



Cross-Sectional Study: The Association between Predisposing Factors and Medication Adherence among Hypertensive Patients

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ABSTRACT

Hypertension is a very high morbidity and mortality worldwide. It has become a serious public health problem in Indonesia and worldwide. East Nusa Tenggara Province is ranked third in terms of hypertension. Kupang City has the highest prevalence in the region. This study aims to determine the association between determinant predisposition variables, namely knowledge and attitudes towards treatment adherence of hypertension patients at primary health care centres in Kupang City, East Nusa Tenggara, Indonesia. This study is a cross-sectional observational study. The data collection instrument uses the MMAS 8 questionnaire sheet, which has been tested for validity and reliability. The sampling technique used was simple random sampling involving 72 respondents. The data was tabulated, analysed descriptively, and tested using the chi-square test using computer application software. The results of the study show that demographically, most of the people with hypertension are in the average age group of 51.80 (SD±3.82), female gender (51.39%), high school education (61.11%), and civil servant occupation (29.17%). The level of knowledge was good (51.39%), the attitude was good (68.06%), and medication adherence was low (87.50%). The results showed no significant association between knowledge (p-value 0.05), attitude (p-value 0.05), and medication adherence.

Keywords: Adherences, Attitude, Hypertension, Knowledge, Predisposing.

ABSTRAK

Hipertensi adalah penyakit dengan morbiditas dan mortalitas yang sangat tinggi di dunia. Hipertensi telah menjadi masalah serius dalam kesehatan masyarakat di Indonesia dan di seluruh dunia. Provinsi Nusa Tenggara Timur adalah peringkat ke-3 terkait penyakit hipertensi. Kota Kupang adalah wilayah dengan prevalensi tertinggi di wilayah tersebut. Penelitian ini bertujuan untuk mengetahui hubungan antara variabel predisposisi determinan yaitu pengetahuan dan sikap terhadap kepatuhan pengobatan pasien hipertensi di pusat pelayanan kesehatan primer di Kota Kupang, Nusa Tenggara Timur, Indonesia. Penelitian ini merupakan penelitian observasional secara cross-sectional. Instrumen pengumpulan data menggunakan lembar kuesioner MMAS 8 yang telah dilakukan uji validasi dan reliabilitas. Teknik pengambilan sampel yang digunakan adalah simple random sampling melibatkan 72 responden. Data dilakukan tabulasi, analisis secara deskriptif, dan pengujian menggunakan uji chi-square menggunakan software aplikasi komputer. Hasil penelitian menunjukkan bahwa secara demografi penderita hipertensi, sebagian besar berada pada kelompok usia rata-rata 51,80 (SD±3,82), jenis kelamin perempuan (51,39%), pendidikan sekolah menengah atas (61,11%), dan pekerjaan Pegawai Negeri Sipil (29,17%). Tingkat pengetahuan baik (51,39%), sikap yang baik (68,06%) dan kepatuhan pengobatan rendah (87,50%). Hasil penelitian menunjukkan bahwa tidak ada hubungan yang signifikan antara pengetahuan (p-value 0,05), sikap (p-value 0,05), dan kepatuhan pengobatan.

Kata Kunci: Hipertensi, Kepatuhan, Pengetahuan, Predisposisi, Sikap.

INTRODUCTION

Hypertension represents a significant health concern, characterised by elevated mortality and morbidity rates globally, with its prevalence continuing to rise annually. Systolic blood pressure is defined as equal to or exceeding 140 mmHg, while diastolic blood pressure is characterised by values equal to or above 90 mmHg (Unger et al., 2020). Complications of hypertension are characterised by a persistent elevation of blood pressure within the arteries. Improper management of hypertension can lead to a range of severe complications, posing significant risks to life, particularly to cardiovascular diseases (James et al., 2014). Hypertension requires appropriate treatment due to its potential to induce numerous macrovascular and microvascular consequences (Shaikh, 2017). Two approaches are employed to manage hypertension: non-pharmacological therapy and pharmaceutical therapy. Non-pharmacological therapy encompasses lifestyle modifications such as cessation of smoking, adherence to a balanced diet, abstention from alcohol, and psychological strategies that involve stress reduction, regular exercise, and adequate rest (Kodela et al., 2023). Concurrently, pharmacological intervention employs antihypertensive medications that reduce blood pressure (Unger et al., 2020).

