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An Overview of Hypertension Incidence Among: A Retrospective study

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ABSTRACT

Background: Hypertension remains a significant public health issue, contributing to elevated rates of morbidity, disability, and mortality. Often termed the "silent killer," this condition frequently goes undetected until complications develop. The present study aims to describe the prevalence and profile of hypertension among outpatients at Syekh Yusuf Gowa Regional General Hospital in 2025. A descriptive, quantitative design with a retrospective approach was used to analyze medical records of all outpatients diagnosed with hypertension from January to December 2025. Total sampling yielded 54 respondents. Data were analyzed univariately and presented as frequency distributions and percentages. Stage 1 hypertension was the most prevalent classification, affecting 28 respondents (51.9%), followed by stage 2 hypertension (19 respondents, 35.2%) and hypertensive crisis (7 respondents, 12.9%). Diabetes mellitus was the most common comorbid condition, present in 14 respondents (25.9%). These findings suggest that hypertension among outpatients at Syekh Yusuf Gowa Regional General Hospital is predominantly stage 1, with diabetes mellitus as the leading comorbidity. The results underscore the need for strengthened health education, routine blood pressure monitoring, and comprehensive risk factor management to prevent disease progression and complications. The study concludes that hypertension prevalence is highest among the pre-elderly age group, women, and those with stage 1 hypertension. Enhanced education, routine screening, and risk factor management are recommended to mitigate further complications.

INTRODUCTION

Hypertension remains a significant public health challenge in many countries, including Indonesia. It is defined by persistently elevated systolic blood pressure of at least 140 mmHg and/or diastolic blood pressure of at least 90 mmHg. Frequently termed a "silent killer," hypertension often presents without specific symptoms until severe organ complications develop. Consequently, hypertension is among the leading causes of morbidity and mortality worldwide (1,2).

According to the World Health Organization, the global prevalence of hypertension continues to increase, driven by factors such as population aging, lifestyle changes, urbanization, high-sodium diets, insufficient physical activity, obesity, smoking, and psychosocial stress (3). When undetected or inadequately managed, hypertension can result in complications including stroke, coronary heart disease, heart failure, chronic kidney disease, retinopathy, and peripheral vascular disease. As a result, hypertension not only affects individual health but also increases healthcare costs and reduces societal productivity (4).

In Indonesia, hypertension is a prevalent noncommunicable disease observed in both primary care settings and hospitals. The persistently high prevalence underscores the need to enhance prevention and control strategies (5). Furthermore, a substantial proportion of patients remain unaware of their hypertensive status, do not routinely monitor blood pressure, or fail to adhere to prescribed treatment regimens. Consequently, many individuals seek medical attention only after experiencing significant elevations in blood pressure or developing complications (6). Hospitals are integral to hypertension management, particularly through outpatient services. These units facilitate regular check-ups, treatment evaluations, counseling, and routine blood pressure monitoring (7). Data from outpatient visits by hypertensive patients offer valuable insights into patient demographics, at-risk age groups, gender distribution, hypertension severity, and comorbidities. Such information is critical for designing promotive, preventive, curative, and rehabilitative health programs (8).(8)

Syekh Yusuf Gowa Regional General Hospital serves as a referral center in Gowa Regency for various chronic conditions, including hypertension (9). The substantial number of hypertension cases underscores the necessity for a scientific evaluation to characterize the patient population seeking care at this facility (10). However, systematically organized data on the prevalence of hypertension among outpatients at this hospital remain limited

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(11,12). Therefore, a study examining the general profile of hypertension among outpatients at Syekh Yusuf Gowa Regional General Hospital in 2025 is warranted. The findings are expected to provide scientific evidence for hypertension management, inform health service evaluations, and support the development of targeted interventions to mitigate the impact of hypertension in the community.

METHODS

This study employed a descriptive,, quantitative design using a retrospective approach, reviewing medical records. The study was conducted at Syekh Yusuf Gowa Regional General Hospital from January to December 2025. The study population consisted of all outpatients diagnosed with hypertension during the study period. Total sampling was used, and all patients who met the inclusion criteria were included, yielding 54 respondents. Inclusion criteria were outpatients with a primary diagnosis of hypertension and complete medical records, while exclusion criteria included incomplete or illegible patient data. The variables examined included age, gender, education, occupation, hypertension classification, and comorbidities. Data were analyzed using univariate analysis with frequency distributions and percentages, and the results were presented in narrative tables. This study received ethical approval from the Health Research Ethics Committee of Syekh Yusuf Gowa Regional General Hospital (Ethical Clearance No: 0489/C/DT.06.01/2026). Patient confidentiality and anonymity were maintained throughout the study by using coded data and restricting access to research documents only to the research team.

