








## REVIEW PAPER

# Insights on home blood pressure monitoring in Asia: Expert perspectives from 10 countries/regions

Ji-Guang Wang MD, PhD<sup>1</sup>  | Ma Lourdes Bunyi MD<sup>2</sup> | Yook Chin Chia MBBS, FRCP<sup>3</sup> | Kazuomi Kario MD, PhD<sup>4</sup>  | Takayoshi Ohkubo MD, PhD<sup>5,6</sup> | Sungha Park MD, PhD<sup>7</sup>  | Apichard Sukonthasarn MD<sup>8</sup>  | Jam Chin Tay MBBS<sup>9</sup>  | Yuda Turana PhD<sup>10</sup>  | Narsingh Verma MBBS, MD<sup>11</sup>  | Tzung-Dau Wang MD, PhD<sup>12</sup> | Yutaka Imai MD, PhD<sup>6</sup>

<sup>1</sup>Centre for Epidemiological Studies and Clinical Trials, The Shanghai Institute of Hypertension, Ruijin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China

<sup>2</sup>Philippine Heart Association, Dr. HB Calleja Heart and Vascular Institute, St. Luke's Medical Center, Metro Manila, Philippines

<sup>3</sup>Department of Medical Sciences, School of Healthcare and Medical Sciences, Sunway University, Selangor, Malaysia

<sup>4</sup>Division of Cardiovascular Medicine, Department of Medicine, Jichi Medical University School of Medicine, Shimotsuke, Japan

<sup>5</sup>Department of Hygiene and Public Health, Teikyo University School of Medicine, Tokyo, Japan

<sup>6</sup>Tohoku Institute for Management of Blood Pressure, Sendai, Japan

<sup>7</sup>Division of Cardiology, Department of Internal Medicine, Yonsei University Health System, Seoul, Korea

<sup>8</sup>Bangkok Hospital Chiang Mai, Chiang Mai, Thailand

<sup>9</sup>General Medicine, Tan Tock Seng Hospital, Singapore City, Singapore

<sup>10</sup>Department of Neurology, Faculty of Medicine and Health Sciences, Atma Jaya Catholic University of Indonesia, Jakarta, Indonesia

<sup>11</sup>Asia Pacific Society of Hypertension, Department of Physiology, King George's Medical University, Lucknow, India

<sup>12</sup>Cardiovascular Center and Division of Cardiology, Department of Internal Medicine, National Taiwan University Hospital and National Taiwan University College of Medicine, Taipei City, Taiwan

## Correspondence

Ji-Guang Wang, The Shanghai Institute of Hypertension, Ruijin Hospital, Shanghai Jiaotong University School of Medicine, Shanghai, China.  
Email: jiguangwang@aim.com

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## Abstract

Hypertension is one of the most powerful modifiable risk factors for cardiovascular disease. It is usually asymptomatic and therefore essential to measure blood pressure regularly for the detection of hypertension. Home blood pressure monitoring (HBPM) is recognized as a valuable tool to monitor blood pressure and facilitate effective diagnosis of hypertension. It is useful to identify the masked or white-coat hypertension. There is also increasing evidence that supports the role of HBPM in guiding antihypertensive treatment, and improving treatment compliance and hypertension control. In addition, HBPM has also shown prognostic value in predicting cardiovascular events. Despite these benefits, the use of HBPM in many parts of Asia has been reported to be low. An expert panel comprising 12 leading experts from 10 Asian countries/regions convened to share their perspectives on the realities of HBPM. This article provides an expert summary of the current status of HBPM and the key factors hindering its use. It also describes HBPM-related initiatives in the respective

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countries/regions and presents strategies that could be implemented to better support the use of HBPM in the management of hypertension.