Indonesia is one of the countries with a high increase in the prevalence of hypertension from 2018-2023, which has increased by 34.1% (Badan Penelitian dan Pengembangan Kesehatan, Kementerian Kesehatan Republik Indonesia, 2019). This figure is higher than the 2013 risks as a result of 25.8%, with the highest prevalence of hypertension in women at 36.9% and in patients aged 60 years and over (Anggraini, 2021). East Nusa Tenggara Province is one of the regions in Indonesia with a fairly high number of hypertension cases, reaching 7.2%. This figure makes hypertension the fourth-highest disease, with 76,130 cases (Tedju, 2022). Kupang City occupies the highest number in the discovery of hypertension cases, namely 28,701 cases and 6,935 cases in 2019 (Dinas Kesehatan Kota Kupang, 2021).

Medication adherence is a critical factor influencing the patient's prognosis. Medication adherence is essential in the management of hypertension, as patients can effectively regulate their blood pressure through the consistent use of antihypertensive medications. The reference is Oktayanti et al., (2024). According to Lawrance Green, health behaviour is influenced by 3 main factors: predisposing, supporting, and driving. Predisposing factors consist of knowledge and attitudes. Knowledge is the sense through the five human senses, namely the senses of sight, hearing, smell, taste, and touch. Attitude is a reaction or response still closed from a person to a stimulus or object. Behaviour-based on good knowledge and a positive attitude will result in long-lasting behaviour (Sulaeman, 2016).

This study aims to elucidate the correlation between predisposing factors and medication adherence among hypertension patients, a link not explicitly addressed in previous research. Examining the correlation between hypertensive patients' knowledge and attitudes toward treatment adherence might inform the invention and development of pharmaceutical service models for hypertensive individuals in community environments.

RESEARCH METHODS

This research was a type of cross-sectional analytical observational research. The research was carried out from July to August 2023. The study was located at one of the health centres in Kupang City, which had the highest hypertensive patient profile throughout 2023. Inclusion criteria are hypertensive patients without comorbidities (comorbid) and willing to be respondents. The sample calculation technique uses the Slovin formula with an error standard of 5% so that a total of 72 respondents were obtained. The Kupang City Health Office granted the research permit with the number DINKES/440/870/950/2021. This study was carried out using simple random sampling. Samples were selected until the number of samples was reached based on the determined inclusion criteria. The instrument used is a questionnaire called the Morisky Medication Adherence Scale (MMAS-8), which has been tested for validity and reliability and measures the level of adherence, attitudes, and knowledge (Riani, 2017). It is combined with closed interviews with patients. The data was tabulated, and descriptive analysis was carried out to see the profile of knowledge, attitudes, and adherence. Bivariate analysis was carried out using the chi-square test to test the research hypothesis based on ordinal scale data in the study (Istyastono, 2020).

RESULTS

This study analyses the demographic profile, knowledge levels, attitudes, and adherence among hypertension patients at a health centre in the Kupang city area. The study was conducted in July-August 2023 at a health centre in Kupang City, involving 72 respondents who met the inclusion criteria. The questionnaire results, which encompass demographic data such as age, gender, education, and occupation of patients, are presented in Table 1.

Table 1. Demographic

	Frequency	Percentage (%)
Gender		
Female	37	51,39
Male	35	48,61
Age (Years Old)	Mean 51,80 (SD ± 3,82)	
Education Level		
Junior High School	2	2,79
Senior High School	44	61,11
Diploma	13	18,05
Bachelor	13	18,05
Work		
Civil Servant	21	29,17
Self-employed	11	15,27
Farmer	9	12,50
Retirement	16	22,22
Others	15	20,84

The data (table 1) obtained the results of the demographic data the most patients were female (51.39%), the average age was 51.80 years (elementary school ± 3.82), with the highest level of education, namely high school (61.11%) and most (29.17) working as Civil Servants.

