

Knowledge, Attitude, and Compliance with Hypertension Patients at The Manggis I Karangasem Health Centre

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Artikel Penelitian

Abstract: High blood pressure or hypertension is a serious medical condition that significantly increases the risk of heart, brain, kidney, and other organ diseases. Most people with hypertension do not show specific symptoms and remain in good condition to perform routine activities. This study aimed to evaluate the knowledge, attitude, and compliance of hypertensive patients. A cross-sectional observational study was conducted at Puskesmas Manggis I Karangasem from March to May 2023 using a validated questionnaire. Data were analyzed using SPSS software version 25.0. A total of 120 respondents participated (100% response rate). Most of respondents were >65 years old (37.5%); male (61.7%); had secondary education (65.8%); not working (28.3%); had grade 1 hypertension (70.8%), and had no comorbidities (80.8%). Patient knowledge was categorized as good (109 [90.8%]), attitude was positive (75 [62.5%]), and medication compliance was high (79 [65.9%]). The results of the chi-square test showed that there was a significant relationship between knowledge and compliance (p -value=0.002), and there was a significant relationship between attitude and compliance (p -value=0.006). Knowledge and attitudes of hypertensive patients must continue to be improved so that patients comply to their medication therapy. Pharmacists are advised to conduct counseling on lifestyle, dietary patterns, and information related to complications in hypertensive patients.

Keywords: hypertension, knowledge, attitude, compliance

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Abstrak: Tekanan darah tinggi atau hipertensi adalah kondisi medis serius yang secara signifikan meningkatkan risiko penyakit jantung, otak, ginjal, dan penyakit organ lainnya. Sebagian besar penderita hipertensi tidak menunjukkan gejala yang spesifik dan tetap dalam kondisi baik untuk melakukan aktivitas rutin. Tujuan penelitian ini adalah untuk mengevaluasi pengetahuan, sikap, dan kepatuhan pasien hipertensi. Penelitian observasional cross-sectional dilakukan di Puskesmas Manggis I Karangasem dari Maret hingga Mei 2023 dengan menggunakan kuesioner yang telah divalidasi. Data dianalisis menggunakan software SPSS versi 25.0. Sejumlah 120 responden berpartisipasi (tingkat respon 100%). Responden mayoritas berusia >65 tahun (37.5%); laki-laki (61,7%); berpendidikan menengah (65.8%); tidak bekerja (28.3%); hipertensi grade 1 (70.8%), dan tidak memiliki komorbid (80.8%). Pengetahuan pasien termasuk pada kategori baik (109 [90.8%]), sikap positif (75 [62.5%]), dan patuh pada pengobatan (79 [65.9%]). Hasil uji chi-kuadrat menunjukkan terdapat hubungan yang signifikan antara pengetahuan terhadap kepatuhan (p -value=0,002), dan terdapat hubungan yang signifikan antara sikap terhadap kepatuhan (p -value=0,006). Pengetahuan dan sikap pasien hipertensi harus terus ditingkatkan agar pasien patuh pada terapi pengobatannya. Apoteker disarankan untuk melakukan penyuluhan tentang gaya hidup, pola diet, dan informasi terkait komplikasi pada pasien hipertensi.

Kata kunci: hipertensi, pengetahuan, sikap, kepatuhan



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Introduction

Cardiovascular diseases are the major cause of death worldwide. More than 75% of heart disease and stroke-related deaths happen in low- and middle-income countries. It is estimated that 1.4 billion persons, or one-third of all adults, have hypertension, yet only 14% have it under control (1,2). High blood pressure is a risk factor for stroke, ischemic heart disease, other cardiovascular diseases and chronic kidney disease (2). The diagnosis of hypertension can be determined through specific systolic and diastolic blood pressure tests or by inspecting data on antihypertensive medication use.

