

Disease response, depression level, anxiety level, physical environment, lifestyle and its impact on the quality of sleep in the elderly In Nganjuk

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IHK Stada Indonesia, IHK Stada Indonesia, Satriya Bhakti Stikes The

Elderly (elderly) are the final stages of the life cycle. This is a reality and can not be avoided, where a person experiences changes biologically, psychologically and socially. Elderly people will experience setbacks, especially in the field of physical ability, more prone to depression, anxiety and stress, besides the physical environment, lifestyle and illness they experience will trigger disruption in their sleep patterns. The purpose of this study is to analyze the effect of response to disease, the level depression, anxiety level, physical environment and lifestyle on the quality of sleep in the elderly in Nganjuk.

The design of this study was observational analytic. The respondents are elderly in the village of Kelurahan, Ngronggot District, Nganjuk Regency, as many as 247 people were taken randomly sampling as many as 154 people. The statistical test used is logistic regression.

Based on the test logistic regression 4 variables affect the sleep quality of the elderly, namely the response to disease ($p = 0.007$; OR = 11.279), Depression ($p = 0.001$; OR = 11.712), Anxiety ($p = 0.002$; OR = 7.736), and lifestyle ($p = 0.031$; OR = 6.098) while the physical environment does not affect the sleep quality of the elderly ($p = 0.050$; OR = 5.414). The most dominant factor of this study is the level of depression and anxiety levels of the elderly.

The results showed that there was an influence of sex, age, marital status, work history and residence on the quality of sleep of the elderly. Likewise, the response to disease, depression, anxiety, physical environment, and lifestyle affect the quality of sleep in the elderly. Psychic shows that negative thoughts can actually affect physical health. Negative emotional conditions such as depression, anxiety, disappointment, or feelings of guilt that cause psychological disorders.

From the five variables, two variables were most dominantly affecting the quality of sleep in the elderly, namely the Depression Level of anxiety. depression is the end result of anxiety. Efforts that must be made for the elderly who experience depression and anxiety are family support, because the family is the main social group that has the greatest emotional ties and is closest to the elderly. With the support of the family, it is expected to reduce anxiety in the elderly, and it is hoped that this support will make the elderly more secure and comfortable for the elderly.

Keywords: Disease response, depression level, anxiety level, physical environment, lifestyle, sleep quality, elderly

BACKGROUND

The older group complained more and woke up earlier. In addition, there are 30% of the seventy-year-old age groups who wake up much at night. This figure was seven times greater than the age group of 20 years (Bandiyah, 2009). Sleep is a state of repetitive, changes in the status of consciousness that occurs during a certain period. If people get enough sleep, they feel their energy has recovered. Proper rest and sleep are as important for good health as good nutrition and adequate exercise (Potter & Perry 2006,).

The aging process makes older people more easily experience sleep disorders, in addition to causing normal changes in sleep patterns and resting elderly (Maas, 2011) .. Various opinions explain several factors that affect sleep. Factors that can affect sleep are age, environment, fatigue, lifestyle, psychological stress, alcohol and stimulants, diet, smoking, motivation, pain, and medication. Potter & Perry (2005) also stated that the factors that influence sleep are physical illnesses, medications and substances, lifestyle, excessive daytime sleep patterns, excessive stress and emotionality, environment, exercise and fatigue, and food intake and calories. Vitiello (2006) adds that the factors that cause poor sleep quality in the elderly are physiological, disease, psychological, primary sleep disorders, social behavior, and the environment. Kim & Moritz (1982, in Maas, 2011) states that the factors that cause disruption of sleep patterns in the elderly are internal and external factors.

Sleep problems that occur in the elderly require appropriate treatment to improve the fulfillment of sleep needs. Meeting the needs of sleep every person is different and is seen from the quality of sleep. There is a need for quality of sleep that is met properly and there are those who experience interference (Hidayat, 2006). Deign with this, improving sleep quality is very necessary. Because of this knowledge of the factors that affect sleep quality in the elderly can be a reference of various health promotion activities included in primary prevention (Anderson & McFarlane, 2006).

