Socioeconomic Status and Hypertension Control in Sub-Saharan Africa

The Multination EIGHT Study (Evaluation of Hypertension in Sub-Saharan Africa)

Marie Antignac, Ibrahima Bara Diop, Diane Macquart de Terline, Kouadio Euloge Kramoh, Dadhi M. Balde, Anastase Dzudie, Beatriz Ferreira, Martin Dèdonougbo Houenassi, Dominique Hounsou, Méo Stéphane Ikama, Adama Kane, Suzy Gisèle Kimbally-Kaki, Samuel Kingue, Charles Kouam Kouam, Emmanuel Limbole, Liliane Mfeukeu Kuate, Jean Bruno Mipinda, Roland N'Guetta, Carol Nhavoto, Zouwera Sesso, Abdallahi Sidy Ali, Ibrahim Ali Toure, Pierre François Plouin, Marie Cécile Perier, Kumar Narayanan, Jean Philippe Empana, Xavier Jouven

Abstract—Systemic hypertension is a rapidly growing epidemic in Africa. The role of socioeconomic status on blood pressure control has not been well studied in this part of the world. We, therefore, aimed to quantify the association of socioeconomic status both at the individual and at the country level with blood pressure control in Sub-Saharan Africa. We conducted a cross-sectional survey in urban clinics of 12 countries, both low income and middle income, in Sub-Saharan Africa. Standardized blood pressure measures were made among the hypertensive patients attending the clinics. Blood pressure control was defined as blood pressure <140/90 mm Hg, and hypertension grades were defined according to the European Society of Cardiology guidelines. A total of 2198 hypertensive patients (58.4±11.8 years; 39.9% men) were included. Uncontrolled hypertension was present in 1692 patients (77.4%), including 1044 (47.7%) with ≥grade 2 hypertension. The proportion of uncontrolled hypertension progressively increased with decreasing level of patient individual wealth, respectively, 72.8%, 79.3%, and 81.8% (*P* for trend, <0.01). Stratified analysis shows that these differences of uncontrolled hypertension according to individual wealth index were observed in low-income countries (*P* for trend, 0.03) and not in middle-income countries (*P* for trend, 0.26). In low-income countries, the odds of uncontrolled hypertension increased 1.37-fold (odds ratio, 1.37 [0.99–1.90]) and 1.88-fold (odds ratio, 1.88 [1.10–3.21]) in patients with middle and low individual wealth as compared with high individual wealth. Similarly, the grade of hypertension increased progressively with decreasing level of individual patient wealth (*P* for trend, <0.01). Strategies for hypertension control in Sub-Saharan Africa should especially focus on people in the lowest individual wealth groups who also reside in low-income countries. **(*Hypertension*. 2018;71:577-584. DOI: 10.1161/HYPERTENSIONAHA.117.10512.)** ● **Online Data Supplement**

Key Words: cardiology ■ developing countries ■ humans ■ hypertension ■ socioeconomic factors

During the past 4 decades, prevalence of hypertension decreased in high-income countries, such as North America and Europe, shifting these countries from the highest blood pressure strata in 1975 to the lowest by 2015.[1] By contrast, during the same period, Africa has witnessed an exponential rise in cardiovascular risk factors.[2,3] Premature cardiovascular mortality could reach 25% to 50% of all-cause mortality in these countries by 2025, if the prevalence of risk factors continues to rise,[4] with hypertension being the number 1 risk factor. In Sub-Saharan Africa, the number of adults with raised blood pressure has

