STRADA Jurnal Ilmiah Kesehatan
DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

The Effect of Acupressure Therapy on Sleep Quality of Elderly in Work Area of Melintang Health Center, Pangkalpinang

Triana Indrayani*, Maulidia Damayanti, Nurul Husnul Lail
Universitas Nasional Jakarta, Indonesia
** Correspondent Author: trianaindrayani@civitas.unas.ac.id*

ABSTRACT

Sleep disorder is one of the most common complaints in elderly. Effective sleep time decreases which results in not having good sleep quality and various kinds of sleep complaints. On the other hand, sleep quality of elderly can be improved by using effective and safe non-pharmacological methods, one of which is acupressure therapy.

Finding out the effect of acupressure therapy on sleep quality of elderly in work area of Melintang Health Center, Pangkalpinang

This study was a pre-experimental study with a one group pretest-posttest design. Sample was 30 elderly people who met inclusion criteria.

Wilcoxon test obtained P value (0.000) < α (0.05); therefore, Ho was rejected. It means that there was an effect of acupressure therapy on sleep quality of elderly in work area of Melintang Health Center, Pangkalpinang.

There is an effect of acupressure therapy on sleep quality of elderly in work area of Melintang Health Center. Elderly people are expected to be able to apply acupressure therapy at home as a non-pharmacological method as an attempt to improve sleep quality.

Keywords: Elderly, Sleep Quality, Acupressure Therapy

Received March 18, 2021; Revised April 11, 2021; Accepted April 28, 2021

STRADA Jurnal Ilmiah Kesehatan
DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

BACKGROUND

World Health Organization (WHO) as cited in Maulinda (2017) defined elderly as someone who reaches age of 60 years and older. This is basically one of impacts of success of development and technological advances which have resulted in a decrease in mortality and morbidity rate for mothers and children, a decrease in fertility rate, and an increase in life expectancy. Increasing life expectancy will automatically increase elderly population.

Furthermore, world's elderly population has been estimated to increase from 962 million in 2017, to 1.4 billion in 2030, to 2.1 billion in 2050, and to 3.1 billion in 2100 (United Nation, 2017). Percentage of elderly population in Indonesia increased from 18 million (7.56%) in 2010 to 25.9 million (9.7%) in 2019, and is expected to continue to increase to 48.2 million (15.77%) by 2035 (Ministry of Health, 2019). Besides, in Bangka Belitung, It was estimated that elderly population in 2020 would reach 8.06% of total population (Endah Rahayu & Wahyuni, 2015). Additionally, there are 15,883 elderly in Pangkalpinang (Pangkalpinang Health Office, 2020). Increasing age increases likelihood of a person experiencing physical, mental, spiritual, economic and social problems. A very basic problem in elderly is a health problem which is a result of a degenerative process. Degenerative process in elderly causes, one of which, decreased sleep efficiency which results in not achieving good sleep quality and various kinds of sleep complaints (Chasanah & Supratman, 2017).

Data released by World Health Organization as cited in Sari and Leonard (2018) demonstrated that about 18% of world's population has sleep disorders, which is increasing every year. In Indonesia, about 10% and 30% of sleep disorders occurred in 2014, including those occurring at age of more than 50 years (elderly). This means that approximately 28 million of total 238 million Indonesians (30%) who suffered from sleep disorders occurred at age of more than 50 years. Sleep disorder is one of the most common complaints in elderly, where they find it difficult to start sleeping. This occurs when sleep time or sleep quantity is not appropriate. Ineffective sleep is also related to sleep quality which causes sleep disorder (Hidayah & Alif, 2016).

Good quality sleep is a condition in which sleep experienced by a person produces freshness and fitness when waking up in morning. Sleep deprivation results in excessive drowsiness during day, lack of energy, and causes impaired concentration. Poor sleep quality can interfere with quality of a person's performance and can increase risk of experiencing mental disorders (Rahman et al., 2019). Importantly, sleep duration depends on age; the more mature a person, the need for sleep decreases, which is 7 hours per day. Besides, need for sleep for elderly (60 years and over) is 6 hours per day (Thayeb et al., 2015).

