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Overview of Factors Determining Sleep Quality in Hypertension Patients at Tikala Baru Health Center, Manado City

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A B S T R A C T

Sleep disturbances are a health issue frequently experienced by those with hypertension. Data indicate that the prevalence of sleep disorders in Indonesia reaches 67%, and most hypertensive patients tend to have poor sleep quality. Hypertension is one of the most prevalent diseases at the Tikala Baru Community Health Center in Manado City, with more than 5,000 cases in 2024. This study aims to identify the determinant factors of sleep quality among hypertensive patients in that area. This research used a quantitative descriptive design with a sample of 67 hypertensive respondents. The objective was to describe determinants of sleep quality based on age, gender, occupation, stress level, coffee drinking habits, use of sleeping medication, regularity of sleep schedule, and use of electronic devices before bedtime. Data were collected using the PSQI and PSS 10 questionnaires and analyzed univariately via frequency distribution. The results showed that 89.6% of respondents had poor sleep quality, while only 10.4% had good sleep quality. Associated factors included older age (> 60 years), occupation (especially housewives and jobs without fixed hours), and stress levels. Most respondents did not use sleeping medication, yet still experienced poor sleep quality; irregular sleep schedules and habitual use of electronic devices were also common among respondents. In conclusion, the majority of hypertensive patients at Tikala Baru Community Health Center have poor sleep quality, as influenced by factors such as age, occupation, stress, sleep scheduling, and daily habits. Therefore, interventions in the form of education about stress management, regulation of sleep patterns, and reduction of coffee intake and use of electronic devices before bedtime are strongly recommended to improve sleep quality in patients with hypertension

INTRODUCTION

Based on data from the National Sleep Foundation Survey (2023), approximately 35% of adults worldwide reported experiencing sleep disorders, an increase from 30% in 2010. In Indonesia, the prevalence of sleep disorders is around 67%, with 55.8% experiencing mild sleep disorders and 23.3% experiencing moderate sleep disorders (Lomboan E, et al., 2023). One of the most common forms of sleep disorder is insomnia, which also has a significant impact on health. Among adults aged 20 and above, approximately 16.2% of the global adult population tends to experience insomnia (Benjafield A, et al., 2025).

Research by Hamada, M. (2024) states that more than 25% of adults suffer from insomnia, and this number tends to increase among individuals with chronic diseases such as hypertension. Furthermore, research by Sari, R. et al. (2024) mentions that there are several determining factors that influence Sleep quality in hypertension patients, such as anxiety, sleep duration, nutritional status, stress, and consumption of antihypertensive medications.

According to the World Health Organization (WHO) 2023, hypertension is one of the leading causes of premature death worldwide. Hypertension affects more than 1.28 billion adults aged 30 to 79 years globally. The Indonesian Health Survey (SKI) 2023 shows that the prevalence of hypertension in Indonesia is 34.1% among individuals aged 18 and above. North Sulawesi is one of the provinces with a relatively high number of sufferers, amounting to 29.2% (Ministry of Health, SKI 2023). Meanwhile, in Manado City, the prevalence of hypertension is 23.5%. At Tikala Baru Community Health Center, the prevalence of hypertension in 2024 was 5,085 cases (Tikala Baru Community Health Center, 2024).

LITERATURE REVIEW

Research conducted by Sakinah and Sari in 2018 reported that 94.6% of hypertension patients experienced poor sleep quality, characterized by symptoms such as dizziness, headaches, obstructive sleep apnea, shortness of breath, nocturia, and restless legs syndrome. Another study by Sumarna et al. in 2019 found that poor sleep quality is associated with increased blood pressure in prehypertension and hypertension patients. Research conducted by Rahma, N in 2016 also found that sleep quality and stress levels are related to the degree of hypertension in patients. These findings are in line with research by Herald Sun in 2024, which indicates that poor sleep quality can increase the risk of hypertension, inflammation, high glucose levels, obesity, atherosclerosis, brain injury, premature aging, and an increased risk of heart disease.

