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Recommendations for home blood pressure measurement are inconsistent between international guidelines

ELEANOR CLAPHAM

Menzies Institute for Medical Research, University of Tasmania, Australia

NIAMH CHAPMAN

School of Health Sciences, Faculty of Health and Medicine, University of Sydney, Australia and Menzies Institute for Medical Research, University of Tasmania, Australia

Why compare guideline recommendations for home blood pressure across countries?

Home blood pressure monitoring (HBPM) is recommended as an out of office measure because it has good prognostic value for cardiovascular disease and can be undertaken by the patient to inform BP management. HBPM is a key individual health behaviour for the self-monitoring of high BP which requires the patient to obtain a BP device, undertake standardised and routine BP measurement, and interpret, record and report BP readings.

HBPM has been shown to be more effective when delivered with patient education,[1] likely because patients must learn new skills to undertake HBPM. Patient education for HBPM should be based on evidence-based information, such as that in guidelines.

Initially, we undertook two studies to explore the quality of 1) online resources to support patients to undertake HBPM, and 2) HBPM among people in Australia. While undertaking this work we identified disparities in guideline recommendations which led us the research question: are recommendations for HBPM consistent across guidelines?

How did we compare guideline recommendations for HBPM?

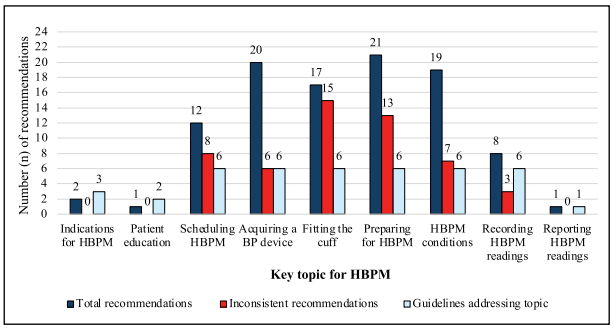
We extracted individual recommendations from six guideline documents: European Society of Hypertension (2021), International Society of Hypertension (2020), Hypertension Canada (2020), Japanese Society of Hypertension (2019), American Heart Association (2019) and the Australian Expert Consensus Statement (2015).

Next, we determined if recommendations were consistent through head-to-head comparison of each individual recommendation. A recommendation was classified as 'inconsistent' if it differed or contradicted in meaning with one or more recommendation in the same guideline or another guideline.

What did we find?

We identified 104 recommendations for HBPM across the six guidelines. Most recommendations focused on acquiring a BP device, preparing for HBPM and conditions for HBPM but few recommendations addressed patient education needs or reporting HBPM to inform clinical decision-making.

Figure 1. Guideline recommendations for the key topics of HBPM.



Half of the guideline recommendations (n=52, 51%) were classified as inconsistent with one or more recommendation.

More than half (n=29, 56%) of all recommendations classified as inconsistent contained a time parameter. For example, three different recommendations for the length of seated rest prior to BP measurement were made across the guidelines; at least five minutes, three to five minutes and one to two minutes.

What does inconsistency in guideline recommendations mean for practice?

Inconsistent recommendations in guidelines may contribute to barriers to translate evidence into practice by causing confusion among health professionals or creating challenges for developing evidence-based educational resources.

We found that half of the recommendations classified as inconsistent included a time parameter. Interestingly, our recent study exploring HBPM quality among people in Australia found that time-based recommendations were the least commonly adhered to.[2] For example, less one third of participants avoided eating during the 30 minutes before BP measurement.

Eleanor Clapham – eleanor.clapham@utas.edu.au

Niamh Chapman – niamh.chapman@utas.edu.au

Conversely, most participants measured BP while seated with their arm supported, recommendations that were consistent across guidelines. In interviews, few participants recalled receiving advice from healthcare practitioners, and those who did revealed that health practitioners typically reiterated consistent recommendations such as “sit down, feet on the floor... arm at heart level, don't cross legs and relax”.[2] This mirrors previous research findings that GPs do not typically deliver complete patient education on HBPM.[3]

Our findings suggest that health practitioners are not given evidence-based direction on patient education strategies for HBPM and how to facilitate a two-way feedback system of HBPM readings between the patient and practitioner.

Take home message

Our findings suggest that there may be a need to improve the consistency in recommendations made across international guidelines for HBPM. While national guidelines vary in recommendations regarding treatment thresholds/targets, such differences are typically due to variation in the prevalence of risk factors and associated cardiovascular outcomes. However, HBPM is a standardised process for patients to obtain high-quality BP measures to inform clinical management. Simple, consistent recommendations to guide HBPM may improve translation to clinical practice to improve BP control.

References

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