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WHAT DETERMINES STUDENT RESILIENCE DURING THE COVID-19 PANDEMIC?

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WHAT DETERMINES STUDENT RESILIENCE DURING THE COVID-19 PANDEMIC?

Abstract

Introduction: The COVID-19 pandemic has shifted more than 4,500 higher education institutions in Indonesia to the new era of digitalization. Higher students must adapt to the new life where learning and social interaction abruptly move to the virtual world. This sudden change could initiate unpleasant or counterproductive circumstances for students to perform well in their studies. This study analyzes the determinants of student resilience during the COVID-19 pandemic. We also analyzed any self-leadership behaviours determining student resilience.

Methods: We cross-sectionally surveyed sophomores of the Public Health Bachelor Program in Airlangga University about their experiences during this unprecedented time. Two hundred sixty-three students responded to the survey. We used the student's characteristics and how this pandemic affected their life to predict their resilience. ~~We also analyzed any self-leadership behaviours determining student resilience.~~ Brief Resilience Scale and Revised Self-Leadership Questionnaire were applied to measure our two main variables in this study. Multiple linear regression was performed to identify the determinants of students' resilience.

Results: Residing in disadvantaged regions and experiencing impacts of the COVID-19 pandemic did not determine the students' resilience. Students' age was the single determinant of resilience when self-leadership was not included in the analysis ($p < 0.1$; $\beta = -0.0714$). Constructive thought pattern strategies were likely to determine their resilience ($p < 0.01$; $\beta = 0.225$).

Conclusion: Constructive thought pattern strategies determined students' resilience during the COVID-19 pandemic. The COVID-19 pandemic must be seen as a beneficial developmental experience for students. Student support centres in higher education institutions are needed to assist students in reaching adulthood.

Keywords: higher education, student resilience, self-leadership, COVID-19, quality education

INTRODUCTION

World Health Organization (WHO) was declared Coronavirus disease (COVID-19) as a pandemic in March 2020 (1). COVID-19 is an infectious disease infecting the human respiratory tract caused by a novel coronavirus that could be transmitted through respiratory droplets, aerosol transmission, and contaminated surfaces (2). As of March 7, 2021, COVID-19 has infected more than 116 million people globally (3), including Indonesia. The first COVID-19 case in Indonesia was reported on March 2, 2020 (4). Due to various modes of transmission, COVID-19 spread rapidly in the country. As of March 7, 2021, Indonesia has the highest COVID-19 case in the Southeast Asia region (1.3 million COVID-19 cases)(3). As aIn response to the surging number of COVID-19 cases in the country, all social activities were restricted to prevent and control COVID-19 transmission, including learning activities. On March 16 2020, the Director-General of Higher Education of Indonesia's Ministry of Education and Culture required all higher education institutions to shift face-to-face learning to online learning (5).

The sudden change in the delivery of learning activities is highly likely to burden students. Most of them are likely to struggle in adapting to online learning due to the unfamiliarity of the new learning method. A survey conducted by Universitas Gajah Mada found that around 33,1% of higher students struggled to understand learning material online (6). Pre-existing inequality in the quality of education and socio-economic are also highly likely to exacerbate students' access to a high quality of online learning (7,8). In addition to challenges in adapting to new learning methods, the pandemic could negatively affect students' wellbeing. They are prone to mental health problems since they ~~are likely to will likely~~ lose the emotional and social support available on campus. Several studies found that students experienced increased stress levels during the COVID-19 pandemic (9–12).