## 1 | INTRODUCTION

Hypertension is one of the most powerful modifiable risk factors for cardiovascular disease and is estimated to cause nearly 1.5 million of deaths each year in Southeast Asia.<sup>1</sup> Lowering blood pressure substantially reduces the risk of cardiovascular morbidity and mortality.<sup>2</sup> However, hypertension continues to pose a significant burden in Asia, with poor awareness and undertreatment reported in many Asian countries/regions.<sup>3</sup> Hypertension control remains a serious challenge, with reported uncontrolled rates ranging from 30% in Taiwan and Singapore to 85% in China.<sup>3,4</sup>

Hypertension is a silent disease that has almost no apparent symptoms in its early stages.<sup>5</sup> Considering the asymptomatic nature of hypertension and the significant disease burden, it is essential to measure blood pressure regularly. Home blood pressure monitoring (HBPM) is recognized as a valuable tool to monitor blood pressure and facilitate effective detection of hypertension.<sup>6-10</sup> It fulfills an important niche within the hypertension management clinical ecosystem.<sup>6-10</sup> International and regional guidelines recommend HBPM as a useful tool for the detection of masked and white-coat hypertension.<sup>6-9</sup> Due to its ability to measure day-to-day blood pressure variability over time, the benefits of HBPM extend beyond diagnosis alone. There is growing acknowledgment of the role of HBPM to guide antihypertensive treatment, and improve treatment compliance and hypertension control.<sup>6-9,11,12</sup> HBPM has also shown prognostic value in the prediction of cardiovascular events.<sup>6-9,13</sup> Despite these benefits, the use of HBPM in many parts of Asia has been reported to be low.<sup>3</sup>

Considering the high burden of hypertension in Asia, there is an urgent need to improve hypertension control in the region. Understanding the challenges of using HBPM will inform decisions that can better support its use in clinical practice to guide management of hypertension. An expert panel comprising 12 leading

experts (cardiologists, epidemiologist, hypertension specialists, internist, neurologist, and primary care specialist) from 10 Asian countries/regions (China, India, Indonesia, Japan, Malaysia, the Philippines, Singapore, South Korea, Taiwan, and Thailand) convened to share their perspectives on the current use of HBPM and identify areas that require prompt interventions. This report provides an expert summary of the current status of HBPM, performed by patients themselves or family members, and the key factors hindering its use. It also describes HBPM-related initiatives in the respective countries/regions and presents strategies that could be implemented to better support the use of HBPM in the management of hypertension.

## 2 | CURRENT STATUS OF HBPM—AWARENESS AND USE

The availability of local hypertension guidelines and HBPM guidelines/consensus is summarized in Table 1.<sup>14-27</sup> While HBPM is recommended within the clinical practice of each country/region,<sup>14,17-19,21-26</sup> there is little guidance on HBPM in the countries/regions, except for China, Indonesia, and Japan where formal local HBPM guidelines/consensus<sup>15,16,20,27</sup> are available to provide detailed guidance to physicians. This suggests that awareness and use of HBPM among physicians may be low in most of the countries/regions in Asia.

The experts shared their perception of the level of awareness and use of HBPM and related guidelines among physicians (specialists and general practitioners in their respective countries/regions). Their inputs revealed considerable disparities between specialists and general practitioners in most countries/regions. HBPM awareness among specialists was perceived as high by the experts in the Asian countries/regions included, with the exception of India and

Country/region	Published local hypertension guidelines	Published local HBPM guidelines/consensus
China <sup>14-16</sup>	✓	✓
India <sup>17</sup>	✓	–
Indonesia <sup>18,27</sup>	✓	✓
Japan <sup>19,20</sup>	✓	✓
Malaysia <sup>21</sup>	✓	–
Philippines <sup>22</sup>	✓	–
Singapore <sup>23</sup>	✓	–
South Korea <sup>24</sup>	✓	–
Taiwan <sup>25</sup>	✓	–
Thailand <sup>26</sup>	✓	–

**TABLE 1** Local hypertension guidelines and home blood pressure monitoring (HBPM) guidelines in the 10 Asian countries/regions

Thailand. Similarly, experts from most of the countries/regions perceived high HBPM awareness among general practitioners, except for India, Thailand, South Korea, and Taiwan. HBPM usage among specialists was considered as high by experts in most of the countries except for India, Indonesia, South Korea, and Thailand. In contrast, experts from the majority of the countries/regions considered HBPM usage among general practitioners as low, except for China, Japan, and Malaysia.

