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RESEARCH

OVERVIEW OF SLEEP QUALITY AMONG PATIENTS WITH HYPERTENSION AT THE POSBINDU OF PRANTI VILLAGE, SIDOARJO

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ABSTRACT

Hypertension is a non-communicable disease with an increasing incidence and may lead to various complications if not optimally controlled. In addition to affecting physical health, hypertension may also affect patients' sleep quality and quality of life. This study aimed to describe sleep quality among patients with hypertension at the Posbindu in Pranti Village, Sidoarjo. This study employed a quantitative descriptive design with a cross-sectional approach. The sample consisted of 45 respondents selected using total sampling. Data were collected using the Pittsburgh Sleep Quality Index (PSQI), which comprises seven components for assessing sleep quality. The data were analyzed using univariate analysis and presented as frequency distributions and percentages. The results showed that the largest age group consisted of respondents aged 55–64 years, totaling 24 respondents (53.3%). Most respondents were female (38; 84.4%), unemployed (28; 62.2%), and had been diagnosed with hypertension for 1–5 years (26; 57.8%). Regarding sleep quality, the majority of respondents were classified as having moderate sleep quality (22; 48.9%), followed by good sleep quality (16; 35.6%) and mild sleep quality (7; 15.6%). Although most respondents had moderate sleep quality, these findings indicate that their sleep quality was not yet optimal. Therefore, efforts to improve sleep quality are needed as part of comprehensive hypertension management.

Keywords: Hypertension, sleep quality, PSQI, hypertensive patients, Posbindu

INTRODUCTION

Hypertension is one of the most common chronic diseases worldwide and remains a major public health concern, particularly among older adults. The World Health Organization (WHO) describes hypertension as a silent killer because it often occurs without specific symptoms while increasing the risk of stroke, cardiovascular disease, kidney failure, and premature mortality (Agung, 2025). Hypertension is defined as a systolic blood pressure of ≥140 mmHg and/or a diastolic blood pressure of ≥90 mmHg (Rantau et al., 2025). In addition to its physical impact, hypertension is frequently associated with poor sleep quality (Unja, 2024).

Globally, approximately 33% of the population was estimated to have hypertension in 2023, and the number of affected individuals is projected to reach 1.5 billion by 2025. In Indonesia, the prevalence of hypertension was 34.1% according to the 2018 Basic Health Research (Riskesdas), with the highest prevalence observed among older adults (Ministry of Health of the Republic of Indonesia, 2023). In East Java, 6,896,624 individuals were reported to have hypertension in 2024, while Sidoarjo Regency recorded an estimated 549,492 hypertensive residents aged ≥15 years (Erwin et al., 2024; Sidoarjo District Health Office, 2024).

Sleep quality is an important indicator of overall health and includes sleep duration, sleep efficiency, sleep regularity, and subjective sleep satisfaction. Poor sleep quality may increase blood pressure through sympathetic nervous system activation and elevated cortisol secretion, whereas uncontrolled hypertension may also contribute to sleep disturbances, indicating a bidirectional relationship between these conditions (Ningtyas, 2024; Imaroh et al., 2025; Alfi & Yuliwar, 2024).

A preliminary survey conducted at the Posbindu in Pranti Village found that 45 of 70 older adults who attended the program had hypertension. Despite the

high prevalence of hypertension, evidence regarding sleep quality among hypertensive patients in this community remains limited. Therefore, this study aimed to describe the sleep quality of patients with hypertension attending the Posbindu program in Pranti Village, Sidoarjo.

METHOD

This descriptive quantitative study employed a cross-sectional design to describe the sleep quality of patients with hypertension attending the Posbindu program in Pranti Village, Sedati District, Sidoarjo Regency. The study was conducted from January to March 2026. A total sampling technique was used to recruit all eligible participants, resulting in a sample of 45 hypertensive patients who actively participated in the Posbindu program. Sleep quality was assessed using the validated Pittsburgh Sleep Quality Index (PSQI) questionnaire, while demographic data, including age, sex, occupation, and duration of hypertension, were also collected. Data were obtained after participants provided written informed consent and completed the questionnaire under the researcher's supervision. The collected data underwent editing, coding, data entry, cleaning, and tabulation before being analyzed using descriptive statistics. The results are presented as frequencies and percentages to describe respondents' characteristics and sleep quality.