It is crucial to address students' emotional distress since they are in a high-risk group of mental health disorders. Many mental illnesses occur for the first time at age 12-24 years old (13), and they could continue into adulthood (14). Experiencing mental illness could lead to disability, stigma and discrimination, leading to severe mental illness and premature death (13). Students' resilience has been discovered as one of the factors maintaining students' mental health (15). The concept of resilience describes how a person can resist illness, adapt,

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3 and thrive (16). It shows the ability to bounce back or recover from stress which resulted
4 from their illness, adaptation, and thriving, which they faced (15–17). Resilience is
5 commonly observed in students to capture their challenges in reaching adulthood (18,19).
6 The student's resilience could minimize the effects from COVID-19-related stressful
7 experiences to acute stress disorder among university students(15). However, how Indonesian
8 students cope with the COVID-19 pandemic has not been documented yet. This study
9 aims to identify the determinants of Indonesian students' resilience during the COVID-19
10 pandemic.
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19 **MATERIALS AND METHODS**

20 *Study area and population*

21 Faculty of Public Health Universitas Airlangga has two campuses located in Surabaya and
22 Banyuwangi district, East Java Province. There are 1,096 undergraduate students, and 287
23 (26.2%) ~~of them~~ are sophomores. A cross-sectional study design was used. We surveyed
24 sophomores of the Public Health Bachelor Program of Airlangga University in Indonesia
25 about their experiences during the implementation of study at home policy during the
26 COVID-19 pandemic. The sophomores are the same group of respondents since they spent a
27 semester of offline lecturing before the pandemic before they abruptly studied in the online
28 mode that must bring a shocking condition in their early life of higher students. The survey
29 was conducted in the second semester of study at home policy implemented in Indonesia. We
30 shared the survey link to the student's forum on the first day of their fourth semester from 22
31 to February 27 2021. We used Google form to build surveys. Before the participants
32 proceeded to the questionnaire pages, they were required to consent by clicking on the "I
33 agree" button. By the end of the survey, 263 respondents participated in the survey.
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46 *Variable*

47 The COVID-19 pandemic leads to a disruptive and abrupt change in student life. The student
48 resilience variable in this study is defined as the student's ability to bounce back from any
49 mental breakdown ~~resulted~~ resulting from the COVID-19 pandemic. We used the Brief
50 Resilience Scale₍₁₆₎ (mean=3.257; sd=0.444; Cronbach's α =0.5691) to measure students'
51 resilience. We used students' age, gender, living regions, COVID-19 impact, and self-
52 leadership behaviour to analyze student resilience determinants. This study identified self-
53 leadership behaviour -using the Revised Self-Leadership Questionnaire₍₂₀₎ (mean=138.76;
54 sd=14.25; Cronbach's α =0.8830). There are three self-leadership behaviours identified
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3 through this questionnaire, i.e., behaviour-focused strategies, natural reward strategies, and
4 constructive thought pattern strategies.
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8 *Data analysis*

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10 Data were analyzed using Stata. Multiple linear regression was carried out to analyze the
11 determinant of student resilience. For the base model, we used the student's age, gender, and
12 whether they live in a disadvantaged area of Indonesia or not. The COVID-19 context is
13 included as a variable in the first model by adding whether the students or their family was
14 infected and/or socially impacted by the COVID-19. Three behaviours of self-leadership are
15 included in the third model. Finally, we included all independent variables jointly on the
16 student's resilience. For each model, the p-values are used to determine whether the
17 relationships observed in the sample exist. We used the coefficient p-values to understand the
18 strength of each variable in the model.
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29 **ETHICAL CLEARANCE**

30 This study is part of the "The Impact of the COVID-19 Pandemic to Higher Student" project.
31 This study was approved by the Research Ethics Committee of Institut Ilmu Kesehatan
32 Bhakti Wiyata with certificate number 92/PP2M-KE/I/2021.
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38 **RESULTS**

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40 In total, 263 students responded to the survey. We described the respondent's characteristics
41 in Table 1.
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49 Most of the sophomores in this study were female. We identified ~~that there was~~ a small
50 proportion of sophomores residing in the underdeveloped region of Indonesia. The number of
51 COVID-19 infections in our respondents was relatively high, which 14.8% of the respondents
52 stated that they or their family members ever transmitted by the COVID-19. The number of
53 respondents experiencing the social impact of the COVID-19 pandemic was significantly
54 higher than the number of COVID-19 infections; 79.1% of the respondents reported that they
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3 or their family faced a complex condition COVID-19 pandemic. Table 1 also presented the
4 score of self-leadership behaviours and self-resilience.

