



Prevalence of Hypertension Among Young Adult Patients at Klinik Soedirman Purwokerto

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ARTICLE INFO

Article history:

Received February 2, 2025

Revised February 12, 2025

Accepted February 16, 2025

Available online February 17, 2025

Kata Kunci:

Hipertensi, Dewasa Muda, Faktor Risiko, Gaya Hidup Sehat

Keywords:

hypertension, prevalence, hypertension in young adults, young adults



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ABSTRACT

Hypertension is a growing public health problem, particularly among young adults. This study aims to determine the prevalence of hypertension among young adult patients at Klinik Soedirman Purwokerto. The study uses a quantitative descriptive design with a sample of all patients aged 18-24 years who accessed healthcare services at the clinic from March to September 2024. The results show that the majority of patients were female (72.51%), with the most frequent age group being 20 years (29.75%). Recorded diagnoses of hypertension included both essential and secondary hypertension, with one case of both types found in a 20-year-old female patient. Risk factors contributing to hypertension in young adults include unhealthy lifestyle factors such as high salt diet, lack of physical activity, alcohol consumption, and smoking habits. These findings indicate the need for more effective preventive programs among young adults, such as promoting healthy lifestyles and routine blood pressure screening. This study can serve as a basis for designing hypertension prevention measures among students, particularly at Jenderal Soedirman University.

ABSTRAK

Hipertensi merupakan masalah kesehatan masyarakat yang semakin meningkat, terutama di kalangan dewasa muda. Penelitian ini bertujuan untuk mengetahui prevalensi hipertensi di kalangan pasien dewasa muda di Klinik Soedirman Purwokerto. Penelitian ini menggunakan desain deskriptif kuantitatif dengan sampel semua pasien usia 18-24 tahun yang mengakses layanan kesehatan di klinik tersebut dari bulan Maret hingga September 2024. Hasil penelitian menunjukkan bahwa mayoritas pasien adalah perempuan (72,51%), dengan kelompok usia yang paling sering ditemukan adalah 20 tahun (29,75%). Diagnosis hipertensi yang tercatat mencakup hipertensi esensial dan sekunder, dengan satu kasus dari kedua jenis ditemukan pada pasien perempuan berusia 20 tahun. Faktor risiko yang berkontribusi terhadap hipertensi pada dewasa muda meliputi faktor gaya hidup yang tidak sehat seperti diet tinggi garam, kurangnya aktivitas fisik, konsumsi alkohol, dan kebiasaan merokok. Temuan ini menunjukkan perlunya program pencegahan yang lebih efektif di kalangan dewasa muda, seperti mempromosikan gaya hidup sehat dan pemeriksaan tekanan darah rutin. Penelitian ini dapat menjadi dasar untuk merancang langkah-langkah pencegahan hipertensi di kalangan mahasiswa, khususnya di Universitas Jenderal Soedirman.

1. INTRODUCTION

Hypertension, or high blood pressure, is a prevalent public health issue that requires attention, with a concerning trend of increasing prevalence among young adults (Sindwani et al.,

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2023). According to the World Health Organization, hypertension is responsible for approximately nine million deaths annually, making it one of the most significant risk factors for morbidity and mortality worldwide (Kitt et al., 2019). Overall, the prevalence of hypertension has been observed to increase with age, typically being higher in urban areas compared to rural ones due to differences in lifestyle factors. However, a concerning trend has emerged, with more than 2.1 million people under the age of 45 in the UK alone suffering from high blood pressure in 2015 (Kitt et al., 2019).

This is of particular concern, as hypertension in young adults and students can have serious long-term consequences. Endothelial dysfunction caused by renal vasoconstriction, increased uric acid levels, and heightened sympathetic nervous system activity can further activate the renin-angiotensin-aldosterone system, not only in the kidneys but also in other areas (Nemecz et al., 2016). This can lead to organ damage, including heart hypertrophy and heart disease, which remain major risk factors for disease and death worldwide, despite the availability of antihypertensive medications (Nemecz et al., 2016; Mohammed et al., 2022).