The results of a preliminary study conducted by one of the village health center officials who handled the elderly Posyandu program stated that the elderly rarely complained of symptoms of sleep disorders. The results of interviews conducted with the elderly who are more than 55 years old, obtained data that only 6 out of 15 elderly who complain often wake up at night because they want to urinate and excessive sleepiness during the day. nine other elderly stated that their sleep quality was good, slept well at night, and did not feel excessive

sleepiness during the day. There are still many elderly people who find it difficult to sleep is a natural thing for them.

RESEARCH MERODE

Design The study was analytic observational The population in this study were all elderly in Posyandu Elderly Village Klurahan Ngronggot District Nganjuk District who were more than 60 years old, were able to hear and see, were communicative and cooperative, did not experience mental disorders and were willing to be the subject of research. N = 247 by calculating the number of samples known 154 samples are needed in this study. The dependent variable of this study was sleep quality in the elderly measured by using PSID while the independent variables in this study were ... Disease response, depression level, anxiety level, physical environment, lifestyle Data collection by interviewing questionnaire.

the sleep disturbance factor Sleep Quality Questionnaire (CEC) with the use of *The Pittsburgh Sleep Quality Index (PSQI)* (Analysis data using ordinal regression

RESULTS

1. Respondent Personal Data

Characteristics			(%)
Gender	Female	1	9.1
	Male	3	0.9
	Total	54	100.0
Age	60-74	8	3.6
	75-90	0	2.5>
	90		.9
	Total	54	100.0
Marital Status	Married	6	5.8
	Wido		

	w / widower	8	4.2
	Unmarried		
	Total	54	00.0
Employment History	Not Working		.6
	Retired	4	8.6
	Farmer	3	4.4
	Wiraswata	3	4.4
	Total	54	00.0
Elderly Live With	Myself	5	8.7
	Family	9	1.3
	Total	54	00.0

2.

3. Variable Data

Characteristics		N	f (%)
Response to Disease	Good	77	50.0
	Less	77	50.0
	Total	154	100.0
Level of Depression	No Depression	46	29.9
	Mild Depression	90	58.4
	Moderate / Severe Depression	18	11.7
	Total	154	100.0
Anxiety Level	No Anxiety	39	25.3
	Mild Anxiety	39	25.3
	Moderate Anxiety	51	33.1
	Severe Anxiety	23	14.9
	Total	152	100.0

	Panic	2	.3
	Total	15	1
		4	00.0
Physical Environment of Elderly	Good	54	3
	Less	10	6
	Total	15	1
		4	00.0
Lifestyle of Elderly	Good	68	4
	Poor	86	5
	Total	15	1
		4	00.0
Sleep Quality of Elderly	Good	52	3
	Poor	10	6
	Total	15	1
		4	00.0

4. Data Analysis

Model Fitting Information

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Variables in the Equation

	B	S	W	d	S	E
		E	ald	f	ig.	xp (B)
Step 0 Constant	,674	,170	,5,633	,1	,	,1,962

Result of logistic regression analysis shows that there is an effect of response to disease, elderly depression, anxiety level, elderly physical environment and lifestyle of the elderly towards sleep quality in the elderly in the village. Ngronggot District, Nganjuk District.

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Model Summary

Step	2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square
	89,18 2 ^a	,503	,697
	68,20 9 ^b	,567	,785
	56,54 1 ^b	,598	,829
	49,84 5 ^c	,615	,853
	45,77 7 ^c	,625	,866

The statistical test results in this study obtained a value in Nagelkerke of 0.866, meaning that the Response to Disease, the Depression Rate of the Elderly, the Anxiety Level of the Elderly, the Physical Environment of the Elderly and the Lifestyle of the Elderly ¹⁸ **Affect the Sleep Quality of the Elderly in the Village of the Subdistrict of Ngronggot District Nganjuk by 86.6% and the rest influenced by other factors by 13.4%.**

