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May Measurement Month 2018: an analysis of blood pressure screening results from Albania

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KEYWORDS

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This article reports on May Measurement Month (MMM) 2018, which consisted of the 2nd round of the hypertension screening campaign conducted in Albania, a former communist country in South Eastern Europe. The hypertension screening campaign in Albania was conducted during the period 13-31 May 2018. Overall, there were eight sites from seven districts of the country involving 7046 participants aged ≥ 18 years (61% women and 39% men; overall mean age 46.8 ± 15.7 years). Blood pressure was measured with OMRON sphygmomanometers (Omron Healthcare, Kyoto, Japan). Hypertension was defined as systolic blood pressure (SBP) ≥ 140 mmHg, or diastolic blood pressure (DBP) ≥ 90 mmHg, or on treatment for hypertension. Self-reported information included height and weight, diabetes, smoking status, and alcohol intake. The proportion of participants with hypertension was 37.2% of whom only 52.1% exhibited awareness. Furthermore, only a quarter of hypertensive individuals were properly treated and controlled. Significant predictors of high SBP and/or high DBP included a previous diagnosis of hypertension, being on antihypertensive medication, frequent alcohol intake, and being overweight and obese. The MMM 2018 campaign in Albania had a unique value for early detection of hypertension, particularly among younger adults. Policymakers and decision-makers in Albania and elsewhere should also rely on the MMM screening campaigns which have a great potential for prevention and control of hypertension in the general population.

Introduction

According to the most reliable estimates provided by the World Health Organization,¹ in Albania, the prevalence of raised blood pressure among adults aged ≥ 18 years was 32% in 2015 (35% in men and 29% in women). Furthermore, in 2017, high systolic blood pressure (SBP) alone was

estimated to account for about 33% of all-cause mortality and 17% of the overall disability-adjusted life years (DALYs) in Albania.²

On the whole, cardiovascular diseases in Albania are estimated to account for 57% of all deaths.¹ In 2017, ischaemic heart disease was responsible for 27% of mortality and 13% of the overall DALYs.² For the same year, stroke accounted for 22% of all deaths and 10% of the overall DALYs in Albania.²

Albania joined the May Measurement Month (MMM) project in 2017 when there were more than one thousand

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individuals screened for hypertension, mainly in Tirana and Durres. This first round pointed to a high prevalence of hypertension and a low awareness of individuals on the presence of this condition. However, the main focus of the first round was on getting acquainted with the process, as well as identifying potential key local collaborators in order to consolidate this type of screening campaign for the years to come.

This article reports on the MMM 2018, which consisted of the 2nd wave of the hypertension screening campaign conducted in Albania, a former communist country in South Eastern Europe.

Methods

There were two study co-ordinators for the MMM 2018 survey in Albania (G.B. and G.Q.), both affiliated with the National Institute of Public Health and the University of Medicine in Tirana.

The ethical clearance for the MMM 2018 in Albania was provided by the Scientific Council of the National Institute of Public Health in November 2017.

Overall, there were eight sites included in the MMM 2018 campaign in Albania: two sites in Tirana district (the capital) and one site in each of the following districts: Bulqize, Burrel, Diber, Durres, Lushnje, and Roskovec.

The overall number of investigators involved at the eight screening sites was 28. All investigators were trained in early May 2018 prior to the screening implementation.

MMM 2018 was supported by the 'Health for All Project (HAP)' in Albania (www.hap.org.al), financed by the Swiss Agency for Development and Cooperation (SDC). HAP supported printing of the examination and interviewing forms (10 000 copies), roller banners, and T-shirts. In turn, the Institute of Public Health in Tirana, which is under the auspices of the Ministry of Health and Social Protection, provided logistical support for the training sessions, as well as the availability of some key investigators.

Participants were recruited through different messages disseminated by social media (Facebook), TV talk-shows, and by strong advocacy exerted by the health promotion specialists at a community level in all screening sites. All messengers emphasized to the general public the importance of blood pressure screening and the unique opportunity to participate in the MMM survey.

The screening duration included the period 13-31 May 2018 (on the whole, there were 19 screening days in each site).

OMRON sphygmomanometer devices (Omron Healthcare, Kyoto, Japan), generously provided by Omron Healthcare for use in the MMM project, were used in all screening sites for measurement of SBP and diastolic blood pressure (DBP).

Survey sites were indoor, except one (involving about 2% of the overall sample) and all participants underwent three sitting recordings of their SBP and DBP taken at 1-min intervals, from either the right or left arm, as recommended in the MMM 2018 protocol.³

Hypertension was defined as SBP \geq 140 mmHg, or DBP \geq 90 mmHg (based on the mean of the 2nd and 3rd

recording for SBP and DBP, respectively), or a subject on treatment for hypertension.³ On the other hand, height and weight were estimated based on individual self-reports, similar to the information on presence of diabetes, smoking status, and alcohol intake.