RESULTS

Table 1. Distribution of the Characteristics of Hypertensive Respondents at the Posbindu of Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Characteristics	N	Percent%
Age		
46-54 Years	9	20,0%
55-64 Years	24	53.3 %
>65 Years	12	26.7 %
Sex		
Male	7	15.6 %
Female	38	84.4 %
Occupation		
Employed	17	37.8 %
Unemployed	28	62.2 %
Duration of Hypertension		
<1 Years	19	42.2 %
1-5 Years	26	57.8 %

(Source : Primary Data, 2026)

presents the characteristics of the 45 respondents with hypertension at the Posbindu of Pranti Village, Sidoarjo. The majority of respondents were aged 55–64 years (24 participants, 53.3%), were female (38 participants, 84.4%), and were unemployed (28 participants, 62.2%). Regarding the duration of hypertension, most respondents had been living with hypertension for 1–5 years (26 participants, 57.8%).

Table 2. Frequency Distribution of Subjective Sleep Quality Among Patients with Hypertension at the Posbindu of Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Subjective Sleep Quality	N	Percent%
Very good	1	2.2 %
Good	33	73.3 %
Fair	11	24.4 %
Total	45	100,0%

(Source : Primary Data, 2026)

As presented in table 2, the majority of the 45 respondents rated their subjective sleep quality as good (33 participants, 73.3%), followed by fair (11 participants, 24.4%) and very good (1 participants, 2.2%). The findings indicate that most patients with hypertension perceived their sleep quality during the previous month as generally good.

Table 3. Frequency Distribution of Sleep Duration Among Patients with Hypertension at the Posbindu of Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Duration	N	Percent%
> 7 hours	7	15.6 %
6-7 hours	20	44.4 %
5-6 hours	12	26.7 %
< 5 hours	6	13.3 %
Total	45	100,0%

(Source : Primary Data, 2026)

Table 3, regarding the sleep duration component, the largest proportion of respondents reported sleeping 6–7 hours per night (20 participants, 44.4%), followed by 5–6 hours (12 participants, 26.7%), more than 7 hours (7 participants, 15.6%), and less than 5 hours (6 participants, 13.3%). These findings indicate that the majority of respondents had an adequate sleep duration.

Table 4. Frequency Distribution of Sleep Latency Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Latency	N	Percent%
Score 0	16	35.6 %
Score 1	4	8.9 %
Score 2	15	33.3 %
Score 3	10	22.2 %
Total	45	100,0%

(Source : Primary Data, 2026)

Table 4, regarding the sleep latency component, most respondents obtained a score of 0 (16 participants, 35.6%), followed by a score of 2 (15 participants, 33.3%), a score of 3 (10 participants, 22.2%), and a score of 1 (4 participants, 8.9%). Overall, these findings suggest that the majority of respondents did not experience clinically meaningful difficulty in initiating sleep.

Table 5. Frequency Distribution of Sleep Efficiency Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Efficiency	N	Percent%
>85 %	45	100.0 %
Total	45	100,0%

(Source : Primary Data, 2026)

As shown in table 5, for the sleep efficiency component, all 45 respondents (100%) had a sleep efficiency of >85%. These findings indicate that all respondents demonstrated good sleep efficiency, suggesting that most of the time spent in bed was effectively utilized for sleeping.

Table 6. Frequency Distribution of Sleep Disturbance Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Disturbance	N	Percent%
Score 1	24	53.3 %
Score 2	21	46.7 %
Total	45	100,0%

(Source : Primary Data, 2026)

As presented in table 6, for the sleep disturbance component, the majority of respondents had a score of 1, accounting for 24 individuals (53.3%), while 21 respondents (46.7%) had a score of 2. These findings indicate that most respondents experienced mild sleep disturbances.

Table 7. Frequency Distribution of Sleep Medication Use Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Medication Use	N	Percent%
Never	44	97.8 %
Yes	1	2.2 %
Total	45	100,0%

(Source : Primary Data, 2026)

As shown in Table 4.7, regarding the use of sleeping medication, the vast majority of respondents had not used sleeping medication, with 44 respondents (97.8%), whereas only one respondent (2.2%) reported using sleeping medication. These findings indicate that most patients with hypertension did not rely on sleeping medication to facilitate sleep initiation.