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From the Department of Pharmacy, St Antoine hospital, HUEP (Hôpitaux Universitaires Est Parisien), AP-HP (Assistance Publique-Hôpitaux de Paris), France (M.A., D.M.d.T.); Paris Cardiovascular Research Centre, INSERM U970, European Georges Pompidou Hospital, France (M.A., D.M.d.T., P.F.P., M.C.P., J.P.E., X.J.); Department of Cardiology, University Hospital of Fann, Dakar, Senegal (I.B.D.); Paris Descartes University, France (D.M.d.T., P.F.P., X.J.); Institute of Cardiology of Abidjan, Ivory Coast, Abidjan, Cote d'Ivoire (K.E.K., R.N.); Department of Cardiology, University Hospital of Conakry, Guinea (D.M.B.); Cardiac Intensive Care and Cardiac Pacing Unit, Douala General Hospital, Cameroon (A.D.); Instituto do Coração, Maputo, Mozambic (B.F., C.N.); National University Hospital of Hubert K. Maga (CNHU-HKM), Cotonou, Bénin (M.D.H., D.H.); Department of Cardiology, National University Hospital of Brazzaville, Marien Ngouabi University, Congo (M.S.I., S.G.K.-K.); Department of Cardiology, University Hospital of Aristide Le Dantec, Dakar, Senegal (A.K.); University of Yaoundé, Ministry of Public Health, Cameroon (S.K., L.M.K.); Department of Internal Medicine, Régional Hospital, Bafoussam, Cameroon (C.K.K.); Department of Internal Medicine (CMCG), Ngaliema Hospital, la Gombe, Kinshasa, Democratic Republic of the Congo (E.L.); Central hospital of Yaoundé, Cameroon (L.M.K.); University Hospital of Libreville, Gabon (J.B.M.); Department of Cardiology, Lome, Togo (Z.S.); Cardiology Unit, National Hospital Center, Nouakchott, Mauritania (A.S.A.); Department of Internal Medicine and Cardiology, University Hospital of Lamorde, Niamey University, Niger (I.A.T.); Department of Cardiology, European Georges Pompidou Hospital, AP-HP, Paris, France (P.F.P., X.J.); and Maxcure Hospitals, Hyderabad, India (K.N.).

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Correspondence to Marie Antignac, Department of Pharmacy, St Antoine Hospital, HUEP, AP-HP, 184 Rue du Faubourg Saint-Antoine, 75012 Paris, France. E-mail marie.antignac@aphp.fr

alarmingly increased from 0.59 to 1.13 billion between 1975 and 2015, especially in low- and middle-income countries.[1]

Adequate control of hypertension is critical to prevent cardiovascular events. Timely diagnosis, patient awareness, and access to adequate treatment are important ingredients in achieving hypertension control in the population. In high-income countries, the association between socioeconomic disadvantage and adverse health, particularly cardiovascular health, has been known for decades.[5–8] This issue remains incompletely investigated in the developing world.

Although there are some data reporting differences in the prevalence and control of hypertension by countries' income levels,[9] there is scarce information from Sub-Saharan Africa.[10,11] Published data are derived from worldwide studies, where Sub-Saharan African countries are poorly represented[9] or estimated.[4] Conclusions of such global studies may not always be extrapolated to these Sub-Saharan African countries. Furthermore, few studies, mostly confined to single countries or centers, have reported on hypertension in relation with individual, patient-level socioeconomic status in Sub-Saharan Africa.[12–14] Finally, the association of both country-level income (across multiple countries) and individual wealth index with hypertension treatment/control has not been assessed together. It is important to identify the most vulnerable groups of patients in different countries and among different individual income strata to develop optimal strategies for hypertension control[8] and for tailoring effective healthcare planning.

The aim of this study was, therefore, to study the association of socioeconomic factors, both at the individual level and at the country level, with hypertension control in 12 Sub-Saharan African countries.

Methods

As requested by policy of American Heart Association journals, the data that support the findings of this study are available from the corresponding author on reasonable request.

Study Design

We conducted an observational and cross-sectional study during outpatient consultations specialized in hypertension in cardiology departments of 29 medical centers from 17 cities across 12 Sub-Saharan African countries between January 2014 and November 2015.

The EIGHT study (Evaluation of Hypertension in Sub-Saharan Africa) was conceived and designed by a multidisciplinary collaborative team of epidemiologists, cardiologists, and pharmacists from Africa and France. The team EIGHT had extensive prior research experience and existing collaborations with a network of physician-scientists in Africa, such as in the field of rheumatic heart disease[15] and sickle cell disease,[16] which aided planning and launch of the present study.

The study was approved by the Ile-de-France III Ethics Committee (No. 2014-A00710-47) and was declared to the National Commission of Informatics (No. 1762715). This study was exclusively supported by a public grant.

A pilot investigation involving 90 patients who tested the questionnaire was conducted in January 2014 in Côte d'Ivoire. This pilot study confirmed patient's understanding and feasibility of completion and resulted in few modifications, which were incorporated in the questionnaire given to patients in the final survey.