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6 We developed a multiple regression model to analyze self-resilience determinants among
7 these sophomores based on these respondents' characteristics.
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11 <INSERT TABLE 2>
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15 For the base model, we analyzed the students' age, gender, and whether they live in a
16 disadvantaged area of Indonesia or not. Of the three variables, students' age was the only
17 significant determinant for the self-resilience score. The coefficient p-values for age is
18 negative, which could be understood that younger students have better resilience.
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21 Then, we developed a second model by including variable related to COVID-19 context,
22 whether the students or their family was infected and/or socially impacted by the COVID-19,
23 in the analysis. We found that students' age remained a significant determinant for the self-
24 resilience score while being infected with COVID-19 and socially impacted with COVID-19
25 did not determine the resilience. The third model replaced the COVID-19's context variables
26 with three self-leadership variables: how they should behave or give self-rewards when they
27 can accomplish something and/or think constructively. Of these three self-leadership
28 behaviours, how students occupy a constructive thought pattern strategy was the only
29 determinant for the students' resilience. We found that students' age did not determine their
30 resilience, but their way of thinking was more likely to contribute to their resilience. Finally,
31 we analyzed all independent variables jointly on the student's resilience. Our final model
32 consistently showed that the self-leadership thought pattern was the primary determinant
33 affecting student's-students' resilience.
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46 **DISCUSSION**

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48 To our knowledge, this is the first study examining determinants of Indonesian university
49 students' resilience during the COVID-19 pandemic. Due to the COVID-19 pandemic, the
50 changing environment has impacted university students' development in their academic life
51 and their growing process to be adults (21).

52
53 In our first model, we found that age is crucial to predicting students' resilience during the
54 pandemic. It shows that younger students tend to have stronger resilience. It is pretty different
55 from the previous study, which found that older individuals are more resilient than young
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3 ones—however, the young ones are more resilient on social support (18). In COVID-19 and
4 prolonged remote learning, social support has a more dominant role for the population (22).
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6 Our study found that constructive thought pattern was associated with students' ability to
7 bounce back in the event of adversity. This finding is consistent with some studies in the
8 education system (23,24) and the non-education system (17,25,26). This behaviour increases
9 individual, team, and organization performance (24,25,27). An individual with a constructive
10 thought pattern commonly identifies and replaces any dysfunctional beliefs and assumptions,
11 mental imagery, and positive self-talk (28).
12

13 The individual can adapt constructive or destructive thought patterns, which affect their
14 emotional and behavioural state and reactions (29). This behaviour enables individuals to
15 confront dysfunctional, irrational beliefs and assumptions with more constructive thought
16 processes (30). They are resilient leaders who possess favourable characteristics which
17 always believe in a prospective future and estimate failure (19). Individuals can determine
18 how their mindset in dealing with a situation. In times of adversity, they can focus on the
19 opportunity of the adversity as a barrier. People who can do this like this mean using an
20 optimistic mindset to create opportunities to overcome any difficulties that might hinder
21 achieving their goals. Individual thought patterns influence behaviour and results (31).
22 Likewise, the COVID-19 pandemic is seen as a challenge to adapt to the new life (32). In this
23 case, students need to have a constructive thinking pattern, which can view the COVID-19
24 pandemic as their opportunity to be successful future leaders.
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26 Constructive thought patterns are also characterized by self-talk. Individuals covertly tell
27 themselves and perform any self-evaluations to strengthen themselves. Optimistic self-talk
28 indicates ~~an~~ emotional intelligence, which ~~is helpful in mediating~~ helps mediate resilience and
29 achievement motivation (17). Optimistic self-talk leads an individual to use emotions to
30 create a productive coping process and release more positive vibes during stressful conditions
31 (33). Any developmental experiences determine resiliency (34). Hence, the COVID-19 must
32 be seen as a developmental experience for this generation Z student to be more resilient.
33 Finally, being open-minded to accept current conditions is a crucial element of resilience
34 (35). It is related to the last constructive thought patterns on mental imagery. It symbolizes
35 and covers the cognitive creation of a developmental experience. Likely, a sudden change of
36 online learning mode is an actual task that envisions students to advance their actual
37 performance. Only students with an open-minded perspective of this actual task will own a
38 constructive thought pattern.
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CONCLUSIONS

