J Biochem Technol (2021) 12(3): 27-32
https://doi.org/10.51847/iSWa5cqOkF
ISSN: 0974-2328

Fear of COVID-19 among Vietnamese Undergraduates and Predictors of their Fear

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Received: 01 May 2021 / Received in revised form: 10 August 2021, Accepted: 12 August 2021, Published online: 22 August 2021

Abstract

The COVID-19 is a global crisis that has brought about a ton of negative consequences. Especially, fearfulness more or less arose in everyone during the pandemic and had bad impacts on their daily life. Furthermore, finding out the predictors of their fear is necessary to come up with strategies to lower the fear. All of that makes examining their fear of COVID-19 more necessary than ever. This study examined Vietnamese undergraduates' fear of COVID-19 and found out some predictors of their fear. Our cross-sectional study was conducted on Vietnamese students using The Fear of COVID-19 Scale. To determine if demographic variables are a predictor of fear of COVID-19 among undergraduate students. Pearson's correlation and linear regression analysis were conducted. The data were analyzed by the Statistical Package for the Social Sciences (SPSS) version 20.0 with considering a significant p-value ≤ of 0.05. The results indicated that: (1) students in Vietnam suffered from a medium level of fearfulness (M = 21.66, SD = 5.83); (2) females had a serious fear of COVID-19 in comparison with males; and (3) the students' gender, university, school year, their number of Family size and their moving status significantly predicted their level of fear for COVID-19. In conclusion, the student's gender, university, school year, their number of Family size, and moving status were significant predictors for their fear of COVID-19.

Keywords: Fear of COVID-19, Gender, School year, Family size, Moving status

Introduction

COVID-19, a major global health emergency, is one of the most heightening concerns of the whole world (Meconcelli *et al*., 2020; Sohrabi *et al*., 2020; Damanhouri *et al*., 2021). This global pandemic has become one of the worst crises in the world which have triggered problems related to every aspect of human life, including mental health issues (Nicola *et al*., 2020). The recent tremendous outbreak itself has triggered exacerbated fears among the community (Ornell *et al*., 2020; Xiang *et al*., 2020). There is such an association between fear and the pandemic's spread out as well as its morbidity and mortality (Ahorsu *et al*., 2020). Simultaneously, fake news, rumors, and misinformation also contributed to the community's fearfulness (Nguyen & Vu, 2020a; 2020b). People might not logically and correctly think when they use their fearfulness to face the COVID-19 (Ahorsu *et al*., 2020). Hence, fear of the COVID-19 has drawn research attention.

As an attempt to complement clinical efforts aimed at preventing the potential signals and curing disease, instruments to evaluate an individual's fear of the pandemic have been developed and validated in several contexts. Of these instruments, the seven-item Fear of COVID-19 Scale (FCS) developed by Ahorsu *et al.* (2020) is a robust scale to evaluate people's fearfulness for the pandemic (Pakpour *et al*., 2020). There have been several language versions of the FCS which have been translated from the original one and those questionnaires were surveyed on population in many countries (Pakpour *et al.*, 2020). While numerous studies are exploring pandemic-related fear among the communities, only a few attempts have been made to understand the issue among university students (Nguyen *et al*., 2020; Rodríguez-Hidalgo *et al*., 2020). Also, exploring the predictors of the fear is necessary. This study was designed to address this issue by investigating the fears of Vietnamese undergraduate students and the predictors related to gender, income, year of study, Family size, and traveling status.

Fear is prevalent in the region with the largest number of COVID-19 cases recorded (Fitzpatrick *et al*., 2020). Restricting international/national travel hardly becomes a long-term circumstance; however, relaxing the travel ban is related to a high risk of infection, especially in high-risk zones (Sharun *et al*., 2020). In this current research, we examine whether there is any relationship between people's travel history (including their travel range, the time they stayed, their travel frequency) and their fear of COVID-19. Regarding gender, there has been some initial evidence about the difference in the degrees of fear among males and females (Fitzpatrick *et al.*, 2020; Reznik *et al*., 2020). Females have been shown to be more serious fear of COVID-19 (Broche-Pérez *et al.*, 2020; Huang & Zhao, 2020; Rodríguez-Hidalgo *et al*., 2020). Regarding age and fear of COVID-19, *Martínez-Lorca, et al.* (2020) found the age-related difference in the mean scores of

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fear of COVID-19 among Spanish university students. Furthermore, they found that students in healthcare majors had more fear than others.

