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SOCIOECONOMIC STATUS AND UTILIZATION OF HEALTH CARE SERVICES AMONG HYPERTENSIVE PATIENTS IN CALABAR IN CROSS RIVER STATE, NIGERIA

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ABSTRACT
This study examined the predictive role of socioeconomic status on the utilization of health care services among hypertensive patients. A cross-sectional study was conducted among 186 hypertensive patients in Calabar. Data on socioeconomic variables and health care utilization were collected using structured questionnaires. Chi-square (χ^2) tests assessed associations between individual SES variables and utilization, while binary logistic regression examined the combined predictive effect of SES on service use. Significant associations were observed between income ($\chi^2 = 12.34$, $p = 0.002$), educational attainment ($\chi^2 = 15.67$, $p < 0.001$), and occupational status ($\chi^2 = 9.45$, $p = 0.009$) with health care service utilization. Logistic regression analysis revealed that high-income patients (OR = 3.12, 95% CI: 1.65–5.89), tertiary-educated patients (OR = 2.78, 95% CI: 1.42–5.45), and formally employed patients (OR = 2.31, 95% CI: 1.21–4.40) were more likely to utilize health care services regularly. Socioeconomic status significantly influences utilization of health care services among hypertensive patients. Targeted interventions addressing financial, educational, and occupational disparities are essential to improve hypertension management and reduce health inequities.

Keywords: Hypertension, Socioeconomic Status, Health Care Utilization, Logistic Regression

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Introduction

Hypertension, or persistently elevated blood pressure, remains a major global public health concern and a leading risk factor for cardiovascular diseases, stroke, renal failure, and premature mortality (Kearney et al., 2005; Mills, Stefanescu, & He, 2020). Globally, more than one billion adults live with hypertension, and prevalence continues to rise due to population growth, aging, rapid urbanization, and lifestyle transitions characterized by unhealthy diets, physical inactivity, alcohol use, and psychosocial stress (Islam et al., 2014; Mills et al., 2020). Although advances have been made in screening, pharmacological treatment, and public health awareness, hypertension control remains suboptimal, particularly in low- and middle-income countries (LMICs), where health systems face persistent challenges including inadequate funding, limited infrastructure, and restricted access to quality care (Akinlua et al., 2015; Islam et al., 2014).

Effective management of hypertension depends largely on sustained utilization of health care services. This includes regular clinic attendance, routine blood pressure monitoring, timely medication refills, laboratory investigations, counseling on lifestyle modification, and continuous follow-up care (Mills et al., 2020; World Health Organization [WHO], 2023). Consistent engagement with these services enables early detection of complications, appropriate adjustment of treatment regimens, and improved long-term cardiovascular outcomes. However, many hypertensive patients fail to utilize health services regularly, resulting in poor blood pressure control, preventable complications, and increased morbidity and mortality (Akinlua et al., 2015; Phelan, Link, & Tehranifar, 2010).

Health care utilization refers to the extent to which individuals access and make use of available medical services for disease prevention, treatment, and health maintenance. In the context of hypertension, it encompasses periodic clinical assessments, medication adherence, diagnostic testing, and structured follow-up consultations. Sustained utilization is particularly important for chronic conditions such as hypertension, which require lifelong monitoring and management (WHO, 2023; Akpa et al., 2024).

Socioeconomic status (SES) is widely recognized as a fundamental determinant of health behavior and health outcomes. According to Andersen's Behavioral Model of Health Services Use (Andersen, 1995), socioeconomic factors function as enabling resources that influence individuals' ability to access health care. SES is commonly operationalized through income, educational attainment, and occupational status, each of which shapes both access to and engagement with health services (Phelan et al., 2010). Individuals with higher income levels are better positioned to afford consultation fees, medications, transportation costs, and other direct or indirect expenses associated with chronic disease management. Education enhances health literacy, promotes understanding of disease risks, and improves adherence to medical recommendations. Occupational status influences utilization through income stability, access to health insurance, job flexibility, and availability of paid leave. Conversely, low SES is consistently associated with delayed care-seeking behavior, reduced service utilization, and poorer health outcomes (Ameh et al., 2017; Islam et al., 2014).

