

## Original Research

# The Correlation Between the Level of Depression and Religious Coping Among Medical Students Class of 2020 Universitas Airlangga

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### Abstract

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**Introductions:** Medical students are at risk of developing depression due to their demanding workload and high expectations, which can impact their academic performance and cognitive function. To prevent severe complications, students must prioritize resources for mental health support, namely religious coping as a coping mechanism. **Objective:** The aim of this study is to prove the correlation between depression level and religious coping in medical students in the 2020 Universitas Airlangga. **Methods:** This research is an observational analytic study with a cross-sectional design, and random sampling was used as a sampling method, totaling 90 subjects. Variables used were religious coping and level of depression. The data was then analyzed, and prevalence, correlation coefficient, and p-value were acquired. The research result would be considered significant if  $p < 0.05$ . **Result:** Out of 90 students, 32 people (35.6%) were found to have a PHQ score greater than 10, indicating depression. Severity was found mostly in people with moderate depression, which consisted of 12 people (13.3%). In terms of religious coping, 84 people (93.3%) use positive religious coping, and 6 people (6.7%) use negative religious coping. The level of depression correlates with religious coping with a Pearson correlation of -0.450, which indicates a negative correlation with a p-value less than 0.001. **Conclusion:** The prevalence of depression among medical students in the 2020 Universitas Airlangga class is 35.6%. The level of depression was found to significantly correlate with religious coping, with a negative direction of correlation.

**Keywords:** Depression, Religious Coping, Prevalence, Correlation, Medical Students

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## Introductions

Mental health is a fundamental component of human health and well-being. Indonesia Mental Health Law 2014 defines mental health as the capability for an individual to develop physically, mentally, spiritually, and socially, to the point where the individual is able to perceive his or her ability, can cope with pressure, can work effectively, and is able to contribute to his or her community. One of the more common mental health disorders and one of the main causes of disability worldwide is depression [1]. There are some forms of depression with slight differences, but all of them are characterized by a continuous feeling of sadness, anxiety, worthlessness, loss of interest in activities, fatigue, difficulty concentrating, as well as reduced sleeping or appetite [2].

Medical students are very susceptible to depression because they have to experience various stressors, such as large workloads and time commitments. In order to achieve the standard curriculum medical schools require, a high level of encouragement, resilience, and intelligence are expected from a medical student. Additionally, medical students must also dedicate most of their time to their studies [3]. According to a previous study, the prevalence of depression in medical students worldwide is around 28% [4]. Comparing to medical students in Indonesia, a study on medical students of Universitas Indonesia found out that the prevalence of depression among its students is around 22% [5].

Although the prevalence of depression in Indonesia is lower compared to medical students worldwide, it is still necessary to study depression because, if left untreated, it can lead to several complications. Depression in medical students can lead to cognitive impairment and declining academic achievement. Furthermore, depression could lead to more severe complications such as anxiety, obesity, substance abuse, and suicidal thoughts and attempts [6].

Moreover, given that this research was con-

ducted during the ongoing pandemic, it is possible that the findings may suggest a potentially negative impact on the well-being of medical students. Studies suggest that the pandemic has had a significant impact on the learning process of medical students and their ability to adapt to clinical environments. The decreased exposure of medical students to clinical settings due to the pandemic is expected to have a noticeable impact on the quality of medical education. In addition, the implementation of remote learning in medical education has resulted in some adverse effects, primarily associated with heightened emotional distress, such as stress, anxiety, and social isolation [7].

When dealing with academic and life stress, medical students need a certain coping mechanism in order to tolerate it. There are different types of coping mechanisms, and they can be classified in various ways. Considering that Indonesia is known as a religious country and the population believes that God has omnipotent power over human life, it will be interesting to study how religion is used as a coping mechanism for depression.

Numerous studies consistently demonstrate the positive impact of religion and spirituality on mental health. Participating in religious or spiritual practices, such as prayers or attending religious services, may provide a sense of social support and connection with others who share similar beliefs and values. Furthermore, these practices may provide a sense of meaning, purpose, and hope in difficult times, thus mitigating symptoms of stress, anxiety, and depression [8].

As explained beforehand, depression is a serious mental illness that, if left untreated, can lead to devastating consequences, including suicide. Therefore, it is crucial to understand the factors that contribute to the development of depression. One area of investigation is the correlation between depression and religious coping. By studying this correlation, researchers hope to

gain insight into how religion can help people, mainly medical students, cope with depression and develop effective intervention plans. If researchers discover that religious coping effectively manages depression, they can incorporate this knowledge into treatment plans and enable healthcare workers to employ religious coping strategies in their practice

## Methods

This research is an analytic observational study with cross-sectional design, conducted at the Faculty of Medicine, Universitas Airlangga Surabaya in August 2021. The population in this research was the Class of 2020 Universitas Airlangga Medical Students consisting of 286 students. Sampling was carried out using random sampling, calculated with a sample size formula for analytical study totalling to the minimum sample size of 85 subjects. The inclusion criteria covered all of the medical students class of 2020 that are actively studying in Universitas Airlangga, and exclusion criteria

are those who were not willing to participate and responses with incomplete data.

