

Lockdown fatigue among the university students at Nueva Ecija during the COVID-19 pandemic

Jomell Miranda Santiago¹, Angelo Reyes Santos², Sheila Rose Flores Morales³, Joy Nacino Savellano⁴

¹College of Education, Nueva Ecija University of Science and Technology, Cabanatuan City, Philippines

²College of Management and Business Technology, Nueva Ecija University of Science and Technology, Cabanatuan City, Philippines

³Research Services Department, Nueva Ecija University of Science and Technology, Cabanatuan City, Philippines

⁴College of Management and Business Technology, Nueva Ecija University of Science and Technology, Cabanatuan City, Philippines

Article Info

Article history:

Received Oct 1, 2022

Revised Jul 30, 2023

Accepted Aug 22, 2023

Keywords:

Lockdown

Lockdown fatigue

Lockdown fatigue level

COVID-19

University students

ABSTRACT

One of the control measures to stop the transmission of COVID-19 was the implementation of a lockdown. However, after a few months of lockdown, previous research has found significant evidence of lockdown-related fatigue. Hence, the current study aimed to determine the lockdown fatigue of the students. A descriptive research design and total sampling were used. A questionnaire was developed to collect data about the sex and monthly income of the respondents and their level of lockdown fatigue and feelings after the lockdown. Permission to conduct and informed consent were obtained. Data were analyzed using various statistical tools. A total of 629 respondents participated in the study. Many of them were female and had a monthly income less than P11,690. Most of them had a moderate to high level of lockdown fatigue, and the difference in their profile was insignificant. After the lockdown period, they sometimes felt powerless, stressed, and angry, their problems were getting worse, and something unexpected would happen. Last, their feelings and lockdown fatigue level, after lockdown, had a significant positive relationship. Further studies regarding the efficacy and effectiveness of lockdowns, as well as any restriction that may jeopardize students' health should be continually assessed by government authorities.

This is an open access article under the [CC BY-SA](https://creativecommons.org/licenses/by-sa/4.0/) license.



Corresponding Author:

Jomell M. Santiago

College of Education, Nueva Ecija University of Science and Technology

3106 Poblacion, San Isidro, Nueva Ecija, Philippines

Email: jomellsantiago8854@gmail.com

1. INTRODUCTION

The COVID-19 pandemic is a worldwide health emergency with severe health and economic consequences. The ailment has infected over a hundred million individuals globally and slain millions of people in over two hundred territories since its emergence in China in 2019 [1]. The Philippines accounted for more than half of all confirmed cases and 40% of all deaths in the Western Pacific Region. Three-quarters (73%) of new cases in the region were from the Philippines [2]. To alleviate disease control and lower the rate of transmission, many governments around the world have implemented strict restrictions such as lockdowns, social isolation, and safer-at-home order [3].

To further mitigate the transmission of the disease, one of the control measures that many countries have adopted was the implementation of a lockdown in their entire territory [4], [5]. Starting in March 2020, the Philippine authority enforced a statewide mandatory lockdown, sometimes known as “community quarantine,” demanding citizens stay indoors and limiting any activities outside the home, except for

frontline and vital staff. Besides, only remote teaching was used because schools were physically close. The quantity of verified COVID-19 cases in the nation significantly decreased thanks to these strategies [6]–[8].

A lockdown is a set of forced, indiscriminately implemented actions to minimize COVID-19 spread that includes some constraints on the established pattern of social and economic activity [9]. Lockdowns are one of the non-pharmaceutical interventions that reduce disease transmission by restricting human interaction on a large scale. According to the historical archival investigation of over forty cities during the flu pandemic from 1918 to 1919, it is linked to delayed or decreased peak mortality rates [10], [11].

While the lockdown tactics effectively slowed the virus's spread and transmission, they damaged people's mental and psychological health. Fatigue is a mental or bodily state of lethargy, and a loss of vitality was one of the utmost widely stated side effects of the COVID-19 lockdown. People who experience lockdown fatigue have been described as having stress, strain, psychological issues, an intellectual or physical sense of fatigue, and decreased energy levels as a result of the restrictive measures put in place to contain COVID-19 [12]–[14].

A few months into the across-the-nation lockdown, extensive evidence of lockdown fatigue has been revealed in earlier studies. The lockdown mandate becomes harsher as time passes [15], [16]. Rising lockdown fatigue was characterized by symptoms, such as exhaustion, sleep difficulties, uncertainty, loneliness, irritability, dread, increased concern, lack of enthusiasm, and loss of concentration in formerly appreciated activities [5], [17]–[19]. Another factor contributing to lockdown fatigue is uncertainty about the results of one's professional or educational activities, as persons in lockdown worry about whether their objectives will be achieved. As a result, it should be emphasized that lockdown fatigue was caused by various variables, ranging from viral infection to the impact of lockdown measures on future possibilities [20].

Lockdown fatigue has been brought on by the student's fear of imminent disaster, which has also caused mental stress and emotional worries [14]. Due to a lack of options, students have been exposing to all facets of the illness through news coverage, including death and financial suffering [21]. The conclusion was support by a previous literature review, which discovered that forcing university students to stay at home or engage in mandatory lockdown procedures to halt the transmission of COVID-19 can significantly exhaust them [14]. Since lockdown fatigue was perceived negatively, it is crucial to find a way to mitigate the fatigue [22].