The young adult group (ages 18-24) is suspected to be affected by lifestyle changes, such as a high-salt diet, lack of physical activity, alcohol consumption, and smoking habits. Additionally, genetic factors play an important role in determining an individual's susceptibility to hypertension. Previous studies show that individuals with a family history of hypertension are at higher risk of experiencing similar conditions compared to the general population (Apriyanto, Sulistyowati, and Utami, 2021; Syarli and Arini, 2021). Modern lifestyles marked by increased consumption of fast food, sedentary behavior, and excessive stress exposure are major risk factors for hypertension at a young age. For instance, research by Shaumi and Achmad (2019) indicates that sedentary lifestyles and high-sodium diets increase the risk of hypertension among young adults. Meanwhile, genetic contributions to hypertension are estimated to range from 30-50%, depending on the population and individual genetic background (Sheikh et al., 2017; Apriyanto, Sulistyowati, and Utami, 2021; Syarli and Arini, 2021; Shaumi and Achmad, 2019; Sinaga et al., 2020; Rasdiyanah, 2021).

Several previous studies have conducted research on the incidence of hypertension in young adults, such as research at the Faculty of Medicine, Riau University, which found a prevalence of prehypertension of 23.6% and hypertension of 9.8% in medical students (Zahra & Siregar, 2023). Another study at a health center in Jambi City identified risk factors for the incidence of hypertension in young adults, such as family history, body mass index, and stress level, finding that genetic factors, body mass index, and stress level were significantly associated with hypertension, while gender and smoking habits were not significantly associated with the prevalence of hypertension in young adults in Jambi (Kendariah and Fairuz, 2023).

Although several studies have examined the prevalence and risk factors of hypertension in young adults, there are still some research gaps that make this study important. Most previous studies focused on the prevalence of hypertension in the general population or older age groups. A study conducted at the Faculty of Medicine, Riau University found a prevalence of prehypertension of 23.6% and hypertension of 9.8% in medical students (Zahra & Siregar, 2023). Another study in Jambi City identified risk factors for hypertension such as family history, body mass index, and stress levels (Kendariah & Fairuz, 2023). However, studies specifically exploring young adults visits to primary healthcare facilities are limited.

In addition, most of the previous studies only addressed hypertension risk factors but did not explore patients' awareness in accessing health services. This study identifies the visiting patterns of young adult patients to Soedirman Purwokerto Clinic, which may provide insights into how this age group is aware of and responds to their health condition. The findings also highlight the limitations in the diagnosis of hypertension in first-level health facilities, which has rarely been addressed in previous studies. One of the patients in this study had a diagnosis of secondary hypertension (I15.8) at the first visit and essential hypertension (I10) after further examination at the referral facility. This suggests possible limitations in the initial screening of

hypertension in primary care, which may affect the quality of diagnosis and treatment of patients.

This study contributes to filling the research gap by providing epidemiologic data on the prevalence of hypertension in young adult patients in primary healthcare facilities, as well as identifying patient visit patterns by age and gender. In addition, this study also highlights potential limitations in the diagnosis of hypertension in primary healthcare that may help in improving standards of examination and referral. With these findings, this study can serve as a reference for the development of more effective health programs to reduce hypertension rates in young adults in Indonesia, including through health education and routine blood pressure screening for university students.

2. METHOD

This study used a quantitative descriptive design to describe the prevalence of hypertension among young adult patients at Klinik Soedirman Purwokerto. The clinic is a healthcare facility under the management of Jenderal Soedirman University, located in the Unsoed Kalibakal campus area. The population in this study included all patients aged 18-24 years who accessed healthcare services at the clinic from March to September 2024. Inclusion criteria included patients aged 18-24 years with complete medical records at the clinic, while exclusion criteria involved patients with incomplete medical records. The sampling technique used was total sampling, where all medical records of eligible patients were analyzed.

Data sources included electronic medical records (EMR) at Klinik Soedirman Purwokerto. The variables extracted from the medical records included age, sex, primary diagnosis, and the type of service accessed. Data were collected using Microsoft Excel, and primary diagnosis variables were categorized using ICD-10 (International Classification of Diseases, 10th Revision) to facilitate analysis.

The research procedure began with preparation, including obtaining research permission from the clinic management and related institutions, and developing a checklist instrument for recording data from medical records. During the data collection phase, the researcher accessed electronic medical records to record data for eligible patients and entered them into the checklist. The data were then coded using ICD-10, and the hypertension diagnosis information was grouped according to the hypertension coding.

3. RESULT AND DISCUSSION

Result

This study involved a total of 4871 young adult patients who accessed services at the Jenderal Soedirman Primary Clinic from March to September 2024. Based on sex distribution, the majority of patients were female, totaling 3532 patients (72.51%), and male patients numbered 1339 (27.49%) [Table 1](#).

