Research Article

FACTORS ASSOCIATED WITH VIETNAMESE STUDENTS' SELF-PERCEIVED MENTAL HEALTH PROBLEMS DURING THE COVID-19 LOCKDOWN: A CROSS-SECTIONAL STUDY

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Abstract

The COVID-19 pandemic has stated the critical importance of addressing the mental health care needs of students. With the abrupt and extensive changes brought about by the pandemic, such as lockdowns and shifts to online learning, students worldwide faced significant psychological challenges. This context led to a comprehensive study focusing on Vietnamese students, aiming to understand their perceptions of mental health amidst these unprecedented times. The research specifically targeted the initial lockdown phase, seeking to describe the prevalence of mental health issues and identify the factors contributing to these problems among students in Vietnam. By examining these aspects, the study aimed to provide insights into the mental well-being of students during a major global crisis. A cross-sectional study was conducted among 1889 students in North and South Vietnam from 30 August, 2021 to 5 September, 2021. Socio-demographic information was collected *via* an online survey and the SF-12 Mental Composite Score (MCS) was used to assess self-perceived mental health problems. The study results show that the prevalence of self-perceived mental health problems, defined by an MCS < 1st quartile, was 21.9% (95%CI: 20%-23.8%) among students during the COVID-19 lockdown. Regression models indicated that the following factors were significantly related to self-perceived mental health problems: Female sex, not living with family, financial difficulty, decreased health status, decreased academic performance and decreased social relationships during the COVID-19 lockdown. The study showed that many factors related to student's self-perceived mental health problems during COVID-19, affecting a significant number of students. Suggestions for teachers and university administrators were also discussed. *ASEAN Journal of Psychiatry, Vol. 25 (8) October, 2024;1-9.*

Keywords: COVID-19 Lockdown; Self-Perceived Mental Health; SF-12; Vietnam; University Student

Introduction

In December 2019, Coronavirus Disease 2019 (COVID-19) was first reported in Wuhan, eastern China [1]. COVID-19 spread rapidly, become a major public health challenge and affected student's campus life [2,3]. The Vietnamese government implemented a lot of measures to protect people's health, including travel restrictions, blockades, curfew use, isolation, social distancing, service facilities, non-essential businesses and school closures [4,5]. These efforts helped protect people from the virus, but also had certain effects on the economy and mental health of people, including the target group of students. Fear of infection, uncertainty about the future due to the socioeconomic downturn and disruption of activities stemming from the pandemic had a significant impact on university students [6,7]. School closures have had a severe impact on student's well-being and mental health [8]. Contemporary studies have shown high levels of stress, depression and anxiety among students during lockdown [9,10].

Previous studies have shown that during the COVID-19 outbreak, the experience of negative emotions, such as depression, anxieties and stress symptoms, occur in students [7,8,10]. Students also had a prevalence of suicidal thoughts, severe distress, high levels of perceived stress, severe depression and high levels of anxiety 11.4% (among 7891 students) [11]. Therefore, public health emergencies associated with the COVID-19 outbreak can have profound psychological impacts on students, including fear, worry, altered sleep patterns and impaired quality of life [12,13]. This study investigated Vietnamese university students with a large sample of 1,889 university students.

According to a recent study of Vietnamese university students, 25.5% experienced stress during the COVID-19 lockdown [14]. Overall, protective factors against impaired mental health among students may relate to living with their family [15] and steady financial status [14,16]. Other factors implicated in mental disorders among students include reduced academic achievement and physical inactivity [17]. Student's mental health can impact many areas of their lives, including motivation and engagement, which may decrease their quality of life, academic achievement and negative relationships with friends and family members. Additionally, these problems can have long-term effects on student's careers, earnings potential and health [18,19].

There has been a lack of assessing the mental health of students during the period of social isolation in Vietnam. Thus, this study investigated Vietnamese university students with a large sample of 1,889 participants and aimed to clarify the following two research questions.

- What prevalence of student's self-perceived mental health problems during the COVID-19 lockdown in Vietnam?

- What factors were associated with students' self-perceived mental health problems during the COVID-19 lockdown in Vietnam?

We hope that the answers to the above research questions will provide some suggestions for Vietnamese higher education institutions in developing prevention programs and mental health care programs for students during similar epidemic outbreaks in the future.

Materials and Methods

Study design and participants

This study was an online-based cross-sectional study at eight universities in Vietnam. Students enrolled from different universities in Vietnam met the following criteria:

- Be at least 18 years of age

- Living in Vietnam during the survey period

- Consent to participate online by signing the informed consent form; and (4) be able to access an online questionnaire.

Sample size and sampling

There was a one-week survey conducted (from 30 August, 2021 to 5 September, 2021), which is the period of social distancing in Hanoi under Directive No.16/CT-TTg on the Implementation of Immediate Measures for the Prevention of COVID-19 Pandemic [20].