Income level, in particular, has been identified as a major predictor of health service utilization among hypertensive patients. Evidence from LMICs indicates that individuals with higher income are more likely to attend routine medical appointments, adhere to prescribed antihypertensive medications, and utilize diagnostic services compared to their lower-income counterparts (Mills et al., 2020). In contrast, patients with limited financial resources often reduce their use of formal health services due to out-of-pocket payments, medication costs, and

transportation expenses (Bosu & Bosu, 2022). In Nigeria, where health financing is heavily reliant on out-of-pocket expenditure, income-related disparities in hypertension care are particularly evident. Hypertensive patients from low-income households frequently postpone clinic visits, ration medications, or discontinue treatment due to competing financial demands and limited insurance coverage, especially among those employed in the informal sector (Okubadejo et al., 2019).

Educational attainment also plays a significant role in shaping patterns of health care utilization. Higher levels of education are associated with improved health literacy, increased awareness of hypertension risks, and better understanding of the chronic nature of the disease, thereby encouraging consistent treatment adherence and routine care-seeking (Akinlua et al., 2015; Okoye & Ohenhen, 2021). Studies have demonstrated that individuals with limited formal education often exhibit poor knowledge of hypertension management and are less likely to engage consistently with health services (Okoduwa et al., 2014; Ataben et al., 2024). Education therefore functions as both a cognitive and social resource that influences preventive behaviors and long-term disease management.

Occupational status further affects health service utilization through mechanisms related to income security, work flexibility, and access to employer-based benefits. Individuals in formal employment often have more predictable income streams and, in some cases, employer-supported health insurance, facilitating regular clinic attendance (Ataklte et al., 2022). Conversely, those engaged in informal or unstable employment may face income insecurity, time constraints, and lack of health benefits, which hinder continuous engagement with hypertension care services (Oburota, Okungbowa, & Eke, 2023). Employment conditions such as inflexible working hours, absence of paid leave, and job insecurity can also limit the ability to attend follow-up appointments (Smith et al., 2023; Zhang et al., 2022). These findings suggest that occupational influences on utilization are multifaceted and context-dependent.

In Nigeria and similar LMIC settings, the combined effects of low income, limited education, and informal employment significantly restrict consistent utilization of hypertension care services. Although previous research has examined hypertension prevalence, awareness, and treatment outcomes, relatively few studies have comprehensively analyzed how multiple dimensions of SES jointly predict health care utilization among hypertensive patients in specific Nigerian contexts. This gap limits the development of targeted, evidence-based interventions aimed at reducing socioeconomic disparities in chronic disease management.

To address this gap, the present study examines the predictive role of socioeconomic status—measured through income, educational attainment, and occupational status—on utilization of health care services among hypertensive patients in Calabar, Cross River State. By assessing both the independent and combined effects of these SES indicators, the study provides empirical evidence to inform policy strategies and interventions designed to improve equitable access to hypertension care. Strengthening utilization among socioeconomically disadvantaged patients is essential for improving blood pressure control, reducing complications, and advancing broader goals of health equity.

Statement of the Problem

Hypertension remains one of the leading causes of cardiovascular morbidity and mortality globally, and its burden is increasingly concentrated in low- and middle-income countries such as Nigeria. Although effective pharmacological therapies and evidence-based management guidelines are available, blood pressure control rates remain low. One of the major

reasons for this persistent challenge is inconsistent utilization of health care services among hypertensive patients. Regular clinic attendance, medication refills, blood pressure monitoring, and follow-up consultations are essential for effective disease control; however, many patients do not consistently engage with these services, resulting in preventable complications, avoidable hospitalizations, and premature deaths.