Preliminary study was conducted at Integrated Service Post (Posyandu) for Elderly in work area of Melintang Health Center. Based on results of interviews with nurses at Health Center, most of elderly who visited had sleep problems and experienced dizziness, of which 16 out of 152 elderly were no longer productive. Based on initial survey conducted by researchers by interviewing 15 elderly people, it was found that elderly in work area of Melintang Health Center experienced sleep disorders. There were 4 elderly people stated that it was difficult to start sleeping at night; 4 people stated that they often woke up earlier in the morning; and 7 people said that they often woke up at night. Elderly often complained that, during the day, they often felt unrefreshed, lacked enthusiasm in doing activities, had heavy head feeling, had decreased work speed, were not focused and more prone to anxiety. This is based on elderly's direct statement that they often woke up at night and found it difficult to start sleeping again.

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

A person who is unable to fulfill his/her sleep needs may experience personality and behavior changes such as aggression, depression, increased fatigue, perceptual disturbances, auditory or visual hallucinations, confusion and disorientation with regard to place and time, decreased coordination, slurred speech, becoming more irritable and not relax (Risnasari, 2015). Interventions for sleep disorders in elderly usually involve pharmacological treatment and non-pharmacological interventions. Pharmacological therapy is currently the most common treatment for sleep disorders. However, pharmacological therapy has side effects, such as: impaired cognitive function, risk of tolerance or dependence, respiratory depression, and normal sleep physiology that have a negative impact (Rahman et al., 2019). Accordingly, non-pharmacological therapies are needed to improve sleep quality, such as music therapy, massage, cognitive behavioral interventions, bright light therapy, aromatherapy, yoga, muscle relaxation, acupuncture, and mental imagery that seem to be comforting and reduce stress and anxiety levels in elderly, which are likely to lead to improved sleep quality. One of effective and safe therapies to improve sleep quality of elderly is acupressure therapy (Hu et al., 2015)

Acupressure therapy is a development of acupuncture science. Thus, it is principally the same, but acupressure therapy uses fingers while acupuncture technique uses needles. Since it uses fingers, non-invasive procedures are given to patient which can minimize risk or side effects of acupressure (Setyowati, 2018). Acupressure is useful for disease prevention, disease healing, rehabilitation (recovery) and increasing endurance (Setyowati, 2018).

Results of a study conducted by Song et al (2015) demonstrated positive effects and safety of acupressure therapy in a diverse population including fatigue and sleep disorders. It is then supported by a study conducted by (Hmwe et al., 2019) which claimed that acupressure had been shown to play a role in reducing stress response by changing hormone levels, neurotransmitter levels, and related brain function. Acupuncture point stimulation regulates endorphins, serotonin, norepinephrine, adrenocorticotropic hormone, cortisol, acetylcholine, and melatonin. All of these hormones play a major role in sleep regulation and function of hypothalamic-pituitary-adrenal axis. This is also in line with a study by Kusumawardani and Isnaeni (2017) with a title *The Effect of Acupressure Therapy on Sleep Quality of Elderly at Budi Luhur Unit of Tresna Werdha Social Service Center, Kasongan Bantul Yogyakarta,* with results showing that there was an effect of acupressure therapy on sleep quality of elderly with z count of -3.415a and p-value of 0.001.

Based on the aforementioned background, researchers were interested in conducting a study entitled *The Effect of Acupressure Therapy on Sleep Quality of Elderly in Work Area of Melintang Health Center, Pangkalpinang.*

METHODS

This study was a pre-experimental study with a one group pretest-posttest design. In this design, there was a pretest before giving treatment.

Population in this study were all elderly with a total of 3,000 elderly in work area of Melintang Health Center. By using purposive sampling, there were 30 elderly obtained as sample.

This study was conducted at Melintang Health Center, Pangkalpinang in January 2020-February 2021.

Data were collected using Pittsburgh Sleep Quality Index (PSQI) questionnaire sheet to evaluate subjective sleep quality which has been widely used in general population and older adults.

STRADA Jurnal Ilmiah Kesehatan
DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

RESULTS

Respondent Characteristics

Frequency distribution of characteristics is presented in following table:

Table 4. 1 Frequency Distribution of Respondent Characteristics in Elderly in Work Area of Melintang Health Center, Pangkalpinang in 2021

Characteristics	Frequency	Percentage (%)
Age		
▪ Late Elderly (≤ 65 Years)	19	63.3
▪ Elderly (> 65 Years)	11	36.7
Sex		
▪ Male	9	30
▪ Female	21	70
Occupation		
▪ Employed	8	26.7
▪ Unemployed	22	73.3
Total	**30**	**100.0**

Table 4.1 shows that from 30 respondents, most of respondents were late elderly (19 respondents or 63.3%), female (21 respondents or 70%), and unemployed (22 respondents or 73.3%).

