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Factors Associated with Disease Acceptance Among Adults with Hypertension in Indonesia

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Abstract

Background: Hypertension prevalence in Aceh Province, Indonesia, has increased significantly over the past decade. Disease acceptance is a crucial determinant of successful blood pressure control, yet factors associated with acceptance remain understudied in this population. This brief report aimed to identify factors associated with disease acceptance among hypertensive adults in Aceh, with particular focus on the role of hypertension knowledge. **Methods:** This study used data from a cross-sectional survey conducted between March and July 2023 involving 534 hypertensive adults selected through random sampling across Aceh Province. Acceptance was measured using the Acceptance of Illness Scale (AIS) and categorized as low, moderate, or high. Knowledge was assessed using a validated 22-item questionnaire. Multinomial logistic regression was employed to identify predictors of acceptance. **Results:** Older age (45–64 years: OR=3.72, 95%CI: 1.18–11.74; >65 years: OR=4.38, 95%CI: 1.22–15.76) and higher education (senior high school: OR=2.27, 95%CI: 1.03–4.99; tertiary: OR=3.75, 95%CI: 1.33–10.6) were significantly associated with high acceptance. Knowledge regarding drug dosing (H6), daily medication (H7), cooking methods (H11), alcohol-related risk (H17), and heart disease complications (H19) was associated with higher acceptance, whereas knowledge regarding renal failure (H21) was associated with lower acceptance. **Conclusion:** Age, education, and specific domains of hypertension knowledge are significantly associated with disease acceptance. Educational interventions targeting younger adults and those with lower education, emphasizing medication adherence and complication awareness, may improve disease acceptance in this population.

Keywords: Hypertension; Disease acceptance; Health knowledge

Introduction

Hypertension remains a leading contributor to global cardiovascular disease burden and premature mortality, with disproportionately high prevalence in low- and middle-income countries (Mills et al., 2020; Devos & Ménard, 2020). In Indonesia, the prevalence of hypertension increased from 25.8% in 2013 to 34.1% in 2018, reflecting broader epidemiological transitions driven by lifestyle changes, urbanization, and aging populations (Kementerian Kesehatan Republik Indonesia, 2018; Turana et al., 2020). Aceh Province, located at the westernmost tip of Indonesia, reported a hypertension prevalence of 26.5% in 2018 (Kementerian Kesehatan Republik Indonesia, 2018). Despite being lower than the national average, the prevalence has shown a concerning upward trend over the past decade (Amra et al., 2020). The province's unique socio-historical context—having experienced a devastating tsunami in 2004 and a prolonged conflict that ended in 2005—has shaped its health system development and population health outcomes (Waizenegger & Hyndman, 2010). Rapid post-conflict reconstruction and economic growth have accelerated lifestyle changes that increase noncommunicable disease risk (Amri & Giyarsih, 2022; Azis et al., 2023). These intersecting factors create a complex health environment where noncommunicable diseases are increasingly prevalent, yet health education and health system capacity to address them remain limited.

Disease acceptance—the cognitive and emotional acknowledgment of a chronic condition and willingness to engage in its management—is a critical determinant of successful hypertension control. Individuals who accept their diagnosis are more likely to adhere to medication regimens, adopt lifestyle modifications, and maintain regular follow-up (Jankowska-Polańska et al., 2017; Pluta et al., 2020; Poulter et al., 2020). Conversely, poor acceptance may lead to treatment non-adherence and preventable complications (Pluta et al., 2020). Despite

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its clinical importance, factors associated with disease acceptance among hypertensive populations in post-conflict settings like Aceh remain understudied. Understanding what shapes acceptance is therefore essential for designing effective health interventions in this context. This brief report, therefore, aims to identify demographic and knowledge-related factors associated with disease acceptance among hypertensive adults in Aceh.

Methods

This brief report utilized data from a cross-sectional survey conducted between March and July 2023 in Aceh Province, Indonesia. The dataset has been previously described in a study examining medication adherence among the same population (Andala et al., 2024). Briefly, 534 hypertensive adults were recruited through random sampling. Eligibility criteria included age ≥18 years, physician-diagnosed hypertension for at least one year, and residency in Aceh Province. Informed consent was obtained from all participants.

Measures

Disease acceptance was assessed using the Acceptance of Illness Scale (AIS) and categorized as low (0–18), moderate (19–29), or high (30–40) (Jankowska-Polańska et al., 2016). Hypertension knowledge was evaluated using a validated 22-item questionnaire (Jankowska-Polańska et al., 2016) assessing understanding of blood pressure interpretation, lifestyle modifications, pharmacological management, and complications.

Statistical Analysis

Data were analyzed using Jamovi version 2.3.21. Multinomial logistic regression was performed to identify factors associated with acceptance categories, with 'moderate acceptance' as the reference category. Results are presented as odds ratios (OR) with 95% confidence intervals (CI). A p-value <0.05 was considered statistically significant.