[Table 1. Distribution of young adult patients by gender at Klinik Soedirman Purwokerto, from March to September 2024](#)

Gender Distribution		Percentage
Male	1339	27.49%
Female	3532	72.51%
Total patients	4871	100%

Age distribution shows that the 20-year-old group had the highest number of visits, with 1449 patients (29.75%). Other age groups included 19 years with 1277 patients (26.22%), 21 years with 748 patients (15.36%), 18 years with 536 patients (11.00%), 22 years with 455 patients (9.34%), and 24 years with 118 patients (2.42%) [Table 2](#).

Table 2. Distribution of patients by age at Klinik Soedirman Purwokerto, from March to September 2024

Age	Number	Percentage
18	536	11.00%
19	1277	26.22%
20	1449	29.75%
21	748	15.36%
22	455	9.34%
23	288	5.91%
24	118	2.42%

Based on the main diagnosis recorded using ICD-10 coding, hypertension diagnoses among patients included I15.8 (secondary hypertension) and I10 (essential hypertension), both found in a 20-year-old female patient. Patient visit history shows two clinic visits. On March 23, 2024, the patient was diagnosed with secondary hypertension (I15.8), and on September 3, 2024, the patient was diagnosed with essential hypertension (I10) Table 3. And in Table 4 the percentage of hypertension cases from the total visits of young adult patients from March to September 2024 is explained.

Table 3. Distribution of young adult patients with hypertension diagnoses at Klinik Soedirman Purwokerto, from March to September 2024.

Gender	Date of Birth	Age	Medical Record Date	Discharge Status	ICD 10
Female	2004-07-10	20	2024-03-23 09:41	Referred Vertically	I15.8-Other secondary hypertension
Female	2004-07-10	20	2024-09-03 10:54	Outpatient	I10-Essential (primary) hypertension

Table 4. Prevalence of Hypertension Among Young Adults at Klinik Jenderal Soedirman Purwokerto, from March to September 2024.

Diagnosis	Number of cases	Total population	Prevalence (%)
Secondary hypertension	1	4871	0.02053
Essential Hypertension	1	4871	0.02053

The patient's discharge status shows that during the first visit, they were referred to a higher-level healthcare facility, and later continued outpatient treatment at the clinic.

These results provide an overview of patient visits among young adults, particularly those diagnosed with hypertension, at Klinik Soedirman Purwokerto, offering initial insight into hypertension prevalence in this population and the need for preventive measures in the future.

Discussion

The study results indicate that the majority of young adult patients accessing services at Soedirman Clinic Purwokerto are female (72.51%), with the 20-year-old age group being the most dominant (29.75%), followed by the 19-year-old group (26.22%) and the 21-year-old group (15.36%). This finding is consistent with the 2018 Riskesdas report, which stated that

hypertension prevalence in Indonesia tends to increase in younger age groups (Apriyanto, Sulistyowati, and Utami, 2021). Previous studies also indicate that major risk factors for hypertension in young adults include high salt diet, lack of physical activity, smoking habits, and stress (Jingga, 2021).

This aligns with a study stating that male and female preferences in choosing healthcare facilities are influenced by personality factors, supporting factors, and patient needs. Males tend to ignore mild illnesses and feel they do not have time to visit healthcare facilities (Ramli, 2022). Another study conducted between 2019 and 2020 also recorded that visits to general and dental healthcare services were dominated by female patients. This may be due to the fact that women are physiologically more susceptible to diseases compared to men. Additionally, internal factors within healthcare services, such as service quality, facilities, and infrastructure, could also be considerations for individuals returning for treatment (Ulya, Wibowo, & Husniyawati, 2022).

The 20-22 age group dominates the use of telemedicine services, indicating that individuals at this age are more health-conscious and willing to seek consultation and treatment. This study found that 95.24% of respondents had a positive perception of telemedicine (Banowati, 2023). Physiologically, during young adulthood or late adolescence, cognitive function develops rapidly, including improvements in abstract thinking, more complex problem-solving, and more mature decision-making. According to Jean Piaget's cognitive development theory, individuals at this stage enter the formal operational phase, where they can think abstractly and logically (Lubis et al., 2024). However, it is important to note that cognitive development can vary between individuals, influenced by factors such as environment, education, and life experiences. Thus, although there is a general trend in cognitive development at this age, each individual may exhibit different levels of progress.