In terms of guidelines, the experts from most of the countries/regions perceived high awareness and/or usage of related guidelines among specialists, except for experts in India, Indonesia, and Thailand. However, experts from the majority of the countries/regions perceived low awareness and usage of relevant guidelines among general practitioners, with the exception of China, Japan, Malaysia, and Taiwan. The experts shared that among physicians who used guidelines, most of them consult international guidelines for guidance—European Society of Cardiology (ESC) and the European Society of Hypertension (ESH) guidelines<sup>6</sup> and American College of Cardiology (ACC)/American Heart Association (AHA) clinical practice guidelines<sup>7</sup> being most commonly used. According to the experts, physicians in China, Indonesia, Japan, Malaysia, Singapore, and Taiwan also refer to their local guidelines for guidance.<sup>16,18,20,21,23,25</sup>

### 3 | BARRIERS TO USING HBPM

While the obstacles hindering the use of HBPM in the 10 countries/regions come in varying degrees of magnitude and forms, the experts broadly identified three barriers that are prominent in most of the countries/regions.

The experts cited lack of awareness of the importance and clinical value of the role of HBPM in hypertension management as one of the major barriers in many of the countries/regions. Many countries/regions face the issue of physicians perceiving home blood pressure monitors as unreliable and inaccurate, especially in countries where physician-administered clinic-based blood pressure measurement (CBPM) is perceived to be superior. This misconception about HBPM also extends to patients and, together with low awareness of HBPM and hypertension, affects patients' compliance to HBPM.

Another prominent barrier is inadequate knowledge of HBPM best practices. The experts in most of the countries/regions raised several physician-related knowledge gaps that are prevalent in their countries/regions. This includes physicians being unsure about the best practices for using HBPM to monitor blood pressure and guide hypertension management, and which home blood pressure monitors to recommend to patients. Similarly, the majority of countries/regions also faced the problem of patients not knowing which device to use and how to carry out HBPM correctly. Across the countries/regions that faced such barriers, it was recognized that the absence of detailed guidance and recommendations on HBPM in local guidelines and inadequate physician and patient education were key factors contributing to inadequate knowledge and low awareness of HBPM.

The experts also shared that the lack of resources is a key impediment to using HBPM in the region. Common to all countries/regions was the recognition that physicians often have insufficient time to properly guide patients in taking appropriate home blood pressure measurements and to do any counseling on the basis of HBPM. Several meta-analyses of randomized controlled trials showed that any feedback or counseling in response to HBPM would improve treatment compliance and blood pressure control.<sup>28,29</sup> Some countries/regions face difficulties in providing patients with adequate access to validated home blood pressure monitors. A major issue is the lack of appropriate information on the validation requirement for and validation status of home blood pressure monitors. Physician and patient education may have to be promoted in the use of web-based listings of validated devices, such as the recently established "STRIDE BP" ([www.stridebp.org](http://www.stridebp.org)). In addition, although home blood pressure monitors are generally affordable, cost must still be an issue in the purchase and use of such devices. Health insurance support, if any, may be of great help.