Univariate Analysis

1. Sleep quality of elderly before acupressure therapy

Table 4. 2 Sleep Quality Score Before Acupressure Therapy in Elderly in Work Area of Melintang Health Center, Pangkalpinang

Variable	Mean	Median	Standard Deviation	Max-Min
Sleep Quality Before Therapy	6.67	6	0.922	6-9

Based on Table 4.2, mean score of sleep quality before acupressure therapy was 6.67 with a median of 6 and standard deviation of 0.922. The lowest sleep quality score was 6 and the highest was 9. Sleep quality scores before acupressure therapy were categorized according to PSQI questionnaire sheet. Frequency distribution of sleep quality before acupressure therapy is presented in following figure:

Table 4. 3 Frequency Distribution of Sleep Quality Before Acupressure Therapy in Elderly in Work Area of Melintang Health Center, Pangkalpinang

Sleep Quality	Frequency	Percentage (%)
Good	0	0
Poor	30	100
Total	**100**	**100.0**

Based on Table 4.3, it can be seen that before acupressure therapy, there were 30 respondents who had poor sleep quality (100%).

2. Sleep quality of elderly after acupressure therapy

Table 4.4 Sleep Quality Score After Acupressure Therapy in Elderly in Work Area of Melintang Health Center, Pangkalpinang

Variable	Mean	Median	Standard Deviation	Max-Min
Sleep Quality After Therapy	4.37	4	0.669	3-6

STRADA Jurnal Ilmiah Kesehatan
DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

Based on Table 4.4, mean score of sleep quality after acupressure therapy was 4.37, with median of 4 and standard deviation of 0.699. The lowest sleep quality score was 3 and the highest was 6. Sleep quality scores after acupressure therapy were categorized according to PSQI. Frequency distribution of sleep quality after acupressure therapy is presented in following figure:

Table 4.5 Frequency Distribution of Sleep Quality after Acupressure Therapy in Elderly in Work Area of Melintang Health Center, Pangkalpinang

Sleep Quality	Frequency	Percentage (%)
Good	29	96.7
Poor	1	3.3
Total	**100**	**100.0**

Tabel 4.5 shows that 29 out of 30 respondents (96.7%) had good sleep quality after acupressure therapy.

Normality Test

Table 4. 6 Table of Normality Results of Sleep Quality Score Before and After Acupressure Therapy in Elderly in Work Area of Melintang Health Center, Pangkalpinang

Sleep Quality Score	Shapiro Wilk Test			Conclusion
	Statistic	df	P value	
Before	0.731	30	0.000	Non-normal distribution
After	0.816	30	0.000	Non-normal distribution

Based on Table 4.6, p value was less than 0.05 (alpha 5%). Thus, it can be concluded that data were not normally distributed, so that bivariate test used Wilcoxon test.

Bivariate Analysis

Table 4. 7 The Effect of Acupressure Therapy on Sleep Quality of Elderly in Work Area of Melintang Health Center, Pangkalpinang

Sleep Quality	Mean	Negative ranks	Positive ranks	Ties	Z count	P value
Before	6.67	29	0	1	-4.791	0.000
After	4.37					

Based on Table 4.7, results of analysis showed that mean score of sleep quality before acupressure therapy was 6.67 and after therapy was 4.37. There were 29 respondents whose sleep quality score after < sleep quality score before acupressure therapy (negative ranks). There was 1 respondent whose sleep quality score after = sleep quality score before acupressure therapy (ties). Wilcoxon test obtained P value (0.000) < α (0.05); therefore, Ho was rejected. It means that there was an effect of Acupressure Therapy on Sleep Quality of Elderly in Work Area of Melintang Health Center, Pangkalpinang.

DISCUSSION

Respondent Characteristics

1. Age

Most of respondents (19 of 30 respondents or 63.3%) were late elderly (<65 years). Hoyer, William, Paul and Roodin (2003) as cited in Sumedi, Handoyo, Wahyudi (2018) mentioned three components of successful ageing: low probability or avoidance of disease and risk factors for disease, maintenance of physical and cognitive functioning,

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

and active engagement with life. It is in accordance with Rahayu (2020) who asserted that from 30 respondents at Integrated Service Post for Elderly (Posyandu Lansia) Bhakti Kencana, most of respondents (20 respondents or 66.7%) were late elderly (56-65 years), while the remaining 10 (33.3%) were elderly aged > 65 years.