Overall, there have been some initial attempts to investigate the fear of COVID-19 and the related predictors of the fear in several contexts. However, only a few studies have been conducted with university students in some contexts. Moreover, more studies are needed to investigate the issue in low-income and middle-income countries to mitigate the potential burden of the pandemic (Gupta *et al*., 2020). This study is, therefore, timely to address these gaps. The following research questions were composed:

1. What is the relationship between fear of COVID-19 and demographic variables among undergraduate students?
2. What demographic variables are predictive of fear of COVID-19 among undergraduate students in Vietnam?
3. How strong are demographic variables at predicting COVID-19 fear among undergraduate students in Vietnam?

Materials and Methods

Sample

This study employed a quantitative research approach. To recruit individuals, convenience sampling was conducted. The participation was voluntary and all participants were recruited through email invitations, included a weblink of the survey. The students were of various majors. They filled the questionnaire anonymously and all of their information was guaranteed to be confidential. In total, 850 undergraduate students completed the scale. However, 43 questionnaires were not fully completed, therefore, they were excluded, leaving 807 complete questionnaires for data analysis. An institutional review board authorized the study, and all participants signed a written consent form in line with the American Psychological Association's ethical principles and the Declaration of Helsinki. They were informed throughout the procedure that no individual findings or information that might be used to identify them as research participants would be published. Furthermore, they were clearly explained that they were completely voluntary in filling the questionnaire, their personal information, as well as their, perform in the questionnaire was kept anonymous and of their right to withdraw at any time, without providing an explanation or incurring any penalty. Individual surveys took roughly ten minutes to complete.

In Vietnam, to the end of July, the first wave of the COVID-19 pandemic involved four phases. The first phase started on 23rd January end ended on 25th February, when each of 16 recorded cases had entirely recovered. The second phase was from 6 March to 19 March, with 69 positive patients, when the patients' close contacts, which comprised hundreds of people, were thoroughly tracked. The third phase lasted from 20 March to 21 April, with 183 positive cases recorded, surpassed the point of 100 infected patients, a point at which disease control becomes more difficult and cases with no obvious source of infection began to arise. Phase four was from 22 April to 24 July, with 145 positive cases, with no reported cases of local transmission and all of those imported cases were immediately quarantined after arrival (Dinh *et al*., 2020). The process of collecting data took place from April 2020 to June 2020 in universities from two large cities in Vietnam. In this period, the cases recorded reached the peak of the third and fourth phase of the first wave of the pandemic in Vietnam which infection began to spread across the population, numerous clusters began to develop in high-density regions, and the infection's origins were untraceable. These two cities were selected because they were two of the largest cities in Vietnam with the most risks of COVID-19 infection. On 31 March 2020, the Prime Minister issued decision No 16/CT-TTg concerning enforcing strict social isolation countrywide on April 1 throughout the country for 15 days, from April 1 through April 15 (The Prime Minister, 2020). Self-isolation was one of the strategies, with residents permitted to leave their houses only for food and medicines. Additionally, gatherings of more than two individuals were prohibited, as was the need for a two-meter distance between people in public places. Factories, businesses, and service establishments that manufacture and provide essential goods were permitted to remain open but must adhere to rigorous health guidelines (The Prime Minister, 2020).

Measures

Ahorsu *et al*. (2020) originally developed the Fear of COVID-19 Scale (FCV-19S). The seven-item FCV-19S has excellent psychometric characteristics to evaluate the general population's COVID-19 fear. A 5-point scale is used to rate all items in the questionnaire, varying from 1 to 5 (with 1 stands for "strongly disagree", 2 is "disagree", 3 means "not sure", 4 alters "agree", and 5 is "strongly agree"). Total scores vary from 7 to 35 and the total scores show the level of their fear of COVID-19 (Ahorsu *et al*., 2020). The FCV-19S items were developed after a thorough review of currently available fear scales, and it has an adequate item-total correlation. The FCV-19S has acceptable reliability values, particularly, reliability of test-retest (intraclass correlation coefficient = 0.72) and internal consistency (Cronbach's alpha = 0.82) (Ahorsu *et al*., 2020). In this study, we applied the Vietnamese version (Nguyen *et al*., 2020) of the Likert-type FCV-19S (Ahorsu *et al*., 2020) with seven items [e.g., *I am afraid of losing my life because of coronavirus-19* (COVID-19)]. For the sample used in the investigation, the instrument demonstrated a good level of reliability ($\alpha = 0.87$). To conduct inferential analyses, there is no severity categorization for the FCV-19S (Ahorsu *et al*., 2020). Hence, Barua *et al*. (2020) established a severity scale based on the percentiles of the FCV-19S score along these lines: FCV-19S was classified as low (score ≤17), moderate (score 18-23), and high (score ≥24).