Patient Population and Measurements

Patient Population

Patients with hypertension diagnosis were enrolled during outpatient consultations, in the cardiology departments of the participating hospitals. Patients who were ≥18 years of age were eligible to participate. Each patient received an information leaflet about the study. Further, the on-site physician presented and explained the study in the regional language to all patients meeting eligibility criteria. Because of the observational, noninterventional nature of the study, with anonymized data, requirement for informed consent was waived, whereas patient nonopposition was documented. Those who agreed to participate completed a standard questionnaire while waiting for their appointment. The first section of the questionnaire (Figure S1 in the online-only Data Supplement; standard questionnaire designed for the EIGHT study [English, French, and Portuguese version]) was completed by patients and collected data on patient demographic factors and medication details. The second section was completed by the physician during the consultation and provided data on patient socioeconomic status, drug regimen, blood pressure values (measured in standardized conditions, see below), and cardiovascular risk factors. Participating investigators (physicians) at each center received a training note detailing the study with standardized instructions on how they should interact with the patients while filling the questionnaire in the survey.

The study was designed with 90% power to detect a 10% difference in uncontrolled hypertension between low- and middle-income countries (with a significance level of 5%). Assuming an overall prevalence of uncontrolled BP of 50%, a total of 2092 patients were required.

Blood Pressure Measurement

Sitting blood pressure was measured twice by physicians, at least 15 minutes apart; attention was paid to avoid caffeine and smoking within the 30 minutes before BP measurement.

Uncontrolled hypertension was defined by a systolic blood pressure ≥140 mm Hg and a diastolic blood pressure of ≥90 mm Hg on either of the measured BP values in the clinic.[17]

Grade 1 (systolic blood pressure, 140–159 mm Hg and diastolic blood pressure, 90–99 mm Hg), grade 2 (systolic blood pressure, 160–179 and diastolic blood pressure, 100–109) and grade 3 hypertension (systolic blood pressure, ≥180 and diastolic blood pressure, ≥110) were defined according to the European Society of Cardiology guidelines.[18]

Country-Level Income and Individual Wealth Category

The country income was obtained from the World Bank database (http://data.worldbank.org/country; accessed January 12, 2015) and categorized into low- and middle-income countries. Individual patient wealth categories were assessed by the treating physician and classified as low, middle, and high:

1. Low defined poor patients who have difficulties to afford medical consultations
2. Middle defined patients who can manage with paying medical consultations
3. High defined patients who have no difficulties to pay medical consultations.

Statistical Analysis

Continuous and categorical variables were expressed as mean (SD) and numbers (percentages) where appropriate.

The associations between country-level income and individual wealth categories with uncontrolled hypertension and hypertension grades were quantified using the following regression models.

First, the odds ratios (ORs) and 95% confidence intervals of country income level and individual wealth categories for uncontrolled hypertension were estimated in separate logistic regression, using the middle-income country-level and the high individual wealth index level as the respective reference categories. A random effect on the country was added (generalized estimated equation models) to account for intra and intercountry variability. ORs were adjusted for age and sex and subsequently for number of prescribed antihypertensive drugs. Second, we conducted a stratified analysis by country-level income whereby we assessed the ORs of individual wealth categories for uncontrolled hypertension separately in low- and in middle-income countries.

Third, we quantified the associations of country-level income and individual wealth categories with hypertension grades using separate

Table. Characteristics of Hypertensive Patients (n=2198)

