

Depression among university students during Vietnam's fourth wave of the COVID-19 pandemic

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Abstract

The novel human coronavirus disease COVID-19 has been continuing to spread around the world, causing severe economic and social consequences worldwide. From the fourth wave of COVID-19 pandemic, thousands of Vietnamese people have been infected every day, making it the biggest outbreak of COVID-19 in Vietnam. Due to the most severe wave of COVID-19 in Vietnam, the concerns about a rising mental health burden have been grown. University students who are still suffering are one of the hardest-hit subjects of the pandemic. This study aims to determine the level of depression, attitudes, and behaviours of university students in Vietnam under these circumstances. A cross-sectional online survey was conducted on nationwide students from August to September 2021. The Patient Health Questionnaire-9 (PHQ-9) scale was used to evaluate the level of depression. The difference between the percentages of qualitative variables was tested using the Chi-square test. Out of a total of 302 university students, 46.0% had depression symptoms, 6.0% and 3.6% for moderately severe and severe, respectively. 80.5% of university students adhered to the Vietnamese 5K guideline. However, 33.4% of students did not wash their hands after coughing and sneezing. Additionally, 44.7% of university students increased physical activity at home; 36.8% used electronic devices over 8 hours/day for sedentary entertainment. The findings indicate a high risk of depression and decreased physical activity among university students during the COVID-19 pandemic. It is expected that the mental health problems of Vietnamese university students during and after the pandemic should be paid an intense attention from both the government and universities to eliminate the depression of university students.

Keywords: Depression; vietnamese student; mental health; mental disorder; physical activity; 5k vietnamese guideline.

Introduction

The novel coronavirus (SARS-CoV-2), which causes acute respiratory distress syndrome, was first reported in December 2019 in Wuhan City, Hubei Province, China [1]. In Vietnam, the first case recorded on January 17, 2020, was a woman returning from Wuhan city, China [2]. As of November 4, 2021, Vietnam has experienced four waves of COVID-19, with the total number reaching 946,043 cases [3]. During the fourth wave, from April 27 to November 4, 2021, the number of COVID-19 infections in Vietnam was 941,159, resulting in a variety of economic and social consequences [3]. During the pandemic, Vietnam has been facing high number of infections, economic recession, and limited social interactions, contributing to risk for mental health issues.

In recent years, depression has impacted 264 million people globally, about half of whom experience symptoms at the age of 14. This condition may lead to suicide - a second leading

cause of death among young adults (15-29 years old) [4]. Due to the COVID-19 pandemic outbreak in Wuhan City, Hubei Province, China, 17.9% of depressive cases and 8.5% of cases with the risk of suicide and self-injury were recorded [5]. Based on the negative impacts on the increased mental health problems in general populations, concerns have been raised about the potential impact on the students' psychology, attitudes, and behaviour. According to the survey in China, 41.52% of students were depressed, and 2.03% had suicidal behaviour [6]. Along with psychological effects, the COVID-19 pandemic had an impact on students' lives, social relationships, and daily routines [7]. During the quarantine period, physical activity decreased while spending time on electronic devices for sedentary entertainment increased [8]. Despite the fact that face masks and hand washing are effective methods of infection prevention [9], Vietnamese students had low adherence to these preventive measures, with only 48.9% washing their hands after coughing or sneezing and 72.8% wearing a mask

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with a positive attitude [10, 11]. It might not only increase the risk of disease transmission but decrease the effectiveness of disease prevention strategies.

University students account for a considerable proportion of the Vietnamese population and will be the country's future labour force. However, they have been suffering the serve impacts during the ongoing pandemic, such as being unable to physically interact with teachers and friends, suffering from an increased level of depression, having fewer physical activities. To our knowledge, there is still not a specific study in Vietnam that could evaluate the impact of the fourth outbreak on university students' mental health. Therefore, this study has been conducted to determine the level of depression, the changes in attitude and behaviour of university students in Vietnam during the COVID-19 pandemic.

Method

Study population

Students studying at universities/colleges in Vietnam.

Place and time

From August to September 2021 in Vietnam.

Study design

Descriptive cross-sectional study.