### 4 | RESEARCH EFFORTS AND OTHER INITIATIVES RELATING TO HBPM

A summary of the initiatives that are undertaken to support the use of HBPM in the countries/regions is provided in Table 2.<sup>3,8,9,15,16,20,30-43</sup> The initiatives generally fall into three broad categories: HBPM research, HBPM guidelines/consensus, and other HBPM-related initiatives, such as education and access. A significant disparity in the pace and extent of HBPM-related initiatives appears across the countries/regions. Notably, Japan devotes substantial efforts to promote the use of HBPM and has established several initiatives including all of the aforementioned categories. Japan has conducted considerable research on HBPM both in the real-world and randomized controlled settings. The large evidence base derived from these research has supported the development of local HBPM guidelines, providing comprehensive recommendations and guidance to healthcare providers (HCPs).<sup>20</sup> In addition, several other initiatives targeting both HCPs and patients are implemented to raise awareness of the value of HBPM in hypertension management, support easy access to HBP monitors, and provide guidance on how to use these devices (Table 2).

According to the experts, there is limited local HBPM research in most of the other countries/regions (Table 2). Besides Japan, only China and Indonesia have developed formal local HBPM guidelines/consensus, and Malaysia and Taiwan are making strides toward providing local recommendations on HBPM in their countries/regions. Educational initiatives, where available, are mostly targeted at HCPs rather than patients (Table 2). Although HBPM research and HBPM guidelines/consensus are available for the Asian region as a whole,<sup>3,8,9,40</sup> the experts' acknowledged that much work remains to be done at the country level in most of the countries/regions to promote the use of HBPM.

TABLE 2 Summary of research efforts and other existing initiatives to support the use of home blood pressure monitoring (HBPM) in the Asian countries/regions

