CORRELATION OF SLEEP TIME WITH QUALITY OF LIFE IN ELDERLY AT MANDING TIMUR VILLAGE, SUMENEP

Moh. Fitrah Armansyah[1)], George Nicolaus Tanudjaja[2)], Nita Kurniawati[3)].

Correspondent Email: *Moh.Fitrah.A@gmail.com*

ABSTRACT

Background: In the elderly, there are anatomical, physiological, and psychological changes that can result in reduced sleep time in the elderly, and are thought to affect the quality of life of the elderly.

Objective: This study aimed to determine the relationship between sleep time and quality of life in the elderly.

Methods: This study used an observational analytic method with a cross-sectional approach. The sample in this study was 35 elderly people in East Manding Village. The sampling technique used was purposive sampling by determining the inclusion and exclusion criteria. The tool used is the WHOQOL-BREF test to measure the quality of life of the elderly and uses the sleep time provisions from the Ministry of Health (Ministry of Health) to measure sleep time in the elderly.

Results: Data analysis used a contingency correlation test with a significance value of $p<0.05$. The correlation between sleep time and quality of life in the physical condition domain was positive, moderate, significant ($r = 0.508$ with $p = 0.000$); with the domain of psychological condition is positive, moderate strength, significant ($r = 0.408$ with $p = 0.03$); with the environmental factor domain being positive, moderate in strength, significant ($r = 0.510$ with $p = 0.002$); while in the domain of social relations there is no significant correlation.

Conclusion: Sleep time is positively, moderately, and significantly correlated with quality of life in the domains of physical conditions, psychological conditions, and environmental factors. This means that the higher the sleep time, the better the quality of life in physical, psychological, and environmental conditions. These findings contribute to science and health promotion in geriatrics for the welfare of the elderly.

***Keywords**: Elderly, Quality of Life, Sleep Time*

[1)] *Student of the Faculty of Medicine, Widya Mandala Catholic University Surabaya*
E-mail: Moh.Fitrah.A@gmail.com
[2)] *Department of Anatomy and Histology, Faculty of Medicine, Widya Mandala Catholic University Surabaya*
[3)] *Department of Neuroscience, Faculty of Medicine, Widya Mandala Catholic University Surabaya*

INTRODUCTION

Aging is a process where there is a change in healthy adults into frail (weak and vulnerable) with reduced physiological and anatomical functions. This can be indicated in the elderly (elderly people) being more susceptible to disease than someone younger than him.[1] WHO (World Health Organization) states that the elderly is someone over 60 years old or older.[2]

The number of the elderly population in the world is estimated to increase by 223% or by 694 million people between 1970 and 2025.[3] In Indonesia alone, in almost five decades from 1971-2020 there was an increase in the elderly population by about two times to 9.92% or around 26 million people.[4]

WHO defines the quality of life as an individual's perception of his own life, which many factors can influence. When entering old age, there will be a decrease in the quality of life, which can be caused by health problems or other problems, this decrease in quality of life can cause the elderly not to be able to enjoy old age comfortably.[5]

When entering the elderly, several problems will arise, resulting in a decrease in the quality of life of the elderly. One of the problems that can be found in the elderly is insomnia or lack of sleep in the elderly.[6] According to the Ministry of Health data, the elderly need 6-7 hours of sleep per day.[7]

Many factors cause lack of sleep in the elderly, one of which is changes in circadian rhythms. Changes in the circadian rhythm in the elderly result in decreased sensitivity in adjusting to light and dark conditions normally. The circadian rhythm is also involved in changes in body temperature, GH, and cortisol secretion. Still, in the elderly, the excretion of cortisol and GH and changes in body temperature fluctuate and become less prominent, in the elderly. In the elderly, there is also a decrease in the hormone melatonin, this decrease in hormone is caused by increasing a person's age.[1]The purpose of this study was to determine the relationship between sleep time and quality of life in the elderly.