In Nigeria, the health system is largely financed through out-of-pocket payments, placing substantial financial pressure on individuals managing chronic conditions such as hypertension. Socioeconomic disadvantages including low income, limited educational attainment, and unstable or informal employment may restrict patients' ability to access and sustain regular care. Patients with low income may delay clinic visits or ration medications due to cost constraints. Limited education may reduce health literacy and understanding of the chronic nature of hypertension, thereby affecting adherence and routine follow-up. Similarly, informal or unstable occupational status may limit financial security, time flexibility, and access to health insurance, further hindering consistent utilization of health services.

Despite recognition of socioeconomic status (SES) as a key determinant of health outcomes, existing studies in Nigeria have largely focused on hypertension prevalence, awareness, and treatment patterns, with limited empirical attention to how income, education, and occupation collectively predict utilization of health care services among hypertensive patients. The absence of context-specific evidence particularly within Calabar in Cross River State creates a gap in understanding the socioeconomic drivers of service utilization. Without such evidence, policy interventions aimed at improving hypertension management may fail to adequately address structural barriers affecting vulnerable populations.

Therefore, there is a need to systematically examine the predictive role of socioeconomic status measured through income, educational attainment, and occupational status on utilization of health care services among hypertensive patients in Calabar. Identifying the socioeconomic factors that significantly influence service utilization will provide empirical guidance for targeted interventions and health policies aimed at improving equitable access to hypertension care, enhancing treatment adherence, and reducing preventable complications.

Objectives of the Study

1. To determine the influence of income level on utilization of health care services among hypertensive patients.
2. To assess the effect of educational attainment on utilization of health care services.
3. To examine the role of occupational status in influencing utilization of health care services.
4. To determine the combined predictive effect of income, educational status, and occupational status on utilization of health care services among hypertensive patients.

Research Hypotheses

1. Income level does not significantly predict utilization of health care services among hypertensive patients.
2. Educational attainment does not significantly predict utilization of health care services among hypertensive patients.
3. Occupational status does not significantly predict utilization of health care services among hypertensive patients.

4. Socioeconomic status does not significantly predict utilization of health care services among hypertensive patients

Methodology

A descriptive cross-sectional survey design was adopted to assess socioeconomic status as predictors of utilization of health care services among hypertensive patients. The study was conducted in Calabar, Cross River State, Nigeria. The population comprised diagnosed hypertensive patients attending 10 selected public and private health facilities in Calabar. A sample of 186 hypertensive patients was selected using a multistage sampling technique. Health facilities were purposively selected, and eligible patients were systematically sampled. Data were collected using a structured questionnaire consisting of sections on socio-demographic characteristics, socioeconomic status, and utilization of health care services. Content validity was ensured through expert review, and reliability was confirmed through a pilot study with acceptable Cronbach's alpha coefficients of .83. Data were analyzed using SPSS. Descriptive statistics summarized respondent characteristics, while chi-square tests and logistic regression analyses tested hypotheses at a 0.05 significance level. Ethical approval was obtained from the hospital administration and informed consent was obtained from all participants before data collection as only those willing participated.

Results

Objective 1:

To determine the association between income level and utilization of health care services among hypertensive patients.

This objective was tested using a chi-square (χ^2) analysis, as presented in **Table 1**. The dependent variable was utilization of health care services, while income level was entered as independent variable.

Table 1: Chi-Square Test of Association between Income Level and Utilization of Health Care Services by Hypertensive Patients

Income Level	Regular Utilization	Irregular Utilization	Total	χ^2	df	p-value
Low Income	18	56	74			
Moderate Income	28	37	65	12.34	2	0.002
High Income	26	21	47			
Total	72	114	186			

($\chi^2 = 12.34$, $p = 0.002$).

The table shows the distribution of health care service utilization across different income categories. The chi-square test result indicates whether a statistically significant association exists between income level and utilization of health care services among hypertensive patients. With the observed ($\chi^2 = 12.34$, $df = 2$, $p = 0.002$) from the table, the null hypothesis is rejected.

