

10. Paciaroni M, Palmerini F and Bogousslavsky J (2008), Clinical presentations of cerebral vein and sinus thrombosis. *Front Neurol Neurosci.* 23: p. 77-88.
11. Stolz E, Rahimi A, Gerriets T, Kraus J and Kaps M (2005), Cerebral venous thrombosis: an all or nothing disease? Prognostic factors and long-term outcome. *Clin Neurol Neurosurg.* 107(2): p. 99-107.
12. Tanislav C, Siekmann R, Sieweke N, Allendorfer J, Pabst W, Kaps M, et al. (2011), Cerebral vein thrombosis: clinical manifestation and diagnosis. *BMC Neurol.* 11: p. 69.

(Received: 05/11/2018 - Accepted: 07/01/2019)

PERSPECTIVES OF PUPILS ON MENTAL HEALTH PROBLEMS AMONG SECONDARY SCHOOL PUPILS IN CAN THO CITY

**Nguyen Tan Dat^{1,*}, Christine Dedding², Pham Thi Tam¹, Nguyen Trung Kien¹,
Joske Bunders²**

¹ *Faculty of Public Health, Can Tho University of Medicine and Pharmacy, Vietnam*

² *VU University, Amsterdam, The Netherlands*

*Corresponding author: ntdat@ctump.edu.vn

ABSTRACT

Background: *Secondary school can be a stressful period for adolescents, having to cope with many life changes. The study aimed to explore perceptions of mental health status, risk factors for mental health problems among Vietnamese secondary school students. Methods:* *A qualitative design was used to address the main study question. Data was collected by means of in-depth interviews and focus group discussions (FGDs) among secondary school students. All interviews and FGDs were audio-taped, transcribed and analyzed for the identification of emerging issues using qualitative techniques of progressive coding, analytic memoing and ongoing comparison. 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 students. Mental health problems were mainly associated with academic pressure, resulting from an overloaded curriculum and pressure from teachers and parents to succeed. Conclusions:* *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, Student*

I. INTRODUCTION

There has been a rapidly growing public awareness of mental health problems, such as stress, anxiety, depression and suicide among adolescents [1]. 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 Can Tho City in the south reported feelings of sadness and hopelessness every day for two weeks in the past 12 months [2]. Four studies reported a high rate (10%) of students who had considered attempting suicide in the past 12 months [3, 4]. 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 [5]. Those involved in physical fights and/or attacks had higher levels of alcohol problems and poor mental health [6].

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 among Vietnamese secondary school students.

II. MATERIALS AND METHODS

1. Methodological approach

An exploratory qualitative approach including individual interviews and focus group discussions.

1.1 Time and study site

This study was conducted from September to October, 2010, in Can Tho City, a city with a population of 1.2 million (2010) in southern Vietnam [7].

1.2 Participants and methods

The main informants included pupils 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 common 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 Can Tho City. Subsequently, guidelines for in-depth interviews and focus group discussions for students were developed.

Secondly, 5 FGDs 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 focus groups were conducted by two Vietnamese facilitators to take notes and to make recordings, and lasted from 100–150 minutes.

The purposive sampling aimed to compose groups representing the range of gender, age, study results and urban/rural characteristics. 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. 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. 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.

2. 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. All interviews were analyzed for the identification of emerging issues using qualitative techniques of progressive coding, analytic memoing and ongoing comparison.

III. RESULTS

3.1. 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 quarreled, 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.

3.2. 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.”

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 teacher’s distressed 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 [8]. Pleasure seeking behaviour that they thought could lead to problems included following media personalities, friendship, gaming, internet, and cigarette smoking. 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.”

IV. 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 students 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 [9], and of first year medical and pharmacology students in Ho Chi Minh, of whom about 40% had depressive symptoms [10]. 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 [9]. Others argue that the negative effect of rapid social change may be to blame [11]

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 [12].

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 [13]. 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 [13]. 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 [13]. 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 [14].

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 [3].

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 modeling positive behaviours [15]. 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 [3].

Pupils' leisure activities

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 [16]. 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 [16]. However, there are no published papers about the impact of gaming and internet addiction on mental health among adolescents in Vietnam.

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. However, our results do reveal that love-life could be associated with poor mental health among Vietnamese secondary 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 [17].