Sampling size

This study collected by convenience sampling technique. University students over 18 years old who reside in Vietnam are recorded. The sample size was calculated using the popularity estimating formula with the following assumptions. The rate of mild to severe student depression in Bangladesh was 82.4% [12], with a 95% confidence level, a precision error of 5%, and a non-response rate of 10%. The required sample size was calculated about 246 people; hence, this survey collected the information of 308 Vietnamese students.

Sampling methods

An online survey was conducted via google form. The questionnaire link was sent to student at nationwide universities through forums, study groups, clubs on social networks (Zalo, Facebook...), students were introduced to the research objectives and invited to participate in the survey.

Variables

Qualitative variables such as demographics, levels of depression (minimal, mild, moderate, moderately severe, and severe), attitudes towards the 5K Vietnamese guideline (including Declaration - Distance - Disinfection - Mask - No gathering), changes in physical activity behaviour (increase, decrease, unchanged), and spending time on electronic devices. Attitude is described as a person's mental propensity that governs how they think about executing the 5K Vietnamese guideline. Behaviour refers to their activities, such as strictly following the 5K Vietnamese guideline or engaging in other physical activities during the ongoing pandemic.

Data collection

The data was collected through a questionnaire consisting of three main parts: (1) Demographic information: age, gender, quarantine status, number of family members, access to information on disease prevention. (2) Assessment of the depressive level through the Patient Health Questionnaire-9 scale (PHQ-9): Through 4 corresponding levels (0-Not at all; 1- Several days; 2- More than half of the days; 3- Nearly every day). Thus, the total score to determine depression is based on 5 levels: minimal (0-4 points), mild (5-9 points), moderate (10-14 points), moderately severe (15-19 points), severe (20-27 points) [13]. This part of the question was translated into Vietnamese and validated for Vietnamese people. (3) Evaluation of the changes in attitudes and behaviours: level of physical activities at home during the pandemic (increase/decrease/unchanged), wear a mask, wash hands frequently with soap or antiseptic solution, keep a distance from others, make health declarations, and other factors.

Statistical analysis

Data was imported and cleaned by Microsoft Excel 2019. Descriptive statistics were reported in frequency and percentage. A Chi-square test was applied to compare percentages between groups. Statistical analysis was performed using MedCalc version 20 software.

Ethical issues

All participants were introduced to the survey. If they agreed, they would answer "Yes" to the first question indicating their consent to participate in the study and they are not bound by anything. The data collection was completely anonymous and used for research purposes only.

Table 1: Demographic characteristics.

Characteristics		n	%
Gender	Male	104	34.4
	Female	198	65.6
Grade	1 st – 3 rd years	200	66.2
	4 th – 6 th years	102	33.8
Regions	Northern	9	3.0
	Central	252	83.4
	Southern	41	13.6
Family members	0 - 4	169	56.0
	More than 4	133	44.0
Quarantine at home	Yes	158	52.3
	No	144	47.7
Get information on pandemic prevention instructions	Yes	301	99.7
	No	1	0.3

Result

Demographic characteristics

A total of 308 participants were recorded. Six cases were excluded for not residing in Vietnam (n = 4), not agreeing to participate in the study (n = 1), and not completing the questionnaire (n = 1), resulting in a total of 302 samples being used for analysis. Most students are female (n = 198; 65.6%) and 1st to 3rd year students (n = 200; 66.2%), mainly living in the central Vietnam (n = 252; 83.4%). The common members of their family are less than 4 people (n = 169; 56.0%). Almost all university students have received instructions on pandemic prevention measures (n = 301; 99.7%). The detailed demographic characteristics are presented in (Table 1).

Correlation of student depression and related issues

The PHQ-9 scale was used to assess the level of depression. Nearly half of university students have depression (46.0%), 6.0% for moderately severe and 3.6% for severe depression, respectively (Figure 1).

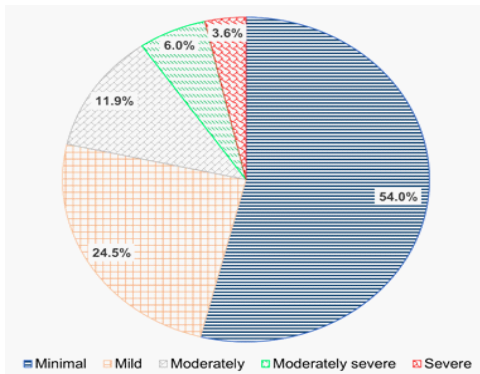


Figure 1: Level of depression among the students.

