects the proportion of males and females enrolled in the classes studied. Students’ participation from each grade (10 to 12) did not significantly differ, at around 33% each. Ninety-five per cent of students were ethnically Kinh; other ethnic groups included Hoa and Khmer. This sample was in line with the school population in this area.
Table 1. Frequencies and percentages (%) of socio-demographics variables of participants by self-esteem status

<table>
<thead>
<tr>
<th></th>
<th>Total</th>
<th>Low Self-Esteem</th>
<th>Normal Self-Esteem</th>
<th>P&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>N</td>
<td>%</td>
</tr>
<tr>
<td>Total Screened</td>
<td>1149</td>
<td>100</td>
<td>223</td>
<td>19.4</td>
</tr>
<tr>
<td>Age (Mean, SD)</td>
<td>16.05</td>
<td>16.01</td>
<td>16.05</td>
<td>0.290</td>
</tr>
<tr>
<td>Sex</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>419</td>
<td>36.5</td>
<td>72</td>
<td>32.3</td>
</tr>
<tr>
<td>Female</td>
<td>730</td>
<td>63.5</td>
<td>151</td>
<td>67.7</td>
</tr>
<tr>
<td>Family economic status</td>
<td>1148</td>
<td></td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>Comfortable living and wealthy</td>
<td>664</td>
<td>57.8</td>
<td>100</td>
<td>45.0</td>
</tr>
<tr>
<td>Very poor/poor/earn just enough to live</td>
<td>484</td>
<td>42.2</td>
<td>122</td>
<td>55.0</td>
</tr>
<tr>
<td>Academic performance in the last semester</td>
<td>1130</td>
<td></td>
<td>219</td>
<td></td>
</tr>
<tr>
<td>Excellent/good</td>
<td>225</td>
<td>19.9</td>
<td>33</td>
<td>15.1</td>
</tr>
<tr>
<td>Fairly good/average</td>
<td>854</td>
<td>75.6</td>
<td>168</td>
<td>76.7</td>
</tr>
<tr>
<td>Below average/very poor</td>
<td>51</td>
<td>4.5</td>
<td>18</td>
<td>8.2</td>
</tr>
<tr>
<td>Personal tutor</td>
<td>1142</td>
<td></td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>928</td>
<td>81.3</td>
<td>166</td>
<td>74.4</td>
</tr>
<tr>
<td>No</td>
<td>214</td>
<td>18.7</td>
<td>57</td>
<td>25.6</td>
</tr>
<tr>
<td>Attendance at supplementary class</td>
<td>1146</td>
<td></td>
<td>223</td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>323</td>
<td>28.2</td>
<td>81</td>
<td>36.3</td>
</tr>
<tr>
<td>One or more</td>
<td>823</td>
<td>71.8</td>
<td>142</td>
<td>63.7</td>
</tr>
<tr>
<td>Mother’s education</td>
<td>1143</td>
<td></td>
<td>222</td>
<td></td>
</tr>
<tr>
<td>&gt; primary school</td>
<td>1006</td>
<td>88.0</td>
<td>181</td>
<td>81.5</td>
</tr>
<tr>
<td>&lt;= primary school</td>
<td>137</td>
<td>12.0</td>
<td>41</td>
<td>18.5</td>
</tr>
</tbody>
</table>

<sup>a</sup><sup>χ²</sup> was used to compare differences in percentages; <i>t</i>-test was used to compare differences in means
Prevalence of low self-esteem and characteristics associated with self-esteem

The mean self-esteem score was 17.56 on the scale of 0 to 30. The scores for boys and girls were similar (17.83 vs 17.40; t = 1.720; p = 0.086). Based on all scores, nearly a fifth (19.4%) of the respondents reported low self-esteem according to Rosenberg’s criteria, with scores below 15 (Table 1).

Based on univariate logistic regression analysis, among six investigated variables, two variables ‘having a personal tutor’ and ‘attendance at supplementary classes’ were negatively associated with the risk of low self-esteem, while the other variables were positively correlated to low self-esteem (Table 2). Students were likely to show lower self-esteem, when their mother’s education was at primary level or below, when they were often physically or emotionally abused at home or at school, when they had below average/very poor academic performance in the last semester, or when they reported experiencing high educational stress.

In the multivariate regression analysis (with the Backward Wald method), not accounting for effect modification, four variables remained correlated to low self-esteem, either in a negative or positive direction. Having a personal tutor and academic performance in the last semester were no longer a significant association, but attending supplementary classes still remained a protective factor for low self-esteem (reduced odds ratio of 43% compared with students not attending) (Table 2). Study results that were considerably positively associated to low self-esteem were medium and high educational stress (odds ratios 2.25 and 4.02, respectively).
Table 2. Factors associated with low self-esteem: multivariate logistic regression analyses

<table>
<thead>
<tr>
<th>Factors</th>
<th>Low self-esteem n (%)</th>
<th>Normal self-esteem n (%)</th>
<th>Univariate logistic regression OR (95% CI)</th>
<th>p-value</th>
<th>Multivariate logistic regression OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mother’s education (n=1143)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>&gt; primary school</td>
<td>181 (18.0)</td>
<td>825 (82.0)</td>
<td>Reference</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>≤ primary school</td>
<td>41 (29.9)</td>
<td>96 (90.1)</td>
<td>1.95 (1.31-2.90)</td>
<td>0.001</td>
<td>1.68 (1.09-2.69)</td>
<td>0.018</td>
</tr>
<tr>
<td>Physical and emotional abuse by parents or other adults in the household (n=1146)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>192 (18.5)</td>
<td>845 (81.5)</td>
<td>Reference</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>31 (28.4)</td>
<td>78 (71.6)</td>
<td>1.75 (1.12-2.73)</td>
<td>0.013</td>
<td>1.76 (1.10-2.82)</td>
<td>0.018</td>
</tr>
<tr>
<td>Academic performance in the last semester (n=1130)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Excellent/good</td>
<td>33 (14.7)</td>
<td>192 (85.3)</td>
<td>Reference</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Fairly good/average</td>
<td>168 (19.7)</td>
<td>686 (80.3)</td>
<td>1.43 (0.95-2.14)</td>
<td>0.087</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Below average/very poor</td>
<td>18 (35.5)</td>
<td>33 (64.7)</td>
<td>3.17 (1.60-6.28)</td>
<td>0.001</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Educational stress (n=1142)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low stress</td>
<td>31 (9.4)</td>
<td>300 (90.6)</td>
<td>Reference</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>Medium stress</td>
<td>68 (17.4)</td>
<td>322 (82.6)</td>
<td>2.04 (1.30-3.22)</td>
<td>0.002</td>
<td>2.25 (1.41-3.58)</td>
<td>0.001</td>
</tr>
<tr>
<td>High stress</td>
<td>121 (28.7)</td>
<td>300 (71.3)</td>
<td>3.90 (2.55-5.98)</td>
<td>&lt;0.001</td>
<td>4.02 (2.60-6.23)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Personal tutor (n=1142)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>166 (17.9)</td>
<td>762 (82.1)</td>
<td>Reference</td>
<td></td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>No</td>
<td>57 (26.6)</td>
<td>157 (73.4)</td>
<td>1.67 (1.18-2.36)</td>
<td>0.004</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Attendance at supplementary class (n=1146)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>81 (25.1)</td>
<td>242 (74.9)</td>
<td>Reference</td>
<td></td>
<td>Reference</td>
<td></td>
</tr>
<tr>
<td>One or more</td>
<td>142 (17.3)</td>
<td>681 (82.7)</td>
<td>0.62 (0.46-0.85)</td>
<td>0.003</td>
<td>0.57 (0.41-0.79)</td>
<td>0.001</td>
</tr>
<tr>
<td>Total (n=1149)</td>
<td>223 (19.4)</td>
<td>926 (80.6)</td>
<td>-</td>
<td>-</td>
<td>Reference</td>
<td>-</td>
</tr>
</tbody>
</table>

Relationships between self-esteem and anxiety, depression, and educational stress, and suicidal ideation

As shown in Table 3, four variables – self-esteem, anxiety, depression, and educational stress – were related to each other. Self-esteem was negatively correlated to anxiety, depression, and educational stress, while educational stress was positively correlated to anxiety and depression.
One of the purposes of the study was to identify the impact of self-esteem on mental health problems. The results of univariate logistics indicate that low self-esteem contributed significantly to anxiety, depression, and suicide among adolescents. Compared to students who reported normal self-esteem, the students who reported low self-esteem had twice the odds of having anxiety symptoms (20.3% (187/921) vs. 34.2% (76/222)) (OR = 2.04; 95% CI OR = 1.48-2.82, p < 0.001), nearly six times the odds of being at risk of depression (CES-D score of ≥ 16) (74.0% vs 33.2%), (OR = 5.72; 95% CI OR = 4.11-7.59), four times the odds of having depressive symptoms (CES-D scores of > 21) (50.7% vs 19.8%) (OR = 4.16; 95% CI OR = 3.06-5.66), and nearly five times the odds of having depression (CES-D score of > 25) (41.7% vs 13.0%), (OR = 4.79; 95% CI OR = 3.45 – 6.65). Students with low self-esteem also were significantly more likely to have considered or attempted suicide (Table 4).

### Table 3. Pearson correlations between self-esteem, anxiety, depression, and educational stress

<table>
<thead>
<tr>
<th></th>
<th>Self-esteem</th>
<th>Anxiety</th>
<th>Depression</th>
<th>Educational stress</th>
</tr>
</thead>
<tbody>
<tr>
<td>Self-esteem</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anxiety</td>
<td>-0.219</td>
<td>-</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Depression</td>
<td>-0.426</td>
<td>0.422</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Educational stress</td>
<td>-0.249</td>
<td>0.318</td>
<td>0.308</td>
<td>-</td>
</tr>
</tbody>
</table>

*All correlations are significant at the 0.001 level (2-tailed)*

### Table 4. Associations between self-esteem and suicidal ideation

<table>
<thead>
<tr>
<th></th>
<th>Yes n (%)</th>
<th>No n (%)</th>
<th>OR (CI 95%)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Seriously considered suicide</strong></td>
<td>301 (26.3)</td>
<td>844 (73.7)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal self-esteem</td>
<td>213 (23.1)</td>
<td>710 (76.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low self-esteem</td>
<td>88 (39.6)</td>
<td>134 (60.4)</td>
<td>2.19 (1.61-2.98)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Planning suicide</strong></td>
<td>142 (12.8)</td>
<td>965 (87.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal self-esteem</td>
<td>96 (10.8)</td>
<td>792 (89.2)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low self-esteem</td>
<td>46 (21.0)</td>
<td>173 (79.0)</td>
<td>2.19 (1.49-3.23)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td><strong>Attempted suicide</strong></td>
<td>44 (3.9)</td>
<td>1095 (96.1)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal self-esteem</td>
<td>28 (3.1)</td>
<td>884 (96.9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low self-esteem</td>
<td>16 (7.3)</td>
<td>204 (92.7)</td>
<td>2.48 (1.32-4.66)</td>
<td>0.004</td>
</tr>
</tbody>
</table>
Discussion

We investigated the prevalence of low self-esteem among secondary school students, the characteristics associated with low self-esteem, and the relationships among self-esteem and anxiety, depression, and suicide. Nearly 20% of the students had low self-esteem, with no difference between girls and boys. These results are in line with some previous studies (Birndorf et al., 2005; Heinonen et al., 2005), but inconsistent with others (Birndorf et al., 2005; McClure et al., 2010). Cultural and social differences in the study populations could explain some of the differences. Reasons for having a higher prevalence of low self-esteem among females. The results of this study cannot provide precise reasons for the higher prevalence of lower self-esteem among females; however, a number of possible causes for the gender differences are worth discussing. Although gender equality has improved in recent years in Vietnam and is clearly legislated, gender issues within the family and society remain a challenge for most Vietnamese, who are strongly influenced by traditional culture and custom (UNICEF Viet Nam, 2010). There is an association between female gender and emotionally unstable personality (Dedovic et al., 2009; Rudolph, 2002). As a result, women are more prone to develop emotionally unstable personality (e.g. borderline personality) (Keng et al., 2018). Thus, females’ self-esteem may be more likely to fluctuate, depending on how they themselves or others, especially their parents, evaluate their achievements. A high prevalence of low self-esteem among the secondary school students should be considered as an important mental health problem not only by parents, school teachers and principals but also by policy makers in the education and health sectors in Vietnam. In fact, health care related to psychological disorders has not received adequate consideration yet in Vietnam (Communist Party of Vietnam, 2017). Therefore, it is important to take mental health care into account when developing a policy framework to improve general school health services, such as Directive No. 23/2006/CT-TTg on having well-equipped and professionally qualified health officers in schools (Prime Minister of Vietnam, 2006), and Decision No. 401/2009/QD-TTg which approved the program ‘Preventing and combatting diseases in educational establishments belonging to the national education system’ (Prime Minister of Vietnam, 2009).

Our results confirm the findings of previous studies (McClure et al., 2010; Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013; Veselska et al., 2009), namely that family characteristics, including mother’s low educational level and physical and emotional abuse by parents or other adults in the household, were associated
with low levels of self-esteem. In addition, educational characteristics such as the school environment, academic performance, and high educational stress were strongly associated with self-esteem. These findings are in line with the results of a study by Pullmann & Allik (Pullmann & Allik, 2008), which found that parents have a great deal of influence on their children’s psychological development, including on the relationships outside the family environment (McClure et al., 2010; Veselska et al., 2009). Students who attended one or more supplementary classes appeared to be at lower risk of having poor self-esteem. In Vietnam, these students are usually from a family with a higher socio-economic status. Attending supplementary class may reduce the stress of workload and academic pressure for those students. It would be useful to confirm this with further studies in the Vietnamese context, but this kind of support is unlikely to be available to families who cannot pay for it.

Low self-esteem in the adolescents in Cantho City was associated with poor academic performance. Aryana reported that high self-esteem among pre-university students was an important factor in predicting high academic achievement (Aryana, 2010). Our finding also highlights that self-esteem plays an important role in predicting academic achievement, although a cross-sectional study design is unable to demonstrate causality; a prospective study to identify causality of the low self-esteem would be appropriate in future research.

With regard to mental health, the results of Pearson correlation analysis showed that self-esteem was negatively correlated to anxiety, depression, and educational stress, while the results of univariate logistic regression illustrated that low self-esteem contributed to a high risk of anxiety, depression, and suicidal ideation. These results are comparable to others showing that low self-esteem was associated with depression (Millings et al., 2012; Weber et al., 2010; Yaacob et al., 2009) and identifying a relationship between self-esteem and anxiety (Rosenberg et al., 1995; Veselska et al., 2009), as well as a relationship between low self-esteem and suicidal ideation and suicide attempts among adolescents (McGee & Williams, 2000; Wild et al., 2004). Screening for low self-esteem in adolescents is a possible strategy to help identify secondary school students at risk of anxiety, depression, and suicide. In addition, our previous study (Nguyen, Dedding, Pham, Wright, et al., 2013) showed an association between mental health problems and academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed. There is clearly a need to reduce mental health problems among today’s secondary school students in Vietnam. The development of a website to
provide psycho-education designed to meet the needs of young Vietnamese and of school-based counselling services for students, possibly by collaborating with volunteers from the Youth Union, the largest socio-political Vietnamese youth organization, at local universities, teachers and parents, will be explored as one of the solutions (Nguyen, Dedding, Pham, & Bunders, 2013). Around 66.3% of young Vietnamese downloaded the mobile health applications for disease prevention (Do et al., 2018). Nevertheless, one of the challenges to use digital health intervention is that young Vietnamese with a higher perceived stress level were significantly less likely to use such interventions (Tran, Zhang, et al., 2018).

**Study limitations**

One limitation of this study relates to the sample and its generalizability. Although the distribution of girls and boys reflected the true/current situation in the classes selected, the sample was from only three schools in urban and suburban Cantho. Another limitation concerns the study design, which specified collection of data from adolescents by self-reporting using standardized questionnaires. The respondents’ personality and identity development are still incomplete, which could result in fluctuating self-perceptions (Schraml et al., 2011) and thus unreliable reporting. Also, the exploration of potential causes of low self-esteem as self-reported by subjects was not included in the survey. Another limitation is that the cross-sectional study design does not permit detection of links between covariates; longitudinal studies on this topic are still needed. Finally, the self-esteem, anxiety, and CES-D scales, like other screening instruments, cannot be viewed as diagnostic tools, but only as screening tests to identify members of groups at risk for these conditions. The results tell us how the students perceive their health but are not in themselves evidence of medical concerns. Moreover, there is no assessment of stress coping and stress levels, obesity (Quek et al., 2017) and chronic medical illness (e.g. asthma) (Lu et al., 2012), that may confound and influence anxiety, depression and suicidal ideations. Finally, in a cross-sectional study the cause–effect relationship cannot be measured; that requires a longitudinal cohort or a randomized controlled study.

**Conclusions**

Our research presented that self-esteem is correlated to anxiety, depression, and academic stress, which significantly effects on students’ quality of life and links to suicidal ideation. These results therefore suggested the need for
a school-based or web-based provision aimed at proactively increasing students’ self-esteem, and skills for dealing with academic stress.

**Ethical considerations**

The study was approved by the Scientific and Training Committees of Cantho University of Medicine and Pharmacy. Written informed consent for participation was obtained from students’ parents or legal guardians before data collection.

**Competing interests**

No conflict of interest here.

**Authors’ contributions**

A first draft of the manuscript was prepared by NTD under the guidance of CD. All authors contributed to the final manuscript version. NTD, JB, JB, and CD jointly generated the research idea and the study design. NTD, CD, PTT and PW contributed to the survey tools. NTD and PTT coordinated the surveys and data collection in the field. NTD, PTT, CD and PW carried out data analysis.

**Acknowledgements**

Special thanks to all the students who participated in the study. We would also like to thank Hanoi University of Medicine and Can Tho University of Medicine and Pharmacy as the Coordinating Board of the project in Vietnam and Professor Pham Van Linh, Rector of Can Tho University of Medicine and Pharmacy, for their kind support for this work. Our deepest appreciation is also due to Professor Wim Brandsma and Professor Wim van Brakel for their kind advice on the data analysis.

**References**


Chapter 7
Role of school health officers in mental health care for secondary school students in Can Tho City, Vietnam
Role of school health officers in mental health care for secondary school students in Can Tho City, Vietnam


Abstract

OBJECTIVES To explore the experiences of school health officers in identifying and managing mental health problems of secondary school students, and to provide recommendations to improve the effectiveness of mental health care in secondary schools in Can Tho City, Vietnam.

METHODS A qualitative study based on in-depth interviews using a semi-structured guideline was conducted with 15 school health officers at 15 secondary schools in Can Tho City, Vietnam. Data were analyzed using content analysis to identify recurring themes.

RESULTS The school health officers reported that stress, depression, suicidal ideation, and sexual orientation issues were the most commonly encountered mental health problems among their secondary school students. To deal with these, the officers worked with a limited range of interventions such as giving mild painkillers or advising students to take a short break at school; if the illness was more serious, they advised the students to go home. When the students presented mental health problems or symptoms, the school health officers tried to obtain more information from the students to offer appropriate advice. Most of them felt that their training was insufficient to deal with mental health problems in an optimal way. They recommended further training to improve their knowledge on mental health and their skill in recognizing and managing mental health problems in students. A website on mental health information for students was introduced to them; they considered it a good source for school health officers to strengthen their knowledge on mental health care for students.

CONCLUSIONS School health officers are not well-equipped to manage mental health problems among secondary school students in this part of Vietnam. They do not have sufficient training, and lack confidence and an appropriate network for advice and referral. Policies and programs are needed
to improve training, re-training, and utilization of school health officers as a first line service to support secondary school students with mental health problems. Strategies for prevention of mental illness and promotion of good mental health need to be included in their training and activities.

**Keywords:** mental health care, students, school nurse, school health officers, Vietnam

**Background**

In many countries, the school nurse is the first person a secondary school student will contact in case of a health problem (Fazel, Hoagwood, et al., 2014; Fazel, Patel, et al., 2014). Typically, school nurses are trained to identify basic health conditions and illnesses and to gauge their severity. In most circumstances, they are able to advise students correctly. However, at present, mental health problems among students appear to be on the rise around the world - from stress and anxiety to depression and suicide (Daya & Karthikeyan, 2018; Kumar & Akoijam, 2017; World Health Organization, 2012, 2018). Several reports have demonstrated that school nurses often do not feel well equipped to provide the support that students with mental health problems may need (Greytak et al., 2019; Rosvall & Nilsson, 2016). School programs aimed at preventing or reducing mental health problems require active participation by the school nurse, who must be prepared for that role (Rosvall & Nilsson, 2016).

In Vietnam, school nurses often do not have a nursing background, and their title is “school health officer.” Government regulations require school health officers to have at least a two-year or three-year college degree, but they do not need a university degree in medicine or nursing (Ministry of Health and Ministry of Education and Training, 2016). There is no special training programme for school health officers. Most are general assistant physicians, with a three-year diploma at the college level; their work mainly involves providing first aid in case of injuries and taking measures to prevent disease outbreaks in schools. A school health officer is positioned to advise the Administration Board of the school and to carry out health checks on height, weight, blood pressure, heart rate, and eyesight for students at the beginning of the school year. They also are tasked with observing and counseling students and their parents on the general health status including the mental health of students during the school year. However, mental health care is not yet included in the detailed list of healthcare communication and campaigns
to be implemented in schools. (Ministry of Health and Ministry of Education and Training, 2016). Mental health is mentioned in the Joint Circular 13/2016/TTLT-BYT-BGDDT on Regulations on Healthcare Activities in Schools issued on May 12, 2016 by the Ministry of Health and Ministry of Education and Training, stating that school health officers are required to take part in workshops, trainings, higher education and professional development opportunities, but there is no mention of how to assist school health officers to participate in those trainings nor any detailed annual plan on such continuous professional development opportunities. As noted in recent systematic reviews, there is a need for much more information about school health, especially about mental health, in low- and middle-income countries (Arenson et al., 2019; Fazel, Patel, et al., 2014). This is the case in Vietnam, where the mental health of adolescents falls within the remit of the Ministry of Health, the Ministry of Labour, Invalids and Social Affairs and the Ministry of Education and Training, but there are limitations in coordination considered to be led by the Ministry of Health (Overseas Development Institute and UNICEF Vietnam, 2018). In addition, there are no legal documents that mention a role for other school personnel and no requirement for training or a background in mental health for other school personnel to participate in the response to mental health issues in students.

Students in secondary schools in Vietnam are under great pressure to achieve academic success, which can lead to mental health problems and even suicide. Securing a place in a public university is a major step towards a success in later life. Can Tho City is a major urban center in the Mekong Delta, Southern Vietnam, that had approximately 26,000 students distributed across 27 secondary schools in the school year 2013 to 2014. We have previously reported that more than a quarter of secondary school students surveyed in Can Tho City had suicidal thoughts and more than 10% had suicidal plans (Nguyen, Dedding, Pham, Wright, et al., 2013). The numbers were lower, but still high, in Ho Chi Minh City and Hanoi (Harpham & Tran, 2006; Tran, 2007). The main factors related to this problem were high academic pressure, both at home and at school (Nguyen, Dedding, Pham, & Bunders, 2013); and emotional and physical abuse by parents or other adults in the household, or by teachers or other staff at school (Le et al., 2016; Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013; Nguyen et al., 2010; Tran, Dunne, et al., 2015). Attitudes and beliefs on mental health are affected by a combination of little knowledge and a mix of traditional and modern views (van der Ham et al., 2011). Stigma related to mental health is highly prevalent in Vietnam (Do et al., 2014; Vuong et al., 2011). It is reported that
mental illness is seen as a disgrace, bringing stigma to the whole family; the family will be viewed as bad and as one that has not followed a virtuous path (Nguyen, 2012). It is said that ‘whenever people think about mental illness, they will certainly think about madness and strange behavior.’ (Hong Minh, 2008; Vuong et al., 2011)

Despite growing concerns about the mental health of school students, both financial and human resources to address mental health issues are limited in Vietnam (Niemi et al., 2010; Vuong et al., 2011). While it is the responsibility of the school structure as a whole, including parents and teachers, to help students cope with these pressures, a large part of the immediate burden falls upon the health officers, who have daily contact with the students (Daya & Karthikeyan, 2018; Garmy et al., 2015; Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013; Paschall & Bersamin, 2018; Werner-Seidler et al., 2017).

