Factors associated with the practice of home blood pressure monitoring among healthcare providers in public healthcare clinics in Putrajaya

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ABSTRACT

Introduction: Hypertension remains a leading global health concern due to its high prevalence and serious health complications. Nowadays, home blood pressure monitoring (HBPM) has emerged as a valuable non-pharmacological intervention to control blood pressure (BP). Numerous studies have demonstrated the pattern of HBPM practice among hypertensive patients. However, information on optimal practice of HBPM instruction by the healthcare providers (HCPs) is still lacking. Therefore, the main objective of this study is to assess the prevalence of optimal practice of HBPM instruction methods by the HCPs to their hypertensive patients and factors associated with it.

Materials and Methods: This is a cross-sectional study, conducted among HCPs with working experience of more than a year, from all four government primary health clinics in Putrajaya between March 2023 and September 2024. The validated Malay-version i-HBPM questionnaire, also known as "the practice of HBPM instruction methods for hypertensive patients" questionnaire was used in this study.

Results: A total of 285 HCPs were recruited in this study. The prevalence of optimal practice of HBPM instruction methods by the HCPs to their hypertensive patients was 14.4%. The most frequently reported barriers to HBPM recognition among HCPs were a lack of understanding of HBPM (28.8%), a lack of HBPM guidelines (17.2%) and the high cost of devices (16.5%). From the HCPs' thought and perspective, the top three most significant patient-related barriers were a lack of understanding of HBPM (42.1%), followed by high device cost (33.0%) and low education level (29.5%). Attending HBPM training was the only significant factor associated with the optimal practice of HBPM instruction methods given by HCPs to their patients (adjusted OR 3.48, 95.0% CI 1.29, 9.34, p = 0.013).

Conclusion: This study demonstrated a low prevalence of optimal practice of HBPM instruction methods provided by HCPs to their hypertensive patients despite high recognition and recommendation of HBPM among HCPs. HBPM training for HCPs is very crucial to improve their knowledge and consultation skills on HBPM.

KEYWORDS:
Home blood pressure monitoring; practice instruction methods; healthcare providers; hypertension management; training HBPM

INTRODUCTION

Hypertension remains a leading global health concern due to its high prevalence and serious health complications leading to cardiovascular and chronic kidney diseases, especially in low- and middle-income countries.[1-3] Despite advancement in treatment, however, rates of blood pressure (BP) control remain suboptimal, with only a small number of patients achieving the target levels, primarily those receiving treatment in the primary care settings. For the past decades, there has been a fluctuating trend in the prevalence of hypertension in many countries around the globe, including Asia. For instance, China has reported an increased prevalence of hypertension among adults from 20.8% in 2004 to 29.6% in 2010, but has declined to 24.7% in 2018, demonstrating good progress in the prevention and control.[4]

While in Malaysia, about 80.0% of hypertensive patients receive treatment in the primary care setting, but only half of them (40.0%) managed to achieve controlled BP, which puts the other half at risk of morbidity and mortality.[5] In terms of disease trend, the prevalence of hypertension slightly decreased from 32.7% in 2011 to 30.3% in 2019 and 29.2% in 2023.[5-7] Compared to other neighbouring countries in Southeast Asia, the prevalence of hypertension in Malaysia is still higher than in Singapore (23.5%), Thailand (24.7%), Indonesia (26.5%), and the Philippines (28.0%).[8]

Home blood pressure monitoring (HBPM) has emerged as a valuable tool to control BP, subsequently improving hypertension outcomes by empowering patients to self-monitor their BP outside the clinic setting (such as home, pharmacy, office, etc.).[9,10] Numerous studies recommend the practice of HBPM among hypertensive patients due to its convenient, cost-effective, user-friendly ability to detect white-coat syndrome (masked hypertension), ability to improve BP control, and ability to adhere the patient with their medication.[8,11,12] However, the effectiveness of HBPM highly depends on the recommendations and quality of instruction given by the healthcare providers (HCPs) regarding proper

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practice of HBPM in terms of BP measurement technique, record of BP, interpretation of BP results, and actions when BP reaches an emergency level.[13,14]

The optimal practice of HBPM instruction methods towards hypertensive patients by HCPs is not easy and challenging. Many studies revealed that not only patients, but HCPs also often have a lack of knowledge about HBPM, leading to incorrect practice of HBPM among the patients.[15-17] The incorrect instruction of HBPM by the HCPs could also make hypertension management less effective.[18] In some situations, despite HCPs being aware of HBPM and its implementation based on standard guidelines, however, only a small proportion recommended and instructed HBPM to their hypertensive patients.[10]

