



Impact of Social Determinant Factors on Hypertension: Retrospective Analysis

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Abstract

The global incidence of hypertension is rising, contributing to the risk of cardiovascular diseases and deaths from various causes. This report highlights the urgent need to address hypertension and its complications, which impact over one billion people worldwide. The study aimed to investigate how social determinants influence the prevalence of hypertension. To prepare this article, a literature review and research study were conducted to collect and analyze data using narrative techniques. The focus was on English-language publications, specifically targeting research papers and reviews accessed through search engines like Google Scholar, BMC, PubMed, ScienceDirect, Emerald Insight, and DOAJ. The study found that individuals with lower socioeconomic status are at a greater risk of developing hypertension. This is largely due to limited access to nutritious food and healthcare services, as well as financial stress. Conversely, those with higher socioeconomic status typically have a lower risk of hypertension, but this risk tends to increase with age, particularly among women. Education significantly impacts health literacy, and older adults with lower levels of education are more vulnerable to hypertension. Online group education programs have the potential to enhance self-care practices among these individuals. Additionally, neighborhood deprivation is a contributing factor to hypertension, highlighting the crucial role socioeconomic factors play in both hypertension and cardiovascular disease. To address this issue, public health strategies should prioritize individual and social interventions, improve neighborhood conditions, ensure access to healthy foods, and enhance housing quality. Expanding primary healthcare services is also vital for better chronic disease management among older adults.

Keywords— Socioeconomic, Education, Environment and Neighborhood, Healthcare access, Hypertension

INTRODUCTION

The World Health Organization (WHO) has published the Global Report on Hypertension, highlighting the growing burden of hypertension worldwide and its association with cardiovascular disease and overall mortality. The report emphasizes the urgent need to address hypertension and its complications, which affect more than one billion people worldwide. Hypertension continues to be a significant public health problem, as it is associated with cardiovascular disease, stroke, and premature death. According to the report, only 54% of adults with hypertension have been diagnosed, 42% are receiving treatment, and only 21% have their hypertension effectively managed (Kario et al., 2024). Hypertension is a significant risk factor for disability and death due to cardiovascular disease, impacting a large segment of the global population. This issue is especially severe in low- and middle-income countries like China, Brazil, India, and Mexico, where the combined economic burden of cardiovascular disease (CVD) and hypertension represents 50% of the total estimated economic costs. (Q. Zhang et al., 2021)

The prevalence of hypertension increased with age, and blood pressure was higher in females than in males (3.0% and 2.9%). According to data from the Ministry of Health of Timor-Leste (2022), the mortality rate due to hypertension reached 156, or about 2.21% of the

total mortality. The mortality rate based on the age category amounted to 24.12% of the population of Timor-Leste. Thus, Timor-Leste accounts for 60 deaths due to hypertension. The total number of people affected by hypertension diseases in 2022 was 4,447, according to the annual report (Tilman, 2025b). Awareness of associated risk factors and screening campaigns within schools is necessary to reduce complications in adulthood (Lawretta et al., n.d.). Research conducted both nationally and regionally across the United States has shown that higher levels of education, health insurance coverage, income, and positive neighborhood characteristics are linked to lower rates of hypertension and better management of the condition among adults. These findings highlight the importance of addressing social determinants of health, such as education, access to healthcare, economic stability, neighborhood environments, and social contexts, which are essential for reducing disparities in hypertension.(Thomas Hinneh, Chitchanok Benjasirisan, Abeer Alharthi, Oluwabunmi Ogungbe, Ruth Alma N. Turkson-Ocran, Chery R. Himmelfarb, 2024).

Some studies found that 19.06% of the population had hypertension, with 2.46% experiencing resistant hypertension, which accounts for 20.85% of those with hypertension. Uncontrolled blood pressure was prevalent in 30.20% of patients, primarily females who were using fewer medications. (Romano et al., 2023). Patients with rheumatoid arthritis (RA) have a higher prevalence of comorbidities compared to those without RA. The findings suggest that many patients with hypertension, especially those without additional health issues or those taking fewer antihypertensive medications, find it challenging to achieve adequate blood pressure control. To improve clinical management, collaboration between general practitioners and hypertension specialists is essential.

