

Chapter 9

Discussion and Conclusions

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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

Stakeholders	Key comments	Key findings
Problems	Chapters 4, 7	Chapters 5, 6
Students	Mental health is a large problem They felt stressed, anxious, worried. Several students' suicide attempts in recent years.	Estimated prevalence of reaching a threshold comparable to a diagnosis of anxiety and depression were 22.8% and 41.1%, respectively 19.4% of students had low self-esteem. 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.
Parents	Depression, anxiety, stress, suicidal thoughts, and suicide attempts are major problems	
Teachers Health officers	Depression, anxiety, stress, suicidal thoughts, and suicide attempts are major problems Stress, depression, suicidal ideation, sexual orientation issues are the most common problems.	
Causes	Chapters 4, 7	Chapters 5, 6
Students	Parental conflict Academic pressure (demands of teachers, parents) Online gaming, Internet, Tobacco smoking and substance use Love life, especially homosexuality Academic pressure is the main cause for (thoughts of) suicide.	<ol style="list-style-type: none"> 1) Physical or emotional abuse by family 2) Family conflicts 3) High educational stress 4) Love life, sexuality 5) Unhealthy use of alcohol, drugs, Internet/gaming
Parents	Academic pressure; poor curricula Poor learning environment Watching TV and playing games too much Partly parental pressure Home environment (economic conditions, parental problems, and unhappy family). Quarrels and fights among students at school	
Teachers	Academic pressure, overloaded curriculum Parents don't teach them manners/good behavior. Parents lack of concern Unhealthy behaviors, (game and Internet addiction, fighting) Students lack problem-solving skills	
Health officers	Stress, pressure, fear of presenting lessons; too much work and study Family environment: parents' divorce; shouting Parents' pressure Sexual orientation issues Mental disorders and internet addiction, too much time on other activities (computer games)	

9.1.2. Prevalence and Types of Mental Health Problems among Secondary School Students

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 et al. (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 of 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).

Neglect

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 addition 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 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 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

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

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 (Prymachuk 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, Shukril, 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 among 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 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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