Characteristics	All	Country-Level Income		Patient Wealth Index		
	Global	Low	Middle	Low	Middle	High
n	2198	1017 (46.3)	1181 (53.7)	376 (17.6)	1053 (49.2)	713 (33.3)
Socioeconomic data						
Age, y; mean (SD)	58.3 (11.8)	57.6 (11.5)	58.8 (12.0)	62.7 (12.5)	58.6 (11.9)	55.6 (10.6)
Men, n (%)	874 (39.8)	443 (43.6)	431 (36.5)	95 (25.3)	422 (40.1)	338 (47.4)
Country-level income						
Low	1017 (46.3)	…	…	143 (38.0)	428 (40.6)	423 (59.3)
Middle	1181 (53.7)	…	…	233 (62.0)	625 (59.4)	290 (40.7)
Patient wealth index, n (%)						
Low	376 (17.6)	143 (14.4)	233 (20.3)	…	…	…
Middle	1053 (49.2)	428 (43.1)	625 (54.4)	…	…	…
High	713 (33.3)	423 (42.6)	290 (25.3)	…	…	…
Life places, n (%)						
Rural	455 (21.1)	221 (22.3)	234 (20.1)	138 (37.8)	223 (22.5)	77 (11.0)
Urban	1702 (78.9)	772 (77.7)	930 (79.9)	227 (62.2)	804 (77.5)	625 (89.0)
Medical data						
Blood pressure, mean (SD)						
Systolic blood pressure	149.1 (23.6)	144.3 (21.9)	153.2 (24.3)	154.6 (25.9)	150.6 (23.4)	145.0 (21.8)
Diastolic blood pressure	88.4 (14.3)	88.5 (13.9)	88.3 (14.6)	89.6 (14.9)	88.2 (14.4)	88.1 (13.5)
Blood pressure, n (%)						
Normal	493 (22.6)	250 (24.8)	243 (20.7)	68 (18.2)	216 (20.7)	194 (27.2)
Grade 1 hypertension	648 (29.7)	293 (29.0)	355 (30.2)	91 (24.4)	321 (30.7)	222 (31.2)
Grade 2 hypertension	558 (25.5)	263 (26.0)	295 (25.1)	115 (30.8)	269 (25.7)	161 (22.6)
Grade 3 hypertension	486 (22.2)	204 (20.2)	282 (24.0)	99 (26.5)	239 (22.9)	135 (19.0)
Years since hypertension diagnosis, n (%)						
<1	335 (15.6)	156 (15.7)	179 (15.5)	60 (16.3)	159 (15.4)	112 (16.0)
>1	1816 (84.4)	837 (84.3)	979 (84.5)	307 (83.7)	872 (84.6)	586 (84.0)
No. of patients treated for hypertension, n (%)	2123 (96.6)	994 (97.7)	1129 (95.6)	361 (96.0)	1017 (96.6)	697 (97.8)
No. of antihypertensives prescribed, mean (SD)	1.94 (0.93)	1.87 (0.91)	2.00 (0.94)	1.90 (0.89)	1.95 (0.92)	1.97 (0.95)
Body mass index, mean (SD)	27.90 (5.84)	27.52 (5.56)	28.23 (6.05)	26.7 (5.8)	27.9 (5.9)	28.4 (5.7)
Cardiovascular risk factors, n (%)						
None	461 (28.0)	224 (26.9)	237 (29.2)	92 (32.7)	212 (27.6)	145 (26.3)
Sedentary lifestyle	649 (39.5)	321 (38.5)	328 (40.4)	102 (36.3)	308 (40.1)	223 (40.4)
Hypercholesterolemia	328 (19.9)	242 (29.0)	86 (10.6)	33 (11.7)	152 (19.8)	133 (24.1)
Diabetes mellitus	288 (17.5)	178 (21.3)	110 (13.6)	48 (17.1)	132 (17.2)	99 (17.9)
Hypertriglyceridemia	88 (5.3)	62 (7.4)	26 (3.2)	11 (3.9)	49 (6.4)	28 (5.1)
Tobacco use	84 (5.1)	32 (3.8)	52 (6.4)	24 (8.5)	34 (4.4)	20 (3.6)

linear regression models with a random effect on country (generalized linear mixed models). As with the above analysis, we adjusted for age and sex and then for the number of prescribed antihypertensive drugs. We also conducted the same analysis stratified by the country-level income.

A 2-tailed *P* value of <0.05 was considered significant. All analyses were performed through scripts developed in the R software (version 3.2.3 [2015-12-10]).

Results

Participants and Overall Hypertension Control

Between January 2014 and November 2015, 2198 patients with hypertension were included. Mean age of patients was 58.3±11.8 years, and 60.2% (n=1324) were women (Table).

A total of 1017 patients (46.3%) were from 6 low-income countries (Benin, Democratic Republic of the Congo, Guinea, Mozambic, Niger, and Togo), and 1181 (53.7%) were from 6 middle-income countries (Cameroon, Congo [Brazzaville], Gabon, Côte d'Ivoire, Mauritania, and Senegal). Patients (n=2173; 98.9%) were mostly recruited in public/subsidized health units.

A majority of patients were living in cities (n=1702; 78.9%) compared with rural areas (n=455; 21.1%).

Individual wealth index was low, midlevel, and high in 376 (17.6%), 1053 (49.2%), and 713 patients (33.3%), respectively (Table).

Sociodemographic data by country are presented in Table S1. Percentage of women varied from 33.7% (58/172) in Guinea to 71.9% in Gabon (64/89). Percentage of patients belonging to the lowest individual wealth category varied from 3.4% (5/148) in Mozambic to 39.8% (35/89) in Gabon. Percentage of patients belonging to the highest individual wealth category varied from 8.9% (26/295) in Côte d'Ivoire to 67.7% in Guinea (113/172).

