

THE INFLUENCE OF PROGRESSIVE MUSCLE RELAXATION ON INSOMNIA IN THE ELDERLY IN THE HEALTH CENTER OF KURANJI PADANG

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ABSTRACT

Insomnia is a common chronic disease, which can have important negative impacts on health and well-being. Insomnia with inadequate complaints, difficulty starting to sleep, difficulty maintaining sleep or waking up too early. Insomnia has side effects for the health of the elderly such as mental dysfunction that can interfere with memory concentration of a person's ability to carry out daily activities, when a person is very tired due to sleep difficulties will make mental emotions more unstable so that it can become stressful, heart disease, headaches visual disturbances, body aches and pains, body feels un fresh and changes in sleep patterns will affect a sustainable mood will become anxiety and depression. The purpose of the study was to identify the effects of progressive muscle relaxation on insomnia in the elderly in the Kuranji Padang health center. This type of research is quantitative with the design of one group pretest-posttest. The research population was all elderly 94 people in the Padang Kuranji region with a total sample of 15 people. The study was conducted 15 weeks until August 13, 2018 in the working area of the Kuranji Padang Health Center. Questionnaires used in measuring insomnia using KSPBJ-IRS. The results of the study showed that there was an effect of progressive muscle relaxation on insomnia in the elderly in the work area of Kuranji health center in Padang with a mean value of 6.467 with a standard deviation of 2.416 and p value of 0.000. It is recommended for the elderly and health center cadres to be given training on progressive muscle relaxation techniques so that they have skills that can be used to reduce insomnia in the elderly.

Keywords: *progressive muscle relaxation, Insomnia*

INTRODUCTION

Health development according to Law No.36 of 2009 concerning health that efforts to maintain health for the elderly are shown to keep alive and productive (Depkes, 2015). Health services implement health prevention through promotive and preventive services both healthy and sick in improving the health of the population. The World Health Organization (2012) states that limits are based on old age levels, namely: middle age 45-59 years (elderly) aged 60-74 years (old) 75-90 years and very old (very old) more than 90 years.

The World Health Organization (2012) states that aging (more than 60 years) is estimated to have increased in 2000 to 2050, namely 11% to 22% of the total population in the world. The number of elderly people in the world in 2016 was 2.235 million elderly people in the world. According to UN data the number of elderly people continues to double within 25 years, the UN estimates that the number of elderly people reaches 600 million people worldwide (8%) the total population of the world continues to increase to 1.1 milia or 13% in 2035. Indonesia has the 4th largest elderly population in the world, after China, India and America. The results of the 2014 population census stated that the number of

elderly people in Indonesia reached 20.04 million (8.05%) of all Indonesian population. The proportion of elderly women in 2014 was 1.11% higher than the proportion of elderly men (Badan Pusat Statistik, 2016).

Humans experience periods of growth and development, humans develop from the process of babies, children, adults and eventually grow old. All humans will experience the process of growing old and old age is the last path of human life. In this old age a person will experience physical, mental and social decline gradually. The aging process is a continuous process naturally, which begins at birth and is generally experienced by living things (Azizah, 2011).

By experiencing this process can affect biologically and psychologically, the period of entering old age means experiencing setbacks such as setbacks which are marked by wrinkled and loosened skin, graying hair, unclear hearing, toothless teeth, worsening vision and slow movements (Nugroho, 2008). In many psychological problems that occur in the elderly such as: feelings of sadness, depression, anxiety and insomnia (Tamher & Noorkasiani, 2009).

Sleep needs disorder is a mental health problem that

often occurs in the elderly. About 80% of clients are depressed and 90% of clients are anxious and insomnia (Stuart & Sundeen, 2011). As many as 50-70% of all elderly people aged > 65 years (Dewi, 2014). In African and Asian countries, around 150 million elderly people experience sleep disturbances. On average 16.6% of insomnia cases in western countries are 20%. While in Indonesia there are an estimated 28 million insomnia sufferers in 2011 and will continue to increase annually (Kallo, 2015).

Insomnia is a common chronic disease, which can have important negative impacts on health and well-being (Lin, *et al* 2016). Insomnia is an inadequate sleep complaint, insomnia is a complaint of difficulty sleeping, difficulty maintaining sleep, or waking up too early, or sleep that is chronic-refreshing or poor in quality (Gambhir *et al.*, 2014). Insomnia has side effects for the health of the elderly such as mental dysfunction that can interfere with memory concentration of a person's ability to carry out daily activities, when a person is very tired due to sleep difficulties will make mental emotions more unstable so that it can become stressful, heart disease, headaches visual disturbances, body aches and pains of anemia, body feels up fresh and changes in sleep patterns will affect a sustainable mood will become anxiety and depression (suastri, 2014).