METHOD

This study used an observational analytic method with a cross-sectional approach to determine the relationship between sleep time and quality of life in the elderly. *Cross-sectional* research is conducted in one observation of the independent and dependent variables. The sample in this study was 35 elderly people aged 60 years or more who live in the village of Manding Timur, Manding sub-district, who met the inclusion and exclusion criteria by using purposive

random sampling as a sampling technique. Collecting data using a questionnaire from WHO, namely WHOQOL-BREF, to measure the quality of life of the elderly and using sleep time provisions from the Ministry of Health (Ministry of Health) to measure sleep time in the elderly.

RESULTS

Table 5.1 Respondent's Gender

Gender	Frequency (f)	Percentage (%)
Man	14	40
Woman	21	60

Table 5.2 Respondent Age Description

Age	Frequency (f)	Percentage (%)
Elderly(60 to 74 years)	30	85
Old(75 to 90 years)	5	15

Table 5.3 Work

Work	Frequency (f)	Percentage (%)
Work (traders, etc.)	9	26
Not working (staying at home)	26	74

Table 5.4 Elderly Bedtime

Sleeping time	Seniors	Percentage(%)
Enough Sleep	15	43
Lack of sleep	20	57
Total	30	100

Of a total of 35 respondents who took part in the study, 20 elderly people (57%) with insufficient sleep time, and 15 elderly people (43%) with sufficient sleep.

The quality of life of the elderly based on the WHOQOL-BREF questionnaire is determined by four domains of quality of life: physical, psychological, social relationships, and environmental factors.

Table 5.5 Quality of Life for Elderly

		Number of Elderly (n)	Percentage
Quality of Life for Elderly Domain 1 (Physical Condition)	Very bad	0	0
	Bad	21	60
	Good	14	40
	Very good	0	0
Total		35	100
		Number of Elderly (n)	Percentage

Quality of Life for the Elderly Domain 2 (Psychological Conditions)	Very bad	0	
	Bad	14	40
	Good	18	51
	Very good	3	9
Total		35	100
		Number of Elderly (n)	Percentage
Quality of Life for the Elderly Domain 3 (Social Relations)	Very bad	1	3
	Bad	17	48
	Good	15	43
	Very good	2	6
Total		35	100
		Number of Elderly (n)	Percentage
Quality of Life for the Elderly Domain 4 (Environmental Factors)	Very bad	5	14
	Bad	21	60
	Good	9	26
	Very good	0	0
Total		35	100

From a total of 35 respondents in this study, quality of life data from each domain was obtained as follows:

- In domain 1 (physical condition), there are 21 elderly people with poor quality of life (60%), and the elderly with good quality of life are 14 elderly (40%).
- In domain 2 (psychological condition), there are 14 elderly people with poor quality of life (40%), 18 elderly people with good quality of life (51%), and 3 elderly people with very good quality of life (9%).
- In domain 3 (social relations), there are 1 elderly (3%) with very poor quality of life, 17 elderly (48%) with poor quality of life, 15 elderly (43%) with good quality of life, and 2 elderly (6 %) with very good quality of life.
- In domain 4 (environmental factors) found 5 elderly people (14%) with very poor quality of life, 21 elderly people (60%) with poor quality of life, and 9 elderly people (26%) with good quality of life

Table 5.6 Relationship between sleep time and quality of life for the elderly

		Quality of Life (Physical Health)						
		Very bad	Bad	Good	Very good	Total	P	C
Sleeping time	Lack of sleep	0	17	3	0	20	0.000	0.508
	Enough Sleep	0	4	11	0	15		
Total		0	21	14	0	35		
		Quality of Life (Psychological Condition)						
		Very bad	Bad	Good	Very good	Total	P	C
Sleeping time	Lack of sleep	0	11	9	0	20	0.030	0.408
	Enough Sleep	0	3	9	3	15		
Total		0	14	18	3	35		
		Quality of Life (Social Relations)						
		Very bad	Bad	Good	Very good	Total	P	C
Sleeping time	Lack of sleep	1	11	8	0	20	0.272	0.317
	Enough Sleep	0	6	7	2	15		
Total		1	17	15	2	35		
		Quality of Life (Environmental Factors)						
		Very bad	Bad	Good	Very good	Total	P	C
Sleeping time	Lack of sleep	5	14	1	0	20	0.002	0.510
	Enough Sleep	0	7	8	0	15		
Total		5	21	9	0	35		