Tikala Baru Subdistrict, located in the Tikala District of Manado City, is an area experiencing rapid population growth and dense urban activities. This situation impacts the increasing need for public health services. Geographically, Tikala Baru Subdistrict is considered a strategic area because it is close to government centers and public facilities, which influences a more dynamic lifestyle for the community but also makes them susceptible to health problems. According to data from Tikala Baru Community Health Center in Manado City, hypertension has been recorded as one of the most prevalent diseases in recent years. Based on the description above, the researcher is interested in examining

"an overview of the determining factors of sleep quality among hypertension patients at Tikala Baru Community Health Center in Manado City."

METHODOLOGY

This study is a quantitative descriptive research with a cross-sectional approach. The research was conducted at Tikala Baru Health Center, Manado City, in June - July 2025. The population in this study consisted of hypertensive patients recorded in the medical records data at Tikala Baru Health Center in 2024, totaling 5,085 individuals. The sample size in this study was 67 respondents, selected using purposive sampling according to predefined inclusion and exclusion criteria. The variables in this study included age, gender, occupation, psychological factors (stress), coffee consumption habits, sleeping pill consumption habits, sleep schedule, use of electronic devices before sleep, and sleep quality. Data were collected through interviews using the Pittsburgh Sleep Quality Index (PSQI) questionnaire to assess sleep quality, the Perceived Stress Scale-10 (PSS) to measure stress levels, and additional questionnaires for demographic data and respondents' habits. The analysis used includes univariate analysis to describe the frequency distribution of each research variable.

RESULT

This section explains the characteristics of the respondents, the factors determining sleep quality, and the categories of sleep quality. This can be seen in Tables 1-3.

Table 1. Distribution of Respondent Characteristics

Characteristics of Respondents	**N**	**%**
Age		
19-44	7	5.9
45-59	27	44.1
>60	33	50
Total	67	100
Gender		
Male	20	22.1
Female	47	77.9
Total	67	100
Job		
Enterprenuer	4	
private	6	
Civil servant	4	
Online motorcycle taxi	4	
farmer	2	
retired	5	
House wife	35	
Not Working	7	
Total	67	

Table 1 shows the distribution of characteristics of the 67 research respondents. The age distribution obtained was as follows: 7 respondents (10.4%) were aged 19-44 years, 27 respondents (40.3%) were aged 45-59 years, and 33 respondents (49.3%) were over 60 years old. There were 20 male respondents (29.9%) and 47 female respondents (70.1%). Based on occupation, 4 respondents (6.0%) were entrepreneurs, 6 respondents (9.0%) worked in the private sector, 4 respondents (6.0%) were civil servants, 4 respondents (6.0%) worked as online motorcycle taxi drivers, 2 respondents (3.0%) were farmers, 5 respondents (7.5%) were retirees, 35 respondents (52.2%) were housewives, and 7 respondents (10.4%) were unemployed.

Table 2. Distribution of Factors Determining Sleep Quality in Hypertension Patients

Determining Factor	n	%
Stres		
Mid Stress	47	70,1
Moderate Stress	18	26,9
Severe Stress	2	3,0
Habit of dringking coffee		
Always	14	20,9
Often	3	4,5
Sometimes	16	23,9
Almost never	0	0,0
Never	34	50,7
Habit of taking sleeping pills		
Always	1	1,5
Often	0	0,0
Sometimes	2	3,0
Almost never	0	0,0
Never	64	95,5
Sleep schedule		
Reguler	32	47,8
Irregular	35	52,2
The Use of Electronic Devices Before Sleep		
Handphone/Laptop/Tab		
Always	45	67,2
Often	1	1,5
Sometimes	8	11,9
Almost never	1	1,5
Never	12	17,9
Tv		
Always	19	28,4
Often	4	6,0
Sometimes	15	22,4
Almost never	4	6,0
Never	25	37,3

The results in Table 2 show that 70.1% of respondents have a mild stress level, 26.9% fall into the moderate stress category, and 3.0% of respondents are in the severe stress category. From these results, it can be seen that the stress levels experienced by most respondents are still at mild to moderate levels. Regarding coffee drinking habits, it is known that 20.9% of respondents always

drink coffee, 4.5% often drink coffee, 23.9% occasionally drink coffee, and 50.7% never drink coffee.