According to the 2018 Indonesia Health Profile Report, the most common disease in the elderly (57.6%) was hypertension. The number of people with hypertension is anticipated to rise to 1.5 billion by 2025, with a death rate of 9.4 million per year (3). The number of hypertension cases in Bali continues to rise, with 738,123 cases in 2018 and 754,251 expected in 2020. Karangasem Regency reported an increase in cases with 44,379 in 2018 and 45,251 in 2020 (4).

Hypertension is also considered as the "silent killer" because it does not show any symptoms for years and this is experienced by most patients (5). According to WHO, the rising prevalence of hypertension and other cardiovascular diseases in developing countries can be attributed to population ageing, urbanisation, and socioeconomic developments which encourage sedentary lifestyles (2). Hypertension not only occurs in developing countries, but also in developed countries. In certain situations, the proportion of undiagnosed, untreated and uncontrolled hypertensive patients is higher in developing countries due to inadequate health systems (5). This disease will disrupt the lives of sufferers and tends to cause complications if not handled properly.

Research on knowledge, attitude, and medication compliance of hypertensive patients have been conducted in developed and low-middle-income countries (6,7), and also in various research settings in Indonesia, such as in community centre (8,9), rural areas (10,11), and hospital (12). Prior studies have shown that hypertensive patients have varying levels of

compliance (13). Lack of knowledge, attitude, and awareness about hypertension and its consequences are the challenges encountered. Hypertensive patients who have less knowledge are often negligent and do not listen to the advice of doctors or pharmacists (8,14). Other factors that contribute to the occurrence of hypertension are environmental, genetic, and lifestyle such as smoking, drinking, and high fat consumption are associated with hypertension. Almost half of hypertension-related deaths are prevented with modifications to lifestyle or antihypertensive medication compliance (2,15,16).

The Manggis I Health Centre has a working area of 109.70 km² and is made up of 39 hamlets and 6 villages. The Manggis I Health Centre had a coastal spot with a hot climate, and most of the land is fisheries land. The research on hypertension patients at The Manggis I Health Centre has not been widely published. As therefore, it is a concern to investigate the knowledge, attitudes, and compliance with hypertension medication in patients seeking treatment at The Manggis I Health Centre.

Method

Sample research

More than 150 hypertensive patients were treated every month at Puskesmas Manggis Karangasem, and not many studies have been conducted there. An observational study was conducted with a cross-sectional design using a validated questionnaire. Samples that met the inclusion criteria were selected consecutively. Inclusion criteria were hypertensive patients who visited Puskesmas Manggis I for treatment. Exclusion criteria were patients who worked as health workers or had a health education background. The sample size was calculated using the Slovin formula ($n=N/(1+Ne^2)$) to ensure that at least 100 samples were collected. The sample size was calculated using the Slovin formula ($n=N/(1+Ne^2)$) to ensure that at least 100 samples were collected.

Research instrument

The questionnaire were developed by modifying several variables from previous studies that analyzed the knowledge and attitudes of hypertensive patients (17,18). RW and PW

evaluated the structure of the questionnaire and the understanding of its content. The knowledge questionnaire had 11 (eleven) dichotomous statements based on the Guttman Scale, whereas the attitude questionnaire had 6 (six) dichotomous statements. Yes/True and No/False answer options determine the final score. One (1) is assigned to each correct response, whereas zero (0) is assigned to each wrong response. The overall knowledge score is divided into three categories: good (score ≥ 9), moderate (score = 6-8), and poor (score < 6). There were three categories for attitude scores: good (score ≥ 5), moderate (score=3-4), and low (score < 3).

Compliance of hypertensive patients was measured by Morisky Medication Adherence Score-8 (MMAS-8), consisting of 8 (eight) statements with Yes/True or No/False answer options. Each correct answer was scored one (1) and zero (0) for incorrect answers. The total compliance score was divided into 3 categories: high (score = 8), medium (score = 6-7), and low (score < 6). The MMAS-8 questionnaire was translated into Indonesian by RW.

