The Effect of Progressive Muscle Relaxation on Sleep Quality and Anxiety Level of Students Confirmed Covid-19

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Article Info	ABSTRACT
  Read online: *Scan this QR code with your smart phone or mobile device to read online.*	Coronavirus disease is a virus that causes respiratory system disorders. Based on data from the Indonesian Ministry of Health, 2022, the number of covid-19 exposures that have been confirmed positive is 6,512,913, recovered as 6,319,990 died 158,768. Progressive muscle relaxation focuses on muscle activity. The purpose of this exercise is to lower the tension. This study aims to measure the effectiveness of exercise on sleep quality and anxiety levels. This study is a quantitative research method, using purposive samples with a quasi-experimental study pretest-posttest one-group research design. This study sampled 24 students who declared confirmed Covid-19. The value of sleep quality is 2.17, with a standard deviation of 0.761. The results obtained a p-value of 0.000, then the $p < \alpha$ where H0 was rejected, significant influence on sleep quality before and after exercise. The value of the level of anxiety after exercise is 2.17, with a standard deviation of 0.381. The results p-value of 0.000, then the $p < \alpha$ where H0 was rejected, significantly influenced the level of student anxiety before and after exercise. The contribution of this research can be used for nursing information, especially for patients who are confirmed Covid-19. **Keywords:** Anxiety, Sleep quality, Muscle Relaxation, Covid-19, Student

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1. INTRODUCTION

Coronavirus is a virus that causes respiratory infections known as Severe Acute Respiratory Syndrome Coronavirus 2 (Covid-19) (Lai et al., 2020). At the end of January 2020, the World Health Organization (WHO) declared Covid-19 to be a global health emergency status and in April 1,278,523 people were found infected with covid-19 (Lingkaran et al., 2022). Based on data from the Indonesian Ministry of Health, as of November 04, 2022, the number of covid-19 exposures in Indonesia that have been confirmed positive is 6,512,913 cases, patients recovered as many as 6,319,990 cases, and died 158,768 people.

Globally shows the prevalence of sleep quality disorders in the world varies. National Sleep Foundation (NSF) survey in America showed 48% of respondents reported having poor sleep quality, and very bad (SWANSON et al., 2011). In Indonesia, the prevalence of sleep disorders is estimated to reach 10%, which means that out of a total of 238 million Indonesians, around 23 million of them experience sleep disorders (Putri & Makiyah, 2021). In Saudi Arabia medical students have a high prevalence of poor sleep quality (76%) (Almojali et al., 2017).

The impact of this pandemic certainly causes several disorders that occur in nurses and prospective health workers (Gorini et al., 2020; Serrano-Ripoll et al., 2020), including nursing students, including physical health, economic inequality, social inequality and mental disorders (de Jonge et al., 2020; Jaspal & Breakwell, 2022). One of the psychological responses experienced by health workers in

dealing with covid-19 patients is anxiety (Korkmaz et al., 2020; Shah et al., 2021). The experiences of nurses who treat Covid-19 patients include anxiety, nurse loyalty, nurse feelings and efforts to reduce the risk of contracting (Chen et al., 2022; Ke et al., 2021; Roberts et al., 2021).

Based on the results of interviews with 7 nursing students of STIkes Ahmad Dahlan Cirebon who are undergoing self-isolation because of confirmed Covid-19, it was admitted that 5 people said that their sleep quality was not adequate when they knew positive Covid-19 had difficulty closing their eyes while in bed, often waking up in the middle of the night and finding it difficult to sleep again, and there were even students who had nightmares in their sleep, while 2 others said their sleep quality was adequate and comfortable. Similarly, regarding the level of anxiety, out of the 7 people interviewed, 6 people said they had anxiety and fear disorders, marked anxiety, fear of the thoughts of bad things that would be faced after being declared Covid-19, and 1 person felt only mild anxiety and not excessive fear. Based on the background above, the purpose this study to knowing the effect of progressive muscle relaxation on sleep quality and anxiety levels in students who have been confirmed with Covid-19. Several previous studies have examined progressive muscle relaxation on sleep quality and anxiety levels in patients in hospitals and medical clinics. For example Liu et al. (2020) examines patients in clinics of Hainan General Hospital. Alawna and Mohamed (2022), Özlü et al. (2021) researched the theme on patients at a hospital in Turkey. The novelty of this research is to highlight this theme for students who are confirmed to have Covid-19.