Hypertension management has improved thanks to lifestyle changes and the use of multiple medications, which have contributed to a decrease in stroke mortality. However, challenges persist, including the white-coat phenomenon, poor patient adherence, and inadequate use of polytherapy. Technological barriers include the need for precise blood pressure monitoring, while clinical issues such as treatment inertia and public health concerns like obesity remain significant. Although technological advancements such as Ambulatory Blood Pressure Monitoring (ABPM) and Self-Monitoring Blood Pressure (SMBP) offer potential improvements in blood pressure control, existing clinical and public health challenges continue to hinder progress (Banegas et al., 2024)

The World Health Organization recognizes five key factors influencing medication adherence: patient-related factors, socioeconomic influences, health system influences, therapy-related factors, and condition-related factors (Guo et al., 2023). In Timor-Leste, a previous study identified various factors contributing to hypertension, including age, genetics, tobacco and alcohol use, caffeine consumption, excessive salt intake, cholesterol levels, and a lack of physical activity. (Tilman, 2025a). A recent study suggested that healthcare personnel undergo training and that investments be made in data infrastructure to enhance health outcomes and public health strategies (Pereira et al., 2025). It is essential to address these gaps, as improving the health conditions of the population depends on understanding local contextual factors and promoting community engagement.

The healthcare system is encountering significant challenges in managing maternal hypertension. These challenges include insufficient logistics, a lack of medications and laboratory support, delays in care, and limited health insurance coverage. Additionally, there are issues related to healthcare providers, such as an inadequate number of professionals and negative attitudes among some staff members. To tackle these challenges, it is advisable to restructure the health system, enhance medical insurance coverage, promote social support, improve education on hypertensive disorders in pregnancy (HDP), and strengthen the workforce by increasing the number of healthcare professionals and improving their working conditions (Adu-Bonsaffoh et al., 2022).

Hypertension is a major risk factor for cardiovascular disease and mortality, particularly in low-income countries. Its prevalence increases with age. The issue of hypertension often arises because many individuals neglect their health. Contributing factors include a diet high in

fatty foods, a lack of exercise, smoking, excessive alcohol consumption, and infrequent visits to healthcare facilities for hypertension checks. To address this, it is essential to promote education and health awareness within the community to encourage behavioral changes that can prevent hypertension. Additionally, we need to strengthen the healthcare system's focus on controlling non-communicable diseases, as these conditions are increasingly common and pose significant challenges. This study aims to analyze the impact of social determinants on the prevention of hypertension.

RESEARCH METHODS

Study Desing

This study employed a systematic review design with a narrative synthesis approach to analyze the impact of social determinants of health on hypertension in Timor-Leste. It exclusively utilized secondary data from published research articles dated between 2019 and 2025, adhering to the Preferred Reporting Items for Systematic Reviews. The review process involved systematic stages, including identification, screening, eligibility assessment, and final inclusion of studies. The literature review was comprehensive, drawing from a variety of sources, including novels, scientific journals, and academic papers, and was critically assessed based on defined criteria that focused on English-language publications, including both research papers and review articles. The study incorporated research publications sourced from prominent search engines like Google Scholar, BMC, PubMed, ScienceDirect, Emerald Insight, and DOAJ.

Population and Sample

The population for this review consisted of published studies investigating individuals or communities affected by Hypertension within the context of social determinants of health in Timor-Leste. Articles were retrieved from PubMed, BMC, DOAJ, and Google Scholar using predefined search terms. A total of 14 articles were initially identified. Based screening procedures—including title and abstract screening, full-text assessment, and application of inclusion and exclusion criteria—eight studies met the eligibility requirements and were included in the final synthesis.

