



The Impact of the COVID-19 Pandemic and Factors Affecting the Mental Health Status of College Students

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Abstract. COVID-19 has become a world pandemic. The number of confirmed cases of COVID-19 has predicted causes of mental health problems, such as depression, anxiety, and stress among students. This study aims to describe the impact of the COVID-19 pandemic and the factors affecting the mental health status of college students and to identify the use of drugs over the past week during the data collection. Data collection used the DASS-21 questionnaire. The first part contains demographic data and drug use comprising 12 questions, while the second consists of 21 questions to measure students' mental health status. Univariate analysis (T-Test) was implemented to assess differences in mental health scores among students. In addition, linear regression analysis was performed to identify factors related to mental health status. The sample in this study involved 152 respondents, with a response rate of 100%. Although most respondents were in the normal depression category, almost a quarter (23.7%) of the respondents experienced moderate depression. In addition, 49 (32.2%) and 34 (22.4%) respondents were categorized as having moderate anxiety and stress, respectively, and 29 (19.1%) respondents experienced very severe anxiety. The results of linear regression obtained that fever, cough, and muscle pain were associated with depression status (p value < 0.05), muscle pain was associated with anxiety status (p value < 0.05), and fever affected stress status (p value < 0.05). The majority of respondents consumed analgesics, supplements, and multivitamins. The Covid 19 pandemic affects students' mental health at various levels, and female respondents were more prone to suffer from stress than men. Consequently, there is a need for measures to address students' mental health issues.

Keywords: COVID-19 · Mental health status · vitamin · DASS-21

1 Introduction

By the end of 2019, a new type of virus was discovered in Wuhan, China, SARS-COV-2. This virus spreads very quickly since it can be transmitted from one human

to another through direct or indirect contact with the host. Direct transmission can be through droplets in the host's respiratory tract emitted when sneezing or coughing and through droplets of body fluids [1]. Signs and symptoms of COVID-19 that appear include fever, cough, shortness of breath, and myalgia. Other non-specific symptoms include sore throat, headache, diarrhea, nausea and vomiting, anorexia, and ageusia [2]. Clean and healthy living habits and consuming supplements and herbs to increase the body's immune have become a trend during the COVID-19 pandemic. It is assumed that certain drugs can increase the body's resistance. In addition, they can complement the nutritional needs and maintain and improve the body's health function due to the content of vitamins, minerals, and amino acids [3, 4].

COVID-19 has become a global pandemic. Indonesia is one of the most affected countries by COVID-19. According to the data released by the COVID-19 Response Acceleration Task Force in Indonesia, confirmed cases until April 13, 2021, reached 1.58 million cases, with 1.43 million recovered and 42,782 death cases [5]. In addition, the increase in confirmed cases of COVID-19 may aggravate problems that relate to mental health.

Mental health issues during the pandemic include stress and anxiety about oneself and family health, lack of appetite and insomnia, short attention span or distracted concentration, and increased use of drugs / prohibited substances [6]. Four risk factors are predicted to be directly related to mental health that will emerge in the COVID-19 pandemic; isolation or social distancing, economic pressure, stress, depression, and discrimination [7]. These factors will be exacerbated by prolonged quarantine duration, fear of infection, and inadequate information regarding COVID-19 [8]. This also may lead to an increase in the use of sedatives, so there is growing access to treatment that functions as a sedative [9].

This research was conducted on college students because, to date, research on the impact of COVID-19 on mental health status among college students is still limited. According to a recently published global review, females, students, and those with chronic/mental illness are at risk of mental health deterioration during the outbreak of COVID-19 [10]. Apart from that, there is a tendency among students to consult with their supervisors regarding the problems they are experiencing. The consequences of neglecting students with mental health problems will prompt several negative outcomes that lead to the use of illegal drugs [11]. Therefore, it is necessary to study the impact of the COVID-19 pandemic and the factors affecting the students' mental health status and identify the drug used by respondents over the past week during the data collection. As professional health workers, pharmacists have significant roles in providing pharmaceutical care to patients, including those with mental health problems, to provide information to prevent, detect, treat or service prescription drugs related to mental health.

2 Method

2.1 Study Design

The type of research is a *cross-sectional study* with a sampling technique of *purposive sample*. Data collection was conducted *online* using a validated questionnaire. The questionnaire was presented in the *Google Form* and distributed via *WhatsApp*, *Instagram*, and *Line*.