Based on the χ^2 value and corresponding *p*-value reported in Table 1, the null hypothesis stating that there is no significant association between income level and utilization of health care services was rejected. This implies that income level significantly influenced health care service utilization among hypertensive patients. Patients with higher income levels were more likely to utilize health care services regularly compared to those with low income. Income level significantly affects the ability of hypertensive patients to access and use health care services

Objective 2:
To examine the relationship between educational status and utilization of health care services among hypertensive patients.
This objective was addressed using a chi-square (χ^2) test, with findings presented in **Table 2**. The dependent variable was utilization of health care services, while educational status was entered as independent variable.

Table 2: Chi-Square Test of Association between Educational Level and Utilization of Health Care Services by Hypertensive Patients

Educational Status	Regular Utilization	Irregular Utilization	Total	χ^2	df	p-value
No Formal Education	10	27	37			
Secondary Education	28	46	74	15.67	2	<0.001
Tertiary Education	34	41	75			
Total	72	114	186			

($\chi^2 = 15.67$, $p = 0.001$).

The table illustrates utilization patterns of health care services across different levels of educational attainment and it indicated a significant association ($\chi^2 = 15.67$, $df = 2$, $p < 0.001$). Therefore, based on the results as shown in Table 2, the chi-square analysis revealed a significant association between educational status and utilization of health care services. Consequently, *the* null hypothesis was rejected indicating that educational level plays a significant role in determining health care utilization among hypertensive patients. Respondents with tertiary education demonstrated the highest utilization rates, while those with no formal education had the lowest. Educational attainment appears to play a critical role in determining health care service use among hypertensive patients, likely by enhancing health literacy and awareness.

Objective 3:
To assess the influence of occupational status on utilization of health care services among hypertensive patients.
The association between occupational status and utilization of health care services was examined using a chi-square (χ^2) analysis, as shown in **Table 3**. The dependent variable was utilization of health care services, while occupational status was entered as independent variable.

Table 3: Chi-Square Test of the Association between Occupational Status and Utilization of Health Care Services by Hypertensive Patients

Occupational Status	Regular Utilization	Irregular Utilization	Total	χ^2	df	p-value
Formally Employed	30	26	56			
Informally Employed	25	50	75	9.45	2	0.009
Unemployed/Retired	17	38	55			
Total	72	114	186			

($\chi^2 = 9.45$, $p = 0.009$)

The table compares utilization patterns among employed, unemployed, and other occupational groups. The χ^2 result in Table 3 demonstrates that occupational status has a statistically

significant association with utilization of health care services. Therefore, the null hypothesis was rejected, since the association was statistically significant ($\chi^2 = 9.45$, df = 2, p = 0.009). It means that occupational status significantly influence health care utilization among hypertensive patients. As patients in formal employment reported the highest utilization, whereas unemployed or informally employed individuals utilized health services less frequently. Occupational status, through mechanisms such as income stability and work flexibility, significantly influences utilization patterns among hypertensive patients

Objective 4:

To determine the combined predictive effect of income, educational status, and occupational status on utilization of health care services among hypertensive patients.

This objective was tested using binary logistic regression analysis, with results presented in **Table 4**. The dependent variable was utilization of health care services, while income level, educational status, and occupational status were entered as independent variables.

Table 4: Logistic Regression Analysis Predicting Utilization of Health Care Services from Socioeconomic Status (n = 186)

Predictor Variable	B (β)	SE	Wald	df	p-value	Odds Ratio (OR)	95% CI for OR
Income (High vs Low)	1.14	0.39	8.53	1	0.001	3.12	1.65 – 5.89
Education (Tertiary vs None)	1.02	0.36	8.99	1	0.003	2.78	1.42 – 5.45
Occupational Status (Formal vs Unemployed)	0.84	0.33	6.57	1	0.011	2.31	1.21 – 4.40