Instruments

The review utilized several methodological instruments to guide data collection and appraisal:

Electronic Databases: PubMed, BMC, DOAJ, and Google Scholar served as primary sources for literature retrieval.

1. Critical Appraisal Tools: Such as the STROBE checklist for observational studies and the CASP or JBI appraisal tools, applied to assess methodological quality and risk of bias.
2. Search Strings: Structured keyword combinations including “Hypertension,” “Housing and Environment,” “Access to Health Care Facilities,” “Impact of Socioeconomic Status on Hypertension,” and “Hypertension Prevalence.”

Inclusion and Exclusion Criteria

The inclusion and exclusion criteria were developed using the PICOS framework, as follows:

- a. Population: The target population was identified based on the focus of the systematic review, specifically individuals and communities affected by hypertension in Timor-Leste.
- b. Intervention: Interventions included actions or strategies implemented to manage individual or community cases, as well as descriptions of management approaches relevant to the topic of the systematic review. This review did not utilize the intervention.
- c. Comparison: The comparison consisted of alternative interventions or management strategies. If a control group was not available, other relevant comparators used in the selected studies were considered. This review did not utilize the comparison.

- d. Outcome: Outcomes referred to the results reported in the included studies that aligned with the theme of the systematic review, particularly hypertension prevalence and associated social determinants of health.
- e. Study Design: Eligible study designs were those that provided empirical data relevant to the review objective, including observational or interventional research articles.

Statistical Analysis

The synthesized results were derived from both qualitative and quantitative data reported in the included studies. A meta-analysis was not performed due to the variation in study designs, populations, and measurement techniques among the publications. Instead, a narrative synthesis approach was utilized to:

1. Group results by themes
2. Examine and contrast the relationships between hypertension and social variables
3. Identify recurring trends and contextual factors influencing the burden of hypertension in Timor-Leste.

Both qualitative and quantitative data from the included research contributed to the synthesized findings.

Ethics Statement

This review uses secondary data from publicly accessible published works. Since no human subjects or personally identifiable information were involved, ethical approval was not required. Each piece of information was used intelligently and in accordance with standards for academic integrity.

RESULTS AND DISCUSSION

Table 1. Literature Review

Authors and Years	Title	Methods	Results
(Pinto, Dos Santos, et al., 2022)	Analysis of Factors Influencing the Incidence of Hypertension in Patients of Hospitalized Patients in Hospital Nacional Guido Valadares (HNGV), Timor Leste	Quantitative analytics with a cross-sectional approach	Research on HNGV's internal customers indicates that smoking, alcohol consumption, and stress significantly increase the incidence of hypertension, with significance test values of 0.041, 0.022, and 0.041, respectively, all below the 0.05 threshold.
(Berek et al., 2022)	Individual Characteristics, Adherence, and Barriers to Medication Adherence of Hypertensive Patients at the Indonesia - Timor Leste Border	a cross-sectional study	The study found that relationship between education and occupation with adherence and barriers to medication adherence, but there is no relationship when viewed from such individual characteristics as age, gender, and marital status.
(Cresswell et al., 2025)	Community-Based Cross-Sectional Study of Hypertension and Diabetes Mellitus in Adults in A Rural Suco of Atauro, Timor-Leste	quantitative-descriptive approach	The study indicates a significant burden of undiagnosed and uncontrolled hypertension in rural areas of Timor-Leste. Enhanced screening for hypertension, targeted health promotion, and strengthening of primary healthcare services are necessary to improve the diagnosis and management of NCDs in rural communities.
(Pinto, Belo, et al., 2022a)	The factors influencing to incidence of hypertension in Baucau Municipality, República Democrática de Timor Leste	quantitative and qualitative methods	Based on the results of data analysis, stress factors, salt, and alcohol consumption have an effect on the incidence of hypertension in the people of Baucau city, Timor Leste.
(Tilman et al., 2025)	Affected Role Knowledge: The Use of Captopril in the Treatment of Hypertension	quantitative descriptive method	The research examined patients' knowledge of captopril usage for hypertension at the Maubara Health Center. Findings revealed that 79% of

