

Rates of untreated, treated, and controlled hypertension and relationships between blood pressure with other cardiovascular risk factors in Brazzaville (Republic of the Congo): May Measurement Month 2017—Sub-Saharan Africa

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Hypertension (HT) is a growing burden worldwide, leading to over 10 million deaths each year. In Brazzaville, the prevalence of HT was 32.5% in 2004. The mortality for stroke in 2008 and heart failure in 2013 were, respectively, 24% and 20.2%. May Measurement Month (MMM) is a global initiative initiated by the International Society of Hypertension aimed at raising awareness of HT and to act as a temporary solution to the lack of screening programmes worldwide. An opportunistic cross-sectional survey of volunteers aged ≥ 18 was carried out in May 2017. Blood pressure (BP) measurement, the definition of HT and statistical analysis followed the standard MMM protocol. The screening was carried out in Brazzaville, and the screening sites were distributed in different districts of the city in public places and health facilities. A total of 3842 individuals were screened during MMM17. After multiple imputations, 1576 (41.0%) had HT. About 956 (29.7%) individuals not receiving anti-hypertensive medication, were hypertensive. Four hundred and nine (66.0%) individuals receiving anti-hypertensive medication, had uncontrolled BP. Systolic and diastolic BPs after adjustment for age and sex differed significantly in association with use of anti-hypertensive medication ($P < 0.0001$), previous stroke ($P = 0.001$ for systolic), and waist circumference ($P < 0.0001$). MMM17 was the largest BP screening campaign undertaken in Congo. Almost one-third of screenees had untreated HT, and two-thirds of treated hypertensives were not well controlled. These results suggest that opportunistic screening can identify significant numbers with raised BP.

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Background

Hypertension (HT) is a major global public health problem.^{1,2} Its prevalence in Brazzaville was 32.5% in 2004, and increases with age.³ Indeed, among people aged 35–65, the prevalence is 47.5% in Congo-Brazzaville.⁴ HT is the leading cause of heart failure and stroke.⁵ Cardiovascular emergencies often reveal HT at Brazzaville.⁵ The hospital mortality for heart failure and stroke was reported as 20.2% in 2008 and 24% in 2013, respectively.^{6,7} Although the diagnosis of these complications has improved,⁷ the treatment of stroke is difficult in Congo, due to delayed consultation, and the lack of effective drugs.⁸ Similarly, the treatment of heart failure remains insufficient and expensive.^{5,6} In view of these problems, early detection of HT will enable patients to be treated early, and delay the onset of these complications. These reasons led Congo to join the initiative of the International Society of Hypertension (ISH), which was screening a large number of populations around the world in May 2017.¹

Methods

May Measurement Month 2017 (MMM17) co-ordination in Brazzaville was provided by B.F.E.M. and S.-G.K.K. The ethical approval was obtained by the Committee for Health Sciences Research from the Ministry of Scientific Research (No. CERSSA 001/2017) and from the Minister of Health and Population. The fees from the ethics committee's authorization have been paid by the ISH. There were 13 screening sites in south (Makélékélé and Baongo districts), centre (Moungali, Poto-Poto, and Moukondo districts) and north of Brazzaville (Talangai and Ouenzé districts). The total number of volunteers was 52. Volunteer training was conducted with the materials provided (films, charts, and cards) by the ISH. For material and financial support, the national co-ordination was supported by WHO-Congo, the Schnell Foundation, the Opimbat Foundation, the Evangelical Church of Congo, the Diocese of Brazzaville, and Propharmed International p/c Sanofi.

Public awareness was broadcast by Congolese national television via a 1-min spot for 2 days before the start of screening. Also, volunteers broadcast messages by megaphone for a week in selected neighbourhoods. Screening was performed for 12 days. The machines used were OMRON MIT5 Connect (Kyoto, Japan), all provided free of charge by OMRON via the ISH for blood pressure (BP) measurement, according to the guidelines issued by the ISH for MMM17.¹ BP was taken three times during screening. HT was defined as a systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg or in those on anti-hypertensive treatment.

We have included, in addition to the ISH recommended items, diabetes screening by fasting blood glucose with an automatic device, and a family history of cardiovascular disease. The data collected were recorded on an individual sheet provided by the ISH MMM global project team. All data were then entered on spreadsheets by a team of investigators. The data analysis was done by the MMM project team.¹

Results

A total of 3842 people were screened, including 2320 women (60.4%) and 3819 black Africans (99.4%). The average age was 47.6 years (range: 18–92 years). Epidemiological characteristics were: on hypertensive medication 620 (16.1%), alcohol intake 526 (13.7%), current smoking 209 (5.4%), diabetes 192 (5%), previous stroke 91 (2.4%), previous myocardial infarction 54 (1.4%), and pregnant 37 (1.6%). A total of 1576 (41%) participants had HT, and of the total participants not on treatment, 956 (29.7%) had HT. The subjects receiving treatment with uncontrolled BP were 409 (66%). BP levels adjusted for age and sex (with an interaction) differed among those on and off anti-hypertensive medication (see Supplementary material online, *Table S1*, and when stratified by various other factors). Those on anti-hypertensive medication and those with a high waist circumference (90 cm or more for males and 80 cm or more for females) had significantly higher systolic and diastolic BPs.

Discussion

The proportion with HT in the MMM screenees from Brazzaville are higher than those reported in 2004 by S.-G.K.K.,³ and are higher than the average global results of MMM17.¹ It appears that many hypertensive individuals are not treated, and those who are treated, are not well controlled.¹ Although this was an opportunistic campaign and there may be a selection bias in who attended, HT is often overlooked in Sub-Saharan Africa, and a previous study has shown that out of treated patients, only 8% are controlled.² An initiative of the ISH and the Pan-African Society of Cardiology advocates the attainment of 25% of patients controlled by 2025.² The association with HT of other risk factors, namely excess alcohol intake, obesity, and overweight, is well known.^{1,2,4} In addition, higher pressures were apparent outside the weekend which conflicts with the overall global results of MMM17.¹ This may come about by BP elevation due to work stress.

In order to improve the control of hypertensive patients, early detection and effective treatment is needed. Also, poverty, ignorance of the disease, prejudices, and beliefs, which are not only essential barriers to the management of HT, but also its complications, must be fought. The MMM17 activity has brought focus on HT in Congo. We want to ensure the sustainability of screening. The difficulties to raise the funds remain for us the major challenge. In the future, screening covering the whole country is our greatest wish.

Conclusion

Our screening campaign identified a high proportion of individuals with HT in Brazzaville. Patients are often unaware of their disease, and few are treated and controlled. The expansion of a screening programme to make it accessible to the entire population of the country is desired. Primary prevention of HT complications is an essential asset for low-income populations.

Supplementary material

Supplementary material is available at *European Heart Journal - Supplements* online.

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