



## Progressive Muscle Relaxation Therapy as an Alternative for Managing Stress During the COVID-19 Pandemic in Yapen Islands Regency

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**Abstract.** COVID-19 was first detected in Wuhan, Hubei Province, China. The virus spread rapidly, prompting the World Health Organization (WHO) to classify COVID-19 as a global pandemic. In Indonesia, the virus spread at a fast pace. According to WHO data, there have been 6,535,354 COVID-19 cases globally, with 387,155 deaths. A total of 216 countries, including Indonesia, have been affected by this virus. In Indonesia, there have been 29,521 confirmed cases with 1,770 deaths, while in West Nusa Tenggara (NTB), 798 cases and 22 deaths have been reported. The high number of cases has placed significant stress on the public, both mentally and physically, due to the pressures brought on by the pandemic. This study employed a Quasi-Experimental design with a sample size of 50 respondents, selected using the purposive sampling technique. The study aimed to assess the impact of progressive muscle relaxation techniques on reducing stress levels in the community of Kepulauan Yapen Regency. Based on statistical tests, the average stress score before the intervention was 16.80, which decreased to 11.58 after the intervention with progressive muscle relaxation techniques. There was an average reduction of 5.16 in stress scores, with a  $p$ -value of  $0.000 < \alpha = 0.05$ . Conclusion: This study concluded that progressive muscle relaxation therapy has a significant effect on reducing stress levels in the community during the COVID-19 pandemic in Kepulauan Yapen Regency.

**Keywords :** Progressive Muscle Relaxation, Stress, COVID-19

### 1. INTRODUCTION

Coronavirus Disease 2019 (COVID-19) was first identified in Wuhan, Hubei Province, China. Its rapid spread and transmission led the World Health Organization (WHO) to declare COVID-19 a global pandemic. In Indonesia, the virus spread rapidly as well. According to WHO data, there were 6,535,354 COVID-19 cases worldwide, with 387,155 deaths. A total of 216 countries, including Indonesia, were affected by the virus. In Indonesia, 29,521 positive cases were reported, with 1,770 deaths.

The widespread transmission of this virus has had a profound impact on societal life. To minimize its spread, several measures must be taken, especially since the pandemic has triggered psychological issues like heightened anxiety within the community. This situation is further exacerbated by the general public's lack of understanding about COVID-19 (Ausrianti et al., 2020; Mona, 2020).

This lack of knowledge prevents people from responding effectively to the situation, resulting in stress, particularly due to restrictions on outdoor activities and the accumulation of work resulting from the work from home policy. Research by Purwanto (2020) revealed that one cause of stress is the piling up of tasks that need to be completed. If individuals can manage their time well, work from home should not pose a problem.

When stress is managed, productivity increases. Conversely, when stress becomes overwhelming, productivity decreases.

Stress is an adaptive response influenced by individual differences and psychological processes. It arises from external factors, situations, or events that cause physical and psychological tension. These external factors are known as stressors (Ivancevich, Konopaske, & Matteson, 2006).

One form of stress that can lead to mental health issues, aside from anxiety, is depression. Both anxiety and depression exhibit symptoms affecting the functions of organs controlled by the autonomic nervous system. According to Arisjulyanto (2017), stress can cause blood vessels to constrict and muscles to tighten, leading to increased blood pressure and potentially triggering hypertension. Addressing this issue requires a therapy that is easy to apply and effective in managing stress during the COVID-19 pandemic (Muslimin, 2017; Arisjulyanto, 2018).

Stress during the pandemic is driven by multiple factors, such as the inability to engage in outdoor activities, increased workloads due to work from home, and concerns about personal and family safety. Research indicates that poor stress management may decrease productivity and quality of life (Purwanto, 2020). If left unaddressed, prolonged stress can lead to mental health problems such as anxiety and depression, potentially resulting in serious health conditions.

One effective method for managing stress is Progressive Muscle Relaxation Therapy. This technique involves alternating muscle tension and relaxation to help individuals achieve a deep state of relaxation, thereby reducing both physical and psychological stress symptoms. Research has shown that progressive muscle relaxation therapy is effective in lowering anxiety and stress levels, as well as improving blood pressure and cardiovascular health (Arisjulyanto, 2017; Lestari & Yuswiyanti, 2015).

