ORIGINAL ARTICLES

Economic, Social, and Mental Health Difficulties Among High School Students in Hanoi During the COVID-19 Lockdown Period

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ABSTRACT

Objective: This study was conducted to describe the social, mental health difficulties and psychological behavior of students at some middle and high schools in Hanoi during the COVID-19 lockdown period.

Methods: This is a cross-sectional study conducted in November 2021 using the form of an online survey on 5,315 students aged 11-17 years old residing in Hanoi. The four main outcome variables included family care and pressure, self-esteem, coping with stressful situations, and anxiety.

Results: Results show that during the COVID-19 epidemic, about 11.6% of students experienced domestic family violence. Up to 43.5% of students assessed that they spent so much time using electronic devices that they did not have time to connect with their families. About 7.4% of students had severe anxiety symptoms, and 67.9% had mild or moderate symptoms. The participants also reported low coping skills and self-esteem during COVID social distancing.

Conclusions: The COVID-19 pandemic, following school closures and distance learning, negatively impacted the psychological development of middle and high school students in Hanoi city. High schools should prioritize integrating coping strategies into their curricula and implement coping interventions to counter the harmful impact of stress on mental health. Future research should investigate the potential association between the duration of school closures and temporal changes in mental health symptoms.

Key words: *Economic, Social, Mental Health, COVID-19 lockdown period, High School.*

INTRODUCTION

As of April 15, 2023, the COVID-19 pandemic is still complex worldwide, with over 685 million cases and more than 6.8 million deaths (1). Vietnam has recorded 11,5 million COVID-19 cases, with 43,186 deaths (2). Although all governments are currently rolling out a vaccination program to achieve herd immunity, there is still an increase in the number of new infections, and many measures are being implemented to minimize the impact of the pandemic on people's lives, the economy, and health (3).

During the initial outbreak in early 2020, the Vietnam government implemented strict nationwide social distancing measures. This included closing schools, limiting public gatherings, and suspending non-essential

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businesses (4). People were encouraged to stay at home as much as possible, and those who had to go out were required to wear masks and maintain a distance of at least one meter from others (4). Online learning has become essential for students to continue their education during the pandemic. In Vietnam, online learning platforms and tools have been made available to all students, from kindergarten to high school. Despite some challenges, such as the lack of reliable internet connectivity and the need for parental support, online learning has successfully kept students engaged and on track with their studies (5). Additionally, online learning has provided new opportunities for students to develop their digital skills and become more comfortable with technology (6).

The COVID-19 pandemic has brought about significant changes in the modes of learning and social interaction, necessitating online learning and social distancing measures. However, these changes have had notable impacts on economic, social, and mental health aspects. Studies (7-9) have shown that social distancing measures have led to isolation and loneliness for many individuals, causing disruptions in social activities and events and a decline in social connections. The pandemic and social distancing measures have also led to increased levels of stress, anxiety, and depression among individuals (8, 10, 11). The shift to online learning has necessitated significant adjustments for students, including changes in routines and limited face-to-face interaction with teachers and classmates, which may exacerbate stress and anxiety (6). Additionally, disruption to daily routines and limited opportunities for physical activity and outdoor recreation have further impacted mental health.

While studies have explored the impact of COVID-19 on mental health and well-being in general, there is a lack of specific research focusing on middle and high school students, particularly during the lockdown period. Considering these challenges, this paper aims to investigate the status of mental health and psychological behavior of some middle and high school students in Hanoi during the COVID-19 lockdown period.

METHODS

Study Design: This was a cross-sectional design.

Location and time of the study: Study subjects included students aged 11-17 years old at some middle and high schools in Ha Noi, Viet Nam who accepted to participate in the study. Students who refused to provide information were excluded.

Sample size and sampling method

The study used respondent-driven sampling. A Google Forms link which contained the questionnaire was published on Facebook for study participants to complete. After each completed response, the study participants were asked to refer this link to other appropriated participants. At the end of the data collection period, a total of 5,325 students aged 11-17 years living in Hanoi's rural/urban areas participated.

Data instrument and data collection method: The self-administered questionnaire was imported and deployed through Google Forms. Participants completed the online survey between October and December 2021.