The instrument used to assess the level of depression in medical students is the Patient Health Questionnaire-9 (PHQ-9), which contains nine criteria for depression based on the DSM-IV criteria [9]. The instrument used to assess religious coping strategies is the Brief RCOPE. The Brief RCOPE consists of 7 items of positive religious coping and 7 items of negative religious coping. Each item is scored from 1 to 4, indicating to what extent the subject did according to what the items say (1: Never; 2: Rarely; 3: Sometimes; 4: Always). Each positive and negative item score was then added and interpreted. A higher score of positive coping compared to negative coping indicates that the subject leans more towards positive religious coping, and vice versa. The correlation analysis between the level of depression and religious coping was then conducted non-parametrically with the Spearman rank correlation test method.

## Results

### Sociodemographic of Research Subjects

**Table 1.** Characteristics of Sociodemographic of Research Subjects

Variable	Frequency	Percentage
Age		
19 years old	20	22.2%
20 years old	48	53.3%
21 years old	20	22.2%
22 years old	2	2.2%
Gender		
Male	39	43.3%
Female	51	56.7%
Religion		
Islam	73	81.1%
Christian	10	11.1%
Catholic	5	5.6%
Hindu	2	2.2%
Buddha	0	0%
Konghucu	0	0%

The subjects of the research were in the age range of 19-22 years old with the mean age of 20.04, with most of them, 48 out of 90 people (53.4%), being in the age of 20 years old.

### Characteristics of Level of Depression in Research Subjects

**Table 2.** The Distribution of Respondents Based on The Level of Depression

Variable	Category	Frequency	Percent
Level of Depression	No Depression	58	64.4%
	Minimal Depression	0	0%
	Mild Depression	1	1.1%
	Moderate Depression	12	13.3%
	Moderately Severe Depression	10	11.1%
	Severe Depression	9	10%
Total		90	100%

From the 90 responses that have been acquired, 58 people (64.4%) are reported to have no depressive disorder, and 32 people (35.6%) are found having PHQ score more than 10, indicating depression.

### Detailed Characteristics of Level of Depression in Research Subjects

**Table 3.** Detailed Characteristics of Level of Depression in Research Subjects

No	Variable	$\bar{x}$	SD
1.	Little interest or pleasure in doing things	1.23	.887
2.	Feeling down, depressed	.96	.898
3.	Trouble falling or staying asleep, or sleeping too much	1.54	1.103
4.	Feeling tired or having little energy	1.33	.960
5.	Poor appetite or overeating	1.18	1.077
6.	Feeling bad about yourself — or that you are a failure or have let yourself or your family down	1.13	.974
7.	Trouble concentrating on things, such as reading the newspaper or watching television	1.09	.967
8.	Moving or speaking so slowly that other people could have noticed? Or the opposite — being so fidgety or restless that you have been moving around a lot more than usual	.72	.924
9.	Thoughts that you would be better off dead or of hurting yourself in some way	.38	.801

The items of PHQ-9 Questionnaire are represented with a number out of 3, where a higher number represents more days, the respondents are experiencing depressive symptoms. Based on the respondents' answers on the Table 3 above, the items with the highest scoring are sleeping problems, lethargy, and anhedonia

### Characteristics of Religious Coping in Research Subjects

**Table 4.** Characteristics of Religious Coping in Research Subjects

Variable	Category	$\bar{x}$ (SD)	Frequency	Percent
Religious Coping	Positive	23.19 (4.6)	84	93.3%
	Negative	10.64 (3.7)	6	6.7%
Total			90	100%

According to Table 3, most of the respondents are reported to lean more on positive religious coping such actions of surrendering one's plan to God or asking God for forgiveness, rather than actions of negative religious coping such as blaming god for the discourse or questioning one's faith.

**Correlation of Level of Depression and Religious Coping****Table 5.** Characteristics of Religious Coping in Research Subjects

			Level of Depression	Religious Coping
Spearman's rho	Level of Depression	Correlation Coefficient	1.000	-.450**
		Sig. (2-tailed)	.	.000
		N	90	90
	Religious Coping	Correlation Coefficient	-.450**	1.000
Sig. (2-tailed)		.000	.	
	N	90	90	

The correlation analysis between the level of depression and religious coping was conducted non-parametrically with the Spearman rank correlation test method. The test result shows a correlation coefficient of -0.450, which indicates a negative correlation with a moderate strength of correlation. The test result also shows a p-value below 0.01, which indicates a significant correlation between the two variables. Therefore, it can be said that the level of depression negatively correlates with religious coping. As individuals lean more towards negative religious coping, depression will increase in severity. In other words, more severe depression is associated with negative religious coping, and a milder severity of depression is associated with positive religious coping.