RESULT AND DISCUSSION

RESULT

Characteristics of respondents

Table 1: Characteristics of Respondent

Age Group	n	%
26–35 Age	6	11,1
36–45 Age	12	22,2
46–55 Age	18	33,3
56–65 Age	13	24,1
>65 tahun	5	9,3
Total	54	100
Male	23	42,6
Female	31	57,4
Total	54	100
Elementary School	10	18,5
Junior high school	12	22,2
Senior High School	19	35,2
diploma/bachelor's degree	13	24,1
Total	54	100
Housewife	17	31,5
farmer	9	16,7
self-employed	11	20,4
government employees	6	11,1
Unemployed/Retired	11	20,4
Total	54	100

The results of the study showed that the largest age group was 46–55 years with 18 respondents (33.3%), followed by the 56–65 age group with 13 respondents (24.1%), 36–45 years with 12 respondents (22.2%), 26–35 years with 6 respondents (11.1%), and over 65 years with 5 respondents (9.3%). These findings indicate that the incidence of hypertension is more dominant in the late adult to pre-elderly age group.

Based on the research results, the majority of hypertension patients were female (31 respondents, 57.4%), while 23 were male (42.6%). This data shows that more female patients were recorded as undergoing outpatient services than male patients. The results showed that the majority of respondents had a final education level of high school (19 respondents (35.2%), followed by Diploma/Bachelor's degree (13 respondents (24.1%), junior high school (12 respondents (22.2%), and elementary school (10 respondents (18.5%). Based on the research results, the most common occupations were housewives (17 respondents, 31.5%), followed by self-employed and

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unemployed/retired (11 respondents each, 20.4%), farmers (9 respondents, 16.7%), and civil servants (6 respondents, 11.1%).

Table 2. Distribution Based on Hypertension Classification

Classification	n	%
Grade 1 Hypertension	28	51,9
Grade 2 Hypertension	19	35,2
Hypertensive Crisis	7	12,9
Total	54	100

The results of the study showed that most of the patients were in the grade 1 hypertension category, as many as 28 respondents (51.9%), followed by grade 2 hypertension as many as 19 respondents (35.2%), and hypertensive crisis as many as 7 respondents (12.9%).

Table 3. Distribution Based on Comorbidities

Comorbidities	n	%
Diabetes mellitus	14	25,9
Dyslipidemia	11	20,4
Kidney Disease	6	11,1
There isn't any	23	42,6
Total	54	100

Based on the research results, the most common comorbidities were diabetes mellitus with 14 respondents (25.9%), dyslipidemia with 11 respondents (20.4%), kidney disease with 6 respondents (11.1%), while 23 respondents (42.6%) did not have any comorbidities.

DISCUSSION

Distribution of Respondents by Age

Physiologically, aging is associated with changes in the structure and function of the cardiovascular system. Arterial blood vessels experience decreased elasticity, blood vessel walls become stiffer, and peripheral resistance increases. These conditions tend to increase blood pressure with age. Furthermore, degenerative processes in the hormonal system and kidney function also contribute to increased blood pressure in older adults.

The dominance of the 46–55 age group indicates that hypertension not only occurs in the elderly but is also widely found in productive age groups. This can be influenced by modern lifestyles such as high-sodium diets, lack of physical activity, smoking, obesity, lack of rest, and high levels of work and social stress. (13) If these conditions are not addressed early, the risk of complications in old age will increase. The results of this study align with various epidemiological studies that indicate that the prevalence of hypertension increases significantly after the age of 40. Therefore, routine blood pressure screening should begin in adulthood to optimize early detection and management of hypertension. (14)

Distribution of Respondents by Gender

Biologically, gender differences can influence the incidence of hypertension. In women of reproductive age, the hormone estrogen has a protective effect on blood vessels. However, during perimenopause and menopause, estrogen levels decline, thus diminishing protection for the cardiovascular system. This decrease in hormones can lead to increased blood pressure, metabolic disorders, and an increased risk of heart and blood vessel disease. (15,16)

In addition to hormonal factors, women are generally more concerned about their health and more actively utilize healthcare facilities than men. This often results in higher outpatient clinic visits for women. Conversely, some men tend to seek treatment when symptoms are already bothersome or complications have occurred. (17) However, hypertension can affect both men and women. Behavioral factors such as excessive salt consumption, smoking, obesity, lack of physical activity, and stress remain dominant factors affecting both groups. Therefore, hypertension education and prevention programs need to be targeted to the entire community, regardless of gender. (18,19)