The COVID-19 pandemic is a developmental experience for the higher student to become adults. Since this pandemic is complex for students to adapt to steep online learning and social isolation, a constructive mindset is needed to ensure student resilience. Constructive thought pattern strategies are the only significant determinant for student resilience. Students are encouraged to have an optimistic and open-minded mindset with positive self-talk to bounce back in the event of adversity. It shows the importance of why student support centres in higher education institutions should provide counselling for students with a diagnosed mental health condition and students who have new challenges in their time in reaching adulthood.

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Table 1 Respondent's characteristics

| Respondent's characteristics | N | mean or % | sd |
|--|-----|-----------|-------|
| Age (years) | 263 | 19.57 | 0.655 |
| gender | | | |
| male | 32 | 12.2% | |
| female | 231 | 87.8% | |
| Live in underdeveloped region | | | |
| yes | 10 | 13.9% | |
| no | 253 | 96.2% | |
| Infected by COVID-19 (their self or their any family member) | | | |
| yes | 39 | 14.8% | |
| no | 224 | 85.2% | |
| socially impacted by COVID-19 | | | |
| yes | 208 | 79.1% | |
| no | 55 | 20.9% | |
| Self-leadership scores: | | | |
| behavior-focused strategies | 263 | 3.952 | 0.429 |
| natural reward strategies | 263 | 3.852 | 0.658 |
| constructive thought pattern strategies | 263 | 4.014 | 0.501 |
| Self-resilience score | 263 | 3.257 | 0.444 |

Table 2 Multiple linier regression

| VARIABLES | (1) Base model | (2) Model 1 | (3) Model 2 | (4) Model 3 |
|---|----------------------|----------------------|----------------------|----------------------|
| age | -0.0714* (0.0424) | -0.0718* (0.0428) | -0.0589 (0.0413) | -0.0596 (0.0417) |
| male | 0.0603 (0.0843) | 0.0603 (0.0847) | 0.121 (0.0840) | 0.121 (0.0843) |
| live in underdeveloped region | -0.0608 (0.144) | -0.0594 (0.145) | -0.0206 (0.141) | -0.0186 (0.142) |
| infected by COVID-19 | | -0.00601 (0.0776) | | -0.0164 (0.0756) |
| socially impacted by COVID-19 | | -0.00416 (0.0683) | | -0.00416 (0.0666) |
| behavior-focused strategies | | | 0.000149 (0.0843) | 0.00113 (0.0848) |
| natural reward strategies | | | 0.00804 (0.0509) | 0.00756 (0.0512) |
| constructive thought pattern strategies | | | 0.225*** (0.0667) | 0.225*** (0.0671) |
| Constant | 4.649*** (0.828) | 4.661*** (0.844) | 3.462*** (0.872) | 3.478*** (0.885) |
| Observations | 263 | 263 | 263 | 263 |
| R-squared | 0.013 | 0.013 | 0.077 | 0.078 |

Standard errors in parentheses

*** p<0.01, ** p<0.05, *p<0.1



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18-Feb-2022

Dear Mrs. Putri: Manuscript ID MJMHS-2021-1175 entitled "WHAT DETERMINES STUDENT RESILIENCE DURING THE COVID-19 PANDEMIC?" which you submitted to the Malaysian Journal of Medicine & Health Sciences, has been reviewed. The comments of the reviewer(s) are included at the bottom of this letter.

The reviewer(s) have recommended publication, but also suggest some minor revisions to your manuscript. Therefore, I invite you to respond to the reviewer(s)' comments and revise your manuscript.

