

## Coping Stress of the COVID-19 Pandemic among Medical and Non-Medical Undergraduate Students at Universitas Padjadjaran, Bandung, Indonesia

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### Abstract

**Background:** Coping stress is an act of dealing with stress by adapting to the problems of the thought process. The 'Distance Learning' policy is a stress factor during the COVID-19 pandemic which may have an impact on psychological conditions and coping stress. This study aimed to determine differences in stress levels and coping stress among medical and non-medical undergraduate students against the global COVID-19 pandemic.

**Methods:** Cross-sectional analytical methods were used. Stratified random sampling recruiting undergraduate students, including from medical students (n=80) and non-medical students (n=84) at Universitas Padjadjaran class 2017–2019. The distributed questionnaire contained 25 questions adapted from the Depression Anxiety Stress Scale (DASS 42) and the Cope Inventory. Validity and reliability tests were carried out previously, and statistical analysis was performed using SPSS v.26.

**Results:** The median age of both groups was 21 years and most of the respondents were female. There was no significant difference in stress and coping stress. At the time of coping, the medical students focused more on emotions and the non-medical students focused more on the problems.

**Conclusion:** There is no difference in the levels of stress and coping stress with emotional and problems focus in the medical and non-medical students.

**Keywords:** Coping stress, COVID-19, epidemiology, medical students, non medical students

### Introduction

Coronavirus disease 2019 (COVID-19) is an infectious disease caused by Severe Acute Respiratory Syndrome-Coronavirus-2 (SARS-CoV-2) which does not always cause any symptoms such as fever, dry cough, difficulty breathing, and fatigue. However, it has specific symptoms such as anosmia, which is a lack of smell, and ageusia, which is a lack of taste.<sup>1-3</sup> In severe cases of COVID-19 it can cause pneumonia, acute respiratory syndrome, kidney failure, and even death.<sup>1</sup> In 2020, COVID-19 has designated as pandemic disease. The number of cases has increased rapidly and spread to various countries in a short time.<sup>1</sup> In Indonesia, within 4 months of the first case,

70,736 confirmed cases of COVID-19 were reported with 3,417 deaths of which the case fatality rate (CFR) is 4.8%.<sup>1</sup>

The COVID-19 pandemic has had psychological and social impact on society as well as on students. The psychological impacts found are anxiety, depression, stress, post-traumatic stress syndrome, and post-traumatic growth.<sup>4</sup> Similar to the outbreak of influenza A (H1N1) in 2009 and Ebola virus disease outbreak in Sierra Leone during 2014–2015, the most common diagnostic category was mild distress or depression, anxiety disorders, and grief, or social problems.<sup>5</sup> State anxiety was found to be high in respondents who felt the vaccine was unsafe.<sup>6</sup> In China, during the epidemic of COVID-19, the anxiety and

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depression level of college students increased significantly, which was also related to multiple factors.<sup>7</sup> The students have increased levels of anxiety, depression, and overreaction to fear of infection due to the emergence of a virus of unknown cause illness or death. Factors that influence the psychological state of a pandemic, including attitude to take preventive action, symptoms that appear, social responsibility, personal priority over others, level of knowledge and information obtained about the disease.<sup>7</sup>

In preventing COVID-19, the Indonesian government has implemented a Large-Scale Social Restrictions, stipulated by the Minister of Health No. 9/2020. Particularly in the field of education, there are distance learning policies to reduce direct interaction. When the individual cannot adapt to the situation for a prolonged period, it can lead to increased stress and anxiety, leading to a state of depression,<sup>8</sup> especially among students as they need to adapt to develop in learning. Groups of students are under pressure in all aspects of daily life, such as learning, emotion, social interaction, including adapting to conditions of emotional stability, psychological and psychosocial conflicts, therefore, they have to cope with stress during the COVID-19 pandemic.<sup>7</sup>

Coping stress is an act to cope with stress which is an adaptation to the problems faced in the thinking process.<sup>9</sup> Coping with stressors, such as obtaining information related to COVID-19, will have an impact on psychological conditions.<sup>10</sup> High stress levels will increase the ability to cope with stress better. Medical students have higher stress level than non-medical students,<sup>11</sup> thus, the possibility of coping with stress in medical students tend to be better. The COVID-19 pandemic has prompted researchers to study coping stress during the COVID-19 pandemic period. This study aimed to compare coping stress during the COVID-19 pandemic period among medical and non-medical undergraduate students.

## Methods

This study was a cross-sectional analytic study, conducted in September–November 2020 using primary data with a stratified random sampling method. Respondents were active students of undergraduate medical and non-medical programs class 2017–2019 at Universitas Padjadjaran, Bandung. This research has obtained permission from the Research Ethics Committee of Universitas

Padjadjaran with No. 826/UN6.KEP/EC/2020.