The recommendation and optimal practice of HBPM instruction methods towards hypertensive patients are not limited to the duty of the doctors but also other non-doctor HCPs, in view of the doctors have limited time seeing patients due to a high number of patients during clinic follow-up or hospital admission, commitment to other clinical procedures or surgeries and commitment to administrative works.[19,20] The non-doctors, especially nurses and pharmacists, also play crucial roles in patient education regarding HBPM.[21,22] However, studies worldwide across various specialities and healthcare settings have shown that the practice of instruction of HBPM among physicians, surgeons, general practitioners, pharmacists, and nurses remains inconsistent.[15,18,23,24] Other studies demonstrated that the practice of recommendation and optimal instruction of HBPM towards hypertensive patients was still low among non-doctor HCPs, with about 10.0% and 14.0% prevalence among nurses and pharmacists.[18,23]

Factors such as inadequate HBPM training among HCPs, a lack of familiarity with HBPM guidelines, and time constraints in patient care are significant barriers to delivering effective instruction of HBPM to hypertensive patients.[15,18,25] Addressing these challenges requires commitment from HCPs to familiarise themselves with HBPM guidelines, participate in proper training on HBPM, and improve communication skills when treating patients.[10,26,27]

In Putrajaya, a different situation is seen in this federal territory of Malaysia, where the prevalence of hypertension is increasing over the years, from 24.1% in 2015 to 24.7% in 2019 and to 24.9% in 2023.[5-7] The increase in the disease burden may be influenced by the quality of instruction of HBPM given by HCPs to their hypertensive patients at the primary care setting. Therefore, the main aim of this study is to determine the prevalence of optimal practice of HBPM instruction methods given by HCPs from primary health clinics in Putrajaya and its associated factors.

MATERIALS AND METHODS

Study Design and Populations

This observational cross-sectional study was conducted at the government primary health clinics in the Federal Territory of Putrajaya under the administration of Putrajaya Health Office from March 2023 until September 2024. The study population consisted of different professions of HCPs (i.e., Family Medicine Specialists (FMS), medical officers (MO), medical assistants (MA), pharmacists, and nurses) working more than one year at all primary healthcare clinics of Putrajaya (Presint 9 Health Clinic, Presint 11 Health Clinic, Presint 14 Health Clinic, and Presint 18 Health Clinic).

Sample Size and Sampling Method

The sample size was calculated using a single population proportion formula, considering a 95.0% confidence level, a 5.0% margin of error, a 20.0% buffer for non-response, and the prevalence of instruction of HBPM by HCPs (19.7%),[10] resulting in a minimum required sample size of 296. Due to the limited number of pool populations of 350 HCPs in all primary health clinics in Putrajaya, the Krejcie and Morgan formula 1970 was applied to accommodate and manoeuvre this limitation.28 The new minimum required sample size was 145.

Study Tools

The "instruction practice of HBPM for hypertensive patients" questionnaire, also known as *i-HBPM* in this study, was used in this study to assess the practice of this HBPM instruction by HCPs. It was originally derived from the study done among physicians in Japan.[10] It was then modified and validated to suit the population settings in Asian countries, including Malaysia.[17] Permission to use questions from the original survey was obtained from the authors. In view of one of the group respondents being a public health nurse and the local setting in Putrajaya that mainly uses the Malay language, the questionnaire required a standard forward-backwards translation process by two bilingual subject matter experts, which was done during the pre-validation study.

In the validation study, 30 HCPs (who were different from the main study) were recruited. The Malay version of *i-HBPM* was found to be well-understood and acceptable; therefore, no further modifications were made. The tool's internal consistency was excellent, with a Cronbach's alpha of 0.97, confirming its reliability for use among the target population. The questionnaire is self-administered and consists of four sections: A, B, C, and D. Section A comprises the sociodemographic background of HCPs, such as age, gender, ethnicity, and level of education. Section B comprises a professional practice profile, such as the type of profession and years of practice, status of HBPM training, and the number of hypertensive patients seen.

Section C focuses on the recommendation of HBPM by HCPs to the hypertensive patients, HBPM usage among hypertensive patients, and recognition by HCPs and patients as an efficient non-pharmacological intervention to control BP. Section D focuses on how the HCPs instruct their patients in terms of the seven correct practices of HBPM, with one correct item giving one mark, contributing to a minimum score of zero and a maximum score of seven marks. The scores were then categorised into "optimal instruction practice of HBPM" (full marks) and "non-optimal instruction practice of HBPM" (score of less than seven marks). In the same section, awareness of the HCPs was assessed by asking about the reference value of home BP. Respondents who answered correctly were classified as having "good awareness", and those who did not were classified as having "poor awareness".