In most patients (n=1816; 84.4%), hypertension was diagnosed >1 year before inclusion to the survey. During consultation, 493 patients (22.6%) had normal blood pressure values, and 1692 patients (77.4%) had uncontrolled hypertension. Among the latter, 648 (29.7%), 558 (25.5%), and 486 (22.2%) patients experienced hypertension grades 1, 2, and 3, respectively.

Overall, 96.6% (n=2123) of patients were under antihypertensive medication; 30%, 42.7%, and 24% were prescribed 1, 2, and ≥3 antihypertensive drugs, respectively.

Distribution of Uncontrolled Hypertension and Hypertension Grades by Country-Level Income

As shown in Figure 1, although the distribution of uncontrolled hypertension differed across individual countries (P<0.001; from 57.0% [142/249] in Benin to 100% [89/89] in Gabon), this was not the case between low- and middle-income countries (75.2% versus 79.3%; P=0.31).

Similarly, the distribution of hypertension grades differed across individual countries (P<0.0001) but not between low- and middle-income countries. Proportion of grade 1 hypertension was 29.0% (n=293) in low- versus 30.2% (n=355) in middle-income countries; grade 2, 26.0% (n=263) versus 25.1% (n=295); and grade 3, 20.2% (n=204) versus 24.0% (n=282), respectively (P=0.29).

Distribution of Uncontrolled Hypertension and Hypertension Grades by Individual Wealth Index

By contrast, the proportion of uncontrolled hypertension progressively increased with decreasing level of individual patient wealth, 72.8%, 79.3%, and 81.8%, in patients with high, mid and low individual wealth, respectively (P for trend, 0.009; Figure 2). Similarly, higher grade of hypertension was seen in lower individual wealth category. For instance, the proportion of grade 3 hypertension was 19.0% (135/712), 22.9% (239/1045), and 26.5% (99/373), in high, middle, and low individual wealth categories, respectively (P for trend, <0.001).

Stratified Analysis by Country-Level Income

We further investigated the association between uncontrolled hypertension, hypertension grades, and individual wealth category separately in low- and middle-income countries.

In low-income countries, the proportion of uncontrolled hypertension progressively increased with decreasing level of individual patient wealth, 70.1%, 77.5%, and 84.6%, in patients with high, mid, and low individual wealth, respectively (P for trend, 0.0082). After adjustment for age and sex, the odds of uncontrolled hypertension increased 1.37-fold (OR, 1.37 [0.99–1.90]) and 1.88-fold (OR, 1.88 [1.10–3.21]) in patients with middle and low individual wealth as compared with those with high individual wealth (Figure 3). Further

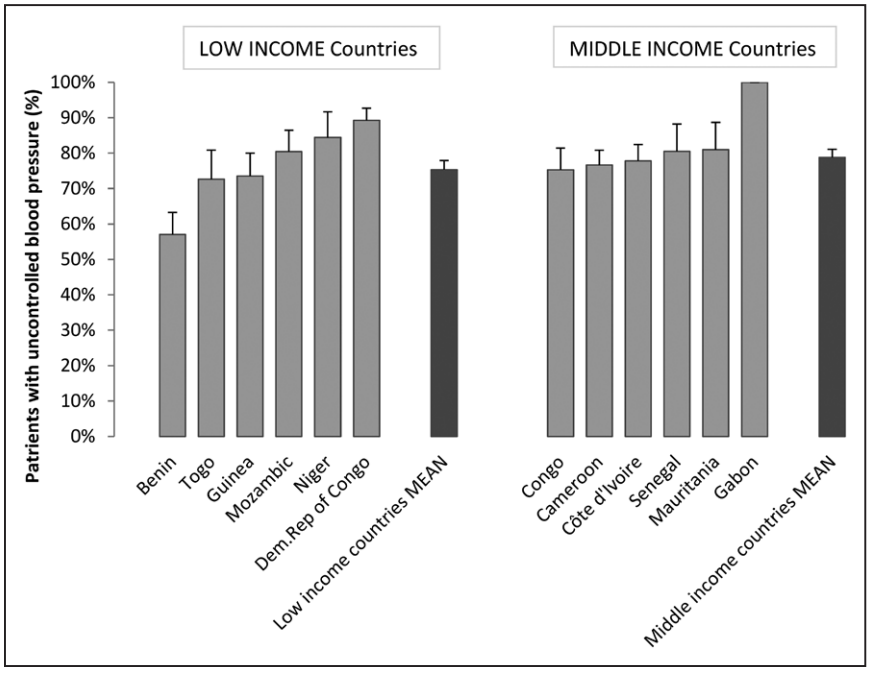

Figure 1. Distribution of uncontrolled blood pressure in low- and middle-income countries. Bars represent the percentage of uncontrolled BP.

