

May Measurement Month 2017: an analysis of blood pressure screening results from Mauritius

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KEYWORDS

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Hypertension is a growing burden worldwide. According to the World Health Organization, ~1.13 billion people worldwide suffer from hypertension. May Measurement Month (MMM) is a global initiative of the International Society of Hypertension aimed at raising awareness of high blood pressure (BP) and to act as a temporary solution to the lack of screening programmes worldwide. We provide the results of the 2017 MMM (MMM17) edition in Mauritius. This cross-sectional survey of participants aged 18 years and over was carried out in May 2017. Hypertension was defined as systolic BP of at least 140 mmHg or diastolic BP of at least 90mmHg or in those on antihypertensive medication. Blood pressure measurement and statistical analysis followed the standard MMM protocol. The screening was conducted by the Non-Communicable Diseases and Health Promotion Unit, which is under the aegis of the Ministry of Health and Wellness, mainly in workplaces and community centres, in both rural and urban areas across Mauritius. Of the 2302 individuals screened, after multiple imputations, 375 (16.3%) had untreated hypertension. May Measurement Month 2017 was the very first BP screening campaign initiated in Mauritius. These results suggest that MMM17 was useful in the identification of potential patients with raised BP.

Introduction

There is sufficient scientific evidence to conclude that hypertension is a major global public health problem, as increased blood pressure (BP) is the most important risk factor for cardiovascular diseases.^{1,2} Furthermore, hypertension is one of the leading causes of the global burden of disease, accounting for 212 million global disability-adjusted life-years lost in 2018.³ Globally, the prevalence of hypertension is now higher in low-

income and middle-income countries than in high-income countries. In 2015, an estimated 8.5 million deaths were attributable to systolic BP >115 mm/Hg, 88% of which were in low-income and middle-income countries.⁴

Hypertension is the principal cause of Mauritian attending community hospitals, area health centres, and mediclinics.⁵ In 2015, the prevalence of hypertension among Mauritian adults aged 25-74 years was 28.4% which marked a significant decrease in the prevalence of hypertension compared with 38.0% in 2009.⁶ May Measurement Month (MMM) is a project initiated by the International Society of Hypertension, aimed at raised

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awareness of high BP and to act as a temporary solution to the lack of screening programmes worldwide. The MMM campaign has opened the avenues for community-based screening and prevention programmes.

Methods

May Measurement Month is a cross-sectional survey and MMM17 in Mauritius was co-ordinated by the Non-Communicable Diseases, Health Promotion and Research Unit, which is under the aegis of the Ministry of Health and Wellness. This Unit was responsible for obtaining ethical clearance from the National Ethical Committee, field screening, data collection, as well as data management and transfer to the central MMM team. The screening was performed mainly in workplaces and community centres in urban and rural areas across the island of Mauritius. Five teams of the Non-Communicable Diseases and Health Promotion Unit screened adults aged 18 years and above throughout the island of Mauritius. Anthropometry measurements were performed and three BP measurements (sitting) were taken using automated Omron devices. The data collected through a questionnaire were later transferred to an Excel Spreadsheet and sent to the MMM co-ordination centre for analysis. Hypertension was defined as a systolic BP of at least 140 mmHg or diastolic BP of at least 90 mmHg

(or both) based on the mean of the second and third BP readings, or in those receiving antihypertensive medication. When necessary, due to missing BP readings, multiple imputation was used to estimate the mean of the second and third BP reading using the global data as described previously.⁷ Participants with BP in the hypertensive range were provided with printed evidence-based dietary and lifestyle advice to lower BP and referred for further follow-up in primary health care centres.

Results

Of the 2302 participants screened 1083 (47.0%) were male, and 1219 (53.0%) were female, of whom 26 (2.1%) reported to be pregnant. The mean [standard deviation (SD)] age was 45.0 (13.6) years and 15.4% were of South Asian and 66.1% of Black ethnicities. With regards to self-reported conditions and risk factors, 13 (0.6%) had a history of myocardial infarction, 141 (6.1%) had diabetes, and 347 (15.1%) were current smokers, while 2230 (96.9%) consumed alcohol once or more per week. The mean body mass index in 2302 participants was 25.7 (SD 4.7) kg/m². According to a preference stated in the protocol, all BP measurements were taken on

