



## Effect of Progressive Muscle Relaxation on Anxiety

Erindra Budi Cahyanto<sup>1\*</sup>, Suratih K<sup>1</sup>

<sup>a</sup>D3 Kebidanan Sekolah Vokasi Universitas Sebelas Maret Jl. Kolonel Sutarto 150 K Jebres Surakarta 57126

\* Corresponding author

E-mail: [erindrabudi@staff.uns.ac.id](mailto:erindrabudi@staff.uns.ac.id)

### ABSTRACT

Teenagers need support to get through the musical period, let alone living with their parents. In the conditions of the COVID-19 pandemic, the stressors experienced are even greater. Adolescents need non-pharmacological support to stay healthy. This study aims to determine the effect of progressive muscle relaxation on adolescent anxiety in orphanages. This type of research is quasi-experimental. This research was conducted at the Mardhatillah Sukoharjo Orphanage, Central Java. The subjects were 42 people, divided into the control group (27 people) and the intervention group (15 people). Measurements were made before and before the intervention. The intervention group received the usual treatment plus progressive muscle relaxation for 4 weeks, while the control group was given the usual treatment. The measuring instrument uses HARS. Data were analyzed by paired t test not using the SPSS 21 program. There was a significant difference between the treatment and control groups with a mean of 7.80 and 10.48 ( $p < 0.001$ ). Advanced muscle relaxation can reduce the anxiety of adolescents living in the Mardhatillah orphanage, Sukoharjo, Central Java.

**Keywords:** Progressive muscle relaxation; teenager; orphanage, anxiety

### INTRODUCTION

Currently the world is facing a pandemic due to the corona virus disease 2019 (COVID 19) caused by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2)(2). The pandemic has resulted in thousands of victims experiencing illness and even death and still increasing from time to time (1).

Governments in various countries including Indonesia implement health protocols to prevent and control the transmission of COVID 19 including: washing hands using soap with running water or alcohol-based antiseptic, maintaining a minimum distance of one

meter from other people, using masks that cover the mouth and mouth, limiting oneself with others (2).

A survey of the impact of health protocols among adolescents in Poland showed that university students experienced high levels of stress and anxiety during the pandemic (3). Teenagers in the United States who are synonymous with various kinds of activities outside the home, now have to stay indoors a lot. This has an impact on mental health by increasing depression and anxiety scores above the normal threshold (4).

Systematic reviews and meta-analyses on eight databases to determine the

impact of COVID 19 on children and adolescents (aged < 18 years) found anxiety and depression disorders, emotional reactions and mental health, psychological stress and behavioral disorders, all of which affect life. For this reason, action is needed to improve mental health conditions among adolescents (5).

Adolescents who do not have parents or other reasons are cared for in orphanages (6). Under normal conditions, many teenagers need support to get through the transition period, especially for teenagers who do not live with their families, for example in orphanages, so they are vulnerable groups (7). In a pandemic, stressors are even greater (8). Given the various data above, there is a need for research to find out effective non-pharmacological relaxation methods to reduce adolescent anxiety, especially those living in orphanages during the COVID-19 pandemic.

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## METHOD

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### 1. Research Design

This study uses a non-equivalent control group design approach.

### 2. Population and Sample

The population in this study were all 42 children in the Mardhatillah orphanage. Subjects were divided into two groups. The determination of the group by random clusters resulted in 27 people being included in the control group (living at the Mardhatillah Polokarto Sukoharjo Orphanage) and 15 people being included in the treatment group (Mardhatillah Kartasura Orphanage).

The treatment group received routine support as usual plus a progressive muscle relaxation intervention three times a week for four weeks, while the control group received general support such as daily without relaxation. Aspects of justice (justice) is maintained by providing training in progressive muscle relaxation techniques in the control group after all interventions in the treatment group are completed.

### 3. Research Variables

The variables in this study were progressive muscle relaxation and anxiety in adolescents.

Progressive muscle relaxation is a relaxation technique by tensing and then relaxing while doing deep breaths on the muscles of the face to the feet, eyes and forehead, cheeks, mouth, nape, shoulders, hands, chest, stomach, back, buttocks, feet, soles of the feet. , while focusing on the feelings at hand. There is an interaction between physical and emotional relaxation thereby reducing psychological stress.

Anxiety is a state of deep feeling of worry that causes disturbances in behavior. The measuring instrument used is the Hamilton Anxiety Rating Scale (HARS) which has a patent value on anxiety.