The validity and reliability of the questionnaire were tested on 30 respondents. All questions are valid ($r\text{-count} > 0.361$; $p\text{-value} = 0.05$). Cronbach's Alpha value of the knowledge questionnaire (0.640) and attitude (0.728). Cronbach alpha score > 0.6 indicates questionnaires are reliable (19). A Rank Spearman test was performed to assess the correlation between ordinal variables, using SPSS version 27. Correlation coefficient 0.00-0.25 indicates a weak correlation; 0.26-0.50 indicates a moderate correlation; 0.51-0.75 indicates a strong correlation; 0.76-0.99 indicates a very strong correlation; and 1 indicates a perfect correlation.

Ethical Consideration

The Bali International University Ethics Committee approved this research on March 30, 2023, number 02.0368/UNBI/EC/III/2023.

Results and Discussion

There were 120 hypertension patients in this study (100% response rate). According to **Table 1**, most respondents are aged 66 to 90 years (45, or 37.5%); male (74, or 61.7%); high school

graduates (79, or 65.8%); unemployed (34, or 28.3%); have grade 1 hypertension (85, or 70.8%); and have no comorbidities (97, or 80.8%).

Knowledge

The respondents' knowledge about hypertension is shown in **Table 2**.

Table 2 shows that most of the respondents answered nearly all knowledge questions correctly. Most of the respondents (95.8%) agree that hypertension is a condition caused by an increase in blood pressure. As many as 92.5% of respondents agreed that hypertensive patients needed therapy, and 86.7% agreed that treatment should be carried out forever. Although 93.3% of respondents understood that people with hypertension should not smoke, 93.3% of respondents said that people with hypertension could still drink alcohol. It is in contrast with prior studies reported that environmental factors such as alcohol intake and unhealthy habits are leading causes of hypertension and cardiovascular disease (20,21). This finding is interesting because consuming alcohol, particularly Balinese Arak, is widely accepted in this area and used in traditional medical practices. To better understand this phenomenon, qualitative exploratory study may be needed, specifically for patients with hypertension who drink alcohol.

Most of the respondents stated they were aware of a healthy diet for hypertension patients. This confirms previous studies that showed that dietary fiber can be utilized as a co-benefit with cardioprotective medications in the treatment of hypertension (15). Hypertension patients must understand the causes of hypertension, the symptoms that often accompany it, the need to take medication regularly and continuously in the long term, and the dangers caused if the drug is not taken (22).

Overall, most of the respondents had good knowledge. The Chronic Disease Management Programme, an integrated initiative that calls for strong collaboration between healthcare facilities and patients, which is run smoothly at the Manggis 1 Health Centre, may have contributed to the respondents' high level of awareness.

Table 1. Respondents' Characteristics (n=120)

| Characteristics | | n | % |
|-----------------|------------------|----|-------------|
| Age (years) | 36-45 | 3 | 2,5 |
| | 46-55 | 33 | 27,5 |
| | 56-65 | 39 | 32.5 |
| | >65 | 45 | 37.5 |
| Gender | Male | 74 | 61.7 |
| | Female | 46 | 38.3 |
| Education | Primary School | 10 | 8.3 |
| | Secondary School | 24 | 20.0 |
| | High School | 79 | 65.8 |
| | University | 7 | 5.8 |
| Occupation | Not working | 34 | 28.3 |
| | Employee | 5 | 4.2 |
| | Farmer | 14 | 11.7 |
| | Breeder | 22 | 18.3 |
| | Housewife | 24 | 20.0 |
| | Self-employed | 19 | 15.8 |
| | Retired | 2 | 1.7 |
| Grade | Grade I | 85 | 70.8 |
| | Grade II | 35 | 29.2 |
| Comorbides | Diabetes | 23 | 19.2 |
| | No comorbides | 97 | 80.8 |