The problem of insomnia in the elderly changes sleep patterns in time and quality of sleep. The elderly sleep only a little at night which results in daytime sleepiness (Feinsilver & Hernandez, 2017). The impact of sleep disturbances if the United States does not get enough sleep to maintain a healthy body will have effects such as unproductive, unfocused depression, forgetfulness, irritability, and causes the body to be susceptible to disease (Thahir, 2014). This statement is in line with the results of research conducted by Sumirta stating that increasing age affects the sleep patterns of elderly people who often complain of difficulty sleeping, difficulty staying awake, difficulty sleeping again after waking at night and excessive napping (Sumirta & Laraswati, 2013).

To prevent the occurrence of insomnia is a professional nursing action in helping to reduce insomnia is individual, group, family and psychopharmaceutical therapy. Nursing actions that can be given are individual therapies such as cognitive therapy, behavioral therapy, stretching, Progressive Muscle Relaxation (PMR) and progressive muscle relaxation and individual logotherapy (Stuart & Sundeen, 2016). Progressive muscle relaxation is a therapy to help

relieve some stress-related symptoms, such as insomnia, hypertension, headaches and pain (Asmadi, 2008).

Progressive muscle relaxation (PMR) introduced by Edmund Jacobson in 1938 in the United States is one of the special techniques designed to help relieve muscle tension that occurs when conscious. The results of research conducted by (Tobing, Keliat, & Wardhani, 2014) require more than half (50%) of those who undergo training to experience changes to not insomnia. This is in line with research conducted by Kallo the effect of PMR on changes in Insomnia levels in the elderly at Manado Werda Home (Kallo, 2015).

METHODOLOGY

This type of qualitative research with the design of one group pretest-posttest. The research population was all elderly 94 people in the Padang Kuranji region with a total sample of 15 people. Purpose sampling technique. The study was conducted from July 15 to August 13, 2018 in the working area of the Kuranji Padang Health Center. Questionnaires used in measuring insomnia using KSPBJ-IRS. The results showed that there was an effect of progressive muscle relaxation on insomnia in the elderly in the work area of the Kuranji health center in Padang with a mean value of 6.467 with a standard deviation of 2.416 and *p* value of 0.000 with a test statistic test. have skills that can be used to reduce insomnia in the elderly.

RESULTS

Table 1: Distribution of Gender Respondents in the Elderly who Insomnia

| Gender | N | % |
|--------|----|------|
| Male | 4 | 26.7 |
| Female | 11 | 73.3 |

Based on Table 5.1 shows that 26.7% of respondents male sex and 73.3% female.

Table 2: Distribution of Insomnia Levels Before Progressive Muscle Relaxation in the Elderly

| Insomnia | Levels | % |
|------------|--------|------|
| Mild | 2 | 12.3 |
| Weight | 12 | 80 |
| Very Weiht | 1 | 6.7 |

Based on table 2 above it was determined that the elderly who experienced mild insomnia were 2 people (12.3%), severe insomnia as many as 12 people (80%) and insomnia very severe 1 person (6.7%).

Table 3: Distribution of Levels Insomnia After Progressive Muscle Relaxation among Elderly

| Insomnia | Levels | % |
|---------------|--------|------|
| No Complaints | 3 | 20 |
| Mild | 10 | 66.7 |
| Weight | 2 | 13.3 |

Based on table 3 above shows that elderly who have no complaints 3 people (20%), mild insomnia 10 people (66.7%) and severe insomnia 2 people (13.3%).

Table 4: Average frequency distribution of insomnia before and after Progressive Muscle Relaxation in the elderly who experience insomnia

| | Mean | SD | SE | P value |
|----------|-------|-------|-------|--------------|
| Pretest | 31,00 | 3,684 | 0,951 | 0.000 |
| Posttest | 24,53 | 3,067 | 0,792 | |

Based on table 4, the previous results were given the Progressive Muscle Relaxation technique with a mean of 31.00 and standard standard 3.684. While the results obtained after the mean value is 24.53 with a standard deviation of 3.067. Statistical test results obtained *p* value of 0.000 ($p < 0.05$), it can be concluded that there is Progressive Muscle Relaxation on Insomnia in the elderly in the Kuranji community working area in Padang.