Table 8. Frequency Distribution of Daytime Dysfunction Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Daytime Dysfunction	N	Percent%
Score 0	8	17.8 %
Score 1	14	31.1 %
Score 2	19	42.2 %
Score 3	4	8.9 %
Total	45	100,0%

(Source : Primary Data, 2026)

As shown in table 8, for the daytime dysfunction component, the largest proportion of respondents had a score of 2, comprising 19 respondents (42.2%), followed by a score of 1 in 14 respondents (31.1%), a score of 0 in 8 respondents (17.8%), and a score of 3 in 4 respondents (8.9%). These findings indicate that most respondents experienced a moderate level of daytime dysfunction, characterized by symptoms such as daytime sleepiness, fatigue, or reduced motivation during daily activities.

Table 9. Frequency Distribution of Sleep Quality Levels Among Hypertensive Patients at the Posbindu in Pranti Village, Sedati District, Sidoarjo Regency, February 2026

Sleep Quality Levels	N	Percent%
Good	16	35.6 %
Mild	7	15.6 %
Moderate	22	48.9 %
Total	45	100,0%

(Source : Primary Data, 2026)

As shown in table 9, the study findings revealed that the majority of hypertensive patients at the Posbindu in Pranti Village had a moderate level of sleep quality, comprising 22 respondents (48.9%).

DISCUSSION

Discussion of Sleep Quality

The findings of this study showed that among the 45 hypertensive patients at the Posbindu in Pranti Village, Sidoarjo, the majority of respondents reported good subjective sleep quality (73.3%), a

sleep duration of 6–7 hours per night (44.4%), normal sleep latency (35.6%), sleep efficiency of >85% (100%), mild sleep disturbances (53.3%), no use of sleeping medication (97.8%), and a moderate level of daytime dysfunction (42.2%).

These findings indicate that although overall sleep quality was perceived as good, impairments in several sleep components remained evident and may adversely affect daytime functioning and daily activities.

Subjective Sleep Quality

The majority of respondents reported good subjective sleep quality (73.3%), indicating that most patients with hypertension perceived their sleep as satisfactory despite living with the condition. Subjective sleep quality reflects an individual's perception of their sleep experience over the previous month, including sleep comfort, ease of falling asleep, and feeling refreshed upon awakening.

These findings suggest that most respondents had adapted well to hypertension, allowing them to maintain a positive perception of their sleep. This perception may be influenced by adherence to antihypertensive treatment, a supportive sleep environment, and effective disease management. Nevertheless, good subjective sleep quality does not necessarily reflect overall sleep quality, as impairments were still observed in other components of the Pittsburgh Sleep Quality Index (PSQI). Therefore, sleep quality assessment in patients with hypertension should include all PSQI components to provide a comprehensive evaluation and to support appropriate nursing interventions and health education aimed at improving blood pressure control.

Sleep Duration

The majority of respondents reported a sleep duration of 6–7 hours per night (44.4%), indicating that most patients with hypertension achieved a relatively adequate amount of sleep. Adequate sleep duration plays an important role in physical recovery, autonomic nervous system regulation, and cardiovascular stability, thereby supporting blood pressure control. However, some respondents reported sleeping less than 6 hours per night, which may be associated with hypertension-related symptoms such as headaches, frequent nocturnal awakenings, and nocturia.

These findings suggest that adequate sleep duration alone does not necessarily reflect optimal sleep quality, as it is also influenced by other sleep components, including sleep latency, sleep disturbances, sleep efficiency, and daytime dysfunction. Therefore, sleep quality in patients with hypertension should be assessed comprehensively using all components of the Pittsburgh Sleep Quality Index (PSQI) to support appropriate nursing interventions and health education aimed at improving hypertension management.

Sleep Latency

The majority of respondents demonstrated very good sleep latency (score 0), with 16 respondents (35.6%) able to fall asleep within a relatively short period after going to bed. Sleep latency is an important component of sleep quality that reflects an individual's ability to initiate sleep. However, some respondents experienced prolonged sleep latency, indicating difficulty falling asleep. This condition may be associated with hypertension-related physical symptoms, such as headaches, as well as psychological factors including stress and anxiety.

The variation in sleep latency among respondents suggests that adaptation to hypertension and effective stress management may influence sleep initiation. Therefore, promoting good sleep hygiene, including maintaining a regular sleep schedule, creating a comfortable sleep environment, limiting electronic device use before bedtime, and practicing relaxation techniques, may help improve sleep latency and overall sleep quality in patients with hypertension.

Sleep Efficiency

All respondents in this study demonstrated a sleep efficiency of >85% (100%), indicating that most of the time spent in bed was devoted to sleeping and that sleep maintenance remained good despite the presence of hypertension. Good sleep efficiency plays an important role in physical recovery, autonomic nervous system regulation, and the maintenance of cardiovascular function. However, optimal sleep efficiency does not necessarily reflect overall sleep quality. Several respondents still experienced mild sleep-related problems, such as frequent nocturnal awakenings, nocturia, headaches, or discomfort during sleep, which may affect other dimensions of sleep quality.