Furthermore, [23] advised educational institutions to take into account how the pandemic has affected their students psychologically. The study gap demonstrates unequivocal that there is a dearth of information and studies that can quantify each student's present degree of lockdown fatigue. This study intends to increase the diversity of perspectives on students' lockdown fatigue as a result of this. Thus, the current study aimed to determine the lockdown fatigue of the students of Nueva Ecija University of Science and Technology San Isidro Campus and will aid policymakers in recognizing the frequent consequences of lockdown fatigue and altering operations to give increased support for students during stressful times like lockdowns.

2. RESEARCH METHOD

A descriptive research methodology was utilized to examine the amount of lockdown fatigue among students at the Nueva Ecija University of Science and Technology San Isidro Campus. It began in January 2021 and was completed in April 2022. Total sample was used, and the target population included all students with an active Messenger account and internet access. Only 629 people agreed to take part in the survey.

The study's questionnaire is based on a number of linked literatures. The survey was broken into four segments: The initial part comprised of questions about their profile (sex and monthly income); the next part was about the level of the lockdown fatigue of the respondents based on the lockdown fatigue scale 13, [23]–[28]; and the last part was comprised statements about the feelings and thoughts of the respondents after lockdown [13], [23]–[25]. Following a thorough assessment of the English-language literature and expert opinions, the questionnaire was revised for substance, wording, and cultural appropriateness. The questionnaire was subjected to pre-testing and adjustments. Data was collected online using Google Forms as the questionnaire due to the country's ongoing implementation of community quarantine, which resulted in the suspension of face-to-face classes.

Permission was acquired from the Campus Director's Office. Before answering the questionnaire, the respondent was asked to offer informed consent. Individuals' privacy and confidentiality were maintained, and they were given sufficient time to respond to the questions.

All completed questions were validated and checked twice. The data from the Google form was then imported into the statistical packages for social sciences (SPSS). Before evaluating, the author double-checked and cleaned all data files. Data cleaning was undertaken to ensure accuracy, consistency, and the absence of missing data and variables. The level of lockdown fatigue among the respondents was measured using a scale of 5 for always, 4 for often, 3 for sometimes, 2 for almost never and 1 for never. The total score

earned by each respondent was calculated, and each score was classified as mild (1-15), moderate (16-30), high (31-45), or severe (45-50) based on the maximum score. Also, the weighted mean of each statement of the lockdown fatigue scale was computed. After the lockdown, the respondents' feelings and thoughts were measured using a 4-point Likert scale: fairly often, sometimes, almost never, and never. The weighted mean of each statement was computed, and each had a verbal interpretation of fairly ten (3.26-4.00), sometimes (2.51-3.25), almost never (1.76-2.50) and never (1.00-1.75). The researchers calculated the frequency and percentage were calculated for the socio-demographic profile and information sources. Analysis of variance (ANOVA) was used to determine whether there were significant differences in their profile regarding lockdown fatigue, and Pearson correlation was used to determine whether there was a significant relationship between their lockdown fatigue level and their feelings and thoughts after lockdown.

3. RESULTS AND DISCUSSION

3.1. Socio-demographic profile of the respondents

A total of 629 respondents participates in the study. The majority of the respondents who participated in the study were female. In their monthly income, most had less than P11,690 which indicate that most respondents belong to poor family as shown in Table 1.

Table 1. Socio-demographic profile of the respondents

Socio-demographic profile		Frequency (f)	Percentage (%)
Sex	Male	202	32.11
	Female	427	67.89
Monthly income	Less than P11,690	249	39.59
	P11,691-P23,380	211	33.55
	P23,381-P46,760	108	17.17
	P46,761 and above	61	9.70

3.2. Lockdown fatigue of the respondents during the COVID-19 pandemic

The Table 2 shows the respondents' lockdown fatigue based on the lockdown fatigue scale. Based on the results, the computed overall mean score for lockdown fatigue was 35.79, implying that a high level of lockdown fatigue exists among the students. It is hard to compare and contrast the findings with those of previous studies because there is no analogous method for measuring fatigue prior to the required lockdown period. The study of [29] supported the results. They uncovered clear evidence of big increases in unhappiness, tediousness, anxiety, aloneness, and exhaustion in the general population from the first to fourth months after the measures were implemented.

Lockdown fatigue can impair one's cognitive, behavioral, and mental abilities [30]. Out of the ten statements on the scale, item 1, "During this pandemic, I am concerned about my personal and family's safety," got the highest mean, equivalent to 4.42. It is followed by items 2 and 3, "I have trouble concentrating and get quickly distracted," and "Because of the lockdown, I regularly felt weak or fatigued," with a mean equivalent of 3.75 and 3.67, respectively. The study of [31] supported the results. In their study of the attitudes of their respondents about a lockdown in their area, they strongly agreed that they could fight and would do everything to protect themselves and their families from COVID-19.

Since the duration of the lockdown was extended, it is no surprise that they can now feel the fatigue brought on by the lockdown. Item statement number 9, "I've been having headaches and body aches," and item statement number 10, "I believe this pandemic is unlikely to end soon," had the lowest mean values of 3.27 and 3.30, respectively. The participants in this study stated that increased worry, lack of focus, and tiredness or physical exhaustion were the most noticeable indications of lockdown fatigue. The described signs of lockdown fatigue in this study were like those in [13], [24]. Their research found that the most noticeable symptoms of lockdown fatigue were physical exhaustion, headaches, body pain, a lack of enthusiasm, and a rise in concern [24].

Additionally, according to the Australian Psychological Society, lockdown fatigue is frequently accompanied by melancholy, physical exhaustion, a loss of interest in earlier loved doings, emotional outbursts, anxiety, and terror [32]. After a few months of the lockdown or home detention technique, Majumdar *et al.* [18] discovered that students had exhaustion symptoms, including weariness, elevated tension, and anxiety levels, and increased concern for their own and their families' wellbeing.