Analysis

To analyze data obtained, the Statistical Package for the Social Sciences (SPSS) version 20 was used. The demographic features of the sample participants were analyzed using descriptive statistics. Using corrected item-total correlations and Cronbach's alpha, the Fear of COVID-19 Scale's internal consistency reliability was measured with SPSS Version 20. As recommended by Field (2009), using the corrected item-total correlations of 0.30 or higher, Cronbach's alpha is at least 0.80 and internal consistency

reliability is determined. To the best of our knowledge, the present study was the first research using the Vietnamese version of the Fear of COVID-19 Scale in Vietnam college students sample. We used SPSS Version 20 to perform an exploratory factor analysis (EFA) on the scale. Moreso, in this study, it is believed that an EFA was superior to confirmatory factor analysis (CFA) because previous research has not consistently identified a single-factor answer across samples from diverse countries and languages. Additionally, irrespective of the rigor of the translation process, this is the recommended strategy for doing the initial psychometric testing of a freshly translated measure (Swami & Barron, 2019). We hypothesized that given the conceptual closeness of the items if there were many variables, they would be correlated. Therefore, we used a direct oblimin rotation to perform a main axis factor analysis. According to Clark and Watson (2016), our sample size is large enough to be conducted an EFA on the seven-item Fear of COVID-19 Scale. Following the recommendation of Field (2009), we utilized a cutoff of the Kaiser-Meyer-Olkin (KMO) with the threshold of 0.8 as an experimental proof of a large enough size sample for factor analysis.

Pearson correlation analysis was conducted to validate the correlation between the change in the FCV-19S and the correction error and to identify the factors impacting the change in the FCV-19S. A p-value of 0.05 was considered statistically significant. To eliminate out confounding variables, statistically correlated factors were chosen and evaluated using multiple linear regression. Multiple linear regression using a stepwise procedure was conducted on the statistically significant factors, with a p-value of 0.05 serving as an eligibility condition for the predictive model. If the p-value of the variable was > 0.05, it was omitted from the model as an explicative variable.

Following the EFA and Pearson correlation analysis, a contemporaneous multiple regression analysis was performed to predict Fear of COVID-19 total scores using hypothetically significant factors. In multiple linear regression analysis, alpha (α) is a constant and the beta coefficient (β) represents each variable's affecting power. $Y=\alpha + (\beta_1 \text{ x} X_1) + (\beta_2 \text{ x } X_2) + \ldots + (\beta_k \text{ x } X_k)$. Standardized residuals were performed to determine the difference between the expected and observed values. To estimate the sample size, a post hoc test was done using a multiple linear regression test with a threshold of 0.05 and a power of 0.8. Calculations based on an 807-student sample size suggested that enough power (1.00) was required to detect a statistically significant difference in the present investigation's measurement results.

Results and Discussion

This research surveyed 807 participants, females accounted for 78.7% (n = 635) and males accounted for 21.3% (n = 172); 20.4% (n = 165) were from the Ho Chi Minh City University of Technology (HUTECH), 37.9% (n = 306) were from The University of Danang - University of Science and Education (UED) and 41.6% (n = 336) were from the Ho Chi Minh City University of Education (HCMUE). The participants' moving status was classified as Labor export (4.8%), Business trips (2.6%), Studying abroad (5.9%), Traveling (1.4%), and None (85.3%). In terms of the number of Family size, the total participants included 2% orphans, 7.4% family with two people, 78.8% three to five people, and 11.8% more than five people. The mean value of the FCV-19S is 21.66 (SD= 5.83) for the total sample.