### 4. Research instrument

Hamilton Anxiety Rating Scale (HARS) is a measuring instrument for anxiety symptoms which consists of 14 aspects including: anxiety, tension, fear, sleep disturbances, thinking disorders, depression, onset of symptoms in muscles, sensory disorders, heart and blood vessel system, respiratory system, digestive, urinary, autonomic nervous system, behavior. The Indonesian version of HARS has been measured and is declared valid and reliable (Ramdan, 2019).

### 5. Data Analysis

The normality test to see the distribution of the data is used as a determinant of the type of mean difference test between the two groups to be compared. Data analysis using SPSS 21 program.

### 6. Research Ethics

This study pays attention to research ethics and has received a letter of ethical feasibility from the Ethics Committee of the Faculty of Medicine UNS number 26/UN27.06.0.1/KEP/EC/2021.

## RESULT

### Subject Characteristics

The characteristics of the subjects in general are relatively in the same criteria, as presented in table 1 the number of subjects is 42 teenagers who live in the orphanages of Mardhatillah Kartasura and Polokarto. Male sex as many as 26 subjects (62%), more than female adolescents amounted to 16 subjects (38%). The education level of junior high school (SMP) subjects was 15 subjects (35.7%) and high school (SMA) was 27 subjects (64.3%).

**Table 1. Characteristics of Subjects**

Karakteristik	n	%
<b>Gender</b>		
Boy	26	62
Girl	16	38
<b>Education</b>		
SMP	15	35.7
SMA	27	64.3

**Table 2. Characteristics of the age of the subjects**

Characteristics	
Ages (years)	
N	42
Mean	15.62
SD	1.87
Min	12
Max	20

Table 2 shows the results of the age analysis of adolescents living in the Mardhatillah orphanage. A total of 42 people who live are teenagers. This category can be seen from the observations of the age of the subject which is indicated by the minimum age value of 12 years and the maximum age of teenagers living 20 years. The average age of the subject is 16 years.

### Pre Test Results

Statistical results using SPSS 17 about anxiety in the control group and the intervention group before performing progressive muscle relaxation are as follows:

**Table 3. Pre Test Anxiety Test Results**

	Control	Experimental
N	27	15
Mean	13.14	11.86
SD	8.29	2.85
sig	0.567	
95 CI	-3.20 – 5.57	

Based on table 3, the results of the anxiety test on adolescents at the Mardhatillah orphanage obtained a significance of 0.56, the p value > 0.05 means that there is no difference in anxiety between the pre-control group and the pre-experimental group.

The pre-control group has a mean anxiety of 13.14 which means experiencing mild anxiety. In the pre-experimental group the mean anxiety is 11.86 which means experiencing mild anxiety. There was no difference in anxiety between groups before treatment, making the intervention conditions ideal.

The statistical results using SPSS 17 about anxiety in the control group and the intervention group after progressive muscle relaxation are as follows:

**Table 4. Post Test Anxiety Test Results**

	Control	Experimental
N	27	15
mean	10.48	7.80
SD	2.76	1.26
Significant		0.001
95 CI lower		1.15
95 CI upper		4.21

In the control group, the result is 10.48, which means experiencing mild anxiety. The experimental group showed a result of 7.80 which means experiencing mild anxiety.

## DISCUSSION

The results of the analysis showed that progressive muscle relaxation can significantly reduce anxiety in adolescents

( $p < .0.001$ ). These results mean that orphanage adolescents who do progressive muscle relaxation experience less anxiety than adolescents who do not do progressive muscle relaxation.

Conditions before the intervention and after the intervention were in the category of mild anxiety, but there was a decrease in anxiety scores.

Anxiety that occurs can cause interference and will cause disruption if not handled (9). Anxiety can be characterized by heart palpitations, body feeling hot and cold, shaking and cold sweats, unfocused, muscle tension, tired easily, blank, irritability, sleep disturbances and some even have an impact on the final exam results (10); (11). By participating in progressive muscle relaxation regularly every day at least once, teenagers at Mardatillah orphanage are calmer in facing exams.

In addition to appearing before facing an exam, anxiety has the potential to arise due to lack of rest, failure to overcome mild anxiety, many personal problems such as family problems, financial problems or others. The success of managing mild anxiety will determine a person experiencing severe anxiety (12).

Progressive muscle relaxation can help reduce anxiety, because in the relaxation group there will be changes in blood pressure and produce a more stable and regular pulse rate (13).

Progressive muscle relaxation has a calming effect because someone who does progressive muscle relaxation has lower cortisol/stress hormone levels (14). The results of this study also support the results of previous studies on relaxation (15).

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### CONCLUSION

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The conclusion of this study is that progressive muscle relaxation reduces adolescent anxiety at the Mardhatillah Sukoharjo orphanage.

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