An online questionnaire adapted from the Depression Anxiety Stress Scale (DASS 42) and the Cope Inventory, containing 25 questions was distributed to the respondents. Stress level was measured by 14 questions whereas coping stress was measured by 11 questions, especially about the emotional and problem-focused aspects with 8 and 3 questions, respectively. The answers to each question were assessed using a Likert scale of 0 to 3 to represent never (scale 0), sometimes (scale 1), often (scale 2), and always (scale 3). The results of the coping stress were divided into coping focused on emotions or problems.

The validity and reliability test of the questionnaire (n=30 questions) were carried out in September 2020 on 30 respondents, who were active students from other universities. Only questions with a Cronbach's Alpha coefficient >0.7 were included in the questionnaire. Validity was calculated using the Pearson's correlation. In total, 25 questions were eligible for the current questionnaire. Valid and reliable questionnaires were then distributed to respondents according to the inclusion criteria through the google form link (online) to avoid direct contact between researcher and the respondents due to the COVID-19 pandemic.

Statistical analysis was processed using Microsoft office excel and IBM SPSS statistics v.26. The normality test was conducted to determine the distribution of the data and data were analyzed using parametric and non-parametric tests (Mann Whitney T-Test).

## Results

In total, 164 respondents were included, consisting of 80 medical students and 84 non-medical students, with the median age of both groups was 21 years old, and predominantly females. The frequency of coping stress between medical students and non-medical students was shown in Table 1.

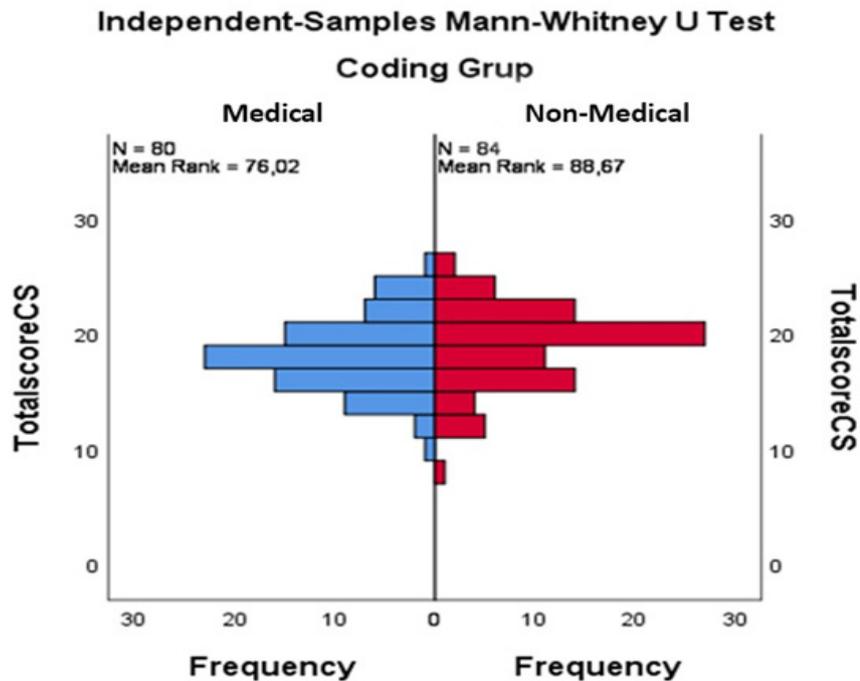
The coping stress score had a data distribution normality of  $p < 0.05$ , thus the data distribution was not normal. The coping stress score in the medical and non-medical groups were 76.02 and 88.67, respectively, and there was no significant difference between both groups (Figure).

Furthermore, there was no significant difference in the comparison of the average value of emotion focused and problem focused between the two groups as shown in Table 2. Although not significant, the medical students

**Table 1 Frequency of Coping Stress based on Emotional and Problem focused among Medical and Non-medical Undergraduate Students at Universitas Padjadjaran**

