GYMNASTIC FREQUENCY AND INSOMNIA LEVEL IN ELDERLY AT BHAKTI LUHUR NURSING HOME TROPODO

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ABSTRACT

Background: Aging is a natural process that cannot be avoided and this process will cause body changes in the elderly which leads to degenerative problems, one of them is sleep disorder. Increasing sleep hygiene is one of many ways to reduce sleep disorder. Sleep hygiene is the life style of the elderly that cause better sleep quality. Gymnastic in the elderly is a mild aerobic excercise that increases parasimpatic activity that leads to adrenalin, norepinephrine, catecolamin level decreasing and vasodilatation of blood vessels, these will cause oxygen transport throughout body, especially brain to lower blood pressure and causing relax effect and increasing the need of sleep in the elderly.
Aim: This study goal is to examine the correlation between gymnastic frequency and insomnia level in elderly at Panti Werdha Bhakti Luhur Tropodo.
Method: This study is an analytic study with the cross-sectional design and purposive sampling method. The primary data has been taken for 4 days from July 24 until 28, 2017 by: 1) using valid and reliable questionnaires about demographic data, level of insomnia, and cognitive status; 2) the secondary data for gymnastic frequency has been taken from April to June 2017. The study using the Spearman test.
Result: The result showed the value of p=0,79, it can be concluded that there is no significant correlation between gymnastic frequency and insomnia level in elderly.

Keywords: elderly, gymnastic, insomnia, cognitive status

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INTRODUCTION

Aging is a natural process that cannot be avoided, running continuously, and will then cause anatomical, physiological, and biochemical changes in the body, so that it can affect the overall function and ability of the body[1].

The term for elderly people is not standard. There are different designations, such as elderly people as seniors, as glamorous, and as elderly. In this research, the author will use the term elderly. Moreover, the Social Welfare Law No. 13 of 1998 stipulates certain ages for someone begins to be called elderly. According to it, a person can be categorized as an elderly person starting at the age of 60 years and over[2,3]. Thus, the elderly are said to be the final stage of development in the human life cycle.

Sleep disorders such as insomnia are common but are still undiagnosed complaints in the elderly group. More than 50% of geriatric patients reported having difficulty sleeping and maintaining it, waking up too early, or not having well-rested. Interestingly, changes in the quantity and quality of sleep related with the growth of a person's age[4].

The poor quantity and quality of sleep will have an impact on decreasing the performance of daily activities, such as frequent sleepiness and lack of energy. One effort that can be done to improve the quality of sleep in the elderly is to improve sleep hygiene. This can be implemented in doing exercises as a non-pharmacological treatment[5].

The elderly gymnastic is a lightweight aerobic exercise that is easy to do and will not be a burden. Thus, it can be performed by the elderly. As a result, good sleep hygiene can be applied by doing regular exercise, which is 3-4 times per week and avoiding strenuous activities before bedtime[6,7].

This phenomenon has encouraged the researchers to conduct a research on the relationship of gymnastic frequencies with the degree of insomnia in the elderly at Panti Werdha Bhakti Luhur Tropodo.

METHOD

This study uses an observational analytic design and retrospective cross-sectional sampling method. The sample in this study was all the elderly people at the Panti Werdha Bhakti Luhur Tropodo who suit the inclusion criteria, all the elderly who are recorded with elderly gymnastics, and those who are well-communicated. Exclusion criteria deal with the elderly who have musculoskeletal pain as well as with severe dementia. The sampling technique in this study uses a non-random sampling method, namely purposive sampling.

The population was taken from all the elderly who lived in four guesthouses at the Panti Asuhan Tropodo Werdha Bhakti Luhur. The samples were taken from the elderly who suit the inclusion and exclusion criteria. Then, the aims and benefits of the study would be explained to the respondents as well as they were asked to approve the sign through informed consent. For respondents who had signed informed consent, data collection was taken. Moreover, gymnastic frequency data was taken by looking at the presence data in the institution while insomnia degree data was taken by using the Insomnia Severity Index (ISI) questionnaire. It was obtained by conducting interviews with respondents. An analysis was performed to determine whether there was a relationship between the frequency of exercise and the degree of insomnia in the elderly or no. After the data analysis was obtained, conclusions are drawn and the report or research results are continued.

RESULT

Based on data collection that has been done on July 24-28, 2017, the following data are obtained as follows:

The Distribution of Respondents' Characteristics based on Sex

Table 1 Respondents' Sex Distribution

Sex	Frequency (n)	Percentage (%)
Female	29	100%
Male	-	0%
TOTAL	**29**	**100%**

Based on the data above, the total number of respondents obtained by 29 people with a percentage of 100%.

The Distribution of Respondents' Characteristics based on Age

Table 2 Respondent's Age Distribution

Age	Frequency (n)	Percentage (%)
60-74 years old (*Elderly*)	18	62,06%
75-90 years old (*Old*)	10	34,48%
>90 years old (*Very old*)	1	3,44%
TOTAL	**29**	**100%**

Based on the data above, the age group of 60-74 years old (elderly) has the highest percentage, which is 62.06%. Yet, the age group of >90 years old (very old) has the lowest percentage, which is 3.44%.