Table 2. Lockdown fatigue of the respondents during the COVID-19 pandemic

No	Item statements	Never F (%)	Ever F (%)	Sometimes F (%)	Often F (%)	Always F (%)	W.M.	Rank
1	During this pandemic, I am concerned about my personal and family's safety.	6 (0.95)	12 (1.91)	75 (11.92)	153 (24.32)	383 (60.89)	4.42	1
2	I have trouble concentrating and get quickly distracted.	16 (2.54)	52 (8.27)	174 (27.66)	216 (34.34)	171 (27.19)	3.75	2
3	As a result of the lockdown, I regularly felt weak or fatigued.	28 (4.45)	71 (11.29)	157 (24.96)	196 (31.16)	177 (28.14)	3.67	3
4	I have been feeling irritable.	37 (5.88)	73 (11.61)	176 (27.98)	188 (29.89)	155 (24.64)	3.56	4
5	I'm having trouble falling or keeping asleep because I'm thinking about the pandemic.	51 (8.11)	84 (13.35)	190 (30.21)	168 (26.71)	136 (21.62)	3.40	8
6	As a result of the lockdown, I've felt unhappy and dejected.	56 (8.90)	78 (12.40)	172 (27.34)	168 (26.71)	155 (24.64)	3.46	6
7	I've been losing interest in doing the activities I used to enjoy.	61 (9.70)	83 (13.20)	166 (26.39)	157 (24.96)	162 (25.76)	3.44	7
8	I've been losing interest in doing the activities I used to enjoy.	48 (7.63)	79 (12.56)	170 (27.03)	169 (26.87)	163 (25.91)	3.51	5
9	I've been having headaches and body aches.	61 (9.70)	119 (18.92)	169 (26.87)	151 (24.01)	129 (20.51)	3.27	10
10	I believe that this pandemic is unlikely to end soon.	76 (12.08)	85 (13.51)	174 (27.66)	161 (25.60)	133 (21.14)	3.30	9
Overall weighted mean							35.79	

Legend: f = frequency; % = percentage; W.M. = Weighted mean

Table 3 showed that a high level of lockdown fatigue was found in 394 (62.64%) respondents, moderate in 160 (25.44%), severe in 69 (10.97%), and 6 (0.95%) respondents had a mild level of lockdown fatigue (Table 3). The present study illustrates that most of the respondents had a moderate to high level of lockdown fatigue. The studies [18], [33], [34] supported the outcomes of the study. They found a substantial level of fatigue among their respondents a few months after it decreed the compulsory lockdown. Furthermore, [35], [36] discovered strong evidence of significant increases in the general population's sorrow, boredom, concern, loneliness, and weariness from the opening weeks to the fourth month after the actions were implemented. Studies [16] and [35] that looked into the existence of lockdown fatigue found that people have been affected emotionally and psychologically by the epidemic. Individuals become progressively exhausted and lethargic as time passes, according to reports from India, the United States, and Saudi Arabia [16], [18]. It is because of the exhaustion that people feel due to the pandemic and the lockdowns that the government has imposed as shown in Table 3.

Table 3. Scores of the respondents based on the lockdown fatigue scale

Level of fatigue	Criteria	Frequency (f)	Percentage (%)
Severe	46-50	69	10.97
High	31-45	394	62.64
Moderate	16-30	160	25.64
Mild	1-15	6	0.95

3.3. Feelings and thoughts of the respondents after the lockdown

Table 4 depicts the respondents' feelings and ideas following the lockdown. Among the statements, item statement number 3, which asked respondents how frequently they get irritated because of an unexpected event, had the highest mean, equivalent to 3.24, with the verbal interpretation "Sometimes." The item with the lowest mean value was item statement number 4, which is about occurrences that were beyond their control and made them upset, with a mean of 2.92. Many studies have supported the results that were obtained. Because of the epidemic, students' academic obligations, such as coursework, assessments, and exams, were a significant source of stress [37]. Financial worries, managing perceived leisure time, and worries about future careers are some examples of personal sources of stress [38]. Meanwhile, during the pandemic, people experienced significant feelings of anxiety, despair, and stress because of the lockdowns enacted in many countries, having a relevant emotional impact on the populace globally [39], [40]. The study found that adolescents reported anxiety symptoms, minor depression and moderate perceived stress due to the lockdown and the closing of schools [41]–[43]. In the Philippines, the study by Mirote [44] found that a lockdown caused burden and distress among its participants.

Table 4. Feelings and thoughts of the respondents after the lockdown

Item statements	Fairly often		Sometimes		Almost never		Never		W.M.	VI
	f	%	f	%	f	%	f	%		
1. How frequently did something unexpected happen in the past several months upset you?	152	24.17	427	67.89	39	6.20	11	1.75	3.14	Sometimes
2. How frequently did you feel powerless over the crucial aspects of your life in the preceding months?	167	26.55	350	55.64	94	6.20	18	2.86	3.06	Sometimes
3. How frequently did you feel anxious or "stressed" in the past months?	240	26.55	311	49.44	65	14.94	13	2.07	3.24	Sometimes
4. How frequently have events beyond your control made you angry in the last few months?	144	22.89	323	51.35	131	20.83	31	4.93	2.92	Sometimes
5. How often did you feel that your problems were getting worse over the past months, to the point that you could not deal with them?	153	24.32	343	54.53	105	16.69	28	4.45	2.99	Sometimes

