May Measurement Month 2019: an analysis of blood pressure screening results from Pakistan-South Asia

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High blood pressure (BP) is well recognized as a huge health problem worldwide and is often described as a silent killer. To develop awareness and screening of this health issue globally, the International Society of Hypertension created ‘May Measurement Month (MMM)’ a campaign to provide BP screening and advice to interested participants. This screening and awareness campaign in Pakistan is a continuation of the efforts of the first MMM programme in Pakistan in 2017. This study was conducted in May and June 2019. This public based cross-sectional study included and screened 6919 individuals of either gender and aged ≥18 years, after informed consent. Information about prior diagnosis and treatment of hypertension with history about comorbidities and lifestyle were taken by a standard pre-designed form. Participants also asked about previous participation in MMM 2017/18. Arterial BP was measured using the OMRON digital BP apparatus and three successive readings were taken. Hypertension was defined as a systolic BP ≥140 mmHg or a diastolic BP ≥90 mmHg or taking antihypertensives. Participants had a mean age of 45.8 years and 47.1% had never had their BP checked. Of all those screened, 3601 (52.1%) participants had hypertension, of whom 56.2% were aware of their diagnosis, 49.5% were on antihypertensive medication and 19.8% had controlled BP (<140/90 mmHg).

Of the 1783 participants on antihypertensive medication, 40.0% had controlled BP. In Pakistan, there are still low levels of awareness, counselling and screening about high BP. Further large-scale studies are required in this region to evaluate these problems and link them with potential solutions.

Introduction

Hypertension is a great health hazard at a global level and its prevalence has been observed as increasing, particularly rapidly among the developing countries which are experiencing an epidemiologic transition, commercial upgrading, population expansion, as well as extended life expectancy. High blood pressure (BP) is a modifiable risk factor for coronary artery disease, myocardial infarction, cardiac failure, cerebrovascular accidents, and chronic
pertensive medication and having a BP <140/90 mmHg.5 So, timely screening, counselling regarding life-style and managing effectively may prevent the life of an individual. The International Society of Hypertension has initiated an effort at a global level in May 2017, to increase the awareness and screening of hypertension. This initiative is known as May Measurement Month (MMM).4 Continuing on from 2017 this screening campaign includes an evaluation of the spectrum of hypertension in Pakistan in 2019 and evaluates the level of awareness of those having hypertension.

Methods

The current study was conducted in May and June 2019 in hospitals and medical camps by health professionals with the assistance of pharmaceutical personnel under ethical guidelines. This community-based cross-sectional study included and screened 6919 participants aged ≥18 years, after informed consent. Information about previous diagnosis and treatment of hypertension along with awareness of hypertension and any history of diabetes mellitus, previous stroke, myocardial infarction, and current smoking was also taken and recorded on a standard pre-designed questionnaire. The questionnaire also included questions on previous participation in MMM 2017/18. Arterial BP was measured using the OMRON digital BP apparatus, in the sitting position and three successive readings were noted after an initial rest of 5 min. The mean value of the second and third readings was used in analysis. BP was measured during the morning in a hospital setup and medical camp environment after enquiring about associated risk factors. Hypertension was defined as a systolic BP ≥140 mmHg or diastolic BP ≥90 mmHg or taking antihypertensive medication. Controlled hypertension was defined as taking antihypertensive medication and having a BP <140/90 mmHg.5 Where BP readings were missing, multiple imputation was used, based on the global data, as described previously.6

Results

A total of 6919 individuals with a mean (standard deviation) age 45.8 (13.2) years were screened, of whom, mean systolic BP was 129.8 mmHg and diastolic BP was 83.2 mmHg. The majority (66.6%) were male, 1535 (22.2%) had diabetes, 308 (4.5%) reported a previous myocardial infarction, 308 (4.5%) reported a previous stroke, and 1324 (19.1%) were current smokers. One hundred and eighty-four (8.0%) women were pregnant. Of all 6919 participants, 3601 (52.1%) had hypertension. Of the 3601 participants with hypertension, 56.2% were aware of their diagnosis, 49.5% were on antihypertensive medication, and 19.8% had controlled BP. Of 1783 participants on antihypertensive medication, 40.0% had controlled BP (Table 1). Of the 5136 participants not taking antihypertensive medication, 1818 (35.4%) were found to have hypertension.

Table 1 Total participants and proportions with hypertension, awareness, on medication, and with controlled BP

| Total participants | Number (%) with hypertension | Proportion of hypertensives aware | Proportion of those on medication | Proportion of those on medication with controlled BP | Proportion of all hypertensives with controlled BP |
|-------------------|------------------------------|---------------------------------|---------------------------------|-------------------------------------------------|-------------------------------------------------|
| 6919              | 3601 (52.1%)                 | 56.2%                           | 49.5%                           | 40.0%                                           | 19.8%                                           |

Discussion

This hypertension screening and awareness campaign in Pakistan in 2019, follows on from the efforts of MMM 2017. Hypertension is one of the most important contributors towards worldwide mortality as well as morbidity.7 The current study finds 52.1% of the population tested had hypertension and that 47.1% of study participants had never had their BP checked. Facts and figures about hypertension are lacking in the South Asian populace.8 Results of the previous survey in Pakistan MMM17, revealed a 55.2% prevalence of hypertension among screenees with a mean age of 45.0 years.9 Ishtiaq et al.10 describes the increasing occurrence of hypertension in Pakistan and reported a prevalence of hypertension of 29.2%. This study also concluded that factors contributing to high BP included low physical activity and fatty diets and a dearth of attention, health services, and awareness. Khan et al.11 reported that 35.5% of patients had never had their arterial BP checked while more than 50% of those on treatment believed that their BP had mostly been controlled and often skipped the prescribed medication. Furthermore, almost 62.5% of patients were taking tablets daily, while 15.5% were taking medicines irregularly and 6.5% of hypertensive patients revealed total non-adherence. In addition to taking effective BP medications, salt restriction and reduced fat consumption with increased regular exercise and avoiding stress and tobacco consumption, are reported to help keep BP in the optimal range.12

Conclusion

In Pakistan, there are still low levels of awareness, counselling and screening about high BP. This study revealed a high proportion of hypertensive adults among 6919 screenees in Pakistan.

Conflict of interest: none declared.
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