A study conducted by Wulansari (2019) affirmed that one of factors affecting sleep quality of elderly is age factor, in which increasing age has an impact on decreasing sleep periods. Results of this study are in line with a statement that one of factors affecting sleep quality of elderly is increasing age, so that elderly tend to have poor sleep quality. Age is a determining factor for sleep duration needed. The older someone gets, the less sleep he/she needs (Rudimin et al., 2017)

Researchers assume that elderly find it difficult to sleep and are prone to diseases, including low back pain and joint pain. Therefore, these two will disrupt respondents' sleep schedules due to pain they are experiencing. In addition, elderly have decreased function of body's systems. Decreased function of neurotransmitters causes decreased production of melatonin, which affects sleep quality.

2. Sex

Based on sex, most of respondents (21 of 30 respondents or 70%) were female. This is in accordance with Center for Data and Information of Ministry of Health of the Republic of Indonesia (2020) which confirmed that elderly females reached 8.2%, while elderly males amounted to 6.9%. It also implies that life expectancy of female is higher than that of male. This is in line with a study conducted by Mading et al., (2015) which found that female respondents showed the highest distribution with a total of 26 respondents (60%). In this study, female respondents were approximately 1.6 times at a higher risk of sleep disorder than male respondents.

Menopause, physiologically, can cause a decreased estrogen production which can affect a person's psychological condition; become more emotional and restless, thus making it difficult for elderly females to sleep (Suastari, 2014). Changes in sex hormone in elderly, especially elderly females, are caused by ongoing menopause process. Transitional phase towards menopause and postmenopausal phase tends to be associated with physical and psychological changes that can increase appearance of disorders such as nocturnal hot flashes, mood disorders, and breathing problems during sleep that can reduce sleep quality (Madrid et al., 2016).

Researchers assume that elderly females do more activities at home such as watching television, playing with grandchildren, and chatting with neighbors. Accordingly, fatigue that elderly females experienced is less than elderly males who often do activities outside such as gardening and exercising. Besides, there are basically two factors affecting sleep quality: psychological and physiological factors, which differ between elderly females and males. Number of elderly females is more than males, so that sleep disorder is usually experienced by majority of elderly females.

3. Occupation

Based on occupation, most respondents (22 of 30 respondents or 73.3%) were unemployed. According to Sumirta (2014), elderly people who are still actively working tend to feel tired more quickly so that their need for rest also increases. It is supported by Amanda et al., (2017) who conducted a study on 30 respondents entitled *The Relationship between Sleep Quality and Hypertension Recurrence Rate in Elderly in Tlogomas Village, Malang*. This study found that 17 respondents (56.7%) were unemployed. Decreased activity of elderly can affect physical fitness which affects sleep quality. It is in accordance with a study by Fadhilah (2020) which showed that majority of respondents

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

(27 respondents or 81.8%) were unemployed, and 6 respondents (18.2%) were employed. In this study, occupation had a relationship with sleep quality of elderly in Talang Putri Village, Plaju Sub-District, Palembang.

Researchers assume that majority of elderly are unemployed. To meet their daily needs, most of them live with their children. Occupation is a factor that can affect sleep quality in elderly since it affects physical fitness which has an impact on sleep quality. In this case, elderly people who are still actively working tend to feel tired more quickly so that their need for rest also increases.

Sleep Quality Before Acupressure Therapy

Based on results of analysis on 30 respondents, mean score of sleep quality before acupressure therapy was 6.67 with a median of 6 and standard deviation of 0.922. The lowest sleep quality score was 6 and the highest was 9. All of them had poor sleep quality (100%).

This result is in accordance with data in Indonesia which shows that prevalence of sleep disorders in 2014 was around 10%, of which 30% occurred at age of more than 50 years (elderly). Sleep deprivation can result in excessive daytime sleepiness, lack of energy and lack of concentration. Poor sleep quality will cause disruption of quality of a person's work and can increase risk of experiencing mental disorders (Rahman et al., 2019).

Furthermore, the more mature a person, the need for sleep decreases, which is 7 hours per day. Besides, need for sleep for elderly (60 years and over) is 6 hours per day (Thayeb et al., 2015). Sleep disorder is a health problem that is often faced by elderly which requires special attention. An ability to meet sleep needs can be improved by teaching methods to stimulate and motivate them to sleep (Manurung & Adriani, 2017).