The Vietnamese government has made significant efforts over the last 10 years to develop a policy framework to improve general school health services, such as Directive No. 23/2006/CT-TTg on having well-equipped and professionally qualified health officers in schools (Prime Minister of Vietnam, 2006), and Decision No. 401/2009/QD-TTg, which approved the program “Preventing and combatting diseases in educational establishments belonging to the national education system” (Prime Minister of Vietnam, 2009). However, these policies focused on issues such as first aid for injured students and prevention of disease outbreaks in schools. Health care related to psychological disorders has not received adequate consideration (Communist Party of Vietnam, 2017). Finding out more about how first line health workers and school health officers perceive and deal with mental health problems among students could reveal gaps that need to be addressed to better serve the large numbers of youth attending secondary schools; such information is not yet available in Vietnam.

In this study, our objectives were to explore the experiences of school health officers in identifying and managing mental health problems of secondary school students and to gather recommendations from the school officers for improving the effectiveness of mental health care in secondary schools in Can Tho City, Vietnam. We investigated how school health officers dealt with mental health problems among students, how they felt about their capacity to cope with these issues, and what they needed to better perform their role in supporting students’ mental health.
2. Methods

2.1. Study design and population

A qualitative research study was conducted with school health officers from November to December, 2015. The health officers were recruited purposively from both public and private secondary schools in nine districts of Can Tho City. The average student population of the schools was 1,000, ranging from 300 to 3,000, and students were between 12 and 20 years of age. The proportions of male and female students were similar in all schools, at approximately 50% each. Interviews took place privately in the health officers’ designated rooms in the schools.

Of the 27 schools invited to join the study, 15 participated but saturation of types of responses with this group of health officers was reached. Most schools had one health officer. Two of the schools had two health officers, but in each case one of them had only a few months of working experience, so these were not included in the study. Of the 12 schools that did not participate, two did not have a health officer, two refused to participate, and the other eight health officers were not available during the period of the study. The 15 health officers participating in the study lived in the local area in Can Tho City.

2.2. Data instruments and collection

Data were collected in one-on-one interviews with health officers, using a guide that included semi-structured as well as open-ended questions. To investigate the experiences of school health officers in identifying and managing mental health problems of secondary school students and obtain recommendations from the school officers for improving the effectiveness of mental health care, the interview guide was developed by the research team based on three primary objectives: 1) to identify common mental health problems arising among secondary school students; 2) to describe the activities of school health officers, especially as related to mental health care for students; and 3) to identify health officers’ perspectives on potential approaches and activities to improve mental health care in the schools. The interviews followed the structure of the questionnaire, starting with background information about the health officer and continuing through the three objectives. All interviews were conducted in the Vietnamese language by the principle researcher, supported by two final-year students in preventive medicine. The interviews lasted 30 to 60 minutes and were audio-recorded. After transcription by the two preventive medicine students,
they were translated into English by the principle researcher who reviewed and analysed them with another member of the research team (PW) who is a native English speaker with adequate proficiency in Vietnamese.

2.3. Data analysis

The English versions of the interviews were used for analysis, while the original Vietnamese versions and recordings served as a backup. Qualitative content analysis and concept-driven coding were used. The main variables based on the objectives were as follows: common mental health problems; challenges for the health officers; and proposed improvements to mental health care for high school students. The transcripts were read and re-read, first independently and then together by two of the researchers (NTD and PW). First of all, they were screened for words and phrases that could be grouped by similarities and used to establish initial subgroups with repeated concepts and themes that were associated with the selected variables. Secondly, axial coding, involved refining this list by deleting or combining categories, followed by making connections between the categories and defining properties, for instance, context or preconditions. Finally, selective coding, involved the identification of core categories. In addition, the links between subgroups were identified and the main themes formulated from recurring texts. In the last stage, selective coding led to identification of the key themes that are described in the results. Quotes from the respondents are used to illustrate the points that arose from the analysis.

2.4. Website for mental health information

As part of our larger research program we also explored the possibility of reducing mental health problems by providing information about health and mental health to students online. There was no existing website with a focus on providing mental health information aimed at that age group in Can Tho City, so we designed such a website, with consideration for the characteristics of teenagers and adolescents. The suckhoetre.vn (youth health) website has three main sections, providing students with information on health and on skills, and a health check-up. It was launched for public use in 2016, with the aim of meeting the needs of secondary school students for information on mental health and psychological wellbeing in Can Tho City. The sources of information are from official websites on mental health in both national and international levels such as kidshealth.org, youngminds.org.uk. Information is also collected and edited by the admin group from Can Tho University of Medicine and Pharmacy. A description of the structure, design and assessment on the application of the website has
been presented elsewhere (*Dat Tan Nguyen et al, submitted for publication*). The school health officers were asked to review the website and provide feedback on how useful the website could be for students and for them.

2.5. Ethical considerations

The study was approved by the Scientific and Training Committee of Can Tho University of Medicine and Pharmacy prior to interviewing at schools. A letter of recommendation from the Can Tho University of Medicine and Pharmacy and a letter of approval from the Department of Education and Training of Can Tho City were presented to the selected schools to ask for permission to interview their health officers. The interviewees were asked for their agreement to participate in the study and gave verbal consent. They were informed that they could refuse to answer any questions or stop the interview at any time without giving any explanation, that all the information would remain confidential, and that neither participation in the study nor refusal to answer questions would affect their employment. The names of the interviewees were not recorded with the data. All recorded interviews and transcribed files were stored on a portable hard drive that stayed with the principle researcher throughout the course of the study.

3. Results

3.1. Demographic characteristics of school health officers

The participants included 11 females and four males, with an average age of 38.2 years (range 30 to 53 years). They had two to 20 years of working experience in secondary schools. Twelve were general assistant physicians (three-year diploma course at college level). Of those remaining, two were nurses and one was a midwife, each of whom had received a two-year college diploma.

All respondents noted that the topics of psychology and mental health were not well represented in the curricula used in their training. In addition, during their years of working at schools, the health officers had never had the opportunity for in-service training on psychology or mental health. They did receive short refresher training courses, but the topics were mainly focused on adolescent reproductive health, HIV/AIDS, food safety, H5N1 influenza, and dengue fever prevention. All of these courses were provided by the Can Tho Department of Education and Training, using trainers from district health centers, health and education media centers, or reproductive health care centers.
As one female assistant doctor with two years’ working experience said,

"In my 3-year training program, the first two years were courses for a general assistant doctor; in the final year we could specialize with a major in internal medicine, pediatrics, or infectious disease. I chose the major in obstetrics and gynecology, and did not learn about mental health".

(School health officer at a private school in Can Tho City).

Another assistant doctor, a male, aged 34, with nine years of working as a school health officer, reported that,

"About mental health, I did have some training, but with very brief and general information, and very little time."

(School health officer at a public school in Can Tho City).

3.2. Common mental health problems of secondary school students encountered by school health officers

Analysis of words and phrases from the 15 interviews established several key themes concerning student mental health. The major themes were stress; depression; suicidal ideation; anger and aggression; sexual orientation, and internet or computer game addition.

The school health officers reported that most of the health problems for which students came to them were minor, such as headache, stomachache, fatigue, hypocalcaemia, and among female students, dysmenorrhea. It was also not uncommon that a few students who had no apparent diagnosis went to the school's health room and reported having headache or fatigue. Health officers reported that these students wanted to escape the classroom, sometimes because of stress or anxiety. A female school health officer at a semi-public school reported:

"Because of stress, pressure or fear of presenting the last lesson in front of the class to the teacher, some students would report headache or fatigue and go to the medical room to ask for medicine while in fact there was no illness when they were checked."

With regard to mental health problems in addition to stress, the respondents reported most commonly seeing students with depression. These students were identified as depressed because they did not want to socialize, study,
or play with friends. They wanted to be alone at school and even spoke or thought about suicide.

As mentioned by a female general practitioner, 55 years old, working in a secondary school:

"One child was withdrawn from school for two weeks, had signs of psychological instability, she self-harmed and stayed in hospital. I do not know whether she came back home or not. In this case, her mother had moved to live with another man and she lived with her grandmother. Her grandmother had just died, which was a big trauma for her."

One student was reported to have committed suicide at the school, after being scolded by the parents, as reported by a male assistant doctor working for five years at a secondary school:

"One student went to the toilet, crying and closed the door. We could not open the door. The student self-harmed and was bleeding, because the family had shouted something about the student’s friends, and the student became hopeless and committed suicide."

Another female assistant doctor, 31 years old, a health officer in a secondary school reported:

"One student who graduated last year sometimes became crazy and bit anyone trying to touch the student. That one only wanted people to speak sweetly, if they did not, the student would give them black looks."

Sexual orientation issues were mentioned by several school health officers in different schools; they often referred to “sexual dysfunction” or “gender dysfunction”.

A 55-year old assistant doctor working in a secondary school confirmed that:

“In the case of a male student who likes a male student, if it does not affect their study, the school does not take any action. Female students who like female students are less common than males who like males. Some females have beautiful hair but suddenly cut their hair as a boy’s hair style because of wanting to be a boy. Parents of those cases were invited to discuss with a class head teachers."
Another female assistant doctor at a secondary school said about signals of sexual confusion:

"It is also common. Being a girl but she does not like to be a girl, she likes to be a boy."

Another female assistant doctor noted that the students’ health problems she encountered at school were "mental disorders and internet addiction."

Considering the causes of mental health problems among their students, the health officers thought that students became stressed through too much work and study, or through too much time spent on other activities, especially computer games. They thought that if the parents put less pressure on the students, and if the students could organize their time better and spend less time on distractions like gaming, they would be able to avoid the development of many mental health problems.

3.3. Mental health care for students at the school

When students come with physical complaints, the health officers give appropriate medicine, such as non-narcotic analgesics. The schools usually offer beds in the medical room for students who need to take short breaks at school, when their complaint is not too serious. In more serious cases, they recommend that the student go home, and contact the parents to take their child.

When students come to them with mental health complaints or symptoms, school health officers try to obtain more information from the student and then to offer appropriate advice. For example, if the student feels isolated and lonely, the officer may contact the teacher to find out more about the situation and behavior of the student in the classroom and to determine whether or not the student is healthy and able to go back to the classroom.

The health officers also reported that Facebook was used as a tool by teachers to monitor student progress. Many students accept the teachers and health officers as friends on their Facebook pages, and schools also have Facebook pages. The health officers check regularly to see what the students post there, especially if they have concerns that the student is not well.

School health officers may also ask a student's friends whether the student participated in social activities and or had any issues related to emotional life or relationships with other students. In some cases, school health
officers asked other students, as friends, to help the student with mental health problems. In severe cases, school health officers contacted the parents, explained the situation to them, and advised or asked them to take action. The suggested action could be to reduce pressure and maintain an encouraging atmosphere at home, or to take the student to a hospital for a checkup or treatment. It was rare for school health officers to give medications to students for mental health problems.

A 50-year-old primary nurse working at a private school recounted:

"According to me, some students are depressed, not talking, not paying attention to the environment, their faces looking different from the other students. Then I know. I contact that student 1-2 times and if I have free time, I give them advice and encourage them, but I do not say too much."

A male assistant doctor working for five years at a secondary school reported that:

"If I find out the reason is love, disagreement, or argument, then I advise them. They are too young to think deeply so I should not put too much pressure on them. It may lead to lethargy and intent to commit suicide." And “For one case of self-harming, I instructed the family to visit a specialized hospital and then to let the student take medicine only.”

3.4. Recommendations to improve mental health care in schools

The health officers were asked how the mental health care in schools could be improved. They stated that they needed to improve their knowledge of psychology and mental health through continued training. The health officers recognized their need for more mental health training.

They would appreciate additional materials and information to help them identify potential mental health issues; these might be books or websites. It would be important to have the support of the school management board for this work. Furthermore, it could help if a qualified person, such as a physician or psychologist, was invited to talk with school health officers, parents, and students on how to recognize and cope with mental health problems.
"It is better to have a reference document ... or a website about mental health care. I will go to read it." Noted a 29-year-old female assistant doctor working in a specialized secondary school.

Another assistant doctor, a 32-year-old female working at a general secondary school, confirmed that:

"I want more training about psychology and mental health."

3.5. Website as a source of information

Five of the 15 health officers volunteered to review the website suckhoetre.vn. All of them agreed that the site provided useful mental health information for secondary school students, with diverse content on key topics, and with good graphics and photographs. The fact that the website was created and hosted by Can Tho University of Medicine and Pharmacy helped to build trust for the readers. They recommended improvements to attract more secondary school students: i) a more colourful design and more user-friendly structure; for example, a ‘hot/updated news’ section to alert readers to the most current added content; ii) content that is updated weekly or monthly; iii) content that is more age-group specific; iv) international articles and events with scientific and professional information to make the website more valuable and to distinguish it from other sites. All respondents agreed that the website should be maintained.

Health officers said that they would visit the website more in the future to improve their own knowledge on mental health. They also suggested that the website be advertised via social media, at meetings of parents at schools, and on school announcement boards to get more attention and increase use, not only by students but also by teachers, parents, and the community.

4. Discussion

Only fifteen of the 27 local high schools participated in the study, but the level of saturation of the responses obtained suggests that the results may be representative at least for this city. In similar studies in Sweden, saturation was reached after 17 (Larsson et al., 2014) or 14 (Jonsson et al., 2017) interviews with school nurses.

School health officers in secondary schools in Can Tho City were mostly trained as assistant doctors, although a few were trained as nurses and one was a midwife. All reported that their basic training was not strong in
psychology and mental health, and they had had no continuing education on these topics, leaving them ill-equipped to deal with mental health issues that arose among their students. Their lack of understanding not only hampers their effectiveness, but may also have detrimental effects on the students. Other studies on school mental health revealed that in most Western countries, this work also is done by nurses, who may or may not have specialized training in mental health care for children and adolescents (Haddad et al., 2010; Ravenna & Cleaver, 2016; Skundberg-Kletthagen & Moen, 2017). It was also a common finding in other studies, including in the West, that unless the nurses had had specific mental health training, they felt that they were not well prepared to deal with mental health problems and wished to have more training (Bohnenkamp et al., 2015; Skundberg-Kletthagen & Moen, 2017). They also expressed a desire for good screening tools to help with early detection of stress, anxiety, and depression among students, perhaps such as those described to be effective for school nurses in the US (Allison et al., 2014) and in Sweden (Larsson et al., 2014).

Our findings showed that it was rare for health officers in Can Tho schools to advise students specifically on any kind of medical care regarding all health problems they might need, unless they perceived a case as serious. Then they would refer the student to a hospital or another clinical resource, and involve the family in that decision. In many countries, the school nurse is the first person a secondary school student will contact in case of a health problem (Fazel, Hoagwood, et al., 2014; Fazel, Patel, et al., 2014) and in most circumstances, they are able to advise students correctly. In contrast to many Western countries, Vietnam lacks support structures and health workers trained in psychology and psychiatry. This makes it difficult, especially in smaller communities, for the school health officer to know what to recommend to the student and family (Niemi et al., 2010; Vuong et al., 2011). Even in Western countries, school nurses reported that they would be more effective if they had better links to support networks, including social services and youth counseling (Dina & Pajalic, 2014; Larsson et al., 2014; Moen & Skundberg-Kletthagen, 2018; Ravenna & Cleaver, 2016; Skundberg-Kletthagen & Moen, 2017). This kind of support network is not widely available outside of large cities in Vietnam.

The mental health problems most frequently seen by the school health officers included stress and depression, although there were also a number of reports of students preoccupied with their sexual orientation and a few cases of attempted or successful suicide. These problems are consistent with the information provided by teachers, parents, and students in a previous study in Can Tho (Nguyen, Dedding, Pham, & Bunders, 2013). Students
with anxiety and depression are at high risk for suicide. Depression is the most powerful predictor of suicide planning, and anxiety and depression are major predictors of suicide (Le et al., 2018; Nguyen, Dedding, Pham, Wright, et al., 2013). It is therefore especially important for the school health officers to first to identify such cases at an early stage and then to deal with them effectively (Allison et al., 2014). Just as in other countries, there is a need to revise and update the training curricula of health professionals to ensure that health officers can provide care according to the current burden of disease, which would include more attention to mental health.

Prevention of mental health problems was not mentioned by the health officers during the interviews. In an earlier paper from this research team, parents and students were asked about how to reduce mental health problems. Students suggested lectures by psychologists about reducing stress and coping with life, and also recommended a friendlier environment in the schools. The parents focused on the need to reduce gaming and other distractions so that students could focus on their studies (Nguyen, Dedding, Pham, & Bunders, 2013).

In the findings of the present study, the school health officers did not recognize and were not confident in dealing with mental health issues among their students because they felt lack of knowledge and experience in that field. In contrast, school nurses in the UK did recognize their role in promoting health and identifying potential problems and addressing them but felt limited by inadequate training and insufficient support from professional networks such as local mental health services (Pryjmachuk et al., 2012) Pryjmachuk, Graham, Haddad, & Tylee, 2012).

School health officers as well as other stakeholders are influenced by prevailing perceptions of mental health in Vietnamese society. As described by van der Ham et al., a survey and focus group discussions among urban residents of Hue in Central Vietnam found that respondents were not very familiar with mental illness and were unable to name any specific ones (Nguyen Thai & Nguyen, 2018; van der Ham et al., 2011). They suggested that pressure or stress, and studying or thinking too much were common causes of mental illness. These were mentioned not only by the health officers, but also by parents and teachers in Can Tho (Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Nakamura, et al., 2019). The Hue study revealed that perceptions of mental health were influenced by a lack of knowledge and a mix of traditional and modern views. Therefore, more emphasis should be aimed at improving capacity to provide mental health
services and on mental health workforce development (Vuong et al., 2011). At present, mental health services lack funding, expertise, facilities, and supportive networks for families and communities (Ng et al., 2011). Various interventions, including developing short courses for students, school teachers, and school health officers, may be plausible options to address the situation locally. Making information on mental health issues available through direct or indirect health education communication, including web-based resources may be another option (Nguyen Thai & Nguyen, 2018). Further studies on the effectiveness of applying web-based resources to disseminate mental health information would help to direct such approaches towards promotion of good mental health and possibly prevention of mental disorders among secondary school students.

As in other countries, school health officers in Vietnam are expected to play an important role in reducing negative health outcomes and risk behaviors among young people. However, according to the current regulations, the role of the school health officer is mainly to organise periodic health examinations, provide first aid and primary health care, inform students about general health issues, ensure school and environmental sanitation, prevent the spread of infectious diseases (including HIV), monitor school safety and injury prevention, and ensure food hygiene (Ministry of Education and Training of Vietnam, 2007). There has been little attention from authorities towards mental health. The results of this study and previous studies in Vietnam suggest that the mental health problems of students need to be addressed (Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen Thai & Nguyen, 2018; Tran, 2007). New regulations are needed to support school health officers to carry out their role in supporting students with mental health problems. The health and education sectors clearly need further insight into the potential key role for school health officers in adolescent mental health care, providing support not only for students but also for teachers and the family (Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013).

**Strengths and limitations of the study**

The qualitative approach with personal interviews gave the researchers access to the ideas and feelings of the respondents. In our study, both male and female officers contributed their experiences, and the respondents were diverse in terms of age range and years of experience. Therefore, our data are likely to be representative of school health officers at least in this city and region, and perhaps much more widely in Vietnam and in countries with a similar school health situation. Future research should involve experts in
adolescent mental health who could identify in greater detail the gaps and needs for training among the school health officers.

5. Summary and conclusions

In general, the challenges faced by school health officers in Can Tho City, Vietnam, appeared to be similar in many ways to those reported by school nurses in Western countries, in that they had specialized training in health care for children and adolescents but not in mental health care, and they often felt ill-equipped by training and experience to do a good job of managing mental health problems among high school students. The situation in Vietnam is more difficult due to the lack support from social service organizations and other support systems for adolescents that nurses in many wealthier countries can reach out to for assistance. In addition, not enough attention has been paid in Vietnam towards training the officers, and providing adequate support within and outside the schools for such a role. Policies and strategies for training and refresher courses for school health officers to equip them with the knowledge and skills they need to support students from grades six to 12 with mental health problems should have high priority at all levels. Continued investment in the workforce and structures for better social and psychological support are also needed.

Conflict of Interest

The authors declare that they have no competing interests.

Author contributions

All authors contributed to the study conception and design. Material preparation, data collection, and analysis were performed by Dat Tan Nguyen, E. Pamela Wright, Tam Thi Pham, and Joske Bunders. The first draft of the manuscript was written by Dat Tan Nguyen and all authors commented on earlier versions of the manuscript. All authors read and approved the final manuscript.

References


Chapter 8

Assessment of the website aimed at providing information on mental health information to secondary school students in Cantho City, Vietnam
Assessment of the website aimed at providing information on mental health information to secondary school students in Cantho City, Vietnam

Nguyen, D. T., Pham, T. T., Wright, P., & Bunders, J. (2020) (submitted for publication, under review)

Abstract

Background: The stigmatization of mental health problems is a primary barrier for young people to approach mental health services when they feel they might have a problem. Instead it is becoming common, especially for youth, to look for information on the internet. This study explored the responses of secondary school students in Cantho city to the suckhoetre.vn website, which aimed to provide information on health and mental health, and to assess its potential relevance, appeal, accessibility, usefulness, and sustainability.

Methods: A cross-sectional study included 643 secondary school students in Cantho city selected by cluster sampling. Students were introduced to the website and after two weeks were invited to complete an anonymous questionnaire to evaluate it.

Results: Most (98.6%) of the students visited the website in the two-week period, 74% once or twice a week, the others more often, up to once a day. Their activities included reading information (85.8%), seeking help (17.7%), sharing information (15.5%), giving advice to others (11.0%), and chatting or giving comments (9.8%). Most students rated the website very highly in terms of appeal, relevance, accessibility, and usefulness, and wanted to have access to the website in the future. These findings are positive signals to pursue the application of a website on mental health for secondary school students as a contribution to better mental health for adolescents in Cantho city.

Conclusion: A website designed to provide information to secondary school students seems to be an effective way to provide access to a sensitive topic like mental health. The website should be maintained and introduced more widely to students, teachers and parents, with a continuous evaluation of its effectiveness in the long term.

Keywords: Website, internet, mental health, student, Cantho, Vietnam
Introduction

Despite the high risk of mental disorders in adolescence, many young people are not receiving appropriate support and guidance from mental health professionals and the community (including family and school) and lack of access to health care and education facilities (World Health Organization, 2018). In recent years it has become commonplace for individuals to seek health information on the internet. Several websites on mental health in different countries, such as KidsHealth.org, youthbeyondblue.com, and tamlydoisong.wordpress.com, appear to play a significant role in improving understanding of mental health and reducing symptoms of depression (Boydell et al., 2014; Duplaga & Dzida, 2013; Moock, 2014). Most adolescents in urban areas in high-income countries have access to and make use of online information on mental health, especially for disorders that are regarded as behavioral problems. That young people tend to turn to the internet suggests that they are willing to seek help, and they might be prepared to cooperate with others having similar mental health problems and contribute to forming peer support networks. With the spread of the internet, it has been recognized that it can contribute to increasing the accessibility of health care (Moock, 2014). Currently, however, there are few reports on combining the internet with positive psychology for health promotion and reduction of mental health symptoms (Mitchell et al., 2010).

Vietnam is one of the nations with the most rapidly growing use of the internet, with a greater development than most other countries in the region. It is reported that approximately 50 million Vietnamese, or half of the population, were connected to the internet in 2017 and Vietnam’s penetration rate (54%) was higher than the world average (46.5%) (EU-Vietnam Business Network, 2018). Two thirds of the internet users accessed it every day, spending on average about 2 hours 20 minutes on weekdays and less at weekends. Popular places to access the internet were at home (78%), at work (31%) and in internet shops or cafés (25%) (Cimigo, 2011).