Study variables: Study variables included study participants' demographic factors, difficulties in living, family care, pressure from family members, and their coping strategies during COVID-19. This study used measure the four outcome variables using corresponded scale including:

Coping with stressful situation: The Kids Coping Scale (KCS) is a self-report for children, modified based on the Self-Report Coping Scale. This scale based on the research work of Darryl Maybery et al.(12) on coping strategies for stressful situations. Six different coping strategies were assessed: problem solving, seeking social support, externalizing, internalizing, distraction, and trivializing. The responses were scored on a 3-point scale from 1 (Never) to 3 (Always). The scores for each component's total coping skills were calculated by taking all items/ items in each element.

Self-esteem: The Rosenberg–Simmons Self-Esteem Scale(13) was used. This 10-item scale that measures global self-worth by measuring both positive and negative feelings about the self. All items are answered using a 4-point Likert scale format ranging from Strongly Agree to Strongly Disagree. The cut-off point of 25 was also recommended by the author to differentiate between normal and low self-esteem people.

Anxiety: The Generalised Anxiety Disorder Assessment (GAD-7)(14) was used. It was a seven-item instrument that is used to measure or assess the severity of generalised anxiety disorder (GAD). Each item asked the individual to rate the severity of his or her symptoms over the past two weeks. Response options included "Not at all", "Several days", "More than half the days" and "nearly every day".

Family care and family pressure: This variable was measured using questions from Global School-based Student Health Questionnaire (15). Seven questions about the frequency parents or guardians do during the past 30 days from this questionnaire were used, in which 4 items for family care and three items for family pressure). The 5-level Likert scale (From Never to Always) was applied for these questions and the sum of the item score was used as the scale for family care and family pressure.

Data processing and analysis: Data analysis was conducted using Stata 16.0 software. Continuous variables are described by means and standard deviation, while categorical variables are represented by frequency and percentage.

Ethical approval: Ethical clearance, including confidentiality of the participants' consents and information, was approved by the Human Research Ethics Committee at Hanoi University of Public Health with Decision No.382/2021/YTCC-HD3. No sensitive data that could identify the participants was collected. Informed consent was described in the instrument, with mandatory acceptance to proceed. There was also a contact for further clarification.

RESULTS

General characteristics of study participants

Data from a total number of 5,315 participants was collected. The general characteristics of study participants were described in Table 1.

Table 1. General characteristics of study participants

Characteristics	N=5,315	
	n	%
Age		
Aged 11	333	6.3
Aged 12	368	6.9
Aged 13	492	9.3
Aged 14	647	12.2
Aged 15	1,486	28.0
Aged 16	1,173	22.1
Aged 17	816	15.4
Location		
Rural	2,794	52.6
Urban	2,521	47.4
Live with		
With parents	4,889	92.0
With single parent	405	7.6
With no one	21	0.4
Ever experienced a family having difficulty in buying food	1,453	27.3
Have at least one parent unemployment due to COVID-19	1,292	24.3
Experience domestic family violence during COVID-19 time	619	11.6
Average Online time per day		
Less than 4h	2,228	41.9
4 – 6h	442	8.3
6 – 8h	1,183	22.3
8 hour or more	1,462	27.5

Most of the study participants were at the age of 15 and above (65.5%). The proportion of participants from rural area was slightly higher than those from urban area (52.6% and 47.4%, respectively). During the COVID-19 pandemic period, about 27.3% of participants who lived in a family had difficulty in buying food. One-fourth participants had at least one parent unemployment due to COVID-19. About 12% of respondents had experienced domestic violence during COVID-19 time. Half of the respondents used the Internet for six and more hours per day.