Country/region	Published HBPM research	HBPM guidelines/consensus	HBPM initiatives
China	<p><i>Real-world studies</i></p> <ul style="list-style-type: none"> <li>Evaluated the reproducibility of morning blood pressure and the association of morning blood pressure with vascular injury in home compared with ambulatory measurements [2019]<sup>41</sup></li> <li>Investigated the accuracy of HBPM in the diagnosis of white-coat and masked hypertension in comparison with ABPM [2015]<sup>42</sup></li> <li>Evaluated the reliability of HBPM and ABPM in the diagnosis of hypertension [2015].<sup>43</sup> Refer to HBPM research in Asia (last row)</li> </ul>	<ul style="list-style-type: none"> <li>HBPM guidelines by the Chinese Hypertension League [2019]<sup>16</sup></li> <li>HBPM consensus by the Chinese Hypertension Committee, Chinese Hypertension League, Chinese Society of Cardiology [2012]<sup>15</sup></li> </ul>	–
India	Refer to HBPM research in Asia (last row)	–	<p><i>Ongoing educational initiatives for HCPs (The Rising Giant: Decoding Omron Healthcare's India strategy: The BioVoice; 2018, <a href="https://www.biovoice.com/the-rising-giant-decoding-omron-healthcares-india-strategy/">https://www.biovoice.com/the-rising-giant-decoding-omron-healthcares-india-strategy/</a>)</i></p> <p>Organizers: Indian Society of Hypertension (ISH) and Omron Healthcare</p> <ul style="list-style-type: none"> <li>Disseminate information on the correct ways of taking home blood pressure measurements</li> <li>Provide education on home blood pressure management and the importance and benefits of HBPM</li> <li>Organize regular conferences and workshops to raise awareness of the latest trends in hypertension and its management</li> </ul>
Indonesia	Refer to HBPM research in Asia (last row)	HBPM guidelines by the Indonesian Society of Hypertension (InaSH) [2019] <sup>27</sup>	<p><i>Educational efforts for HCPs (Check Blood Pressure at Home: Meramuda; 2018, <a href="https://meramuda.com/beauty-health/kampanye-ceramah-cek-tekanan-darah-di-rumah/">https://meramuda.com/beauty-health/kampanye-ceramah-cek-tekanan-darah-di-rumah/</a>; Ceramah: Detecting hypertension at home: The Jakarta Post 2019, <a href="https://www.thejakartapost.com/life/2019/10/14/ceramah-detecting-hypertension-the-silent-killer-at-home.html">https://www.thejakartapost.com/life/2019/10/14/ceramah-detecting-hypertension-the-silent-killer-at-home.html</a>)</i></p> <p>Organizers: InaSH and OMRON</p> <p>Organized scientific meetings and lectures to increase awareness of the importance of measuring blood pressure at home</p>
Japan	<p><i>Key landmark studies<sup>a</sup></i></p> <p><i>Real-world studies</i></p> <ul style="list-style-type: none"> <li>The HONEST study evaluated morning home blood pressure as a predictor of coronary artery disease events [2016]<sup>30</sup></li> <li>The J-HOP study evaluated the optimal time schedule for HBPM to best predict stroke and coronary artery disease [2016]<sup>31</sup></li> <li>The Ohasama study evaluated the relationship between home blood pressure levels and the risk of hemorrhagic and ischemic stroke [2004]<sup>32</sup> <i>Interventional studies</i></li> </ul> <p>The HOMED-BP study evaluated the feasibility of adjusting antihypertensive drug treatment based on home blood pressure [2012]<sup>33</sup></p> <p>Refer to HBPM research in Asia (last row)</p>	<ul style="list-style-type: none"> <li>HBPM guidelines by the Japanese Society of Hypertension (JSH) (2nd edition) [2012]<sup>20</sup></li> <li>HBPM guidelines by the Japanese Society of Hypertension (JSH) (1st edition) [2003]<sup>34</sup></li> </ul>	<p><i>Ongoing education efforts for HCPs and public (Japanese Association of Hypertension. 2017-2018, <a href="http://ketsuatsu.net/index.html">http://ketsuatsu.net/index.html</a>; Blood Pressure Handbook: Japanese Association of Hypertension and Japanese Society of Hypertension; 2019, <a href="http://ketsuatsu.net/bp_techou.html">http://ketsuatsu.net/bp_techou.html</a>)</i></p> <p>Organizers: JSH and Japanese Association of Hypertension (JAH)</p> <ul style="list-style-type: none"> <li>Provide education to promote the value of HBPM in hypertension management</li> <li>Provide education to ensure HCPs stay abreast of the latest guidelines and recommendations for HBPM</li> <li>Issue a blood pressure handbook to disseminate information on how to measure home blood pressure accurately <i>Ongoing efforts to support easy access to home blood pressure monitors (List of Sphygmomanometer: Japanese Society of Hypertension; 2019, <a href="https://www.jpnh.jp/com_ac_wg1.html">https://www.jpnh.jp/com_ac_wg1.html</a>)</i></li> </ul> <p>Organizer: JSH</p> <p>Provide lists of certified automated home blood pressure monitors</p>

(Continues)

Table 2 (Continued)