To revise your manuscript, log into <https://mc.manuscriptcentral.com/mjmhs> and enter your Author Center, where you will find your manuscript title listed under "Manuscripts with Decisions." Under "Actions," click on "Create a Revision." Your manuscript number has been appended to denote a revision.

You may also click the below link to start the revision process (or continue the process if you have already started your revision) for your manuscript. If you use the below link you will not be required to login to ScholarOne Manuscripts.

*** PLEASE NOTE: This is a two-step process. After clicking on the link, you will be directed to a webpage to confirm. ***

https://mc.manuscriptcentral.com/mjmhs?URL_MASK=34d5b70873c74e2686d88b7960fd990f

You will be unable to make your revisions on the originally submitted version of the manuscript. Instead, revise your manuscript using a word processing program and save it on your computer. Please also highlight the changes to your manuscript within the document by using the track changes mode in MS Word or by using bold or colored text.

Once the revised manuscript is prepared, you can upload it and submit it through your Author Center.

When submitting your revised manuscript, you will be able to respond to the comments made by the reviewer(s) in the space provided. You can use this space to document any changes you make to the original manuscript. In order to expedite the processing of the revised manuscript, please be as specific as possible in your response to the reviewer(s).

IMPORTANT: Your original files are available to you when you upload your revised manuscript. Please delete any redundant files before completing the submission.

Because we are trying to facilitate timely publication of manuscripts submitted to the Malaysian Journal of Medicine & Health Sciences, your revised manuscript should be submitted by 04-Mar-2022. If it is not possible for you to submit your revision by this date, please write to us for the extension.

Once again, thank you for submitting your manuscript to the Malaysian Journal of Medicine & Health Sciences and I look forward to receiving your revision.

Sincerely,
Dr. Normala Ibrahim
Editor-in-Chief, Malaysian Journal of Medicine & Health Sciences
normala_ib@upm.edu.my

Associate Editor Comments to Author:

Associate Editor

Comments to the Author:
(There are no comments.)

Reviewer(s)' Comments to Author:

Reviewer: 1


Comments to the Author
Input for the author:

In this study, the concept of resilience used has not been presented. There is no justification for the selection of research variables. It is recommended that previously published articles that support the research variables are added to the background.

The instrument used for this research has not been explained whether it is developed by researchers or refers to a particular instrument. This should be explained in the research method. If developed by the researchers please add the results of the validity and reliability tests. If it refers to a particular instrument, please write down the reference.

Reviewer: 2

Comments to the Author
Please complete the script according to my notes. Thank you

 **MJMHS-2021-1175_Proof_hi.pdf**
284K

Malaysian Journal of Medicine & Health Sciences

Decision Letter (MJMHS-2021-1175.R1)**From:** normala_ib@upm.edu.my**To:** nuzululkusuma@fkm.unair.ac.id, putri.nuzulul@gmail.com**CC:****Subject:** Malaysian Journal of Medicine & Health Sciences - Decision on Manuscript ID MJMHS-2021-1175.R1**Body:** 15-Mar-2022

Dear Mrs. Putri:

It is a pleasure to accept your manuscript entitled "WHAT DETERMINES STUDENT RESILIENCE DURING THE COVID-19 PANDEMIC?" in its current form for publication in the Malaysian Journal of Medicine & Health Sciences. The comments of the reviewer(s) who reviewed your manuscript are included at the foot of this letter.

Thank you for your fine contribution. On behalf of the Editors of the Malaysian Journal of Medicine & Health Sciences, we look forward to your continued contributions to the Journal.

Sincerely,
Dr. Normala Ibrahim
Editor-in-Chief, Malaysian Journal of Medicine & Health Sciences
normala_ib@upm.edu.my


Associate Editor Comments to Author:

Associate Editor
Comments to the Author:
(There are no comments.)

Reviewer(s)' Comments to Author:

Reviewer: 1

Comments to the Author
(There are no comments.)

Date Sent: 15-Mar-2022 Close Window

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