	Disease in Age 30-60 Years at the Maubara Health Center, in the Municipality of Liquica, Timor-Leste [2025]		patients had sufficient knowledge, while only 8% had low knowledge. Among those who understood the drug's use, 47% were categorized as having sufficient knowledge, whereas 13% fell into the low knowledge category.
(Pires et al., 2022)	Relations Between Stress Level with Recurrence of Hypertension Disease in Patients Aged 40-60 Years old in Community Health Center Level II Municipality Lospalos, Timor Leste	quantitative method	The analysis of Chi-Square revealed a significant value of 0.016 (less than 0.05), indicating an unacceptable null hypothesis (H_0). Additionally, the Linear-by-Linear Association statistic was 0.399, suggesting a weak relationship between stress levels and the recurrence of hypertension in patients aged 40-60 years. Overall, there is a relationship identified between stress levels and hypertension recurrence in this demographic.
(Li et al., 2024)	Association between socioeconomic status and hypertension among adults in Fujian province and the mediating effect of BMI and cooking salt intake: a cross-sectional study	A cross-sectional study	The previous study socio-economic status was associated with the prevalence of hypertension among adults in Fujian province, China. BMI and cooking salt intake were partial mediators of the association between socio-economic status and hypertension
(Luo et al., 2024)	Relationship between socioeconomic status and hypertension incidence among adults in southwest China: a population-based cohort study	a population-based cohort study	The findings indicate a negative correlation between socioeconomic status and hypertension incidence among adults in southwest China, suggesting that individuals with higher socioeconomic status are less likely to develop hypertension.
(Zacher, 2023)	Educational Disparities in Hypertension Prevalence and Blood Pressure Percentiles in the Health and Retirement Study	Analysis of Secondary Data	A previous study shows that less-educated older adults are not only more likely to have hypertension and uncontrolled BP than those with more schooling, but they also have higher systolic BP across nearly the entire BP distribution. Educational disparities in systolic blood pressure (BP) increase in magnitude across BP percentiles and are largest at the highest levels of BP. This pattern is observed for those with and without diagnosed hypertension, is robust to early-life confounders, and is only partially explained by socioeconomic and health-related circumstances in adulthood.
(Upoyo et al., 2024)	The Effect of Online Group Education on Promoting Knowledge, Motivation, Self-Efficacy, Self-Care Behaviors, and Preventing Uncontrolled Blood Pressure in Hypertensive Patients: A Quasi-Experiment Study	A Quasi-Experiment Study	Online group education significantly increases self-care behavior in hypertensive patients, as evidenced by a significant increase in the intervention group. This increase can be attributed to increased knowledge, self-efficacy, and motivation, resulting in a reduction in blood pressure and a boost in self-care behavior.
(Maluwa et al., 2025)	Impact of health education on knowledge retention among caregivers of hypertensive patients: A prospective cross-sectional study in rural Malawi	A prospective cross-sectional study in rural Malawi	The previous study found that positive and good knowledge retention among caregivers of hypertensive patients occurred after health education at the sixth week mark. With improved knowledge and the ability to retain it, resulting in enhanced attitudes and practices, caregivers are a cornerstone for continued and improved hypertension care for patients.