DISCUSSION

This study was conducted on male and female respondents characteristic of the sexes is not one of the causes of insomnia. The distribution of respondents by sex showed that respondents who were female were 11 people (73.3%) more than those of male 4 (26.7%).

Distribution of Insomnia Levels before Progressive Muscle Relaxation in the Elderly

The results showed that the elderly who experienced mild insomnia were 2 people (13.3%), severe insomnia 1 person (6.7) with a mean value of 2.93 and median 3.00. This is in line with the research conducted by Widodo (2010) in Gonilan Village. Results before treatment 6.7% of elderly experienced insomnia were 83.3% had moderate insomnia, 10 % experience mild insomnia.

The results of the interviews found that the elderly had trouble sleeping at night by sleeping during the day. Elderly people who experience insomnia have a difficult complaint to start sleeping and maintain adequate sleep duration so that disruption in social

activities and functions. According to Thahir (2014) that older people spend more time in bed before bed begins, the frequency of awakening during sleep increases and causes the elderly to experience fatigue, drowsiness and risk of falling during the day. In the elderly also changes in normal sleep circadian rhythms that are less sensitive to dark and light changes (Martono & Pranarka, 2011).

Elderly must pay attention to the quality of sleep, the quality of the need for good sleep depends on each of the elderly individuals. Sleep is a necessity for the body and mind. Sleep needs for adults 7-9 hours a day to sleep, while in the elderly there is a decrease of 6-7 hours a day. The amount of sleep does not change according to changes in age but the quality of sleep seems to change in most elderly people. The episode of REM sleep tends to be shortened. With increasing age there is a decrease in sleep period. Sleep needs will decrease with increasing age. At the age of 40-65 years the need for sleep is 7 per day and the age of 65 years and above needs to sleep 5-7 hours per day (Wilkinson & Ahem, 2013).

Insomnia that occurs in the elderly must be overcome so as not to affect activity and cause an impact. The impact that will be felt on the elderly who experience insomnia such as excessive sleepiness during the day, depression, memory disorders and decreased quality of life (Amir, 2007). This is also supported by the opinion of Taylor *et. al* (2014) that insomnia is a significant burden that can manifest in various ways. Insomniacs are reported to have disability functional and require greater health care, injuries and an increased incidence of depression and anxiety. Having sleep deprivation and staying awake at night is the most disturbing aspect and for many people suffering from insomnia is a frightening experience.

According to the assumption, researchers of insomnia in the elderly have the same complaints as frequent waking at night, difficult to sleep, sleepy during the afternoon and fatigue. The impact of this complaint is that the elderly experience disruption in their activities and disruption in social functions. So in this case insomnia in the elderly must be taken to overcome the insomnia. Actions that need to be done by stimulating and motivating sleep, one of the ways that is done by relaxation. Relaxation by moving the limbs, relaxes the muscles in certain body parts with progressive muscle relaxation techniques so that the elderly can distinguish muscle sensations in tight and relaxed conditions.

Distribution of Insomnia Levels after Progressive Muscle Relaxation in the Elderly

The results of the study showed that the elderly experienced good complaints of 3 people (20%), mild insomnia as many as 10 people (66.7%) and severe insomnia by 2 people (13, 3%) with mean 1.93 and median 2.00. after progressive Muscle Relaxation techniques were performed in the elderly, there was a significant decrease in elderly insomnia. This is in line with the results of a study conducted by Supriyati (2010) which concluded that to trigger a relaxation response by taking over tight muscles into a state of relaxation, the muscles that have relaxed from the relaxation response naturally follow.

This decreased level of insomnia is because of progressive muscle relaxation techniques. According to (Chen *et al.*, 2009) said that progressive Muscle Relaxation is very effective in reducing tension, overcoming insomnia and asthma. Insomnia is a state of inadequate sleep deprivation, both quality with sleep that is only brief or difficult to sleep (Hidayat, 2008).

According to the assumption of researchers the effect of progressive Muscle Relaxation technique is a very effective where the elderly can meet their sleep needs and reduce sleep disturbances. *Progressive Muscle Relaxation* is a nursing intervention to improve relaxation so that it can meet the quality of sleep needs for the elderly. Relaxation therapy is the cheapest easy therapy to do so that the elderly can do where and whenever to stretch muscle tension due to sleep disturbances and stress.