Previous studies in Vietnam showed that mental health problems in relation to young people should be a major concern for health authorities, schools, communities, and families (Nguyen, 2009; Nguyen, 2006; Tran, 2007). Of particular relevance to this study were the high levels of depression, anxiety, and suicidal ideation among secondary school students in Cantho city, which we have described elsewhere (Nguyen, Dedding, Pham, Wright, et al., 2013). However, although the primary health care system in Vietnam is quite strong, primary mental health care—especially for mental health
problems in children—is non-existent. Despite some progress, the service environment and response for Vietnam remain largely inadequate. The situation is even worse in remote provinces, which lack mental health services and so cannot prevent and treat children’s mental health disorders (UNICEF, 2018). Stigma related to mental health is highly prevalent in Vietnam, and is recognized as one of the main factors hindering youth from approaching mental health services (van der Ham et al., 2011).

From our previous studies in Vietnam, relevant stakeholders including students, teachers and school health officers suggested on having a web based information resource on psychology and mental health for students (Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013; Nguyen, Dedding, et al., 2019; Nguyen et al., 2020). In addition, most of the students reported that they would share their private problems and seek help from a website if it was avaible.

For these reasons, it is possible that students and adolescents in Vietnam could benefit from access to information about mental health through a website, where they can remain anonymous. Since there was no existing website providing specifically mental health information aimed at that age group, we designed such a website, with consideration for the characteristics of teenagers and adolescents. The suckhoetre.vn (youth health) website has three main sections, providing students with information on health and on health-related skills, and a health check-up. The main contents were designed based on key topics in general health care, sexual orientation, love and relationships, drug and game addictions, reproductive health, nutrition, and skills to scope with stress in life, as mentioned by students, teachers and parents in previous studies (Nguyen, Dedding, Pham, & Bunders, 2013; Nguyen, Dedding, Pham, Wright, et al., 2013; Nguyen, Dedding, et al., 2019; Nguyen et al., 2020). Information in Vietnamese posted on the suckhoetre.vn was translated and cited from information in both national and international websites, such as kidshealth.org website (The Nemours Foundation, 2020), Mai Huong Daycare Psychiatric Hospital website (Bệnh Viện Tâm Thần Ban Ngày Mai Hương, 2020), and Depression website (Bệnh Lý Trầm Cảm, 2020). In addition, current health status screening was integrated in the website, including the General Health Questionnaire, the CES-D, the Rosenberg self-esteem scale, and the Educational Stress Scale for Adolescents, all described earlier in this thesis. Information translated into Vietnamese was checked by the researchers and students of Can Tho University of Medicine and Pharmacy for accuracy and accessibility. The design and interface of the website was shaped by the researcher in collaboration with students of Can Tho University of Medicine and
Pharmacy. The first draft version was piloted with three school health officers and ten students for feedback, to complete the website. It was launched for public use in 2016, with the aim of meeting the needs of secondary school students for information on mental health and psychological wellbeing in Cantho city.

After the website was available, we recruited secondary school students to investigate whether they appreciated features of the website, and whether it might be a way forward to recommend that the education authorities support a website as a tool to improve students’ mental health. Until now, the website is still being available for public use but not with regular updates on the information as before.

Methods

Study design and population

A cross-sectional study was carried out with 643 secondary school students including 318 boys and 325 girls, with mean age of 16.99 years. The students were recruited using random sampling in three stages. Firstly, three schools were selected, including the one specialized school in Cantho city and two of the 23 regular secondary schools, one in an urban and one in a rural district of the city. The regular schools had 61 classes of grades 10 to 12 with an average 35 students per class. Two classes from each grade from 10 to 12 were randomly selected by coding all classes in these grades with a number and using Excel software to select two numbers randomly per grade. The specialized secondary school had 26 classes of grades 10 to 12; three classes from these grades were randomly selected. All students in each selected class were invited to participate. The number of valid completed questionnaires was 643, which is 95.4% of the 674 distributed; the other questionnaires were excluded because they were incomplete. Data collection took place in November 2016.

Data collection

The suckhoetre.vn website, its purpose, and the aims of this study were introduced to the students in the selected classes. The students were invited to use the website, then after two weeks, they were asked to complete the questionnaire anonymously.
The questionnaire consisted of five components asking the participants about: (1) demographic information on their age, sex, class, school, means of internet connection; (2) their access situation (visited the site or not, visiting activities, number of visits during last seven days); (3) their evaluation of the usefulness, relevance, interest, appeal, and accessibility, using a 5- or 7-point Likert scale ranging from “extremely” to “not at all” with a neutral midpoint, and their willingness to maintain access to the website; and (4) whether they did or would introduce the suckhoetre.vn website to others.

These measurements were done for each item from the three main sections of the website: health, skills and health check-up, to identify which information was most relevant to the students, and which information the students most liked and most disliked.

In addition to the data obtained from the questionnaires, we consulted the website’s own data after it had been up for one year, to find out whether it was still being used.

**Statistical analysis**

Data were entered into and analyzed by SPSS software 18.0. Data are presented as means ± standard deviation (SD) and analyzed descriptively to determine the demographic characteristics of the study population. The Chi-squared test ($\chi^2$) was used to assess the significance of differences in the distribution of selected sociodemographic characteristics. All tests were 2-tailed and a p-value of <0.05 was considered statistically significant.

**Ethical approval**

Ethical approval for the study was obtained from the Scientific and Technical Committee of the Can Tho University of Medicine and Pharmacy. The purpose of the study was introduced to the students before they were invited to join the study and to give their verbal consent. They were informed that they could refuse to answer any questions or stop completing the questionnaire at any time without giving any explanation, and that all the information would remain confidential. Students were not required to attach their name to the questionnaire. A small compensation of 20,000 VND (less than 1.00 USD) in cash was offered to the students after completing the questionnaire.
Results

Socio-demographic characteristics of the sample

Completed questionnaires were submitted by 643 secondary school students, with a mean age of 16.99 years, ranging from 16 to 20 years. The numbers of boys and girls were close to equal. The number of students from the two regular schools was higher than from the one specialized school. The percentages of students from grades 10, 11 and 12 were 35.9%, 31.1%, and 32.8%, respectively.

Table 1. Socio-demographic characteristics of the sample

<table>
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<tr>
<th>Characteristics</th>
<th>Total</th>
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<th>Boys</th>
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<td>Total</td>
<td>643</td>
<td>100</td>
<td>318</td>
<td>49.5</td>
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<tr>
<td>Age (mean±SD)</td>
<td>16.99±0.86</td>
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<td>16.96±0.83</td>
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<td>16</td>
<td>228</td>
<td>35.5</td>
<td>114</td>
<td>35.85</td>
<td>114</td>
<td>35.08</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>203</td>
<td>31.6</td>
<td>87</td>
<td>27.36</td>
<td>116</td>
<td>35.69</td>
<td></td>
</tr>
<tr>
<td>18–20</td>
<td>212</td>
<td>32.9</td>
<td>117</td>
<td>36.79</td>
<td>95</td>
<td>29.23</td>
<td></td>
</tr>
<tr>
<td>Type of school</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.208&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>Specialized</td>
<td>211</td>
<td>32.8</td>
<td>99</td>
<td>31.1</td>
<td>112</td>
<td>34.5</td>
<td></td>
</tr>
<tr>
<td>Regular</td>
<td>432</td>
<td>67.2</td>
<td>219</td>
<td>68.9</td>
<td>213</td>
<td>65.5</td>
<td></td>
</tr>
<tr>
<td>Grade</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.027&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
<tr>
<td>10</td>
<td>231</td>
<td>35.9</td>
<td>116</td>
<td>36.5</td>
<td>115</td>
<td>35.4</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>201</td>
<td>31.3</td>
<td>85</td>
<td>26.7</td>
<td>116</td>
<td>35.7</td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>211</td>
<td>32.8</td>
<td>117</td>
<td>36.8</td>
<td>94</td>
<td>28.9</td>
<td></td>
</tr>
</tbody>
</table>

<sup>a</sup> t-test was used to compare differences in mean of age according to sex.

<sup>b</sup>χ² was used to compare differences in age groups, types of school and grades according to sex.

Almost all of the students (99.2%) had access to equipment for an internet connection. The mobile phone was the most popular way to access the internet, used by nearly two thirds of the students. Nearly half used a laptop, about one third a computer and around one fifth used an iPad (Table 2).

Usage of the suckhoetre.vn website

After receiving information about suckhoetre.vn, nearly all of the students visited the website within the first two weeks after its launch. Their main activity on the website was reading information, but 10–20% of students also
used it for seeking help, sharing information, giving advice to others, and chatting or giving comments (Table 2).

Most of the activities were similar among the students. However, the percentage of students from regular schools seeking help was significantly higher than among students from the specialized schools. Sharing information on the website was more common among boys than among girls.

Table 2. Main activities on suckhoetre.vn website within two weeks of its launch

<table>
<thead>
<tr>
<th>Reported Activity</th>
<th>Total % (n)</th>
<th>Sex</th>
<th>School</th>
<th>p^a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male % (n)</td>
<td>Female % (n)</td>
<td>p^a</td>
</tr>
<tr>
<td>Not visited yet</td>
<td>1.4 (9)</td>
<td>1.6 (5)</td>
<td>1.2 (4)</td>
<td>0.487</td>
</tr>
<tr>
<td>Visited</td>
<td>98.6 (634)</td>
<td>98.4 (313)</td>
<td>98.8 (321)</td>
<td>98.1 (207)</td>
</tr>
<tr>
<td>Read information</td>
<td>85.8 (544)</td>
<td>84.0 (263)</td>
<td>87.5 (281)</td>
<td>0.124</td>
</tr>
<tr>
<td>Search for help</td>
<td>17.7 (112)</td>
<td>20.1 (63)</td>
<td>15.3 (49)</td>
<td>0.067</td>
</tr>
<tr>
<td>Share information</td>
<td>15.5 (98)</td>
<td>18.5 (58)</td>
<td>12.5 (40)</td>
<td>0.022*</td>
</tr>
<tr>
<td>Give advice</td>
<td>11.0 (70)</td>
<td>12.1 (38)</td>
<td>10.0 (32)</td>
<td>0.228</td>
</tr>
<tr>
<td>Chat/Comment</td>
<td>9.8 (62)</td>
<td>10.5 (33)</td>
<td>9.0 (29)</td>
<td>0.307</td>
</tr>
<tr>
<td>Other</td>
<td>1.4 (9)</td>
<td>1.3 (4)</td>
<td>1.6 (5)</td>
<td>0.516</td>
</tr>
</tbody>
</table>

^a χ^2 was used to compare differences in accessing and activities on the website according to sex and types of school.
* p < 0.05

In the week preceding the completing of the questionnaire, more than 75% of the students had visited the website once or twice, while fewer than 10% had visited it more often than that. No significant differences were noted between boys and girls or between specialized and regular schools in the frequency of visiting the website in that week (p>0.05).
Students’ evaluation of usefulness, relevance, interest, appeal, accessibility, and possibility to maintain access to the website in the future

When asked to evaluate the website, more than two thirds of the students reported that it was very useful or useful; just over half said it was very interesting or interesting; and just under half referred to it as very or quite appealing. The percentage of students responding that the website was not useful, interesting or attractive was very low, always less than 5%, while higher proportions reported being undecided. A significantly higher percentage of boys reported that the website was very appealing than did girls (Table 3).

<table>
<thead>
<tr>
<th>Item</th>
<th>Total sample (n)</th>
<th>Sex</th>
<th>School</th>
<th>p&lt;sup&gt;a&lt;/sup&gt;</th>
<th>p&lt;sup&gt;a&lt;/sup&gt;</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Male % (n)</td>
<td>Female % (n)</td>
<td>Specialized % (n)</td>
<td>Regular % (n)</td>
</tr>
<tr>
<td>Usefulness</td>
<td>634</td>
<td>313</td>
<td>321</td>
<td>207</td>
<td>427</td>
</tr>
<tr>
<td>Very much</td>
<td>0.554</td>
<td>15.8 (100)</td>
<td>16.9 (53)</td>
<td>14.6 (47)</td>
<td>15.0 (31)</td>
</tr>
<tr>
<td>Somewhat</td>
<td>0.112</td>
<td>54.6 (346)</td>
<td>54.6 (171)</td>
<td>54.5 (175)</td>
<td>60.4 (125)</td>
</tr>
<tr>
<td>Undecided</td>
<td></td>
<td>29.0 (184)</td>
<td>27.5 (86)</td>
<td>30.5 (98)</td>
<td>24.6 (51)</td>
</tr>
<tr>
<td>Not really</td>
<td></td>
<td>0.6 (4)</td>
<td>1.0 (3)</td>
<td>0.3 (1)</td>
<td>0 (0)</td>
</tr>
<tr>
<td>Interest</td>
<td>0.740</td>
<td>9.2 (59)</td>
<td>11.8 (37)</td>
<td>6.9 (22)</td>
<td>10.1 (21)</td>
</tr>
<tr>
<td>Very much</td>
<td>0.771</td>
<td>43.8 (278)</td>
<td>44.7 (140)</td>
<td>43.0 (138)</td>
<td>43.5 (90)</td>
</tr>
<tr>
<td>Somewhat</td>
<td></td>
<td>45.6 (289)</td>
<td>41.9 (131)</td>
<td>49.2 (158)</td>
<td>45.9 (95)</td>
</tr>
<tr>
<td>Undecided</td>
<td></td>
<td>1.1 (7)</td>
<td>1.6 (5)</td>
<td>0.6 (2)</td>
<td>0.5 (1)</td>
</tr>
<tr>
<td>Not really</td>
<td></td>
<td>0.2 (1)</td>
<td>0.0 (0)</td>
<td>0.3 (1)</td>
<td>0.0 (0)</td>
</tr>
<tr>
<td>Not at all</td>
<td></td>
<td>6.6 (42)</td>
<td>9.3 (29)</td>
<td>4.0 (13)</td>
<td>7.2 (15)</td>
</tr>
<tr>
<td>Appeal</td>
<td>0.024*</td>
<td>40.4 (256)</td>
<td>41.2 (129)</td>
<td>39.6 (127)</td>
<td>41.1 (85)</td>
</tr>
<tr>
<td>Very much</td>
<td>0.536</td>
<td>48.1 (305)</td>
<td>43.5 (136)</td>
<td>52.6 (169)</td>
<td>47.8 (99)</td>
</tr>
<tr>
<td>Somewhat</td>
<td></td>
<td>3.9 (25)</td>
<td>4.8 (15)</td>
<td>3.1 (10)</td>
<td>3.9 (8)</td>
</tr>
<tr>
<td>Undecided</td>
<td></td>
<td>0.9 (6)</td>
<td>1.3 (4)</td>
<td>0.6 (2)</td>
<td>0.0 (0)</td>
</tr>
</tbody>
</table>

<sup>a</sup>χ<sup>2</sup> was used to compare differences in frequency of visiting the website according to sex and types of school. * p < 0.05.
Regarding the content of the website, the health categories included health care, stress, emotions and feelings, depression, relationships, substance abuse and game addiction, nutrition, and reproductive health. The students reported that the topics of health care, stress, and nutrition were most appropriate to them and they also liked these the most. Other topics were of much less interest to most of the students. The least liked section was the one on drugs and game addictions.

The skills section contained tools for learning study skills, soft skills, career skills, handling situations, and protecting; these were considered “very suitable” for their own needs by 30.9% of the respondents. The health check-up section (providing ways to measure stress, depression, and self-esteem) was rated by only 18.3% as appropriate for them (Table 4).

<table>
<thead>
<tr>
<th>Item</th>
<th>Most appropriate % (n)</th>
<th>Most liked % (n)</th>
<th>Most disliked % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health care</td>
<td>57.6 (365)</td>
<td>42.3 (272)</td>
<td>2.8 (18)</td>
</tr>
<tr>
<td>Stress</td>
<td>41.6 (264)</td>
<td>25.5 (164)</td>
<td>5.0 (32)</td>
</tr>
<tr>
<td>Nutrition</td>
<td>33.3 (211)</td>
<td>22.6 (143)</td>
<td>3.0 (19)</td>
</tr>
<tr>
<td>Emotion and feeling</td>
<td>19.6 (124)</td>
<td>11.2 (71)</td>
<td>6.0 (38)</td>
</tr>
<tr>
<td>Depression</td>
<td>14.0 (89)</td>
<td>9.0 (57)</td>
<td>6.8 (43)</td>
</tr>
<tr>
<td>Reproductive health</td>
<td>12.5 (79)</td>
<td>8.8 (56)</td>
<td>10.9 (69)</td>
</tr>
<tr>
<td>Relationship</td>
<td>10.1 (64)</td>
<td>4.3 (27)</td>
<td>9.9 (63)</td>
</tr>
<tr>
<td>Stimulant drug and game addiction</td>
<td>9.6 (61)</td>
<td>6.9 (44)</td>
<td>21.1 (134)</td>
</tr>
<tr>
<td>Skills</td>
<td>30.9 (196)</td>
<td>21.5 (136)</td>
<td>4.3 (27)</td>
</tr>
<tr>
<td>Health check-up</td>
<td>18.3 (116)</td>
<td>8.2 (52)</td>
<td>4.6 (29)</td>
</tr>
</tbody>
</table>

The majority of students thought that the website would appeal to their parents and friends. Furthermore, almost two-thirds felt that the website was very much or somewhat easy to access (Table 5).
Table 5. Appeal and accessibility of the suckhoetre.vn website

<table>
<thead>
<tr>
<th>Item</th>
<th>Total % (n)</th>
<th>Sex % (n)</th>
<th>School % (n)</th>
<th>p^a</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Male</td>
<td>Female</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male (%)</td>
<td>Female (%)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Specialized</td>
<td>Regular</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>% (n)</td>
<td>% (n)</td>
<td>% (n)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>% (n)</td>
<td>% (n)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Appeal to parents</td>
<td>79.8</td>
<td>80.2</td>
<td>79.4</td>
<td>0.446</td>
</tr>
<tr>
<td>(506)</td>
<td>(251)</td>
<td>(255)</td>
<td>(168)</td>
<td></td>
</tr>
<tr>
<td>Appeal to friends</td>
<td>72.9</td>
<td>73.8</td>
<td>72.0</td>
<td>0.333</td>
</tr>
<tr>
<td>(462)</td>
<td>(231)</td>
<td>(231)</td>
<td>(147)</td>
<td></td>
</tr>
<tr>
<td>Accessibility</td>
<td></td>
<td></td>
<td></td>
<td>0.920</td>
</tr>
<tr>
<td>Very much</td>
<td>15.5</td>
<td>15.7</td>
<td>15.3</td>
<td>14.0</td>
</tr>
<tr>
<td>(98)</td>
<td>(49)</td>
<td>(49)</td>
<td>(29)</td>
<td></td>
</tr>
<tr>
<td>Somewhat</td>
<td>49.1</td>
<td>48.2</td>
<td>49.8</td>
<td>54.1</td>
</tr>
<tr>
<td>(311)</td>
<td>(151)</td>
<td>(160)</td>
<td>(199)</td>
<td></td>
</tr>
<tr>
<td>Undecided</td>
<td>32.0</td>
<td>31.9</td>
<td>32.1</td>
<td>27.5</td>
</tr>
<tr>
<td>(203)</td>
<td>(100)</td>
<td>(103)</td>
<td>(146)</td>
<td></td>
</tr>
<tr>
<td>Not really</td>
<td>2.7</td>
<td>3.2</td>
<td>2.2 (7)</td>
<td>3.9 (8)</td>
</tr>
<tr>
<td>(17)</td>
<td>(10)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Not at all</td>
<td>0.8 (5)</td>
<td>1.0 (3)</td>
<td>0.8 (5)</td>
<td>0.5 (1)</td>
</tr>
</tbody>
</table>

^a X^2 was used to compare differences in appeal and accessibility levels of the website according to sex and types of school.

When the students were asked whether they would like the website to remain operational, nearly all of them (96.5%) said yes. Most (89%) planned to continue visiting the website in the future; most (88.2%) also agreed they would introduce it to family members and friends, and 88.6% said they would introduce the website to families with members who have mental health problems.

In addition to the data from the questionnaires, we checked the data registered by the website one year after its introduction. The website registered the numbers of visits to different items, which revealed that the reproductive health item attracted the highest number of views (850,713), followed by the emotion and feeling section (viewed 442,856 times), and the depression items (viewed 437,252 times). We do not have data on how many people made these visits, nor on who they are, whether they were the target populations in the secondary schools or youth in general or indeed parents or others interested in the health of young people. This data do, however, demonstrate that one year on, the website was still being consulted by many people.
Discussion

Use of the mental health information website by secondary school students

Although mental health problems are common among adolescents, barriers including social stigma prevent them from approaching the health services for information and possibly for assistance (Corrigan, 2004; Schomerus & Angermeyer, 2008; Thornicroft, 2008). In the current context of high internet use, we investigated whether information provided by a website designed to attract secondary school students would be a good way to provide them with information about this sensitive topic. After we introduced the website suckhoetre.vn to selected secondary schools in Cantho city, Vietnam, nearly all of the students visited the site at least once or twice a week, and most of them used the website just to read information, which suggests that this is a good approach to give students relatively easy access to information they need. These findings are in line with a report from Hue city, Vietnam in which both parents and students anticipated that the internet would be a useful source for obtaining and sharing information for young people in Vietnam (Sobowale et al., 2016). Most of the youth in our study population had access to internet at home and very often on a smartphone, which would provide the confidentiality they need. Previous studies on mental health of secondary school students in Cantho city had produced a recommendation to provide information through the internet; the present study confirms that it can be effective as a source of information here as it has been elsewhere (Boydell et al., 2014; Nguyen, Dedding, Pham, & Bunders, 2013).

Students in regular schools were significantly more likely to use the website to search for help than students in specialized schools. This may be explained either by different needs among the two types of students, or by different access to information besides what is available on the website. According to the 2015–2016 school year annual report on academic performance of students from secondary schools in Cantho City by the Department of Education and Training, there were more students with high academic performance rankings in the specialized schools than in the regular schools (97% versus less than 50%) (Can Tho City Department of Education and Training, 2016). Previous research (Nguyen, Dedding, Pham, Wright, et al., 2013) found that students with lower academic performance were more likely to be at risk of depression, which might prompt them to seek help on the website.
One point arising from the results was that it was more common for boys than for girls to share information on the website (p<0.05). This difference might be a result of differences in mental health issues and needs, or to a difference in willingness to share such information. It may be linked to the difference in personalities and self-esteem between boys and girls (Bailey et al., 2007) or in patterns of seeking help for psychological disorder (World Health Organization, 2019a). Future website information and programs on mental health should make efforts to integrate gender aspects into their content, to meet the needs of both boys and girls.

**Usefulness, relevance, interest, attractiveness, accessibility, and potential to maintain the suckhoetre.vn website**

Most of the respondents reported that the website was useful and interesting, confirming that it can be a good source of information for them.

More boys than girls found the website was “very/extremely appealing” (9.3% vs 4.0%), which suggests that gender is an important factor that needs to be considered during the process of designing the website to improve its appeal. Previous studies have shown that males are more likely to give “extreme” answers in which they strongly agree or disagree (Sarsons & Xu, 2015). In addition, as mentioned above, boys reported more often that they shared information that they found on the website. This could be a reason for the boys having found the website very appealing.

The topics of health care and psychological and mental health such as stress were considered very appropriate by most of the respondents. In addition, many students agreed that skills including soft skills, career skills, handling situations, and protecting skills were most useful for them. Following this, we suggest that in addition to having access to psychological and mental health information, it would be helpful for schools to provide training in these life skills that could help students to cope with daily stress (Sobowale et al., 2016). Therefore, it is important to take students’ demands into account to provide the information related to health care, psychological and mental health, and skills.

Students also reported that the health check-up content helped them learn about depression, and self-esteem on the website was the most suitable and interesting to them. This result suggests that in addition to providing psychological and mental health information on the website, the health check section on the website can be useful to provide the first suggestion to
students on whether they face mental health problems, and that could alert them to search for a diagnosis and early medical treatment.

**Strengths and Limitations**

One limitation of this study relates to the sample, which was from senior secondary schools with students aged from 16 to 20 years, so a younger or older student population might have responded differently. This is, however, an age group with high levels of stress in making the transition to adulthood and a high need for good knowledge about mental health, as shown in previous publications (Center for Behavior Health Statistics and Quality, 2014; World Health Organization, 2018). The study was undertaken in one large city in the south of Vietnam, which may mean that it is not representative for the whole country, although in the current context of media and the internet, the youth in different locations share problems and concerns more often than in the past. Another limitation concerns the data collection, done by self-reporting using standardized questionnaires. The young respondents’ personality and identity development are still incomplete, which could result in fluctuating self-perceptions (Schraml et al., 2011) and thus unreliable reporting. Another limitation is that the study did not include a way to cross-check on their self-report and the actual visits to the website. The data provide information on the students’ use of the website, but did not attempt to find out about students’ actual mental health problems or how the website might help them to seek appropriate help.