Family care and pressure during COVID-19 pandemic

Table 2. Family care and family pressure during COVID-19 pandemic

Family care and family pressure during COVID-19 pandemic	Never n (%)	Rarely n (%)	Sometimes n (%)	Often n (%)	Always n (%)
Family care					
The frequent parents or guardians check to see if their child' homework was done during the past 30 days.	862 (16.3)	606 (11.4)	1,868 (35.1)	1,425 (26.8)	554 (10.4)
The frequent parents or guardians understood their child's problems and worries during the past 30 days.	520 (9.7)	829 (15.6)	1,502 (28.3)	1,125 (21.2)	1,339 (25.2)
The frequent parents or guardians know what their child was doing with free time during the past 30 days.	412 (7.7)	584 (11.0)	1,677 (31.6)	1,158 (21.8)	1,484 (27.9)
The frequent parents or guardians give their children advice and guidance during the past 30 days.	230 (4.3)	455 (8.6)	1,786 (33.6)	1,409 (26.5)	1,435 (27.0)
Family pressure					
The frequent parents or guardians expect too much of their child (i.e., to do better in school or be a better person) during the past 30 days.	321 (6.0)	441 (8.3)	1,317 (24.8)	2,012 (37.9)	1,224 (23.0)
The frequent parents or guardians did not respect their child as a person (i.e., not let their child talk or favor someone else more than their child) during the past 30 days.	2,824 (53.1)	956 (18.0)	355 (6.7)	427 (8.0)	753 (14.2)
The frequent participants were in a physical fight during the past 12 months.	592 (11.1)	4,402 (82.8)	31 (0.6)	30 (0.6)	260 (4.9)

More than one-third (37.2%) of participants had parents or guardians check their homework often or always. Nearly half of participants reported that their parents or guardians often or always understood their problem/worry during the past 30 days. Half of the participants also reported their parents or guardians knew what they did in their free time, and 53.5% of parents or guardians often or always provided advice and guidance to respondents during the past 30 days.

Regarding family pressure, 60.9% of participants reported that their parents or guardians often or always expected too much of them. Nearly one-fourth of parents or guardians often did not respect their child as a person during the past 30 days. The percentage of participants who reported that during the past 12 months, they usually/always been in a physical fight was 5.5%.

Table 3. Self–reports of coping in response to a stressful situation during the COVID-19 pandemic

Kids Coping Scale	Never n (%)	Sometimes n (%)	Always n (%)
Problem-solving			
Try to think of a different way to solve the problem	138 (2.6)	3654 (68.7)	1523 (28.7)
Try your best to make things better	93 (1.7)	2640 (49.7)	2582 (48.6)
Try hard to fix the problem	1785 (33.6)	3329 (62.6)	201 (3.8)
Say sorry if your fault	71 (1.3)	2194 (41.3)	3050 (57.4)
Avoidant			
Did not want to think about it	67 (12.7)	3753 (70.6)	886 (16.7)
Avoid problem or where it happens	160 (3.0)	2674 (50.3)	2481 (46.7)
Did things to stop thinking about it	888 (16.7)	2616 (49.2)	1811 (34.1)
Social support seeking			
Thought about what others might do	717 (13.5)	1907 (35.9)	2691 (50.6)
Ask someone to help	264 (5.0)	2965 (55.8)	2086 (39.2)

Table 3 shows respondents' self-reports of coping in response to a stressful situation during COVID-19. Among three groups of active copings strategies, "Say sorry if your fault" was the most applied strategy (57.4%), followed by "Thought about what others might do" and "Try your best to make things better" at 50.6% and 48.6%, respectively. Only 3.8% of respondents reported they "try hard to fix the problem". The average total score of coping (sum of 9 items) was 20.40±2.13. The distribution of score for each aspect of the scale were described in Figure 1.