(Satapathy et al., 2024)	Association of neighborhood deprivation and hypertension: A systematic review and meta-analysis	A systematic review and meta-analysis	The significant association between neighborhood poverty and hypertension underscores the importance of socioeconomic determinants in reducing hypertension and cardiovascular disease. Public health strategies that focus on individual-level interventions and broader societal factors are important. Health policies aimed at improving environmental conditions, such as increasing access to healthy foods, reducing environmental pollutants, and improving housing quality, may be effective in reducing the risk of hypertension.
(Lunyera et al., 2023)	Association of Perceived Neighborhood Health With Hypertension Self-care	A cross-sectional study	Exposure to pollution and noise pollution can also increase stress and blood pressure. The study found that better neighborhood health and in-home food availability are linked to increased hypertension self-care behavior and self-efficacy among Black individuals with hypertension in socially disadvantaged settings. To improve hypertension self-management, multifaceted interventions targeting contextual barriers and healthy food resources are needed.
(Wang et al., 2024)	The impact of hypertension follow-up management on the choices of signing up for family doctor contract services: does socioeconomic status matter	Analysis of Secondary Data	Primary health care should increase the participation rate of family doctors by strengthening the follow-up management of chronic diseases. Family doctors should focus on improving the quality of services and enriching the content of service packages, especially for older people with higher incomes and education levels.

Hypertension

Hypertension, adopting the standards of the International Hypertension League, was defined as a blood pressure of $\geq 140/90$ mmHg, a history of hypertension, or using antihypertensive drugs during the previous 2 weeks (M. Zhang et al., 2025). Hypertension can lead to problems such as atherosclerosis, heart attack, stroke, heart enlargement, and kidney damage. Adults with undiagnosed hypertension may face an increased risk of morbidity and mortality. Because hypertension is a chronic disease that can cause death if left untreated, early detection and knowledge of risk factors for hypertension in adults are important. The goal of hypertension treatment is to reduce risk factors for hypertension (Debora et al., 2023). Stress can promote hypertension by repeatedly raising blood pressure and stimulating the neurological system to create huge amounts of vasoconstricting hormones, both of which raise blood pressure. White coat hypertension, work strain, race, social context, and mental discomfort are all stress-related factors that impact blood pressure. When one risk factor is combined with additional stress-producing variables, the impact on blood pressure is doubled (Pinto, Belo, et al., 2022b). Non-genetic factors are also numerous and are related to lifestyle (nutrition, physical activity, alcohol and tobacco consumption, among others) or the presence of conditions associated with chronic inflammatory conditions, such as obesity and insulin resistance. With these factors, blood pressure increases more rapidly with age, eventually leading to blood pressure levels that indicate the presence of disease (Mill, 2019).

The study found that Hypertension, defined as blood pressure $\geq 140/90$ mmHg, a history of hypertension, or use of antihypertensive drugs within two weeks, can lead to complications like atherosclerosis, heart attack, stroke, heart enlargement, and kidney damage. Undiagnosed hypertension increases the risk of morbidity and mortality. Early detection and understanding of

risk factors are crucial for hypertension treatment. Stress, lifestyle, and chronic inflammatory conditions can also contribute to hypertension, with increased blood pressure levels indicating disease. Based on the found that stress factors, salt, and alcohol consumption have an effect on the incidence of hypertension in the people of Baucau city, Timor Leste (Pinto, Belo, et al., 2022a).

Socioeconomic Status

Lower socioeconomic status is associated with higher hypertension risk. Financial constraints can limit access to healthy foods, safe environments for physical activity, and healthcare services. Chronic stress from economic hardship also contributes to elevated blood pressure. The previous study found that socioeconomic status was associated with the prevalence of hypertension among adults in Fujian province, China. BMI and cooking salt intake were partial mediators of the association between socio-economic status and hypertension (Li et al., 2024). Another study found that the association of socio-economic status and self-reported hypertension was mediated by psychological distress, and sex moderated the mediation effect. (L. Zhang et al., 2024). The study indicates a negative correlation between socioeconomic status and hypertension incidence among adults in southwest China, suggesting that individuals with higher socioeconomic status are less likely to develop hypertension. (Luo et al., 2024).

The study found that lower socioeconomic status is linked to higher hypertension risk, with financial constraints limiting access to healthy foods and healthcare services. Chronic stress from economic hardship contributes to elevated blood pressure. Studies show a negative correlation between socioeconomic status and hypertension incidence, suggesting that higher socioeconomic status may reduce hypertension risk.