These findings suggest that sleep quality in patients with hypertension is a multidimensional construct influenced by multiple components rather than sleep efficiency alone. Therefore, sleep quality should be evaluated comprehensively using all components of the Pittsburgh Sleep Quality Index (PSQI) to support appropriate nursing interventions and health education for improving hypertension management.

Sleep Disturbance

The majority of respondents experienced mild

sleep disturbances (score 1), accounting for 24 respondents (53.3%), indicating that although most patients with hypertension were able to sleep relatively well, they still experienced minor sleep-related problems. These disturbances commonly included frequent nocturnal awakenings, nocturia, headaches, and discomfort during sleep, which may reduce sleep quality if they occur repeatedly over time.

This finding may be associated with the aging process, as most respondents were aged 55–64 years, as well as physiological changes and physical symptoms related to hypertension. Although the sleep disturbances were generally mild, they remain clinically important because they may negatively affect overall sleep quality and health status. Therefore, promoting sleep hygiene, optimizing hypertension management, and providing education on factors affecting sleep are essential to help maintain optimal sleep quality in patients with hypertension.

Sleep Medication Use

The majority of respondents experienced mild sleep disturbances (53.3%), indicating that sleep-related problems were common among patients with hypertension but had not yet substantially affected their overall sleep quality. This condition may be associated with aging and hypertension-related physiological changes, including reduced sleep quality, frequent nocturnal awakenings, and nocturia. Nevertheless, most respondents did not require pharmacological treatment because their sleep disturbances were generally mild and could be managed through adaptation and non-pharmacological approaches.

These findings highlight the importance of promoting sleep hygiene, including maintaining a regular sleep schedule, avoiding caffeine before bedtime, creating a comfortable sleep environment, and practicing relaxation techniques to prevent the progression of sleep disturbances in patients with hypertension.

Daytime Dysfunction

The largest proportion of respondents experienced moderate daytime dysfunction (42.2%), indicating that suboptimal sleep quality continued to affect their ability to perform daily activities. This condition was characterized by fatigue, daytime sleepiness, and reduced concentration. Daytime dysfunction may be associated with persistent sleep disturbances, including frequent nocturnal awakenings, nocturia, and discomfort during sleep.

Although most respondents reported good subjective sleep quality and sleep efficiency, impairments in other sleep components may have reduced the restorative effects of sleep. Therefore, improving sleep quality through sleep hygiene practices, such as maintaining a regular sleep schedule, creating a comfortable sleep environment, avoiding caffeine before bedtime, and practicing relaxation techniques, may help reduce daytime dysfunction and support better hypertension management.

CONCLUSION AND SUGGESTION

Conclusion

1. Most patients with hypertension demonstrated good subjective sleep quality.
2. Sleep latency was generally within the normal range, indicating no significant difficulty in initiating sleep.
3. Most respondents had an adequate sleep duration to meet their daily restorative needs.
4. Sleep efficiency was good, with most time in bed effectively spent sleeping.
5. Mild sleep disturbances were common but did not substantially affect overall sleep.
6. The use of sleeping medication was minimal among respondents.
7. Moderate daytime dysfunction was still observed, particularly in the form of fatigue, daytime sleepiness, and reduced concentration.

Suggestion

1. For Healthcare Professionals
   Healthcare professionals are encouraged to enhance patient education and nursing interventions regarding the importance of sleep quality in patients with hypertension by promoting sleep hygiene, stress management, and appropriate physical activity to improve sleep quality and support blood pressure control.
2. For the Community
   Patients with hypertension are encouraged to adopt a healthy lifestyle by practicing good sleep hygiene, maintaining a regular sleep schedule, limiting caffeine intake before bedtime, and engaging in regular physical activity to improve sleep quality and support blood pressure control.
3. For the Posbindu
   The Posbindu is encouraged to strengthen promotive and preventive programs through health education, sleep quality monitoring, and continuous support for patients with hypertension to improve sleep quality and support blood pressure control.
4. For Future Researchers
   Future studies are recommended to investigate factors influencing sleep quality among

patients with hypertension, including stress, physical activity, dietary patterns, medication adherence, and family support, using analytical study designs to provide more comprehensive evidence.

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