Table 1. Characteristics of the study population

Characteristics	Total (N = 807)
Gender	
Female, *n* (%)	635 (78.7)
Male, *n* (%)	172 (21.3)
University	
HUTECH, *n* (%)	165 (20.4)
HCMUE, *n* (%)	336 (41.6)
UED, *n* (%)	306 (37.9)
School year	
Freshman, *n* (%)	372 (46.1)
Sophomore, *n* (%)	262 (32.5)
Junior, *n* (%)	108 (13.4)
Senior, *n* (%)	65 (8.0)
Family size	
One person, *n* (%)	16 (2.0)
Two people, *n* (%)	60 (7.4)
Three to five people, *n* (%)	636 (78.8)
Above five people, *n* (%)	95 (11.8)
Moving status	
Labor export, *n* (%)	39 (4.8)
Business trip, *n* (%)	21 (2.6)
Study abroad, *n* (%)	48 (5.9)
Travel, *n* (%)	11 (1.4)
Not a mover, *n* (%)	688(85.3)

Table 2 represents that the Cronbach's alpha for the Fear of COVID-19 Scale, which includes 7 items, was acceptable with a total α of 0.87. Additionally, the scale's reliability was shown by the immensely strong corrected item-total correlations for all items (all rs > 0.60). Taken together, these two indicators both exceed Field's (2013) recommended cutoffs, indicating that the Fear of COVID-19 Scale has reliability and good internal consistency. We achieved a KMO of 0.86, showing that the size of sample for the EFA was sufficient. The analysis of principal axis factor resulted in a single-factor solution, which has an eigenvalue of 4 explaining 57.14% of the variance in the Fear of COVID-19 scores. **Table 2** shows that factor loadings were high (all loadings > 0.70) and no instances of things being cross-loaded onto multiple factors. Altogether, the outcome of the EFA indicated a one-factor solution for the Vietnamese version of The Fear of COVID-19 Scale with a Vietnamese undergraduate sample.

Table 2. EFA and assesses of internal consistency reliability of Vietnamese version of The Fear of COVID-19 Scale

Item	Factor loading	Corrected item-total correlation	*M*(SD)
1. It makes me uncomfortable to think about coronavirus-19.	.787	.597	3.46 (1.13)
2. I am most afraid of coronavirus-19.	.788	.614	3.48 (1.07)

3. My hands become clammy when I think about coronavirus-19	.785	.654	2.31 (1.05)
4. I am afraid of losing my life because of coronavirus-19.	.758	.650	3.52 (1.15)
5. When watching news and stories about coronavirus-19 on social media, I become nervous or anxious.	.750	.693	3.35 (1.11)
6. I cannot sleep because I'm worrying about getting coronavirus-19.	.714	.685	2.41 (1.04)
7. My heart races or palpitates when I think about getting coronavirus-19.	.703	.686	2.75 (1.16)
Internal consistency, Cronbach's alpha		.874	

Table 3 showed that the corrected coefficient Adjusted R^2 was 0.021, indicating that there was almost 5.1% of the variation in the dependent variable of students' fear of COVID-19 to a one-unit change in the independent variable. The Durbin–Watson value = 1.906, which is significant and must be approximate 2, showed that the remainder was not correlated. This implies that the regression model does not breach the assumption regarding the independence of the error (Field, 2013).

Table 3. Multiple Linear Regression Models for Fear of COVID-19

Variables	B	SE B	Beta	95% CI
Gender	-0.230***	0.071	-0.113	[-0.369, -0.091]
University	-0.038	0.073	-0.019	[-0.181, 0.105]
School year	0.120**	0.059	0.072	[0.005, 0.236]
Family size	-0.293	0.208	-0.049	[-0.702, 0.116]
Moving status	0.273*	0.136	0.070	[0.006, 0.540]
R^2 (ΔR^2)	0.027 (0.021)			
F for R^2	4.465 (5,801) ***			
Durbin-Watson	1.906			

*: p <0.05; **: p <0.01; ***: p<0.001; Δ: adjusted; CI: confidence interval; FCV-19S: Fear of COVID-19

Multiple linear regression was calculated to predict Fear of COVID-19 in terms of gender, income, year of study, Family size, and moving status. From **Table 3**, all Sig values are less than 0.05, pointing out that all these independent variables were meaningful for the dependent variable. The undergraduates' fear of COVID-19 could be predicted by gender, university, year of study, family size, and moving status by the following formula: Fear of COVID-19 = .107 x Gender - .147 x School year + .073 x Family size - .084 x Moving status - .108 x University. When fear of COVID-19 was predicted, it was discovered that gender (β= .107, p = .002), school year (β = -.147, p = .001), family member (β = .073, p = .033), moving status (β = .084, p = .016) and school (β = .108, p = .002) were significant predictors. The overall model fit was R^2 = .057, which reports the proportion of variance in the fear of COVID-19 explained by the set of independent variables in the model (gender, school year, family size, moving status, and university).