Distribution of mean frequency of before and after insomnia Progressive Muscle Relaxation In the elderly who experience insomnia

This study showed that the provision of technique *Progressive Muscle Relaxation* in the elderly who had previous mild insomnia 13.3% became no complaints 20%, insomnia weighed 80% to 13% and insomnia was very severe. This is in line with the research conducted by Widodo with the title Effect of progressive muscle relaxation therapy on changes in insomnia levels in elderly in Gonilan village. Results before treatment 6.7% of elderly experienced insomnia fallow, t 83.3% had moderate insomnia, 10% experience mild insomnia.

Based on the results of the study obtained statistics with *Paired T-Test* in pre-test and post-test obtained $p = 0,000$ or $p < 0.05$ means the effect on insomnia before and after *Progressive Muscle Relaxation*. This is consistent with research conducted by (Kallo, 2015) on the effect of programme of relaxation techniques on

changes in the fulfillment of sleep needs in elderly people in Sijambe Village Pekalongan suggesting that progressive relaxation is an effective way to relax and reduce anxiety.

Research conducted by Chen *et al.*, (2009) suggested that the Progressive technique *Muscle Relaxation* showed an increase in meaningful relaxation abilities. Progressive Muscle Relaxation on a regular basis can improve or overcome various stresses and self-control (Chen *et al.*, 2009).

Progressive Muscle Relaxation is one technique for training how to relax the whole muscles. By tense and relax several muscle groups and differentiate the relaxed tense and physical sensations will be accompanied by a relaxed mental so as to help a person to meet the needs of sleep. This is consistent with Edmund Jacobson's theory) that progressive muscle relaxation techniques are carried out 20-3-minutes, one time regularly is very effective in decreasing insomnia (Tobing, Keliat & Wardhani., 2014).

Based on the description above according to the assumption of the researcher, it can be said that *Progressive Muscle Relaxation* is an alternative therapy that can be done by the elderly to overcome muscle tension and sleep needs. Progressive Muscle Relaxation can be an easy and cheapest method without side effects.

CONCLUSION

The results of the study of the level of insomnia to the elderly before carried out at *progressive muscle relaxation* was a minimum value of 22, maximum 29 with a standard deviation of 3.684. While the level of insomnia after *progressive muscle relaxation* was carried out at a minimum of 18, maximum 28 with a standard deviation of 3.067. With these results it can be concluded that there is an effect of *progressive muscle relaxation* on insomnia in the elderly in the work area of the Kuranji health center in Padang with a mean of 6.467 with a standard deviation of 2.416 p value of 0.000.

SUGGESTION

a. Suggestions for Nursing

It is expected that the elderly and health center cadres in the Kuranji Puskesmas work area will be given training on techniques *Progressive Muscle Relaxation* so that they have skills that can be used to reduce insomnia in the elderly.

b. Suggestions for further researchers

This research can be a guideline for future researchers who wish to examine the same

variables, but it is recommended to increase the variables regarding the factors associated with insomnia.