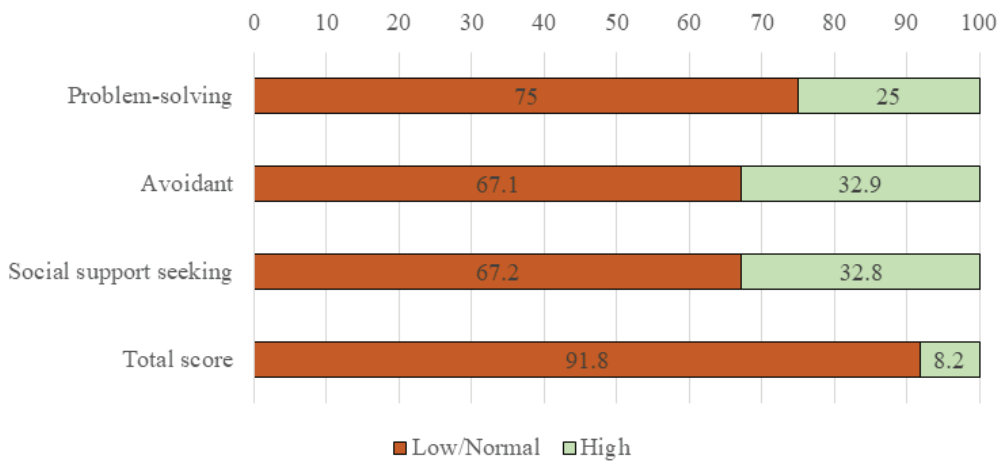

Figure 1. Distribution of score (Kids Coping Scale) in different aspects and in total Self esteem

Table 4. Self-esteem of study participants during the COVID-19 pandemic

	Totally not agree n (%)	Partially not agree n (%)	Partially agree n (%)	Totally agree n (%)
Positive thinking				
I am satisfied with myself	373 (7.1)	1,474 (27.7)	2,477 (46.6)	991 (18.6)
I feel that I have a number of good qualities	185 (3.5)	771 (14.5)	2945 (55.4)	1,414 (26.6)
I am able to do things as well as most other people	331 (6.2)	1,231 (23.2)	2,530 (47.6)	1,223 (23.0)
I feel that I'm a person of worth, at least on an equal plane with others	276 (5.2)	650 (12.2)	2,408 (45.3)	1,981 (37.3)
I take a positive attitude toward myself	408 (7.7)	760 (14.3)	2,046 (38.5)	2,101 (39.5)
Negative thinking				
I certainly feel useless at times	561 (10.6)	1,161 (21.8)	2,752 (51.8)	841 (15.8)
I feel I do not have much to be proud of	1,178 (22.1)	1,439 (27.1)	1,901 (35.8)	797 (15.0)
At times I think I am no good at all	865 (16.3)	762 (14.3)	2282 (42.9)	1,406 (26.5)
I wish I could have more respect for myself	307 (5.8)	346 (6.5)	1,516 (28.5)	3,146 (59.2)
All in all, I am inclined to feel that I am a failure	1,813 (34.1)	1,365 (25.7)	1,564 (29.4)	573 (10.8)
Self-esteem score	**N**	**%**		
Normal (25+)	3,559	67.0		
Low self-esteem (Less than 25)	1,756	33.0		

Table 4 shows the results of self-esteem scale among study participants. Two positive questions that received the highest proportion of agreement among respondents were "I feel that I'm a person of worth, at least on an equal plane with others" (82.6%) and "I feel that I have a number of good qualities" (82.0%). Besides, two negative questions which were most disagreed with were "I feel I do not have much to be proud of" (49.3%) and "All in all, I am inclined to feel that I am a failure (59.8%). Overall, two thirds of the participants had self-esteem score at a normal level (25 points and above.

Anxiety by GAD-7

Table 5. Anxiety level among study participants using GAD-7

Over the last two weeks, how often have you been bothered by the following problems	Not at all n (%)	Several days n (%)	More than half the days n (%)	Nearly everyday n (%)
Feeling nervous, anxious, or on edge	1,089 (20.6)	2,612 (49.1)	1,330 (25.0)	284 (5.3)
Not being able to stop or control worrying	1,147 (21.5)	2,352 (44.3)	1,337 (25.2)	479 (9.0)
Worrying too much about different things	1,200 (22.6)	2,413 (45.4)	1,255 (23.6)	447 (8.4)
Trouble relaxing	1,818 (34.3)	2,405 (45.2)	857 (16.1)	235 (4.4)
Being so restless that it is hard to sit still	1,628 (30.6)	2,829 (53.2)	715 (13.5)	143 (2.7)
Becoming easily annoyed or irritable	1,339 (25.2)	2,343 (44.1)	1,197 (22.5)	436 (8.2)
Feeling afraid, as if something awful might happen	1,168 (22.0)	2,654 (49.9)	1,111 (20.9)	382 (7.2)
Anxiety severity	**N**	**%**		
Minimal (1-4)	1,315	24.7		
Mild (5-9)	2,400	45.2		
Moderate (10-14)	1,206	22.7		
Severe (15-21)	394	7.4		

Table 5 shows the results of GAD-7 questionnaire among study participants. There were some mental problems that happened nearly everyday among respondents including "Not being able to stop or control worrying" (9.0%), "Worrying too much about different things" (8.4%) and "Becoming easily annoyed or irritable" (8.2%). Totally, there were 24.7% of study participants had minimal symptoms of anxiety, while 67.9% of them had mild or moderate symptoms of anxiety. Only 7.4% of respondents had severe anxiety symptoms.