To find out the dominant influence affecting ¹⁰ **sleep quality in the elderly in the village of ngronggot subdistrict, Nganjuk district**, a logistic regression statistical test was used with the method *Forward: LR*. The results showed that of the five variables that affect ¹⁰ **sleep quality in the elderly in the village of Ngronggot subdistrict, Nganjuk district**, the results of four variables that affect the ¹ **sleep quality of the elderly are the response to disease** ($p = 0.007$; $\text{Exp (B)} = 11.279$), Depression ($p = 0.001$; $\text{Exp (B)} = 11.712$), Anxiety (¹⁵ $p = 0.002$; $\text{Exp (B)} = 7.736$), **and lifestyle** ($p = 0.031$; $\text{Exp (B)} = 6.098$) while the physical environment does not affect the quality of elderly sleep ($p = 0.050$; $\text{Exp (B)} = 5.414$). Of the four variables, three variables were most dominantly affecting ¹ **the quality of sleep in the elderly**, namely the Depression Rate of the Elderly with the results ($p = 0.001$; $B = 2,461$; $\text{Exp (B)} = 11,712$)

meaning that the *p-value of the* significance of the variable Depression rate of the elderly < 0.05 then reject H_0 . It can be concluded that there is a significant influence on the level of depression of the elderly on the quality of sleep in the elderly with a value of the coefficient of influence of 2.461. the value of $\text{Exp}(B)$ means that if the elderly are indicated to be depressed then they will be 11,712 times more likely to have poor sleep quality compared to the elderly who are not indicated to be depressed.

Anxiety level in the elderly, with results ($p = 0.002$; $B = 2,046$; $\text{Exp}(B) = 7,736$). The *p-value of the* significance of the variable level of anxiety in the elderly < 0.05 then reject H_0 , which proves that there is a significant influence on the level of anxiety of the elderly on the quality of sleep in the elderly with an influence coefficient of 2.046. The value of $\text{Exp}(B)$ means that if the elderly is indicated to experience anxiety then the elderly has a 7,736 times better sleep quality than the elderly who is not indicated to have anxiety.

While the third dominant variable is the response to the disease of the elderly, with results ($p = 0.007$; $B = 2.423$; $\text{Exp}(B) = 11,279$). The *p-value of* significance < 0.05 then reject H_0 , which proves that there is a significant effect of the disease response of the elderly to the sleep quality of the elderly with an influence coefficient of 2.423. The value of $\text{Exp}(B)$ implies that if the response to the disease of the elderly is not good then the elderly has a 11,279 times better sleep quality than that of the elderly who responds well to the disease.

DISCUSSION

Effect of Disease Response on Sleep Quality in Elderly

The results of the study show that there is an influence between Responses to Disease on Sleep Quality in Elderly. Changes in social roles in the community can occur due to functional and disability disorders in the elderly. This can cause feelings of alienation in the elderly. Positive thinking can improve health because positive thinking does not only lie in the ability to eliminate stress and boost immunity; positive thinking also has benefits for our overall body health. If our thought patterns or judgments about diseases or the conditions of life we are living are negative, it is likely that these thoughts will have a negative impact on health conditions and even if we have no hope of improvement in our thinking patterns, our brain will automatically never be able to coordinate the production of chemicals needed by the body to recover so that the recovery process is hampered. Psychic shows that negative thoughts can actually affect physical health. Negative emotional conditions such as depression, anxiety, disappointment, or feelings of guilt that cause psychological disorders.

In addition to psychological biological factors elderly are also very influential. The process of aging continuously, which is characterized by decreased physical endurance that is increasingly vulnerable to disease that can cause death. This is due to changes in the structure and function of cells, tissues, and organ systems. The process of aging is a lifelong process, not only starting from a certain time, but starting from the beginning of life (Nugroho, 2014).