The present study's primary objectives are as follows: (1) the fear of COVID-19 among Vietnamese undergraduates and (2) the roles of gender, university, year of study, number of Family size, and moving status as possible predictors for their COVID-19 fear. The results showed that (1) Vietnamese undergraduate students suffered from a medium level of fearfulness (M = 3.09, SD = .83); (2) females had a more serious fear of COVID-19 in comparison with males; and (3) the students' gender, university, year of study, the number of a family member, and their moving status significantly influenced their fear of COVID-19.

The findings of the study indicated that females tended to have a more serious fear of COVID-19 than males, which corroborated with previous studies conducted in Europe (Reznik *et al.*, 2020), and Cuba (Broche-Pérez *et al.*, 2020). Trevisan *et al.* (2020) also pointed out that female young adults, ranging from 20 to 28 years of age, who suffered from COVID-19, stood out over the total in terms of positive cases.

Vietnamese students' fear of COVID-19 was at a medium level. There are several possible explanations for this finding. Firstly, this research was conducted 3 months after the beginning of the third wave of COVID-19 in Vietnam, when there had been no cases reported in the community for more than 30 days. Secondly, the Vietnamese government showed careful preparation via the three previous waves of COVID-19 in this country (Nguyen & Vu, 2020a; Quach & Thi, 2020). At that phase, Europe was the center of the pandemic. On top of that, surrounding deaths was one of the strongest reason for people' fear (Rodríguez-Hidalgo *et al.*, 2020) while Vietnam recorded only one death up to the time this survey occurred (July 31st, 2020).

In this regression model, the factor that mainly predicted students' fear of COVID-19 was year of study (Beta = -.147, Sig = 0.000), followed by university (β = .108, p = .002), gender (β= .107, p = .002), moving status (β = .084, p = .016). The least influential factor was number of Family size (β = .073, p = .033). The freshmen who had just engaged in university life suffered the most fear of COVID-19. This may be because many of the freshmen had lived with their families before they entered university, and this was the first time they lived on their own and away from their families. The hardship of being independent for the first time may have increased their fear of the pandemic.

The study has several limitations that warrant further investigation. Firstly, it did not consider the information about the undergraduates' surrounding people. According to Wang *et al.* (2020), COVID-19 was not only psychologically dangerous for individuals but also for the surrounding people. Future research needs to consider whether their Family size or friends were positive with COVID-19 or died of COVID-19. The second limitation was related to the survey's timing. This survey produce was administered once Vietnam had passed the third wave of the pandemic and had been in a relatively stable status. Therefore, it was not eligible to conclude if COVID-19 triggered any serious fear among the population when it hit its peak.

Despite some limitations presented above, this study has several significant contributions. Firstly, this study is one of the few studies looking at the fear of the COVID-19 by undergraduate students, and it is the first study reporting the fear among Vietnamese students. The study found that Vietnamese students suffered from a medium level of fearfulness (M = 3.09, SD = .83). The study also revealed some predictors of the fear, including gender, year of study, number Family size, and traveling status.

Conclusion

The global crisis pandemic has brought fearfulness among citizens and had great impact on our daily routine. This research is one of the few that examines Vietnamese undergraduates' fear of COVID-19. The results of the research showed that Vietnamese undergraduates suffered from a medium level of fear of COVID-19, among which females had a more severe level of fear than males. The research also pointed out that the students' gender, university, year of study, the number of a family member, and their moving status significantly influenced their fear of COVID-19.

Acknowledgments: The authors acknowledge to the lecturers at the HUTECH, UED and HCMUE, who had supported us in delivery the questionnaires of this research to their students.

Conflict of interest: None

Financial support: None

Ethics statement: The study protocol was approved by the Educational Psychology Research Group, Ho Chi Minh City University of Education, Vietnam (No. 3019/QD-DHSP).

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