



# Effectiveness of Music and Progressive Muscle Therapy on Insomnia in the Elderly in Sowan Village

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**Abstract.** Analyzing differences in the effectiveness of music therapy and progressive muscle relaxation in the elderly with insomnia. This research is a quantitative study with a *Quasy Experiment research* design and uses a pretest and posttest group design approach. The sampling technique used in this study was purposive sampling and obtained 34 respondents. Based on the results of research with Wilcoxon Test, the mean value of insomnia level in the music therapy group was 30.76 to 21.94 and the progressive muscle relaxation group was 30.53 to 21.82 with the overall p value being 0.000 or ( $p < 0.05$ ). So it can be concluded that there is an effect of giving music therapy and progressive muscle relaxation in the elderly who experience insomnia. The results show music therapy was effective in reducing the level of insomnia in the elderly, this result was proven by decrease in the level of insomnia with a p value of 0.000 or  $< 0.05$  and progressive muscle relaxation therapy was effective in reducing the level of insomnia in the elderly. The result was proven by decrease in the level decrease in the level of insomnia with a p value of 0.000 or  $< 0.05$ .

**Keywords:** Music Therapy · Progressive Muscle Therapy · Insomnia · elderly

## 1 Introduction

Indonesia's elderly population ranks fourth in the world's largest. According to the Ministry of Social Welfare (2008) in 2020 the number of elderly people was 28.8 million people or about 11.34% with a life expectancy of 71.1 years. In Central Java Province, the elderly aged 50–54 accounted for 7.01%, aged 55–59 contributed 6.14%, and those aged 60–69 contributed 6.05% [1].

According to the National Sleep Foundation, among 1,508 elderly people aged 65 years and over in the United States, about 67% reported experiencing sleep disorders, while as many as 7.3% elderly complained about sleep disorders or insomnia (Mehardika, 2012). The elderly's inability to get good quality sleep and lack of REM sleep can cause dizziness, loss of enthusiasm, laziness, irritability, decreased ability to make sound decisions, and lead to depression and frustration complaints. Management that can be done to overcome insomnia can be done using pharmacological or non-pharmacological therapy. Pharmacological therapy such as sleeping pills, while

non-pharmacological therapies such as relaxation therapy can be done by using music therapy or progressive muscle relaxation which is believed to be able to provide a sense of comfort and benefit to meet sleep quality even though it has not been widely used [1].

Progressive muscle relaxation is a technique that focuses on relaxation and stretching of a group of muscles in a relaxed state, while music therapy is the giving of musical elements to a person to provide a therapeutic effect. When you hear beautiful music, the “happiness” hormone (betaendorphins) will produce [5].

Based on the explanation above, the researcher wants to conduct research to determine the effectiveness of music therapy and progressive muscle relaxation on reducing insomnia in the elderly in Sowan Hamlet, Nambuhan Village.

## 2 Research Methods

The research method used in this research is Quasy Experiment with pretest and posttest control group design. The population in this study were the elderly who experienced insomnia in Nambuhan Village, which amounted to 38 people with a total sample of 34 people.

## 3 Research Results

Based on the results of the study, the average age of the respondents is 62.3, the youngest age is 57 years and the oldest age is 69 years with a standard deviation of 2,939. The gender of the respondents were mostly women as many as 19 people (55.9%) with the

**Table 1.** Frequency Distribution of Respondents’ Characteristics by Age, Gender, Education and Occupation

Characteristics of Respondents	Frequency (f)	Percentage (%)	mean	SD	Min	max
<b>Age</b>			62.3	2,939	57	69
55–65 Years	30	88.2				
66–75 Years	4	11.8				
<b>Gender</b>						
Man	15	44.1				
Woman	19	55.9				
<b>Education</b>						
SD	33	97.1				
Bachelor	1	2.9				
<b>Profession</b>						
IRT	14	41.2				
Farmer	20	58.8				