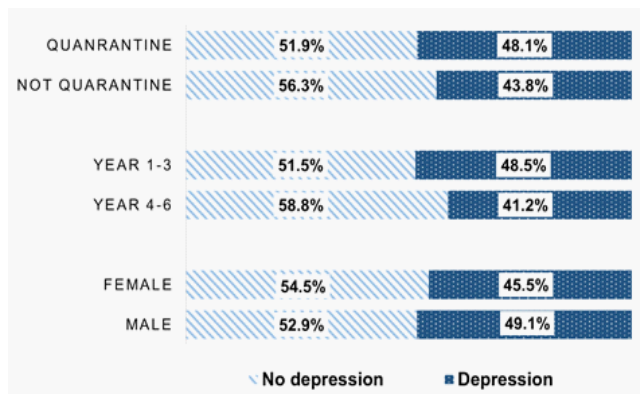


Figure 2: The percentage of depression and related issues.

(Figure 2) shows the proportion of depression among male students at 49.1% and among students from year 1 to year 3 at 48.5%. The rate of depression varies according to quarantine status, with higher proportion (48.1%) of individuals who have been quarantined experiencing depression compared to 43.8% of participants who have not been quarantined.

The correlation between demographics and the degree of depression factors was evaluated using the Chi-square test. The results show that depression proportion among female students is higher than that among male students. Among the students with severe depression, up to 81.8% are female, and the difference is statistically significant (p = 0.004). In addition, depression mainly occurs among 1st to 3rd-year students with

the rates of moderate and moderately severe depression at 69.4% and 66.7%, respectively. Other differences are presented in detail in (Table 2).

Table 2: Correlations of depression and related factors.

Characteristics	Minimal	Mild	Moderate	Moderately Severe	Severe	
	n (%)	n (%)	n (%)	n (%)	n (%)	
Gender	Male	55 (33.7)	27 (36.5)	13 (36.1)	7 (38.9)	2 (18.2)
	Female	108 (66.3)	47 (63.5)	23 (63.9)	11 (62.1)	9 (81.8)
	p	< 0.0001	0.001	0.019	0.169	0.004
Grade	Years 1 - 3	103 (63.2)	56 (75.7)	25 (69.4)	12 (66.7)	4 (36.4)
	Years 4 - 6	60 (36.8)	18 (24.3)	11 (30.6)	6 (33.3)	7 (63.6)
	p	< 0.0001	< 0.0001	0.001	0.048	0.213
Quarantined at home	Yes	82 (50.3)	43 (58.1)	17 (47.2)	10 (55.6)	6 (54.5)
	No	81 (49.7)	31 (41.9)	19 (52.8)	8 (44.4)	5 (45.5)
	p	0.914	0.049	0.637	0.508	0.680

Students' attitudes and behaviours during the COVID-19 outbreak

People who increased physical activities at home account for a larger portion (44.7%) than those who reduced physical activities (27.2%) as shown in (Figure 3A & Figure 3B) displays that 36.8% of university students used electronic devices for sedentary entertainment over 8 hours/day, higher than that before the pandemic occurred (11.6%). The percentage of people used electronic devices from 0 to 2 hours per day decreases by more than half compared to that before the pandemic (10.9%).

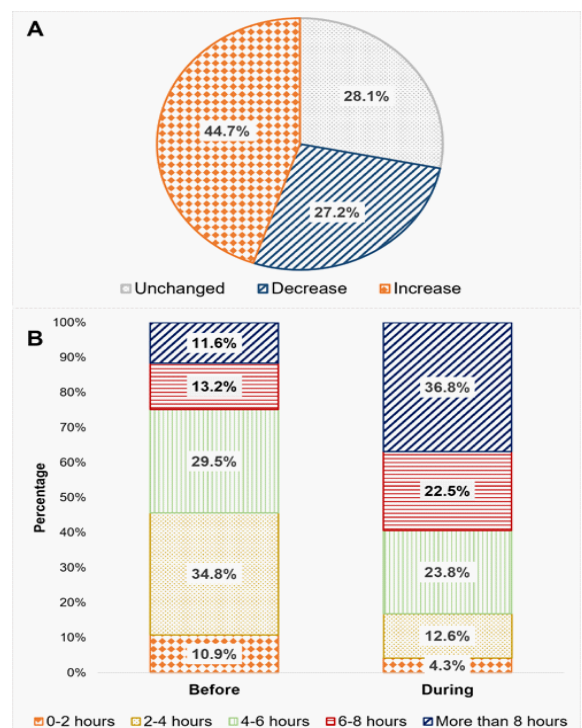


Figure 3: A - Level of physical activity at home; B - Comparison of spending time on electronic devices among students for sedentary entertainment before and during the pandemic.