DISCUSSION

The presented results have focused on identifying the status of perceived stress on mental wellbeing due to COVID-19 lockdown period on a vulnerable group, high school students. Almost half of participants knew how to cope with problem by "try their best" or "say sorry if their fault", "avoiding problems" and "thought about what others might do". Specifically, the coping style adopted by participants has been shown to play a critical role in mediating the effects of perceived stress on mental health (16). In particular, the utilization of approach coping has been found to buffer against the negative impact of stress on mental wellbeing (17). Consistent with previous research utilizing the concept of problem-focused coping, our results reinforce the importance of coping style as a key determinant of the psychological consequences of perceived stress (16-18). Furthermore, the use of effective coping strategies may be compromised when an

individual is emotionally unstable, leading to a decline in mental wellbeing.(19) In this study, almost two thirds of the study participants have self-esteem score at normal level. Our results are consistent with findings from other studies (20, 21). Besides, there is still one third of the study participants suffering from low self-esteem. Results showed that low self-esteem was an influencing factor for having a higher level of depression and contributed significantly to depression (20, 22).

Our study also aims to enhance the evidence for the potential mechanisms underlying the relationship between school closures or distance learning and their impacts on mental health. These mechanisms primarily stem from the absence or loss of social connections (6), resulting in reduced opportunities for social integration and interactions with adults and peers. Inadequate support and diminished interpersonal opportunities contribute to the onset of feelings of loneliness, depression, and anxiety (9, 23), particularly among adolescents and young adults attending universities (24).

Regarding the potential mental health implications of hybrid education or partial school closures, the current evidence is equivocal, with some studies available for evaluation (2, 7, 11). Thus, definitive conclusions regarding the impact of such approaches on mental health cannot be made. However, these findings suggest that the psychological consequences observed in previous reviews focusing on the initial stages of the pandemic (2, 7, 11) or on the broader pandemic period (25, 26) may, in part, be attributed to the effects of school closures or distance learning on the mental health of young individuals.

This study has several limitations that must be acknowledged. The study design was observational in nature and the sampling method was non-probability, thereby constraining our ability to draw causal inferences. Moreover, the survey did not distinguish between mandatory and optional remote schooling, potentially introducing confounding variables that may be linked to mental health challenges, such as having a family member with high medical risk or harboring doubts about the school's ability to ensure safety. These factors may have influenced children's choice of schooling modality, rendering the observed associations less conclusive. In addition, it should be noted that our study employed a convenience sampling approach, which limits the generalizability of the findings to all high schools, as the sample was not randomly selected. Nevertheless, the sample size was considerable and can be regarded as a robust representation of a subset of high school students in a megacity such as Hanoi.

CONCLUSION

The findings of this study reveal that a significant proportion of students, approximately 11.6%, experienced domestic family violence during the COVID-19 pandemic. Moreover, a substantial number of students, up to 43.5%, reported that their excessive use of electronic devices limited their ability to engage with their families. Additionally, a noteworthy percentage of students exhibited symptoms of anxiety, with 7.4% displaying severe symptoms and 67.9% exhibiting mild or moderate symptoms. Furthermore, the study revealed that participants reported low coping skills and self-esteem during periods of COVID-19 related social distancing.

To promote the adoption of adaptive coping styles and mitigate the detrimental effects of stress on mental health, high schools should prioritize the inclusion of approach coping

strategies in their curricula. Additionally, coping interventions should be considered as an essential component of high schools and other school-based programs. While no study investigated the temporal changes in mental health symptoms related to the duration of school closures, it is reasonable to anticipate that the negative effects on mental health are likely to increase with prolonged school restrictions. Further research is therefore needed to better understand this relationship.

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