Hmwe et al., (2020) strongly advocated that sleep disorder in elderly population is a worldwide health problem attributed to many health conditions and improvements in health care. Sleep disorders consist of a variety of clinical conditions including difficulty in initiating or maintaining sleep, excessive daytime sleepiness, and sleep disturbances - waking patterns. Sleep disorder in elderly is a health problem that requires a comprehensive treatment approach, taking into account various risk factors such as comorbidities, medication side effects, and psychosocial factors. According to Leblanc et al (2015), stopping physical activities such as social relationships with friends, work and staying in a room all day has been shown to increase likelihood of sleep disorders.

More importantly, according to Rafknowledge, factors affecting sleep quality in elderly include aging process, psychological disorders, general medical disorders, lifestyle, physical environmental factors, and social environmental factors (Ernawati and Agus, 2012 as cited in Manurung & Andriani, 2017). Based on results of interviews with respondents, it was difficult for them to start sleeping and they often woke up at night and found it difficult to go back to sleep, although falling back asleep had to wait a few minutes or several hours.

Sleep disorders in the elderly are often treated with drugs that have potential side effects: drowsiness, poor concentration, memory loss, and drug dependence. These side effects contribute to risk of falls, accidents, and cognitive impairment with long-term use of sleeping pills. To avoid detrimental effects of sleeping pills, it would be beneficial to integrate conventional medical treatments with complementary therapies to address this clinical problem. Non-pharmacological treatment approaches have been recommended for managing sleep disorders in elderly, one of which is acupressure therapy (Hmwe et al., 2020). It is in line with Manurung and Andriani (2017) who conduct a study with results claiming that Before intervention was carried out in elderly at Guna Budi Bakti Nursing

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

Home Medan in 2017, most of respondents (20 respondents or 66.7%) had poor sleep quality.

Researchers assume that majority of elderly have poor sleep quality due to aging. They often go to bathroom in between their sleep, experience coughing, aches and cramps that make them wake up. Poor sleep quality of elderly is also caused by psychological factors such as a lot of thoughts, feelings of anxiety, distant or lack of family support. Moreover, elderly also frequently feel sleepy during the day due to lack of sleep at night which can give a feeling of tiredness in the morning and reduced sleep satisfaction. There are also environmental factors such as noise, hot room temperature, uncomfortable beds, and lights that are too bright. Poor sleep quality can lead to depression, illness, loss of time, disruption of daily activities and less enjoyment of life.

Sleep Quality After Acupressure Therapy

Based on results of analysis on 30 respondents, mean score of sleep quality after acupressure therapy was 4.37, with median of 4 and standard deviation of 0.699. The lowest sleep quality score was 3 and the highest was 6. Most of respondents (29 respondents or 96.7%) had good sleep quality after acupressure therapy.

Non-pharmacological medications to improve sleep quality have no risk of drug-related tolerance or dependence. A wide variety of non-pharmacological treatments have been used to improve sleep, including music therapy, back massage, cognitive behavioral interventions, bright light therapy, aromatherapy, yoga, muscle relaxation, mental imagery, acupuncture, etc. Massage, music therapy, touch therapy, aromatherapy, relaxation, and mental imagery seem to be comforting and reduce stress and anxiety levels in elderly, which are likely to lead to improved sleep quality. One of complementary therapies that can be studied and recommended for sleep disorder is Acupressure Therapy (Hu et al., 2015).

Acupressure is a therapy with principle of healing touch which shows more caring behavior among respondents. Thus, it can provide a feeling of calm and comfort which can bring closer therapeutic relationship between researchers and respondents. From a psychological aspect, acupressure can also help improve sleep quality of respondents. Most of respondents said that acupressure therapy can make them feel more cared for, calm, comfortable and relaxed. Feeling of being comfortable, calm and relaxed in these elderly people is an effect of acupressure. Stimulation of sensory nerve cells around acupressure point will be forwarded to spinal cord, then to mesencephalon and hypothalamus–pituitary complex, all of which are activated to release endorphins which can provide a sense of calm (Majid, 2017).