Most university students have a positive attitude to adhere to the 5K Vietnamese guidelines of the Ministry of Health, 95.4% wear masks, 89.7% wash their hands regularly, and 90.1% do not gather in crowds. But the proportion of students who do not fully follow the 5K guidelines is still quite high at 19.5% (Figure 4A). Most of student reported that they have been wearing mask when leaving home (94.4%), including places such as medical facilities (98.3%), schools/workplaces (96.4%), residential areas (96.4%) as shown in Figure 4B. Regarding hand-washing behaviour, 90.4% of students reported to wash their hands after returning from public locations, whereas 24.2% and 33.4% of students reported not to wash their hands after close contact with others and not to wash their hands after coughing or sneezing, respectively (Figure 4C).

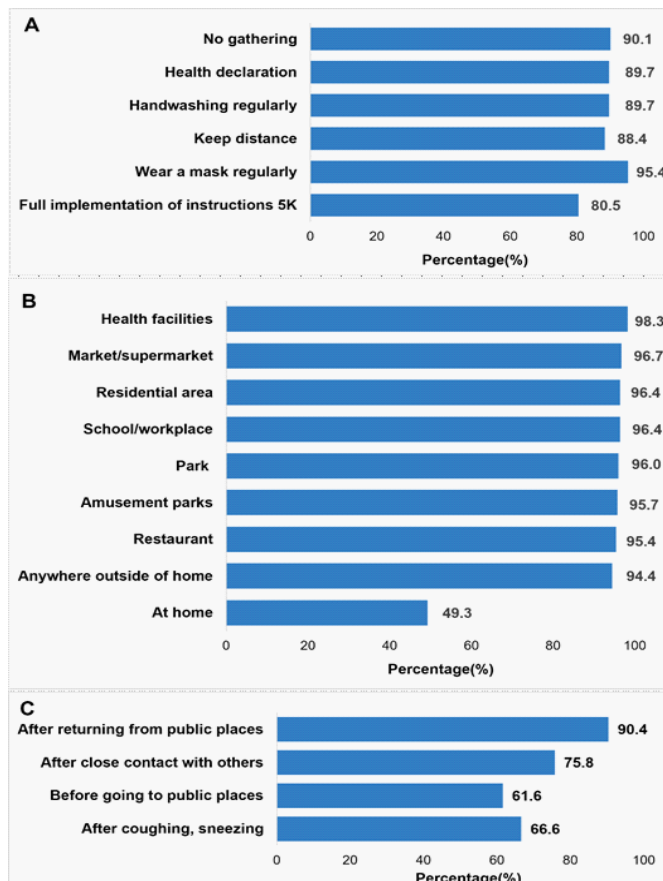


Figure 4: A - Students' attitude towards adherence regarding the 5K Vietnamese guideline; B - Mask-wearing habits of university students; C - Hand-washing habits of university students.

Discussion

The COVID-19 pandemic has had a negative impact on the mental health of the community in general and students in particular. Our study has assessed the impact of the pandemic on mental health, attitude, and behaviour of Vietnamese university students during the fourth COVID-19 wave. 46% of the students have a high level of depression with 9.6% of moderately severe and severe levels of depressive symptoms. Depression affects an individual's health, increases the risk of coronary heart disease and of suicidal ideation [14, 15]. We found that the depression proportion among Vietnamese university students is similar to that of Bangladeshi students (46.92% depressed) [16] but higher than that of students in Saudi Arabia (25.4% depressed) [17]. Compared to Spanish students, Vietnamese university students also have a higher rate of depression [18]. In Vietnam, when the community