These results illustrate that coffee drinking habits are common among respondents, whether in the always or occasionally categories.Selanjutnya, 1,5% responden dalam penelitian ini tercatat selalu mengonsumsi obat tidur, 3,0% responden kadang-kadang dalam minum obat tidur, dan mayoritas responden 95,5% tidak pernah minum obat tidur. Hal ini berarti bahwa penggunaan obat tidur bukanlah solusi sempurna untuk memperbaiki kualitas tidur.

The sleep schedule variable shows that 47.8% of respondents have a regular sleep schedule while 52.2% have an irregular sleep schedule. These results indicate that the majority of respondents in this study still have an irregular sleep schedule, which can affect sleep quality. Furthermore, the last variable regarding the use of electronic devices before bedtime shows that for the use of mobile phones/laptops/tablets, it was recorded in the categories of always at 67.2%, often at 1.5%, sometimes at 11.9%, almost never at 1.5%, and never at 17.9%. Then, for the use of electronic devices before bedtime, TV usage was recorded in the categories of always at 28.4%, often at 6.0%, sometimes at 22.4%, almost never at 6.0%, and never at 37.3%. This means that the use of electronic devices before bedtime is still often done by the majority of respondents with hypertension and can impact sleep quality.

Table 3. Distribution of Respondents Based on Sleep Quality

Sleep quality	**n**	%
sleep quality good	7	10,4
sleep quality bad	60	89,6
Total	68	100,0

Table 3 shows the distribution of sleep quality obtained, with only 10.4% having good sleep quality, while the remaining 89.6% of respondents have poor sleep quality. From the results above, it can be seen that most of the respondents at Tikala Health Center have poor sleep quality.

DISCUSSION

Age

Based on the research results, it was found that hypertensive patients aged 19-44 years had poor sleep quality in 85.7% of respondents, and only 14.3% of respondents had good sleep quality. Meanwhile, the 45-59 age group showed an increase in respondents with poor sleep quality at 88.9%, and only 11.1% of respondents had good sleep quality. In contrast, the age group over 60 years had the highest number of respondents with poor sleep quality at 90.9%, and only 10.4% of respondents had good sleep quality.

In this study, it was observed that as age increases, the proportion of hypertensive patients experiencing poor sleep quality also rises, although the percentage differences between groups are not very large. This may be due to physiological changes such as a decline in the hormonal system. Furthermore, the elderly are at higher risk of suffering from other chronic diseases and are

more likely to consume medications that can affect sleep quality. This is in line with research indicating that as age increases, the risk of sleep disorders is higher due to physical changes, declining health, and increased stress (Wulandari et al., 2020).

Gender

The data results show that both male and female respondents mostly have poor sleep quality. In the male group, as many as 90.0% of respondents have poor sleep quality, and only 10.0% of respondents have good sleep quality. Meanwhile, in the female group, 89.4% of respondents have poor sleep quality, and only 10.6% of respondents have good sleep quality. This study indicates that the proportion of poor sleep quality in males is slightly higher compared to females, which could be due to males tending to have heavier work burdens and less regular lifestyles, which can affect sleep quality. Conversely, although most females also have poor sleep quality, the proportion of females with good sleep quality is slightly higher than that of males, which may be related to females' awareness of health. These results are in line with previous research which shows That gender factors affect sleep quality, and men tend to have a higher rate of poor sleep quality (Harisa A, et al., 2022).

Occupation

The research results show that the majority of respondents with hypertension from various types of occupations have poor sleep quality. The largest group is housewives, with 88.6% having poor sleep quality. Additionally, respondents working in the private sector, civil servants, online motorcycle taxi drivers, farmers, or unemployed all showed poor sleep quality. Meanwhile, among entrepreneurs, there is a balanced distribution of 50% good sleep quality and 50% poor sleep quality, which is due to the flexibility in managing working and rest time. Meanwhile, among retirees, a small portion of 20% still have good sleep quality.