2. METHOD

The method is a quasi-experimental study pretest-posttest one group design (Nuniek Tri Wahyuni et al., 2022; Suteja & Setiawan, 2022), which aims to determine the quality of the sleep before being given therapi and after therapi. Experimental research aims to examine possible causalities due to the influence of certain treatments on others under controlled conditions. In this study treatment was only given to one group and there was no comparison group. Then the group given the treatment was immediately measured to find out the results. The design of this study used a population of students at Ahmad Dahlan College of Health Science Cirebon, Indonesia. Using purposive sampling (Kasmad et al., 2022; R Nur Abdurakhman et al., 2022), namely sampling based on certain considerations such as previously known population traits or characteristics. The samples taken in this activity were students who confirmed positive Covid-19 at Ahmad Dahlan College of Health Science Cirebon Regency as many as 24 students who met the inclusion criteria.

3. RESULTS AND DISCUSSION

3.1 Characteristics of Respondents Based on the Age

Table 1 shows the characteristics of respondents based on the respondents' age and explains the student's age to meet the characteristics of a respondent.

Table 1
Distribution of Respondents Based on the Age of Students Confirmed with Covid-19

Age variable		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17	2	8.3	8.3	8.3
	18	2	8.3	8.3	16.7
	19	12	50.0	50.0	66.7
	20	7	29.2	29.2	95.8
	21	1	4.2	4.2	100.0
	Total	24	100.0	100.0	

Based on Table 1 above, it illustrates that respondents aged 19 years were 12 people (50.0%), 20 years old as many as 7 people (2 9.2%) and 17 years and 18 years, namely 2 people each (8.3%), and the 21 years old as many as 1 person (4.2%). It can be concluded that the most is the age of 19.

3.2 Distribution of Respondents Based on the Gender

Table 2 shows the characteristics of respondents based on the respondents' gender and explains the student's gender to meet the characteristics of a respondent.

Table 2
Distribution of Responden Based on the Gender of Students Confirmed with Covid-19

Gender		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Man	11	45.8	45.8	45.8
	Woman	13	54.2	54.2	100.0
	Total	24	100.0	100.0	

Based on Table 2 above illustrate that the respondents were 11 men (45.8%), 20 women were 13 people (54.2%). It can be concluded that the most were women who were respondents to this study.

3.3 Distribution of Respondents Based on Sleep Quality Before and After Progressive Muscle Relaxation

Table 3 shows the respondents based on sleep quality before and after progressive muscle relaxation.

Table 3
Distribution of Respondents Based on Sleep Quality Before and After Progressive Muscle Relaxation

| Sleep Quality | Progressive Muscle Relaxation. | | | |
| | Before | | After | |
	N	%	N	%
Less	17	70.8	5	8.8
Enough	5	8.8	10	41.7
Good	2	8.4	9	37.5

Based on Table 3 above illustrates that before progressive muscle relaxation, most respondents had less sleep quality as many as 17 people (70.8%). After progressive muscle relaxation, most respondents had adequate sleep quality of 10 people (4 1.7%).

According to research conducted by Galván (2020), less sleep for a person is the cause of decreased cognitive skills. Some adolescents experience sleep disorders and experience unstable emotions (Brown et al., 2018), decreased achievement in school, and poor appearance (Hartmann & Prichard, 2018; Jakobsson et al., 2019).