Coping Stress	Never		Sometimes		Often		Always	
	MS n (%)	Non-MS n (%)						
<b>Emotional focused</b>								
I try to see the COVID-19 pandemic in a positive light from the information circulating.	1 (1.3)	1 (1.2)	26 (32.5)	30 (35.7)	41 (51.3)	37 (44)	12 (15)	16 (19)
I share my complaints and boredom regarding the COVID-19 pandemic with others or write links on social media.	18 (22.5)	21 (25)	47 (58.8)	36 (42.9)	13 (16.3)	24 (28.6)	2 (2.5)	3 (3.6)
I have a lot of ideas that can be put in writing or pictures because there is a lot of free time during distance learning during the COVID-19 pandemic.	20 (25)	23 (27.4)	45 (56.3)	40 (47.6)	13 (16.3)	16 (19)	2 (2.5)	5 (6)
I tend to postpone work because I feel I have a lot of free time during distance learning during the COVID-19 pandemic.	14 (17.5)	12 (14.3)	45 (56.3)	36 (42.9)	20 (25)	28 (33.3)	1 (1.3)	8 (9.5)
I vent my emotions by being angry with those around me (eg friends, family) since the COVID-19 pandemic.	44 (55)	48 (57.1)	30 (37.5)	26 (31)	6 (7.5)	8 (9.5)	-	2 (2.4)
I am excited when I will meet virtually with relatives.	2 (2.5)	13 (15.5)	31 (38.8)	35 (41.7)	37 (46.3)	29 (34.5)	10 (12.5)	7 (8.3)
I seek God's help by praying and praying more often than usual during the COVID-19 pandemic.	2 (2.5)	3 (3.6)	28 (35)	18 (21.4)	33 (41.3)	41 (48.8)	17 (21.3)	22 (26.2)
I accept the fact that the COVID-19 pandemic is happening without us expecting it.	2 (2.5)	-	10 (12.5)	7 (8.3)	28 (35)	28 (33.3)	40 (50)	49 (58.3)
<b>Problem focused</b>								
I try to read the information about COVID-19 carefully.	1 (1.3)	-	21 (26.3)	25 (29.8)	40 (50)	35 (41.7)	18 (22.5)	24 (28.6)
During the COVID-19 pandemic, I took my mind off boredom during Distance Learning by doing other activities (for example: watching movies, studying, creating work, exercising at home).	-	1 (1.2)	12 (15)	15 (17.9)	42 (52.5)	35 (41.7)	26 (32.5)	33 (39.3)
I thought about the best way to prevent the spread of COVID-19 within my family first by implementing health protocols.	-	1 (1.2)	10 (12.5)	10 (11.9)	34 (42.5)	30 (35.7)	36 (45)	43 (51.2)

Note: MS= Medical student; Non-MS=Non-medical student



**Figure Total score of Coping Stress among Medical and Non-medical Students**

Note: CS=Coping Stress

were tended to focus more on the emotion and the non-medical students more on the problems.

**Discussion**

This study shows that there is no difference regarding the level of stress between groups of medical and non-medical students. This is different from a research conducted in Saudi Arabia,<sup>11</sup> resulting that stress levels in medical students are higher than non-medical students. In Wuhan, China,<sup>7</sup> college students have high levels of stress, anxiety, and depression during

the COVID-19 pandemic. Stress levels may decrease during the COVID-19 pandemic because, during the pandemic, everyone is forcing themselves to stay at home and spend a long time with family. Increased interaction may improve the quality of life and reduce stress due to the intimacy of social interactions, support from family or people around them, and the gift of love from parents will create resilience and increase better coping and reduce stress levels.<sup>12,14</sup>

In addition, the same level of stress in medical and non-medical students in Saudi Arabia is due to differences in several situations

**Table 2 Emotion Focused and Problem Focused Coping among Medical and Non-medical Students**

Group	Mean	Standard Deviation	P-value	Significance*
Emotion focused				
Medical	11.74	2.489	0.067	0.797
Non-medical	11.20	2.477		
Problem focused				
Medical	6.44	1.358	0.652	0.032
Non-medical	6.55	1.710		

and conditions. Our study was conducted a few months after the COVID-19 pandemic emerged in Indonesia, and also when the COVID-19 pandemic was still occurring. At that time the distance learning system was in progress, so students from the two groups studied were used to coping well and could adapt to the environment.<sup>15</sup>

In the comparison of the mean value of coping stress in the two groups, there was no difference. These results are in accordance with the theory of Lazarus and Folkman, 1984, showing that coping stress is determined by the level of stress. In our study, the results of the stress level of the two groups were not significant and this is in line with the results of the average stress coping score, in which there was no significant difference.<sup>16</sup>

A particular focus makes a difference in dealing with one's coping stress. From the results of our study, there was no significant difference in the mean value of the two aspects of emotion-focused and problem-focused between the medical and non-medical groups. However, the results of the study showed that the value of coping aspects that focused on emotions was more diverse in medical students.

Coping stress that focuses on emotions will reduce individual stress level.<sup>17</sup> This can be collaborated with the results of research on stress levels in medical students, which might be higher than non-medical students.<sup>11</sup> The medical students have lower stress levels because they do coping stress focuses on emotions. Compared with the non-medical group, the scores were more or less diverse on problem-focused coping.

The limitation of this study is that there is the lack of research data on coping stress regarding pandemic situation among college students, as this COVID-19 pandemic is a new life experience since previous pandemic in century.

To conclude, there is no significant difference in stress levels between the medical and non-medical groups. Alignment or the absence of differences in stress levels of the two groups result in no different of coping stress score. The dominant medical students have emotional-focused coping, and the non-medical students in problem-focused coping. The result of this study is different from other studies because it is unique since this study has been carried out during the COVID-19 pandemic.

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