2.2 Sample Size

The population in this study was active undergraduate students at Universitas Muhammadiyah Surakarta (UMS), Indonesia. The samples were calculated using the Slovin formula. The minimum sample was 100 samples of active UMS undergraduate students. The inclusion criteria in this study were active undergraduate students of UMS, ≥ 18 years old, could fill out a questionnaire via Google Form, and agreed to participate.

2.3 Data Instrument and Collection

The instrument used in this research is the DASS-21 questionnaire translated by the Institute for Language and Science Development (LPIDB) UMS with 4 Likert scale responses from 0 to 3. The questionnaire consists of two parts. The first part contains demographic data and drug use, while the second part engages in questions to measure the students' mental health status. The measured mental health was divided into three domains, which each domain contained seven questions, depression domain (Q3, Q5, Q10, Q13, Q16, Q17, and Q21), anxiety domain (Q2, Q4, Q7, Q9, Q15, Q19, Q20), and stress domain (Q1, Q6, Q8, Q11, Q12, Q14, Q18). Data collection applied *Google Forms*, distributed through social media, such as *WhatsApp*, *Instagram*, and *Line*. Data were gathered from October–November 2021. Each question was scored 0–3 after data were collected. The scores for each category were summed and then multiplied by 2 to find the final score. The results were then interpreted, encompassing normal, mild, moderate, severe, and very severe. Depression is categorized as normal (0–9), mild (10–13), moderate (14–20), severe (21–27), and very severe (≥ 28). As for anxiety, the categories are divided into normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and very severe (≥ 20). In the stress domain, the categories are normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and very severe (≥ 34) [12]. The validity and reliability of the questionnaire were tested on 30 respondents, yielding a value of sig 2 tailed < 0.05 , indicating the questionnaire is valid. Meanwhile, Cronbach's Alpha value was 0.98, denoting the questionnaire is reliable [13].

2.4 Ethical Issues

The Faculty of Medicine Ethics Commission Universitas Muhammadiyah Surakarta approved this research (Reference No.3742/B.1/KEPK-FKUMS/X/2021). Respondents were notified in writing regarding the nature of the research. The respondent's approval statement was placed at the interface of the *Google Form*. The respondents were asked to click on the word "READY" to participate in this study.

2.5 Data Analysis

Data analysis implemented Excel and SPSS IBM version 25. Descriptive statistics, univariate statistics, and linear regression were used in data analysis. Before analysis, the answers and score of each answer were checked in Ms. Excel. Then, it was exported to SPSS for analysis. Normality of the data was tested with Kolmogorov Smirnov. Because the data were normally distributed, the T-Test was performed to assess the difference in the mean scores. Independent T-Test was used for independent variables with two groups (e.g., gender). Linear regression statistical analysis was utilized to determine the relationship between demographic characteristics and physical symptoms of the mental health status. Statistically, significant differences between groups were determined at the 95% confidence level ($p\text{-value} < 0.05$).

3 Result

3.1 Demographic Characteristics of Respondents

A total of 152 respondents participated in this study with a response rate of 100%. Respondents were male (13.8%) and female (86.2%). The majority of respondents ranged from 18–21 years, were in the final semester (62.5%), unmarried (98%), and vaccinated (98.7%). The demographic characteristics of the respondents are presented in Table 1.

Table 1. Characteristic of respondents

Characteristics	Frequency	Percentage % (N = 152)
Gender		
Male	21	13.8
Female	131	86.2
Age		
18 – 21 years	131	86.2
>21 years	21	13.8
Faculty		
Health Sciences	105	69.1
Non-Health Sciences	47	30.9
Class of		
2018	95	62.5
2019	35	23.0
2020	5	3.3
2021	17	11.2
Marital Status		

(continued)

Table 1. (continued)

Characteristics	Frequency	Percentage % (N = 152)
Married	3	2.0
Unmarried	149	98.0
Vaccination Status		
Unvaccinated	2	1.3
Vaccine Dose 1	14	9.2
Vaccine Dose 2	136	89.5
Diagnosed with COVID-19		
Yes	19	12.5
No	133	87.5
Family members diagnosed with COVID-19		
Yes	65	42.8
No	87	57.2
Satisfied with support during the COVID-19 pandemic		
Yes	140	92.1
No	12	7.9
History of Chronic Disease		
Yes	9	5.9
No	143	94.1

3.2 Physical Symptoms

Physical symptoms experienced by respondents over the past week varied, including headache, fever, cough, itching, skin redness, diarrhea, muscle pain, sore throat, and loss of smell and taste. Most respondents suffered from headaches (22.4%); the least physical symptom experienced was the loss of smell and taste (2.6%). Table 2 shows the physical symptoms suffered by the respondents over the past week.