The majority of students believed that the website has the potential to appeal to parents and friends. In addition, many students said that it was easy for them to access. Many said that they hoped that the website would remain active and that they would return to it and continue to support it in the future. Many students agreed that they would introduce the website to their family, friends, and families of people with mental health problems. The results suggest that the website has high potential to expand its users to different groups in Vietnam. However, this is one of the first studies in Vietnam on using a website to provide information on psychology and mental health; much research remains to be done to establish the long-term usefulness of such a website.
Conclusion

The results of this study suggest that a dedicated website can be a useful source of information on health and mental health for secondary school students in urban Vietnam, and may be an effective way to reach students in other parts of the country and the region. The interest shown by the students in the website reinforces previous recommendations that secondary schools in Vietnam should pay more attention to the mental health of their students. More research would be needed to evaluate the long-term usefulness of the website and whether it is appropriate for different school levels in Vietnam.

Acknowledgements

We acknowledge the financial support of the “Strengthening teaching and research capacity of preventive medicine staffs to meet the challenges of emerging infections and new environmental hazards to health” Project from the Dutch Organization for International Cooperation Dutch Organization for Internationalization in Education (NUFFIC) and the Dutch government. We also thank the Coordinator Board for the project at Hanoi Medical University, Hanoi, Vietnam. We would like to thank the secondary school students who gave their time to participate in this study.

References


Chapter 9
Discussion and Conclusions
Discussion and Conclusions

This chapter presents a reflection on the main findings of the research performed for this thesis, and the conclusions drawn from the results. The research was guided by the following main research question:

*How can the complex field of mental health problems among adolescents in Vietnam be understood and addressed with sustainable and accessible developments at the secondary school level?*

Corresponding to this main question, four sub-questions were formulated:

1) What are the perception of key stakeholders (students, teachers, parents, experts) about the problems and causes of adolescent mental health problems and possible approaches to mitigate them, in Can Tho City, Vietnam?

2) What is the prevalence of different types of mental health problems among Vietnamese secondary school students in Can Tho City?

3) What are the major risk factors associated with mental health problems among these students?

4) How could mental health problems be mitigated to improve quality of life of Vietnamese secondary school students?

In this chapter, I summarize the main findings and conclusions by sub-question and describe their contribution to the main research question, as well as their relation to findings of similar studies in other national and international research. This discussion is followed by a presentation of the strategies and recommendations drawn from the studies that could contribute to improving mental health among secondary school students in Vietnam.
9.1. The Situation of Mental Health Problems among Secondary School Students in Can Tho City

To address the first three questions, we carried out different types of research to gain information from students, teachers and parents about what they thought were the main problems and the reasons for them, and about what could be done about them. Qualitative methods provided opinions and experiences of different stakeholders including suggestions about how to address the problems. Quantitative surveys among students at four secondary schools provided information about how many and what types of mental health issues were to be found among the students, and to obtain information that might be related to the causes and effects of these problems.

9.1.1. Perceptions of Different Stakeholders on Mental Health Problems

In the first report (Chapter 4), we described the results of a number of interviews and focus group discussions. Our first set of questions regarded how the mental health issues of secondary school students were perceived by the three main groups of stakeholders: teachers, parents and the students themselves. At a later stage, the health officers from secondary schools were interviewed (Chapter 7), which added another point of view to these impressions.

It became clear that the mental health of secondary school students does need attention in Vietnam. All of the stakeholders recognized depression, anxiety, stress, suicidal thoughts, and suicide attempts as major problems among students. When asked about possible causes of these problems, most students said they were mainly associated with academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed. Students also mentioned issues in the family environment and in their recreational activities such as Internet gaming and drinking. Certain topics that will come up later in the discussion were not mentioned at that time, such as abuse at home or at school, or emotional issues or drugs. Parents agreed that academic pressure was the main cause of mental health problems among students. Although parents admitted that parental pressure contributed partly to student’s mental health problems, they put the main blame on teachers and the government. Parents also mentioned quarrels and conflict among students during and after school, and within and between schools, as well as addiction to online games. They did mention the home environment, including economic conditions, parental problems, and having an unhappy family. They did not mention physical or emotional abuse at
home, alcohol addiction or sexual orientation. Similarly, teachers reported that academic pressure due to an overloaded academic curriculum was a main cause for mental health problems among students. Teachers also mentioned unhealthy behaviors, such as addiction to games and the Internet, and fighting among students, and a lack of problem-solving skills. In contrast to parents, teachers mainly looked at the failure of parents to teach their children manners and good behavior, and thought that parents lacked concern their children. They also did not mention physical or emotional abuse at home by parents or at school by teachers, and did not propose substance abuse or sexuality as key problems.

Although stress, depression, suicidal ideation, and sexual orientation issues were reported by the school health officers as the most commonly encountered mental health problems among their students, they did not recognize and were not confident in dealing with mental health issues because they felt they lacked knowledge and experience in that field (Chapter 7).

All of these stakeholders are influenced by prevailing perceptions of mental health in Vietnamese society. Mental health and illness are not well understood, as described by van der Ham et al. among urban residents of Hue in Central Vietnam, where most people were not familiar with mental illness and were unable to name any specific diseases (Nguyen Thai & Nguyen, 2018; van der Ham et al., 2011). The Hue study revealed that perceptions of mental health were influenced by a lack of knowledge and a mix of traditional and modern views. When asked about causes of mental health problems, people suggested pressure or stress, and excessive studying or thinking (Chapter 7). These possibilities were mentioned not only by school health officers, but also by parents and teachers in Can Tho City (Chapter 4, (Nguyen, Nakamura, et al., 2019).

It is noted that all stakeholders, including students, parents, teachers (Chapter 4), and school officers (Chapter 7), did not mention physical and emotional abuse at home by parents and at school by teachers, or adverse childhood events, drug addiction, or Internet addiction as factors related to mental health problems of adolescents, all of which appeared during the following research.
Table 9.1. Perspectives of stakeholders and key findings from research

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Key comments</th>
<th>Key findings</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Problems</strong></td>
<td>Chapters 4, 7</td>
<td>Chapters 5, 6</td>
</tr>
<tr>
<td>Students</td>
<td>Mental health is a large problem</td>
<td>Estimated prevalence of reaching a threshold comparable to a diagnosis of anxiety and depression were 22.8% and 41.1%, respectively</td>
</tr>
<tr>
<td></td>
<td>They felt stressed, anxious, worried.</td>
<td>19.4% of students had low self-esteem.</td>
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<tr>
<td></td>
<td>Several students’ suicide attempts in recent years.</td>
<td>Suicide had been seriously considered by 26.3% of the students, while 12.9% had made a suicide plan and 3.8% had attempted suicide.</td>
</tr>
<tr>
<td>Parents</td>
<td>Depression, anxiety, stress, suicidal thoughts, and suicide attempts are major problems</td>
<td></td>
</tr>
<tr>
<td>Teachers</td>
<td>Depression, anxiety, stress, suicidal thoughts, and suicide attempts are major problems</td>
<td></td>
</tr>
<tr>
<td>Health officers</td>
<td>Stress, depression, suicidal ideation, sexual orientation issues are the most common problems.</td>
<td></td>
</tr>
<tr>
<td><strong>Causes</strong></td>
<td>Chapters 4, 7</td>
<td>Chapters 5, 6</td>
</tr>
<tr>
<td>Students</td>
<td>Parental conflict</td>
<td>1) Physical or emotional abuse by family</td>
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<tr>
<td></td>
<td>Academic pressure (demands of teachers, parents)</td>
<td>2) Family conflicts</td>
</tr>
<tr>
<td></td>
<td>Online gaming, Internet, Tobacco smoking and substance use</td>
<td>3) High educational stress</td>
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<tr>
<td></td>
<td>Love life, especially homosexuality</td>
<td>4) Love life, sexuality</td>
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<td></td>
<td>Academic pressure is the main cause for (thoughts of) suicide.</td>
<td>5) Unhealthy use of alcohol, drugs, Internet/gaming</td>
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<tr>
<td>Parents</td>
<td>Academic pressure; poor curricula</td>
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<tr>
<td></td>
<td>Watching TV and playing games too much</td>
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<td></td>
<td>Partly parental pressure</td>
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<tr>
<td></td>
<td>Home environment (economic conditions, parental problems, and unhappy family).</td>
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<td></td>
<td>Quarrels and fights among students at school</td>
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<tr>
<td>Teachers</td>
<td>Academic pressure, overloaded curriculum</td>
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<td></td>
<td>Parents don’t teach them manners/good behavior.</td>
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<td></td>
<td>Parents lack of concern</td>
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<tr>
<td></td>
<td>Unhealthy behaviors, (game and Internet addiction, fighting)</td>
<td></td>
</tr>
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<td></td>
<td>Students lack problem-solving skills</td>
<td></td>
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<tr>
<td>Health officers</td>
<td>Stress, pressure, fear of presenting lessons; too much work and study</td>
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<tr>
<td></td>
<td>Family environment: parents' divorce; shouting</td>
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<td></td>
<td>Parents’ pressure</td>
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<td></td>
<td>Sexual orientation issues</td>
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<td></td>
<td>Mental disorders and internet addiction, too much time on other activities (computer games)</td>
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</table>
To answer question two, we conducted a survey among more than one thousand secondary school students to find out how many and what kinds of mental health issues were occurring in Can Tho City schools. From the results reported in Chapter 5, according to their own responses, more than one fifth (22.8%) of the students were at risk of anxiety, and two fifths (41.1%) were at risk for depression. The prevalence of anxiety was higher than the 16.2% previously reported for secondary school students in Ho Chi Minh City (Thai, 2010). The prevalence of depressive symptoms was 25.9%, based on CES-D scores with the cut-off point >21, and 18.7% when the cut-off point >25 was used. This prevalence was quite similar to Thai’s finding (2010) of 26.3%, but much higher than that among children and adolescents in the USA, where 3.2% had depression, although that sample included younger children as well (Ghandour et al., 2019). An earlier US study reported a higher level of depressive symptoms among adolescents, with 38.5% and 10.4% scoring at or above 16 and 28 CES-D total scale cutoffs, respectively (Herman et al., 2011). Using data from two national Vietnamese youth surveys, Le et al. (2012) reported prevalences of ‘experiencing low mood’ to be 34.06% and 37.34% among adolescents, both in and out of school. A more recent study by Thai et al. (2020) found prevalences of depression and psychological distress among Vietnamese adolescents across different areas in Vietnam to be 22.9% and 30.6%, respectively (Thai et al., 2020). All of these results illustrate that the prevalences of depression and of ‘low mood’ continue to be high, which creates big challenges for the healthy mental development of adolescents.

Regional and national differences in the mental health scores of children and adolescents could be explained by several factors, which may be individual, familial, or environmental/cultural (Bernaras et al., 2019). Environmental stressors, such as poverty, traumatic events and illness, have consistently been linked to poor mental health among youth around the globe (Nikapota, 1991). The socio-economic development status in Can Tho City, the location of this study, is much lower than in Ho Chi Minh City or the USA, which may help to explain the higher levels of anxiety and depressive symptoms. Poverty has been found to be a strong predictor of adolescent anxiety and depression (Najman et al., 2010).
The prevalence of suicidal thoughts (26.3%) and suicide plans (12.9%) in our study population was higher than reported for students in Ho Chi Minh City (6.3% suicidal thoughts and 4.6% suicidal plans) and in Hanoi (10.6% suicidal thoughts) (Tran, 2007), but similar to what was found among Malaysian secondary students (25.3% with suicidal thoughts and 10.5% with suicide plans) (Yuen, 2007). Suicidal behaviors from the national survey data (Le et al., 2012) were 5.28% and 12.21%. The prevalence of suicide attempts (3.8%) was, however, lower than in Ho Chi Minh City (5.8%) (Thai, 2010) and Hanoi (9.2%) (Nguyen, 2006). Suicide among these students also featured more prominently than among first year university students at Can Tho University of Medicine and Pharmacy (Nguyen, 2009), although both study populations were living in the same region. Lifestyle differences between Can Tho, Ho Chi Minh City and Hanoi may be responsible for differences in mental health status (economic status and other factors). The higher rate of suicidal ideation among secondary school students in this study compared to medical university students may reflect the higher education and income of university students’ parents. Another interpretation could be that the medical students are farther along in their studies and may be more confident of their outcomes, whereas the secondary school students may still be comparatively insecure. Le at el. (2012) showed a doubling in prevalence of suicidal behaviors from 5.28% within less than ten years using two national population-based surveys on Vietnamese youth (2003–2004 and 2009–2010. A more recent study among Vietnamese adolescents across different areas in Vietnam determined a prevalence of suicidal thought at 10.9% (Thai et al., 2020).

The results of Chapter 5 revealed one potentially important difference between the prevalence of mental health problems among Vietnamese students in Can Tho City (South of Vietnam) and in Da Nang and Khanh Hoa provinces (Central Vietnam). In Chapter 5 we reported that female students had a significantly higher risk of anxiety and depression, while a study in Da Nang and Khanh Hoa provinces, undertaken in 2006, found that gender was not significantly associated with overall rates of anxiety and depression among Vietnamese youth there (Amstadter et al., 2011). However, that study evaluated gender differences only in relation to adolescents’ total scores on the Strengths & Difficulties Questionnaire (SDQ), whereas in our study we used two different assessments, the Center for Epidemiology Studies Depression Scale (CES-D) score for depression and the 13-item anxiety scale score for anxiety, which may make our conclusion stronger.
Our findings suggest that mental health problems in Vietnamese youth are a concern, which is consistent with the two previous studies of Vietnamese adolescents, which reported that approximately 9% had mental health difficulties (Amstadter et al., 2011), and of first year medical and pharmacology students in Ho Chi Minh, of whom about 40% had depressive symptoms (Do, 2007). Medical students in eight provinces of Vietnam reported that adverse events in their childhood led to issues with both physical and mental health and quality of life as young adults (Tran, Dunne, et al., 2015). It has been suggested that the cultural influence of collectivism compared to individualism, or the cultural influences of authority figures may be more repressive in Vietnam than in Western countries, and that these factors could be responsible for a high prevalence of mental health disorders (Amstadter et al., 2011; McKelvey RS et al., 1999). Others argue that the negative effect of rapid social change may be to blame (Liu & Shuzhuo, 2011; Prasad et al., 2016).

9.1.3. Risk Factors Associated with Student’s Mental Health Problems

From the perceptions about mental health problems and their causes described in Chapter 4, and the results of the surveys described in Chapters 5 and 6, we can identify a number of factors in the social and cultural context that affect the appearance of mental health problems among school-going adolescents. In this section we describe in more detail a number of the key issues raised in the three chapters and in the literature.

9.1.3.1. Academic pressure associated with mental health problems

University entrance is based on the scores achieved in the entrance examination and prospective students require high scores to be admitted to universities. Securing a place in a public university is considered a major step towards a successful career, an especially important achievement for those from rural areas or disadvantaged families. The pressure on the candidates is very high. It is estimated that nearly one million students take the exam annually but, on average, only 20% pass (National High School, 2012).

Given the highly competitive nature of the education system, many school pupils spend a great deal of time on extra classes after school and even during weekends and holidays. A study done in Ho Chi Minh City found that nearly 30% of secondary school pupils spent more than three hours a day on additional studies; 47% reported attending classes during weekends or holidays (Thai, 2010). In the same study, two thirds of pupils were found
to experience medium or high educational stress, based on the Educational Stress Scale for Adolescents (Thai, 2010). It can be concluded from the older data and from the results in Chapter 5 that pressure to succeed in school education is intense in Vietnam, and appears to be increasing as society becomes more competitive.

Competitive stress can be a positive stimulus for achievement for young people but if this stress is severe and prolonged, it can have a major impact on health and well-being. Educational pressure on young people is discussed widely in the media and society but much of this discussion is based on case studies and anecdotes, rather than systematic research, and there has been little research published from Vietnam regarding academic stress and youth mental health. An earlier cross-sectional study revealed that educational stress was strongly associated with depression, anxiety, psychological distress, poor well-being and other behavioural factors (Thai, 2010). In other countries such as India, the relation between study and stress is recognized as an issue to be dealt with (Hoa et al., 2016; Rentala et al., 2019). A study of Chinese adolescents showed that educational stress was the most predictive variable for depression, and had a strong association with suicide ideation among Chinese adolescents (Sun et al., 2010). The issues of academic competition and pressure to succeed were confirmed as a risk factor in our studies (Chapters 4, 5, 6).

Educational characteristics such as the school environment, academic performance, and high educational stress were strongly associated with self-esteem in our study (Chapter 6). Students who attended one or more supplementary classes appeared to be at lower risk of having poor self-esteem. In Vietnam, these students are usually from a family with a higher socio-economic status. Attending supplementary class may reduce the stress of workload and academic pressure for those students. Support from the parents for the extra study, both financial and emotional, could be seen as caring, but at the same time could be part of the pressure felt by the students to reach a high level of achievement.

9.1.3.2. Love and sex

The study highlighted that romantic relationships and sexual feelings, thoughts, attractions and behaviors towards others and identifying one’s own sexuality were defining features that influenced the mental health and wellbeing of adolescents (Chapters 5 and 6). Parental pressure and hostile attitudes and behaviors to such relationships added to anxiety in the adolescents. The study also revealed that secondary school students in
Vietnam who engaged in sexual intercourse (with or without pregnancy) often experienced poor mental health. This is in line with research in India that reviewed different mental health promotion manuals developed for adolescence with the aim to understand whether those manuals addressed the emerging issues of romantic relationships in adolescence. Potential risks to adolescents include decreased academic performance, unstable mental health characterized by depression, antisocial behaviors, and dating violence (Basavaraju & Navaneetham, 2019). However, longitudinal studies have indicated that although adolescent romantic relationships are central to psychosocial development, the key issue was that qualities within these relationships determined whether romantic experiences had positive or negative implications for mental health. Adolescents who were highly engaged with and supportive of their romantic partner showed positive coping skills later in life (Kansky & Allen, 2018). These contrasting data demonstrate the need for further understanding of the role of romantic relationships in adolescents’ mental health.

Prior research on sexual orientation in adolescents and depressive symptoms indicated that in comparison to heterosexual adolescents, sexual minority adolescents (those who are attracted to the same or both sexes or are questioning their orientation) consistently reported higher depressive symptoms. Sexual minority adolescents reported lower family satisfaction, greater cyberbullying victimization, and increased likelihood of unmet medical needs, all of which were associated with greater depressive symptoms (Luk et al., 2018). Of 385 Chinese transgender and gender-nonbinary adolescents, 296 reported that they had experienced parental abuse and/or bullying at school from classmates or teachers; the latter was significantly associated with increased risk of suicidal ideation (Peng et al., 2019).

The findings described in Chapters 5 and 6 also revealed the concerns of adolescents over their sexual lives and orientation. There is still much misunderstanding and lack of knowledge in Vietnam about homosexuality and transgender people. Even a considerable proportion of health professionals lack knowledge about the diversity of sexual orientation, gender identity, and health issues related to the sexual minorities and gender non-conforming populations (Nguyen, Nguyen, et al., 2019). There is not yet much research on this topic in Vietnam but there is evidence that sexual orientation can affect how people, including young people, are treated and how that can result in mental health issues (Nguyen et al., 2015; Save the Children and Institute of Social and Medical Studies, 2015)
9.1.3.3. Family environment and adverse childhood events

The family environment can be a strong source of support for developing adolescents, when it provides close relationships, strong parenting skills, good communication, and modeling positive behaviours (Hoa et al., 2016; Krauss et al., 2020; Kuhn & Laird, 2014). Such strong support was reported to be related to reduced risk of depression in female students, while for male students, it could moderate the relation between academic stress and depression. The results of Chapters 4, 5 and 6 confirmed that a lack of family support and negative adult behaviours can have a negative impact on adolescent mental health. These results are similar to those reported from previous studies in Vietnam and Malaysia, in which an unhappy family environment, difficult family events like the death of a parent, regular conflict in the family, poor parental relationships, and economic difficulties were predictors of poor mental health and risk-taking behaviours (Nguyen, 2009; Nguyen, 2006; Tran, 2007; Yuen, 2007). The importance of parent-child relationships in relation to self-esteem and depressive symptoms in early adolescence was demonstrated (Babore et al., 2016). Multiple features of the family environment are involved in the development of self-esteem during late childhood and adolescence for both boys and girls, and through the ages of 10 to 16 years (Krauss et al., 2020). Others have described the protective effect that the family environment could have against low self-esteem and other problems among adolescents in Indonesia (Triana et al., 2019). Nearly 20% of the students in our study had low self-esteem, with no difference between girls and boys (Chapter 6). These data also confirmed that family characteristics, including mother’s low educational level and physical and emotional abuse by parents or other adults in the household, were associated with low levels of self-esteem. Self-esteem was reported as a major factor to be considered in depression among Italian adolescents (Fiorilli et al., 2019). It was noted that problems with parents and friends increased adolescents’ depressed mood, while troubles with classmates impacted on their sense of inadequacy and insecurity. Among Chinese adolescents, self-esteem and loneliness played mediating roles in linking family dysfunction to anxiety and depression (Wang et al., 2020).

In the worst case, the family and wider environment involve events that have a negative effect on the development and mental health of young people. The two main mental health problems that manifested in the adolescents in our study were anxiety and depression; both were found to be strong predictors for suicidal ideation. As many as 26.3% of students had seriously considered suicide, while 12.9% had made a suicide plan and 3.8% had actually attempted suicide. Key risk factors for anxiety and
depression identified among the students were identified as adverse childhood experiences as a result of family characteristics and the environment, or school performance and environment (Chapter 5).

Adverse childhood events (ACE) include different types of abuse, which might be physical and/or emotional and/or sexual. Studies in a USA population estimated that physical, sexual, and emotional abuse, as well as parental incarceration or a family history of suicidality during childhood, each increased the risk for suicidal ideation and suicide attempts among adults by 1.4 to 2.7 times. Accumulation of ACE further increased the odds; three or more ACE led to more than three times the probability of considering or attempting suicide (Thompson et al., 2019).

Our findings also suggest a relationship between abuse and mental health problems. The results reported in Chapter 6 confirmed that frequent physical or emotional abuse from adults (parents or other adults in the family, teachers or other staff members at school) was an independent predictor of anxiety. Other studies in Vietnam had noted this relationship in Ho Chi Minh City (Thai, 2010), in Hanoi and in rural Hai Duong (Nguyen et al., 2010). Interestingly, in the discussions with different stakeholders about mental health issues (Chapter 4), the topic of abuse did not arise, possibly because neither families nor schools perceive their actions as abuse of the students, or because if they are aware of it, they preferred not to talk about it. In a study on secondary school students in Hanoi, lifetime exposure to at least one form of abuse was reported by 94.3% of participants and lifetime exposure to more than 10 forms by 31.1% (Le et al., 2015). Those who had suffered multiple types of abuse had also had more adverse life events, a chronic disease or disability.

**Emotional Mistreatment**

We collected additional preliminary data on abuse experienced by secondary school students in Cai Rang district, Can Tho City, using a cross-sectional survey among 716 students, which has not yet been prepared for publication. Most often reported was emotional abuse, which was reported by 41.5% of the students; compared to female students, male students tended to have experienced more emotional abuse. These results are consistent with those from Malaysian teenagers (Yuen, 2007) and from first year university students in Can Tho City (Nguyen, 2009). It is however different from another Vietnamese study, which found that women were more often emotionally abused than men (Nguyen, 2006). The factors
related to the risk of emotional abuse included parents’ marital status and parents frequently arguing.

**Physical Abuse**

The highest rate of students reporting physical abuse was among those in grade 12, at 38.2%. It is worth noting that in all three classes, the rate of severe physical abuse was higher than that of mild abuse. This result reflects the urgency of preventing violence against children, especially school violence, which is considered a serious problem in today’s society. Male students significantly more frequently reported physical abuse than did female students, similarly to a previous report (Nguyen, 2006). These results are comparable to those among secondary school students in Hanoi (Le et al., 2015). Findings from cross-sectional studies across Vietnam among secondary school students revealed that the prevalences of at least one type of AVE was 86% and of multiple types was 56% (Thai et al., 2020). Mother's education and the quality of family environment were associated with physical abuse. Adverse childhood experiences appear to be common among Vietnamese adolescents and are strongly associated with depression, psychological distress and suicidal thought (Thai et al., 2020).