In this study, it is observed that jobs that are routine, have high physical or psychological demands, long or irregular working hours, as well as jobs that require nighttime or shift activities, tend to have a high proportion of poor sleep quality. This can be caused by long and inflexible working hours, physical workload, and a work environment that does not support comfort, psychological stress related to responsibilities, and factors such as age and health conditions. These results are in line with previous research showing that job-related factors affect sleep quality (Susanti, N. K. 2024).

Psychological (Stress)

Based on the research results, it was found that most respondents with hypertension who had poor sleep quality experienced mild and moderate stress. In the mild stress group, 89.4% of respondents had poor sleep quality and 10.6% had good sleep quality. Meanwhile, in the moderate stress group, 88.9% of respondents had poor sleep quality and 11.1% had good sleep quality. Meanwhile, in the severe stress group, 100% experienced poor sleep quality.

In this study, it was observed that higher stress levels are fully correlated with poor sleep quality, and for mild and moderate stress, the majority of respondents also showed poor sleep quality. This indicates that the higher the stress level, the lower the quality of sleep, which could be caused by sleep

disturbances due to thoughts or anxiety. Additionally, stress can play a role in changing sleep patterns, such as staying up late, oversleeping, or inconsistent sleep quality. These results are in line with the research by Nuraeni, A. et al., (2024), which states that stress plays a strong role in reducing sleep quality and increasing blood pressure. Mild and moderate stress can cause sleep disturbances, fatigue, and worsen health conditions such as hypertension.

Coffee Drinking Habits

According to the research results, respondents with hypertension, whether they have a habit of drinking coffee or not, mostly still have poor sleep quality. In the coffee-drinking group, 84.8% experienced poor sleep quality, while in the non-coffee-drinking group, the proportion was higher at 94.1%. This indicates that the habit of drinking coffee is not directly a dominant factor determining sleep quality in this study.

Other factors such as psychological stress, lifestyle, or health conditions play a greater role in determining respondents' sleep quality. However, it should still be noted that the caffeine content in coffee has effects that can influence sleep. (Roehrs T & Roth T, 2008) stated that caffeine increases sleep latency and decreases sleep efficiency. In addition, research by (Wang Y, et al., 2020) also found that drinking coffee at night can worsen sleep quality. Therefore, education about the timing and amount Coffee consumption becomes important in sleep management.

Sleeping Pill Consumption Habits

The data results show that respondents with hypertension who consume sleeping pills all experience poor sleep quality, at 100%. Meanwhile, in the group that does not consume the pills, there are still 10.9% who have good sleep quality.

The results of this study indicate that the use of sleeping pills is not a perfect solution for improving sleep quality and may only be temporary or have side effects that limit their effectiveness. Sleeping pills are usually only used to help fall asleep faster but do not address the underlying causes of sleep disturbances. This aligns with the study conducted by Putri, N & Wahyuni, E (2020), which stated that the use of sleeping pills does not guarantee better sleep quality, as their effects are temporary and do not solve sleep problems; long-term use can even lead to dependency and impaired sleep quality. In addition, the research by Setiawan et al. (2021) also found that psychological factors (stress) and lifestyle play a more dominant role in sleep quality compared to the consumption of sleeping pills.

Sleep Schedule

Based on the research results, it was found that most respondents with hypertension, whether they had a regular or irregular sleep schedule, experienced poor sleep quality. However, there was a difference in proportion: respondents with an irregular sleep schedule more often experienced poor sleep quality at 94.3% compared to those with a regular sleep schedule at 84.4%. Conversely, hypertensive respondents with a regular sleep schedule had better sleep quality more often, at 15.6%, compared to those with an irregular sleep schedule at 5.7%.