A study by Ilmi, Dewi, & Rasni (2017) also demonstrated that relaxation techniques effectively reduce stress levels in patients. Progressive muscle relaxation is a step-by-step relaxation process, with or without muscle tension, using mental focus to alleviate the physiological and emotional components of stress. This technique reduces tension and changes physiological parameters in the body.

In Kepulauan Yapen, progressive muscle relaxation therapy is an accessible and widely applicable solution. It is easy to practice, requires no special equipment, and can be performed by anyone. The application of this therapy is expected to provide an

effective means of stress management during the COVID-19 pandemic, especially when access to mental health services may be limited.

Given this background, research on the use of Progressive Muscle Relaxation Therapy as an alternative solution for managing stress during the COVID-19 pandemic in Kepulauan Yapen is crucial. This study aims to determine the extent to which the therapy can help reduce stress levels in the community during the pandemic, thereby contributing positively to both mental and physical health in Kepulauan Yapen.

## **2. METHODS**

The research design used in this study is a one group pretest-posttest design. In this design, stress levels in the community were measured twice: before and after the intervention of progressive muscle relaxation therapy. The study aims to measure the effect of the therapy on reducing stress levels in the community during the COVID-19 pandemic.

The study was conducted in the Yapen Islands Regency. Data collection was carried out over a specific period, adjusted to the conditions of the pandemic and local health policies. The population of this study consisted of individuals in Yapen Islands Regency who experienced stress during the COVID-19 pandemic. The sample used in this study was 50 respondents, selected using purposive sampling techniques.

Stress levels were measured using the Perceived Stress Scale (PSS), a valid and reliable instrument for assessing individual stress levels. The scale consists of several items that measure psychological responses to stressful situations. Measurements were taken twice, once before (pretest) and once after (posttest) the progressive muscle relaxation therapy intervention.

The study began with administering a pretest to the respondents to assess their stress levels before the intervention. Following this, respondents underwent progressive muscle relaxation therapy for two weeks, with three sessions per week. Each therapy session lasted 30 minutes and was guided by healthcare workers trained in progressive muscle relaxation techniques. After two weeks, a posttest was conducted to assess changes in stress levels among respondents following the intervention. The data obtained from both the pretest and posttest were analyzed to determine whether progressive muscle relaxation therapy had a significant effect on stress reduction.

The data collected were analyzed using a paired t-test to compare pretest and posttest scores. This test was employed to determine whether there were significant

differences between stress levels before and after the progressive muscle relaxation therapy. A p-value of less than 0.05 was considered significant.

### 3. RESULTS

#### Respondent Characteristics

Table 1. Respondent Characteristics

Variable	n	%
<b>Sex</b>		
Male	29	58
Female	21	42
<b>Education</b>		
No Formal Education	16	32
Elementary School	4	8
Junior High School	5	10
Senior High School	13	26
Bachelor's Degree	12	24
<b>Job</b>		
Employed	42	84
Unemployed	8	16

Based on the data in Table 1, the majority of respondents are male, representing 58%, while the highest level of education is "no formal education," accounting for 32%. Additionally, 84% of respondents are employed.

Table 2. Stress Levels Before and After Progressive Muscle Relaxation Therapy

Stress Levels	Mean	n	CI95%	P value
Pretest	16,80	50	16,19-17,30	0,000
Posttest	11,58	50	11,07-12,09	

Based on the data presented in Table 2, the average stress score before the intervention was 16.70, which decreased to 11.52 after the intervention using progressive muscle relaxation techniques. The average stress score of the community showed a decrease of 5.22 following therapy with progressive muscle relaxation techniques, with a p-value of 0.000, which is less than  $\alpha = 0.05$ . This indicates that there is a significant effect of progressive muscle relaxation therapy on reducing the stress levels of the community during the COVID-19 pandemic.

### 4. DISCUSSION

Respondents face various sources of stress that can trigger its onset, such as their environment and community. Furthermore, during the current COVID-19 pandemic, all activities have become significantly restricted. Many tasks must be completed at home, and inefficiencies in work lead to a backlog of tasks, ultimately resulting in increased stress.