As all educational institutions were closed, data were collected through Social Networking Service (SNS) platforms. Convenience sampling was used with the help of colleagues and university students. A core group of 8 lecturers from Hanoi National University, Vietnam, was established. This core group had a good relationship with lecturers from universities throughout the country. Through online classes, we introduced students to the study and invited them to participate in the survey. The online questionnaire link was sent to lecturers from universities who supported us to send this link to the students through online applications. The students were also encouraged to share this link with their classmates. As a result, a total of 1,889 students were enrolled in this study.

Study variables

Dependent variable: Self-perceived mental health problems were determined by whether each symptom bothered the individual over the past 4 weeks (yes/no).

Independent variables: Independent variables included socioeconomic and demographic information of participants, such as sex (male/female), living with family (yes/no), infection status (yes/no), COVID-19 vaccination status (yes/no), current health status (better, almost

unchanged, worse), financial difficulty (yes/no), academic performance (better, almost unchanged, worse), social relationships (better, almost unchanged, worse) and region (North/South of Vietnam).

Study instruments

To measure mental health problems, we used the SF-12 questionnaire [21]. It was designed to assess multidimensional facets of physical and mental health and a higher score indicates better state of health. We selected the SF-12 questionnaire because due to its good psychometric properties and relatively short completion time, it is recommended as an online survey instrument for this type of survey. The study instrument consisted of two main parts. The first part included questions about socioeconomic and demographic characteristics, while the second part was the 12-Item Short Form Health Survey (SF-12). The number of possible response options varies from 2 to 6. The questionnaire covers various dimensions. The scope includes the domains of physical functioning (2 questions), physical limitations in daily activities (2 questions), bodily pain (1 question), general health (1 question), energy/fatigue (1 question), social functioning (1 question), emotional limitations in daily activities (2 questions) and mental health (2 questions) [21]. The results of the SF-12 health survey are represented by one Physical Component Score (PCS) and one Mental Component Score (MCS), with the PCS including the items inquiring parameters of physical functioning and pain, while the MCS focuses on psychological and mental health questions.

Statistical analysis

There is no recommended cut-off point for the MCS, we split the sample based on the first quartile in the MCS (mental health problems *vs* non-mental health problems). The mean MCS score was 39.8 (SD 10.6) (Median 39.5, interquartile range 31.6-48.2) and 413/1889 (21.9%) students had a score lower than 31.6 (the first quartile).

Using Stata 14.2, we calculated Chi-square tests to compare the differences in characteristics of participant's self-perceived mental health problems [22,23]. To examine the factors associated with the self-perceived mental health problems of respondents during the COVID-19 lockdown, we applied Multiple Poisson regression models with robust error variances [24-26]. We

calculated Prevalence Ratios (PR's) with a 95 Confidence Interval (CI) and a p-value of <0.05, which was considered statistically significant.

Results

General characteristics of the study participants

Table 1 shows the participant's socio-demographic characteristics of the 1,889 respondents, 1,353 (71.6%) female and 536 (28.4%) were male. One-fourth of the participants (24.1%) did not live with their families during the COVID-19 lockdown. Most of them never had contact with COVID-19 infected persons (85.3%), never received a dose of COVID-19 vaccination (68.2%), had almost unchanged health status (82.5%) and were from northern Vietnam (75.1%). Approximately half of the students reported financial difficulty (43%), almost unchanged academic performance (48.2%) and almost unchanged social relationships (55.1%) compared to those before the COVID-19 pandemic (Table 1).

Prevalence of self-perceived mental health problems during the COVID-19 lockdown

Table 2 shows the participant's self-perceived mental health problems during the COVID-19 lockdown. The prevalence of self-perceived mental health problems among students was 21.9% (95%CI: 20%-23.8%). The prevalence of self-perceived mental health problems among female students was higher than that of male students (23.1% *vs* 18.8%, p<0.05). The prevalence of not living with family and financial difficulty with self-perceived mental health problems among students was higher than that of living with family and not financial difficulty (28.4% *vs* 19.8%, 29.3% *vs* 16.2%, p<0.001, respectively).

The prevalence of poor academic performance, health status and social relationships among students with self-perceived mental health problems was higher than that of better and almost unchanged academic performance, health and social relationships status (28% *vs* 11.9%, 17.4% and 48.1% *vs* 7.6%, 20.9% and 31.2% *vs* 12.7%, 16.5%, p<0.001, respectively) (Table 2).