Results about abuse must, however, be interpreted with caution, because other studies suggest that children and youth are exposed to sexual abuse and assault in varied ways, and may not speak openly about it (Gewirtz-Meydan & Finkelhor, 2020).

**Sexual Abuse**

The least common form of abuse reported was sexual abuse, which was 18.7%, much lower than the 36.19% found by Pham Xuan Thong (Pham, 2011), but similar to the 19.7% reported by Nguyen (2006). Compared to women, male students appeared to have a higher risk of being abused. This finding is consistent with previous publications (Nguyen, 2006). We found several factors to be related to sexual abuse: age, mother's education, parents arguments, and family economic status. Estimates of sexual abuse will often be less than the real frequency because respondents in surveys or interviews may be reluctant to disclose such abuse (Murray et al., 2014).
Abuse is an active type of negative behavior towards other people, but ignoring children and not providing care or support is another kind of abuse. About one-third of students in this study said they felt neglected (32.4%), which is similar to the 31.2% reported from an earlier study (Nguyen, 2009). There was no difference in reported neglect between men and women. Marital status of parents, quality of family environment and the hierarchy of students in the family were significantly related to neglect. In a UK study, neglect was associated with problematic use of the Internet, which was in turn related to a number of other mental health issues (El Asam et al., 2019). A recent review emphasised the importance of increasing the attention for the issue of neglect of adolescents, because of the many harmful effects that can follow it (Raws, 2019).

All of the above information parallels a study that looked separately at household dysfunction and maltreatment, and found that household dysfunction, such as the child witnessing parental or intimate partner violence, resulted in more reported symptoms of depression, anxiety, and trauma. That study also showed that sexual and physical abuses were associated with symptoms of depression, trauma, and externalizing behavior. Neglect was shown to be associated with depressive, trauma, and anxiety symptoms, similar to what was found in our study (Negriff, 2020).

9.1.3.4. Abuse in the school setting

Our findings also suggest that both emotional and physical abuse were not only experienced in the home but also in the school environment. For example, frequent physical or emotional abuse from teachers or other authorities or from the peer group at school were independent predictors of anxiety.

A relationship has been demonstrated between physical punishment in school and mental health problems including anxiety, depression, low self-esteem, alcoholism, substance abuse, and suicidal tendency, throughout the life course (Durrant & Ensom, 2020). A recent study in Vietnam looked at factors ranging from the individual (age, gender, mental health) to the family (social support, parental supervision, parental violence and conflict with siblings) to the school including peers (social support, teachers, bullying) that were associated with involvement in bullying as a perpetrator or a victim (Le et al., 2017). Students who suffered from emotional abuse, neglect, physical abuse or sexual abuse were at risk of depression from 2.75
to 5.73 times, significantly higher, than those who were not abused, which is consistent with our findings in Chapters 5 and 6.

In our study, poor school performance and high educational stress were strong indicators of anxiety and depression in high school students. In China, a relation was also found between two forms of academic difficulties – academic underachievement and academic pressure – and effortful control among adolescents (Pan et al., 2016).

9.1.3.5. Activities outside the school and family

When the students explained factors related to their mental health problems they also mentioned activities outside of the school and family spheres that had negative effects. Especially use and abuse of drugs and alcohol were noted, as well as the more recent development of addiction to Internet and online gaming. These have been mentioned in the literature as problems among adolescents.

Abuse of drugs and alcohol

Drug abuse is of increasing concern in Southeast Asia, with an estimated 2.9 million people in the region injecting drugs (United Nations Office on Drugs and Crime, 2020). According to the same source, 9 of 10 people injecting drugs reported having started to use the substances before reaching the age of 18 years. Vietnam has also seen an increasing number of recorded cases of young people abusing drugs, and the actual number is thought to be higher because of difficulties in collecting accurate data (OECD Development Centre, 2017). We collected additional preliminary data in 2019 on abuse of alcohol by secondary school students in Ninh Kieu district, Can Tho City, using a cross-sectional survey among 945 students, which has not yet been prepared for publication. The results show that the prevalence of students drinking at least one beer in the past 30 days was 18.2%. This is in accordance with another study in Vietnam by Jordan et al. in which the prevalence of adolescent alcohol use was reported to be 16.2% (Jordan et al., 2013). High levels of alcohol abuse have been reported among university students in Vietnam (Diep et al., 2013). A significant association between alcohol use and having symptoms of depression was detected in our unpublished study. Abuse of drugs and alcohol have been associated with mental health problems in adolescents (Kessler et al., 1997; Winstanley et al., 2012). It would be important to find out more about the extent of alcohol and drug abuse among young people, especially in relation
to mental health problems, in the setting of Vietnam and to learn from other
countries about potential interventions to reduce it.

Internet Abuse

According to pupils and parents in this study, playing computer games or
accessing the Internet were activities undertaken by pupils to relieve stress.
However, addiction to computer games or to using the Internet could also
have a negative impact on academic achievement and could raise the level
of academic stress (Masih & Rajkumar, 2019). Greater use of the Internet
by Chinese adolescents was associated with social and psychological
variables such as a decline in the size of social circles, depression,
loneliness, lower self-esteem and life satisfaction, sensation seeking, poor
mental health, and low family function (Cao & Su, 2006). A recent review
found that more than 10% of Chinese adolescents were dealing with Internet
gaming addiction; the main correlates were parental psychological control,
physical/verbal abuse by parents, verbal abuse by teachers, and bullying
(Wang et al., 2020). Recent studies on gaming and internet addiction in
Vietnam revealed a prevalence of more than 20%, and there were significant
associations with male gender, problems in self-care, high perceived stress
scores as well as anxiety and depression (Tran, Huong, et al., 2017; Tran,
Mai, et al., 2017). This addiction is also mentioned as a common problem in
the UNICEF report on mental health among youth in different provinces in

Although these activities were mentioned by respondents in our surveys
(Chapters 5, 6 and 7) we did not specifically look into the extent of this
problem and its association with mental health issues in our study
population. However, unpublished preliminary data from our 2019 study on
cross-sectional study about game addiction among 855 students in Ninh
Kieu district, Can Tho City, reveal that 94.3% of students were spending
more than one hour a day to play games. In addition, according to the GAS
score for game addiction, 67.3% of students were likely to be addicted to
games and 10.4% of the students were classified as already game addicted.
Significant associations between game addiction and alcohol use and
having symptoms of depression were detected. Tran et al. reported that
20.9% of Vietnamese youths were addicted to the Internet and their
previous studies showed that the addiction was significantly associated with
self-care problems, lower quality of life, anxiety and depression (Tran,
Huong, et al., 2017; Tran, Mai, et al., 2017).
From all of the above, we can see that a wide range of factors can be shown to contribute to the development of mental health problems among adolescents. Different kinds of interventions might be needed to address these different problems.

9.1.4. Potential Solutions to Ameliorate and Prevent Mental Health Problems

During each study, using either questionnaires or interviews, we asked the different stakeholders about what they thought could be done to reduce and manage the mental health problems identified.

A majority of students thought that reducing the demands of the academic curriculum, appointing confidential counselors and sharing their concerns on an appropriate website would help to improve their mental health. These are new findings for which we did not find comparable results. Reducing the academic curriculum is not a simple matter because it involves the Ministry of Education working with thousands of schools around the country, not only the schools in the study, which have very little freedom to adjust the curriculum. To shift the academic curriculum from being centered on quantitative school achievements to the direction of a student-centered one, will require a lot of effort from not only the education sector but from the whole society including parents, and shifts in policy decision-making related to labor, human resources, and home affairs that manage the staff in education and government sectors.

Various interventions, including developing short courses for students, school teachers, and school health officers, may be plausible options to address the situation locally. Making information on mental health issues available through direct or indirect health education communication, including web-based resources may be another option (Nguyen Thai & Nguyen, 2018). Our qualitative study showed that there were few differences among pupils, parents and teachers in the proposed solutions to reduce pupils’ mental health problems. The students would like reduced academic pressure, more attention from their family, more recreational activities supported by schools, and a friendlier learning environment. Parents would like teachers and schools to take more responsibility for the quality of teaching and to find better ways to teach their children. The teachers would like to see pressure on them reduced by lowering academic pressure and increasing salaries, and they also want the parents to take some responsibility for teaching children. Table 2 below summarizes these suggestions.
Seeking advice or help outside the family is also necessary because pupils cannot always easily share their feelings with their parents. Schools do have Secretary Boards, Youth Unions and Parents’ Associations, and some schools have medical professionals that can be consulted, but these institutions do not yet function well to deal with mental health issues. One reason is that all the parties lack knowledge and skills on mental health and psychology. In addition, pupils with mental health problems may not recognize their own problems and may not seek help. In the context of Vietnam, it is very important to build up a system for mental health care from kindergartens to universities. Such a system needs to be integrated into the current school health care and should involve all relevant stakeholders: education, health, psychology, health care communication, and physical development, as well as community services and activities.
Table 9.2. Potential solutions suggested by stakeholders

<table>
<thead>
<tr>
<th>Stakeholders</th>
<th>Solutions suggested</th>
</tr>
</thead>
<tbody>
<tr>
<td>Students</td>
<td>Reduce academic workload/pressure. Recruit confidential counselors at schools. More attention from the family. Create a friendly environment so that children feel comfortable to share their cares in the family. A friendlier learning environment. More recreational activities at schools, extra activities to strengthen social cohesion, provide social and life skills, reduce academic stress, increase friendship, and reduce discrimination and disunity among students. School meetings to bring teachers, parents and pupils together Short training courses at schools for teachers, parents, students, about adolescent psychology Support students to write blogs to deal with stress. Provide website on mental health.</td>
</tr>
<tr>
<td>Parents</td>
<td>Teachers and schools take more responsibility for the quality of teaching, find better ways to teach. Combine activities of school and family. Community takes a role in teaching and educating youth. Control online gaming. Ban alcohol and tobacco consumption.</td>
</tr>
<tr>
<td>Teachers, health officers</td>
<td>Reduce pressure on teachers, increase salaries. Parents take more responsibility for teaching children. Collaboration among associations, such as Youth Union, Women’s Union, Parents’ Association, to strengthen support for students, teachers and parents. Combine activities of school and family. Train health officers to recognize and deal with mental health problems. Provide information materials such as books, websites. Set up a website in cooperation with the university to provide information on mental health for students and others.</td>
</tr>
</tbody>
</table>

9.1.4.1. Potential role for school health officials and school personnel

Although the parents, teachers and health staff interviewed in Chapter 4 recognized the importance of mental health for high school students, very little was actually undertaken in relation to such problems within the school system. Students suggested lectures by psychologists about reducing stress and coping with life, and also recommended a friendlier environment in the schools. The parents focused on the need to reduce gaming and other
distractions so that students could focus on their studies (Chapter 4). We detected an association between mental health problems and academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed (Chapter 5).

One of the key players in school-based approaches to mitigating the mental health problems could be the health officers working in schools. They were interviewed about their role and their potential to play a greater role in future, as described in Chapter 7.

Prevention of mental health problems was not mentioned by the health officers during the interviews. The school health officers did not appear to recognize and were not confident to deal with mental health issues among their students. They felt they lacked knowledge and experience in that field. In contrast, school nurses in the UK did recognize their role in promoting health and identifying and addressing potential problems, but also felt limited by inadequate training and insufficient support from professional networks such as local mental health services (Pryjmachuk et al., 2012). At present, mental health services in Vietnam are still limited in coverage and capacity, with inadequate human resources (Tran, 2017); they lack funding, expertise, facilities, and supportive networks for families and communities (Ng et al., 2011; Overseas Development Institute and UNICEF, 2018).

As in other countries, school health officers in Vietnam are expected to play an important role in reducing negative health outcomes and risk behaviors among young people. However, according to the current regulations, the role of the school health officer is mainly to organise periodic health examinations, provide first aid and primary health care, inform students about general health issues, ensure school and environmental sanitation, prevent the spread of infectious diseases (including HIV), monitor school safety and injury prevention, and ensure food hygiene (Ministry of Education and Training of Vietnam, 2007). There has been little attention from authorities on mental health. New regulations are needed to support school health officers to create an enabling environment for capacity building, curriculum adjustment, facility requirements, and greater school and community awareness (Ministry of Education and Training, 2019) so that students with mental health problems can get the support they need. The health and education sectors clearly need further insight into the potential key role for school health officers in adolescent mental health care, providing support not only for students but also for teachers and families.
9.1.4.2. Role for a website to provide information to students

Our research has demonstrated the need to reduce mental health problems among today’s secondary school students in Vietnam. One suggestion was to appoint confidential counselors for students, but that would be difficult to implement in Vietnam, because schools lack staff and financial support for such providers, who are anyway not widely available with appropriate training and experience. However, most of the students reported that they would share their private problems and seek help from a website if it was available. Developing such a website should be feasible in order to provide an internet-based psycho-educational intervention for students in Vietnam.

The development of a such website to provide information about psychology and mental health, designed to meet the needs of young Vietnamese was explored as one of the solutions (Chapter 8). In 2016, Sobowale et al. reported the encouraging interest in obtaining information about mental health through online sources, from adolescents in Hue, Central Vietnam (Sobowale et al., 2016). One study in Vietnam revealed that around 66.3% of young Vietnamese downloaded mobile health applications for disease prevention (Do et al., 2018). Nevertheless, one of the challenges to use a digital health intervention is that young Vietnamese with a higher perceived stress level were significantly less likely to use such interventions (Tran, Zhang, et al., 2018).

We did make an effort to design a website that could support high school students (and others, because access was free to all online) and studied its use (Chapter 8). During the year that the website was available online, the number of views revealed that the reproductive health item was the most liked, with the highest number of views (850,713), followed by the emotion and feeling section, viewed 442,856 times, and the depression items, viewed 437,252 times. Although we could not distinguish whether the visits were from different individuals or included several visits from fewer people, the data do demonstrate that one year on, the website was still being consulted by many people. We also asked high school students to evaluate the website for us after giving them a few weeks to use it (Chapter 8). Students in regular schools were significantly more likely to use the website to search for help than students in specialized schools. This may be explained either by different needs among the two types of students, or by different access to information besides what is available on the website. According to the 2015–2016 school year annual report on academic performance of students from secondary schools in Can Tho city by the Department of Education and Training, there were more students with high academic performance...
rankings in the specialized schools than in the regular schools (97% versus less than 50%) (Can Tho City Department of Education and Training, 2016). In an earlier study (Chapter 5) we had found that students with lower academic performance were more likely to be at risk of depression, which might have prompted them to seek help on the website.

One point arising from the results of the survey was that it was more common for boys than for girls to share information on the website (p<0.05). This difference might be a result of differences in mental health issues and needs, or to a difference in willingness to share such information. It may be linked to the difference in personalities and self-esteem between boys and girls (Bailey et al., 2007) or in patterns of seeking help for a psychological disorder (World Health Organization, 2019a). Future website information and programs on mental health should make efforts to integrate gender aspects into their content, to meet the needs of both boys and girls.

The majority of students believed that the website has the potential to appeal to parents and friends. In addition, many students said that it was easy for them to access. They said that they hoped that the website would remain active, and that they would return to it and continue to support it in the future. Many students agreed that they would introduce the website to their family, friends, and families of people with mental health problems. The results suggest that the website has high potential to expand its users to different groups in Vietnam. However, this is one of the first studies in Vietnam on using a website to provide information on psychology and mental health; much investigation remains to be done to establish the long-term usefulness of such a website and to determine the most needed and appropriate content. A school website that includes sections helping students to gain knowledge and skills related to mental health and school health care, adapted to fit each age group, could serve as a quick and convenient communication tool among students, teachers, parents, school health officers, school management boards. It could help the education management system to undertake timely and effective responses and actions to take care of the mental, reproductive and physical development of students in the school setting.
9.2. Validity, Dissemination, Limitations and Recommendations

9.2.1. Validity

Several approaches were used to maximize the validity of the results reported here. For the quantitative components in Chapters 5 and 6, the Center for Epidemiology Studies Depression (CES-D) scale with high internal consistency with Cronbach’s alpha coefficients ranging from 0.85 to 0.90 among general population samples was employed (Radloff, 1977). This scale has been validated in Vietnam using confirmatory factor analysis (Nguyen et al., 2007). The anxiety scale also showed a high level of internal consistency (Cronbach’s alpha ranged from 0.76 to 0.81) and has also been validated for use among Vietnamese students (Nguyen et al., 2007). The Educational Stress Scale for Adolescents (ESSA) used to measure educational stress has been also validated to measure the educational stress of adolescents in Vietnam with a high level of internal consistency with a Cronbach’s alpha of 0.83 (Thai et al., 2012).

Exploratory interviews with two experts with major in behavior science and health education from a university of public health and two psychiatric doctors with knowledge and experience related to adolescent mental health problems and working in a psychiatric clinic were conducted to gain insight into aspects of mental health problems to be included in the qualitative research instruments and design. In addition, focus group discussion questions and guidelines were revised by a supervisor with more than 30 years of experience in working the public health sector in Vietnam and pre-tested with first-year students of CTUMP before applying in the high schools. Continuous revisions to the guideline were accepted during the pilots to better align it with reality.

9.2.2. Dissemination

The results of Chapter 4 were presented at the Science, Technology and Youth Conference at Can Tho University of Medicine and Pharmacy in 2011. The results in Chapters 5 and 6 were disseminated at the 5th Expanded Mekong Delta Science Conference at Can Tho University of Medicine and Pharmacy in 2016 and discussed with teachers and students of Ly Tu Trong specialized school, one of the schools participating in the study, with participation of three professors and doctors from Washington University, USA, in 2019. The results of Chapters 7 and 8 were presented at the 6th Expanded Mekong Delta Science Conference at Can Tho University of Medicine and Pharmacy in 2018 and Chapter 8 was shared in an
International Health Science Conference on Mental Health at Can Tho University of Medicine and Pharmacy in 2019.

Furthermore, manuscripts resulting from the study were shared for comments from colleagues at CTUMP, doctors working in preventive medicine centers and the Department of Health of Can Tho city and other provinces in the Mekong Delta, before submitting for publication.

External recognition of these results

The results in Chapter 5 were employed by a book, which appeared in a list of 100 weekly best seller books, to stress the need to pay attention to mental health care during raising and educating children and adolescents in Vietnam. The online records of Research Gate revealed that the three articles published before 2020 have been widely read and cited: as of the date of submission of the dissertation, Chapter 4 had 192 reads and 9 citations, Chapter 5 had 1887 reads and 54 citations, and Chapter 6, only published in 2019, already had 148 reads and 2 citations. Clearly these scientific reports are filling an information gap that is important not only in Vietnam but in other countries as well.

9.2.3. Limitations

Every research, however carefully planned and designed, has limitations. We chose to focus our research on the school setting, to explore the mental health problems and possible solutions to improve mental health care for adolescents. However, many adolescents in Vietnam are not attending school, especially in the Mekong Delta (14% according to (UNICEF, 2016) and our results may not be applicable to youth who are not attending school. Also, we only studied high schools in Can Tho City, so that the results may not be generalizable to the whole country, or even the South, as there may be differences between adolescents living in urban and rural environments. However, our data were comparable to what was reported as the national average rates of depression and anxiety (Thai, 2010). We did have large numbers of respondents in the surveys and the proportions of girls and boys were the same as in the population, which leads us to believe that the results are representative of the study population.

In general, people who participate in health surveys are healthier than those who do not (Bobak et al., 2006; Keyes et al., 2018). Thus, the levels of depressive symptoms, anxiety, and suicide ideation are possibly underestimated. However, the difference between respondents and non-
respondents were similar in all subgroups in our study sample, so the comparisons between populations are valid, even if the absolute prevalence rates may be underestimated (Bobak et al., 2006). The low non-respondent bias should not affect the association between depressive symptoms or anxiety and risk factors within the study sample.

The self-esteem, anxiety, and CES-D scales, like other screening instruments, cannot be viewed as diagnostic tools, but only as screening tests to identify members of groups at risk for these conditions. The results tell us how the students perceive their health but are not in themselves evidence of medical concerns. In addition, cut-off scores were not validated among youth in Vietnam which means they should be interpreted with caution.

Another limitation concerns the study design, which specified collection of data from adolescents by self-reporting using standardized questionnaires. The respondents’ personality and identity development are still incomplete, which could result in fluctuating self-perceptions (Schraml et al., 2011) and thus unreliable reporting. The study did not include a tool or a measure to cross check on their self-report.

Moreover, there was no assessment of stress coping and stress levels, obesity (Quek et al., 2017), chronic medical illness (Lu et al., 2012) or use of tobacco and alcohol, all factors that may confound and influence anxiety, depression and suicidal ideation.

Finally, in a cross-sectional study the cause-effect relationship cannot be measured; that requires a longitudinal cohort or a randomized controlled study. Our cross-sectional studies did identify potentially important factors and relationships that could now be further explored using other methods.

9.2.4. Recommendations

In this section we first describe a number of possible applications of our findings that could be implemented by different stakeholders to mitigate the problems identified by the research. We further suggest directions for future research building upon the findings described in the thesis.
9.2.4.1. Recommendations for Application of Findings

In this section we present recommendations based on the findings described above, for potential application by different stakeholders, from local to central level.

Schools

It is believed that schools are an ideal setting in which to promote mental health for children and youth, providing an opportunity to reach large groups of children during their formative years of cognitive, emotional and behavioural development (Manitoba Healthy Schools, 2020; World Health Organization, 2004b). The most effective school based programs for promoting mental health are comprehensive, target multiple health outcomes, involve the whole school, focus on personal skill development, include parents and the wider community and are implemented over a period of time. Comprehensive school health is not limited to the classroom – it addresses the whole school environment with actions in four interrelated pillars that provide a strong foundation for healthy schools including i) social and physical environment; ii) teaching and learning; iii) partnerships and services; and iv) healthy school policy. A Whole School Approach to mental health promotion should be considered for introduction to schools in Vietnam (Manitoba Healthy Schools, 2020). That would mean:

- accepting integrated health promotion (including mental health promotion) as a priority in strategic planning processes;

- discussing mental health promotion as part of school well-being team meetings and exploring possibilities for cross-curricular approaches to integrated mental health teaching and learning;

- developing lesson plans and delivering curriculum in a way that links mental health to other health activities;

- promoting positive mental health through inclusive group sporting and other activities encouraging team work, new relationships, and physical activity;

- establishing school-based counseling services for students, possibly by collaborating with volunteers from the Youth Union, the largest social-political organization of Vietnamese youth, active at local universities;
ensuring that teachers receive training in the psychology of their profession, to raise awareness of how certain practices (such as pressure to perform and harsh punishment) may be counterproductive. This may help to address some of the issues related to teachers’ attitudes, and may allow for discussion of effective versus abusive methods of discipline in the schools.

Family

Anxiety, depression, and suicidal ideation are common among Vietnamese secondary school students and are strongly associated with physical and emotional abuse in the family. Therefore, attitudes of parents need to be changed from a punitive to a more supportive approach to reduce the risk of poor mental health. Parents should also be invited to participate in psychological education programs, to raise their awareness of how certain efforts with youth (such as pressure to perform, and threats or harsh punishment) may be counterproductive to the aims they have for their children. Better knowledge may help to make parents’ attitudes more positive, and may open their minds for discussion of better methods of discipline at home.

Ministry of Education and Training

The Ministry is responsible for the training of all types of teachers and has a role in approving the training of health staff as well. It would be important for them, during the regular review of training curricula for teachers and school managers, to make space for better preparation on the psychology of students and studying.

The Ministry is also responsible for the school curriculum that is putting so much pressure on the students. They regularly review and should cut out parts of the current programs that are may not be important for today’s capacity development, to reduce the pressure on students for study and examinations, and to ease educational pressures not only for students but also for both teachers and the management boards of schools.

Ministry of Health

The Ministry of Health is responsible for health programs, and for the training of health staff. There should be collaboration with the Ministry of Education and Training to recommend solutions to reduce stress for students and improve their mental health. They should also provide solutions for
screening, early detection and treatment of mental health problems for students; and provide knowledge and awareness to the community including students, parents, teachers and education management staff on common mental health issues in students and preventive and curative solutions. It became clear that more emphasis should be aimed at improving capacity to provide mental health services and on mental health workforce development in Vietnam.