Table 2. Overview of Knowledge Level, Attitude, Adherence

Knowledge	Frequency	Percentage (%)
High	37	51.39
Medium	31	43.06
Low	8	11,11
Attitude	Frequency	Percentage (%)
Good	49	68.06
Medium	23	31.94
Low	-	-
Adherence	Frequency	Percentage (%)
High	3	4.17
Medium	6	8.33
Low	63	87.50

Table 2 shows that most respondents' knowledge about hypertension and its control efforts were in the Good category, namely 37 respondents (51.39%). Knowledge results from human senses or a person's knowledge of objects through his senses (eyes, nose, ears, and so on). Patients generally receive information during counselling with pharmacists when taking medications. Thus, there is a need to increase education related to knowledge about hypertension through health promotion. Health workers, such as pharmacists, are needed to provide health promotion programs, including education to the public regarding the correct use of antihypertensive drugs. Knowledge of adequate hypertension therapy directly will have an impact on adherence to the use of antihypertensive drugs.

Based on the data Table 2, it was obtained that most of the respondents' attitudes about hypertension were in a good category, namely 49 respondents (68.06%). Attitude is a reaction or response still closed from a person to a stimulus or object. The results of this study show that if the patient has a good attitude, it is expected that the adherence to the hypertension

treatment carried out is also good or good enough. Based on the study of behavioural theory, it is known that health behaviour will be influenced by several factors, one of which is attitude (Glanz, Rimer, and Viswanath, 2015). The respondents' attitudes will impact their health; personal experience is the basis of a person's attitude and influences their health (Notoadmodjo, 2020).

Based on the data in Table 2, it is known that most of the treatment adherence of hypertension patients is in the low category, namely 63 respondents (87.50%). Adherence is influenced by several factors that affect the patient's ability to follow care optimally, often disrupted by several barriers, including socioeconomic factors, the healthcare system, disease characteristics, disease therapy, and factors related to the patient (Weisser et al., 2020) The results of this study show that the community has low adherence. Hence, it is necessary to be provided with the right information regarding the use of drugs so that it can greatly influence the patient's mindset and attitude (Mediani et al., 2022).

Table 3. The Association of Knowledge and Attitude to Usage Adherence Hypertension medication

Variable	Mean (\pm SD)	p-value
Knowledge	72.50 (\pm 3,40)	0.089
Attitude	70.10 (\pm 2.73)	0.627

Based on Table 3 above, the results of *the chi-square* statistical test show no significant association between knowledge and the level of treatment adherence of hypertension patients (p-value > 0.05). Patient attitudes were also statistically known to have no significant association with patient adherence (p-value > 0.05).

DISCUSSION

The treatment of hypertension is an essential step in the prevention of consequences such as cardiovascular disease, stroke, and other organ damage. On the other hand, the success of hypertension treatment heavily depends on the patient's adherence to the treatment plan created by the medical staff. The problem of low adherence to hypertension medication is a multifaceted issue that calls for an all-encompassing strategy. Patients with hypertension hope that by better understanding the variables that cause the condition and improving their adherence, they can lower the risk of consequences and enhance their quality of life.

Characteristics that may increase an individual's risk include knowledge and attitudes influencing health behaviours and factors such as age, gender, and family history (Ristiani et al., 2023). In hypertension treatment adherence, predisposition characteristics affect an individual's behaviour before a specific scenario arises. Individual biological, psychological, and social characteristics constitute components within this category of factors (Notoadmodjo, 2020). Factors associated with hazardous health behaviours are referred to as predisposing factors. These factors may increase an individual's likelihood of developing hypertension. Consequently, it is crucial to consider these two factors when seeking to prevent and manage hypertension (Radhi et al., 2023). Understanding the association between health knowledge, attitudes, and behaviours is critical in the context of treatment and in improving therapy's success (Putra et al., 2023). Health workers can form positive attitudes and encourage healthy behaviours.