Education

The study found that relationship between education and occupation with adherence and barriers to medication adherence, but there is no relationship when viewed from such individual characteristics as age, gender, and marital status (Berek et al., 2022). The prevalence of hypertension increased with age, and blood pressure was higher in females than in males (3.0% and 2.9%). Awareness of associated risk factors and screening campaigns within schools is necessary to reduce complications in adulthood. Education influences health literacy, awareness of hypertension risks, and adoption of preventive behaviors. Individuals with higher levels of education are more likely to engage in regular exercise, maintain healthy diets, and practice routine blood pressure monitoring. A previous study shows that less-educated older adults are not only more likely to have hypertension and uncontrolled BP than those with more schooling, but they also have higher systolic BP across nearly the entire BP distribution. Educational disparities in systolic blood pressure (BP) increase in magnitude across BP percentiles and are largest at the highest levels of BP. This pattern is observed for those with and without diagnosed hypertension, is robust to early-life confounders, and is only partially explained by socioeconomic and health-related circumstances in adulthood (Zacher, 2023).

Online group education significantly increases self-care behavior in hypertensive patients, as evidenced by a significant increase in the intervention group. This increase can be attributed to increased knowledge, self-efficacy, and motivation, resulting in a reduction in blood pressure and a boost in self-care behavior. (Upoyo et al., 2024). The previous study found that positive and good knowledge retention among caregivers of hypertensive patients occurred after health education at the sixth week mark. With improved knowledge and the ability to retain it, resulting in enhanced attitudes and practices, caregivers are a cornerstone for continued and improved hypertension care for patients. (Maluwa et al., 2025). The other research examined patients' knowledge of captopril usage for hypertension at the Maubara Health Center. Findings revealed that 79% of patients had sufficient knowledge, while only 8% had low knowledge. Among those who understood the drug's use, 47% were categorized as having sufficient knowledge, whereas 13% fell into the low knowledge category. (Tilman et al., 2025).

The study discovered that hypertension prevalence rises with age, with greater blood pressure in women. Education has an impact on health literacy, understanding of hypertension risks, and preventative actions. Less-educated older persons are more likely to develop hypertension and uncontrolled blood pressure, and educational gaps in systolic blood pressure rise over BP percentiles. Online group education dramatically improves hypertension patients' self-care behavior, lowering blood pressure and enhancing self-care. Awareness of risk factors and screening initiatives is critical for reducing problems in adulthood.

Environment and Neighborhood

Neighborhood deprivation refers to a state of relative disadvantage in terms of income, employment, education, and living conditions in a geographic area. This study suggests significant implications for health policy and public health interventions. The significant association between neighborhood poverty and hypertension underscores the importance of socioeconomic determinants in reducing hypertension and cardiovascular disease. Public health strategies that focus on individual-level interventions and broader societal factors are important. Health policies aimed at improving environmental conditions, such as increasing access to healthy foods, reducing environmental pollutants, and improving housing quality, may be effective in reducing the risk of hypertension. (Satapathy et al., 2024)

Living in disadvantaged neighborhoods with limited access to parks, recreational facilities, and fresh food markets creates barriers to hypertension prevention. Exposure to pollution and noise pollution can also increase stress and blood pressure. The study found that among Black individuals with hypertension living in disadvantaged communities, better neighborhood health and access to food at home are linked to increased self-care behaviors and self-efficacy regarding hypertension management. To improve hypertension self-management, it is essential to implement multifaceted interventions that address contextual challenges and provide access to healthy food resources (Lunyera et al., 2023). The review discusses the influence of multiple factors on hypertension, such as the physical and built environments, stressors, green spaces, and food systems. It advocates for public health strategies to redesign these environments to improve hypertension control rates globally. Future research should incorporate environmental risk assessments and policy interventions in urban planning and clinical practices. Healthcare providers are encouraged to personalize treatments by integrating lifestyle changes with medications, acknowledging the complex interplay of environmental and genetic factors in managing hypertension (Rajagopalan et al., 2025)

The study found that neighborhood deprivation, a disadvantage in income, employment, education, and living conditions, is linked to hypertension. Socioeconomic determinants play a crucial role in reducing hypertension and cardiovascular disease. Public health strategies should focus on individual-level interventions and societal factors. Improving environmental conditions, such as access to healthy foods and housing quality, may reduce hypertension risk. Addressing contextual barriers and healthy food resources can improve hypertension self-management. Future research should integrate environmental risk assessments into clinical practice and urban planning to achieve significant reductions.