Table 2. Respondent's physical symptoms over the past week

Physical Symptoms	Frequency	Percentage (%)
Headache		
Yes	34	22.4
No	118	77.6
Fever		
Yes	12	7.9
No	140	92.1
Cough		
Yes	7	4.6
No	145	95.4
Itching and Skin Redness		
Yes	10	6.6
No	142	93.4
Diarrhea		
Yes	8	5.3
No	144	94.7
Muscle Aches and Pains		
Yes	11	7.2
No	141	92.8
Sore Throat		
Yes	8	5.3
No	144	94.7
Loss of Smell and Taste		
Yes	4	2.6
No	148	97.4

3.3 Drug Consumed by Respondents Over the Past Week

Over the past week, during the data collection, the majority of respondents (69.75%) did not consume drugs. As many as 30.2% of respondents reported drug use, and 13.2% consumed drugs to reduce aches and pains. As many as 3.9% of respondents used drugs to treat fever, flu, and cough. In addition, respondents also took herbal medicines and multivitamins to increase their immune system (3.9%) (Table 3).

Table 3. Purpose and type of drug use by respondents over the past week

No	Purpose of Drug Use	Type of Drug	Percentage (%)
1.	Reduce sick and pains	Ibuprofen	13.2
		Paracetamol	
		Mefenamic acid	
		Betahistine	
		Potassium diclofenac	
2	Overcome fever, flu, and cough	Black cough medicine	3.9
		Paracetamol	
		Phenylpropanolamine HCl	
		Chlorpheniramine Maleate	
3	Support body resistance and maintain body immunity	Herbal medicine	3.9
		Vitamin C	
		Vitamin B1, B2, B6, B12	
		Multivitamin	
		Zinc	
4	Treat infection	Azithromycin trihydrate	3.3
		Amoxicillin	
5	Medicate allergies, itching, and skin redness	Loratidine	2
		Cetirizine HCl	
6	Treat inflammation and allergies	Methylprednisolone	1.3
		Dexamethasone	
7	Treat anemia	Maltofar	1.3
		Folic acid	
8	Relieve stomach acid	Ranitidine	1.3
		Hydrotalcite	
		Mg Hydroxide	

3.4 Mental Health

Respondents had a mild to very severe mental health category. In the depression domain, 46.7% of respondents were in the normal category. However, 23.7%, 11.8%, and 4.6% of the respondents fell into the moderate, severe, and very severe depression categories, respectively. While in the anxiety domain, 18.4% and 19.1% of respondents experienced severe and very severe anxiety, respectively. In the stress domain, most participants were categorized in the mild category (40.1%), yet 22.4% and 10.5% suffered moderate and severe stress levels. The distribution of mental health status categories is presented in Table 4.

Table 4. Distribution of mental health categories

Variable	Number of questions	Mean ± SD	Category = N (%)				
			Normal	Mild	Moderate	Severe	Very Severe
Depression	7	1.14 ± 1.25	71 (46.7%)	20 (13.2%)	36 (23.7%)	18 (11.8%)	7 (4.6%)
Anxiety	7	2.04 ± 1.37	32 (21.1%)	14 (9.2%)	49 (32.2%)	28 (18.4%)	29 (19.1%)
Stress	7	1.19 ± 0.97	40 (26.3%)	61 (40.1%)	34 (22.4%)	16 (10.5%)	1 (0.7)

Table 5. Association of respondents’ demographic characteristics and mental health status based on univariate analysis