Factors associated with self-perceived mental health among students

The factors associated with self-perceived mental health problems among the students. Factors related to self-perceived mental health

problems included sex, living with family, financial difficulties, current health status, academic performance and social relationships. The prevalence of self-perceived mental health problems among male students was less than that of female students (PR=0.75, 95%CI: 0.62-0.91). The prevalence of self-perceived mental health problems among students living with family was less than that of students not living with family (PR=0.76, 95%CI: 0.63-0.90). Students having financial difficulty status had a higher prevalence of self-perceived mental health problems than that student not having financial difficulty status (PR=1.45, 95%CI: 1.21-1.74). Poor health status, academic performance and social relationships increased the prevalence of self-perceived mental health problems among students (PR=4.25, 95%CI: 2.53-8.08; PR=1.68, 95%CI: 1.03-2.73; PR=1.82, 95%CI: 1.15-2.89; respectively) (Table 3).

Table 1. Characteristics of the participants (N=1889).

Variables	Category	Frequency	Percentage (%)
Gender	Male	536	28.4
	Female	1353	71.6
Living with family	No	455	24.1
	Yes	1434	75.9
History of contact to COVID-19	No	1611	85.3
	Yes	278	14.7
COVID-19 vaccination status	No	1288	68.2
	Yes	601	31.8
Financial difficulty	No	1077	57
	Yes	812	43
Current health status	Better	145	7.7
	Almost unchanged	1609	85.2
	Worse	135	7.1
Academic performance	Better	118	6.2
	Almost unchanged	910	48.2
	Worse	861	45.6
Social relationships	Better	126	6.7
	Almost unchanged	1041	55.1
	Worse	722	38.2

Table 2. Self-perceived mental health problems of participants.

Self-perceived mental health problems		No	Yes	p-value
		1476 (78.1)[*]	413 (21.9)[*]	
Gender	Female, n (%)	1041 (76.9)	312 (23.1)	0.046[*]
	Male, n (%)	435 (81.2)	101 (18.8)	
Living with family	No, n (%)	326 (71.6)	129 (28.4)	0[*]
	Yes, n (%)	1150 (80.2)	284 (19.8)	
History of contact to COVID-19	No, n (%)	1265 (78.5)	346 (21.5)	0.328
	Yes, n (%)	211 (75.9)	67 (24.1)	
COVID-19 vaccination status	No, n (%)	990 (76.9)	298 (23.1)	0.050
	Yes, n (%)	486 (80.9)	115 (19.1)	
Financial difficulty	No, n (%)	902 (83.8)	175 (16.2)	0[*]
	Yes, n (%)	574 (70.7)	238 (29.3)	

Current health status	Better, n (%)	134 (92.4)	11 (7.6)	0*
	Almost unchanged, n (%)	1272 (79.1)	337 (20.9)	
	Worse, n (%)	70 (51.9)	65 (48.1)	
Academic performance	Better, n (%)	104 (88.1)	14 (11.9)	0*
	Almost unchanged, n (%)	752 (82.6)	158 (17.4)	
	Worse, n (%)	620 (72)	241 (28)	
Social relationships	Better, n (%)	110 (87.3)	16 (12.7)	0*
	Almost unchanged, n (%)	869 (83.5)	172 (16.5)	
	Worse, n (%)	497 (68.8)	225 (31.2)	

Note: Statistical comparison using=Chi-square test for categorical variable -display as n (%); *=p-value indicated statistical significance (p<0.05).

Table 3. Factors associated with student's self-perceived mental health.

Self-perceived mental health problems		Model		
		PR	95% CI	p-value
Gender	Female	REF	-	-
	Male	0.75	0.62-0.91	0.003*
Living with family	No	REF	-	-
	Yes	0.76	0.63-0.90	0.002*
History of contact to COVID-19	No	REF	-	-
	Yes	1.13	0.9-1.41	0.271
COVID-19 vaccination status	No	REF		
	Yes	0.86	0.71-1.04	0.125
Financial difficulty	No	REF	-	-
	Yes	1.45	1.21-1.74	0
Current health status	Better	REF	-	-
	Almost unchanged	2.43	1.39-4.25	0.002*
	Worse	4.52	2.53-8.08	0
Academic performance	Better	REF	-	-
	Almost unchanged	1.35	0.83-2.21	0.229
	Worse	1.68	1.03-2.73	0.036
Social relationships	Better	REF	-	-
	Almost unchanged	1.12	0.71-1.78	0.615
	Worse	1.82	1.15-2.89	0.011*

Note: CI=Confidence Interval, PR=Prevalence Ratios; REF=Reference category; *=p-value indicated statistical significance (p<0.05).

Discussion

The primary purposes of the present study were to investigate the prevalence of self-perceived mental health problems among students and to determine the factors that are associated with student's self-perceived mental health problems during the COVID-19 lockdown.