**Discussions****Characteristics of Sociodemographic of Research Subjects**

Mental health issues among college students are a multifactorial phenomenon. External factors such as exams, workload, and expectations, as well as internal factors such as low self-esteem and personality, can contribute to the incidence of depression in college students. Therefore, many college students in this situation develop mental health disorders for the first time [10]. Additionally, age can be one of the factors leading to an increased risk of depression. Depression can be found at all ages, ranging from children to older adults. The occurrence of depression in childhood and adolescence can cause reduced academic performance, reduced social functioning, cognitive impairment, and an increased risk of other mental health disorders, as well as substance use disorders [11].

For gender, our study shows that more female (56.7%) than male (43.3%) students participated in the study. This is in conjunction with a previous study done at Muhammadiyah Yogyakarta University, where

the respondents were comprised of 62 (66%) female and 32 (34%) male medical students [12]. This is to be expected because, in recent years, there has been a notable increase in the number of women enrolling in medical schools and pursuing careers in the medical field. Over the past few decades, the proportion of female medical students has been consistently increasing, even surpassing that of male students in some medical institutions [13]. Studies have shown that there is an association between gender and depression. According to a cross-national epidemiology of DSM-IV major depressive episode, women are more likely to experience depression than men with the ratio of 2:1 [14]. However, a meta-analysis of gender differences in depression found that gender disparities in depression persist across different cultures and age groups [15]. These findings suggest that there may be biological, social, and cultural factors that contribute to the gender gap in depression rates.

Lastly for religion, this research has found out that most of the respondents was of the religion of Islam. This may be since Indonesia is a Muslim country, and about

86.6% of the total population of Indonesia is of the religion of Islam [16]. The relationship between religion and mental health can vary depending on individual, cultural, and socio-economic factors. Some research suggests that religious involvement and spirituality may protect against depression, while others have found that negative religious traits such as religious doubt and death anxiety may increase the risk of depression. For example, a study published by the International Journal of Environmental Research and Public Health suggests that religious doubts may give rise to feelings of psychological distress such as death anxiety and depression [17]. The relationship between religion and depression is complex and may vary depending on cultural, individual, and socio-economic factors. Although some findings suggest that religious involvement and spiritual practices may provide a source of support and comfort for individuals with their struggles with depression, it is still important to note that mental health support should be culturally sensitive and tailored to the specific needs and beliefs of the individual.

### Characteristics of Level of Depression in Research Subjects

According to the table, the result of our studies shows that 32 people (35.6%) have a PHQ score greater than 10, indicating depression. This result of this study is not much different, albeit slightly higher compared to several studies of the prevalence of depression in college students. When we compare our results with those of previous studies specifically on medical students, we can see that our results also do not differ that much. A meta-analysis analyzing the prevalence of depression in medical students shows that 33.5% of medical students are suffering from depression [18]. However, it is stated in the study that the rate of depression gradually decreased each year, reaching 20.5% in Year 5 of medical school. Considering that the respondents in our study are in

their fifth year as well, it is quite concerning that the rate of depression in our study is significantly higher compared to the global prevalence of depression amongst medical students.

Adding to the severity of depression in our study, it shows that the responses are dominated by subjects with a moderate severity of depression (13.3%). Compared to previous studies, our results show notable differences, where subjects in other studies are reported to have a milder severity of depression. A study using the same PHQ-9 questionnaire directed towards universities in Shanghai shows that most of its college students who are suffering from depression have a mild degree of depression (28.5%), and only 10% are suffering from moderate severity of depression [19]. The finding of this study is also in contrast with research that was conducted on students at universities in Bangladesh, India, where the average PHQ-9 score was 9.5, indicating a mild severity of depression instead [20].

### Detailed Characteristics of Level of Depression

According to a cross-sectional design study of depression among medical students in Bahrain, there is a considerably strong association between depression and physical symptoms among medical students [21]. The study showed that participants reported various physical symptoms, with the highest frequency of sleeping problems at 40%, followed by lethargy at 31.9%, and headaches at 23.8%. Our reported symptoms also do not differ much from a study done analyzing depression in Iranian medical students, where the most common reported symptoms are changes in sleep pattern (74.3%), loss of energy (53.6%), and difficulty in concentrating (51.1%) [22].