Characteristics	n	Depression		Anxiety		Stress		Total	
		Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value
Gender									
Male	21	0.95 ± 1.32	0.491	1.67 ± 1.49	0.223	0.81 ± 0.75	0.023	17.14 ± 10.41	0.155
Female	131	1.17 ± 1.24		2.10 ± 0.11		1.25 ± 0.86		20.98 ± 11.58	
Ages									
18 – 21	131	1.09 ± 1.25	0.253	2.02 ± 1.37	0.711	1.14 ± 0.98	0.089	20.08 ± 11.64	0.313
>21	21	1.43 ± 1.25		2.14 ± 1.39		1.52 ± 0.87		22.81 ± 10.31	
Faculty									
of Health Sciences	104	1.13 ± 1.26	0.959	2.03 ± 1.35	0.889	1.18 ± 0.963	0.880	20.43 ± 11.06	0.973
Non-Health	48	1.15 ± 1.24		2.06 ± 1.44		1.21 ± 0.988		20.50 ± 12.44	
Marital Status									
Married	3	1.15 ± 1.25	0.839	2.04 ± 1.37	0.960	1.20 ± 0.96	0.808	20.52 ± 11.33	0.938
Unmarried	149	1.00 ± 1.73		2.00 ± 2.00		1.33 ± 1.53		20.00 ± 21.63	
Status Vaccination									
Unvaccinated	3	1.15 ± 1.25	0.511	2.04 ± 1.38	0.960	1.19 ± 0.98	0.016	20.51 ± 11.53	0.582
Vaccinated	147	0.67 ± 1.15		2.00 ± 0.00		1.00 ± 0.00		16.00 ± 4.24	
Diagnosed with COVID-19									
Yes	19	0.79 ± 1.23	0.195	2.21 ± 1.36	0.563	1.16 ± 0.96	0.875	20.42 ± 10.48	0.989
No	133	1.19 ± 1.25		2.02 ± 1.38		1.20 ± 0.97		20.46 ± 11.65	

(continued)

Table 5. (continued)

Characteristics	n	Depression		Anxiety		Stress		Total	
		Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value
A family member diagnosed with COVID-19									
Yes	65	1.14 ± 1.28	0.984	2.05 ± 1.43	0.955	1.22 ± 0.84	0.762	20.75 ± 10.49	0.787
No	87	1.14 ± 1.23		2.05 ± 1.33		1.22 ± 1.05		20.24 ± 12.19	
Satisfied with support during the COVID-19 pandemic									
Yes	138	1.13 ± 1.23	0.812	2.01 ± 1.35	0.482	1.19 ± 0.93	0.924	20.20 ± 10.78	0.385
No	14	1.21 ± 1.53		2.29 ± 1.59		1.21 ± 1.31		23.00 ± 17.23	
History of Chronic Disease									
Yes	9	1.44 ± 1.24	0.451	2.56 ± 0.73	0.246	1.33 ± 1.00	0.650	24.11 ± 8.73	0.326
No	143	1.12 ± 1.25		2.01 ± 1.39		1.18 ± 0.97		20.22 ± 11.62	

Table 6. Relationship between physical symptoms and mental health status

Physical Symptoms	n	Depression		Anxiety		Stress		Total DAS	
		Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value
Headache									
Yes	34	1.38 ± 1.37	0.197	2.44 ± 1.19	0.052	1.38 ± 0.89	0.191	24.06 ± 10.66	0.037
No	118	1.07 ± 1.21		1.92 ± 1.40		1.14 ± 0.99		19.42 ± 11.53	
Fever									
Yes	12	2.13 ± 1.25	0.021	2.38 ± 1.30	0.479	2.00 ± 1.41	0.150	30.75 ± 14.96	0.009
No	140	1.08 ± 1.232		2.02 ± 1.38		1.15 ± 0.92		19.88 ± 11.03	
Cough									
Yes	7	0.14 ± 0.38	0.031	1.86 ± 1.46	0.720	0.86 ± 0.38	0.352	15.29 ± 4.53	0.224
No	145	1.19 ± 1.26		2.05 ± 1.37		1.21 ± 0.98		20.70 ± 11.65	
Itching and skin redness									
Yes	10	1.80 ± 1.31	0.830	2.20 ± 1.75	0.172	1.40 ± 0.84	0.224	25.10 ± 10.03	0.186
No	142	1.09 ± 1.24		2.03 ± 1.35		1.18 ± 0.977		20.13 ± 11.53	
Diarrhea									
Yes	8	1.00 ± 1.30	0.749	2.38 ± 1.69	0.479	1.38 ± 0.92	0.582	22.25 ± 12.33	0.651

(continued)

Table 6. (continued)