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Distribution of Respondents Based on Education

Education level is a social determinant of health that can influence a person's knowledge, attitudes, and behaviors regarding health maintenance. (20) Individuals with higher education generally have better access to information about healthy lifestyles, the importance of regular health checkups, and adherence to treatment. However, higher education does not completely protect against hypertension, as this disease is multifactorial.(21)

The predominance of respondents with a high school education indicates that hypertension is common among those with secondary education. This may be due to high exposure to risk factors such as work pressure, unhealthy diets, low physical activity, and a lack of awareness of regular checkups. (22) In low-education groups, the risk of hypertension may also increase due to limited access to health information and a low ability to understand therapy. Therefore, hypertension education strategies need to be tailored to the community's educational background to ensure effective health messages are received. (23)

Distribution of Respondents Based on Occupation

Occupation is closely associated with activity patterns, stress levels, income, and lifestyle. Among housewives, the risk of hypertension may be influenced by the persistent demands of domestic work, insufficient exercise, family-related stress, and inadequate dietary control (24). Although household tasks involve physical activity, they may not meet the recommended standards for maintaining cardiovascular health (25).Among self-employed and employed individuals, economic pressures, occupational demands, extended working hours, and psychological stress may contribute to elevated blood pressure. In contrast, among retired or unemployed individuals, hypertension is frequently associated with advancing age, reduced physical activity, and comorbid degenerative diseases (26). These findings indicate that hypertension affects all occupational groups. Consequently, preventive interventions should be tailored to the specific characteristics of each group, including promoting regular exercise, stress management, and healthy dietary practices (27).

Distribution Based on Hypertension Classification

The predominance of grade 1 hypertension suggests that the majority of patients access healthcare services during the initial stages of elevated blood pressure. This trend provides an opportunity for early intervention through lifestyle modification, health education, and, when appropriate, pharmacological therapy. Consistent management may reduce the risk of progression to more advanced stages (28,29).

The relatively high proportion of grade 2 hypertension indicates that some patients may experience delayed diagnosis, suboptimal medication adherence, or inadequate risk factor management (30). Grade 2 hypertension is associated with a higher risk of complications compared to grade 1 and necessitates more intensive monitoring. The 12.9% incidence of hypertensive crises warrants significant attention, as this medical emergency can result in target organ damage, including stroke, acute heart failure, and acute kidney failure. Enhancing public awareness regarding the importance of regular blood pressure monitoring is essential to prevent severe cases (31).

Distribution Based on Comorbidities

Diabetes mellitus, as the most common comorbidity, demonstrates a close relationship between metabolic disorders and hypertension. Insulin resistance, chronic inflammation, impaired endothelial function, and increased blood vessel stiffness in people with diabetes can exacerbate elevated blood pressure. (32) The combination of these two conditions significantly increases the risk of coronary heart disease, stroke, and kidney failure. Dyslipidemia is also an important comorbidity because high cholesterol and triglyceride levels can accelerate the process of atherosclerosis. Narrowing of blood vessels due to atherosclerosis increases vascular resistance, making blood pressure more difficult to control. (33)

Meanwhile, kidney disease has a bidirectional relationship with hypertension. Uncontrolled hypertension can damage the kidneys, and conversely, kidney damage can worsen blood pressure through disruption of fluid balance and the renin-angiotensin system.(34) These findings emphasize that hypertension management requires more than just lowering blood pressure; it must also address the management of comorbidities. A comprehensive approach through regular checkups, dietary adjustments, drug therapy, and lifestyle changes is crucial to prevent long-term complications. (35)

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CONCLUSION

The incidence of hypertension in outpatients at Syekh Yusuf Gowa Regional Hospital in 2025 was dominated by the 46–55 age group, females, high school graduates, and housewives. The most common hypertension classification was grade 1 hypertension, while the most common comorbidity was diabetes mellitus. The results of this study can serve as a basis for planning promotive and preventive programs and for improving the quality of services for hypertension patients in hospital facilities.

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CONFLICT OF INTEREST

The authors declare that there are no conflicts of interest related to this study.

AUTHOR'S CONTRIBUTION STATEMENT

The authors declare that there are no conflicts of interest related to this study. Specifically, the authors have no financial, personal, or professional relationships with any organizations or entities that could have influenced, or be perceived to influence, the objectivity, integrity, or outcomes of this research. This declaration ensures the transparency and credibility of the study.

DECLARATION OF GENERATIVE AI AND AI-ASSISTED TECHNOLOGIES IN THE WRITING PROCESS

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