Based on the findings described in this dissertation, the website providing mental health information should be continually advanced and employed, and linked to a Whole School Approach to mental health promotion with the multi-stakeholder engagement of students, parents, teachers and school health officers in the school setting.

9.2.4.2. Recommendations for further research

The results of our research raise new questions and in this section we suggest ideas for further research that could help to further inform policy and practice.

Although our findings suggested that self-esteem plays an important role in predicting academic achievement, a cross-sectional study cannot determine causality; a prospective study following a cohort of students could help to identify the causality and establish the effects of low self-esteem through the secondary school years.

Further studies on the effectiveness of applying web-based resources to disseminate mental health information would help to direct such approaches towards promotion of good mental health and possibly prevention of mental disorders among secondary school students.

It would be very instructive to design and implement an intervention with a Whole School Approach to mental health promotion in local high schools, as a pilot for a systematic evaluation and potentially for later scaling up in Vietnam.

In recent years, important mental health issues have arisen which have not yet been studied in detail in Vietnam. Attention deficit hyperactivity disorder, abuse of drugs and alcohol, and cyber bullying are now considered important mental health issues in children and adolescents. They were not within the scope of our study but are worthy of future research.
Attention Deficit Hyperactivity Disorder

Attention deficit hyperactivity disorder (ADHD) is reported as an important mental disorder in children and adolescents with varied prevalence (Adewuya & Famuyiwa, 2007; Ersan et al., 2004) (Pineda et al., 2001); (Gau et al., 2005); (Brook & Boaz, 2005). In Vietnam, the prevalence of ADHD was reported at 1.3% in Hanoi in 2006 (Nguyen, 2010) and 7.7% in Vinh Long in 2015 (Pham et al., 2015), both lower than in other countries. It would be useful to explore this disorder more in different contexts in Vietnam.

Cyberbullying

As the use of Internet increases around the world, studies in many countries are now reporting cyber-bullying as a social and a school problem, with prevalences from 6.5% to 35.4% (Bottino et al., 2015; Jadambaa et al., 2019). In Vietnam, the few studies on cyberbullying among students revealed prevalences from 16.7% to 35.7% (Nguyen & Tran, 2017; Nguyen & Tran, 2016; Tran, Ngo, et al., 2015). Some studies have reported a variation between female and male students in bullying victimisation (Le et al., 2019; Tran, Nguyen, et al., 2018; Tran, Shukri1, et al., 2018). Most importantly for our research, an association has been found between cyberbullying and depressive symptoms, and suicide ideation and attempts (Bottino et al., 2015; Le et al., 2019; Nixon, 2014). These results suggest another important direction for future research on mental health among adolescents in Can Tho City.

The findings from these studies suggest that the mental health problems observed mong pupils in Vietnam should be addressed at many levels of society, including government, school, community and family, along with attention to individuals. Much more information from research will be needed to have sufficient evidence to form a basis for better policies and planning to address these problems.

9.3. Overall Conclusions

This dissertation has identified common mental health problems among Vietnamese secondary school students from grades 10 to 12 in urban and suburban settings in Can Tho City, Vietnam. Our research results provide evidence for possible approaches to reduce and prevent mental health problems among Vietnamese secondary school students. With regard to common mental health problems and their related factors, Chapters 5 and 6
showed that anxiety, depression, and suicidal ideation were common among these students and there were strong associations with physical and emotional abuse in the family and high educational stress. Self-esteem is associated with anxiety, depression, and academic stress, all of which significantly affect students’ quality of life and are linked to suicidal ideation.

Chapter 4 on perspectives of pupils, parents, and teachers confirms that that the students feel that their mental health status is poor because of many risk factors in their learning and living environment. Academic curricula and the attitudes of parents and teachers need to be changed from a punitive to a more supportive approach, to reduce the risk of poor mental health.

Reports in the literature suggest that active participation by the school nurse is crucial in school programs aiming at preventing or reducing mental health problems (Rosvall & Nilsson, 2016). However, our findings in Chapter 7 revealed that school health officers in Can Tho City did not feel well-equipped to manage mental health problems, because of insufficient training, lack confidence, and absence of an appropriate network for advice and referral. Updated policies and programs are needed for initial training and refresher courses, which will strengthen the role of school health officers as first line support for secondary school students with mental health problems.

The results from Chapters 4, 5, 6 and 7 highlight the need for a school-based or web-based provision of information, aimed at proactively increasing students’ self-esteem and skills for dealing with academic stress. Chapter 8 shows how a website designed to provide information to secondary school students may be an effective way to provide access to information on a sensitive topic like mental health. The website should be maintained and introduced more widely to students, teachers and parents, with a continuous evaluation of its effectiveness in the long term.
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Summary

This summary highlights the main findings contributing to answer the main research question, by sub-question, the limitations, the recommendations for the application of these findings and suggestions for further research.

The Situation of Mental Health Problems among Secondary School Students in Can Tho City

Perceptions of Different Stakeholders on Mental Health Problems

It became clear that the mental health of secondary school students does need attention in Vietnam (Chapter 4). All of the stakeholders recognized depression, anxiety, stress, suicidal thoughts, and suicide attempts as major problems among students.

When asked about possible causes of these problems, most students said they were mainly associated with academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed. Students also mentioned issues in the family environment and in their recreational activities such as Internet gaming and drinking.

Parents agreed that academic pressure was the main cause of mental health problems among students. Although parents admitted that parental pressure contributed partly to student’s mental health problems, they put the main blame on teachers and the government. Parents also mentioned quarrels and conflict among students during and after school, and within and between schools, as well as addiction to online games. They did mention a role for the home environment, including economic conditions, parental problems, and having an unhappy family.

Similarly, teachers suggested that academic pressure due to an overloaded academic curriculum was a main cause for mental health problems among students. Teachers also mentioned unhealthy behaviors, such as addiction to games and the Internet, fighting among students, and a lack of problem-solving skills. In contrast to parents, teachers mainly looked at the failure of parents to teach their children manners and good behavior, and thought that parents lacked concern their children.
Although stress, depression, suicidal ideation, and sexual orientation issues were reported by the school health officers as the most commonly encountered mental health problems among their students, they did not recognize and were not confident in dealing with mental health issues because they felt they lacked knowledge and experience in that field (Chapter 7).

It is noted that none of the stakeholders, including students, parents, teachers (Chapter 4), and school officers (Chapter 7), mentioned physical and emotional abuse at home by parents or at school by teachers, or adverse childhood events, drug addiction, or Internet addiction as factors related to mental health problems of adolescents, whereas all of these issues came out from the following research.

Prevalence and Types of Mental Health Problems among Secondary School Students

According to their responses to the questionnaires, more than one fifth (22.8%) of the students were at risk of anxiety, and two fifths (41.1%) were at risk for depression (Chapter 5). It is reported that female students had a significantly higher risk of anxiety and depression. The prevalence of depressive symptoms illustrated that the prevalences of depression and of ‘low mood’ are high, which creates challenges for the healthy mental development of adolescents.

A rather high prevalence of suicidal thoughts (26.3%) and suicide plans (12.9%) was detected in our study population.

Risk Factors Associated with Student’s Mental Health Problems

Mental health problems among adolescents were mainly associated with academic pressure, an overloaded academic curriculum and pressure to perform well, from teachers, parents, and each other, but also from the family environment and their recreational activities. In this section we describe in more detail a number of the key issues raised in the three chapters and our recent data still being prepared for publication.

Academic pressure associated with mental health problems

The issues of academic competition and pressure to succeed were confirmed as risk factors in our studies (Chapters 4, 5, 6). Educational characteristics such as the school environment, academic performance, and high
educational stress were strongly associated with self-esteem in our study (Chapter 6). Students who attended one or more supplementary classes appeared to be at lower risk of having poor self-esteem; attending supplementary class may reduce the stress of workload and academic pressure. Support from the parents for the extra study, both financial and emotional, could be seen as caring, but at the same time could be part of the pressure felt by the students to reach a high level of achievement.

**Love and sex**

The study highlighted that romantic relationships and sexual feelings, thoughts, attractions and behaviors towards others and identifying one’s own sexuality were defining features that influenced the mental health and wellbeing of adolescents (Chapters 5 and 6). Parental pressure and hostile attitudes and behaviors to such relationships added to anxiety in the adolescents. The study also revealed that secondary school students in Vietnam who engaged in sexual intercourse (with or without pregnancy) often experienced poor mental health. The findings described in Chapters 5 and 6 of also revealed the concerns of adolescents over their sexual lives and orientation.

**Family environment and adverse childhood events**

The results of Chapters 4, 5 and 6 confirmed that a lack of family support and negative adult behaviours can have a negative impact on adolescent mental health. Nearly 20% of the students in our study had low self-esteem, with no difference between girls and boys (Chapter 6). These data also confirmed that family characteristics, including mother’s low educational level and physical and emotional abuse by parents or other adults in the household, were associated with low levels of self-esteem. In the worst case, the family and wider environment involve events that have a negative effect on the development and mental health of young people. The two main mental health problems that manifested in the adolescents in our study were anxiety and depression; both were found to be strong predictors for suicidal ideation. As many as 26.3% of students had seriously considered suicide, while 12.9% had made a suicide plan and 3.8% had actually attempted suicide. Key risk factors for anxiety and depression identified among the students were identified as adverse childhood experiences as a result of family characteristics and the environment, or school performance and environment (Chapter 5).
Our findings also suggest a relationship between abuse and mental health problems. The results reported in Chapter 6 confirmed that frequent physical or emotional abuse from adults (parents or other adults in the family, teachers or other staff members at school) was an independent predictor of anxiety. Interestingly, in the discussions with different stakeholders about mental health issues (Chapter 4), the topic of abuse did not arise, possibly because neither families nor schools perceive their actions as abuse of the students, or because if they are aware of it, they preferred not to talk about it.

*Emotional Mistreatment*

Most often reported was emotional abuse, which was reported by 41.5% of the students; compared to female students, male students tended to have experienced more emotional abuse (unpublished data). The factors related to the risk of emotional abuse included parents’ marital status and parents frequently arguing.

*Physical Abuse*

The highest rate of students reporting physical abuse was among those in grade 12, at 38.2%. It is worth noting that in all three classes, the rate of severe physical abuse was higher than that of mild abuse. This result reflects the urgency of preventing violence against children, especially school violence, which is considered a serious problem in today’s society. Mother's education and the quality of family environment were associated with physical abuse.

*Sexual Abuse*

The least common form of abuse reported was sexual abuse, which was 18.7%; we could not determine whether this rate reflected the real situation or the willingness of respondents to admit to such a sensitive form of abuse. Male students appeared to have a higher risk of being abused than did females. We found several factors to be related to sexual abuse: age, mother's education, parents arguments, and family economic status.

*Neglect*

About one-third of students in this study said they felt neglected (32.4%). There was no difference in reported neglect between men and women. Marital status of parents, quality of family environment and the hierarchy of students in the family were significantly related to neglect.
Abuse in the school setting

Our findings in Chapters 5 and 6 reflected that students who suffered from emotional abuse, neglect, physical abuse or sexual abuse were at significantly higher risk of depression than those who were not abused. In our study, poor school performance and high educational stress were strong indicators of anxiety and depression in high school students.

Activities outside the school and family

Abuse of drugs and alcohol

Our additional preliminary data in 2019 on abuse of alcohol by secondary school students in Ninh Kieu district, Can Tho City, which has not yet been prepared for publication, show that the prevalence of students drinking at least one beer in the past 30 days was 18.2%. A significant association between alcohol use and having symptoms of depression was detected in that study. It would be important to find out more about the extent of alcohol and drug abuse among young people, especially in relation to their mental health problems, in the setting of Vietnam, and to learn from other countries about potential interventions to reduce it.

Internet Abuse

According to pupils and parents in this study, playing computer games or accessing the Internet were activities undertaken by pupils to relieve stress. However, internet or game addiction is also mentioned as a common problem in the UNICEF report on mental health among youth in different provinces in Vietnam (UNICEF, 2016). Although these activities were mentioned by respondents in our surveys (Chapters 5, 6 and 7) we did not specifically look into the extent of this problem and its association with mental health issues in our study population. However, unpublished preliminary data from our 2019 study on game addiction reveal that 94.3% of students were spending more than one hour a day to play games. In addition, according to the GAS score for game addiction, 67.3% of students were likely to be addicted, and 10.4% of the students were classified as already game addicted. Significant associations between game addiction and alcohol use and having symptoms of depression were detected.
From all of the above, we can see that a wide range of factors can be shown to contribute to the development of mental health problems among adolescents. Different kinds of interventions might be needed to address these different problems.

**Potential Solutions to Ameliorate and Prevent Mental Health Problems**

A majority of students thought that reducing the demands of the academic curriculum, appointing confidential counselors, and sharing their concerns on an appropriate website would help to improve their mental health.

Our qualitative study showed that there were few differences among pupils, parents and teachers in the proposed solutions to reduce pupils’ mental health problems. The students would like reduced academic pressure, more attention from their family, more recreational activities supported by schools, and a friendlier learning environment. Parents would like teachers and schools to take more responsibility for the quality of teaching and to find better ways to teach their children. The teachers would like to see pressure on them reduced by lowering academic pressure and increasing salaries, and they also want the parents to take some responsibility for teaching children.

Seeking advice or help outside the family is also necessary because pupils cannot always easily share their feelings with their parents. In the context of Vietnam, it is very important to build up a system for mental health care from kindergartens to universities. Such a system needs to be integrated into the current school health care and should involve all relevant stakeholders: education, health, psychology, health care communication, and physical development, as well as community services and activities.

**Potential role for school health officials and school personnel**

Although the parents, teachers and health staff interviewed in Chapter 4 recognized the importance of mental health for high school students, very little was actually undertaken in relation to such problems within the school system. In Chapter 4, when parents and students were asked about how to reduce mental health problems, students suggested lectures by psychologists about reducing stress and coping with life, and also recommended a friendlier environment in the schools. The parents focused on the need to reduce gaming and other distractions so that students could focus on their studies.
There are health officers in the schools who could play a role as counsellors, but mental health problems were not raised as an issue by the school health officers during when we interviewed them. They did not appear to recognize and were not confident in dealing with mental health issues among their students because they lacked knowledge and experience in that field. The health and education sectors clearly need further insight into the potential key role for school health officers in adolescent mental health care, to provide support not only for students but also for teachers and families.

**Potential role for a website to provide information to students**

Our efforts to design a website providing mental health information that could support high school students, as one answer to question four, are highlighted in Chapter 8. The majority of students believed that the website has the potential to appeal to parents and friends. They said that it was easy for them to access and that they hoped that the website would remain active, because they would return to it and continue to support it in the future. Many students agreed that they would introduce the website to their family, friends, and families of people with mental health problems. It is confirmed that a website designed to provide information to secondary school students could be an effective way to provide information on a sensitive topic like mental health. This finding reflects the potential of using a website as a quick and convenient communication tool for mental health prevention among students (and perhaps others, such as school health officers, parents, and teachers).

**Limitations**

We chose to focus our research on the school setting, to explore the mental health problems and possible solutions to improve mental health care for adolescents. Also, we only studied secondary schools in Can Tho City, so that the results may not be generalizable to the whole country, or even the South, as there may be differences, for example between adolescents living in urban and rural environments. However, we did have large numbers of respondents in the surveys and the proportions of girls and boys were the same as in the population, which leads us to believe that the results are representative of the study population. In general, people who participate in health surveys are healthier than those who do not (Bobak et al., 2006; Keyes et al., 2018). Thus, the levels of depressive symptoms, anxiety, and suicide ideation are possibly underestimated. The self-esteem, anxiety, and CES-D scales, like other screening instruments, cannot be viewed as diagnostic tools, but only as screening tests to identify members of groups at
risk for these conditions. The study did not include a tool or a measure to cross check on adolescents’ self-report. Moreover, there was no assessment of stress coping and stress levels, obesity (Quek et al., 2017), chronic medical illness (Lu et al., 2012) or use of tobacco and alcohol, all factors that may confound and influence anxiety, depression and suicidal ideation. Finally, in a cross-sectional study the cause-effect relationship cannot be measured; that requires a longitudinal cohort or a randomized controlled study.

Recommendations

We present recommendations based on the findings described above, for potential application by different stakeholders, from local to central level and for further research.

Recommendations for Application of Findings

Schools

The most effective school based programs for promoting mental health are comprehensive, target multiple health outcomes, involve the whole school, focus on personal skill development, include parents and the wider community and are implemented over a period of time. A Whole School Approach to mental health promotion should be considered for introduction to schools in Vietnam (Manitoba Healthy Schools, 2020).

Family

Attitudes of parents need to be changed from a punitive to a more supportive approach to reduce the risk of poor mental health. Parents should also be invited to participate in psychological education programs, to raise their awareness of how certain efforts with youth (such as pressure to perform, and threats or harsh punishment) may be counterproductive to the aims they have for their children. Better knowledge may help to make parents’ attitudes more positive, and may open their minds for discussion of better methods of discipline at home.

Ministry of Education and Training

The Ministry is responsible for the training of all types of teachers and has a role in approving the training of health staff as well.
The Ministry is also responsible for the school curriculum that is putting so much pressure on the students. They regularly review and should cut out parts of the current programs that are may not be important for today’s capacity development, to reduce the pressure on students for study and examinations, and to ease educational pressures not only for students but also for both teachers and the management boards of schools.

**Ministry of Health**

The Ministry of Health should be collaboration with the Ministry of Education and Training to recommend solutions to reduce stress for students and improve their mental health. They should also provide solutions for screening, early detection and treatment of mental health problems for students; and provide knowledge and awareness to the community including students, parents, teachers and education management staff on common mental health issues in students and preventive and curative solutions. It became clear that more emphasis should be aimed at improving capacity to provide mental health services and on the mental health workforce development in Vietnam. Based on the findings described in this dissertation, the website providing mental health information should be continually advanced and employed, and linked to a Whole School Approach to mental health promotion, with a multi-stakeholder engagement of students, parents, teachers and school health officers in the school setting.

**Recommendations for further research**

A prospective study following a cohort of students could help to identify the causality and establish the effects of low self-esteem through the secondary school years.

Further studies on the effectiveness of applying web-based resources to disseminate mental health information would help to direct such approaches towards promotion of good mental health and possibly prevention of mental disorders among secondary school students.

It would be very instructive to design and implement an intervention with a Whole School Approach to mental health promotion in local high schools, as a pilot for a systematic evaluation and potentially for later scaling up in Vietnam.
In recent years, important mental health issues (attention deficit hyperactivity disorder, abuse of drugs and alcohol, and cyber bullying) have arisen which have not yet been studied in detail in Vietnam. They were not within the scope of our study but are worthy of future research.
Samenvatting

Deze samenvatting belicht de belangrijkste bevindingen die bijdragen aan het beantwoorden van de hoofdonderzoeksvraag, per deelvraag, de beperkingen, de aanbevelingen voor de toepassing van deze bevindingen en suggesties voor verder onderzoek.

De situatie van geestelijke gezondheidsproblemen onder middelbare scholieren in Can Tho City

Percepties van verschillende belanghebbenden over geestelijke gezondheidsproblemen


Gevraagd naar mogelijke oorzaken van deze problemen, zeiden de meeste studenten dat ze voornamelijk geassocieerd werden met academische druk, als gevolg van een overbelast curriculum en de druk van leraren en ouders om te slagen. Studenten noemden ook problemen in de gezinsomgeving en in hun recreatieve activiteiten, zoals gamen op het internet en drinken.

Ouders waren het erover eens dat academische druk de belangrijkste oorzaak was van psychische problemen onder studenten. Hoewel ouders toegaven dat ouderlijke druk gedeeltelijk bijdroeg aan de geestelijke gezondheidsproblemen van leerlingen, gaven ze de grootste schuld aan leraren en de overheid. Ouders noemden ook ruzies en conflicten tussen leerlingen tijdens en na schooltijd, en binnen en tussen scholen, evenals verslaving aan online games. Ze noemden wel een rol voor de thuisomgeving, waaronder economische omstandigheden, ouderlijke problemen en het hebben van een ongelukkig gezin.

Evenzo suggereerden leraren dat academische druk als gevolg van een overbelast academisch curriculum een hoofdoorzaak was van psychische problemen bij studenten. Leraren noemden ook ongezond gedrag, zoals verslaving aan games en internet, ruzie tussen studenten en een gebrek aan probleemoplossende vaardigheden. In tegenstelling tot ouders, keken leerkrachten vooral naar het falen van ouders om hun kinderen manieren en
goed gedrag aan te leren, en vonden zij dat het ouders ontbrak aan bezorgdheid over hun kinderen.

Hoewel stress, depressie, zelfmoordgedachten en problemen met seksuele geaardheid door de zorgcoördinatoren van de school werden gemeld als de meest voorkomende psychische problemen onder hun studenten, herkenden ze het niet en voelden ze zich niet zeker genoeg om met psychische problemen om te gaan, aangezien ze het gevoel hadden dat ze tekortschoten in kennis en ervaring op dat gebied (hoofdstuk 7).

Opmerkelijk is dat geen van de belanghebbenden, inclusief studenten, ouders, leerkrachten (hoofdstuk 4) en zorgcoördinatoren (hoofdstuk 7), fysiek en emotioneel misbruik door ouders thuis of door leerkrachten op school, vervelende gebeurtenissen uit de kindertijd, drugsverslaving of internetverslaving als factoren noemde gerelateerd aan psychische gezondheidsproblemen van adolescenten, terwijl al deze problemen uit het volgende onderzoek naar voren kwamen.

**Prevalentie en soorten geestelijke gezondheidsproblemen onder middelbare scholieren**

Op basis van de antwoorden op de vragenlijsten had meer dan een vijfde (22,8%) van de studenten een verhoogd risico op angst en twee vijfde (41,1%) een verhoogd risico op depressie (Hoofdstuk 5). Naar verluidt hadden vrouwelijke studenten een significant hoger risico op angst en depressie. De prevalentie van depressieve symptomen illustreerde dat de prevalentie van depressie en van ‘neerslachtigheid’ hoog is, wat problemen oplevert voor de gezonde mentale ontwikkeling van adolescenten.

Een vrij hoge prevalentie van zelfmoordgedachten (26,3%) en zelfmoordplannen (12,9%) werd gedetecteerd in onze onderzoekspopulatie.

**Risicofactoren die geassocieerd worden met de geestelijke gezondheidsproblemen van studenten**

Geestelijke gezondheidsproblemen onder adolescenten werden vooral geassocieerd met academische druk, een overbelast academisch curriculum en prestatiedruk van leerkrachten, ouders en elkaar, maar ook vanuit de gezinsomgeving en hun recreatieve activiteiten. In deze sectie beschrijven we meer gedetailleerd een aantal van de belangrijkste kwesties, die in de drie hoofdstukken en in onze recente gegevens die nog in voorbereiding zijn, voor publicatie aan de orde zijn gekomen.
Academische druk geassocieerd met psychische problemen

De kwesties van academische concurrentie en druk om te slagen werden in onze studies bevestigd als risicofactoren (hoofdstukken 4, 5, 6). Educatieve karakteristieken zoals de schoolomgeving, academische prestaties en hoge educatieve stress werden in ons onderzoek sterk geassocieerd met zelfvertrouwen (Hoofdstuk 6). Studenten die één of meer aanvullende lessen volgden, bleken een verminderd risico te hebben op een laag zelfbeeld; het bijwonen van aanvullende lessen kan de stress van werkdruk en academische druk verminderen. Ondersteuning van de ouders voor de extra studie, zowel financieel als emotioneel, kan als zorgzaam worden beschouwd, maar kan tegelijkertijd onderdeel zijn van de druk die de studenten voelen om een hoog prestatieniveau te bereiken.