Legend: f = frequency; % = percentage; WM = weighted mean; VI = verbal interpretation; 3.26 – 4.00 = fairly often; 2.51 – 3.25 = sometimes; 1.76 – 2.50 = almost never; almost never; 1.00 – 1.75 = never

3.4. Difference between the profile of the respondents and their lockdown fatigue

Table 5 shows the difference between the profile of the respondents and their lockdown fatigue. Based on the result, the difference between the profile of the respondents and their lockdown fatigue is insignificant [45] supported the insignificant difference between their sex and lockdown. They conclude that an individual's reaction to stressful events and coping mechanisms determine lockdown fatigue levels rather than gender per se. However, it was contradicted by the studies of [23], [24], [46]. The studies [23], [24] found that females had higher levels of lockdown fatigue than males did. It is likely a result of gender differences in how individuals communicate feelings and sentiments, including worry, fear, grief, anxiety, and bodily discomfort. They relate it to the perception that women are more sentimental and frequently shoulder additional household duties. In addition, many studies have shown that men typically repress their feelings and emotions, whereas women do so more openly [47], [48]. Males did, however, show higher degrees of lockdown fatigue than females, according to Liu *et al.* [49]. Men have traditionally been seen as "pillars" in the family and society, which has led to expectations that they will handle more responsibilities than women in times of public health crises.

The results diverged from the study's hypothesis on the relationship between participants' lockdown weariness and their family's monthly income [49]. They claimed that more acute fatigue was linked to more severe depressive and anxious symptoms and economic loss. Individuals affected worst by economic loss are those whose families belong to the lower-income class. The government has restricted a large portion of people's mobility under the Enhance Community Quarantine rules, which impacts many people in the lower socioeconomic class whose incomes typically see them through one day at a time. They primarily rely on their daily wages to provide for their families.

In addition, [46] showed that the Enhanced Community Quarantine in the Philippines has resulted in the displacement of about 57% of the displaced workers. These people no longer have access to their means of subsistence because of quarantine regulations. Some family heads have broken quarantine laws and risked jail out of desperation to make a living despite the COVID-19 threat [50]. Therefore, the higher economic loss may cause psychological discomfort, which raises the likelihood of fatigue [49]. This result may be explicated because both lower-class and middle-class households experienced harmful effects from the lockdown because many businesses (apart from those providing necessary services) were temporarily closed, leaving their employees without sources of income [51].

Table 5. Difference between the profile of the respondents and their lockdown fatigue

Variables	Lockdown fatigue scores ± S.D.		p-value
	Score	S.D.	
Sex	Male	35.50 ± 7.75	0.5557
	Female	35.92 ± 8.41	
Monthly gross family income	Less than P11,690	35.43 ± 8.34	0.6001
	P11,690-PP23, 381	35.64 ± 8.24	
	P23,381-P46,761	36.38 ± 8.23	
	P46,761 and above	36.70 ± 7.47	

3.5. Relationship between the lockdown fatigue level and their feelings and thoughts after lockdown

Table 6 shows the relationship between the lockdown fatigue level and their feelings and thoughts after the lockdown. The findings showed a strong correlation between the respondents' lockdown fatigue and all comments about their sentiments and thoughts. It implies that, as the level of lockdown fatigue increases, the frequency of the different feelings and thoughts described in the five statements also increases. It also means that people who experience high to severe levels of lockdown fatigue frequently experience upset, powerlessness, anxiety or tension, and anger. Additionally, The studies [24], [52]–[55] discovered a substantial positive correlation between the length of the lockdown and the severity of sadness and the experience of stress. The social isolation brought on by the lockdown was linked to high levels of fatigue [56], [57]. Uncertainty, loneliness, anger, dread, and elevated stress were additional signs of growing fatigue during the lockdown [5], [17], [19].

Thus, lockdown fatigue affects the frequency with which the respondents feel powerless over crucial aspects of their lives, how frequently those unexpected events make them upset and the instances where events beyond their control make them angry. Strong evidence gained [58] also clearly showed that from the opening weeks to the succeeding month of the lockdown's implementation, the general populace's discontent, anxiety, loneliness, and fatigue had increased. To make matters worse, the lockdown enhanced depression, anxiety, and stress symptoms [15], [59] said that throughout the lockdown, study participants experienced frustration, annoyance, and anger against themselves or other people. With this, the frequency with which they often felt that their problems were getting worse to where they could not deal with them was also associated with the level of lockdown fatigue which they were dealing.

Meanwhile, subsequent studies [15], [29] have found indications of pandemic fatigue after only a few months of lockdown implementation. Naddeo *et al.* [60] discovered that, after the lockdown period, students struggled to maintain their academic performance and even lost interest in learning. Because of this, it shows that the association between their lockdown fatigue level and their feelings after a lockdown affects their academic performance. Therefore, strategies to reduce lockdown fatigue among the students must be identified this rising problem during the pandemic in the Philippines, where a modified quarantine was still continuously implemented.