**Table 2.** Frequency Distribution of Insomnia Levels Before and After Music Therapy is Given in Patients with Sleep Disorders (Insomnia)

Insomnia Level	No insomnia		Mild Insomnia		Insomnia Currently		Severe Insomnia	
	F	%	F	%	f	%	f	%
Pre-test	-	-	1	5.9	15	88.2	1	5.9
Post-test	4	23.5	13	76.5	-	-	-	-

**Table 3.** Frequency Distribution of Insomnia Levels Before and After Giving Progressive Muscle Relaxation Therapy in Patients with Sleep Disorders (Insomnia)

Insomnia Level	No insomnia		Mild Insomnia		Insomnia Currently		Severe Insomnia	
	F	%	F	%	f	%	F	%
Pre-test	-	-	2	11.8	15	88.2	-	-
Post-test	7	41.2	9	52.9	1	5.9	-	-

**Table 4.** The effect of music therapy and progressive muscle relaxation in the elderly who experience insomnia

Group	Variable	Average	Z	P value
Music therapy	Pre-test	30.76	-3,827	0.000
	Post-test	21.94		
Progressive Muscle Relaxation	Pre-test	30.53	-3.666	0.000
	Post-test	21.82		

last education level of the respondents at most being elementary school as many as 33 people (97.1%) and most of the respondents' occupations being farmers as many as 20 people (58.8%) (Table 1).

Based on the results showed that the level of Insomnia Before being given music therapy most of the respondents experienced moderate insomnia levels 15 people (88.2%), and after being given music therapy most experienced mild insomnia levels as many as 13 people (76.5%) (Table 2).

Based on the results of the study, the level of Insomnia Before being given progressive muscle relaxation therapy, most of the respondents experienced moderate insomnia levels 15 people (88.2%), and after being given music therapy most experienced mild insomnia levels as many as 9 people (52.9%) (Table 3).

Based on the results of the study using the Wilcoxon Test, the mean value of insomnia level in the music therapy group was 30.76 to 21.94 and the progressive muscle relaxation

group was 30.53 to 21.82 with the overall p value being 0.000 or ( $p < 0.05$ ). So there is an effect of giving music therapy and progressive muscle relaxation in the elderly who experience insomnia (Table 4).

## 4 Discussion

### 4.1 The Effectiveness of Music Therapy in Elderly Who Has Insomnia

Music therapy was effective in reducing the level of insomnia in the elderly, this result was proven by a decrease in the level of insomnia in the music therapy group from 30.76 to 21.94 with a p value of 0.000 or  $< 0.05$ . Music is useful to help the elderly who experience it. These results are in line with the research put forward by [5]. Music therapy makes the brain release dopamine (a hormone associated with the brain system, providing feelings of enjoyment and reinforcement to motivate someone to proactively carry out certain activities so as to relieve stress (Natalina, 2018).

### 4.2 The Effectiveness of Progressive Muscle Relaxation in the Elderly with Insomnia

Progressive muscle relaxation therapy was effective in reducing the level of insomnia in the elderly. This result was proven by a decrease in the level of insomnia in the progressive muscle relaxation group from 30.53 to 21.82 with a p value of 0.000 or  $< 0.05$ . Under conditions of stress the body's metabolism increases in preparation for the use of energy in physical actions. Through progressive muscle relaxation exercises in the elderly who are trained to be able to elicit a relaxation response so that they can achieve a calm state [7]. The above is in accordance with the theory put forward by Edmund Jacobson (1920) in [3] that progressive muscle relaxation exercise which is carried out for 20–30 min, once a day regularly for one week is quite effective in reducing insomnia.

## 5 Conclusion

The results show music therapy was effective in reducing the level of insomnia in the elderly, this result was proven by decrease in the level of insomnia with a p value of 0.000 or  $< 0.05$  and progressive muscle relaxation therapy was effective in reducing the level of insomnia in the elderly. The result was proven by decrease in the level decrease in the level of insomnia with a p value of 0.000 or  $< 0.05$ .

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