Healthcare Access

The study indicates a significant burden of undiagnosed and uncontrolled hypertension in rural areas of Timor-Leste. Enhanced screening for hypertension, targeted health promotion, and strengthening of primary healthcare services are necessary to improve the diagnosis and management of NCDs in rural communities. (Cresswell et al., 2025).

Access to healthcare facilities is essential for maintaining a healthy status. Based on previous studies, the health status and behavior of the studied population related to high blood pressure were assessed. As many as 87.3% had never checked their blood pressure, with a higher proportion among men (91.5%). Self-reported hypertension was 2.8% in both sexes, with 47.7% taking prescribed medication. The proportion of those suffering from hypertension was

higher in the 45-69 age group (53.9%), men (47.8%), and women (60.5%) (Marcos Carvalho, Levi Anatolia S.M. Exposto, 2024)

Early detection, counseling, and adherence to treatment are all hindered by limited access to high-quality, affordable healthcare. Key social determinants include having insurance and being located near medical facilities. By improving follow-up care for chronic illnesses, primary healthcare can enhance the involvement of family physicians. Specifically, for elderly patients who have more resources and higher levels of education, family physicians should focus on improving the quality of care and enhancing the substance of the services they offer (Wang et al., 2024).

The study indicates that patients' access to timely and appropriate care plays a significant role in shaping their understanding of the healthcare environment and their overall experience. Policymakers should prioritize improving patients' knowledge about how to utilize primary care services and navigate referrals within health institutions. This effort should be backed by investments in resources and training. (Carvalho et al., 2025). A good hospital plays a crucial role in the patient's healing process and enhances the productivity of its staff. Medical services can be performed effectively and efficiently while maintaining a high standard of cleanliness. A building that is beautiful, functional, efficient, and clean creates a positive impression on all hospital users, leading to beneficial physical responses and psychological effects. (Exposto et al., 2023)

The study found that access to healthcare facilities is crucial for managing health, especially among individuals with hypertension. However, limited access to affordable and high-quality healthcare hampers early detection, counseling, and treatment adherence. To address these issues, primary healthcare services should increase the involvement of family doctors, enhance follow-up care for chronic illnesses, and improve the overall quality of services, particularly for the elderly.

CONCLUSIONS

According to the study, individuals with lower socioeconomic status are at a higher risk of developing hypertension, as financial constraints limit their access to healthy foods and medical care. High blood pressure can also result from the ongoing stress caused by economic difficulties. Conversely, those with a higher socioeconomic position may have a reduced risk of hypertension. Additionally, women generally experience higher blood pressure levels, and the prevalence of hypertension increases with age. Education has a significant impact on preventive measures and health literacy. Older adults with lower educational attainment tend to have more uncontrolled blood pressure and higher rates of hypertension. Online group instruction could be an effective way to enhance self-care practices. Furthermore, hypertension is associated with impoverished neighborhoods. Reducing the rates of cardiovascular disease and hypertension largely depends on addressing socioeconomic factors. Public health programs should prioritize individual-level interventions alongside social determinants of health. Communities can decrease the risk of hypertension by improving conditions, such as housing quality and access to nutritious foods. Primary healthcare services should focus on increasing the involvement of family doctors, enhancing follow-up care for chronic illnesses, and improving the overall quality of care, especially for the elderly. The study recommends that the government prioritize non-communicable disease (NCD) programs and strengthen health systems accordingly.

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