



THE CURRENT STATUS AND FACTORS RELATED TO MENTAL HEALTH IN HIGH SCHOOL STUDENTS AT TWO MOUNTAINOUS COMMUNES, THAI NGUYEN PROVINCE

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ABSTRACT

Background: Mental health in high school students plays a pivotal role in shaping the foundation for learning and development. **Objective:** this study is to describe the current status and factors related to the mental health of high school students two mountainous communes, Thai Nguyen Province. **Methods:** The study was designed as a cross-sectional descriptive study, involving a total of 400 high school students. An anonymous survey was conducted from September to October 2021. The Strength and Difficulties Questionnaire (SDQ) questionnaire for self-reporting by participant was used in this study. **Results:** The research findings revealed that the group of students with normal mental health status accounted for 67.5%, while those at the borderline level were 19.5%, and 13.4% of students were categorized as having abnormal mental health. Factors related to the mental health of students included their living area, family harmony, and academic stress ($p < 0.05$). **Conclusions:** A significant proportion of students (33.5%) experiencing mental health challenges in this study. These results underscore the importance of targeted interventions and support systems to promote positive mental health outcomes among high school students in similar contexts.

Keywords: High school students; Factor; Mental Health; Thai Nguyen

INTRODUCTION

In 2016, the World Health Organization (WHO) released a report indicating that mental and behavioral disorders in children and adolescents were becoming increasingly prevalent, affecting

approximately 20% of children and adolescents worldwide. This figure underscored the utmost importance of addressing the psychological and emotional well-being of the younger generations (World Health Organization, WHO - 2016)¹.

In Vietnam, a nation with distinctive cultural and social characteristics, research conducted by multiple authors has identified the prevalent issues related to psychological and mental health among Vietnamese students. These studies have consistently shown that approximately 10-20% of students in Vietnam are grappling with psychological and mental health issues, necessitating attention, counseling, and therapeutic interventions²⁻⁴. The detailed information about the epidemiological situation of mental disorders in Vietnam can be obtained from the epidemiological study conducted by Tran Van Cuong. This study reported that 2.8% of the population exhibited symptoms of depression, 2.6% showed signs of anxiety, and behavioral disorders in adolescents accounted for 0.9% of the population⁵.

The research overview suggests a scarcity of studies focusing on mental health among high school students in the mountainous districts of Thai Nguyen province. Consequently, our aim is to fill this gap by providing valuable insights into the mental health situation among high school students in Thai Nguyen Province. Through our research, we aspire to offer essential guidance for tailored support, interventions, and policy development in this area. Our study seeks to illuminate the specific mental health challenges faced by high school students in this region, with the overarching goal of catalyzing improvements in mental health services. This endeavor is crucial for fostering the overall development and well-being of Vietnamese students. Our primary objective is to assess the mental health status of high school students in two selected mountainous communes in Thai Nguyen Province and to identify factors associated with their mental health.

METHODS

Study Participants, Time, and Location:

The study included high school students aged 12-16 years old from April 2021 to December 2021 in Nam Hoa and Giang Tien

mountainous communes, Thai Nguyen province. The selection criteria as such: High school students, residence in mountainous communes, willingness to participate and ability to understand and complete the survey.

Methods

Study Design: A cross-sectional descriptive design was employed for this study.

Sample Size and Sampling Method: Using a sample size calculation based on proportions with a 95% confidence level, we determined that 384 high school students were required to ensure the study's accuracy. A convenient sampling method was utilized in this research, and a total of 400 high school students who met the sampling criteria participated in the study.

Instruments: This study utilized the Strength and Difficulties Questionnaire (SDQ) questionnaire for self-reporting by children (students). The questionnaire had been translated into Vietnamese and validated for screening ability in the Vietnamese community as part of the Ministry of Health's 2011 project⁶. The SDQ questionnaire consists of 25 questions, including 10 about strengths, 14 about weaknesses, and 1 neutral question. Each statement had corresponding response levels: 0 – Not True, 1 – Somewhat True, 2 – Certainly True. The questionnaire was divided into 5 domains, each comprising 5 questions: 1) Emotional Problems, 2) Conduct Problems, 3) Hyperactivity Problems, 4) Peer Problems and 5) Prosocial Problems. Prosocial Problems were scored positively (strengths), while the other four domains (Emotional Problems, Conduct Problems, Hyperactivity Problems, and Peer Problems) were scored negatively (difficulties), and their scores were summed up.