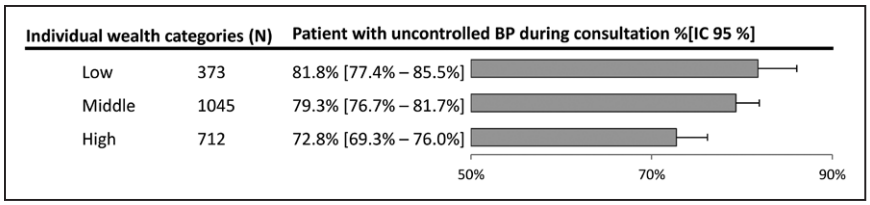

Figure 2. Percentage of patients with uncontrolled blood pressure (BP) by patient wealth. IC indicates confidence interval.

adjustment for number of prescribed antihypertensive drugs did not change these results.

Similarly, in low-income countries, the grade of hypertension increased progressively with decreasing level of individual patient wealth (Figure 4; *P* for trend, <0.001). For instance, the proportion of hypertension grade 3 was 15.6%, 24.3%, and 28.0% in patients with high, middle, and low individual wealth index. After adjustment for age and sex, on average, the hypertension grade of patients with middle and low individual wealth was significantly higher than that of patients with high individual wealth (linear regression coefficient, 0.17; 95% confidence interval, 0.0006–0.341 and 0.49; 95% confidence interval, 0.249–0.744; Table S2). Further adjustment for number of prescribed antihypertensive drugs did not change these results.

In middle-income countries, the proportion of uncontrolled hypertension (80.0%, 80.5%, and 86.6%; *P* for trend, 0.36) did not differ between low, middle, and high individual wealth groups. Similarly, there was no relationship between hypertension grade and individual wealth categories (*P* for trend, 0.21).

Discussion

Key Results

Our study represents the first multination report on socioeconomic status and uncontrolled hypertension from Sub-Saharan Africa. We investigated the specific associations between country-level income (low- versus middle-income countries), individual wealth, and finally the interplay between these 2 socioeconomic factors with respect to achievement of adequate hypertension control.

Our results demonstrate the overall strikingly high proportion of uncontrolled BP in low- and middle-income countries (77.4%), of which 61.7% had hypertension of grade 2 or 3. Although the proportion of uncontrolled hypertension did not differ between low- versus middle-income countries, significant difference existed according to individual wealth status, with a progressive increase in uncontrolled hypertension with decreasing individual wealth. Interestingly, the association between individual wealth level and uncontrolled hypertension was noted in low- but not in middle-income countries, with a continuum of increased odds from 1.37- to 1.88-fold in patients with middle and low versus high wealth index. These results highlight the scope of the problem posed by uncontrolled hypertension and the important interplay between socioeconomic status and hypertension in vulnerable populations. It is important to bear in mind that these data derived from specific urban clinics likely represent the best case scenario, and the magnitude of the problem in the general population with hypertension could be underestimated.

According to the World Health Organization estimations, the African region has the highest prevalence rate of hypertension, afflicting 46% of the adult population aged ≥25 years.[19] To further compound the problem, majority of the patients are unaware of their hypertensive status, thus precluding effective therapy.[3,20–22] Indeed, a systematic review and meta-analysis[3] pooling data from 33 surveys, involving >110 414 participants in Sub-Saharan Africa, showed that between 44% to 93% of hypertensive patients were unaware of their disease, only 18% were on medication, and a mere 7% achieved adequate blood pressure control overall.[3,20]

Our study further adds to these sobering figures and calls for urgent action if the World Health Organization Global Monitoring Framework target of 25% reduction in premature mortality from noncommunicable diseases by 2025, including a 25% reduction in the prevalence of hypertension to be achieved in a timely fashion.[23,24]

