

Descriptive Quality of Sleep to Clients with Hypertension

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Abstract

Sleep quality in hypertension patients is generally disrupted due to several factors that can impact on poor sleep quality and will affect the increase in blood pressure. The objective of the study was to assess the sleep quality of clients with hypertension. Sample collection conducted here was the accidental sampling technique based on 35 respondents suffering from hypertension. The data were collected using PSQI questionnaire and tension metre (sphygmomanometer). The results showed that there were classified into 3 degrees I, II, and III respondents having poor sleep quality. This may occur because of the higher degree of hypertension classification. It is likely to experience poor sleep quality based on some components of sleep quality such as subjectivity, sleep quality, sleep latency, sleep duration and sleep disturbance; thus, resulting in disruption of activity on the next day. It was suggested that the clients should pay an attention on the quality of sleep including in the work place.

Keywords: Sleep Quality, Hypertension, client.

Introduction

Hypertension is one of the important factors as the trigger of non-communicable diseases such as heart disease and stroke which is currently the number one cause of death in the world.¹ Hypertension has killed 9.4 million people worldwide each year. The World Health Organization estimates that the number of hypertensive patients will continue to increase³ as the population grows. In the next 2025, about 1.5 billion people in the world were affected by hypertension.²

The comparison of people suffering from hypertension is quite high, i.e. 51 people from 100 people suffering from hypertension.³ Based on the data of Basic Health Research 2013, some non-communicable disease cause death in South Borneo, one of them hypertension reaches 30.8%. Based on the hypertension patients per city in South Borneo in 2015, Banjarmasin is the highest hypertension patients with 18,730 patients, followed by Tanah laut 14.121 people, Banjar Regency 7,738 people, Kotabaru 6,680 people, Banjarbaru 5,629 people, Tapin 3,085 people, Barito Kuala 2,985 people and the rest ranged from 2,500 to over a thousand people.⁴

In general, people with hypertension suffered sleep disorders due to some physical conditions² and environmental conditions experience so that the impact on poor sleep quality and will affect the increase in

blood pressure decreases while normal (10-20% is still considered normal). This occurs because of a decrease in sympathetic activity during sleep. If sleep disorder⁴ then there is no decrease in blood pressure during in blood pressure during sleep so that will increase the risk of hypertension. Every 5% of normal decline should occur and not be experienced⁴ by some one who suffers hypertension, and then the possibility of 20%¹¹ will increase blood pressure.⁵ Sleep deprivation was a risk factor for hypertension in adults. Shorter sleep results can cause metabolic and endocrine disorders that can cause cardiovascular disorders.⁶

Based on a preliminary study that researchers conducted at the South community health center Banjarbaru some clients who suffer from hypertension complain often feel sleepy at 9-11 a.m, at night some people who suffer from hypertension have difficulty sleeping because of headache and some clients say should take drugs that give side effects drowsiness to make falling asleep. Based on the described problems, it was interested in conducting research on sleep quality on clients with hypertension in the work area of community health center Banjarbaru Selatan, Kalimantan, Indonesia.

Method

Types of Research: This research method is descriptive research that aims to assess the quality of

sleep on clients with hypertension in the work area of community health center Banjarbaru Selatan.

Population & Sampling: The population in this study was all hypertension clients in the work area of community health center Banjarbaru Selatan new cases and amounted to 4,498 people. Sample in this research is part of hypertension patient in working area of community health center Banjarbaru Selatan. Sampling technique in this research is by using accidental sampling technique.

Data Collection: In this study primary data about sleep quality on clients with hypertension obtained from questionnaires in the form of structured questions asked to the respondent and blood pressure measurement using tensi meter (*sphygmomanometer*).

Ingredients: The instrument of data collection used in this research is questionnaire PSQI (Buysee, et al, 1989) and tensimeter (*sphygmomanometer*).

Data Analysis: Data analysis used in this research use descriptive data analysis by using frequency distribution formula and presented by frequency distribution table, then drawn conclusion. From the characteristics of the respondent was made tabulation of frequency distribution of tabulation (cross tabulation).

Results

Characteristics of Respondent

Table 1: Frequency distribution characteristics of responden by sex

No	Sex	Frequency	%
1	Male	16	45.7
2	Female	19	54.3

Based on table 1, 35 respondents researched showed that most of the respondents were female sex of 19 people (54.3%).