Results

Among 534 respondents, the majority were female (84.6%), aged 45–64 years (65.7%), and had completed senior high school (38.4%). Acceptance distribution was: low 16.9% (n=90), moderate 57.5% (n=307), and high 25.7% (n=137). Older age was significantly associated with higher acceptance (Table 1). Respondents aged 45–64 years (OR=3.72, 95%CI: 1.18–11.74) and >65 years (OR=4.38, 95%CI: 1.22–15.76) were more likely to have high versus moderate acceptance compared to those aged 18–44 years.

Table 1. Multinomial Logistic Regression of Factors Associated with Acceptance

Variable	High vs Moderate Acceptance	
	OR (95% CI)	p-value
Age (ref: 18–44)		
45–64 years	3.72 (1.18–11.74)	0.025*
>65 years	4.38 (1.22–15.76)	0.024*
Education (ref: Primary)		
Senior high school	2.27 (1.03–4.99)	0.042*
Tertiary	3.75 (1.33–10.6)	0.013*
Knowledge Questions		
H6 (drug dosing)	2.90 (1.51–5.58)	0.001**
H7 (daily medication)	4.48 (1.35–14.87)	0.014*
H11 (cooking method)	2.09 (1.02–4.30)	0.045*
H17 (alcohol risk)	5.27 (2.06–13.47)	<0.001**
H19 (heart disease)	3.04 (1.37–6.71)	0.006**
H21 (renal failure)	0.32 (0.15–0.67)	0.003**

*p<0.05; **p<0.01

Higher education was also associated with high acceptance. Senior high school graduates (OR=2.27, 95%CI: 1.03–4.99) and tertiary education holders (OR=3.75, 95%CI: 1.33–10.6) were more likely to have high acceptance compared to primary school graduates. Knowledge about medication (H6: OR=2.90, 95%CI: 1.51–5.58), daily medication necessity (H7: OR=4.48, 95%CI: 1.35–14.87), optimal cooking methods (H11:

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OR=2.09, 95%CI: 1.02–4.30), alcohol-related risks (H17: OR=5.27, 95%CI: 2.06–13.47), and heart disease complications (H19: OR=3.04, 95%CI: 1.37–6.71) were all positively associated with high acceptance. However, knowledge about renal failure complications (H21: OR=0.32, 95%CI: 0.15–0.67) showed a negative association.

Discussion

This brief report identifies age, education, and specific knowledge domains as significant correlates of disease acceptance among hypertensive adults in Aceh Province. The findings suggest that sociodemographic factors, particularly age and education, may play an important role in disease acceptance. Older adults may have greater experience adapting to chronic illness, while higher educational attainment may facilitate understanding and management of the condition.

Knowledge emerged as a key modifiable factor. Understanding medication dosing, daily medication requirements, healthy cooking methods, and alcohol-related risks all predicted higher acceptance. This aligns with evidence that patient education improves chronic disease management (Kilic et al., 2016; Rajkumar & Romate, 2020; Lugo-Mata et al., 2017). Notably, knowledge about renal failure complications was paradoxically associated with lower acceptance, possibly reflecting fears about medication side effects, a common barrier to adherence (Mukete & Ferdinand, 2016; Burnier & Egan, 2019). This suggests that knowledge is generally beneficial, but specific misconceptions or fears may undermine its positive effects.

The negative correlation between some lifestyle-related knowledge and acceptance suggests that knowledge alone is insufficient; health messages must be delivered in ways that promote acceptance rather than resistance. This may be particularly relevant in Aceh, where cultural and spiritual factors influence health behaviors (Anwar et al., 2020). Thus, culturally tailored health communication that addresses both knowledge gaps and emotional barriers is essential for improving disease acceptance in this population.

Implications and limitations

Educational interventions targeting younger adults and those with lower education may improve disease acceptance. Health promotion should emphasize complication prevention while addressing potential medication fears through patient-centered communication. This study is cross-sectional and cannot establish causality. The use of self-reported data may introduce recall bias. The sample was limited to Aceh Province, restricting generalizability. As this is a secondary analysis of existing data, unmeasured confounding may influence results.

Conclusion

Age, education, and specific knowledge about hypertension were significantly associated with disease acceptance. Knowledge about medication, healthy lifestyle practices, and complications predicted higher acceptance, while knowledge about renal failure showed negative correlation. Tailored educational interventions addressing both knowledge and emotional barriers may improve acceptance and, consequently, blood pressure control among hypertensive adults in Aceh.

Statements

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Data Availability: Data are available from the corresponding author upon reasonable request.

Conflict of Interest: The authors declare no conflicts of interest.

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