Patient Sociodemographic Characteristics and Adherence to Hypertension Medication: A Survey in a Rural Village in Indonesia

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Abstract. Hypertension has become a major global health problem and is one of the most important risk factors for cardiovascular events that can be prevented and treated. Medication adherence is important in hypertension management and can be influenced by various factors, including those related to patients and the healthcare system. Since 2017, the Faculty of Medicine, Universitas Islam Indonesia, has designed and delivered several programs (including hypertension-related programs) for people in Pandak village. However, data about the extent of nonadherence to hypertension medication and its association with sociodemographic characteristics have not been reported. This study focused on the relationships between the adherence to hypertension medication and sociodemographic characteristics of people with hypertension. A community-based cross-sectional study was conducted in Pandak, Bantul, Yogyakarta. We used data from the community health centers to recruit participants. Adults (18 years old or older) diagnosed with hypertension and living in the selected village were included. Sociodemographic variables included age, sex, education level, occupation, and income. Adherence to hypertension medication was assessed using the Indonesian Medication Adherence Report Scale questionnaire. Univariate and bivariate analyses were applied. Most patients (58.2%) had no schooling or graduated from elementary school. The nonadherent group included 133 of 177 (75.1%) patients. Level of education, gender, age, occupation, and income did not differ significantly between the adherent and nonadherent participants (p > 0.05). Nonadherence to hypertension medication was commonly found in this rural village; these findings suggest that integrated interventions involving patients, community health workers, and community leaders are required.

Keywords: Hypertension · Sociodemographic · Adherence · Posyandu Lansia

1 Introduction

As a major global problem, the prevalence of hypertension is expected to increase, especially in developing countries. Recent data show that more than 600 million people

have hypertension worldwide [1], and that this disease is responsible for 5.8% of deaths worldwide. In 2025, it is estimated that there will be 1.5 billion people with hypertension in developing countries [2]. Based on the 2018 national data, the prevalence of hypertension in Indonesia reached 34.1%.In this country, hypertension is the third leading cause of death for all ages (6.8%), after stroke (15.4%), and tuberculosis (7.5%). Although it has been estimated that 15 million Indonesian adults have hypertension, the control rate is <10% [3].

Nonadherence to hypertension medication is considered to be the main predictor of poor hypertension control. Adherence has many definitions, but its essence remains the same in every statement: i.e., the extent to which patients follow the recommendations of health-care professionals. Adherence to a medication includes instructions on the continuous use of the drug, lifestyle modifications, home monitoring, and self-assessment [4, 5].

Since 2017, the Faculty of Medicine Universitas Islam Indonesia has delivered a services program in Pandak village. Similar to other villages in Indonesia, blood pressure checks in the community are provided through community-based health-care programs such as integrated health posts (Posbindu) and integrated health service posts for the elderly (IHSP-E, posyandu lansia). There are 12 IHSP-E in this village, most of which offer monthly meetings for village residents. Based on the IHSP-E register book, at the time of this study, one-third of members had hypertension, i.e. a systolic blood pressure ≥140 mmHg or diastolic blood pressure ≥90 mmHg. Although a high prevalence of hypertension among the villagers has been acknowledged, information on how they adhere to hypertension treatment is scarce. Therefore, this study examined the relationships between sociodemographic characteristics and adherence to hypertension medication in Pandak village.

2   Method

This observational, cross-sectional study applied a total sampling technique to provide representative data for the selected village. The study was conducted in Pandak village in the Bantul district, Yogyakarta, in February–April 2020.

The following inclusion criteria were applied: residents of Pandak village, aged ≥18 years, diagnosed with hypertension based on The Healthy Indonesia Program with a Family Approach (PIS-PK) 2018, and willing to participate in the study. The flow of participants is shown in Fig. 1.

This study was approved by the ethics committee of the Faculty of Medicine, Universitas Islam Indonesia. Participants provided their written consent after being given detailed information about their involvement in the study.
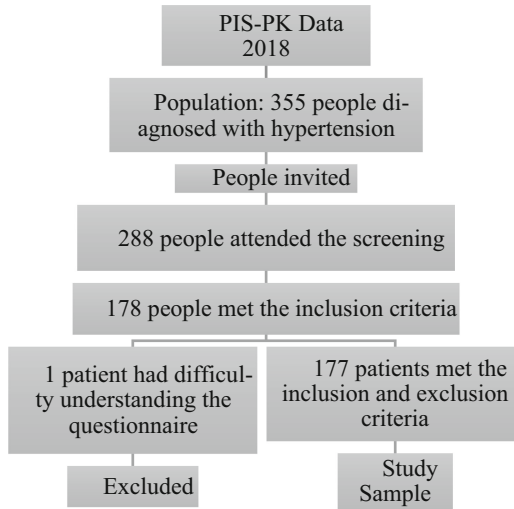
Fig. 1. Sample Determination

The questionnaires used in this study contained information about patient identity, sociodemographic data, hypertension history, and medication adherence. The Indonesian version of the Medication Adherence Rating Scale-5 (MARS-5) questionnaire was used to assess patient adherence to hypertension medication. This is a self-reported questionnaire, and each participant completed the questionnaire independently or was assisted by a community health worker in the village. Data were analyzed using IBM SPSS Statistics (version 24). Both univariate and bivariate analyses were performed. The chi-square test was performed to examine the relationships between sociodemographic factors and adherence to hypertension medication.

