BENEFITS OF PROGRESSIVE MUSCLE RELAXATION TO IMPROVE SLEEP QUALITY IN YOUTH

MANFAAT RELAKSASI OTOT PROGRESIF UNTUK TINGKATKAN KUALITAS TIDUR DI REMAJA

Kanthi Suratih*, Erindra Budi
Midwifery, Vocational School, Sebelas Maret University, Jalan Ir. Sutami 36 Kentingan, Surakarta Indonesia
Correspondence Email: kanthi.suratih@staff.uns.ac.id

ABSTRACT

Sleep disturbances are common among teenagers in the era of the Covid-19 pandemic due to the implementation of online learning. The results of several 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, reactions to emotional and mental health, psychological distress, and behavioral disorders, sleep disturbances, nightmares and it all can affect aspects of adolescent life, especially in orphanages where they do not have relatives and parents. So it is felt that it is very important to do a non-pharmacologic therapeutic action to overcome these problems and progressive muscle relaxation is one of the easy methods to be carried out by teenagers in orphanages. This study aims to determine the effect of progressive muscle relaxation on adolescent sleep quality. using method. pre- and post-test experiments with a control group. Involving research subjects as many as 42 teenagers. Data were analyzed by paired t test not using the SPSS 21 program. There was a significant difference between the control and treatment groups with a mean of 6,52 and 4,20 and getting a p-value of 0.003 so that it can be concluded that the implementation of progressive muscle relaxation can be useful for making good sleep quality for adolescents in orphanages.

Keywords: progressive muscle relaxation; sleep quality; teenagers

ABSTRAK

Gangguan tidur sering terjadi di kalangan remaja di era pandemi Covid-19 akibat penerapan pembelajaran daring. Hasil beberapa tinjauan sistematis dan meta-analisis pada delapan database untuk mengetahui dampak COVID-19 pada anak dan remaja (usia <18 tahun) ditemukan gangguan kecemasan dan depresi, reaksi terhadap kesehatan emosional dan mental, tekanan psikologis, dan perilaku gangguan, gangguan tidur, mimpi buruk dan itu semua dapat mempengaruhi aspek kehidupan remaja terutama di panti asuhan dimana mereka tidak memiliki kerabat dan orang tua. Sehingga dirasa sangat penting dilakukan tindakan terapi non farmakologis untuk mengatasi permasalahan tersebut dan relaksasi otot progresif merupakan salah satu metode yang mudah dilakukan oleh remaja di panti asuhan. Penelitian ini bertujuan untuk mengetahui pengaruh relaksasi otot progresif terhadap kualitas tidur remaja, menggunakan metode. eksperimen sebelum dan sesudah tes dengan kelompok kontrol. Melibatkan subyek penelitian sebanyak 42 remaja. Data dianalisis dengan uji t berpasangan tidak menggunakan program SPSS 21. Terdapat perbedaan yang signifikan antara kelompok kontrol dan perlakuan dengan mean 6,52 dan 4,20 serta mendapatkan p-value 0,003 sehingga dapat disimpulkan penerapan relaksasi otot progresif dapat bermanfaat untuk membuat tidur nyenyak. kualitas remaja di panti asuhan.

Kata kunci: relaksasi otot progresif; kualitas tidur; remaja

Copyright © 2022 Authors
This work is licensed under a Creative Commons Attribution - ShareAlike 4.0 International License
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). The number of confirmed cases in 222 countries as of January 7, 2021, reached 85,929,428 patients, and 1,876,100 died. In Indonesia, the number of patients reached 797,723, recovered 659,437 people, and 23.52 died (Zhang et al., 2020). This 2019 series of Corona diseases also have a bad impact on human mental health such as stress, anxiety to depression, sleep disorders, and others (Apriyani, 2021).