Physical Symptoms	n	Depression		Anxiety		Stress		Total DAS	
		Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value	Mean ± SD	p-Value
No	144	1.15 ± 1.25		2.02 ± 1.36		1.18 ± 0.97		20.35 ± 11.46	
Muscle Aches and Pains									
Yes	11	1.91 ± 1.70	0.033	3.00 ± 0.89	0.015	1.73 ± 1.10	0.056	30.00 ± 14.68	0.004
No	141	1.08 ± 1.20		1.96 ± 1.38		1.15 ± 0.95		19.71 ± 10.90	
Sore Throat									
Yes	8	1.75 ± 1.28	0.156	2.75 ± 1.29	0.132	1.75 ± 1.04	0.093*	28.38 ± 14.11	0.044
No	144	1.10 ± 1.24		2.00 ± 1.36		1.16 ± 0.96		20.01 ± 11.20	
Loss of smell and taste									
Yes	4	1.50 ± 0.70	0.682	2.50 ± 0.71	0.634	1.50 ± 0.71	0.651	23.50 ± 2.12	0.707
No	148	1.13 ± 1.26		2.03 ± 1.38		1.19 ± 0.97		20.41 ± 11.54	

Table 7. Regression linear model for Depression, Anxiety, and Stress domains (N = 152)

Variable	Depression			Anxiety			Stress			Total DASS		
	Regression Coefficient	Std. error	p-value	Regression Coefficient	Std. error	p-value	Regression Coefficient	Std. error	p-value	Regression Coefficient	Std. error	p-value
Gender	0.216	0.294	0.465	0.433	0.321	0.180	0.442	0.225	0.052	3.842	2.688	0.155
Age	0.337	0.294	0.253	0.120	0.323	0.711	0.036	0.070	0.605	2.377	2.697	0.313
Never in Diagnosis of Covid 19	0.398	0.306	0.195	-0.195	0.337	0.563	0.038	0.238	0.875	0.038	2.824	0.989
Vaccination status	-1.153	0.888	0.196	0.467	0.978	0.634	-1.587	3.029	0.601	-4.513	8.187	0.582
Chronic disease history	-0.326	0.430	0.451	-0.549	0.471	0.246	-0.152	0.334	0.650	-3.887	3.944	0.326
Headache	-0.315	0.243	0.197	-0.517	0.264	0.052	-0.247	0.188	0.191	-4.644	2.209	0.037
Fever	-1.042	0.448	0.021	-0.354	0.499	0.479	-0.854	0.346	0.015	-10.868	4.087	0.009
Cough	1.043	0.478	0.031	0.191	0.532	0.720	0.350	0.375	0.352	5.418	4.433	0.224
Itching and skin redness	-0.708	0.406	0.083	-0.172	0.450	0.703	-0.224	0.317	0.481	-4.973	3.745	0.186
Muscle pain	-0.831	0.387	0.033	4.035	0.422	0.015	-0.578	0.300	0.056	-10.291	3.505	0.004
Sore throat	-0.646	0.453	0.156	3.500	1.365	0.132	-0.590	0.349	0.093	-8.361	4.126	0.044

The mean ±SD value of the stress domain was 1.19 ± 0.97 (Table 4). This score was statistically significant (P < 0.05) higher for females (1.25 ± 0.86) than males (0.81 ±

0.75) (Table 5). The linear regression results showed that gender and physical symptoms such as headache, fever, cough, muscle pains, and sore throat were significantly related to student's mental health status (Table 5 and 7). Gender had an effect on mental health in the stress domain. Fever, cough, and muscle pain were significantly related to the depression domain. Muscle pain was also significantly associated with the anxiety domain, and fever significantly affected of stress domain (p -value < 0.05) (Tables 6, 7).

4 Discussion

This study aims to describe students' mental health status during the COVID-19 pandemic and the modifying factors. Data were taken from 152 respondents who completed the questionnaire via *Google Form*. The majority of respondents in this study were female, with a total of 131 (86.2%). This is following data from the Indonesian Higher Education Database (PDDikti) that the number of female college students is higher than that of male students. The age of the respondents varied between 18 years and 23 years, categorized as productive age, and those were the students. Most respondents ranged from 18–21 years, with a total of 131 (86.2%) respondents. The majority were students from health sciences (69.1%). A total of 136 respondents had been vaccinated with the 2nd dose, and only a small number of respondents were unvaccinated (1.3%).

The physical symptoms experienced by the respondents over the past week ranged from headaches to loss of smell and taste. The most reported physical symptoms were headache (22.4%) followed by fever, muscle aches and pains, itching and skin redness, sore throat, diarrhea, cough, and loss of smell and taste. This is in line with a former study that the most common physical symptoms felt by the community during the COVID-19 pandemic were headaches, myalgia, and coughs [14].