The diagnosis of hypertension in patients in this study includes secondary hypertension (115.8) and essential hypertension (110). Upon further examination, both diagnoses were found in the same individuals. Secondary hypertension was diagnosed when the patient first visited at Klinik Jenderal Soedirman. The patient was then referred to a higher-level facility for further examination and received a diagnosis of essential hypertension from the referral hospital. This may have occurred because primary healthcare facilities do not always conduct comprehensive examinations. Essential hypertension is the most common form of hypertension, occurring without a specific identifiable cause but influenced by genetic and lifestyle factors (Weber et al., 2022). In contrast, secondary hypertension results from underlying medical conditions. Common causes include kidney diseases such as chronic kidney disease or renal artery stenosis, which lead to sodium and water retention and increased renin release, all contributing to elevated blood pressure. Endocrine disorders such as hyperaldosteronism or Cushing's syndrome cause excessive hormone production, raising blood pressure. Certain medications, including oral contraceptives and corticosteroids, can also lead to increased blood pressure as a side effect (Carretero & Oparil, 2020; Kementerian Kesehatan Republik Indonesia, 2019).

A systematic review analyzing 20 research articles concluded that seven risk factors are associated with the prevalence of hypertension in adolescents, namely lifestyle, smoking habits, dietary patterns, physical activity levels, nutritional status, obesity, and education level. Among these factors, lifestyle has the most significant impact on hypertension, as adolescent habits continuously evolve over time, often shifting towards unhealthy behaviors. A lifestyle characterized by convenience should ideally be balanced with healthy habits, such as consuming adequate nutritious food and engaging in physical activities that promote overall health. Additionally, unhealthy habits among adolescents can be managed by increasing their awareness and understanding of the importance of maintaining health, ultimately helping to reduce the prevalence of hypertension in this age group (Surya et al., 2022).

This further reinforces the idea that hypertension can result from various mechanisms, including endocrine system disorders or unknown primary causes. Managing these patients highlights the necessity of long-term management to prevent severe complications such as heart

disease and stroke (Dewiyanti et al., 2022). Overall, this data provides valuable insights into the prevalence of symptomatic hypertension among young adults, particularly in higher education settings such as Jenderal Soedirman University. Therefore, more effective promotional and preventive programs are needed, such as health education, promoting a healthy diet, increasing physical activity, and conducting routine blood pressure screenings. Further research is recommended to identify the relationship between lifestyle, genetic factors, and the prevalence of hypertension in this age group to develop more targeted and evidence-based prevention strategies.

4. CONCLUSION

Based on the research on the prevalence of hypertension in young adult patients at Klinik Pratama Soedirman, it can be concluded that hypertension is becoming an increasingly significant health issue among the younger age group, especially among university students. The study shows that the majority of patients are female, with the 20-year-old age group being the most frequent users of healthcare services. Two types of hypertension were identified: essential and secondary hypertension. However, it is likely that the diagnosis of secondary hypertension was made after the patient underwent further examination during referral to a hospital, making essential hypertension the most probable diagnosis.

These findings highlight the need for more effective health promotion programs targeted at young adults. Implementing lifestyle interventions, such as promoting a balanced diet, increasing physical activity, and discouraging smoking and alcohol consumption, could help reduce the prevalence of hypertension in this age group. Routine blood pressure monitoring should also be encouraged, particularly among university students, as early detection and intervention can prevent long-term complications.

This study has several limitations. First, the research was conducted in a single healthcare facility, which may not represent the broader population of young adults. Second, the study relied on medical records, which may lack detailed lifestyle and behavioral data that could provide further insights into hypertension risk factors. Lastly, the cross-sectional nature of the study prevents the establishment of causality between risk factors and hypertension incidence.

Further research is recommended to explore the long-term impact of hypertension on young adults, including its progression and associated complications. Future studies should also incorporate a larger and more diverse sample to improve generalizability. Additionally, qualitative research could be conducted to better understand the lifestyle and behavioral factors contributing to hypertension in young adults. Examining genetic predisposition and conducting interventional studies on health education and lifestyle modifications would also be valuable in designing more effective hypertension prevention strategies.

By addressing these aspects, future research can contribute to more comprehensive and evidence-based approaches in managing and preventing hypertension among young adults.

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