Some of the factors that influence sleep patterns are increased concerns about Covid-19, low family and environmental support, academic disorders, and declining physical health. On the other hand, several studies have also declared that age, gender, economic status, and information about sleep affect the occurrence of sleep pattern disorders in adolescents. Sleep problems are associated with increasing age in adolescents. Sleep problems are more often experienced by female adolescents than male adolescents (Apriyani, 2021). Another study states that there is no significant gender difference in sleep problems. Economic status is one of the determinants of a person's health (Hartini et al., 2021).

Adolescents according to the Ministry of Health of the Republic of Indonesia range from 10 to 19 years and are unmarried. the transitional period from childhood to adulthood. Many changes have an impact both physically and psychologically. Under normal conditions, many teenagers need support to get through the transition period, especially teenagers who do not live with their families, for various reasons, for example in orphanages, so they are a vulnerable group. In a pandemic. There are more and more stressors that make teenagers experience stress, even depression and other mental problems such as sleep disorders and mood disorders, and decreased learning abilities (Putri & Azalia, 2022).

Many changes that have to be suddenly adopted by the world's population in this era of covid, changes have both physical and psychological impacts. Under normal conditions, many teenagers need support to get through the transition period, especially teenagers who don't live with their families, for example in orphanages, so they are a vulnerable group. And in this pandemic condition, the stressor is even greater (Keliat et al., 2020).

Various problems experienced by the teenagers in the orphanage include aspects of adjusting to the environment in the orphanage such as adjustment with friends at the orphanage, with caregivers, problems adjusting to the surrounding environment, as well as problems adjusting to the school environment, especially with online learning methods that do not recognize space and boundaries, time (Hasanah et al., 2020), and with online school activities that do not know this time, of course, it will have an impact on the sleep quality of teenagers who are still in school (Ariyanto, 2015).

Quality sleep is a state in which a person can easily fall asleep and stay asleep (Perry, 2016). If you do not feel discomfort while sleeping, someone can say that your sleep quality is good, and you do not experience various disorders such as dizziness, body aches, excessive daytime sleepiness, fatigue, and so on. When we sleep, our awareness of our surroundings stops and we enter a state of rest called a cycle to allow the body to rest, which is processed by the sleep center. At the same time, the body can produce substances that, once in the bloodstream, can cause drowsiness. When this process is altered by stressors, distractions, anxiety, and physical stress, it can contribute to sleep disturbances. Good quality sleep can provide a feeling of calm in the morning, and a feeling of energy, and did not complain of sleep disturbances. In theory, the normal number of hours of sleep is in the range of 6-8 hours in 24 hours (Perry, 2016).

The incidence of sleep quality problems in adolescents during the Covid-19 pandemic has been reported in a survey in China and it was found that 20.1% of 320 children and adolescents had sleep problems. In addition, there is a study obtained data that
55.8% of respondents reported having sleep disorders. The decline in sleep quality is often not realized by adolescents with an age range of 13-17 years, it is found that 66% have sleep problems, but only a third of that number can identify themselves as having sleep problems (Hartini et al., 2021).

One of the non-pharmacological therapies that can be used as an alternative treatment for sleep quality disorders that many adolescents experience in this pandemic era is progressive muscle relaxation which gives satisfactory results in a therapeutic program for muscle tension, reduces anxiety, makes it easier for clients to get good sleep, depression, reduces fatigue, cramps, neck and back pain, lowers high blood pressure, mild phobias and improves concentration (Kasron & Susilawati, 2017).