Data Collection and Data Processing Method:

Data was collected using Google Forms and sent to students in the selected communes. All students were provided with an explanation of the research purpose and participated voluntarily. Data Analysis: Data was entered and analyzed using EpiData 3.1 and SPSS 20.0 software. The analysis included univariate statistics for

both quantitative and qualitative variables, and differences were determined with a significance level set at $p < 0.05$.

Research ethics: The research was approved by the ethical committee in the field of medical research at Thai Nguyen University of Medicine and Pharmacy in 2021.

RESULTS

General characteristics

Table 1. General characteristics of the research participants

Characteristics		n	%
Age	≤ 14	185	46.25
	> 14	215	53.75
Gender	Male	159	39.75
	Female	241	60.25
Area	Urban	172	43.00
	Rural	228	57.00
Ethnicity	Ethnic minority	183	45.75
	Ethnic Kinh	217	54.25

The majority of high school students are female, accounting for 60.25% of the total. The proportion of students in rural areas is higher than in urban areas (with a ratio of 57% compared to 43%). More than half of the students belong to the Kinh ethnic group, making up 54.25% of the population, while the remainder belong to ethnic minority groups 45.75% (Table 1).

Mental Health Issues in High School Students

Table 2. Characteristics of Mental Health in Students in the Study

Scale		Normal	Borderline	Abnormal
Total Difficulty Score (0-40)	Score	0-15	16-19	20-40
	n (%)	270 (67.50)	78 (19.50)	52 (13.00)
Emotional Problems (0-10)	Score	0-5	6	7-10
	n (%)	277 (69.25)	46 (11.50)	77 (19.25)

Conduct Problems (0-10)	Score	0-3	4	5-10
	n (%)	312 (78.00)	59 (14.75)	29 (7.25)
Hyperactivity Problems (0-10)	Score	0-5	6	7-10
	n (%)	328 (82.00)	39(9.75)	33 (8.25)
Peer Problems (0-10)	Score	0-3	4-5	6-10
	n (%)	252 (63.00)	121 (30.25)	27 (6.75)
Prosocial Problems (10-0)	Score	0-3	4-5	6-10
	n (%)	322 (80.50)	60 (15.00)	18 (4.5)

Table 2 showed that the majority of high school students (67.50%) fall within the normal range, while 19.50% are borderline and 13.00% are categorized as having abnormal mental health. A significant portion of students (69.25%) report normal levels of emotional problems. There are 14.75% falling into the borderline range and 7.25% categorized as having abnormal conduct. The majority of students (82.00%) report normal levels of hyperactivity, while 9.75% are borderline and 8.25% are categorized as having abnormal hyperactivity. In addition, there are 30.25% are borderline and 6.75% are categorized as having abnormal peer relationships. The majority of students (80.50%) exhibit normal prosocial behavior, while 15.00% fall into the borderline range and 4.5% are categorized as having abnormal prosocial behavior.

Factors Influencing the Mental Health of High School Students

Table 3. Average Scores by Student's Characteristics

Characteristics		Mental Health			P
		Normal	Borderline	Abnormal	
Living Area	Urban	111 (64.25)	43 (25.25)	18 (10.50)	0.026
	Rural	148 (69.00)	46 (15.25)	34 (15.75)	
Harmony in the Family	Harmonious Family	120 (68.50)	34 (19.50)	21 (12.00)	0.007
	Non-Harmonious Family	147 (65.25)	44 (19.75)	34 (15.00)	
Academic Stress	No Stress	140 (65.25)	51 (24.00)	23 (10.75)	0.018
	Stressful	123 (68.50)	29 (16.25)	27 (15.25)	

In rural areas, the prevalence of “abnormal” issues is higher compared to urban areas (10.50% vs 15.75%), and this difference is statistically significant (with $p < 0.05$). In families where adults often argue or fight, the prevalence of “abnormal” issues is higher compared to children in harmonious families (15% vs 12%), and this difference is statistically significant (with $p < 0.05$). Children who are pressured to study excessively and experience stress have a higher prevalence of “abnormal” issues compared to those who do not have excessive studying and homework (15.25% vs 10.75%), and this difference is statistically significant (with $p < 0.05$) (Table 3).