Table 2: Frequency distribution characteristics of responden by age

No	Age	Frequency	%
1	<45 years	3	8.6
2	45–59 years	17	48.6
3	60–75 years	15	42.9

Based on table 2 of 35 respondents studied showed that most respondents aged between 45–59 years as

many as 17 people (48.6%).

Frequency distribution of hypertension classification

Table 3: Frequency distribution of hypertension classification

No	Hypertension Classification	Frequency	%
1	Grade I (Light)	17	48.6
2	Grade II (Medium)	10	28.6
3	Grade III (Weight)	8	22.8

Based on table 3 of 35 respondents studied showed that respondents with hypertension classification grade I as much as 17 people (48.6%).

Distribution of Sleep Quality Frequency in Clients with Hypertension

Table 4: Distribution of sleep quality frequency in clients with hypertension

No	Sleep Quality	Frequency	%
1	Good	6	17.1
2	Bad	29	82.9

Based on table 4 of 35 respondents studied showed that the majority of respondents have poor sleep quality of 29 people (82.9%).

Cross Sample Sleep Quality in Clients with Hypertension Based on Hypertension Classification

Table 5: Cross Sample sleep quality in clients with hypertension based on hypertension klasifikasi

Hypertension Classification	Sleep Quality				Total	
	Good		Bad		F	%
	F	%	F	%		
Grade I	6	35.3	11	64.7	17	100
Grade II	0	0	10	100	10	100
Grade III	0	0	8	100	8	100
Total	6	17.1	29	82.9	35	100

Based on table 5 of 35 respondents studied showed that respondents who have poor sleep quality with classification of grade I hypertension as many as 11 people (31.4%), respondents who have bad sleep quality with classification of grade II hypertension as much as 10 people (100%), of respondents who have bad sleep

quality with classification of grade III hypertension as many as 8 people (100%) and no respondents who have good sleep quality with classification hypertension grade II or grade III.

Discussion

Hypertension Classification: Based on table 3 it is found that from 35 respondents, respondents mostly have classification of hypertension degree I as much as 17 people (48.6%), this can be caused by age and gender factors where respondents came more than half of female respondents as many as 19 people (54.3%), and most aged between 45-59 years as many as 17 people (48.6%). So in this study, women aged 45-59 years tend to be affected by hypertension, which at that age will experience menopause women who cause estrogen hormones begin to disappear, the hormone estrogen is able to protect blood vessels.

In the pre menopause women begin to lose little by little the hormone, one estrogen that can protect blood vessels from damage.⁷ This process continues as the amount of estrogen hormone decreases with age, which generally occurs in women aged 45-55 years. Prevalence of hypertension in women found is higher than men.⁸

Kumar⁹ explains that someone who is at risk of suffering from hypertension is over 45 years of age and high blood pressure around the age of 40 years, although it can occur in young age. Hypertensive progressiveness begins with pre-hypertension in patients aged 20-29 years (with increased cardiac output), then becomes premature hypertension in patients aged 30-39 years (where peripheral resistance increases) hypertension at the age of 40-49 years and eventually become hypertensive with complications at the age of 50+ years.¹⁰ The most suffering from hypertension was 41-65 years old (63.80%), followed by 25-40 years (25.50%), >65 years (8.50%), and <25 years (2.10%).¹¹ Generally, blood pressure increases in age. Usually it was caused by decreased organ function.

Respondents suffering from pre-hypertension are female (5.88%), while those suffering from grade I hypertension (30.39%), and who suffer from grade II hypertension of female (19.63%).¹²

Quality of Sleep to Clients with Hypertension: Based on the results of research conducted by researchers found that the majority of respondents ie as many as 29 people (82.9%) of the 35 respondents who studied had

poor sleep quality based on some components of sleep quality. People suffering from hypertension will have a risk of getting poor quality sleep quality.¹³

Poor sleep quality in this study tends to occur in the subjectivity of the quality of sleep, sleep latency, sleep duration, sleep disturbance and disruption of activity in the day. In this study, more than 50% have poor sleep quality based on sleep disorders such as frequent to the bathroom, difficulty breathing, dizziness, pain and difficulty sleeping, which can wake her sleep. In America, 10% of the population in the United States experience hypertension associated with sleep disorders.¹⁴

Patients about 33% suffered from hypertension almost all experience sleep disorders.¹⁵ According Ingram et al.,¹⁶ people with hypertension generally experience pain, other than that the patients is also easily tired, feel uncomfortable difficult breathing and difficulty sleeping that can disturb sleep in people with hypertension. 68% of the most common symptoms of hypertensive patients are nocturia.¹⁷ About 91% of people with hypertension have difficulty breathing during sleep.¹⁸

A total of 15 people (42.9%) of respondents who studied had poor sleep quality based on sleep duration. Most respondents studied said sleeping <6 hours a day. Tarwoto and Wartonah¹⁹ explained that the duration of sleep for age <45 years is 7-9 hours/day, sleep duration for age 40-60 years ie \pm 7 hours/day and sleep duration for age >60 years ie \pm 6 hours/day.