Progressive muscle relaxation (ROP) is a type of relaxation activity by tightening and relaxing the muscles one part of the body at a time to gain control over the anxiety that stimulates the mind and muscle tension.(Amanda et al., 2019). The rationale for implementing this ROP is this: Whenever humans experience tension and anxiety, the body will automatically react in a fight or flight, releasing various hormones and chemicals such as adrenaline, cortisol, and norepinephrine to prepare our bodies for physical activity (Di et al., 2015) One thing we can notice is that stressed muscles tend to tense up, because that is the human body's way of protecting from any form of perceived threat, in this case, situations that cause stress or trigger anxiety. If our muscles are in a tense state for a while For a long time, it can trigger other symptoms in our body, such as headaches and tension, or migraines. Therefore, we need to learn some relaxation techniques so as not only to relax but also to reduce muscle tension. ROP is a very useful technique for reducing stress and anxiety in our body by gently tensing and relaxing muscles. This exercise can help a person to feel relaxed immediately (Fakhtur Rahman et al., 2020.). By doing progressive muscle relaxation, there is a decrease in CRH (corticotropin releasing) hormone) and ACTH (adrenocorticotropic hormone) in the hypothalamus. Decreased release both of these hormones can reduce sympathetic nerve activity, reducing expenditure adrenaline and non-adrenaline. This causes a decrease in heart rate dilation blood vessels, decreased vascular resistance, decreased heart pump makes the body relax and makes sleep more restful (Basri et al., 2022)

METHOD
This research was conducted from June to July 2021. The population is 42 teenagers who live permanently in the Mardhatillah orphanage. Subjects were divided into two groups. random group determination 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 the usual routine of support plus progressive muscle relaxation which was gradually supervised by caretakers who had been trained by the previous researcher. The implementation of the ROP is carried out after the Isha prayer or before going to bed at night.

Relaxation intervention three times a week for four weeks, while the control group received general support such as daily without relaxation. The fairness aspect in this study was maintained by providing training in progressive muscle relaxation techniques in the control group after all interventions in the treatment group were completed. Measurement of sleep quality using a measuring instrument, namely Pittsburgh Sleep Quality Index(PSQI) in Indonesian which is carried out before the beginning of the first week before carrying out the ROP Action and at the end of the Fourth week after completing the ROP. 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.
RESULTS

The general description of the research subjects can be seen in table 1, while the number of subjects is 2 teenagers who live in the Mardhatillah Kartasura and Polokarto orphanages. Male sex had as many as 26 subjects (62%), more than female adolescents with 16 subjects (38%). The education level of junior high school (SMP) was 15 subjects (35.7%) and high school (SMA) was 27 people (64.3%).

<table>
<thead>
<tr>
<th>Characteristics of Respondents</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Man</td>
<td>26</td>
<td>62</td>
</tr>
<tr>
<td>Woman</td>
<td>16</td>
<td>38</td>
</tr>
<tr>
<td>Education</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Junior High School</td>
<td>15</td>
<td>35.7</td>
</tr>
<tr>
<td>high school</td>
<td>27</td>
<td>64.3</td>
</tr>
<tr>
<td>Total</td>
<td>42</td>
<td>100</td>
</tr>
</tbody>
</table>

Table 2 shows the age characteristics of the research subjects based on age, the youngest respondent is 12 years old and the oldest is 20 years old with an average of 15.82 years. The following is the result of data processing with SPSS 21 from measuring sleep quality before ROP therapy is carried out.

Table 2 Age Characteristics of Respondents

<table>
<thead>
<tr>
<th>Characteristics of Respondents</th>
<th>Age (years)</th>
<th>N</th>
<th>15.62</th>
<th>SD 1.87</th>
<th>Min 12</th>
<th>Max 20</th>
</tr>
</thead>
</table>
| The results of sleep quality measurements carried out on 42 subjects before the ROP action were obtained for the control group average of 6.94 and the treatment group was 7.59. PSQI results in 5 both control and treatment groups were included in poor sleep quality.