The Distribution of Respondents' Gymnastic on Frequency

Table 3 Respondents' Gymnastic Distribution

Gymnastic Frequency	Frequency (n)	Percentage (%)
Very Good (44-58 times for 12 weeks)	4	13,79%
Good (29-43 times for 12 weeks)	3	10,34%
Poor (15-28 times for 12 weeks)	6	20,68%
Very Poor (0-14 times for 12 weeks)	16	55,17%
TOTAL	**29**	**100%**

Based on the data, it is obtained that most of the data rates very poor with a percentage of 55.17% and the least are good exercise frequency data with a percentage of 10.34%.

It can be concluded that the percentage of elderly people who have a satisfactory gymnastic frequency as much as 24.13% and the percentage of elderly people who have an unsatisfactory gymnastic frequency of 75.85%.

The Distribution of Respondents Insomnia Degree

Table 4 Respondents' Insomnia Degree

Degree of Insomnia	Frequency (n)	Percentage (%)
Lack of Insomnia (0-7 score)	9	31%
Mild Insomnia (8-14 score)	12	41,4%
Moderate Insomnia (15-21 score)	8	27,6%
Severe Insomnia (22-28 score)	-	0%
TOTAL	**29**	**100%**

Based on the data, the most frequent is elderly with mild insomnia with a percentage of 41.4%, and the least is severe insomnia with a percentage of 0%.

The Distribution of Insomnia's Degree based on Respondents' Gymnastic Frequency

Table 5 The Distribution of Insomnia's Degree based on Respondents' Gymnastic Frequency

Gymnastics Frequency	Degree of Insomnia								Total	
	Not		Mild		Medium		High			
	n	%	n	%	n	%	n	%	n	%
Very good (44-58x for 12 weeks)	1	3,44 %	2	6,89 %	1	3,44 %	-	-	4	13,79 %
Good (29-43x for 12 weeks)	1	3,44 %	2	6,89 %	0	-	-	-	3	10,34 %
Not Good (15-28x for 12 weeks)	2	6,89 %	2	6,89 %	2	6,89 %	-	-	6	20,68 %
Not Very Good (0-14x for 12 weeks)	5	17,24 %	6	20,68 %	5	17,24 %	-	-	16	55,17 %
TOTAL	9	31,01 %	12	41,35 %	8	27,57 %	-	-	29 %	100 %

Based on the data, it was found that the elderly who could not be related to insomnia were mostly received gymnastics with a very good frequency of 17.24%. The elderly who deal with the most severe problems are followed by very good frequency exercises with a percentage of 20.68%. The elderly who experience moderate insomnia are mostly followed by very good frequency exercises with a very poor percentage of 17.24%.

It was concluded that the percentage of elderly with satisfactory gymnastic frequencies was 24.13% and those who had mild insomnia as much as 3.78%. The percentage of elderly with unsatisfactory gymnastic frequency is 75.85%, and those who have mild insomnia as much as 27.57%.

DISCUSSION

The results of data analysis obtained p-value as much as 0.790 and the value of the correlation coefficient are 0.052 so that it can be concluded there is no significant relationship between the frequency of gymnastics with the degree of insomnia in the elderly with a correlation level of almost no correlation.

The research data related to the frequency of gymnastics showed that most of the elderly who had very poor exercise frequencies (0-14 times for 12 weeks) results in the percentage of 55.17% then followed by the elderly who had poor exercise frequencies (15-28 times for 12 weeks) with a percentage of 20.68%. The research data related to the degree of insomnia, most of which are elderly with mild insomnia with a percentage of 41.35% and followed by elderly who do not experience insomnia with a percentage of 31.01%.

According to Putu Arysta Dewi and I Gusti Ayu Indah Ardani, one of the causes of insomnia is the environmental or behavioral factors. In this study, behavioral factors were found to be a factor causing insomnia in the elderly. In this case, along with the data, about half of the elderly respondents, who became the respondents of the study, had very poor exercise frequencies[8].

The scope of this study is there are many factors that can influence the degree of insomnia that is under-research such as psychological problems, consumption of coffee or tea (which contains caffeine), diseases and the use of certain more specific drugs, ambient conditions such as sound, air temperature, bed conditions, and bedroom, and many other factors. Gymnastic factors themselves such as duration and movement of gymnastics are also not examined so that it can be a factor that can affect the results of research[9].

The sampling technique uses purposive sampling, so all elderly people

who are willing to become research respondents are used. The number of respondents in nursing homes is very limited so that the results obtained are less than optimal.

The study design uses cross-sectional. The study was conducted without giving intervention and no follow-up that caused the movements and duration of exercise did not fulfil the willing of the researchers. It also did not deal with pre and post-tests that effected the unknown of respondents' insomnia before and after doing the elderly exercises.

CONCLUSION

The research on the relationship of gymnastic frequency with the degree of insomnia in the elderly at the Panti Werdha Bhakti Luhur Tropodo which was conducted on July 24 to July 28 2017 can be concluded as follows:

1. Very poor is the most frequent gymnastic frequency classification in the elderly at the Panti Werdha Bhakti Luhur Tropodo.
2. Mild insomnia is the most frequent classification of insomnia's degree in the elderly at the Panti Werdha Bhakti Luhur Tropodo.
3. There is no significant correlation between the frequencies of gymnastics with the degree of insomnia in the elderly at the Panti Werdha Bhakti Luhur Tropodo.

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