Table 2. Respondents' Knowledge (n = 120)

| Statements | Y/T n (%) | N/F n (%) |
|--|--------------|--------------|
| Hypertension is indicated by an increase in blood pressure | 115 (95.8) | 5 (4,2) |
| People diagnosed with hypertension must take medication every day | 111 (92.5) | 9 (7.5) |
| A person with high blood pressure must be on medication throughout their life | 104 (86.7) | 16 (13.3) |
| A person with high blood pressure may drink alcohol | 112 (93.3) | 8 (6.7) |
| A person with high blood pressure should not smoke | 112 (93.3) | 8 (6.7) |
| A person with high blood pressure should eat vegetables every day. | 115 (95.8) | 5 (4.2) |
| A person with high blood pressure should eat fruit every day | 114 (95.0) | 6 (5.0) |
| Foods that are good for high blood pressure are boiled/baked ones | 114 (95.0) | 6 (5.0) |
| Increased blood pressure can lead to heart disease, such as a heart attack if left untreated | 111 (92.5) | 9 (7.5) |
| Increased blood pressure can lead to stroke if left untreated | 110 (91.7) | 10 (8.3) |
| Increased blood pressure can lead to visual issues if left untreated | 109 (90.8) | 11 (9.2) |

Pharmacists are expected to play an active role in providing health promotion programs through education and counseling.

Attitude

Table 3 shows the responses' attitudes toward hypertension.

Patient attitude is an important domain in medication treatment. **Table 3** shows that 93.3% of the respondents consistently controlled their blood pressure, 87.5% of the respondents engaged in regular physical activity, and 88.3% of respondents obtained eight hours of sleep each night. While 71.6% of respondents restricted their salt intake, 79.2% of respondents had control of their diet patterns, and 67.5% of respondents avoided eating instant or fast food.

This survey indicates most of the respondents considered nutrition to be an important aspect of a hypertension diet. The previous study highlights the potential advantages of advising those experiencing cardiovascular diseases and hypertension to consume more dietary fiber (15). Another study that focused on minimizing the

intake of processed foods underlined the crucial role of calories in managing hypertension and added dietary fiber supplements may be useful in controlling blood pressure (23).

Compliance

Table 4 shows respondents' compliance with medication.

Compliance with taking medication is an effort what to do to achieve treatment goals. In general, compliance is when the patient adheres to medication, makes lifestyle modifications, and regulates the diet according to the recommendations of health workers. Compliance is a requirement to improve the patient's quality of life and achieve therapeutic effectiveness, while non-compliance is the cause of treatment failure.

Table 3. Respondents' Attitudes (n=120).

| Statements | Y/T n (%) | N/F n (%) |
|-----------------------------------|--------------|--------------|
| Control blood pressure regularly | 112 (93,3) | 7 (6,7) |
| Regular exercise | 105 (87,5) | 15 (12,5) |
| Obtain eight hours of sleep daily | 106 (88,3) | 14 (12,4) |
| Limiting salt intake | 86 (71,6) | 34 (28,3) |
| Managed diet | 95 (79,2) | 25 (20,9) |
| Avoid eating instant food | 81 (67,5) | 39 (32,5) |

Table 4. Respondents' Compliance (n=120).

| Statements | Y/T n (%) | N/F n (%) |
|---|--------------|--------------|
| Do you sometimes forget take the medication? | 26 (21.7) | 94 (78.3) |
| People sometimes miss taking their medication for reasons. Did you ever missed taking medication over the past two weeks? | 11 (9.2) | 109 (90.8) |
| Have you ever stop taking the medication without informing the doctor, because you felt worse when you took it? | 3 (2.5) | 117 (97.5) |
| Did you sometimes forget to bring your hypertension medication, when traveling or leaving the house? | 17 (14.2) | 103 (85.8) |
| Did you take your hypertension medication yesterday? | 17 (14.2) | 103 (85.8) |
| Do you ever decided not to take the pills when you felt good? | 3 (2.5) | 117 (97.5) |
| Taking medication everyday is inconvenience for some people. Do you feel bothered with your hypertension treatment plan? | 2 (1.7) | 118 (98.3) |
| Do you feel difficult consuming your medication? | 20 (16.7) | 100 (83.3) |