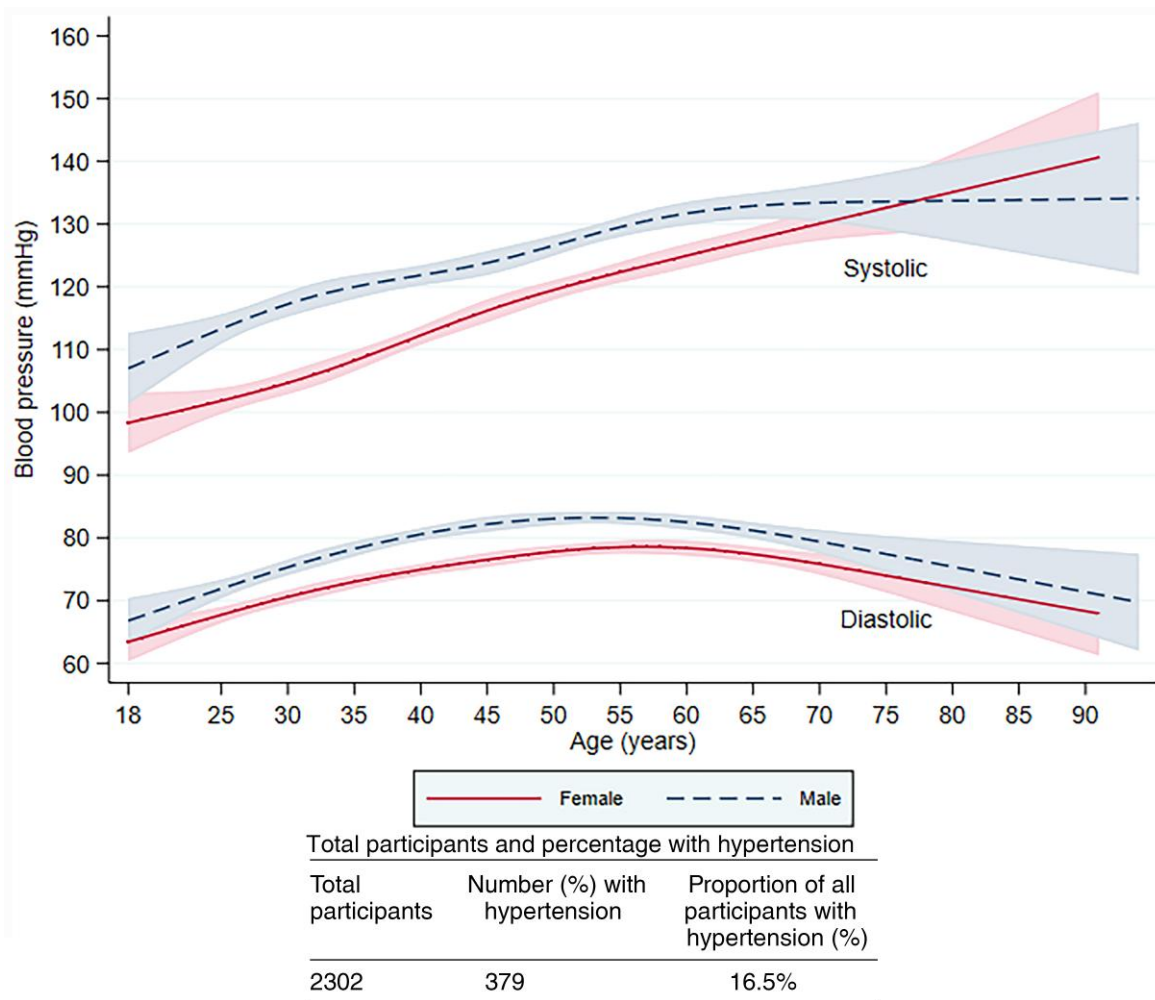


Figure 1 Graph showing the mean blood pressure (systolic and diastolic) in both genders by age, excluding those on antihypertensive medication.

the left arm for all participants. The majority of measurements was carried out on Monday (41.4%) or Tuesday (39.3%). Among screened participants with three valid consecutive BP measurements, the mean of the first and second reading (121.9/78.1 mmHg) was higher than the mean of the second and third reading (119.3/77.1 mmHg). Systolic BP increased with age in both genders, with the mean BP in women exceeding the mean BP in men at 75 years of age. Diastolic BP demonstrated an inverse 'U' relationship, with the highest levels at 55 years of age (Figure 1). Of the 2302 participants screened, 379 (16.5%) participants were found to have hypertension. Of these, only four (1.1%) were reported to be taking anti-hypertensive medication, of whom all four (100%) had controlled BP (<140/90 mmHg).

Discussion

Overall, among the 2302 participants screened, 16.5% had hypertension. Among hypertensive participants, it was observed that 1.1% were on antihypertensive medication. Compared with other studies conducted locally, MMM17 was the most successful hypertension screening campaign in terms of size carried out in collaboration with the Mauritian government following a standardized protocol. The MMM campaign was effective, as it took hypertension to the front line of our health agenda, reminding both health professionals and the population of the need for regular BP measurement. The simplicity of the MMM study and its low cost contributed greatly to the considerable success of the campaign in our country.

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Data availability

No new data were generated or analysed in support of this research.

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