Description:

The contingency coefficient correlation test calculates P&C value

From the results of the correlation analysis above, it was found that a significant relationship between sleep time and quality of life in the elderly with a p-value <0.05 was domain 1 (physical condition), domain 2 (psychological condition), and domain 4 (environmental factors) with the contingency coefficient being 0.508, 0.408 and 0.510 which means showing a moderate correlation.

Whereas in domain 3 (social relations), the results were not significant, p>0.05 between the domain of social relations and sleep time in the elderly.

DISCUSSION

Characteristics of Research Respondents

From research conducted by Indrayani et al.,[8] Regarding the factors related to the quality of life of the elderly, it was found that there was a relationship between gender, age, and occupation with the quality of life in the elderly. This happens because the life expectancy of women is higher than men. According to data from BPS in 2019, the comparison of the female elderly population was 52.35%, and the male elderly population was 47.65%.[3]When women enter old age, there will be a decrease in the hormone estrogen, which causes a decrease in body function and resistance. Indrayani also explained the relationship between age and the quality of life of the elderly. There were anatomical, physiological, and psychological changes when entering old age. Anatomical and physiological changes refer to a decrease in daily activities, while psychological changes impact the vulnerability to stress in the elderly. Employment status also affects the quality of life of the elderly. The elderly who are still working can fulfill their needs, and the elderly who are not working feel anxious and afraid of economic dependence on their families.

Distribution of Elderly Sleep

According to research by Sri Sunarti[9], decreased sleep time in the elderly is caused by difficulty in starting to sleep, maintaining a good night's sleep, and waking up too early. In addition, sleep disturbances in the elderly can also occur due to a history of illness. Physiologically, this decrease in sleep time is caused by changes in the sleep cycle where there is a reduction in the sleep cycle at stages 3 & 4 (deep sleep) to stages 1 & 2, where the elderly will be easier to wake up. Another change that occurs physiologically is a change in circadian rhythm, namely a decrease in sensitivity in adjusting to dark and light conditions.[1]

Distribution of Elderly Quality of Life

Several factors can affect the quality of life of an elderly person such as physical condition, gender, family support, marital status, socioeconomic and work status. Judging from the age of the research respondents, namely between 60-75 years, where when entering the elderly physiologically, there will be a decrease in a physical condition which will cause the elderly to be more susceptible to suffering from illness, and this decrease in physical condition will result in disruption of the elderly in carrying out their daily activities, the Physical condition decline in the elderly causes a decrease in the quality of life of the elderly.[5]In addition to physical conditions, gender is also one of the factors that can affect the quality of life of the elderly. Where the elderly of the female sex will mostly have a low quality of life, this can happen because in women, after menopause, there will be a decrease in the hormone estrogen. In addition to physical activity, the elderly of the male sex have a more physical condition. capable of doing physical activity.[5]

Relationship between sleep time and quality of life for the elderly

The data analysis results regarding the relationship between 4 domains of quality of life and sleep time in the elderly found that the physical condition domain had the most significant relationship with the elderly's sleep time. This is in accordance with the theory in the literature review, where at the time of entering the elderly, there will be a decrease in a physical condition caused by anatomical and physiological changes. The decline in physical conditions in the elderly causes a decrease in the physical activity carried out by the elderly. The daily physical activity carried out by the elderly causes an increase in energy consumption and the secretion of endorphins. The secretion of these endorphins causes a feeling of pleasure, comfort, and happiness, which makes the elderly more relaxed and easier to meet their sleep needs.[10] In the elderly who have less sleep time will be more likely to be sleepy and feel tired during the day, which results in a decrease in activity which results in a decrease in the quality of life of the elderly.[1]