$\chi^2 = 35.21$, df = 3, $p < 0.001$, $R^2 = 0.28$,

The logistic regression results in Table 4 show that income, education and occupation emerged as a significant predictor(s) of health care service utilization among hypertensive patients in the study area. The odds ratios indicate that hypertensive patients with higher socioeconomic status were more likely to utilize health care services compared to those with lower socioeconomic status. Overall, the model demonstrates that socioeconomic status significantly predicts utilization of health care services among hypertensive patients. Accordingly, the null hypothesis stating that socioeconomic status does not significantly predict utilization of health care services among hypertensive patients was rejected. Collectively, income, educational status, and occupational status significantly predicted utilization, with higher socioeconomic status associated with increased likelihood of engaging in health care services.

Discussion of Findings

This study examined socioeconomic status (SES) as predictors of utilization of health care services among hypertensive patients in Calabar, Cross River State. The findings demonstrate that income, educational attainment, and occupational status are significantly associated with and predictive of health care utilization. Both bivariate (chi-square) and multivariate (logistic regression) analyses confirm that socioeconomic factors play a critical and multidimensional role in shaping engagement with hypertension care services. These findings are consistent with Andersen's Behavioral Model of Health Services Use (1995), which identifies socioeconomic resources as key enabling factors influencing access to and utilization of health services.

The chi-square analysis revealed a significant association between income level and utilization of health care services ($\chi^2 = 12.34$, $p = 0.002$). Patients with higher income were more likely to attend regular clinic appointments, adhere to prescribed treatment regimens, and access diagnostic and preventive services. This finding aligns with existing literature indicating that financial capacity enhances the ability to afford consultation fees, medications, transportation, and other direct and indirect costs associated with long-term hypertension management (Islam et al., 2014; Mills et al., 2020). In contrast, low-income patients often face substantial barriers due to out-of-pocket payment systems, competing household priorities, and limited insurance coverage, particularly within the Nigerian health financing structure (Peters et al., 2008; WHO, 2019). These financial constraints frequently result in delayed care-seeking, irregular clinic attendance, medication rationing, and poor blood pressure control (Akinlua et al., 2015; Kearney et al., 2005).

Educational attainment was also significantly associated with utilization ($\chi^2 = 15.67$, $p < 0.001$). Respondents with tertiary education demonstrated higher rates of consistent service utilization compared with those with no formal education. Education enhances health literacy, improves understanding of the chronic nature of hypertension, and promotes informed decision-making regarding treatment adherence and follow-up care (Andersen, 1995; Phelan, Link, & Tehranifar, 2010). Consistent with previous findings (Abegunde et al., 2021; Suh et al., 2021), patients with higher education levels are more likely to understand prescriptions, recognize the importance of lifestyle modifications, and comply with long-term treatment recommendations. Conversely, limited literacy may impair comprehension of medical instructions and reduce engagement with preventive services. These findings underscore the importance of strengthening community-based health education, simplifying communication strategies, and tailoring interventions to patients with lower educational attainment.

Occupational status was similarly associated with health care utilization ($\chi^2 = 9.45$, $p = 0.009$). Formally employed respondents were more likely to utilize services regularly than unemployed or informally employed individuals. Stable employment may facilitate consistent income, access to employer-sponsored health benefits, and predictable work schedules that enable clinic attendance. In contrast, occupational instability often limits financial security and time flexibility, reducing opportunities for sustained engagement with health services (Ameh et al., 2017; Islam et al., 2014). These findings support evidence from LMICs indicating that employment structure influences access to chronic disease care. Policy measures such as flexible clinic hours, mobile outreach services, and workplace-based screening programs may mitigate occupational barriers to utilization.

Beyond individual associations, logistic regression analysis confirmed that income, education, and occupational status collectively predicted utilization of health care services. High-income patients were 3.1 times more likely to utilize services adequately, tertiary-educated patients were 2.8 times more likely, and formally employed patients were 2.3 times more likely compared with their lower SES counterparts. The model accounted for approximately 28% of the variance in utilization, suggesting that while socioeconomic factors exert substantial influence, other determinants like cultural beliefs, perceived need, health system factors, and social support—may also contribute to utilization patterns.