Most respondents experienced difficulty sleeping, respondents need \pm 60 minutes to be able to fall asleep. This is in accordance with research conducted by Mansoor²⁰ which explains that people with hypertension usually take a longer time to start falling asleep. Normal people usually fall asleep within 20 minutes.²¹

According to Buysse²² sleep quality is a complex phenomenon involving various domains, among others, assessment of subjective sleep quality, sleep latency, sleep duration or duration of sleep, efficiency of sleeping habits, sleep disturbances and disruption of daytime activities, so if wrong one of the seven domains are disturbed it will result in decreased quality of sleep. In this study the respondents had poor sleep quality based on subjective response about sleep quality as much as 22 people (62.9%), respondents had poor sleep quality based on sleep latency as many as 17 people (48.6%),

respondents had very high sleep quality both based on the efficiency of sleeping habits as much as 16 people (45.7%), and respondents have very good sleep quality based on the use of drugs as many as 32 people (91.4%).

¹² In this study respondents had poor sleep quality based on the disruption of daytime activities as many as 18 people (51.43%), this is in accordance with research conducted by Potter & Perry¹³ showed that dizziness in people with hypertension can wake the patient does not get enough sleep, which will affect the activity in the next day, people suffering from hypertension will have the risk of getting poor sleep quality.

¹ Autonomic cardiovascular control changes across sleep stages. Thus, blood pressure, heart rate and peripheral vascular resistance progressively decrease in non-rapid eye movement sleep. Any deterioration in sleep quality or quantity may be associated with an increase in nocturnal blood pressure which could participate in the development or poor control of hypertension. In the present report, sleep problems/disorders, which impact either the quality or quantity of sleep, are reviewed for their interaction with blood pressure regulation and their potential association with prevalent or incident hypertension. Obstructive sleep apnea syndrome, sleep duration/deprivation, insomnia, restless legs syndrome and narcolepsy are successively reviewed.

Sleep Quality in Clients with Hypertension

Classification: Based on the results of research conducted by research² showed that respondents classification tend to have poor sleep quality based on some components of sleep quality, it can be caused by age factor where the increasing of age hence decreasing of sleep quality which can influence health such as hypertension, on the contrary the higher the grade of hypertension have complaints such as dizziness, difficulty sleeping and have a short duration of sleep, which⁹ will affect sleep quality on clients with hypertension. Poor sleep quality is associated with increased risk of hypertension, and thus increases the risk of cardiovascular disease.⁶

Remmes²³ explains that sleep disorders can cause or worsen medical and psychiatric disorders such as hypertension, vascular disease, heart or brain, obesity and depression. In another study conducted by Calhoun and Harding²⁴ explained that if poor sleep quality can increase blood pressure in a person. Poor sleep quality can lead to hormone regulation of blood pressure balance or aldosterone hormone does not work optimally, so less sleep time can make the nervous system become

hyperactive which then affects the whole body including the heart and blood vessels.

⁷ Adults who had sleep disturbances, short sleep, and poor sleep quality were 1.84 times more likely¹⁰ to have hypertension than adults who did not have sleep disorders, short sleep, and poor sleep quality.¹⁵ On the other hand, if there is a lack of sleep will increase blood pressure and activate the sympathetic nervous system that in the long term it will trigger hypertension.²⁵

Conclusion

Based on the conclusions obtained from the results of research entitled sleep quality overview in Clients with Hypertension in the Work Area of community health center Banjarbaru Selatan are:

1. The results showed that most respondents have classification of grade I hypertension with 17 people (48.6%).
2. The results showed most of the respondents had poor sleep quality of 29 people (82.9%)
3. The results showed that the tendency in classification of grade I, II and III hypertension has poor sleep quality.

³ **Conflict of Interest:** The authors declare that here is no conflict of interest.

³ **Source of Funding:** The self-funding was conducted in this research.

Ethical Clearance: Ethical clearance was provided by the Ethics Committee of Banjarmasin Health Politechnic

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