first practiced social distancing, there was a study to assess the level of psychological trauma among people with depression [19]. These percentages are lower than that of the results (46.0%) in our study, indicating that university students have been among the most heavily affected people during the pandemic. The findings also show that the rate of depression among 1st to 3rd-year students (48.5%) is higher than that of 4th-6th year students (41.2%). The number of students in 1st to 3rd years with both moderate and moderately severe symptoms (69.7% and 66.7%, respectively) is twice as much as that of the students in 4th to 6th years (30.6% and 33.3%, respectively). One possible reason is that students in their 4th to 6th years have more stable mentality than students in their first years owing to higher level of emotional maturity. They are more psychologically stable when confronted with mental health conditions. Therefore, evaluating students' perceptions, knowledge, and attitudes may aid in identifying characteristics that form healthy practices and responsive behaviours, as well as strengthening prevention efforts against significant mental health problems [20]. To help students improve this condition, we should encourage them to increase social interaction or introduce them to skill courses on emotional control, nurturing and healing from within, especially for first-year students. Additionally, meditation can be good therapy for the stress caused by the COVID-19 pandemic [21]. Other findings demonstrate that girls have a higher proportion of depression than boys, as up to 81.8% of depression cases are among female students. This shows that women are more susceptible to psychological trauma than men, suggesting that it is necessary to pay intense attention to women's mental health. On the other hand, the proportion of students experiencing depression is mainly recorded among students living in the central region, where the pandemic outbreak is not as strong as that in the southern region. Thus, when the scope of the study is expanded to areas where the outbreak is more intense, the incidence of depression might reach much higher levels, leading to an alarming situation. Apart from reviewing and tracking the number of infected cases, it is essential for Vietnamese government to focus on mental health care to minimize negative consequences for people, the economy and society.

When implementing social distancing measures for a long time, schools are closed, making the changes in students' daily habits, with 22.5% of students using electronic devices for sedentary entertainment from 6 to 8 hours and 36.8% for more than 8 hours a day. Increased spending time on electronic devices can cause sleep disturbances and increase the risk of cardiovascular diseases such as high blood pressure and coronary heart disease. Additionally, it also affects mental health by causing depression, even suicide [22]. Our study also recorded an increase in physical activities at home during social distancing (44.7%). In this survey, the non-depression rate in students is 54%, with attitudes of compliance with 5K guidelines (95.4%), 89.7% washing their hands on a regular schedule, and 90.1% not gathering over 5 people. These results exhibit the positive attitude of university students that might help them avoid depression. Wearing a mask and washing hands are both highly prevalent in this study (except at home: 49.3%), which may be associated with a higher proportion of non-depression. Many students have a good attitude towards the 5K guidelines, 94.4% of which wear masks anywhere outside their home. Nevertheless, one fifth of

university students (19.5%) have not strictly followed the 5K guidelines of the Vietnam Ministry of Health. This may bring about consequences including the increase of infection risk and disease transmission in the population. Viruses are spread by the respiratory tract when mucus or respiratory secretions containing the virus enter the body from the eyes, nose, or throat, mainly through the hands. Therefore, hands are also a common way for viruses to spread from person to person [23]. Thus, frequent hand washing is an effective measure to reduce the risk of infection and spread to the community. Our study shows that 33.3% of the students did not wash their hands after coughing and sneezing, exhibiting the increase of the infection risk. Thus, it is necessary to intensively propagandize the preventive measures to the population. Besides, the further study needs to be conducted with the enlargement of sample size to more accurately evaluate the level of psychological vulnerability, attitude, and behaviour of Vietnamese university students.

Conclusions

In conclusion, this study gives the evidence that nearly half of Vietnamese university students show signs of depression, exhibiting a relatively high percentage of students' depression during the Vietnam's fourth wave of the COVID-19 pandemic. Most students strictly adhered to the 5K guidelines, but it still remains a high percentage of students who have not practised hand washing after coughing and sneezing. Due to the increase of spending time on electronic devices for sedentary entertainment, students' dependence on electronic devices has become higher during the pandemic. We highlight the risk of mental health issues among students during the ongoing pandemic, which can have serious and long-term consequences on their life. Further, the study with larger sample size is highly required to assess more accurately the level of psychological vulnerability, attitude, and behaviour of Vietnamese students. It is essential to develop the government policy to help university students reduce the depression among the university students. Both the government and universities could cooperate to reduce the mental health problems, improve the fitness, and build a healthy lifestyle for the better life quality of university students.

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