In accordance with statements from Potter & Perry (2005) that asthma, hypertension, and heart disease can interfere with sleep. Hypertension, heart disease, stroke, diabetes mellitus, *arthritis*, lung disease, cancer, depression, memory disorders, osteoporosis, and prostatic hypertrophy are types of diseases that can cause sleep disorders. Some patients also complained of several illnesses during interviews during the study such as headaches, high blood pressure, diabetes mellitus, joint pain and also frequent tightness. This is in accordance with some of the theories above, the elderly should be given more counseling about maintaining the stability of their physical illness. Such as the elderly with a history of hypertension can go on a low salt diet in order to maintain blood pressure stability. The lack of awareness of the elderly to check their health condition also triggers the elderly to get more information about their complaints so that the handling for the elderly cannot be optimal. Besides counseling or providing psychological therapy is also very necessary, because the response of the disease from the elderly is also closely related on the basis of psychological things such as depression or anxiety that continues from the patient.

Influence of Elderly Depression Levels on Elderly Sleep Quality The

results showed there was an influence between Depression Levels on Elderly Sleep Quality. According to Nugroho (2014), psychosocial stress experienced by the elderly could result in deep anxiety, decreased physical condition, uncontrolled anger, and even could lead to depressed mood. Depression can be interpreted as a form of natural disruption characterized by feelings of excessive sadness, depressed, uninspired, feelings of worthlessness, feeling empty, hopeless, always feeling himself a failure, not interested in ADL. The results of this study are in line with Azizah's research, 2011 which states that withdrawal, anxiety, and inability to concentrate are included in behaviors related to depression. Elderly as the final stage of the human development cycle A period where everyone hopes to live a quiet, peaceful life and enjoy retirement with their beloved children and grandchildren with affection. The results of the study are also consistent with the statement (Silvanasari, 2012) behavior related to depression is often associated with inhibited adjustments against loss in life and stressor. Stress triggers such as forced pension, death of a

spouse, deterioration of ability or physical strength and deterioration of health as well as physical disasters, social position, financial, income and housing cause depression in the elderly. Azizah (2011) also states the loss of a loved one and loss of a job or position will cause the elderly to experience deep sadness which results in depression.

The fact of life that is not in line with expectations and failure can be a trigger for depression. The absence of media for the elderly to devote all their feelings and anxiety is a condition that will sustain depression. For that the elderly who fall into the category of mild, moderate or severe depression should have better family support than the elderly who do not experience depression. These efforts can deal with depression in the elderly and will indirectly have an impact on the decline in the value of poor sleep quality in the elderly. Families who have close emotional relationships can be used as a main pillar in dealing with depression in the elderly. Some elderly people also added that they did not drag on to the sadness of this situation because there was support from families (children and grandchildren and relatives) who could cheer them up. And also the technological sophistication they can communicate with children, grandchildren and relatives who live far from them. According to Azizah (2011), families are the main social groups that have the greatest emotional ties and are closest to the elderly. The early retirement period of the elderly will be required to adapt to new lifestyles, especially for the elderly who work as state civil servants (ASN). Like a lot of lost time with coworkers, more and more time is not productive, feels no need anymore and post power syndrome. So that boredom for retirees will peak which eventually triggers depression. Therefore preparing for the elderly who will retire is very important.

Effect of Anxiety Levels on Sleep Quality in the Elderly

The results showed there was an influence between Anxiety Levels on the Sleep Quality of the Elderly. Anxiousness caused difficulty starting to sleep, going to sleep took more than 60 minutes, arising from frightening dreams and having difficulty waking up in the morning, waking up in the morning feeling less fresh (Nugroho, 2014). A study conducted by Maryam (2008) states that gender factors can significantly affect anxiety levels, in the study it was also mentioned that female sex is more at risk of experiencing anxiety compared to male gender. Some experts and researchers say that men have lower anxiety levels than women .. Women have more sleep problems than men. However, there are many factors that cause it, including the many roles played by women such as a career or making a living, being a mother and housewife. Even more significant is the factor in psychological differences caused by changes in hormone levels at certain times. All this adds to the long list