Country/region	Published HBPM research	HBPM guidelines/consensus	HBPM initiatives
Malaysia	<p><i>Real-world studies</i></p> <ul style="list-style-type: none"> <li>Determined the number of patients who used home blood pressure monitors and the types of devices used [2018]<sup>35</sup></li> <li>Explored the influence of HBPM on primary care patients with hypertension [2011]<sup>36</sup> Refer to HBPM research in Asia (last row)</li> </ul>	<p>Development of local HBPM guidelines by the Malaysian Society of Hypertension (MSH) in progress</p>	<p>Ongoing educational initiatives for public</p> <p>Organizer: MSH</p> <p>Development of a HBPM guidebook in progress</p>
Philippines	Refer to HBPM research in Asia (last row)	–	–
Singapore	Refer to HBPM research in Asia (last row)	–	<p>Education efforts for HCPs (Annual Scientific Meeting. Hypertension in organ failure - Still relevant? Singapore Hypertension Society; 2019, <a href="https://www.shs.org.sg/wp-content/uploads/2019/04/SHS-8th-Annual-Scientific-Meeting-2019.pdf">https://www.shs.org.sg/wp-content/uploads/2019/04/SHS-8th-Annual-Scientific-Meeting-2019.pdf</a>)</p> <p>Organizer: Singapore Hypertension Society (SHS)</p> <p>Conducted hands-on workshop on HBPM (2019)</p>
South Korea	Refer to HBPM research in Asia (last row)	–	–
Taiwan	<p><i>Real-world studies</i></p> <ul style="list-style-type: none"> <li>Evaluated the relationship between ambient temperature and home BP [2019]<sup>37</sup></li> <li>Evaluated the association of HBPM and ABPM with preclinical hypertensive cardiovascular damage [2019]<sup>38</sup></li> <li>Evaluated the effectiveness of home telehealth care (HBPM and automatic data transmission) combined with care management by public health nurses in improving blood pressure control in patients with hypertension [2019]<sup>39</sup> Refer to HBPM research in Asia (last row)</li> </ul>	<p>Development of local HBPM consensus in progress</p>	<p>Education efforts for HCPs and public</p> <p>Organizer: Taiwan Hypertension Society (THS)</p> <ul style="list-style-type: none"> <li>Advocate the "7-2-2 (7 consecutive days/twice a day/twice each occasion)" slogan to facilitate standardized implementation of HBPM in the public (since 2011)</li> <li>Conducted "Attitudes toward HBPM" survey among HCPs in 2019-2020 to promote the value of HBPM in hypertension management</li> <li>Issued the "Hypertension Pocket Guidelines" [2015] to support HCPs to follow HBPM recommendations</li> </ul>
Thailand	Refer to HBPM research in Asia (last row)	–	–
Asia (including all the 10 Asian countries/regions among others)	<p><i>Real-world study</i></p> <p>The Asia BP@Home study investigated the home blood pressure control status in several Asian countries/regions [2018]<sup>40</sup></p> <p><i>Literature review</i></p> <p>Examined the status of HBPM in several Asian countries/regions [2017]<sup>3</sup></p>	<ul style="list-style-type: none"> <li>Asia-specific guidance on HBPM by the HOPE Asia Network [2018]<sup>7</sup></li> <li>Asia-specific HBPM consensus by the HOPE Asia Network [2018]<sup>8</sup></li> </ul>	–

Note: [] indicates year of publication.

Abbreviations: ABPM, ambulatory blood pressure monitoring; HCPs, healthcare providers; HOMED-BP, Hypertension Objective treatment based on Measurement by Electrical Devices of Blood Pressure; HONEST, Home blood pressure measurement with Olmesartan Naive patients to Establish Standard Target blood pressure; HOPE Asia, Hypertension, Brain, Cardiovascular and Renal Outcome Prevention and Evidence in Asia; J-HOP, Japan morning surge-Home Blood Pressure study.

<sup>a</sup>A multitude of studies have evaluated home blood pressure monitoring (HBPM) in Japan, only key landmark studies are shown here.

## 5 | FUTURE DIRECTIONS FOR HBPM

The experts recommended taking broad and strategic actions to promote the use of HBPM in clinical practice. While the experts acknowledged the unique situation in each country/region, they agreed that local HBPM research and guidelines/consensus are synergistic foundational steps necessary for enhancing HBPM awareness and access (Figure 1).

### 5.1 | Local HBPM research

The experts recognized that evidence from international studies may not be directly applicable to local populations or contexts. As such, there is a need to drive further research on HBPM in the countries/regions. This serves a twofold purpose. Firstly, local research can generate the evidence on the clinical value of HBPM within the local population and context. Such research efforts have also been recommended by international guidelines to evaluate HBPM reproducibility across a wider range of ethnicities.<sup>7</sup> Secondly, local research is able to account for the inherent variability in seasonal changes, healthcare practices and policies, as well as behavioral, diet, and lifestyle practices specific to each individual country/region. This in turn allows it to generate meaningful country-specific findings on the local application of HBPM.