Potter and Perry (2015) declared that a person will fall asleep when he/she feels comfortable and relaxed. This comfortable condition is what elderly need to sleep, so that they do not have difficulty sleeping and can get deep sleep (Stage 4 of NREM), which increases duration and efficiency of sleep. It is in line with a study carried out by Manurung and Andriani (2017) with results finding that after intervention, most of respondents (21 respondents or 70%) at Guna Budi Bakti Nursing Home Medan in 2017 had good sleep quality. A study by Majid (2017) demonstrated mean score of sleep quality of elderly after complementary acupressure therapy at Tresna Werdha Teratai Social Institution Palembang in 2017 was 4.80. This is in line with Neri et al., (2016) who concluded that there was an increase in sleep quality of pregnant women after acupressure on acupoint HT 7.

Researchers assume that majority of respondents have a good sleep quality after intervention since they experience relaxation during acupressure therapy. These comfortable, calm and relaxed conditions can make elderly have desire to sleep. This

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

comfortable condition is what elderly need to sleep, so that they do not have difficulty sleeping and can get deep sleep, which increases duration and efficiency of sleep. Based on questionnaire data distributed to elderly after giving acupressure therapy, an assessment of quality and quantity of sleep was obtained which indicated that most of elderly experienced an increase in fulfillment of their sleep needs. Night sleep disorders are reduced as well as daytime sleepiness.

The effect of acupressure therapy on sleep quality in elderly

Results of analysis showed that mean score of sleep quality before acupressure therapy was 6.67 and after therapy was 4.37. There were 29 respondents whose sleep quality score after < sleep quality score before acupressure therapy (negative ranks). There was 1 respondent whose sleep quality score after = sleep quality score before acupressure therapy (ties). Results of Wilcoxon obtained P value (0.000) < α (0.05); therefore, Ho was rejected. It means that there was an effect of Acupressure Therapy on Sleep Quality of Elderly in Work Area of Melintang Health Center, Pangkalpinang.

Hmwe et al., (2020) asserted that acupressure is stimulation of acupuncture points on meridians using finger or thumb pressure. It aims to regulate vital energy (known as Qi) which maintains health and well-being of the person. Manual stimulation of acupuncture points helps release muscle tension, improves blood circulation, and strengthens immunity.

Providing stimulation with massage and pressing on acupressure points will affect changes in body's physiology and can affect a person's mental and emotional state. Applying pressure to acupressure points such as heart meridian 7 (shenmen) will physiologically stimulate increased serotonin secretion. Serotonin acts as a neurotransmitter that carries signals to brain to activate pineal gland to produce melatonin. Melatonin then affects suprachiasmatic nucleus (SCN) in anterior hypothalamus of brain in regulating circadian rhythms resulting in decreased sleep latency, nocturnal awakening, and an increase in total sleep time and sleep quality (Iswari & Wahyuni, 2013).

This is also in line with a study by Kusumawardani and Isnaeni (2017) with a title *The Effect of Acupressure Therapy on Sleep Quality of Elderly at Budi Luhur Unit of Tresna Werdha Social Service Center, Kasongan Bantul Yogyakarta*, with results showing that there was an effect of acupressure therapy on sleep quality of elderly with z count of -3.415a and p-value of 0.001. Additionally, a study by Sumedi, Handoyo, Wahyudi (2018) explained mean score of sleep quality before and after acupressure measures. Data showed that score of sleep quality decreased from 16.3 to 11.7. Results of paired t test analysis showed that acupressure had an effect on sleep quality of elderly with p value = 0.000.

Researchers assumed that there are differences in sleep quality of elderly before and after acupressure therapy since acupressure has stimulated PC 6, HT 7, LV 3 and EX-HN 3 intervention points. These acupressure points work to calm mind, reduce difficulty in sleeping, pain, palpitations, restlessness, and headaches. This study has proven the effect of acupressure therapy on sleep quality of elderly, which was shown by elderly who experienced a change from poor sleep quality to good sleep quality. This condition can psychologically provide a calming effect and can affect improvement of rest and sleep quality.

CONCLUSION

From 30 respondents, most of respondents are late elderly (19 respondents or 63.3%), female (21 respondents or 70%), and unemployed (22 respondents or 73.3%).

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

Mean score of sleep quality before acupressure therapy is 6.67, in which all respondents have poor sleep quality (100%).
Mean score of sleep quality after acupressure therapy is 4.37, in which most of respondents (29 respondents or 96.7%) have good sleep quality after acupressure therapy.
There is an effect of acupressure therapy on sleep quality of elderly in work area of Melintang Health Center, Pangkalpinang.

REFERENCES

Ambarsari, S. A. (2015). Pemenuhan Kebutuhan Tidur Lansia: Terapi Akupresur. *The Sun*, *2*(1).