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. In Vietnam, homosexuality is not yet a clear concept to everyone, because patterns and practices have changed rapidly in past decades. 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 [18], but yet not in Vietnam.

V. CONCLUSIONS

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.

REFERENCES

1. Giang TL and Duong KH, Social issues under economic transformation and integration in Vietnam. Vol. 1. 2007, Vietnam: Development Forum.
2. Ambrosini PJ, Review of pharmacotherapy of major depression in children and adolescents. *Psychiatr Serv* 2000. 51(5): p. 627-633.
3. Tran BP, Improving knowledge of factors that influence the mental health of school children in Vietnam. 2007, Queensland University of Technology: Brisbane.
4. Nguyen TD, Child maltreatment and mental health among first year students in Cantho University of Medicine and Pharmacy, Vietnam. 2009, Queensland University of Technology: Brisbane.
5. Giannakopoulos G, et al., Emotional, behavioural problems and cigarette smoking in adolescence: findings of a Greek cross-sectional study. *BMC Public Health*, 2010.

- 10(57): p. <http://www.biomedcentral.com/content/pdf/1471-2458-10-57.pdf>.
6. Murphy DA, et al., Adolescent orofacial injury: association with psychological symptoms. *Psychol Health Med*, 2010. 15(5): p. 574-583.
 7. Central Population and Housing Census Steering Committee, The 2009 Vietnam population and housing census: completed results. Vol. 5. 2010, Hanoi: General Statistics Office of Vietnam.
 8. Tran TN, Vietnamese family in the new international context. Vietnam Academy of Social Sciences, 2008: p. <http://www.trf.or.th/TRFGallery/Upload/Gallery/.../1000000011.pdf>.
 9. Amstadter AB, R.L., Meyer A, Sawyer G, Kilpatrick DG, Tran TL, Trung LT, Tam NT, Tuan T, Buoi LT, et al., Prevalence and correlates of probable adolescent mental health problems reported by parents in Vietnam. *Soc Psychiatry Psychiatr Epidemiol* 2011. 46: 95-115
 10. Do QD, Depression and stress among the first year medical students in university of medicine and pharmacy at Ho Chi minh city, Vietnam. 2007, Chulalongkorn University: Bangkok.
 11. Liu H and Shuzhuo L, Social change and psychological well-being in urban and rural China. *Asia Health Policy Program Pap Ser* 2011. 23: p. http://iis-db.stanford.edu/pubs/23369/AHPPwp_23.pdf.
 12. Education in Vietnam. <http://www.edcal.com/215425.page>.
 13. Thai TT, Educational stress and mental health among secondary and high school students in Ho Chi minh city, Vietnam. 2010, Queensland University of Technology: Brisbane.
 14. Sun J, et al., Association between academic stress and mental health among Chinese adolescents. 2010, Queensland University of Technology: Brisbane.
 15. Herman KC and Ostrander R, Do family environments and negative cognitions of adolescents with depressive symptoms vary by ethnic group? *J Fam Psychol* 2007. 21(2): p. 325-330.
 16. Akin A and Iskender M, Internet addiction and depression, anxiety and stress. *Int Online J Educ Sci* 2011. 3(1): p. 138-148.
 17. Milhausen RR, Yarber WL, and Crosby R, Self-reported depression and sexual risk behaviors among a national sample of rural high school students. *Health Educ Monogr Ser* 2003. 20(2): p. 33-39.
 17. D'augelli AR, Mental health problems among lesbian, gay, and bisexual youths aged 14 to 21. *Clin Child Psychol Psychiatry* 2002. 7(3): p. 433-456.

(Received: 06/11/2087 - Accepted: 08/01/2019)

VITAMIN D STATUS AND SOME BONE TUNOVER MARKERS IN SCHOOL-AGE CHILDREN IN CAN THO CITY

*Nguyen Minh Phuong**

Can Tho University of Medicine and Pharmacy

*Corresponding author: nmphuong@ctump.edu.vn

ABSTRACT

*Vitamin D is a hormone that has an important function. Vitamin D insufficiency is adversely associated with health problems: osteoporosis, diabetes mellitus, asthma. **Objective:** To determine the value of vitamin D, some bone turnover markers and evaluate the effectiveness of the supplement of calcium and vitamin D in children of vitamin D decrease or deficiency aged 6-14 years old in schools located in Can Tho city from October, 2012 to April, 2016. **Method:***