The results of this study indicate a significant effect on the reduction of stress levels in the community after the implementation of progressive muscle relaxation therapy. These findings align with Arisjulyanto's (2017) research, which states that progressive muscle relaxation can reduce stress levels and blood pressure in hypertensive patients. Additionally, Ilmi et al. (2017) found that progressive muscle relaxation techniques effectively decreased anxiety and stress in female inmates. Similar research conducted by Lestari & Yuswiyanti (2015) also indicates that progressive muscle relaxation is highly effective in lowering anxiety and stress levels in patients.

According to Casey & Benson (2006), the physiological response of the body to stress is known as the "fight or flight" response. In this response, the brain's cortex receives stimuli transmitted through the sympathetic nerves to the adrenal glands, which then release adrenaline or epinephrine. As a result, breathing becomes deeper, heart rate increases, and blood pressure rises. This response requires quick energy, prompting the liver to release more glucose as fuel for the muscles, along with the release of hormones that stimulate the conversion of fats and proteins into sugar.

Progressive Muscle Relaxation (PMR) has emerged as a promising alternative for managing stress across various populations. Research indicates that PMR effectively reduces anxiety, improves sleep quality, and enhances overall mental health.

In a study involving geriatric women, PMR significantly decreased state anxiety, muscle tension, and sleep disturbances, demonstrating its effectiveness among older adults facing psychosocial stress (Berry, 1982). Adolescents experiencing stress and aggression showed a notable improvement in anger management and health-related quality of life after an 8-week PMR intervention (Nickel et al., 2005).

COVID-19 patients reported decreased anxiety and improved sleep quality following PMR exercises, highlighting its relevance during health crises (Özlü et al., 2021). Pregnant women also benefited from PMR, with significant reductions in depression, anxiety, and stress levels, indicating its applicability in maternal health (Nejad et al., 2015). Neurophysiological studies have confirmed the effectiveness of PMR in

alleviating anxiety symptoms, as evidenced by changes in EEG patterns and physiological responses (Ranjita & N, 2014).

This statement is further supported by Triyanto (2014) in his book, *Integrated Nursing Care for Hypertension Patients*, which explains that relaxation techniques produce an integrated physiological response and disrupt a part of consciousness known as the “Benson relaxation response.” This relaxation response is thought to inhibit the autonomic nervous system and central nervous system while enhancing parasympathetic activity, characterized by decreased skeletal muscle tone, cardiac muscle tone, and disruptions in neuroendocrine function.

To gain the benefits of the relaxation response, it is essential to create a calm environment, assume a comfortable position, and utilize relaxation exercise recordings, such as tapes. These tools will help patients focus their attention on releasing tension in key muscle groups while feeling the rhythm of their breathing. Relaxation therapy is one of the self-management techniques based on the workings of the sympathetic and parasympathetic nervous systems. The increasing application of relaxation techniques is due to their proven effectiveness in reducing tension and anxiety, supported by numerous studies on progressive relaxation. Progressive relaxation therapy has been shown to be effective in reducing anxiety and stress (Arisjulyanto, 2017; Triyanto, 2014).

While PMR demonstrates considerable benefits, some may argue that its effectiveness can vary based on individual circumstances and the severity of stressors, underscoring the need for a personalized approach to stress management.

## **5. CONCLUSION**

Based on the results of this study, it can be concluded that progressive muscle relaxation therapy has a significant effect on reducing stress levels in the community during the COVID-19 pandemic. Measurements taken before and after the intervention showed a meaningful decrease in stress scores, indicating the effectiveness of relaxation techniques in helping individuals manage stress arising from health crisis situations.

These findings support previous research that indicates relaxation techniques can reduce stress and anxiety while providing positive contributions to mental health. Therefore, progressive muscle relaxation therapy is recommended as an effective and practical method for addressing mental health issues that arise due to social restrictions and emotional pressures during the pandemic.

Furthermore, additional research is needed with a larger sample size and various sampling methods to strengthen these findings. The implementation of this relaxation technique in community contexts should also be expanded to ensure greater accessibility and a wider positive impact on improving the mental well-being of the community.

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