Table 6 . Relationship between the lockdown fatigue level of the respondents and their feelings after lockdown

Item statements	Level of lockdown fatigue	Mean \pm S.D.	Correlation Coefficient	p-value
1. How frequently did something unexpected happen in the past several months upset you?	Severe	3.51 \pm 0.53	0.3599	0.00*
	High	3.19 \pm 0.55		
	Moderate	2.91 \pm 0.58		
	Mild	2.50 \pm 1.05		
2. How frequently did you feel powerless over the crucial aspects of your life in the preceding months?	Severe	3.59 \pm 0.49	0.4307	0.00*
	High	3.11 \pm 0.67		
	Moderate	2.71 \pm 0.75		
	Mild	2.57 \pm 1.27		
3. How frequently did you feel anxious or "stressed" in the past months?	Severe	3.71 \pm 0.51	0.4324	0.00*
	High	3.33 \pm 0.69		
	Moderate	2.82 \pm 0.65		
	Mild	2.83 \pm 0.75		
4. How frequently have events beyond your control made you angry in the last few months?	Severe	3.39 \pm 0.73	0.3993	0.00*
	High	2.99 \pm 0.75		
	Moderate	2.58 \pm 0.76		
	Mild	2.00 \pm 1.09		
5. How often did you feel that your problems were getting worse over the past several months, to the point that you could not deal with them?	Severe	3.36 \pm 0.64	0.4107	0.00*
	High	3.10 \pm 0.80		
	Moderate	2.60 \pm 0.75		
	Mild	2.33 \pm 1.21		

4. CONCLUSION

Most respondents had a moderate to high level of lockdown fatigue, and the difference between their profile and lockdown fatigue level was insignificant. After the lockdown, people occasionally feel helpless over significant elements of their lives, anxious or stressed, and angry over things out of their control. They may also believe that something unexpected happened that distressed them. Last, the association between their lockdown fatigue level and feelings and thoughts after lockdown had a positive relationship. Students in the Philippines reported high levels of lockdown fatigue because of the implementation of mandatory lockdown to slow the transmission of the virus. The student population has suffered due to the exhaustion caused by the pandemic's restrictive restrictions. Further studies regarding the

efficacy and effectiveness of lockdowns or any restriction that may jeopardize students' health should be continuously assessed by government authorities.

ACKNOWLEDGEMENTS

The researchers would like to thank the University's administration and everyone who helped them finish this study. Above all, the authors wish to acknowledge and thank the Almighty God. All glory to God.