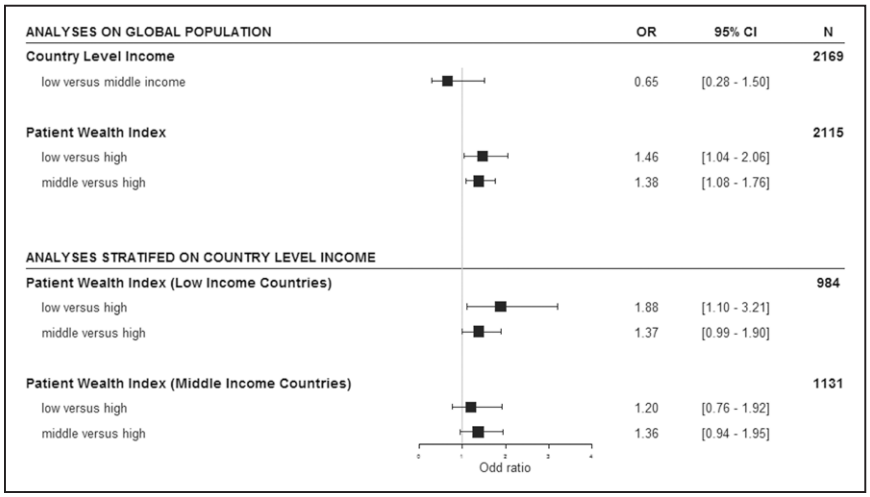

Figure 3. Odds ratios (OR) of country-level income and wealth index category for uncontrolled BP. Squares represent OR and lines, 95% confidence interval (CI). ORs derived from separate logistic regression analysis adjusted for age and sex and with a random effect on country to account for intra and intercountry variability.

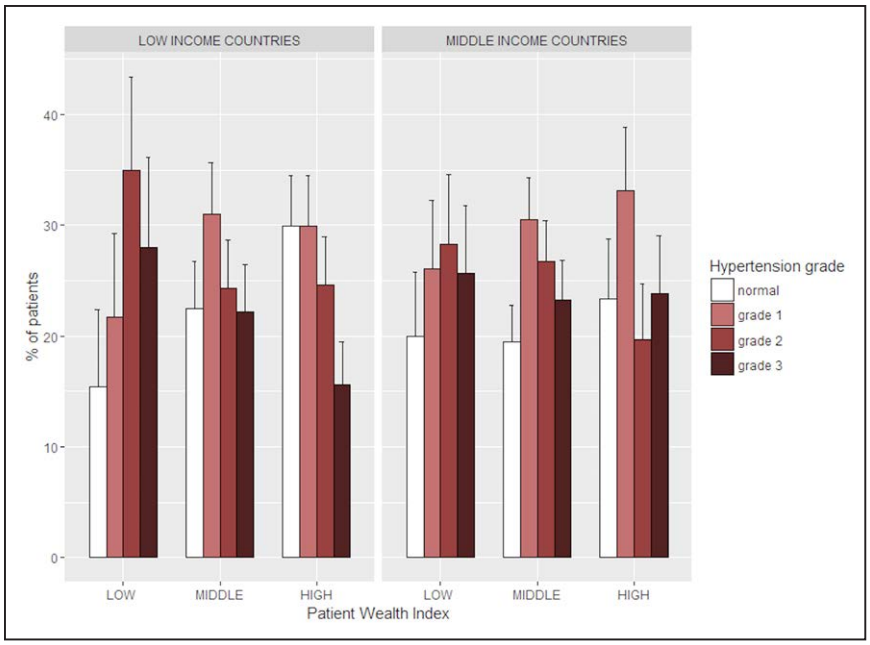

Figure 4. Percentage of patients with uncontrolled blood pressure by patient wealth index stratified by country-level income.

Hypertension is probably the easiest chronic noncommunicable disease to treat because blood pressure measurement for diagnosis and monitoring is simple, drug regimens are mainly once daily and inexpensive, and treatments generally do not need laboratory monitoring. Despite this, hypertension is adequately controlled in only ≈13% of people with the disorder worldwide.[11] With >9 million deaths from hypertension worldwide each year, the potential effect of improved treatment of hypertension, particularly if combined with population-wide measures, would be substantial. A recent cluster randomized trial indicated that a community health worker–led multicomponent intervention was effective in improving hypertension control among low-income, uninsured patients with hypertension in South America.[25]

In this context, socioeconomic factors are of importance to consider as highlighted by the present report. Our study is unique in that it addressed for the first time the relative association of individual wealth and country-level income with uncontrolled hypertension. It has been described that access to medications and economic level of the patients[24] are related. Although financial inequalities represent a barrier to access drug therapy worldwide,[26] the situation is potentially even more vitiated in Sub-Saharan Africa where people may buy substandard poor-quality drugs, particularly those of Asian manufacture/origin, from street markets and unlicensed sources.[27] Our team performed another study (SEVEN study [Quality Assessment of Cardiovascular Drugs in Africa]) with same investigators in African countries to assess quality of cardiovascular drugs purchased in the licensed and unlicensed places of sale. High rates of poor-quality cardiovascular drugs (reaching almost 50%) were found for drugs purchased in street markets and manufactured in Asia and or in certain antihypertensive drugs.[28] The majority of poor quality was because of underdose of the active ingredients. Underdose antihypertensive medicines could obviously result in a worth BP control, and likewise, unknown variability in the quality of drugs can lead to incorrect dosage adjustments by the physician.