Table 4 shows that 21.7% of respondents sometimes forgot to take their medication. A total of 9.2% of respondents stated that there were days when they did not take their medication in the last 2 weeks. A small proportion of respondents (2.5%) did not contact their doctor when they decided to stop taking their medication. Most respondents (85.8%) took their medication with them when they had to leave the house or travel. Most respondents (85.8%) said they were still taking their medication the day before this data collection. A small proportion of respondents (2.5%) decided to stop taking their medication when they felt better. Most respondents (98.3%) still felt comfortable and not bothered if they had to take hypertension medication every day, however, 16.7% of respondents reported that they found it difficult.

Table 5 presents the knowledge, attitude, and proportion of respondents' compliance.

Table 5 shows that most of the respondents' knowledge (90.8%) and attitude (62.5%) were in the good category. This result differs slightly from other studies, which found moderate levels of knowledge (8,24). Overall, 65.8% of respondents reported compliant. The Rank Spearman test results indicate a weak correlation between knowledge and compliance (Sig. 2-tailed = 0.006; p 0.05; Correlation Coefficient = 0.252). Whereas, there is a moderate correlation between attitude and compliance (Sig. 2-tailed = 0.001; p 0.05; Correlation Coefficient = 0.303). These results were similar to previous studies where knowledge and medication compliance were significantly related (6,24). Patients with adequate knowledge tend to follow medical advice more strictly because they are aware of the consequences of not doing so. Uncontrolled hypertension can lead to cardiac disease, including heart attack, stroke, and visual issues.

Table 5. Knowledge, Attitude, and Compliance (n=120)

| | n | % |
|-------------------|-----|------|
| Knowledge | | |
| Good | 109 | 90,8 |
| Fair | 8 | 6,7 |
| Poor | 3 | 2,5 |
| Attitude | | |
| Good | 75 | 62,5 |
| Fair | 22 | 18,3 |
| Poor | 33 | 19,2 |
| Compliance | | |
| Compliant | 79 | 65,9 |
| Fair | 28 | 23,3 |
| Non-compliant | 13 | 10,8 |

| | Knowledge | | |
|-------------------|-----------------|------|-------------|
| | Sig. (2-tailed) | p | Correlation |
| Compliance | 0.006 | 0.05 | 0.252 |

| | Attitude | | |
|-------------------|-----------------|------|-------------|
| | Sig. (2-tailed) | p | Correlation |
| Compliance | 0.001 | 0.05 | 0.303 |

To succeed in treatment, patients must try to take their medications as prescribed. Patient non-compliance is one factor contributing to therapy failure, whereas compliance is one of the requirements for enhancing the patient's quality of life and achieving therapeutic success (8,25,26). According to prior studies, hypertension patients may get more informed and compliant by receiving instruction through flyers (25). Previous study reported that medication compliance in elderly hypertension patients is highly influenced by age, the year treatment was initiated, and the year the condition was diagnosed (27).

The limitation of this study is that the data were collected through interviews, which allows information bias to occur. Another limitation is the potential for selection bias, given that most of those interviewed were elderly and had secondary education. As this study was limited to one health center in Karangasem district, interpretation of the findings for the larger population must be done carefully.

Conclusion

This study revealed that hypertensive patients have good knowledge and positive attitudes, and most have a strong commitment to taking hypertension drugs. There is a relationship between knowledge and attitudes towards medication compliance.

Patients' knowledge level and behaviour are crucial in managing hypertension. A patient-centred strategy is required to improve compliance with medications and blood pressure control. Pharmacists are required to carry out a variety of actions, including health education, social media interaction, motivation, and specific counselling.

Acknowledgement

The authors gratefully acknowledged the Manggis 1 Karangasem Health Centre and those who participated.

Conflict of Interest

The authors of this study claimed that they have no conflicting objectives.

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