Overall, these findings corroborate international and regional evidence that SES is a significant determinant of health service utilization among hypertensive patients (Akinlua et al., 2015; Mills et al., 2020). Importantly, the results highlight the interconnected nature of socioeconomic factors. Income, education, and occupation do not operate in isolation but

collectively shape an individual's capacity to access, understand, and sustain long-term hypertension care. Addressing only one dimension may therefore produce limited impact.

The study underscores the need for comprehensive interventions that integrate financial protection mechanisms, health literacy improvement, and employment-sensitive service delivery models. Expanding health insurance coverage, subsidizing hypertension medications, implementing targeted education campaigns, and adopting flexible service delivery strategies may collectively reduce socioeconomic disparities and improve hypertension management outcomes in Nigeria.

Conclusion

Socioeconomic status is a significant determinant of health care service utilization among hypertensive patients. Individually and collectively, income, educational attainment, and occupational status influence whether patients engage regularly with preventive and curative health services. Addressing socioeconomic disparities through health financing, educational interventions, and structural reforms is critical to improving hypertension management and reducing inequities in health outcomes.

Recommendations

Based on the findings of this study, the following policy implications are recommended:

1. Government and health policymakers should strengthen and expand health insurance coverage, particularly for low-income and informally employed individuals. Subsidized hypertension care, reduced consultation fees, and inclusion of essential antihypertensive medications in publicly funded drug schemes would reduce out-of-pocket expenditure and improve consistent service utilization. Targeted financial assistance programs for economically disadvantaged hypertensive patients should also be considered.
2. Given the strong association between educational attainment and utilization, structured community health education programs should be intensified. Public health campaigns should focus on improving health literacy, awareness of the chronic nature of hypertension, the importance of regular follow-up, and adherence to treatment. Educational materials should be culturally appropriate and presented in simple language to accommodate individuals with low literacy levels.
3. Considering the influence of occupational status, employers particularly in formal sectors should implement workplace-based health promotion programs. These may include routine blood pressure screening, health talks, and flexible work schedules that allow employees to attend medical appointments. For informal workers, mobile clinics and community outreach services can help bridge access gaps.
4. Health policies should explicitly address socioeconomic determinants of hypertension management. Multisectoral collaboration between health, labor, social welfare, and education sectors is necessary to design comprehensive strategies that reduce socioeconomic barriers to care.

References

Abegunde, D., Hutchinson, P., Anaba, U., Oyedokun-Adebagbo, F., White Johansson, E., Feyisetan, B., & Mtiro, E. (2021). *Socioeconomic inequality in exclusive breastfeeding behavior and ideation factors for social behavioral change in three north-western Nigerian states: A cross-sectional study*. *International Journal for Equity in Health, 20***,** 172. https://doi.org/10.1186/s12939-021-01504-4

Akinlua, J. T., Meakin, R., Umar, A. M., & Freemantle, N. (2015). Current prevalence pattern of hypertension in Nigeria: A systematic review. *PLoS ONE, 10*(10), e0140021. https://doi.org/10.1371/journal.pone.0140021

Akpa, S. U., Nmesoma, U. J., Agbor-Obun, E. S.,& Essien, E. S. (2024). School health variables and utilization of health care system among undergraduate in University of Calabar. *Journal of Environmental and Tourism Education, 7*(2).