The experts recognized the importance of conducting interventional studies and real-world studies within local research, and suggested several potential areas of HBPM research which are summarized in Table 3. These local research efforts can yield invaluable country-specific findings, which form the local evidence base to support the development of local HBPM guidelines/consensus, and to

inform future planning of local initiatives and programs to increase HBPM awareness and access.

### 5.2 | Evidence-based local HBPM guidelines/consensus

The experts recommended developing or updating local HBPM guidelines/consensus to provide formal recommendations to guide physicians in the latest best practices for using HBPM in their respective countries/regions. The experts acknowledged that local guidelines/consensus should take reference from the latest HBPM research and recommendations to standardize key practices for using HBPM, including frequency and duration of HBPM, as well as diagnostic thresholds. While the experts maintained that the general principles of HBPM should remain consistent with international and regional recommendations, they also recognized the need for local guidelines/consensus to be adapted according to the unique scenario of each country/region for it to be both useful and relevant to the physicians in the respective countries/regions.

Through evidence generated from local research, local HBPM guidelines/consensus will thus be able to bring a twofold benefit to enhance HBPM awareness. First, by capturing evidence on the clinical value of HBPM in local populations, local guidelines/consensus will be able to help to raise HBPM awareness, improve understanding of HBPM's best practices among local physicians, and advocate and encourage the use of HBPM. Second, these local guidelines/consensus will function as an evolving set of standardized country-specific best practices to support continuous education of local physicians and other HCPs.

### 5.3 | HBPM-related initiatives

The experts acknowledged that continuous efforts to raise HBPM awareness and improve access to HBPM are critical for promoting sustainable improvements in HBPM use in clinical practice. They recommended leveraging on the local research efforts and local guidelines/consensus to drive these initiatives. The experts recommended regular knowledge sharing to help physicians and HCPs stay up to date with the latest HBPM research and recommendations. They also recommended that specialists lead the way as active advocates for HBPM, so as to influence healthcare policies and practices, and to promote the use of HBPM among general practitioners. The latter may substantially vary across countries, because the health insurance system is well established in some Asian countries/regions but is still being established or even far from ready in many others.

The experts suggested making use of both digital and non-digital resources, such as mobile healthcare applications, websites of non-profit organizations, and information leaflets for patient education. They recommended disseminating information on the importance of measuring home blood pressure and the correct way of measuring home blood pressure that can be easily understood by patients and

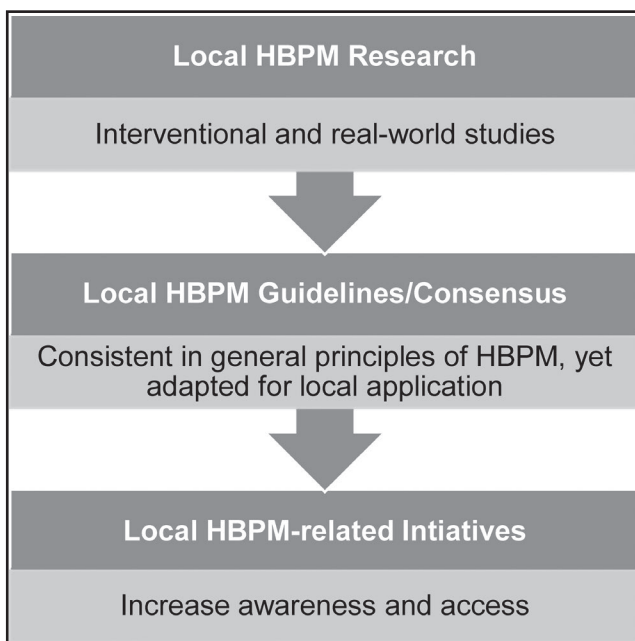


FIGURE 1 Future directions for home blood pressure monitoring (HBPM)