Support from the closest people, such as family, friends, or neighbors, morally and materially can help COVID-19 survivors to remain strong and enthusiastic throughout the day [15]. Along with those who had been diagnosed with COVID-19 as well as their families, 140 (92.1%) respondents expressed satisfaction with the support provided by their families. This positively impacts mental health during a crisis such as the COVID-19 pandemic. Therefore, the growing family support is highly valued and much needed [16, 17]. This research is in accordance with research conducted in the Mena area that increased support from family members during the COVID-19 pandemic had a positive impact on mental health and could overcome other negative impacts of the COVID-19 pandemic [18].

To maintain stamina and immunity, the Indonesian National Agency of Drug and Food Control recommends taking herbal medicines or supplements containing nutrients, minerals, amino acids, etc. Our findings report that the medicines consumed by the respondents over the last week were used to cure the disease suffered by the respondents and maintain their immunity amid the COVID-19 pandemic. Judging from the purpose of drug use, more respondents (13.2%) consumed analgesic drugs. Analgesics are drugs that can reduce pain without losing consciousness [19]. In addition, respondents also took supplements, multivitamins, and herbal medicines to maintain their immunity. This corresponds to previous studies that during the COVID-19 pandemic, people mostly used drugs to maintain their body health and immunity, such as vitamins, supplements, and herbal medicines [20]. Given the purpose of the drug use by

respondents over the past week, there was no evidence of the use of sedatives related to handling mental health status in the COVID-19 pandemic. Drugs that can manage mental health status are antidepressants, such as Selective Serotonin Reuptake Inhibitors (SSRIs), Monoamine Oxidase Inhibitors (MAOIs), Serotonin Norepinephrine Reuptake Inhibitors (SNRIs), Noradrenergic and Specific Serotonergic Antidepressants (NaSSAs), and Tricyclic Antidepressants (TCAs) [21].

The majority of respondents expressed that their mental health was good. However, judging from the research results, the categories of depression, anxiety, and stress were at mild to very severe levels. A total of 46.7% of respondents in the depression domain were in the normal category. Although most respondents had moderate anxiety (32.2%), 18.4% and 19.1% were placed in severe and very severe anxiety categories. Meanwhile, most stress domains had the mild category (40.1%), and the remaining 22.4% and 10.5% were in the moderate and severe stress categories. Therefore, more attention is required regarding services for mental health prevention and treatment [22, 23]. Here health professionals have significant roles in providing information to prevent, detect, and treat.

In this study, women aged 18–21 were more prone to higher stress scores than men. This could be determined by fluctuations in ovarian hormone levels that cause changes in sensitivity to emotional stimuli [24]. This study's results align with research in Italy and China that younger ages and women were more likely to experience stress because the environment around women was more susceptible to stress than men [25, 26]. In addition, physical symptoms such as headache, fever, muscle aches, and sore throat were reported to have a significant relation to mental health ($p < 0.05$). Following previous research, physical health can affect mental health, especially in stress. In addition, other studies in Pakistan reported that physical symptoms such as fever, cough, myalgia, chills, and dizziness affected levels of depression, anxiety, and stress [6, 14]. Thus, health care providers should provide adequate resources for counseling and psychological interventions to individuals [27].

In this study, vaccination status and history of chronic disease were revealed to entail no significant relation with the mental health status of students (p -value > 0.05). This result contrasts with previous studies that medical history and chronic illness were associated with anxiety and increased levels of psychiatric distress [26, 28, 29]. In addition, support from the closest people during the COVID-19 pandemic did not have a significant relationship with the mental health status of the respondents. Previous research discovered that dissatisfaction with support from family, friends, and coworkers was related to anxiety, and social support was related to anxiety [6, 30].

This research entails several limitations. First, as we utilized *Google Forms* for data collection, the results might be biased. Second, small sample sizes limited the scope of generalization. Third, this study used a self-reported questionnaire to measure psychiatric symptoms and did not make a clinical diagnosis. Fourth, drug use identification by respondents was less specific. Nevertheless, this research is the first to investigate the impact of the COVID-19 pandemic on the mental health status of students at Universitas Muhammadiyah Surakarta. The data from this study can be used as a reference to provide information to prevent, detect, and carry out policies related to mental health problem management among students due to the COVID-19 pandemic.

5 Conclusion

This study concludes that the respondents' mental health status ranged from mild to very severe category. The factors influencing the respondents' health status were the physical symptoms such as headaches, fever, cough, muscle pains, and sore throat since they had significant differences measured by linear regression $p < 0.05$. Over the past week, respondents took supplements and multivitamins to increase their immune system and immunity. Further, there were no drugs used to handle the mental health status.

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