Chasanah, N., & Supratman, S. K. M. (2017). Hubungan Kualitas Tidur dengan Kualitas Hidup pada Lansia di Kelurahan Karangasem Kecamatan Laweyan Surakarta. Universitas Muhammadiyah Surakarta.

Chen, M.C., Yang, L.Y., Chen, K.M., & Hsu, H.F. (2020). *Systematic Review and Meta-Analysis on Using Acupressure to Promote the Health of Older Adults*. *Journal of Applied Gerontology : The Official Journal of the Southern Gerontological Society*, *39*(10), 1144–1152.

Dewi, A. P. (2015). Hubungan Antara Kualitas Tidur dan Kuantitas Tidur dengan Prestasi Belajar Mahasiswa. *Jurnal Online Mahasiswa Program Studi Ilmu Keperawatan Universitas Riau.*

Dewi, Y. I. (2015). Pengaruh senam lansia terhadap kualitas tidur pada lansia yang insomnia. ***J****urnal Online Mahasiswa Program Studi Ilmu Keperawatan Universitas Riau*.

Dinas Kesehatan Kota Pangkalpinang. (2020). *Penduduk Sasaran Program Pembangunan Kesehatan Tahun 2020*.

Endah Rahayu, T., & Wahyuni, S. (2015). *Proyeksi Penduduk Kabupaten/Kota Tahun 2010 – 2020 Provinsi Kep. Bangka Belitung*.

Hidayah, N., & Alif, H. (2016). Hubungan Tingkat Kecemasan Dengan Terjadinya Insomnia Pada Wanita Premenopause Di Dusun Ngablak Desa Kedungrukem Kecamatan Benjeng Kabupaten Gresik. *Journal of Health Sciences*, *9*(1).

Hidayat, A. A. (2014). *Metode Penelitian Keperawatan dan Teknik Analisis Data*. Jakarta : Salemba Medika.

Hmwe, N. T. T., Browne, G., Mollart, L., Allanson, V., & Chan, S. W.-C. (2019). *An integrative review of acupressure interventions for older people: A focus on sleep quality, depression, anxiety, and agitation. International Journal of Geriatric Psychiatry*, *34*(3), 381–396.

Hmwe, N. T. T., Browne, G., Mollart, L., Allanson, V., & Chan, S. W.-C. (2020). *Acupressure to improve sleep quality of older people in residential aged care: a randomised controlled trial protocol*. *Trials*, *21*(1), 360.

Hu, R.F., Jiang, X.Y., Chen, J., Zeng, Z., Chen, X. Y., Li, Y., Huining, X., & Evans, D. J. W. (2015). *Non-pharmacological interventions for sleep promotion in the intensive care unit*. *The Cochrane Database of Systematic Reviews*,*2015*(10),CD008808.

Iswari, N. L. P. A. M., & Wahyuni, A. A. S. (2013). Melatonin Dan Melatonin Receptor Agonist Sebagai Penanganan Insomnia Primer Kronis. *E-Jurnal Medika Udayana*, 680–694.

Kementerian Kesehatan RI. (2012). *Orientasi Akupresur Bagi Petugas Puskesmas*.

Kementrian Kesehatan RI. (2012). *Orientasi Akupresur Bagi Petugas Puskesmas*.

Kementrian Kesehatan RI. (2019). *Materi Komunikasi, Informasi dan Edukasi Pedoman Untuk Puskesmas dalam Pemberdayaan Lanjut Usia*.

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

Kholifah, S. N. (2016). *Keperawatan Gerontik* (ke-1). Kemenkes RI.

Kusumawardani, W., & Isnaeni, Y. (2017). Pengaruh Terapi Akupresur Terhadap Kualitas Tidur Lansia di Balai PSTW Unit Budi Luhur Kasongan Bantul Yogyakarta. Universitas' Aisyiyah Yogyakarta.

Lai, F.C., Chen, I.H., Chen, P.J., Chen, I.J., Chien, H.W., & Yuan, C.F. (2017). *Acupressure, Sleep, and Quality of Life in Institutionalized Older Adults: A Randomized Controlled Trial*. *Journal of the American Geriatrics Society*, *65*(5).

Leblanc, M.F., Desjardins, S., & Desgagné, A. (2015). *The relationship between sleep habits, anxiety, and depression in the elderly*. *Nature and science of sleep*, *7*, 33.