TABLE 3 Potential areas of local home blood pressure monitoring (HBPM) research

Interventional studies	Real-world studies
<ul style="list-style-type: none"> <li>• Examine the value of HBPM in assessing the efficacy of hypertension chronotherapy</li> <li>• Identify country/region-specific diagnostic thresholds and treatment targets of home blood pressure based on cardiovascular outcomes and mortality</li> <li>• Assess cardiovascular outcomes in hypertension patients treated according to home blood pressure</li> </ul>	<ul style="list-style-type: none"> <li>• Compare HBPM vs clinic blood pressure measurement and/or ABPM</li> <li>• Examine HBPM usage in local populations</li> <li>• Evaluate how different climate, healthcare settings, and lifestyle practices affect HBPM</li> <li>• Understand gaps in knowledge and motivation for HBPM usage in both physicians and patients</li> </ul>

Abbreviation: ABPM, ambulatory blood pressure monitoring.

the general public. The experts agreed that patients and their caregivers should also be given access to a list of certified home blood pressure monitors to ease their selection of these devices.

To alleviate the issue of physicians not having sufficient time to guide patients in taking appropriate home blood pressure measurements, the experts recommended providing HBPM training to other HCPs who can help to guide patients how to measure home blood pressure accurately. Finally, in countries where home blood pressure monitors are less accessible, the experts suggested loaning the devices to patients.

## 6 | SUMMARY

Overall, there are vast disparities in the use and awareness of HBPM and related guidelines among physicians in the 10 Asian countries/regions. Although physicians in most of the countries have a high level of awareness of HBPM, use of HBPM and related guidelines is low in many countries/regions, especially among GPs, with only China, Indonesia, and Japan having formal local HBPM guidelines/consensus to provide detailed guidance. The experts broadly identified three barriers that are prominent in most of the countries/regions, including lack of awareness of the clinical value of HBPM, inadequate knowledge of HBPM best practices, and limited resources and access to HBP monitors. Although HBPM-related initiatives are implemented in all countries/regions, only Japan has implemented several comprehensive initiatives to promote the use of HBPM; much work remains to be done in most countries/regions. The experts recommended conducting more local research and developing local HBPM guidelines/consensus as the foundational steps for increasing HBPM awareness and access. Enacting the necessary change will require recognition of the unique challenges in each country/region and collaboration across various stakeholders to promote the use of HBPM in patient care.

The key limitation of the present statement is the small number of participants. Other than Japan which had three representatives, the rest of the countries/regions each had only one representative to provide their perspectives on the status of HBPM in their respective countries/regions. Although the experts are researchers in the field of HBPM or leaders of national hypertension or cardiac societies, there is a potential for bias, particularly in countries with varied healthcare settings where the standards of healthcare

facilities differ between cities and rural areas. A larger panel comprising experts from interdisciplinary teams, as well as general practitioners and other HCPs in each country, will provide a more comprehensive perspective. Nonetheless, this article provides interesting insights into the current status of HBPM and the barriers that are hindering the use of HBPM in the 10 countries/regions in Asia. It serves as a valuable foundation for supporting future work and initiatives.

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## CONFLICT OF INTEREST

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## AUTHOR CONTRIBUTIONS

All authors contributed to the conceptualization, drafting, and revision of the manuscript. They approved the final version of the manuscript and take responsibility for the accuracy and integrity of the work as a whole.

## ORCID

Ji-Guang Wang  <https://orcid.org/0000-0001-8511-1524>

Kazuomi Kario  <https://orcid.org/0000-0002-8251-4480>

Sungha Park  <https://orcid.org/0000-0002-7798-658X>

Apichard Sukonthasarn  <https://orcid.org/0000-0001-7569-9563>

Jam Chin Tay  <https://orcid.org/0000-0001-7657-4383>

Yuda Turana  <https://orcid.org/0000-0003-4527-0285>

Narsingh Verma  <https://orcid.org/0000-0003-0348-7419>

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