DISCUSSIONS

Mental Health Issues in High School Students

Results from Table 2 indicate the total difficulty scores and average scores for each dimension of emotional problems, conduct problems, hyperactivity, peer problems, and the average score for the social relationship scale of children.

General Abnormalities: The study results show that the group of high school students in the normal range accounts for 67.5%, borderline cases make up 19.5%, and 13.0% fall into the abnormal category. Some other research findings related to mental health issues among adolescents (aged 12-16) in Vietnam using the SDQ self-report and parent-report, as reported by Dang Hoang Minh and colleagues (2013), revealed that with a cutoff score of 15 for cases with problems on the SDQ scale, the prevalence of adolescents with problems was 10.73% (of which 3.89% were in the abnormal range), and the prevalence of parent-reported problems among adolescents was 13.2%⁶. The study by Amstadter and colleagues (2011) on 1368 Vietnamese adolescents showed that the percentage of children with issues, calculated based on the average total difficulties score on the SDQ scale, was 99.1%⁷. Therefore, compared to the findings of Dang Hoang Minh and colleagues (2013), the self-reported prevalence of abnormal/problematic cases in this study is approximately 2.73 percentage points higher (13.00% compared to 10.73%). Thus, with an estimated range of 13.00%, it indicates that about 1 in 10 children in Vietnam have issues according to the SDQ scale. This result also aligns with the prevalence of mental health problems in

children in other Asian countries, which typically ranges from 10% to 20%⁶.

Emotional Problems: Children often exhibit emotional problems such as fear, sadness, anxiety, and irritability. Particularly, anxiety disorders are common in children during their school years, especially in the middle school age group. This study also observed that the most prevalent issue in children is related to emotional aspects. When considering the average total difficulty scores, the proportion of children with emotional problems at an abnormal level reaches as high as 19.25%. This rate is approximately twice as high as that for other issues, highlighting that emotional development difficulties are the most common challenges faced by adolescents during this developmental stage, which is known to be one of the most challenging periods in life. These results align closely with a study conducted by Tran Quynh Anh and colleagues in 2013 on the mental health of students at Viet Duc High School in Hanoi, which found that 16% of students had emotional issues⁸. The combination of developmental changes, academic pressures, social influences, family dynamics, and environmental factors likely contributes to the elevated prevalence of emotional problems among high school students in this study. Addressing these multifaceted issues requires comprehensive interventions that target individual, familial, and societal factors impacting adolescent emotional well-being.

Hyperactivity Problems: Hyperactivity and inattention are often among the common developmental issues in children. This study reveals that the proportion of children with hyperactivity issues at an abnormal level is 8.25%, which is a noteworthy concern. This rate is considerably higher than the findings of Dang Hoang Minh and colleagues (2013), where the prevalence of children with hyperactivity issues was 2.85% (self-reported) and 2.69% (parent-reported). Research on children by the WHO in both developed and developing countries has shown correlations between disorders related to stimulant substance use, impulse control disorders, and early school dropout¹. A study by Zendarski and colleagues (2017) revealed that children with hyperactivity and attention issues have a higher risk of failing, suspension, or expulsion from school. The number of students dropping out of

school in the first year of primary school is also significantly associated with children experiencing behavioral disorders and delayed psychological development⁹.

Conduct Problems: Children often exhibit behavioral issues, and when these become severe, they can be classified as conduct disorders. In the realm of behavioral issues in this study, the proportion of children at an abnormal level is 7.25%. This rate is higher than the findings of Dang Hoang Minh and colleagues (2013), where the prevalence of children with abnormal behavioral issues was 2.68% (self-reported) and 3.36% (parent-reported)⁶. However, it is significantly lower than the 24% of students in Ho Chi Minh City who had behavioral issues according to a study by Truc Thanh Thai and colleagues in 2020¹⁰.