Table 3. Results of Pre-Test Sleep Quality

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>mean</td>
<td>6.94</td>
<td>7.59</td>
</tr>
<tr>
<td>SD</td>
<td>2.045</td>
<td>1.227</td>
</tr>
<tr>
<td>p value</td>
<td>0.560</td>
<td>0.988</td>
</tr>
</tbody>
</table>

After 4 weeks of ROP action, the experimental POS data was taken. The results showed that the measurement of sleep quality carried out on 42 subjects before the ROP action was obtained for the control group average of 6.52 and the treatment group 4.20. The results of PSQI 5 in the control group included poor sleep quality and the experimental group had an average sleep quality score of 4.20 (PSQI <5) so it was included in good sleep quality. And the results of the different T-test results obtained a p value of 0.003 which means that there is a significant difference between the experimental group and the control group.

Table 4 Results of Sleep Quality Test Posts

<table>
<thead>
<tr>
<th></th>
<th>Control</th>
<th>Experiment</th>
</tr>
</thead>
<tbody>
<tr>
<td>N</td>
<td>27</td>
<td>15</td>
</tr>
<tr>
<td>mean</td>
<td>6.52</td>
<td>4.20</td>
</tr>
<tr>
<td>SD</td>
<td>1.99</td>
<td>1.56</td>
</tr>
<tr>
<td>p value</td>
<td>0.003</td>
<td>4.33</td>
</tr>
</tbody>
</table>

DISCUSSION

The subjects of this study were mostly male adolescents, which amounted to 62%, and female adolescents by 38%. Data Centers for Disease Control research shows that sleep deprivation is one of the health problems, with the prevalence of sleep disorders in American adolescents at about 68.8%. Adolescent girls have a higher prevalence of not getting enough sleep than boys (71.3% versus 66.4%)(Baso et al., 2019).

The education level of all respondents is elementary and secondary education, which in this era of the covid pandemic underwent an online system so that the teenagers used gadgets more often and underwent learning that did not recognize space and time and...
made them stressed and had sleep disturbances (Winurini, 2020).

The subjects of this study also had an average age of 15.62 years. From the results of the study, it was found that the COVID-19 pandemic can affect adolescents, directly and indirectly, especially their mental health. Based on age classification, the age group of 13-15 years was the largest contributor to stress sufferers in the mild to severe category. Students' stress levels in adolescents aged 15-18 years generally report higher stress indicators compared to boys and younger adolescents aged 12-14 years (Putri & Azalia, 2022).

The results of the pre-test measurements of the experimental and control groups showed that both groups had poor sleep quality with a global score of .5 Poor sleep quality in adolescents was very common. Teenagers still need to get up early to go to school online despite a lack of sleep. Sleep deprivation problems can also occur because in this pandemic era teenagers go to school online so they have excess energy at home and use it to watch tv until late at night and use electronic devices such as cell phones, laptops, and others. Sleep or sleep problems among teens may not appear serious at first, but sleep disturbances in teens can very well cause irritability, moodiness, and difficulty learning and concentrating, thus affecting school performance.(Di et al., 2015).

The results of measuring the sleep quality of orphanages after 4 weeks of therapy showed that the control group obtained a global score of 6.52 and 4.20 for the experimental group. And the result of the difference test between the two groups is 0.003. This proves that routinely doing ROP will help improve the quality of adolescent sleep according to the results of similar studies which reveal that doing progressive muscle relaxation will make a person focus his attention on muscle activity, recognizing muscles that are tense and continue to reduce tension by doing relaxation techniques to get a relaxed feeling. This therapy can also improve sleep quality because it works against the sympathetic nerves to achieve a relaxed and calm state (Didacus, 2019). The next impact that is obtained after doing ROP is that the muscles that become relaxed will make the hormone melatonin stimulated so that it can regulate the sleep cycle and improve sleep quality (Lestiawati & Liliana, 2019).

CONCLUSION
This study concludes that the implementation of progressive muscle relaxation techniques 3 times a week for 4 weeks which is carried out regularly will be able to help teenagers in the pandemic era improve their sleep quality. Suggestions for further researchers can use Progressive Muscle Relaxation therapy combined with other types of non-pharmacological therapy to help adolescents overcome mental health problems.

REFERENCE