Liefde en seks

De studie benadrukte dat romantische relaties en seksuele gevoelens, gedachten, aantrekkingen en gedragingen jegens anderen en het identificeren van iemands eigen seksualiteit bepalende factoren waren die de geestelijke gezondheid en hetwelzijn van adolescenten beïnvloedden (Hoofdstukken 5 en 6). Ouderlijke druk en vijandige houdingen en gedragingen in dergelijke relaties droegen bij aan de angst bij de adolescenten. Uit het onderzoek bleek ook dat middelbare scholieren in Vietnam die geslachtsgemeenschap hadden (met of zonder zwangerschap) vaak een slechte geestelijke gezondheid hadden. De bevindingen beschreven in de hoofdstukken 5 en 6 onthulden ook de zorgen van adolescenten over hun seksuele leven en geaardheid.

Familieomgeving en ongunstige gebeurtenissen in de kindertijd

De resultaten van de hoofdstukken 4, 5 en 6 bevestigden dat een gebrek aan gezinsondersteuning en negatief volwassen gedrag een negatieve invloed kan hebben op de geestelijke gezondheid van adolescenten. Bijna 20% van de studenten in onze studie had een laag zelfbeeld, zonder verschil tussen meisjes en jongens (hoofdstuk 6). Deze gegevens bevestigden ook dat gezinskenmerken, waaronder het lage opleidingsniveau van de moeder en fysiek en emotioneel misbruik door ouders of andere volwassenen in het huishouden, geassocieerd werden met een laag zelfbeeld. In het ergste geval zijn er in het gezin en in de wijdere omgeving gebeurtenissen die een negatief effect hebben op de ontwikkeling en geestelijke gezondheid van jongeren. De twee meest voorkomende geestelijke gezondheidsproblemen die zich bij de adolescenten in ons onderzoek manifesterden, waren angst.
en depressie; beide bleken sterke voorspellers te zijn voor zelfmoordgedachten. Maar liefst 26,3% van de studenten had zelfmoord serieus overwogen, terwijl 12,9% een zelfmoordplan had opgesteld en 3,8% daadwerkelijk een zelfmoordpoging had gedaan. De belangrijkste risicofactoren voor angst en depressie die onder de studenten werden geïdentificeerd, waren ongunstige ervaringen uit de kindertijd als gevolg van gezinskenmerken en de omgeving, of schoolprestaties en -omgeving (hoofdstuk 5).

Onze bevindingen suggereren ook een verband tussen misbruik en psychische problemen. De resultaten die in Hoofdstuk 6 worden gerapporteerd, bevestigen dat frequent fysiek of emotioneel misbruik door volwassenen (ouders of andere volwassenen in het gezin, leraren of andere stafleden op school) een onafhankelijke voorspeller van angst is. Interessant is dat in de discussies met verschillende belanghebbenden over geestelijke gezondheidskwesties (hoofdstuk 4) het onderwerp misbruik niet aan de orde kwam, mogelijk omdat noch gezinnen noch scholen hun acties als misbruik van de leerlingen beschouwen, of omdat ze, als ze zich ervan bewust zijn, er liever niet over praatten.

**Emotionele mishandeling**

Het vaakst gemeld was emotioneel misbruik, dat werd gemeld door 41,5% van de studenten; in vergelijking met vrouwelijke studenten hadden mannelijke studenten over het algemeen meer emotioneel misbruik meegemaakt (niet-gepubliceerde gegevens). De factoren gerelateerd aan het risico van emotioneel misbruik waren onder meer de burgerlijke staat van de ouders en ouders die vaak ruzie maken.

**Fysiek misbruik**

Het hoogste percentage studenten dat fysieke mishandeling meldde, was met 38.2% onder degenen in groep 12. Het is noemenswaardig dat in alle drie de klassen het percentage ernstige lichamelijke mishandeling hoger was dan dat van lichte mishandeling. Dit resultaat weerspiegelt de urgentie om geweld tegen kinderen te voorkomen, met name geweld op school, dat in de huidige samenleving als een ernstig probleem wordt beschouwd. Opleiding van de moeder en de kwaliteit van de gezinsomgeving werden geassocieerd met lichamelijk misbruik.
Seksueel misbruik

De minst voorkomende gemelde vorm van misbruik was seksueel misbruik, wat 18,7% was; we konden niet bepalen of dit percentage de werkelijke situatie weerspiegelde of de bereidheid van respondenten om deze gevoelige vorm van misbruik toe te geven. Mannelijke studenten bleken een hoger risico te lopen om misbruikt te worden dan vrouwen. We vonden verschillende factoren die gerelateerd konden worden aan seksueel misbruik: leeftijd, opleiding van de moeder, onenigheden van ouders en de economische status van het gezin.

Verwaarlozing

Ongeveer een derde van de studenten in deze studie zei zich verwaarloosd te voelen (32,4%). Er was geen verschil in gerapporteerde verwaarlozing tussen mannen en vrouwen. De burgerlijke staat van ouders, de kwaliteit van de gezinsomgeving en de hiërarchie van studenten binnen het gezin waren significant gerelateerd aan verwaarlozing.

Misbruik op school

Onze bevindingen in de hoofdstukken 5 en 6 lieten zien dat studenten die leden aan emotioneel misbruik, verwaarlozing, lichamelijk of seksueel misbruik een significant hoger risico liepen op depressie dan degenen die niet werden misbruikt. In onze studie waren slechte schoolprestaties en hoge educatieve stress sterke indicatoren van angst en depressie bij middelbare scholieren.

Activiteiten buiten de school en het gezin

Misbruik van drugs en alcohol

Onze aanvullende voorlopige gegevens uit 2019 over alcoholmisbruik door middelbare scholieren in de wijk Ninh Kieu, Can Tho City, welke nog niet zijn voorbereid voor publicatie, laten zien dat de prevalentie van studenten die in de afgelopen 30 dagen minstens één biertje dronken 18,2% was. In dat onderzoek werd een significant verband gevonden tussen alcoholgebruik en het hebben van depressieve symptomen. Het zou belangrijk zijn om meer te weten te komen over de omvang van alcohol- en drugsmisbruik onder jongeren, vooral in relatie tot hun psychische gezondheidsproblemen, in de setting van Vietnam, en om van andere landen te leren over mogelijke interventies om dit terug te dringen.
Internetmisbruik

Volgens leerlingen en ouders in dit onderzoek waren computerspelletjes of toegang tot het internet activiteiten die leerlingen ondernamen om stress te verminderen. Internet- of gameverslaving wordt echter ook als een veelvoorkomend probleem genoemd in het UNICEF-rapport over geestelijke gezondheid onder jongeren in verschillende provincies in Vietnam (UNICEF, 2016). Hoewel deze activiteiten werden genoemd door respondenten in onze onderzoeken (hoofdstukken 5, 6 en 7), hebben we niet specifiek gekeken naar de omvang van dit probleem en het verband met psychische problemen in onze studiepopulatie. Uit niet-gepubliceerde voorlopige gegevens van ons onderzoek naar gameverslaving uit 2019 blijkt echter dat 94,3% van de studenten meer dan een uur per dag besteedde aan het spelen van games. Bovendien was volgens de GAS-score voor gameverslaving 67,3% van de studenten waarschijnlijk verslaafd en werd 10,4% van de studenten al als gameverslaafd geclassificeerd. Significante associaties tussen gameverslaving en alcoholgebruik en het hebben van depressieve symptomen werden gedetecteerd.

Uit al het bovenstaande kunnen we opmaken dat een breed scala aan factoren bijdragen aan de ontwikkeling van psychische problemen bij adolescenten. Er zijn mogelijk verschillende soorten interventies nodig om deze verschillende problemen aan te pakken.

Mogelijke oplossingen om geestelijke gezondheidsproblemen te verbeteren en te voorkomen

Een meerderheid van de studenten was van mening dat het verminderen van de eisen van het academische curriculum, het aanstellen van vertrouwenspersonen en het delen van hun zorgen op een geschikte website zou helpen om hun geestelijke gezondheid te verbeteren.

Ons kwalitatief onderzoek toonde aan dat er weinig verschillen waren tussen leerlingen, ouders en leraren in de voorgestelde oplossingen om de geestelijke gezondheidsproblemen van leerlingen te verminderen. De studenten zouden minder academische druk willen, meer aandacht van hun familie, meer recreatieve activiteiten die door scholen worden ondersteund en een vriendelijker leermilieu. Ouders zouden graag zien dat leerkrachten en scholen meer verantwoordelijkheid nemen voor de kwaliteit van het onderwijs en dat ze betere manieren vinden om hun kinderen les te geven. De leerkrachten zouden graag zien dat de druk op hen wordt verminderd door de academische druk te verlagen en de salarissen te

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verhogen, en ze willen ook dat de ouders enige verantwoordelijkheid nemen in het lesgeven aan hun kinderen.

Het is ook nodig om advies of hulp buiten het gezin te zoeken, omdat leerlingen hun gevoelens niet altijd gemakkelijk met hun ouders kunnen delen. In de context van Vietnam is het erg belangrijk om een systeem op te bouwen voor geestelijke gezondheidszorg, van kleuterscholen tot universiteiten. Een dergelijk systeem moet worden geïntegreerd in de huidige schoolgezondheidszorg en alle relevante belanghebbenden moeten erbij betrokken zijn: onderwijs, gezondheid, psychologie, communicatie over de gezondheidszorg en lichamelijke ontwikkeling, evenals gemeenschapsdiensten en activiteiten.

*Mogelijke rol voor zorgcoördinatoren op school en schoolpersoneel*

Hoewel de in hoofdstuk 4 geïnterviewde ouders, leerkrachten en gezondheidswerkers het belang van geestelijke gezondheid voor middelbare scholieren erkenden, werd er in feite weinig ondernomen met betrekking tot dergelijke problemen binnen het schoolsysteem. In hoofdstuk 4 toen aan ouders en leerlingen werd gevraagd hoe ze geestelijke gezondheidsproblemen konden verminderen, stelden de leerlingen lezingen van psychologen voor over het verminderen van stress en hoe om te gaan met het leven, en adviseerden ze ook een vriendelijker omgeving op de scholen. De ouders richtten zich op de noodzaak om gamen en andere afleidingen te verminderen, zodat studenten zich konden concentreren op hun studie.

Er zijn zorgcoördinatoren op de scholen voor wie een rol als adviseur wegelegd zou kunnen zijn, maar geestelijke gezondheidsproblemen werden niet als een probleem aan de orde gesteld door de zorgcoördinatoren van de school tijdens onze interviews. Ze leken het niet te erkennen en hadden geen vertrouwen in het omgaan met psychische problemen onder hun studenten omdat ze kennis en ervaring op dat gebied misten. De gezondheids- en onderwijssector hebben duidelijk meer inzicht nodig in de mogelijke sleutelrol van zorgcoördinatoren op school in de geestelijke gezondheidszorg voor adolescenten, om niet alleen ondersteuning te bieden aan studenten, maar ook aan leerkrachten en gezinnen.
Mogelijke rol voor een website om informatie te verstrekken aan studenten

Onze inspanningen om een website te ontwerpen met informatie over geestelijke gezondheid die middelbare scholieren zou kunnen ondersteunen, als een antwoord op vraag vier, worden toegelicht in hoofdstuk 8. De meerderheid van de leerlingen was van mening dat de website de potentie heeft om ouders en vrienden aan te spreken. Ze zeiden dat het voor hen gemakkelijk was om toegang te krijgen en dat ze hoopten dat de website actief zou blijven, omdat ze ernaar zouden terugkeren en het in de toekomst zouden blijven ondersteunen. Veel studenten waren het erover eens dat ze de website zouden introduceren bij hun familie, vrienden en families van mensen met psychische problemen. Er wordt bevestigd dat een website die is ontworpen om informatie te verstrekken aan middelbare scholieren, een effectieve manier kan zijn om informatie te verstrekken over een gevoeligh onderwerp als geestelijke gezondheid. Deze bevinding weerspiegelt de potentie van het gebruik van een website als een snel en gemakkelijk communicatiemiddel voor preventie van geestelijke gezondheidsproblemen onder leerlingen (en misschien ook voor anderen, zoals zorgcoördinatoren op school, ouders en leraren).

Beperkingen

We hebben ervoor gekozen om ons onderzoek te richten op de schoolomgeving, om de geestelijke gezondheidsproblemen en mogelijke oplossingen te verkennen teneinde de geestelijke gezondheidszorg voor adolescenten te verbeteren. We hebben ook alleen middelbare scholen in Can Tho City bestudeerd, waardoor de resultaten misschien niet generaliseerbaar zijn voor het hele land, of zelfs niet voor het zuiden, omdat er verschillen tussen adolescenten kunnen zijn, zoals het wonen in stedelijke en landelijke omgevingen. We hadden echter een groot aantal respondenten in de enquêtes en de verhouding tussen het aantal meisjes en jongens was hetzelfde als in de populatie, wat ons doet vermoeden dat de resultaten representatief zijn voor de onderzoekspopulatie. Over het algemeen zijn mensen die deelnemen aan gezondheidsonderzoeken gezonder dan degenen die dat niet doen (Bobak et al., 2006; Keyes et al., 2018). De niveaus van depressieve symptomen, angstgevoelens en zelfmoordgedachten worden dus mogelijk onderschat. De zelfbeeld-, angst- en CES-D-schalen kunnen, net als andere screeningsinstrumenten, niet worden gezien als diagnostische instrumenten, maar alleen als screeningstests om leden van groepen te identifieren die risico lopen op deze problemen. Het onderzoek bevatte geen instrument of maatregel om de zelfrapportage van adolescenten te
controleren. Bovendien was er geen beoordeling van het omgaan met stress en stressniveaus, obesitas (Quek et al., 2017), chronische medische ziekte (Lu et al., 2012) of het gebruik van tabak en alcohol, wat allemaal factoren zijn die met angst, depressie en zelfmoordgedachten kunnen interfereren of deze kunnen beïnvloeden. Ten slotte kan in een cross-sectioneel onderzoek de oorzaak-gevolgrelatie niet worden gemeten; dat vereist een longitudinaal cohort of een gerandomiseerde gecontroleerde studie.

Aanbevelingen

Op basis van de hierboven beschreven bevindingen presenteren we aanbevelingen voor mogelijke toepassing door verschillende belanghebbenden, van lokaal tot centraal niveau, en voor verder onderzoek.

Aanbevelingen voor toepassing van bevindingen

Scholen

De meest effectieve schoolprogramma's voor het bevorderen van geestelijke gezondheid zijn veelomvattend, richten zich op meerdere gezondheidsresultaten, betrekken de hele school, richten zich op persoonlijke vaardigheidsontwikkeling, betrekken hierbij ouders en de bredere gemeenschap en worden gedurende een bepaalde periode uitgevoerd. Introductie van een integrale schoolbenadering voor bevordering van de geestelijke gezondheid zou overwogen moeten worden op scholen in Vietnam (Manitoba Healthy Schools, 2020).

Familie

De houding van ouders moet worden veranderd van een bestraffende naar een meer ondersteunende benadering om het risico op een slechte geestelijke gezondheid te verkleinen. Ouders moeten ook worden uitgenodigd om deel te nemen aan psychologische onderwijsprogramma's, om hen bewust te maken van de manier waarop bepaalde inspanningen van jongeren (zoals prestatiedruk, bedreigingen of harde straffen) contraproducentief kunnen zijn voor de doelen die ze voor hun kinderen hebben. Betere kennis kan helpen om de houding van ouders positiever te maken, en om hen open te stellen voor een bespreking over betere methoden voor discipline binnenshuis.
Ministerie van Onderwijs en Vorming

Het ministerie is verantwoordelijk voor de opleiding van alle soorten leraren en heeft ook een rol bij het goedkeuren van de opleiding van gezondheidspersoneel.

Het ministerie is ook verantwoordelijk voor het schoolcurriculum dat de studenten zo onder druk zet. Ze evalueren regelmatig en zouden delen van de huidige programma's die misschien niet belangrijk zijn voor de capaciteitsontwikkeling van vandaag moeten verwijderen, zodat de druk op studenten voor studie en examens verminderd wordt, en om de onderwijsdruk niet alleen voor studenten te verminderen, maar ook voor docenten en schoolbesturen.

Ministerie van Gezondheid

Het ministerie van Volksgezondheid zou moeten samenwerken met het ministerie van Onderwijs en Vorming om oplossingen aan te bevelen die stress voor studenten verminderen en hun geestelijke gezondheid verbeteren. Ze moeten ook oplossingen bieden voor screening, vroege opsporing en behandeling van psychische problemen onder studenten; en kennis en bewustzijn verstrekken aan de gemeenschap, inbegrepen studenten, ouders, leraren en personeel van het schoolbestuur, over veelvoorkomende psychische problemen bij studenten en preventieve en curatieve oplossingen. Het werd duidelijk dat er meer nadruk moet worden gelegd op het verbeteren van de capaciteit om geestelijke gezondheidsdiensten te verlenen en op het verbeteren van het personeelsbestand in de geestelijke gezondheidszorg in Vietnam. Op basis van de bevindingen die in dit proefschrift worden beschreven, moet de website die informatie over geestelijke gezondheid biedt, voortdurend worden ontwikkeld en beemand, en worden gekoppeld aan een integrale schoolbenadering ter bevordering van de geestelijke gezondheid, met betrokkenheid van meerdere belanghebbenden, studenten, ouders, leraren en zorgcoördinatoren op school in de schoolomgeving.

Aanbevelingen voor verder onderzoek

Een prospectieve studie die een cohort leerlingen volgt, zou kunnen helpen om de causaliteit aan te tonen en de effecten vast te stellen van een laag zelfbeeld tijdens de middelbare schooljaren.
Verder onderzoek naar de effectiviteit van het gebruik van webgebaseerde bronnen om informatie over geestelijke gezondheid te verspreiden, zou helpen om dergelijke benaderingen te richten op het bevorderen van een goede geestelijke gezondheid en mogelijk op het voorkomen van psychische stoornissen bij middelbare scholieren.

Het zou zeer leerzaam zijn om een interventie met een Whole School Approach voor geestelijke gezondheidsbevordering op lokale middelbare scholen te ontwerpen en te implementeren als een pilot voor een systematische evaluatie, en dit later mogelijk op te schalen in Vietnam.

In de afgelopen jaren zijn er belangrijke geestelijke gezondheidsproblemen ontstaan (aandachtstekortstoornis met hyperactiviteit, misbruik van drugs en alcohol, en cyberpesten) die in Vietnam nog niet in detail zijn bestudeerd. Ze vielen niet binnen de strekking van onze studie, maar zijn toekomstig onderzoek waard.
Tóm Tắt

Bản tóm tắt này bao gồm các kết quả nghiên cứu quan trọng góp phần trả lời các câu hỏi nghiên cứu, những vấn đề, những khuyến nghị cho việc áp dụng những phát hiện này và gợi ý cho các nghiên cứu tiếp theo.

Thực trạng các vấn đề về sức khỏe tâm thần của học sinh trung học tại thành phố Cần Thơ

Nhan thức của các bên liên quan khác nhau về các vấn đề sức khỏe tâm thần

Kết quả nghiên cứu cho thấy sức khỏe tâm thần của học sinh trung học tại Việt Nam rất cần được quan tâm (Chương 4). Tắt cả các bên liên quan cho rằng các vấn đề chính về sức khỏe tâm thần của học sinh bao gồm trầm cảm, lo âu, căng thẳng, có suy nghĩ tự tử và có kế hoạch tự tử.

Khi được hỏi về nguyên nhân có thể của những vấn đề này, hầu hết học sinh cho biết các nguyên nhân chủ yếu liên quan đến áp lực học tập, do chương trình học quá tải và áp lực thành công từ giáo viên và phụ huynh. Học sinh cũng đề cập đến các vấn đề trong môi trường gia đình và trong các hoạt động giải trí như chơi game trên mạng internet và uống rượu.

Phụ huynh cũng cho rằng áp lực học tập là nguyên nhân chính dẫn đến các vấn đề sức khỏe tâm thần của học sinh. Mặc dù phụ huynh thừa nhận rằng áp lực của phụ huynh có góp phần đối với các vấn đề sức khỏe tâm thần của học sinh, tuy nhiên họ vẫn cho rằng trách nhiệm phần lớn thuộc về giáo viên và cơ quan nhà nước. Các bậc phụ huynh cũng đề cập đến các cuộc cãi vã và xung đột giữa các học sinh trong và sau giờ học, trong và giữa các trường học, cũng như việc nghiêm game trực tuyến. Họ cũng cho rằng môi trường gia đình bao gồm điều kiện kinh tế, các vấn đề của cha mẹ và việc có một gia đình không hạnh phúc có góp phần dẫn đến các vấn đề tâm thần ở học sinh.

Tương tự, các giáo viên cho rằng áp lực học tập do chương trình học quá tải là nguyên nhân chính dẫn đến các vấn đề sức khỏe tâm thần ở học sinh. Các giáo viên cũng đề cập đến những hành vi không lành mạnh như nghiên game và internet, đánh nhau giữa các học sinh và thiếu kỹ năng giải quyết vấn đề. Ngược lại với phụ huynh, giáo viên chủ yếu cho rằng cha mẹ chưa dạy được con cách cư xử và hành vi tốt, và cha mẹ thiếu quan tâm đến con cái là những nguyên nhân chính.
Mặc dù cán bộ y tế trường học nhận định rằng căng thẳng, trầm cảm, có ý định tự tử và các vấn đề liên quan đến xu hướng tính dục là những vấn đề sức khỏe tâm thần thường gặp nhất ở học sinh của họ, nhưng họ không nhận ra và không tự tin đổi mặt với các vấn đề sức khỏe tâm thần vì họ cảm thấy mình thiếu kiến thức và kinh nghiệm trong lĩnh vực này (Chương 7).

Điều đáng lưu ý rằng không có bản liên quan nào bao gồm học sinh, phụ huynh, giáo viên (Chương 4) và nhân viên trường học (Chương 7) để cấp đến việc làm dùng thẻ chat và tình thân bởi cha mẹ ở nhà hoặc giáo viên ở trường, các sự kiện bất lợi thời thơ ấu, nghiên ma túy, hoặc nghiên internet như là yếu tố liên quan đến các vấn đề sức khỏe tâm thần của thanh thiếu niên. Tuy nhiên, nghiên cứu kết tiếp thuộc luận án này cho thấy các vấn đề này được ghi nhận như các yếu tố có liên đến sức khỏe tâm thần của học sinh.

**Tý lệ hiện mắc các vấn đề sức khỏe tâm thần ở học sinh trung học**

Theo nhận định từ các em học sinh trong bảng câu hỏi, hơn 1/5 (22,8%) học sinh có nguy cơ lo lắng và 2/5 (41,1%) có nguy cơ trầm cảm (Chương 5). Kết quả nghiên cứu cho thấy các học sinh nữ có nguy cơ lo lắng và trầm cảm cao hơn đáng kể. Tý lệ của các triệu chứng trầm cảm cho thấy tý lệ trầm cảm và "tâm trạng buồn phiền" ở học sinh là cao. Điều này tạo ra những thách thức cho sự phát triển tâm thần lành mạnh của thanh thiếu niên.

Tý lệ học sinh có ý định tự tử (26,3%) và kế hoạch tự sát (12,9%) khá cao đã được phát hiện trong mẫu nghiên cứu của chúng tôi.

**Các yếu tố rủi ro liên quan đến các vấn đề sức khỏe tâm thần của học sinh**

Các vấn đề sức khỏe tâm thần ở thanh thiếu niên không chỉ chú ý đến quan đến áp lực học tập, chương trình học quá tải và áp lực phải đạt thành tích tốt từ giáo viên, cha mẹ và giữa các học sinh với nhau, mà còn từ môi trường gia đình và các hoạt động giải trí của họ. Trong phần này, chúng tôi mô tả chi tiết hơn một số yếu tố liên quan đến các vấn đề này như ra trong ba chương nghiên cứu và số liệu nghiên cứu gần đây của chúng tôi vẫn đang được chuẩn bị để xuất bản.

**Áp lực học tập liên quan đến các vấn đề sức khỏe tâm thần**

Các vấn đề về căng thẳng trong học tập và áp lực thành công đã được xác nhận là các yếu tố liên quan trong các nghiên cứu của chúng tôi (Chương 4, 5, 6). Các đặc điểm giáo dục như môi trường học đường, kết quả học tập và áp lực giáo dục cao có liên quan chặt chẽ đến long tử tôn trong nghiên cứu
của chúng tôi (Chương 6). Học sinh đã tham dự một hoặc nhiều lớp học bổ trợ đường như ít có người có của ‘long tử tôn thấp’. Việc tham gia các lớp học bổ sung có thể giảm bớt căng thẳng của khối lượng công việc và áp lực học tập. Sự hỗ trợ từ phụ huynh cho việc học thêm cả về tài chính và tình cảm, có thể được coi là sự quan tâm, nhưng đồng thời cũng có thể là một phần áp lực làm học sinh cảm thấy phải đạt được thành tích cao.