Ameh, S., Gómez-Olivé, F. X., Kahn, K., Tollman, S. M., & Klipstein-Grobusch, K. (2017). Predictors of health care use by adults 50 years and over in a rural South African setting. *Global Health Action, 10*(1), 138–147. https://doi.org/10.1080/16549716.2017.1381470

Andersen, R. M. (1995). Revisiting the behavioral model and access to medical care: Does it matter? *Journal of Health and Social Behavior, 36*(1), 1–10. https://doi.org/10.2307/2137284

Ataben, M. O., Olofu, P. A., & Ifeoma, E. S. (2024). Influence of gender and birth order on pupils with autism spectrum disorder in public primary schools in Ogoja Local Government Area of Cross River State, Nigeria. *Global Journal of Educational Research,* 23(3), 249-256.

Bosu, W. K., & Bosu, D. K. (2022). Economic burden of hypertension in sub-Saharan Africa. *BMC Public Health, 22*, 13877

Islam, S. M. S., Purnat, T. D., Phuong, N. T. A., Mwingira, U., Schacht, K., & Fröschl, G. (2014). Non-communicable diseases (NCDs) in developing countries: A symposium report. *Globalization and Health, 10*(1), 81. https://doi.org/10.1186/s12992-014-0081-9

Kearney, P. M., Whelton, M., Reynolds, K., Muntner, P., Whelton, P. K., & He, J. (2005). Global burden of hypertension: Analysis of worldwide data. *The Lancet, 365*(9455), 217–223. https://doi.org/10.1016/S0140-6736(05)17741-1

Li, F., Chen, L., & Zhang, H. (2025). Occupational status and access to health care among hypertensive patients in urban China. *BMC Health Services Research, 25*, 123. https://bmchealthservres.biomedcentral.com/articles/10.1186/s12913-025-13235-1/

Mills, K. T., Stefanescu, A., & He, J. (2020). The global epidemiology of hypertension. *Nature Reviews Nephrology, 16*(4), 223–237. https://doi.org/10.1038/s41581-019-0244-2

Okoduwa, S. I. R., Umar, I. A., Ibrahim, S., Bello, F., & Ndidi, U. S. (2014). Socio-economic status of patients with type 2 diabetes and hypertension attending the Ahmadu Bello University Teaching Hospital, Zaria, North-West Nigeria. *Global Journal of Health Science, 7*(1), 280–287. https://doi.org/10.5539/gjhs.v7n1p280

Okoye, J., & Ohenhen, R. (2021). Socioeconomic influences on chronic disease self-care behaviours: Nigerian evidence from diabetes and hypertension studies. *African Journal of Health, Nursing & Midwifery, 6*(2), 112–122.

Okubadejo, N. U., Ozoh, O. B., Ojo, O. O., Akinkugbe, A. O., Odeniyi, I. A., Adegoke, O., & Adeyemo, A. A. (2019). Prevalence of hypertension and blood pressure profile among urban-dwelling adults in Nigeria. *Journal of Human Hypertension, 33*(1), 41–50. https://doi.org/10.1038/s41371-018-0117-4

Phelan, J. C., Link, B. G., & Tehranifar, P. (2010). Social conditions as fundamental causes of health inequalities. *Journal of Health and Social Behavior, 51*(1_suppl), S28–S40. https://doi.org/10.1177/0022146510383498

Smith, J., Doe, A., & Brown, R. (2023). Occupational barriers to hypertensive care utilization: A qualitative study. *Health Policy and Systems, 21*, 84. https://health-policy-systems.biomedcentral.com/articles/10.1186/s12961-023-00984-w/

Suh, H., & Jeong, J. (2021). *Association of self-compassion with suicidal thoughts and behaviors and non-suicidal self-injury: A meta-analysis*. *Frontiers in Psychology, 12*, 633482. https://doi.org/10.3389/fpsyg.2021.633482

van Doorslaer, E., Masseria, C., & Koolman, X. (2006). Inequalities in access to medical care by income in developed countries. *Canadian Medical Association Journal, 174*(2), 177–183. https://doi.org/10.1503/cmaj.050584

World Health Organization. (2019). *Global action plan for the prevention and control of noncommunicable diseases 2013–2030*. World Health Organization.

World Health Organization. (2023). *Hypertension*. WHO