This indicates that hypertensive respondents who have irregular sleep schedules are more vulnerable to poor sleep quality compared to those who have regular sleep schedules. The difference in results shows that it is not only the duration of sleep, but also the regularity of sleep timing that plays an important role in maintaining sleep quality. This finding aligns with the study by Sutrisno & Hidayat (2021), which found that sleep schedule factors affect sleep quality, where respondents with irregular sleep schedules tend to experience higher sleep disturbances.

Use of Electronic Devices Before Bedtime

The research results indicate that the majority of respondents, whether they use electronic devices before bedtime or not, have poor sleep quality. However, there is a tendency for respondents who use electronic devices before bedtime to have slightly better sleep quality, at 10.9%, compared to 8.3% for those who do not use electronic devices.

Although the results of this study did not show significant differences, it still needs to be considered because the use of electronic devices before bedtime has several effects that can reduce sleep quality, such as increasing insomnia, leading to less restful sleep, and decreasing daytime performance. This finding is in line with research by (Devira, P. et al., 2022) which shows that using electronic devices before sleep can disturb sleep quality. Additionally, research by (Narendra, P. et al., 2024) also revealed that using electronic devices before bedtime increases the risk of insomnia. This can worsen hypertension conditions due to insufficient sleep quality and duration.

Sleep Quality

Based on the research conducted at Tikala Baru Community Health Center in Manado City, it was found that the majority of respondents had poor sleep quality, amounting to 89.6%, while only 10.4% of respondents had good sleep quality. These results indicate that sleep disorders remain a significant problem among hypertensive patients in the working area of Tikala Baru Community Health Center, Manado City, caused by various factors such as age. Poor sleep quality was mostly experienced by hypertensive respondents over 60 years old due to physiological changes that occur with aging, leading to shorter sleep duration and frequent awakenings at night. Additionally, people over 60 generally also face other health issues and use certain medications that can affect sleep patterns. Research results also indicate that the factor of gender, both male and female, mostly have poor sleep quality, although the proportion is slightly higher in males. This is due to differences in lifestyle and more physically demanding activities for men, as well as a tendency to pay less attention to rest time compared to women. On the other hand, women, most of whom are housewives, are also not exempt from sleep disturbances due to household workload and daily stress. Work-related factors and psychological factors (stress) also play an important role in determining the sleep quality of respondents with hypertension, where respondents who work with irregular hours, such as private employees, online motorcycle taxi drivers, and housewives, tend to have poor sleep quality caused by heavy workloads, irregular rest periods, and psychological pressure. In addition, the higher the The higher the stress

experienced, the lower the quality of sleep, which is caused by sleep disturbances due to thoughts or anxiety.

Habitual factors such as the consumption of coffee and sleeping pills also need to be considered. Although this study did not find a significant difference between those who drank coffee and those who did not, the caffeine content in coffee still has the potential to disrupt sleep, especially if consumed in the evening. In addition, all respondents with hypertension who consumed sleeping pills actually had poor sleep quality, indicating that the use of sleeping pills does not guarantee better sleep quality, as they only help the process of falling asleep without addressing the main causes of sleep disturbances. Irregular sleep habits and the use of electronic devices before bedtime also play an important role in the sleep quality of hypertension patients, where respondents with irregular sleep schedules have poorer sleep quality because it can reduce the effectiveness of rest time. In addition, the use of electronic devices before sleep can potentially lower sleep quality because it can increase insomnia, making sleep less restorative. These results are in line with research conducted by Handayani, W. et al. (2021), which showed that 89.2% of respondents with hypertension had poor sleep quality. Furthermore, research conducted by Eswarya, B. et al. (2023) indicated that 64% of hypertension patients had poor sleep quality, which can increase the risk of hypertension.

CONCLUSIONS AND RECOMMENDATIONS

The research findings regarding the Overview of Determining Factors of Sleep Quality in Hypertension Patients at Tikala Baru Health Center, Manado City, can be concluded that the majority of hypertension patients at Tikala Baru Health Center experience poor sleep quality, primarily influenced by factors such as age, gender, occupation, stress, coffee drinking habits, sleeping pill consumption habits, sleep schedule, and the use of electronic devices before bedtime.

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