REFERENCES




- [1] L. J. Labrague and C. A. Ballard, "Lockdown fatigue among college students during the COVID-19 pandemic: Predictive role of personal resilience, coping behaviors, and health," *Perspectives in Psychiatric Care*, vol. 57, no. 4, pp. 1905–1912, Mar. 2021, doi: 10.1111/ppc.12765.
- [2] World Health Organization, "Consolidated guidelines on HIV testing services, 2019: web annex L: symptom and risk-based screening to optimize HIV testing services: a scoping review," *World Health Organization*, 2020. <https://apps.who.int/iris/handle/10665/335903>. (accessed Mar. 15, 2023).
- [3] Y. Xiao and M. E. Torok, "Taking the right measures to control COVID-19," *The Lancet Infectious Diseases*, vol. 20, no. 5, pp. 523–524, May 2020, doi: 10.1016/S1473-3099(20)30152-3.
- [4] X. Ren, "Pandemic and lockdown: a territorial approach to COVID-19 in China, Italy and the United States," *Eurasian Geography and Economics*, vol. 61, no. 4–5, pp. 423–434, Sep. 2020, doi: 10.1080/15387216.2020.1762103.
- [5] S. Singh, D. Roy, K. Sinha, S. Parveen, G. Sharma, and G. Joshi, "Impact of COVID-19 and lockdown on mental health of children and adolescents: A narrative review with recommendations," *Psychiatry Research*, vol. 293, p. 113429, Nov. 2020, doi: 10.1016/j.psychres.2020.113429.
- [6] M. Mukherjee, "Can a better higher education system emerge out of the Coronavirus crisis?," *The HEAD Foundation*, 2020.
- [7] J. H. Fowler, S. J. Hill, R. Levin, and N. Obradovich, "Stay-at-home orders associate with subsequent decreases in COVID-19 cases and fatalities in the United States," *PLOS ONE*, vol. 16, no. 6, p. e0248849, Jun. 2021, doi: 10.1371/journal.pone.0248849.
- [8] M. K. Chen, Y. Zhuo, M. de la Fuente, R. Rohla, and E. F. Long, "Causal estimation of stay-at-home orders on SARS-CoV-2 transmission," *ArXiv e-Journal (Unpublished)*, May 2020.
- [9] L. E. G. Mboera *et al.*, "Mitigating lockdown challenges in response to COVID-19 in Sub-Saharan Africa," *International Journal of Infectious Diseases*, vol. 96, pp. 308–310, Jul. 2020, doi: 10.1016/j.ijid.2020.05.018.
- [10] H. Markel *et al.*, "Nonpharmaceutical interventions implemented by US Cities during the 1918–1919 Influenza Pandemic," *JAMA*, vol. 298, no. 6, p. 644, Aug. 2007, doi: 10.1001/jama.298.6.644.
- [11] B. Marroquín, V. Vine, and R. Morgan, "Mental health during the COVID-19 pandemic: Effects of stay-at-home policies, social distancing behavior, and social resources," *Psychiatry Research*, vol. 293, p. 113419, Nov. 2020, doi: 10.1016/j.psychres.2020.113419.
- [12] E. Volkan and E. Volkan, "Under the COVID-19 lockdown: Rapid review about the unique case of North Cyprus," *Psychological Trauma: Theory, Research, Practice, and Policy*, vol. 12, no. 5, pp. 539–541, Jul. 2020, doi: 10.1037/tra0000809.
- [13] D. Sinha and P. Manna, "The effect of lockdown due to COVID-19 on post traumatic stress and depression among College Students of Kolkata, hotspot district of West Bengal, India," *IOSR Journal of Humanities And Social Science*, vol. 25, no. 5, pp. 58–64, 2020, doi: 10.9790/0837-2505095864.
- [14] Y. Gan, J. Ma, J. Wu, Y. Chen, H. Zhu, and B. J. Hall, "Immediate and delayed psychological effects of province-wide lockdown and personal quarantine during the COVID-19 outbreak in China," *Psychological Medicine*, vol. 52, no. 7, pp. 1321–1332, May 2022, doi: 10.1017/S0033291720003116.
- [15] J. P. Nitschke *et al.*, "Resilience during uncertainty? Greater social connectedness during COVID-19 lockdown is associated with reduced distress and fatigue," *British Journal of Health Psychology*, vol. 26, no. 2, pp. 553–569, Oct. 2020, doi: 10.1111/bjhp.12485.
- [16] S. A. Meo, D. A. A. Abukhalaf, A. A. Alomar, K. Sattar, and D. C. Klonoff, "COVID-19 pandemic: impact of quarantine on medical students' mental wellbeing and learning behaviors," *Pakistan Journal of Medical Sciences*, vol. 36, no. COVID19-S4, May 2020, doi: 10.12669/pjms.36.COVID19-S4.2809.
- [17] W. Y. Jiao *et al.*, "Behavioral and emotional disorders in children during the COVID-19 epidemic," *The Journal of Pediatrics*, vol. 221, pp. 264–266.e1, Jun. 2020, doi: 10.1016/j.jpeds.2020.03.013.
- [18] P. Majumdar, A. Biswas, and S. Sahu, "COVID-19 pandemic and lockdown: cause of sleep disruption, depression, somatic pain, and increased screen exposure of office workers and students of India," *Chronobiology International*, vol. 37, no. 8, pp. 1191–1200, Aug. 2020, doi: 10.1080/07420528.2020.1786107.
- [19] I. Margaritis, S. Houdart, Y. El Ouadrhiri, X. Bigard, A. Vuillemin, and P. Duché, "How to deal with COVID-19 epidemic-related lockdown physical inactivity and sedentary increase in youth? Adaptation of Anses' benchmarks," *Archives of Public Health*, vol. 78, no. 1, p. 52, Dec. 2020, doi: 10.1186/s13690-020-00432-z.
- [20] A. M. Maatuk, E. K. Elberkawi, S. Aljawameh, H. Rashaideh, and H. Alharbi, "The COVID-19 pandemic and E-learning: challenges and opportunities from the perspective of students and instructors," *Journal of Computing in Higher Education*, vol. 34, no. 1, pp. 21–38, Apr. 2022, doi: 10.1007/s12528-021-09274-2.
- [21] E. Mahase, "Covid vaccine could be rolled out to children by autumn," *BMJ*, vol. 372, p. n723, Mar. 2021, doi: 10.1136/bmj.n723.
- [22] R. D. C. Afan and J. N. Tariga, "Lockdown fatigue, personal resilience and coping appraisal of faculty in a state university," *International Journal of Public Health Science (IJPHS)*, vol. 11, no. 2, pp. 471–478, Jun. 2022, doi: 10.11591/ijphs.v11i2.21374.
- [23] A. H. Mohammed *et al.*, "Lockdown fatigue and university students: exploring the factors that play significant roles in the level of lockdown fatigue among university students in the era of COVID-19," *Psychology Research and Behavior Management*, vol. Volume 15, pp. 763–775, Mar. 2022, doi: 10.2147/PRBM.S352811.
- [24] B. A. R. Hassan *et al.*, "Exploring the level of lockdown fatigue and effect of personal resilience and coping behaviours on university students during the COVID-19 pandemic: a cross-sectional analysis from Iraq," *Current Psychology*, vol. 42, no. 17, pp. 14851–14859, Jun. 2023, doi: 10.1007/s12144-022-02779-8.
- [25] H. J. Michielsen, J. De Vries, and G. L. Van Heck, "Psychometric qualities of a brief self-rated fatigue measure," *Journal of*