of women's problems with the quality of their daily sleep (Rafknowledge, 2004). the prevalence of sleep disorders is higher in women than in men. Women are more likely to have nightmares, trouble sleeping and wake up more often than men. Psychologically women have a lower coping mechanism compared to men in overcoming a problem, with physical and psychological disorders, women will experience an anxiety, if anxiety continues it will result in an elderly person more often experiencing sleep disorders compared to men. (Nugroho, 2014). Reinforced statement of the theory of potter & perry (2005) which states that pensions, physical disorders, the death of a loved one and economic problems are examples of situations that cause the elderly to experience anxiety. In the elderly, generally the homeostatic urge to sleep first decreases, followed by a cyclic push to awake. This change coincides with other physical changes. Circadian rhythmic sleep disorders can affect the decrease in growth hormone secretion, prolactin, thyroid and melatonin, so that the result of a decrease in hormone levels will make it difficult for older people to maintain sleep (Erliana, et al, 2008).

Efforts that must be made for the elderly who experience anxiety are family support, because the family is the main social group that has the greatest emotional ties and is closest to the elderly. With the support of the family, it is expected to reduce anxiety in the elderly, and it is hoped that this support will make the elderly more secure and comfortable for the elderly. Elderly people who are indicated by poor sleep quality in Kelurahan Village, Ngronggot Subdistrict, Nganjuk District, are predominantly female. This is consistent with the theory of rafknowledge and nugroho which suggests that women have more sleep problems. There are many factors why women are more at risk of experiencing anxiety. One of them is menopause factor from elderly women. A woman will experience emotional instability along with fears of changes in the body due to the end of menstruation. Like the body's hormones that can change, moods can also change. This shows that women are very sensitive to the influence of emotional and hormonal fluctuations, so that it can affect anxiety from the elderly. It could be due to the high coping or defense mechanism against a problem of women is smaller than men. Besides psychological conditions and increased anxiety, anxiety and emotions that are not controlled due to decreased hormone estrogen, can be a cause of increased risk of sleep disorders in women is higher. The period of losing a loved one is a crucial period for the elderly, so it needs very good coping so that the elderly left behind can adapt very well because it will definitely grow where the elderly feel alone and lonely, feel useless and also feel unable to continue living without couple. Do not let it be left

so that it will reach the saturation point which can lead to anxiety and depression, and ultimately the quality of sleep disturbed elderly.

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Effect of Physical Environment on Elderly Sleep Quality The

results of the study showed no influence between Physical Environment on Elderly Sleep Quality. The physical environment in which a person sleeps affects the person's ability to fall asleep. Sound, lighting levels, room temperature can affect sleep quality (Nugroho, 2014). This is also supported by the theory of Perry and Potter (2009) the physical environment in which a person is located can affect his sleep. The size, hardness, and position of the bed affect the quality of sleep. Someone is more comfortable sleeping alone or with others, sleep buddy can disturb sleep if he snores. Sound also affects sleep, need calm to sleep, avoid noise. Noise can have an impact on poor sleep quality. Noise can cause shortening of deep sleep and prolonged shallow sleep (stages 1 and 2 NREM). The duration of REM sleep in the elderly with a noisy environment also decreases (Silvanasari, 2012).

From the above data and facts the researcher concludes that in addition to the factors described above, there is another influential factor, namely air ventilation. Because at night the elderly often close the window so that the room becomes hot and stuffy so the room temperature will increase. That is because air exchange is disrupted. Notoatmodjo (2010) also said that lack of ventilation will cause lack of oxygen so that toxic carbon dioxide levels can increase and disrupt sleep comfort in the elderly.

Effect of Lifestyle on Elderly Sleep Quality The

results showed there was an influence between Lifestyle on Elderly Sleep Quality. Lifestyle factors such as smoking are a factor in the occurrence of insomnia because the nicotine contained in cigarette smoke works as a stimulant that keeps the sucker awake and alert. The stimulant effect of nicotine can also cause individuals to experience "*nicotine withdrawal*" every night so that it can cause sleep disturbances (Darmojo, 2005, in Sumirta, 2014). Stanley & Beare (2008) also added that caffeine use at night and excessive tobacco use can interfere with sleep.