**Tình yêu và tinh dục**

Nghiên cứu nhận mạnh rằng các mối quan hệ lành mạnh và cảm xúc tinh dục, suy nghĩ, sự hấp dẫn và hành vi đối với người khác và xác định giới tính của chính một người có ảnh hưởng đến sức khỏe tâm thần và hạnh phúc của thanh thiếu niên (Chương 5 và 6). Áp lực từ cha mẹ và các thái độ và hành vi thúc đẩy đối với các mối quan hệ như vậy đã làm tăng thêm sự lo âu ở thanh thiếu niên. Nghiên cứu cũng chỉ ra rằng học sinh trung học ở Việt Nam có quan hệ tình dục (có hoặc không có mang thai) thường có sức khỏe tâm thần kém. Các phát hiện của nghiên cứu được mô tả trong Chương 5 và 6 cũng cho thấy thanh thiếu niên có mối quan tâm về cuộc sống và xu hướng tinh dục của chính họ.

**Mối trường gia đình và những sự kiện bất lợi thời thơ ấu**

Kết quả của các Chương 4, 5 và 6 cho thấy việc thiếu sự hỗ trợ của gia đình và các hành vi tiêu cực của người lớn có thể có tác động tiêu cực đến sức khỏe tâm thần của thanh thiếu niên. Gần 20% học sinh trong nghiên cứu của chúng tôi có long tử tôn thấp. Không có sự khác biệt giữa học sinh nam và nữ (Chương 6). Số liệu nghiên cứu cũng cho thấy các đặc điểm gia đình bao gồm trình độ học vấn thấp của mẹ, và sự làm đường thế chấp và tinh thần bởi cha mẹ hoặc những người lớn khác trong gia đình có liên quan đến mức độ tự tôn thấp của thanh thiếu niên. Trong trường hợp xấu nhất, gia đình và môi trường bên ngoài có những sự kiện/biên có có ảnh hưởng tiêu cực đến sự phát triển và sức khỏe tâm thần của những người trẻ tuổi. Hai vấn đề sức khỏe tâm thần chính biểu hiện ở thanh thiếu niên trong nghiên cứu của chúng tôi là lo âu và trầm cảm; cả hai đều được coi là những yếu tố tiên doan chất chể cho ý định tự tử. Có tới 26,3% học sinh đã nghiêm túc xem xét việc tự tử, trong khi 12,9% đã lên kế hoạch tự tử và 3,8% đã thực sự có ý định tự tử. Nghiên cứu cho thấy trải nghiệm thời thơ ấu bất lợi do đặc điểm gia đình và môi trường, hoặc kết quả học tập và môi trường là các yếu tố nguy cơ chính gây lo âu và trầm cảm đội với học sinh (Chương 5).
Những câu của chúng tôi cũng cho thấy mối quan hệ giữa làm dụng và các vấn đề sức khỏe tâm thần. Các kết quả nghiên cứu trong Chương 6 xác nhận rằng việc làm dụng thể chất hoặc tinh thần thường xuyên từ người lớn (cha mẹ hoặc những người lớn khác trong gia đình, giáo viên hoặc các nhân viên khác ở trường) là một yếu tố thiên lượng độc lập của sự lo âu. Điều cần ghi nhận là, các bên liên quan không dễ cập đến vấn đề làm dụng trong các cuộc thảo luận về các vấn đề sức khỏe tâm thần (Chương 4). Điều này có thể do cả gia đình và nhà trường đều không nhận thức được hành động của họ là làm dụng học sinh, hoặc nếu có nhận thức về điều này, họ cũng không muốn để cập về nó.

**Ngược dại tình cảm**

Thường được báo cáo là làm dụng tình cảm, được 41,5% học sinh báo cáo; sở với học sinh nữ, học sinh nam có xu hướng bị ngược dại tình cảm nhiều hơn (số liệu nghiên cứu gần đây của các tác giả chưa được công bố). Các yếu tố liên quan đến nguy cơ bị ngược dại tình cảm bao gồm tình trạng hôn nhân của cha mẹ và sự tranh cãi thường xuyên của cha mẹ.

**Lạm dụng thể chất**

Học sinh lớp 12 có tỷ lệ bị làm dụng thể chất cao nhất (38,2%). Điều đáng chú ý là ở 3 cấp lớp học, tỷ lệ làm dụng thể chất về nang cao hơn so với thế hệ. Kết quả này phản ánh tính cấp thiết của việc ngăn chặn bạo lực đối với thanh thiếu niên, đặc biệt là bạo lực học đường, một vấn nạn được coi là nghiêm trọng trong xã hội ngày nay. Sự giáo dục của người mẹ và chất lượng của môi trường gia đình có liên quan đến sự lạm dụng thể chất.

**Lạm dụng tình dục**

Theo kết quả nghiên cứu, làm dụng tình dục là hình thức làm dụng ít phổ biến nhất, chiếm 18,7%. Chúng tôi không thể xác định rằng tỷ lệ này phản ánh đúng tính hình thực tế hay do mức độ sẵn sàng của những người được hỏi để thừa nhận hình thức làm dụng này cao. Học sinh nam có nguy cơ bị làm dụng tình dục cao hơn học sinh nữ. Nghiên cứu cho thấy một số yếu tố có liên quan đến làm dụng tình dục bao gồm độ tuổi, trình độ học vấn của mẹ, sự cải nhau giữa cha mẹ và tình trạng kinh tế gia đình.
Sự bỏ mặc

Khoảng 1/3 số học sinh trong nghiên cứu này cho biết họ cảm thấy bị bỏ bê (32,4%). Nghiên cứu không cho thấy có sự khác biệt về tình trạng bỏ bê giữa học sinh nam và nữ. Sự bỏ bê có liên quan đến mức ý nghĩa thống kê với tình trạng hôn nhân của cha mẹ, chất lượng môi trường gia đình và thụ bặc của học sinh trong gia đình.

**Lạm dụng trong môi trường trường học**

Những phát hiện từ nghiên cứu của chúng tôi trong Chương 5 và 6 cho thấy những học sinh bị lạm dụng tinh cảm, bị bỏ rơi, làm dũng thể chất hoặc làm dũng tinh dục có nguy cơ trầm cảm cao hơn có ý nghĩa thống kê so với những học sinh không bị lạm dụng. Trong nghiên cứu của chúng tôi, kết quả học tập kém và áp lực học tập là những yếu tố liên quan chặt chẽ với sự lo âu và trầm cảm ở học sinh trường học.

**Các hoạt động bên ngoài trường học và gia đình**

**Lạm dụng ma túy và rượu**

Số liệu nghiên cứu bộ bỏ sung của chúng tôi năm 2019 về lạm dụng đồ uống có cồn của học sinh trường học tại quận Ninh Kiều, thành phố Cần Thơ (chưa công bố) cho thấy tỷ lệ học sinh uống ít nhất một cốc bia trong 30 ngày qua là 18,2%. Nghiên cứu cũng cho thấy có mối liên quan giữa việc sử dụng rượu và các triệu chứng trầm cảm. Việc tìm hiểu thêm về mức độ lạm dụng rượu và ma túy trong giới trẻ, đặc biệt là liên quan đến các văn đề sức khỏe tâm thần của họ là rất cần thiết trong bối cảnh của Việt Nam. Ngoài ra, việc học hỏi từ các quốc gia khác về các biện pháp can thiệp tiêng năng để giảm thiểu nó cũng rất cần thiết.

**Lạm dụng internet**

Theo các học sinh và phụ huynh tham gia trong nghiên cứu này, chơi trò chơi trên máy tính hoặc truy cập internet là những hoạt động mà học sinh thực hiện để giải tỏa căng thẳng. Tuy nhiên, báo cáo của UNICEF về sức khỏe tâm thần của thanh niên các tỉnh ở Việt Nam cho thấy nghiên cứu game hay internet cũng được đề cập đến như một vấn đề sức khỏe tâm thần phổ biến (UNICEF, 2016). Mặc dù những hoạt động này đã được người tham gia nghiên cứu đề cập trong cuộc khảo sát của chúng tôi (Chương 5, 6 và 7), chúng tôi chưa thực hiện được hoạt động nghiên cứu nhằm xem xét cụ thể mức độ của vấn đề này và mối liên quan của nó với các vấn đề sức khỏe tâm

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thành đối với người tham gia vào nghiên cứu. Tuy nhiên, số liệu số bỏ chửa được công bố từ nghiên cứu năm 2019 của chúng tôi về chứng nghiên trò chơi trên máy tính cho thấy 94,3% học sinh đánh hơn một giờ mỗi ngày để chơi. Ngoài ra, theo diệm số của GAS về chứng nghiên game, 67,3% học sinh có khả năng đã nghiên và 10,4% học sinh được phân loại là đã nghiên game. nghiên cứu cũng cho thấy nghiên game và sử dụng rượu có mối tương quan có ý nghĩa thống kê các triệu chứng trầm cảm.

Các kết quả nghiên cứu trên cho thấy có nhiều yếu tố khác nhau góp phần dẫn đến các vấn đề sức khỏe tâm thần ở thanh thiếu niên. Từ đó cho thấy việc cần thiết có các loại can thiệp khác nhau để giải quyết các vấn đề sức khỏe tâm thần khác nhau.

**Các giải pháp tiêm năng để cải thiện và ngăn ngừa các vấn đề về sức khỏe tâm thần**

Đa số học sinh nghĩ rằng giảm tài yếu cấu của chương trình học, hỗ trợ tư vấn ăn danh và chia sẻ môi quan tâm của học sinh trên một trang web thích hợp sẽ giúp cải thiện sức khỏe tâm thần của họ.

Nghiên cứu định tính của chúng tôi cho thấy rằng có rất ít sự khác biệt giữa học sinh, phụ huynh và giáo viên trong việc đề xuất các giải pháp để xuất đủ cải thiện các vấn đề sức khỏe tâm thần của học sinh. Học sinh muốn giảm áp lực học tập, gia đình quan tâm nhiều hơn, các hoạt động giải trí được trường hỗ trợ nhiều hơn và môi trường học tập thân thiện hơn. Các bậc phụ huynh mong muốn giáo viên và nhà trường có trách nhiệm hơn về chất lượng giảng dạy và tìm ra những phương pháp dạy học sinh tốt hơn. Các giáo viên muốn áp lực đối với học giảm bớt bằng cách giảm áp lực tại nhà trường và tăng lương và họ cũng muốn phụ huynh có trách nhiệm hơn trong việc dạy dỗ con tại gia đình.

Việc tìm kiếm lời khuyên hoặc sự giúp đỡ từ bên ngoài gia đình cũng cần thiết với học sinh không phải lúc nào cũng dễ dàng chia sẻ cảm xúc của mình với cha mẹ. Trong bối cảnh của Việt Nam, việc xây dựng hệ thống chăm sóc sức khỏe tâm thần từ mẫu giáo đến đại học là vô cùng quan trọng. Một hệ thống như vậy cần được tích hợp vào công tác chăm sóc sức khỏe học đường hiện tại và cần có sự tham gia của tất cả các bên liên quan bao gồm giáo dục, y tế, tâm lý, truyền thông chăm sóc sức khỏe và phát triển thể chất, cũng như các dịch vụ và hoạt động cộng đồng.
Vai trò tiềm năng của cán bộ y tế học dưỡng và nhân viên trường học

Mặc dù phụ huynh, giáo viên và nhân viên y tế được phong vân trong Chương 4 nhân thấy tâm quan trọng của sức khỏe tâm thần đối với học sinh trung học, nhưng thực tế rất ít hoạt động liên quan đến sức khỏe tâm trạng được thực hiện trong hệ thống trường học. Trong Chương 4, khi được hỏi về cách cái thiện các vấn đề về sức khỏe tâm thần, học sinh đã đưa ra để xuất về các bài giảng của các nhà tâm lý học về cách giảm căng thẳng và kỹ năng giải quyết các vấn đề trong cuộc sống, đồng thời để xuất mọi trường học dưỡng thân thiện hơn. Các bác phụ huynh tập trung vào nhu cầu giảm thiểu việc chơi game và các yếu tố gây xao loạn khác để học sinh có thể tập trung vào việc học.

Nhân viên y tế học dưỡng có thể đồng vai trò là người tư vấn về sức khỏe tâm thần cho học sinh, tuy nhiên nhân viên y tế học dưỡng đã không đề cập đến các vấn đề sức khỏe tâm thần như vấn đề cần giải quyết trong buổi phòng vấn của nghiên cứu. Họ dưỡng như không nhận ra và không tự tin trong việc giải quyết các vấn đề sức khỏe tâm thần của học sinh vì có thể họ thiếu kiến thức và kinh nghiệm trong lĩnh vực này. Ngành y tế và giáo dục ở ranh cảnh có cái nhìn sâu sắc hơn về vai trò chủ chốt tiềm năng của nhân viên y tế học dưỡng trong việc chăm sóc sức khỏe tâm thần vì thành niên dễ hờ hợt không chỉ cho học sinh mà còn cho giáo viên và gia đình.

Vai trò tiềm năng của một trang web cung cấp thông tin cho học sinh

Những nỗ lực của chúng tôi trong việc thiết kế một trang web cung cấp thông tin sức khỏe tâm thần có thể hỗ trợ học sinh trung học như một đáp án cho cầu hỏi nghiên cứu số 4 được nêu rõ trong Chương 8. Đa số học sinh tin rằng trang web có khả năng thu hút phụ huynh và bạn bè. Trang web được học sinh đánh giá là dễ dàng truy cập và hỗ trợ vướng mắc trong trang web sẽ vẫn hoạt động vì hỗ trợ tiếp tục truy cập và ứng dụng trang web trong tương lai. Nhiều học sinh đồng ý rằng hỗ trợ thế giới thanh trang web với gia đình, bạn bè và gia đình của những người có vấn đề về sức khỏe tâm thần. Nghiên cứu cho thấy trang web cung cấp thông tin cho học sinh trung học về chủ đề nhạy cảm như sức khỏe tâm thần có thể là giải pháp hiệu quả. Kết quả này phản ánh tiềm năng của việc sử dụng trang web như một công cụ truyền thông nhanh chóng và thuận tiện để phòng ngừa sức khỏe tâm thần cho học sinh (và có thể cả những người khác, chẳng hạn như nhân viên y tế học dưỡng, phụ huynh và giáo viên).
Một số hạn chế của nghiên cứu

Nghiên cứu tập trung vào bệnh cảnh học đường để khám phá các vấn đề sức khỏe tâm thần và các giải pháp tiệm năng nhằm cải thiện việc chăm sóc sức khỏe tâm thần cho thanh thiếu niên. Ngoài ra, chúng tôi chỉ nghiên cứu các trường trung học ở Thành phố Cần Thơ nên kết quả không thể có tính đại diện cho cả nước hay cả miền Nam vì có thể có sự khác biệt giữa các địa bàn, chast hạn giữa thanh thiếu niên sống ở thành thị và nông thôn. Tuy nhiên, chúng tôi đã bao gồm số lượng lớn người trả lời trong các cuộc khảo sát và ý lệ học sinh nam và nữ là trường đương nhau trong dân số, điều này khiến chúng tôi cho rằng kết quả là đại diện cho địa bàn nghiên cứu. Nhìn chung, những người tham gia các cuộc khảo sát sức khỏe đều khóa mạnh hơn những người không tham gia (Bobak và cộng sự, 2006; Keyes và cộng sự, 2018). Do đó, mức độ của các thước chứng trầm cảm, lo âu và ý định tự tử có thể bị đánh giá thấp hơn thực tế. Các thang điểm về lồng tưới tôn, lo âu và thang CES-D cũng như các công cụ sàng lọc khác không thể được xem như công cụ chẩn đoán, mà chỉ là các xét nghiệm sàng lọc để xác định độ tuổi tham gia khảo sát có nguy cơ bị các vấn đề về sức khỏe tâm thần hay không. Nghiên cứu chưa bao gồm công cụ hoặc một phương pháp nào để kiểm tra chéo về chất lượng thông tin do các học sinh tự cung cấp. Ngoài ra, nghiên cứu chưa bao gồm nội dung về khả năng đối phó với căng thẳng, mức độ căng thẳng, béo phi (Quek et al., 2017), bệnh mạn tính (Lu et al., 2012) hoặc sự dùng thuốc lá và rượu. Các yếu tố này có thể ảnh hưởng lớn nhất nhau và ảnh hưởng đến lo âu, trầm cảm và ý định tự tử. Cuối cùng, nghiên cứu mang tính chất mô tả cắt ngang nên chưa xác định được mối quan hệ nguyên nhân - kết quả. Mối quan hệ này cần nghiên cứu theo thời gian hoặc nghiên cứu ngẫu nhiên có độ chứa đã chứng minh.

Khuyến nghị

Chúng tôi đưa ra các khuyến nghị dựa trên kết quả nghiên cứu được mô tả ở trên để các bên liên quan khác nhau từ cấp địa phương đến trung ương có thể áp dụng và đề xuất cho các nghiên cứu tiếp theo.

Khuyến nghị cho việc ứng dụng các kết quả nghiên cứu

Trường học

Các chương trình nâng cao sức khỏe tâm thần học đường hiệu quả mang tính toàn diện, hướng đến nhiều kết quả khác nhau về sức khỏe, có sự tham gia của toàn trường, tập trung vào phát triển kỹ năng cá nhân bao gồm phát huynh và cộng đồng rộng lớn hơn và được thực hiện xuyên suốt theo thời...
gian. Phương pháp tiếp cận toàn trường để nâng cao sức khỏe tâm thần cần được xem xét để đưa vào các trường học ở Việt Nam (Manitoba Healthy Schools, 2020).

Gia đình

Thái độ của cha mẹ cần thay đổi từ cách thức truyền phát sang cách tiếp cận hỗ trợ hơn để giảm nguy cơ sức khỏe tâm thần kém ở trẻ. Cha mẹ cũng cần tham gia vào các chương trình giáo dục tâm lý để nâng cao nhận thức của họ về nội lực với trẻ (chẳng hạn như áp lực phải thực hiện và những lời đe dọa hoặc trực tiếp phát nghiệm khác) có thể phân tách đúng với mục đích mà họ mong muốn đối với trẻ. Kiến thức tốt hơn có thể giúp làm cho thái độ của cha mẹ trở nên tích cực hơn và có thể giúp họ chấp nhận thảo luận về các phương pháp kỹ luật tốt hơn ở nhà.

Bộ Giáo dục và Đào tạo

Bộ chịu trách nhiệm đào tạo tất cả giáo viên và cũng có vai trò trong việc phê duyệt đào tạo nhân viên y tế học đường.

Bộ cũng phải chịu trách nhiệm về chương trình giảng dạy hiện hành của nhà trường đang tạo ra nhiều áp lực cho học sinh. Bộ nên thường xuyên rà soát và giảm tải những phần của chương trình hiện hành có thể không quan trọng đối với sự phát triển năng lực hiện nay để giảm áp lực học tập và thỉ cử cho học sinh. Việc giảm bớt áp lực giáo dục này không chỉ cho học sinh mà còn cho cả giáo viên và ban giám hiệu nhà trường.

Bộ Y Tế

Bộ Y tế cần phối hợp với Bộ Giáo dục và Đào tạo đưa ra các giải pháp giảm căng thẳng và nâng cao sức khỏe tâm thần cho học sinh. Bộ cũng cần cung cấp các giải pháp sắp lịch, phát hiện sớm và điều trị các vấn đề sức khỏe tâm thần cho học sinh và cung cấp kiến thức và nhận thức cho cộng đồng bao gồm học sinh, phụ huynh, giáo viên và cán bộ quản lý giáo dục về các vấn đề sức khỏe tâm thần thường gặp ở học sinh và các giải pháp phòng ngừa và chữa trị. Cần chú trọng hơn nữa vào việc nâng cao năng lực cung cấp các dịch vụ sức khỏe tâm thần và phát triển nhận thức lượng về sức khỏe tâm thần ở Việt Nam. Dựa trên những kết quả nghiên cứu được mô tả trong luận án này, trang web cung cấp thông tin sức khỏe tâm thần cần được liên tục nâng cao và sử dụng, đồng thời liên kết với phương pháp tiếp cận toàn trường để nâng cao sức khỏe tâm thần với sự tham gia của nhiều bên.
liên quan gồm học sinh, phụ huynh, giáo viên và nhân viên y tế trường học trong bối cảnh học đường.

Khuyến nghị cho các nghiên cứu tiếp theo

Nghiên cứu theo thời gian đối với học sinh có thể giúp xác định mối quan hệ nhằm quan cấu và nghiên cứu ảnh hưởng của lồng tрус tốt thấp trong những năm học trường học.

Nghiên cứu tiếp theo về hiệu quả của việc áp dụng các nguồn thông tin dựa trên web để phổ biến thông tin sức khỏe tâm thần sẽ giúp định hướng các phương pháp tiếp cận tương tự nhằm nâng cao sức khỏe tâm thần và có thể ngăn ngừa rối loạn tâm thần ở học sinh trung học.

Thiết kế và thực hiện can thiệp thí điểm với phương pháp tiếp cận toàn trường để nâng cao sức khỏe tâm thần ở các trường trung học tại địa phương để đánh giá một cách có hệ thống và khả năng nhân rộng sau này ở Việt Nam.

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Curriculum Vitae

Dat Tan Nguyen was born in Vinh Long province in 1980. In 1997, he finished high school and started his medical studies at Can Tho University of Medicine and Pharmacy (CTUMP), from 1997 to 2003. After graduating as a general medical doctor, he started working as a lecturer at the Faculty of Public Health, CTUMP. He participated in an internship program of public health, at Hanoi School of Public Health, from Sept 2004 to Sept 2005 and followed by obtaining a Master degree in public health from Queensland University of Technology, Brisbane, Australia, in 2009.

After graduation from university in 2003, Dat was employed as a lecturer in the Department of Epidemiology and Biostatistics, Faculty of Public Health, CTUMP, up to 2009. From 2011, he held the post of Assistant Training Coordinator in that department. He was then promoted to be Vice-head of the Department of Biostatistics and Demography. From June 2018 to January 2020 he also held the position of Deputy Head of CTUMP Education Department. Since January of this year, he has been appointed as Assistant Dean of the Faculty of Nursing & Medical Technology.

During the past several years, Dat has been teaching undergraduates in all faculties of the university, in the following subjects: Biostatistics, Epidemiology, Demography, Reproductive health, Research methodology, and Health management. He has also conducted training in several research-related skills, such as using statistical software for data analysis including: SPSS, Stata, Epi Info, Epidata, managing and citing references using EndNote. He has also supervised many students during their community practice in the field, as well as guiding students to complete dissertations and research projects.

Through these years, Dat’s main research interests have been in the fields of psychology and mental health, adolescents, school health, child development and autism, and non-communicable diseases including diabetes, obesity and hypertension.

At the university, international projects are a highly valued part of the work; at present Dat participates in a project “Developing a tailored implementation plan for collaborative care of perinatal depression in community health centers in Vietnam”, in co-operation with Washington University, USA. Past research collaborations included:
2017 – 2018: PI of a study on: Emergency Room Collaborative Study on Alcohol and Injuries in Can Tho, Vietnam”, co-operating with National Institutes of Health, National Institute on Alcohol Abuse and Alcoholism, USA;

2014 – 2017: main researcher on a collaborative study on “Assessment of the neonatal hepatitis B vaccination coverage and attitudes towards vaccination in the Mekong Delta, Vietnam”, a collaborative study with the University of Antwerp, Belgium, funded by VLIR, Belgium;


Scientific Publications in International Journals

1. Pham Thi Tam, Nguyen Tan Dat, Le Minh Huu, Xuan Cuc Pham Thi, Hoang Minh Duc, Tran Cong Tu, Simon Kutcher, Peter A. Ryan, Brian H. Kay, High Household Economic Burden Caused by Hospitalization of Patients with Severe Dengue Fever Cases in Can Tho Province, Vietnam, The American Society of Tropical Medicine and Hygiene, 87(3), http://www.ajtmh.org/content/journals/10.4269/ajtmh.2012.12-0101