The statistical analysis in this study revealed that patient knowledge was not correlated with the degree of medication adherence among hypertension patients. The test results on the correlation between the attitudes of hypertension patients and their treatment adherence levels yielded a p-value of 0.627, over the threshold of 0.05, contradicting the theoretical expectations. According to Green, (2022), health behaviour is impacted by several elements, including attitude. The respondent's attitude will affect their health; personal experience forms the foundation of an individual's attitude, influencing their health (Parwati et al., 2021).

The prevalence of hypertension in Kupang City appears to rise annually, according to current statistics (Dinas Kesehatan Kota Kupang, 2021). This underscores the necessity for enhanced preventative and control measures. Educational interventions on medication administration, adherence to guidelines, and identifying appropriate nutritional intake might be innovations in pharmaceutical services to enhance patient adherence within health centres (Norkhasanah et al., 2023). Enhanced patient knowledge and attitudes have improved their

comprehension of the risks associated with clinical problems, prophylaxis, and the impacts of pharmacological side effects (Paczkowska et al., 2021). Knowledge and attitude are essential components that influence an individual's drive to develop behaviour; treatment effectiveness is also contingent upon patient adherence when treating hypertension patients (Michie, 2016).

This study's findings differ from those reported in other research, including that of Pristianty et al. (2023), in hypertensive patients at the Surabaya City Health Centre, knowledge variables (5.9%) and attitudes (14.80%) were identified as factors influencing patients' adherence to hypertension medication. The findings of this study diverge from those of previous research, which indicates that knowledge and attitude may serve as determinants for patients in recognising symptoms and the risk of complications associated with low adherence to hypertension treatment (Machaalani et al., 2022). The variations in the results of this study can be attributed to the differences in the respondents' social, cultural, and economic conditions, which allow them to form a pattern of association associations that differ from the actual theory of behaviour (Singer, 2012). The duration of drug information services and interactions with pharmacists at the health clinic was restricted, and the variety of medications utilised resulted in patients' understanding of fundamental treatment protocols being confined. These challenges are identified through reports and interviews with healthcare professionals and research participants. Internal hurdles pertain to motivation and support regarding medication management; certain patients have not received comprehensive instruction and assistance during home treatment, leading them to seek information from many unverified sources.

This study's findings will significantly impact the delivery of pharmaceutical services in community settings and the advancement of novel pharmaceutical services. To enhance patient clinical outcomes, service innovation must adopt a population-based perspective to achieve greater effectiveness and optimisation (King, 2015). Nelson and Liu, (2023), assert that pharmaceutical services employing an epidemiological approach could represent an innovative strategy to mitigate severe issues within the hypertension patient group. In this way, chemists can discover risk factors for prevalent diseases and provide appropriate therapies. Consequently, pharmaceutical services focus on illness treatment, effort reduction, and therapy management in alignment with patient needs.

Several research-based findings have found that educational approaches based on information technology, such as *in-home telemonitoring*, can innovate pharmaceutical services in community service settings (Park et al., 2021). The approach, supported by the immediate family, can also be an effective option for improving patient adherence with the assistance of a pharmacist (Nurannisa et al., 2022). The findings of this study are expected to inform pharmacist services in community settings to provide educational and effective services for the success of hypertensive patient therapy. However, the limited number of respondents and the location of the study need to be considered when generalising the findings; the scope and more comprehensive research can improve future studies.

CONCLUSION

The challenge of low adherence to hypertension medication is a complex issue that requires a comprehensive approach. There is no correlation between reduced adherence to therapy among hypertension patients and knowledge or attitude as a predisposing variable. The goal is to understand the causes of hypertension and improve adherence, thereby reducing the likelihood of complications and enhancing the quality of life for patients with hypertension. Therapy management should be customised to address the specific needs of each patient.

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