3.4 Distribution of Respondents Based on Anxious Levels Before and After Progressive Muscle Relaxation

Table 4 shows the respondents based on anxiety levels before and after progressive muscle relaxation.

Table 4
Distribution of Respondents Based on Anxious Levels Before and After Progressive Muscle Relaxation

| Anxiety Levels | Progressive Muscle Relaxation. | | | |
| | Before | | After | |
	N	%	N	%
Light	2	8.3	20	83.3
Keep	16	66.7	4	16.7
Heavy	6	25.0	0	0

Based on Table 4 illustrates that prior to progressive muscle relaxation, most respondents had a moderate anxiety rate 16 people (66.7%). After progressive muscle relaxation, most respondents had a light anxiety rate of 20 people (83.3%).

O'Donnell and Dunlap (2019) conducted a similar study that stated that progressive muscle relaxation effectively lowered anxiety in students anxious about facing a competency test. In line with the research conducted by Bianchi et al. (2020), the same results were carried out on students who experienced anxiety when facing exams.

3.5 The Effect of Progressive Muscle Relaxation on Sleep Quality and Anxiety Levels of Student Confirmed by Covid-19

Table 5 shows the statistical results of the effect of progressive muscle relaxation on sleep quality and anxiety level of students confirmed with Covid-19.

Table 5
The Statistical Results

Variable		Mean	Std Deviation	Std Error	P *value*
Sleep Quality	Pre	1.38	0.647	0.132	0,000
	Post	2.17	0.761	0.115	
Anxiety	Pre	3.17	0.565	0.115	0,000
	Post	2.17	0.381	0.078	

Based on Table 5 illustrates that the average sleep quality score of college students before progressive muscle relaxation is 1.38 with a standard deviation of 0.647. The value of sleep quality after progressive muscle relaxation r is 2.1 7 with a standard deviation of 0.761. The statistical test results obtained a p-value of 0.000, then the $p < α$ where H0 was rejected, meaning that there was a significant influence between the sleep quality of students confirmed with Covid-19 before and after progressive muscle relaxation.

The following research by Liu et al. (2020) stated that progressive muscle relaxation could improve sleep quality. People who face difficulty sleeping can be overcome with muscle activities that can provide a sense of relaxation.

Based on Table 5 illustrates that the average value of students' anxiety level before progressive muscle relaxation is 3.17, with a standard deviation of 0.565. After progressive muscle relaxation, the average value of the anxious level is 2.1 7, with a standard deviation of 0.381 and a standard deviation of 0.078. The statistical test results obtained a p-value of 0.000, then the $p < α$ where H0 was rejected, meaning that there was a significant influence between the anxiety level of students confirmed with Covid-19 before and after progressive muscle relaxation.

Research conducted by Carisa and Wahyuni (2022) stated that there was an influence of progressive muscle relaxation on reducing the anxiety level of students who were doing their final project. Stress can decrease after progressive auto-relaxation (Corbett et al., 2019). İçel and Başoğul, (2021) while researched that aggressive muscle relaxation could reduce stress.

4. CONCLUSION

Based on the respondents' characteristics, including the age of the student and the gender of the respondent, each of them affected improving sleep quality in students after progressive muscle relaxation. After being carried out therapy, progressive muscle relaxation improves students' sleep quality confirmed with Covid-19. Similarly, the level of anxiety has a significant influence. After the progression of muscle relaxation, there is a decrease in the level of anxiety in Ahmad Dahlan Cirebon students confirmed with Covid-19. The effect of progressive muscle relaxation on the quality of students confirmed with Covid-19 at Ahmad Dahlan Cirebon in 2022, most respondents had sleep quality sleep that there was a significant influence between the sleep quality of students confirmed with Covid-19 before and after progressive muscle relaxation. Then there is an improvement in the quality of student sleep after progressive muscle relaxation. It can be seen from respondents' demographic data from the pre-test and post-test results conducted by researchers.

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