Our results show that the prevalence of self-perceived mental health problems among Vietnamese students was 21.9% (95%CI: 20%-23.8%). The findings also indicated that student's self-perceived mental health problems were associated with female sex, not living with family, financial difficulty, decreased health status, decreased academic performance and decreased social relationships during the COVID-19 lockdown.

In our regression models, we found that sex was one factor associated with self-perceived mental health problems, in which females had higher levels of poor mental health than males. This result is consistent with previous studies that found a lower quality of life reported by female than male students or depressive symptoms more frequently in young female [27,28]. In addition, sex may predict mental health problems during the pandemic because of personality traits. The level of neuroticism or emotional instability/negative emotionality in females is higher than that in males [29].

It is also revealed from this study that living with family was another protective factor against mental health problems. Previous studies have indicated that the risk factors associated with emotion and mental health in adults include the death of parents, not living with parents and parent's psychological problems and mental illness [30,31], which is consistent with the results of current study. Students who lived with their families might have received better support from their family members and the local healthcare system and coping resources are protective against mental health problems [32]. This finding may indicate that family and robust social support are necessary during public health emergencies [33].

Similar to previous studies, financial difficulty was found to be associated with student's mental health problems [16,34,35]. Financial status, especially family income, has always been an integral factor that influences university quality of life and mental well-being [36,37]. Since the COVID-19 pandemic, the impact of financial status on mental health has become even more concerning. In particular, below-average family income was a predictor of poor mental health, more than other factors such as gender, time using electronic devices and contact history with COVID-19 cases [37,38]. Because of the lockdown, some families would lose their source of income and students might feel anxious about paying their tuition payments [39]. Higher education students face financial burden. This issue is different for younger students, who depend primarily on their parents. College students may struggle with rising tuition rates, uncertain job prospects, delays in making monthly payments, high credit card debt [40,41]. Financial difficulties, both in a cross-sectional and longitudinal study, were confirmed to lead to "poor mental health in students with the possibility of a vicious cycle occurring" [42].

Additionally, this study found that self-perceived health status predicted the level of mental health problems among students. Students who confirmed that their health was worse than before were more likely to worry than others [43]. A possible explanation for this might be that the students lacked physical and other health activities during the lockdown. In Vietnam, the government implemented measures, including implementing strict social isolation to prevent epidemics, which inevitably disrupted routine life and led to physical and mental health issues [20,44].

The results confirmed the association between decreased academic performances, decreased social relationships and impaired mental health among students. This finding is consistent with previous studies in the context of the COVID-19 pandemic [8,10,45,46]. During the COVID-19 lockdown, students had to stay at home and continue learning online. During this time, the students lacked social and physical activities. Thus, they often felt less interested in online lectures [47]. The absence of face-to-face social interactions is associated with symptoms of student's anxiety and depression [10]. Studying online at home for a long time makes it difficult for students to concentrate on their studies, easily irritable, difficult self-control, mentally disturbed, unsuccessful in school, worry about the quality of study and future job opportunities [48,49].

Our study had some limitations. Firstly, the cross-sectional design only allows for identifying associations, not establishing causation. This means we can observe correlations between variables, but we cannot determine whether one factor directly causes another. Secondly, the data were collected through an online survey relying on participant's self-reports, which may introduce social desirability bias. Participants might have responded in ways they perceived as more socially acceptable rather than providing accurate reflections of their true thoughts and feelings. Despite these limitations, the study provides valuable insights into the factors related to students' self-perceived mental health problems during the COVID-19 lockdown in Vietnam.

Conclusion

In conclusion, the prevalence of self-perceived impaired mental health among Vietnamese students was 21.9% (95%CI: 20%-23.8%). We also identified a relationship between self-perceived

mental health problems and various factors, such as female sex, not living with family, financial difficulty, decreased health status, decreased academic performance and decreased social relationships during the COVID-19 lockdown. The findings suggest teachers and universities should pay special attention to female students because they tend to be more likely to suffer from mental health issues than male students. Educators and schools must increase awareness of how families play a role in students' mental health and provide effective learning strategies to promote students' mental health and their learning. In addition, university administrators can help students by supplying financial service and schooling cost reduction as financial support. Besides, university administrators need to be actively involved in assessing, identifying, preventing and managing the mental health of university students.

Acknowledgement

Ethical Consideration

Ethical approval for this study was obtained from the Institutional Review Board, Vietnam Association of Psychology (Decision No. 10/2021/HTLHVN-DD). Participants could refuse to participate or withdraw from the survey at any time.

Author Contributions

Linh Dao Thi Dieu conceptualized the article, checked the database, performed data analyses and contributed portions of the writing. All other authors collected the data, assisted in data analysis and wrote the manuscript.

Data Availability

The supplementary file contains three tables and Strengthening the Reporting of Observational Studies in Epidemiology (STROBE) checklist. All other information regarding the study will be provided by the author upon request.

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