In a global literature review study, sleep difficulties and sleeping problems are shown to be very common among medical students, and its occurrence has been discussed by multiple studies [23]. Compared to the gen-

eral populace and other non-medical majors, sleeping problems occurred more frequently in medical students, and sleeping difficulties were more intense. Sleep disturbances can be caused by several factors, namely low sleep awareness among students. Students with no education of sleep may have low hygiene and increase their risk of having misdiagnosed or mistreated sleeping disorders. Other factors contributing to sleeping problems include irregular schedules, examinations, and other academic workloads that contribute to stress. In addition, sleeping problems in medical students may also impair academic performance. Barahona-Correa et al. [24]. found out in their study that A higher GPA was more frequent in students with good sleep quality. Thus, having a poor sleep quality may lead to lower GPA and other academical performances.

The second highest scoring of PHQ-9 items in our study is lethargy (1.33). Fatigue in our study may be a direct effect of sleeping problems, since sleeping can have a significant impact on an individual's energy levels and ability to function optimally throughout the day. According to past research, burnout and fatigue are strongly associated, with burnout often being a precursor to fatigue. Burnout can lead to emotional exhaustion, which can make it difficult for individuals to cope with the demands of their work and daily lives, thus resulting in physical and mental fatigue [25]. Similarly, fatigue can also increase the risk of burnout by making it difficult for individuals to maintain the level of engagement and motivation needed to perform their work effectively

Lastly, the third worst score in our study is loss of interest, or anhedonia (1.23). Loss of interest in or pleasure in activities that were once enjoyable is one of the most common symptoms of depression. These activities can include hobbies, social activities, and even daily tasks like personal hygiene or household chores. Studies have shown that anhedonia is associated with reduced positive affect, social withdrawal, and feelings

of hopelessness, impacting one's motivation and sense of purpose and making it difficult to find meaning in life. This loss of meaning can exacerbate feelings of hopelessness and increase the risk of suicidal ideation. Past studies have found that anhedonia is associated with a greater severity of suicidal intention compared to non-anhedonic groups [26]. Furthermore, the same study also found that anhedonia has a significant relationship with suicide attempts. It is crucial to recognize the association between anhedonia and suicidal ideation to identify individuals who may be at higher risk of suicide. Early intervention and treatment of depression and anhedonia can help reduce the risk of suicidal ideation and prevent suicide.

### **Characteristics of Religious Coping of Research Subjects**

Most of the respondents in this research relied more on positive religious coping rather than negative religious coping, as evidenced by a mean score of 23.19 vs. 10.64 respectively. The result of this study are not much different compared to previous studies, such as religious coping on health-care workers where positive religious coping scored 21.33 and negative religious coping scored 10.52 [27]. Previous study on Faculty of Medicine in University of Malaya shows that medical students adopt positive religious coping as well (mean: 19.81) instead of negative religious coping (mean:10.16) [28].

This result however is to be expected, because generally religion and faith teaches us to put or trust in God. In the Islamic Religion for example, the Holy Quran taught the believers of Islam to put trust in God and rely on Him [29]. By having a dependence on a higher being or power, people will feel less pressured, and even in the direst situation, relying on God may reduce anxiety and combat emotions of hopelessness and despair.

### **Correlation Between Level of Depression and Religious Coping**

The finding of this study has found that level of depression negatively correlates with religious coping. This result means that individuals who lean more on positive religious coping have lower level of depression and vice versa where those who lean on negative religious coping indicates a higher severity of depression.

Several past researches supported our result of study. Research has found that the level of depression is associated with the use of religious coping strategies among individuals. Choi et al. found out that individuals who relied more on positive religious coping strategies, such as seeking spiritual support and connecting with a religious community, were less likely to experience depression [30]. On the other hand, individuals who relied more on negative religious coping strategies, such as feeling angry or abandoned by God, were more likely to experience decline in mental and physical health. Similarly, a study by Chow et al found that individuals who reported higher levels of religious coping had lower levels of depression and anxiety, further proving that positive religious coping remains an important coping mechanism to improve mental health. However, it is important to note that the relationship between religious coping and depression may be influenced by factors such as the individual's religious beliefs and practices, cultural background, and the type of religion [27].

For study limitations, study findings should be interpreted while considering several limitations. Considering our sample number, our study may not be generalizable to the broader population of medical students in other countries. Potential confounding variables that were beyond the scope of this study existed, such as family history or financial status, that may influence student success. In addition, individual's religious beliefs and practices, cultural background, and the type of religion may also contribute to result, considering the Islamic religion has dominated the result while some other

religion only have a few and some with no result.

### Conclusions

A total of 64.4% of the respondents were reported to have no depression, and 35.6% were reported to suffer from depression, based on the PHQ-9 questionnaire. The religious coping mechanisms that are mostly used by the respondents are positive religious coping (93.3%) with a mean of 23.19, compared to negative religious coping (6.7%) with a mean of 10.64. The results of this study suggest that depression has a moderate strength of correlation with a negative direction of correlation. Which means that as people use positive religion to cope more, their level of depression will be lower in severity, and vice versa.

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### Conflict of interests

The authors declared no conflict of interest.

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