Mading, M. F., Abi Muhlisin, H. M., & SKM, M. K. (2015). Gambaran karakteristik lanjut usia yang mengalami insomnia di Panti Wreda Dharma Bakti Pajang Surakarta. Universitas Muhammadiyah Surakarta.

Majid, Y. A. (2017). Perbedaan Kualitas Tidur Lansia Setelah Mendapatkan Terapi Komplementer Akupresur Dan Terapi Musik Instrumental Di Panti Sosial Tresna Werda Teratai Palembang Tahun 2017. *Masker Medika*, *5*(1), 139–151.

Manurung, R., & Adriani, T. U. (2017). Pengaruh Terapi Relaksasi Otot Progresif Terhadap Kualitas Tidur Pada Lansia Di Panti Jompo Yayasan Guna Budi Bakti Medan Tahun 2017. *Jurnal Ilmiah Keperawatan Imelda*, *3*(2), 294–306.

Maulinda, D. (2017). Pengaruh Terapi Relaksasi Benson Terhadap Kualitas Tidur Lansia di Posyandu Permadi Tlogomas Kota Malang.

Miner, B., & Kryger, M. H. (2017). *Sleep in the Aging Population. Sleep Medicine Clinics*, *12*(1), 31–38.

Neri, I., Bruno, R., Dante, G., & Facchinetti, F. (2016). Acupressure on self-reported sleep quality during pregnancy. *Journal of acupuncture and meridian studies*, *9*(1), 11–15.

Notoatmodjo. (2018). *Metodologi Penelitian Kesehatan*. Jakarta: Rineka Cipta.

Notoatmodjo, & Soekidjo. (2018). *Metodologi Penelitian Kesehatan* (Ke-3 (ed.)). PT. Rineka Cipta.

Putri, E. V. (2018). Hubungan Antara Faktor Internal Dan Faktor Eksternal Pekerja Dengan Kualitas Tidur Pekerja Shift Di Pt. X Sidoarjo. Universitas Airlangga.

Rahman, H. F., Handayani, R., & Sholehah, B. (2019). Pengaruh Terapi Relaksasi Benson Terhadap Kualitas Tidur Lansia Di Upt. Pelayanan Sosial Lanjut Usia Bondowoso. *Jurnal SainHealth*, *3*(1), 15–20.

Risnasari, N. (2015). Pengaruh Teknik Relaksasi Benson Terhadap Pemenuhan Kebutuhan Tidur Pada Lansia.

Rudimin, R., Hariyanto, T., & Rahayu, W. (2017). Hubungan Tingkat Umur Dengan Kualitas Tidur Pada Lansia Di Posyandu Permadi Kelurahan Tlogomas Kecamatan Lowokwaru Malang. *Nursing News: Jurnal Ilmiah Keperawatan*, *2*(1).

Sari, D., & Leonard, D. (2018). Pengaruh Aroma Terapi Lavender Terhadap Kualitas Tidur Lansia Di Wisma Cinta Kasih. *Jurnal Endurance*, *3*(1), 121–130.

Setyowati, H. (2018). *Akupresur Untuk Kesehatan Wanita Berbasis Hasil Penelitian* (ke-1). Unimma Press.

Song, H. J., Seo, H.J., Lee, H., Son, H., Choi, S. M., & Lee, S. (2015). *Effect of self-acupressure for symptom management: a systematic review. Complementary therapies in medicine*, *23*(1), 68–78.

Sugiyono. (2018). *Metode Penelitian Kuantitatif dan Kualitatif*. Alfabeta.

Sukanta, P. O. (2008). *Pijat Akupresur Untuk Kesehatan.* Penebar Plus.

Thayeb, R. R. T. A., Kembuan, M. A. H. N., & Khosama, H. (2015). Gambaran Kualitas Tidur pada Perawat Dinas Malam RSUP Prof. Dr. RD Kandou Manado. *e-CliniC*, *3*(3).

DOI: 10.30994/sjik.v10i1.742
ISSN: 2252-3847 (print); 2614-350X (online) Vol.10 No.1 May 2021 Page. 964-975

United Nation. (2017). *UN World Population Prospect the 2017 Revision*.

Zeng, H., Liu, M., Wang, P., Kang, J., Lu, F., & Pan, L. (2016). T*he Effects of Acupressure Training on Sleep Quality and Cognitive Function of Older Adults: A 1-Year Randomized Controlled Trial. Research in Nursing & Health*, *39*(5), 328–336.