Thus, standards of health systems and quality control measures assume importance in addition to individual affordability of patients. This aspect likely explains the findings from the present study, which showed that uncontrolled hypertension was significantly associated with low individual wealth in low- but not in middle-income countries. This highlights that individual poverty in combination with an inadequate health system can contribute to an unhealthy synergy, representing a double hit.

Another aspect could explain difference in BP control among different individual wealth index, that is, the prescribed drugs. In our study, the number of prescribed antihypertensive drugs did not differ across the individual wealth categories. However, the pharmacological class of antihypertensive drugs did differ across individual wealth categories. Accordingly, patients belonging to higher wealth categories were more frequently prescribed angiotensin receptor blockers (*P* for trend, 0.004). They were also more likely to be prescribed β-blockers but less likely to receive diuretics, although these 2 differences did not reach statistical significance (data not shown). Taken together, these data suggest that the choice of prescribed antihypertensive drugs could be influenced by the socioeconomic status of the patient, poorer patients being less frequently prescribed expensive antihypertensive drugs.

Identifying such and other patterns in noncommunicable diseases are needed to allow health policy makers to tailor specific strategies for Sub-Saharan Africa.[10] Studies such as the present are useful to obtain hard data from the field and suggest that different strategies may be needed for instance in low- versus middle-income countries toward achieving adequate hypertension control in the population. In addition to addressing the major challenge of poverty at the individual level, improvement in public healthcare delivery, adequate quality control measures, increased access to diagnostic tools, and low-cost generic medications of quality are all essential ingredients to an effective public health strategy to tackle the growing menace of hypertension.

Limitations and Strengths

We acknowledged the following limitations. Individual wealth index was assessed and categorized by the treating physician and hence subjective to some extent. Socioeconomic status is difficult to define and represents a composite measure of a person's income, education, employment, and social status.[29] We used physician assessment as the reasonable surrogate because the patient's regular physician is best placed to appreciate the socioeconomic status of the patient in the context of his own country.

We also simplified the assessment into 3 categories, which would be understandable and applicable across the 12 participating countries.

This study has also many strengths, including its multisite design, with >2000 patients from 29 medical centers in 17 cities from 12 countries—a scale often difficult to achieve in the developing world. Hypertension control was directly assessed from participating clinics and thus represents reliable data. Actual data on management of cardiovascular disease are uncommon in Africa: they are usually derived from small, monocentric studies. Articles currently published are reviews[3,30,31]; thematic review,[10] lecture,[32] or editorials.[21]

Furthermore, the study was supported by a strong and structured collaborative multidisciplinary network, which has already performed studies, such as the SEVEN[27] study about the quality of cardiovascular drugs in Sub-Saharan Africa. Active involvement of African cardiologists, who are familiar with the problems of this area, helped derive specific questions and analysis.

Perspectives

In this multination study from Sub-Saharan Africa, almost three fourths of hypertensive patients had poor hypertension control. We further observed that the rate and severity (hypertension grade) of uncontrolled hypertension was proportional to the individual wealth. This was observed in low- but not in middle-income countries, suggesting that the combination of individual poverty with a poor health system is particularly detrimental to achieving the goal of adequate blood pressure control. Strategies for improving hypertension control in Sub-Saharan Africa should focus on people belonging to the lowest wealth groups with a particular focus on those living in low-income countries.

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Disclosures

None.

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Novelty and Significance

What Is New?

- Systemic hypertension is a rapidly growing epidemic in Africa. Our study represents the first multination report on socioeconomic status and uncontrolled hypertension from Sub-Saharan Africa.

What Is Relevant?

- Our results demonstrate the overall strikingly high proportion of uncontrolled blood pressure in low- and middle-income countries (77.4%), of which 61.7% had hypertension of grade 2 or 3. Interestingly, the association between individual wealth level and uncontrolled hypertension was noted in low- but not in middle-income countries.

Summary

These results highlight the scope of the problem posed by uncontrolled hypertension and the important interplay between socioeconomic factors and hypertension in vulnerable populations.