Peer Problems: Peer relationships are of significant importance to children, but the influence from their peer group can have both positive and negative effects on their behavior. This study reveals that the proportion of children with abnormal peer relationship issues is only 6.75%, significantly lower than the findings of Dang Hoang Minh and colleagues (2013), where the prevalence of children with abnormal peer relationship issues was as high as 22.18% (parent-reported) and even higher when self-reported (3.18%)⁶. However, the most noteworthy point in this study's sample is the relatively high proportion of children with borderline difficulties in peer relationships, which is 2-3 times higher than the proportions for other issues (30.25% compared to 9.75% to 15%). This suggests that a significant portion of children is experiencing difficulties in their social development, albeit not severe enough to be classified as abnormal.

Prosocial Problems: The majority of children in the study sample have positive social relationships. Most children chose responses such as "completely true" and "partly true" for all statements related to this aspect. This study reveals that the majority of children in the sample have positive social relationships (80.5% at a normal level), with 15% and 4.5% of children at borderline and abnormal levels, respectively. Compared to the findings of Dang Hoang Minh and colleagues (2013), this study's proportion of children at an abnormal level regarding positive social

relationships is higher, with a corresponding rate of 4.5% compared to 2.18% as reported by the children themselves⁶.

Factors Influencing the Mental Health of High School Students

It's evident that several characteristics such as living area, family harmony, and academic stress are significantly associated with the mental health status of high school students in Thai Nguyen Province (Table 3).

Living Area: The data shows that students from urban areas have a higher proportion of borderline and abnormal mental health statuses compared to those from rural areas ($p = 0.026$). This suggests that there may be environmental or socio-economic factors related to urban living that contribute to higher levels of mental health challenges among students. A study by Tang et al. (2019) found that common among Chinese secondary school students residing in urban areas reported higher levels of depressive symptoms compared to their rural counterparts, suggesting a potential association between urban living and poorer mental health outcomes¹¹. Similarly, Jones and Giano et al. (2019) identified that urban environments were associated with increased stress levels among students, which may contribute to higher rates of mental health issues observed in urban populations¹².

Harmony in the Family: Students from harmonious families exhibit a higher proportion of normal mental health compared to those from non-harmonious families ($p = 0.007$). This underscores the critical role of family dynamics in shaping the mental well-being of adolescents, with supportive and harmonious family environments likely fostering better mental health outcomes. Research by Lin and Yi (2019) demonstrated that family cohesion and support were protective factors against adolescent depression and anxiety, highlighting the importance of family harmony in promoting positive mental health outcomes¹³. Furthermore, a longitudinal study conducted by Moreira and Telzer (2015) found that adolescents from families characterized by conflict and instability were at a higher risk of developing mental health problems later in life, underscoring the detrimental impact of family discord on mental well-being¹⁴.

Academic Stress: Interestingly, students experiencing academic stress show a higher proportion of normal mental health compared to those without stress ($p = 0.018$). This finding contrasts with common assumptions that academic pressure negatively impacts mental health. It may suggest that students who are able to cope with academic stress effectively or have supportive resources in place exhibit better mental health despite facing stressors. Contrary to common assumptions, a study by Li et al. (2017) reported that moderate levels of academic stress were associated with better mental health outcomes among adolescents, suggesting that a certain level of stress might promote resilience and psychological growth¹⁵.

CONCLUSIONS

The study provides insight into the current state of mental health among high school students in two mountainous communes of Thai Nguyen Province. The findings highlight a significant proportion of students experiencing mental health challenges, with factors such as living area, family harmony, and academic stress demonstrating associations with mental health status. These results underscore the importance of targeted interventions and support systems to promote positive mental health outcomes among high school students in similar contexts. By addressing these factors, educators, policymakers, and stakeholders can work collaboratively to foster environments conducive to the overall well-being and academic success of students. Further research and implementation of evidence-based interventions are warranted to address the complex interplay of factors influencing mental health in this population.

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