While in domain 3, namely social relations, there is no significant relationship. In the literature review, social relations are influenced by other factors, namely psychological conditions (psychosocial).[11]. When a person enters old age, there will be several changes, one of which is a change in psychosocial conditions. These psychosocial changes cause the elderly to feel lonely and depressed and experience anxiety more

often. Feelings of anxiety, depression, and loneliness are caused by many things, one of which is grief. Grief that occurs in the elderly is caused by the loss of a spouse, family member, and relatives or close friends of the elderly themselves. The elderly who feels lost will often be alone (lonely) and withdraw from their environment so that their social interactions are reduced. If this goes on for a long time, it can cause feelings of anxiety and depression.

Apart from being influenced by psychological (psychosocial) other factors that cause the absence of a relationship between social relations and bedtime in the elderly, namely the frequent holding of joint prayer activities carried out by the elderly, this joint prayer activity is carried out regularly once a week. This allows the elderly to meet, gather and tell stories so that elderly can support each other. With this activity, the elderly can have good social relations. Another factor is from the WHOQOL-BREF questionnaire questions regarding social relations, where in this third domain, there are only three questions, namely question no. How satisfied are you with your personal/social relationships), 21 (How satisfied are you with your sex life), and 22 (How satisfied are you with the support you get from your friends). In question no 21 regarding sexual relations, almost all of the elderly answered with a score of 2, namely (unsatisfactory) this is very reasonable because, according to a literature review, when entering old age, there will be changes in the reproductive system[11]

CONCLUSION

Based on the results of data analysis from research conducted on 35 respondents regarding the relationship between sleep time and the quality of life of the elderly in Manding Timur Village, Manding District, Sumenep Regency, it can be concluded as follows: There is a positive, moderate and significant correlation between sleep time and quality of life. Domains of physical conditions, psychological conditions, and environmental factors. There is no significant relationship between sleep time and quality of life in the domain of social relations. These findings contribute to science in the field of geriatrics in the welfare of the elderly.

REFERENCE

1. Sudoyo AW, Setiyohadi B, Alwi I, Simadibrata M, Setiadi S. Buku ajar ilmu penyakit dalam edisi VI. Interna Publishing. 2014.
2. Brundtland GH. Men ageing and health: achieving health across the life span. Who. 2001;
3. Hakim LN. Urgensi Revisi Undang-Undang tentang kesejahteraan lanjut usia. Aspir J Masal Sos. 2020;
4. BPS. Statistik penduduk usia lanjut 2020. Badan Pus Stat. 2020;
5. Hayulita S, Bahasa A, Novika Sari A, Studi PS, STIKes Yarsi Sumbar K, Studi III Keperawatan STIKes Yarsi Sumbar PD. Faktor dominan yang berhubungan dengan kualitas hidup lansia. 2018.
6. Sunarti S, Ratnawati R, Mattaliti GNM, Nugrahenny D, Ramadhan R, Budianto R, et al. Prinsip dasar kesehatan lanjut usia (Geriatri). UB Press. 2019.
7. Kemenkes. Kebutuhan tidur sesuai usia [Internet]. Istirahat Cukup. 2015. p. 2. Available from: www.promkes.depkes.go.id
8. Indrayani, Ronoatmojo S. Faktor-faktor yang berhubungan dengan kualitas hidup lansia di Desa Cipasung Kabupaten Kuningan Tahun 2017. J Kesehat Reproduksi. 2018;
9. Sunarti S, Helena H. Gangguan tidur pada lanjut usia. J Islam Med. 2018;
10. Dewi AI, Wahyuni N, Andayani NLN, Griadhi IPA. Hubungan Aktivitas Fisik Dengan Kualitas Tidur Pada Lansia Di Desa Sumerta Kelod. Maj Ilm Fisioter Indones. 2020;8(1).
11. Kholifah SN 2016. Keperawatan gerontik. J Mater Process Technol. 2018;1(1).