- Psychosomatic Research*, vol. 54, no. 4, pp. 345–352, Apr. 2003, doi: 10.1016/S0022-3999(02)00392-6.
- [26] A. Iskandarsyah, W. Yudiana, A. Shabrina, and J. Passchier, “Perception of information about COVID-19 and protective behaviours in relation to feelings of anxiety and happiness,” *International Journal of Public Health Science (IJPHS)*, vol. 11, no. 1, p. 8, Mar. 2022, doi: 10.11591/ijphs.v11i1.21018.
- [27] S. F. Nashath and I. M. P. S. Ilankoon, “Stress and resilience and associated factors among nursing undergraduates in the early stages of the COVID-19 pandemic,” *International Journal of Public Health Science (IJPHS)*, vol. 11, no. 3, pp. 836–845, 2022, doi: 10.11591/ijphs.v11i3.21698.
- [28] J. M. Santiago and A. R. Santos, “Knowledge and attitudes towards COVID-19 vaccines among university students, faculty members and staffs,” *International Journal of Public Health Science (IJPHS)*, vol. 11, no. 2, p. 654, Jun. 2022, doi: 10.11591/ijphs.v11i2.21169.
- [29] A. Brodeur, A. E. Clark, S. Fleche, and N. Powdthavee, “COVID-19, lockdowns and well-being: Evidence from Google Trends,” *Journal of Public Economics*, vol. 193, p. 104346, Jan. 2021, doi: 10.1016/j.jpubeco.2020.104346.
- [30] J. Trendall, “Concept analysis: chronic fatigue,” *Journal of Advanced Nursing*, vol. 32, no. 5, pp. 1126–1131, Nov. 2000, doi: 10.1046/j.1365-2648.2000.01583.x.
- [31] J. M. Santiago and A. R. Santos, “Knowledge, attitude and practices of the university students about COVID-19 during the Luzon lockdown in the Philippines,” *International Journal of Public Health Science (IJPHS)*, vol. 10, no. 3, pp. 670–678, Sep. 2021, doi: 10.11591/ijphs.v10i3.20844.
- [32] A. Maloy *et al.*, “‘I think friendship over This lockdown like saved my life’—student experiences of maintaining friendships during COVID-19 lockdown: An interpretative phenomenological study,” *Frontiers in Psychology*, vol. 13, Apr. 2022, doi: 10.3389/fpsyg.2022.861192.
- [33] S. Sundarasan *et al.*, “Psychological impact of covid-19 and lockdown among university students in malaysia: Implications and policy recommendations,” *International Journal of Environmental Research and Public Health*, vol. 17, no. 17, pp. 1–13, Aug. 2020, doi: 10.3390/ijerph17176206.
- [34] A. H. Khan, M. S. Sultana, S. Hossain, M. T. Hasan, H. U. Ahmed, and M. T. Sikder, “The impact of COVID-19 pandemic on mental health & wellbeing among home-quarantined Bangladeshi students: A cross-sectional pilot study,” *Journal of Affective Disorders*, vol. 277, pp. 121–128, Dec. 2020, doi: 10.1016/j.jad.2020.07.135.
- [35] J. F. A. Murphy, “Pandemic fatigue,” *Irish Medical Journal*, vol. 113, no. 6, p. 90, 2020.
- [36] L. M. Pérez *et al.*, “Depressive symptoms, fatigue and social relationships influenced physical activity in frail older community-dwellers during the Spanish lockdown due to the COVID-19 pandemic,” *International Journal of Environmental Research and Public Health*, vol. 18, no. 2, p. 808, Jan. 2021, doi: 10.3390/ijerph18020808.
- [37] W. Ansari, R. Oskrochi, and G. Haghgoo, “Are students’ symptoms and health complaints associated with perceived stress at university? Perspectives from the United Kingdom and Egypt,” *International Journal of Environmental Research and Public Health*, vol. 11, no. 10, pp. 9981–10002, Sep. 2014, doi: 10.3390/ijerph111009981.
- [38] C. Gibbons, “Stress, eustress and the national student survey,” *Psychology Teaching Review*, vol. 2, no. 2015, 21AD.
- [39] S. Bourion-Bédès *et al.*, “Psychological impact of the COVID-19 outbreak on students in a French region severely affected by the disease: results of the PIMS-CoV 19 study,” *Psychiatry Research*, vol. 295, p. 113559, Jan. 2021, doi: 10.1016/j.psychres.2020.113559.
- [40] M. Song, “Psychological stress responses to COVID-19 and adaptive strategies in China,” *World Development*, vol. 136, p. 105107, Dec. 2020, doi: 10.1016/j.worlddev.2020.105107.
- [41] C. Karing, “Prevalence and predictors of anxiety, depression and stress among university students during the period of the first lockdown in Germany,” *Journal of Affective Disorders Reports*, vol. 5, p. 100174, Jul. 2021, doi: 10.1016/j.jadr.2021.100174.
- [42] I. Asanov, F. Flores, D. McKenzie, M. Mensmann, and M. Schulte, “Remote-learning, time-use, and mental health of Ecuadorian high-school students during the COVID-19 quarantine,” *World Development*, vol. 138, p. 105225, Feb. 2021, doi: 10.1016/j.worlddev.2020.105225.
- [43] F. J. de O. Araújo, L. S. A. de Lima, P. I. M. Cidade, C. B. Nobre, and M. L. R. Neto, “Impact Of Sars-Cov-2 and its reverberation in global higher education and mental health,” *Psychiatry Research*, vol. 288, p. 112977, Jun. 2020, doi: 10.1016/j.psychres.2020.112977.
- [44] B. A. Mirote, “Burden and distress of collegiate students during the COVID-19 pandemic crisis lockdown,” *European Journal of Humanities and Educational Advancements*, vol. 2, no. 8, pp. 1–6, 2021.
- [45] P. A. Hendriksen, J. Garssen, E. Y. Bijlsma, F. Engels, G. Bruce, and J. C. Verster, “COVID-19 lockdown-related changes in mood, health and academic functioning,” *European Journal of Investigation in Health, Psychology and Education*, vol. 11, no. 4, pp. 1440–1461, Nov. 2021, doi: 10.3390/ejihpe11040103.
- [46] J. L. B. Sabal and M. K. Navarro-Mansueto, “A snapshot of the crisis of COVID-19: estimate of the employment impact due to lockdowns in Cagayan de Oro City, Philippines,” *Journal of Emergency Management and Disaster Communications*, vol. 02, no. 02, pp. 171–189, Dec. 2021, doi: 10.1142/S2689980921500068.
- [47] D. F. Tolin and E. B. Foa, “Sex differences in trauma and posttraumatic stress disorder: A quantitative review of 25 years of research,” *Psychological Trauma: Theory, Research, Practice, and Policy*, vol. 5, no. 1, pp. 37–85, 2008, doi: 10.1037/1942-9681.s1.1.37.
- [48] T. M. Chaplin, K. Hong, K. Bergquist, and R. Sinha, “Gender differences in response to emotional stress: an assessment across subjective, behavioral, and physiological domains and relations to alcohol Craving,” *Alcoholism: Clinical and Experimental Research*, vol. 32, no. 7, pp. 1242–1250, Jul. 2008, doi: 10.1111/j.1530-0277.2008.00679.x.
- [49] S. Liu *et al.*, “The prevalence of fatigue among Chinese nursing students in post-COVID-19 era,” *PeerJ*, vol. 9, p. e11154, Apr. 2021, doi: 10.7717/peerj.11154.
- [50] C. K. Pastor, “Sentiment analysis of Filipinos and effects of extreme community quarantine due to coronavirus (COVID-19) pandemic,” *SSRN Electronic Journal*, 2020, doi: 10.2139/ssrn.3574385.
- [51] A. Admin-bisnisan, F. D. Mobo, A. Rahmat, and M. S. Pagal, “The impact of COVID-19 in the economic sector of olongapo in Zambales, Philippines,” *Jurnal Bisnisan: Riset Bisnis dan Manajemen*, vol. 2, no. 3, pp. 37–41, Feb. 2021, doi: 10.52005/bisnisan.v2i3.40.
- [52] A. Prabhat, A. Kumar, and S. K. Bhardwaj, “Prolonged lockdown due to COVID-19 alters sleep–wake timings and negatively affects self-esteem, personality, depression and anxiety in college-going Indian students,” *Sleep and Vigilance*, vol. 6, no. 1, pp. 199–210, Jun. 2022, doi: 10.1007/s41782-022-00200-9.
- [53] M. Orgilés, A. Morales, E. Delvecchio, C. Mazzeschi, and J. P. Espada, “Immediate psychological effects of the COVID-19 quarantine in Youth From Italy and Spain,” *Frontiers in Psychology*, vol. 11, Nov. 2020, doi: 10.3389/fpsyg.2020.579038.
- [54] A. Abba-Aji *et al.*, “COVID-19 pandemic and mental health: prevalence and correlates of new-onset obsessive-compulsive symptoms in a Canadian Province,” *International Journal of Environmental Research and Public Health*, vol. 17, no. 19, p. 6986, Sep. 2020, doi: 10.3390/ijerph17196986.