Elderly with a bad lifestyle have been consuming coffee and cigarettes for a long time. So this makes an unhealthy lifestyle has become their daily habits. Actually the elderly who often consume coffee and also smoke state that smoking and consuming excessive coffee are not good for health. But the elderly also say that removing or changing habits is very difficult. Family support is very important to help the difficulties of changing the habits

of the elderly in minimizing the use or consumption of coffee and smoking in everyday life. ⁵ A healthy lifestyle is any attempt to apply good habits in creating a healthy life and avoid bad habits that can interfere with health. The benefits of a healthy lifestyle include feeling peaceful, safe, and comfortable, having confidence, living a balanced life, sleeping soundly (silvanasari , 2012).

The results of data analysis show that if the elderly are indicated to experience anxiety, then the elderly have an 8 times better sleep quality than those who are not indicated to have anxiety. Psychosocial stress experienced by the elderly can cause deep anxiety, decreased physical condition, uncontrolled anger, and can even cause feelings of depression (Nugroho, 2008). Maslim (1997, in Silvanasari 2014) also states that symptoms of mild depression are loss of interest and excitement, lack of concentration and attention, decreased activity, self-esteem and lack of self-confidence. ¹⁶ Anxiety is an obscure and pervasive concern, which is related to feelings of uncertainty and helplessness. This emotional state has no specific object. ⁴

Anxiety is experienced subjectively and communicated interpersonal (Stuart, 2006 in Silvanasari 2014). Darmojo (2005, in Sumirta 2014) said that anxiety is a part of everyday human life. For people whose adjustments are good, anxiety can be quickly overcome and overcome, but for people whose adjustments are not good, anxiety is the biggest part of their lives, so that anxiety impedes their daily activities. Anxiety experienced by the patient can stimulate the sympathetic nervous system to release catecholamines, glucagon and cortisol-steroid hormones that affect the CNS in increasing anxiety, frustration, rapid breathing, hypertension and muscle tension. Likewise it can stimulate the function of the RAS (*Reticular Activating System*) which regulates all phases of the sleep cycle, increases *sleep latency* and decreases sleep efficiency which includes an increase in the frequency of waking at night (Puspitosari, 2011 in Sumirta 2014).

¹ The results of analysis *logistic regression* found the results of three variables that affect ¹ sleep quality in the elderly. Of the three variables, it is found that the two variables that most dominantly affect the quality of sleep in the elderly, namely the Depression Rate of the Elder means that if the elderly are indicated to be depressed then they will have 12 times the chance of poor sleep quality compared to the elderly who is not indicated to be depressed, and the level of anxiety. Meaning that if the elderly is indicated to experience anxiety then the elderly is likely to have 8 times worse sleep quality than the elderly who are not indicated to experience anxiety. Depression is the end result or output of anxiety. So anxiety is a sign and symptom before entering the depressive phase. So we can conclude from this data that if

a person or elderly is categorized as depressed, the prevalence for being categorized as poor sleep quality will be 12 times greater than that not included in the depression category. Whereas in the elderly category that is not categorized as depression may just enter the anxiety phase or phase. Then seen from the statistical test results obtained if the elderly who fall into the category of anxiety have 8 times the quality of the elderly who are not indicated experiencing anxiety.

CONCLUSION

Elderly Sleep Quality is influenced by Disease Response, Depression Level, Anxiety Level, Physical Environment, Lifestyle The most dominant factor affecting the sleep quality of the Elderly In Klurahan Village, Ngronggot District, Nganjuk Regency is the Level of Elderly Depression ($p = 0.001$ OR = 11.712).

Suggestions

1. Efforts to increase knowledge and understanding of the poor sleep quality of the elderly so as to increase the awareness and willingness of the elderly to meet their sleep needs to be of higher quality.
2. It is necessary to educate or promote health and counseling to the elderly through Karang Werdha, Posyandu Elderly or elderly associations about efforts to meet the needs of quality elderly sleep. Such as teaching methods of progressive muscle relaxation exercises that are very efficient and easy to do for the elderly, so that the optimal degree of elderly health can be achieved.

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