3   Result and Discussion

The total number of respondents who completed the requirements for this study were 177 villagers with hypertension (Table 1); most were pre-elderly (39%) or elderly (47.1%). More than half of the respondents were women (n = 106, 59.9%). The education levels varied: 18.6% had no schooling, and <25% had graduated from senior high school. More than half had no schooling or graduated from elementary school.

Among the 177 respondents, only 84 (47.5%) had taken their hypertension medications in the preceding 30 days. More than half of respondents (n = 93) did not take any antihypertensive medications and were categorized as the nonadherent group. Nonadherence was subsequently identified in 84 participants. The adherent group was defined as participants with an MARS-5 score ≥20 (range of scores 0–25). Forty of 84 respondents (47.6%) had a score of <20 (nonadherent group), and 44 (52.4%) had a score of ≥20 (adherent group). Therefore, in total 133 (75.1% were categorized into the nonadherent group and 44 (24.9%) into the adherent group.

Table 1. Sociodemographic Characteristics of Respondents (n = 177)

No.	Characteristics	n (%)
1	**Age**	
	<45 years	23 (13)
	45–60 years	69 (39)
	61–80 years	76 (42)
	>80 years	9 (5.1)
2	**Gender**	
	Men	71 (40.1)
	Women	106 (59.9)
3	**Education level**	
	No schooling	33 (18.6)
	Elementary school	70 (39.5)
	Junior high school	31 (17.5)
	Senior high school	38 (21.5)
	University	5 (2.8)
4	**Occupational status**	
	Unemployed	33 (18.6)
	Farmer	21 (11.9)
	Laborer	61 (34.5)
	Entrepreneur	23 (13)
	Other	39 (22)
5	**Income**	
	Low	119 (67.2)
	High	58 (32.8)

The results of the statistical analysis of the associations between sociodemographic characteristics and adherence to hypertension medication are shown in Table 2. There were no sociodemographic variables (level of education, age, gender, occupation, and income) significantly associated with adherence.

Table 2. Association between sociodemographic characteristics and patient's adherence (n = 177)

Characteristics	Groups			p value
	Nonadherent n (%)	Adherent n (%)	OR (95% CI)	
Age				0.276
≤60 years	66 (71.7)	26 (28.3)	0.682 (0.342–1.360)	
>60 years	67 (78.8)	18 (21.2)		
Gender				0.818
Men	54 (76.1)	17 (23.9)	1.086 (0.540–2.183)	
Women	79 (74.5)	27 (25.5)		
Education Level				0.358
Low-level education	80 (77.7)	23 (22.3)	1.378 (0.694–2.736)	
High-level education	53 (71.6)	21 (28.4)		
Occupational status				0.090
Unemployed	21 (63.6)	12 (36.4)	0.500 (0.222–1.125)	
Work	112 (77.8)	32 (22.2)		
Income				0.090
Low	94 (79.0)	25 (21.0)	1.832 (0.906–3.702)	
High	39 (67.2)	19 (32.8)		

4 Discussion

Only ~25% of patients were classified as adherent to their hypertension medication. Despite having been diagnosed with hypertension, nearly 50% of participants had not taken their hypertension medication in the past 30 days. This finding confirmed that a considerable proportion of people with hypertension do not adhere to their medication [6, 7]. An earlier study in the Bantul district also highlighted the need to consider targeted intervention for hypertensive patients with a low level of education [7]. However, in this study, a low education level was not associated with nonadherence to hypertension medication. Non-adherence behavior was not only reported among no-schooling patients but also among those who graduated from a higher education level.

In this study, gender was not associated with hypertension medication adherence, which is similar to a finding in another Indonesian community healthcare center10. However, this finding is interesting because previous studies suggested men tend to be busier than women and may forget or not have the time to adhere to their medication [8, 9].

Interventions and programs to improve patient adherence have been reported [10–13]. For rural communities, Rahmawati and Bajorek [7] recommended optimizing the role of community health workers as part of the hypertension management team in the

community health center. For example, community health workers can advise older people to take their medications as prescribed. As a chronic condition, hypertension requires integrated and comprehensive management. Qowi et al. [14] reported a hypertensive health-service program, called KAPTEN (Anti-Hypertensive Cadre), as a preventive effort for the community in Surabaya, Indonesia. It aims to provide public health education and regular blood pressure monitoring [14]. A chronic disease management program known as prolanis was launched in Indonesia in 2010. This program is offered mainly to patients with hypertension and/or diabetes mellitus [15]. Prolanis provides diverse services such as screening for cardiovascular risk factors (including blood pressure checks), counselling, simple laboratory examinations, home visits, referral to secondary healthcare services, and prevention of disease complications. Although Prolanis seems to be an ideal integrated hypertension program, its implementation should be optimized [16].

5   Conclusion

This study confirmed findings from previous studies regarding the relationship between a low level of education and adherence to hypertension medication. The prevalence of nonadherence to hypertension was very high, and 75% of respondents did not take their medications as prescribed. Improving patient adherence is imperative to increasing the treatment and control rates and to reducing the risk of cardiovascular disease complications.

Author's Contribution.   AN and RR contributed to the study planning, data collection, analysis of findings, and manuscript preparation.

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