Data collection consisted of hard-copy forms. All data were entered into a customized excel file, which was subsequently cleaned locally. Data analysis was completed centrally by the MMM project team and multiple imputation was performed to impute the mean of readings 2 and 3 where this was missing, based on the global data.³

Results

Overall, 7046 participants aged \geq 18 years were included in the MMM 2018 screening campaign in Albania, with a mean age of 46.8 ± 15.7 years. Of 7006 individuals with valid data on sex (99.5% of the total), 60.6% were women and 39.4% were men. In total, 94.8% of participants were ethnic Albanians (Caucasians).

Of all participants, 1268 (18.0%) of participants were on antihypertensive treatment.

Overall, 2624 participants (37.2%) had hypertension, of whom 1268 (48.3%) were on antihypertensive treatment and 1356 participants (51.7%) were not. Of individuals not on antihypertensive treatment, 23.5% were found to have hypertension ($n = 5778$).

Of the 2624 individuals with hypertension, the proportion of antihypertensive awareness was 52.1%. Only 50.4% of individuals on medication had controlled blood pressure and of all hypertensive individuals, only one in four (24.4%) participants had controlled blood pressure, regardless of the medication status.

Significant predictors of elevated SBP and/or high DBP were a previous diagnosis of hypertension, being on antihypertensive medication, increasing frequency of alcohol intake, and overweight and obesity (all $P < 0.01$). In addition, diabetes was a significant predictor of elevated SBP ($P = 0.003$), but not of elevated DBP. Conversely, smoking was a significant determinant of DBP only ($P = 0.001$).

Blood pressures measured on Saturdays were significantly lower than Monday for both SBP and DBP measurements (*Figure 1*).

After imputation, and excluding individuals on antihypertensive medication, the age- and sex-standardized prevalence of hypertension was 22.8% ($n = 5380$). Conversely, among participants on antihypertensive treatment, the age- and sex-standardized prevalence of uncontrolled hypertension was 40.5% ($n = 1162$).

Discussion

Salient findings from the MMM 2018 screening in Albania included a high level of hypertension (37.2%), only half being aware of their hypertension (52.1%); and only one-quarter of hypertensive individuals treated and controlled (24.4%).

The MMM 2018 campaign in Albania has identified a considerable number of hypertensive cases and also other major risk factors in the adult population including smoking, excessive alcohol intake, overweight, and obesity.

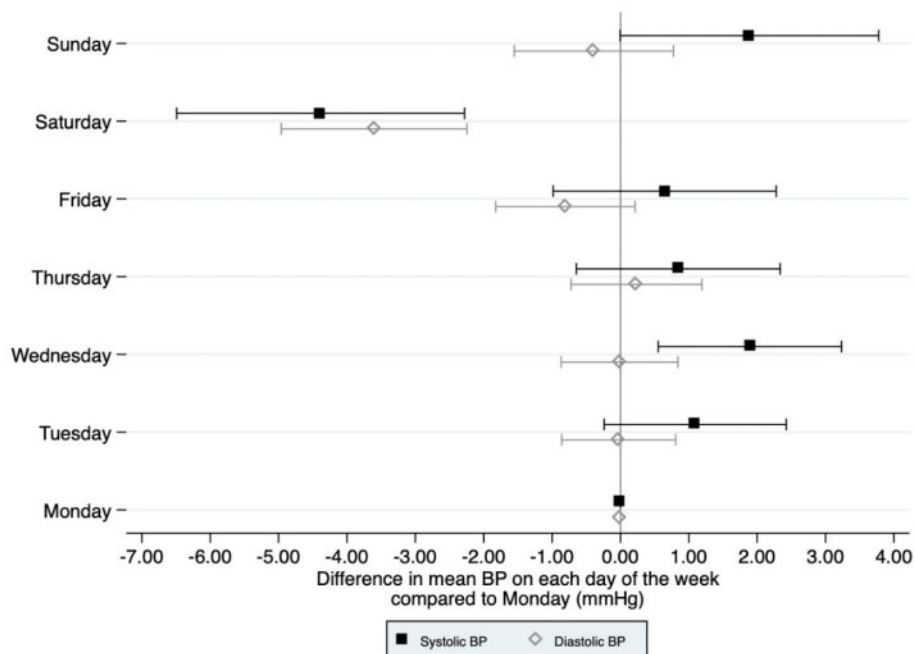


Figure 1 Difference in mean blood pressure according to day of the week with Monday as the reference day.

Importantly, detection of hypertension is expected to contribute to the prevention of complications and premature mortality in the Albanian adult population.

The routine hypertension screening in Albania currently consists of annual check-ups of all individuals aged 35-70 years. The MMM campaign included a far broader age range, which differs from routine screening and has a unique value for early detection of hypertension particularly among younger adults who otherwise would not attend preventive services. Nevertheless, the (non-probabilistic) sample included in the MMM screening campaign bears the potential of selection bias and, as such, findings generated from this sample cannot be generalized to the overall adult population of Albania.

Notwithstanding potential limitations, policymakers and decision-makers in Albania and elsewhere, among other sources of information, should utilize the MMM screening campaigns which have several advantages and a great potential for prevention and control of hypertension in the general population.

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Conflict of interest: none declared.

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