REFERENCES

- Amir, N. (2007). *Mirror The World of Medicine*. Retrieved from: <http://www.kalbe.co.id/files/15709/gangguantidurpadalansia>.
- Asmandi. (2008). *Konsep Dasar Keperawatan*. Jakarta: EGC.
- Azizah, M.L. (2011). *Elderly nursing Yogyakarta*: Graha Science.
- Badan Pusat Statistik. (2016). *Pembangunan Berkelanjutan* - tan. Retrieved from: <https://www.bps.go.id/>
- Chen, W., Chu, H., Lu, R., Chou, Y., Chen, C., Chang, Y., O'Brien, A. & Chou, K. (2009). Efficacy of progressive muscle relaxation training in reducing anxiety in patients with acute schizophrenia. *Journal of Clinical Nursing*, 18(15), pp 2187–2196.
- Depkes. (2015). *Service and increase in the health of lanut age*. Retrieved from: www.depkes.go.id/resources/download/.../profil-kesehatan-Indonesia-2015.pdf
- Dewi, S.R. (2014). *Buku Ajar Keperawatan Gerontik*. Yogyakarta. Retrieved from: <http://penerbitbukudee.publish.com/shop/keperawatan-gerontik/>
- Feinsilver, S. H. & Hernandez, A. B. (2017). Sleep in the Elderly: Unanswered Questions. *Clinics in Geriatric Medicine*, 33(4), pp 579–596.
- Gambhir, I. S., Chakrabarti, S. S., Sharma, A. R. & Saran, D. P. (2014). Insomnia in the elderly - A hospital-based study from North India. *Journal of Clinical Gerontology and Geriatrics*, 5(4), pp 117–121.
- Hidayat, A.A.A. (2008). *Pengantar Konsep Dasar Keperawatan*. Jakarta: Salemba Medika.
- Kallo, V. D. (2015). Pengaruh Terapi Relaksasi Otot Progresif Terhadap Perubahan Tingkat Insomnia Manado. *EJournal Keperawatan (e-Kep)*, 3(1), Pages 9
- Lin, Y.F., Liu, Z.D., Ma, W. & Shen, W. (2016). Hazards of insomnia and the effects of acupuncture treatment on insomnia. *Journal of Integrative Medicine*, 14(3), pp174–186.
- Martono, H.H & Pranarka, K. (2011). *Geriatrics—Elderly*. Retrieved from: <http://lib.ui.ac.id/file?file=pdf/metadata-128378.pdf>
- Nugroho, W. (2008). *Keperawatan Gerontik & Geriatrik*. Jakarta: EGC.
- Stuart, G.W & Sundeen, S.J. (2011). *Buku Saku Keperawatan Jiwa (Terjemahan)*. Jakarta : EGC.
- Suastari, N.M.P., Tirtayasa, P.N.B., Aryana, I.G.P.S. & Kusumawardhani, R.T. (2014). HUBUNGAN ANTARA SIKAP SLEEP HYGIENE DENGAN DERAJAT INSOMNIA PADA LANSIA DI POLIKLINIK GERIATRI RSUPSANGLAH, DENPASAR. Retrieved from: <file:///C:/Users/Admin/Downloads/11866-1-21909-1-10-20150123.pdf>
- Sumirta, I.N. & Laraswati, A.S. (2013). FAKTOR YANG MENYEBABKAN GANGGUAN TIDUR (INSOMNIA) PADA LANSIA. Retrieved from: <http://poltekkes-denpasar.ac.id/files/JURNAL%20GEMA%20KEPERAWATAN/JUNI%202015/I%20Nengah%20Sumirta.pdf>
- Supriyati, L. (2010). *The Effect of Therapy Think Stop and Progressive Muscle Relaxation against Anxiety in Clients with Physical Disorders at Dr Soedono Hospital in Medan*. Thesis. University of Indonesia. Retrieved from: <file:///C:/Users/Admin/Downloads/41-69-1-PB.pdf>
- Tamher, S. & Noorkasiani. (2009). *Kesehatan Usia Lanjut dengan Pendekatan Asuhan Keperawatan*. Salemba Medika.
- Taylor, D., Gehrman, P., Dautovich, N.D., Lichstein, K.L. & McCrae, C.S. (2014). *Handbook of Insomnia*. Springer, U.S.
- Thahir, A. (2014). Effect of PMR (Progressive Muscle Relaxation) on Insomnia in the Elderly at the Elderly Social Institution Tresna Werdha Natar Lampung Province in 2012, 1–11. [download.garuda.ristekdikti.go.id/article.php?....Pengaruh%20PMR%20\(Progressive%\)](http://download.garuda.ristekdikti.go.id/article.php?....Pengaruh%20PMR%20(Progressive%)).
- Tobing, D. L., Keliat, B. A. & Wardhani, I. Y. (2014). Pengaruh Progressive Muscle Relaxation dan Logoterapi terhadap Effect of Progressive Muscle Relaxation and Logotherapy on Anxiety, Depression, and Relaxation Ability. *Jurnal Keperawatan Padjadjaran*, 2, pp 65–73.
- Widodo. (2010). *Peran Musik sebagai Fasilitas untuk Mengurangi Insomnia Pasien*. Retrieved from: www.journal.unair.ac.id.
- Wilkinson, J.M. & Ahem, N.R. (2013). *Buku Saku Diagnosis Keperawatan: diagnosis NANDA, intervensi NIC, criteria hasil NOC edisi 9*. Jakarta: EGC.
- World Health Organization (2012). *Angka Kematian Bayi*. Amerika: Retrieved from: <file:///C:/Users/Admin/Downloads/D4-2015-321347-bibliography.pdf>