

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

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KEYWORDS

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Raised blood pressure (BP) is a growing health care problem in the world leading to over 10 million deaths annually. May Measurement Month (MMM), which aims at raising awareness and screening people for raised BP, is assisting people to know their BP status. In 2018, an opportunistic cross-sectional survey was carried out during May and June in 10 791 volunteers aged 18 years and above following that done in 2017. The screening took place in Lilongwe, Blantyre, Dedza, Kasungu, and Nkhatabay districts mostly in hospitals/clinics, marketplaces, workplaces, and churches/mosques with Kasungu and Nkhatabay in rural areas. After multiple imputation, 2404 (22.3%) had hypertension. Of individuals not receiving antihypertensive treatment, 2101 (20.0%) were found to have raised BP. Only 303 (12.6%) of those with hypertension were receiving antihypertensive treatment, and of these 101 (33.3%) had uncontrolled BP. MMM was the largest BP screening campaign ever undertaken in Malawi. The results identified a large number of individuals with raised BP who were unaware and not on treatment and over one-third of those on treatment were uncontrolled, indicating the need for better management of cases. These results suggest that opportunistic screening can identify significant numbers with raised BP.

Introduction

A nationwide STEPwise approach to Surveillance (STEPS) survey conducted by the World Health Organization (WHO) and Ministry of Health (MoH) in Malawi in 2009 found that 32.9% (1237 of 3727) had hypertension.¹ This survey further found that three quarters of participants never had their

blood pressure (BP) measured before and 94.9% with high BP were not aware they had the condition.

In Malawi, cardiovascular conditions including high BP, stroke, and related premature deaths are very common, mostly reported in the media with information from various health facilities and the communities. From 2017, Malawi was involved in an initiative by the International Society of Hypertension (ISH) called May Measurement Month (MMM). This initiative aims at raising awareness and screening people for high BP from the age of 18 years and this presented

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an opportunity for people to be aware and screened. During MMM17, 4009 individuals were screened and 849 (22.3%) had hypertension.^{2,3} Among those not receiving antihypertensive medication, 697 (19.1%) were found to have raised BP. Only 152 individuals were receiving antihypertensive medication, and of these 78 (51.4%) had uncontrolled BP.

Methods

The study was co-ordinated by Moyowathu HealthCare Services, Prime Health Consulting and Services with full support from Ministry of Health.

There was no need for ethical clearance as we were complimenting the Ministry of Health's efforts to raise awareness and get people screened for raised BP. The awareness and screening took place in five districts, namely Blantyre, Dedza, Lilongwe, Kasungu, and Nkhatabay. The most common locations were hospitals/clinics, workplaces, churches/mosques, and community gathering places such as football grounds, local leaders' places, and individual homes. In Kasungu and Nkhatabay districts, screening was also conducted in rural areas of Traditional Authorities (TAs), Chisemphere and Mkumbira, respectively, after the Ministry of Health suggested the screening reach out to rural communities.

We had 29 screening sites and used 48 volunteers who were qualified health workers, medical students, and also non-health workers who were trained on how to conduct BP measurements using automatic Omron machines kindly donated by OMRON Healthcare. Data capture was done using hard copies, which had 10 entries on one page then this was entered into a spreadsheet developed by the ISH/MMM project team.

The sources of funding were from ISH, Moyowathu HealthCare Services and Prime Health Consulting and Services.

We used both radio (Zodiak Broadcasting Station and Times Group) and print media (Nation Newspaper, Times Newspaper, and Malawi News Agency) and word-of-mouth to disseminate messages. The whole screening took place during the months of May and part of June (almost 40 days).

We used Omron BP machines and three measurements were taken whilst sitting.

Hypertension was defined, as in the global MMM paper,⁴ as systolic BP ≥ 140 mmHg or diastolic BP ≥ 90 mmHg or on treatment for hypertension.

Weight and height were measured in hospitals and clinics, while in other areas it was estimated.

Data cleaning was done locally and analysed centrally by the MMM project team. Multiple imputation was performed to impute the mean of readings 2 and 3 where this was missing, with full details given in the global paper.⁴

Results

The study enrolled 10 791 participants; 5724 (53.0%) were female, 5057 (46.9%) were male and the majority of participants were Black (99.9%). The mean age was 40.0 (SD

16.1) years with the majority aged between 18 and 29 (29.9%). Thirty (0.3%) reported having participated in MMM17. Of all participants, 8838 (81.9%) had not their BP measured in the last 12 months and 5166 (47.9%) reported never having had their BP measured. The total number and proportion of those on anti-hypertensive treatment were 303 (2.8%).

After multiple imputation, the number of participants found to have hypertension was 2404 (22.3%). Of those with hypertension, 14.7% were aware of their condition, 12.6% were on medication, and 8.4% had controlled BP ($<140/90$ mmHg). Of those participants on antihypertensive medication, 202 (66.7%) had controlled BP. Of those not on antihypertensive medication, 2101 (20.0%) were found to have raised BP.

Discussion

The study found that the proportion of screened individuals' hypertension was 22.3%, and of these participants, low proportions were aware (14.7%), on antihypertensive treatment (12.6%), or controlled (8.4%). Of those on medication, control was relatively high with two-thirds having a controlled BP. The proportion of participants with hypertension was lower in Malawi compared to the sub-Saharan African region (24.8%) and lower than the worldwide proportion of 33.4%.⁴

MMM18 was conducted, in addition to urban areas, in typical rural areas and there were some instances in these rural areas when some people could request to be checked after learning about the initiative from their neighbouring communities during and after the initial exercise.

There may have been selection bias as it was not randomly sampled, participants could be screened in one area more than other areas and it did not cover the whole country; even in the districts that it was conducted in, it was in few areas.

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