- [55] S. K. Brooks *et al.*, “The Psychological impact of quarantine and how to reduce it: Rapid review of the evidence,” *The Lancet*, vol. 395, no. 10227, pp. 912–920, Mar. 2020, doi: 10.1016/S0140-6736(20)30460-8.
- [56] J. H.-J. Cho, R. Olmstead, H. Choi, C. Carrillo, T. E. Seeman, and M. R. Irwin, “Associations of objective versus subjective social isolation with sleep disturbance, depression, and fatigue in community-dwelling older adults,” *Aging & Mental Health*, vol. 23, no. 9, pp. 1130–1138, Sep. 2019, doi: 10.1080/13607863.2018.1481928.
- [57] M. Shevlin *et al.*, “COVID-19-related anxiety predicts somatic symptoms in the UK population,” *British Journal of Health Psychology*, vol. 25, no. 4, pp. 875–882, Nov. 2020, doi: 10.1111/bjhp.12430.
- [58] H. T. Le *et al.*, “Anxiety and depression among people under the nationwide partial lockdown in Vietnam,” *Frontiers in Public Health*, vol. 8, 2020, doi: 10.3389/fpubh.2020.589359.
- [59] S. Grover *et al.*, “Psychological impact of COVID-19 lockdown: An online survey from India,” *Indian Journal of Psychiatry*, vol. 62, no. 4, p. 354, 2020, doi: 10.4103/psychiatry.IndianJPsychiatry_427_20.
- [60] A. Naddeo, R. Califano, and I. Fiorillo, “Identifying factors that influenced wellbeing and learning effectiveness during the sudden transition into eLearning due to the COVID-19 lockdown,” *Work*, vol. 68, no. 1, pp. 45–67, Jan. 2021, doi: 10.3233/WOR-203358.

BIOGRAPHIES OF AUTHORS






Jomell Miranda Santiago    graduated Bachelor’s Degree in Secondary Education major in General Science at Nueva Ecija University of Science and Technology San Isidro Campus and finished a Master’s Degree in Biology Education at Central Luzon State University. He is currently connected with Nueva Ecija University of Science and Technology as Assistant Professor for four (5) years and has been active in the field of research in recent years. He can be contacted at email: jomellsantiago8854@gmail.com.






Angelo Reyes Santos    graduated Bachelor’s Degree in Business Administration major in Marketing Management and Master’s Degree in Business Administration at Wesleyan University, Philippines. He finished a Doctor of Philosophy in Business Administration at Nueva Ecija University of Science and Technology. He is presently affiliated with NEUST for four (5) years as Associate Professor and Head of the University ISO Unit and has been involved in the field of research in recent years. He can be contacted at email: 15angelosantos@gmail.com.



Sheila Rose Flores Morales    is a graduate of Bachelor of Science in Agriculture major in Animal Science from the University of the Philippines at Los Baños. She is presently affiliated with NEUST as University Research Associate I and has been actively involved in the field of research. She is a member of the NEUST Innovation and Technology Support Office. She can be contacted at email: Sfmorales@alum.up.edu.ph.



Joy Nacino Savellano    is a graduate of BS Management Major in Entrepreneurship, Master in Management Major in Business Management and Doctor of Philosophy in Business Administration at NEUST, Cabanatuan City. She is an Associate Professor V at CMBT-Entre Department and has been teaching for 23 years now. Currently, she is the Accreditation Unit Head of Nueva Ecija University of Science and Technology. She can be contacted at email: bujoynsavellano17@gmail.com.