Table I: Sociodemographic background and professional practice profiles (N = 285)

Variables	n (%)	Median (IQR)
Sociodemographic background		
Age (Years)		37 (9)
Gender		
Male	52 (18.2)	
Female	233 (81.8)	
Ethnicity		
Malay	240 (84.2)	
Chinese	15 (5.3)	
Indian	21 (7.4)	
Others	9 (3.1)	
Educational Level		
Primary & secondary education	39 (13.7)	
Tertiary education	246 (86.3)	
Professional Practice Profiles		
Type of Profession		
Family Medicine Specialist	9 (3.2)	
Medical Officers	91 (31.9)	
Pharmacists	39 (13.7)	
Medical Assistants	64 (22.5)	
Staff Nurse	42 (14.7)	
Public Health Nurse	40 (14.0)	
Duration of practice (Years)		8 (7)
Attended HBPM training		
Yes	195 (68.4)	
No	90 (31.6)	
Interaction with hypertensive patients (%)		45.0 (47.5)

Data collection

A simple random sampling method was applied at the beginning of the study by selecting the respondents from the available name list of HCPs from each government primary health clinic in Putrajaya. A computer-generated random number list (using the RAND function in Microsoft Excel) was used to select names for study invitation. The selected names were then screened based on the criteria in the preliminary questions given through each clinic representative via *WhatsApp* link. The inclusion criteria were a Malaysian citizen, HCPs of MOH Malaysia, working for more than a year in the primary health clinic, having a valid practising certificate, and being able to read in Malay or English. Those who were eligible to participate in the study were informed by the researcher. Subsequently, they received a *WhatsApp* link to the written consent that was attached to the questionnaire. Those who agreed to participate proceeded to the questionnaire. Those who disagreed skipped the questionnaire. The on-site researchers were available at the primary health clinic and by phone to assist the respondents. Two reminder text messages were sent each week for three weeks to the clinic representatives.

Data analysis

The data was generated automatically in the Microsoft Excel document once the respondents completed the questionnaire. This data was transferred to the IBM Statistical Package for Social Sciences (SPSS) version 29 for statistical analysis. There was no missing information, misinformation, or duplication of data since the online questionnaire was previously set with these safety features. Continuous data was checked for data distribution. Normally distributed continuous data were presented as mean and standard deviation (SD), and non-normal data distribution was presented as median and interquartile range (IQR). The categorical data were presented in numbers and percentages.

Logistic regression analysis was performed to determine the associated factors of the practice of optimal instruction of HBPM among the HCPs. All variables with a p-value < 0.25 in the simple logistic regression (SLR) analysis were included in the multiple logistic regression (MLR) analysis. The likelihood of practising optimal instruction of HBPM in the SLR and MLR analysis was presented as crude odds ratio ($_{\text{crude}}$ OR) and adjusted odds ratio ($_{\text{adjusted}}$ OR), respectively. A p-value < 0.05 was considered statistically significant.

Ethical Approval

This study was registered under the National Medical Research Registry (NMRR), Ministry of Health (MOH) Malaysia, with an ID of NMRR-23-03068-33X (IIR). Before the commencement of the study, ethical clearance was obtained from the Malaysian Medical Research and Ethics Committee (MREC), MOH Malaysia. Approval to carry out this study was obtained from the Putrajaya Health Office.

RESULTS

A total of 285 HCPs were recruited in this study. The sociodemographic background and professional practice profiles are presented in Table I. The median (IQR) age of the respondents was 37 years (9 years), with most respondents being female (81.8%) and of Malay (84.2%). About half of the respondents attained tertiary education (52.6%). The median (IQR) duration of service in the primary health clinic was 8 years (7 years). In terms of professional roles, about 35.1% were doctors (FMS and medical officers) and 64.9% were non-doctors (pharmacists, medical assistants, and

Table II: The status of the recommendation of HBPM to the hypertensive patients, the usage of HBPM among the patients, and the recognition of HBPM by the HCPs

Variables	n (%)
Recommendation of HBPM by HCPs to their Hypertensive Patients	
Recommendation of HBPM	
Yes	282 (98.9)
No	3 (1.1)
Type of patients that HCPs would recommend HBPM # (n = 282)	
All patients	146 (51.2)
Newly diagnosed patients with hypertension only	150 (52.6)
Already known hypertension only	127 (44.6)
Patients on drug treatment	142 (49.8)
Patients on non-pharmacological treatment	96 (33.7)
Patients with low drug compliance/adherence	110 (38.6)
Barrier when HCPs did not recommend HBPM # (n = 3)	
Lack of guidelines for HBPM	3 (100.0)
Lack of understanding of HBPM	1 (33.3)
Recommendation of HBPM is low in the guidelines	2 (66.6)
No reimbursement for HBPM	1 (33.3)
Scepticism about HBPM	-
Too much burden for physician	2 (66.7)
Concern on reliability and accuracy of HBPM device	3 (100.0)
High cost of the device	3 (100.0)
Inertia of physician on practice of hypertension	-
Usage of HBPM among Hypertensive Patients	
Percentage of hypertensive patients who have BP measurement devices (%)	50.0 (50.0)
Percentage of hypertensive patients who measure their own BP (%)	50.0 (50.0)
Recognition of HBPM as an Effective Intervention by HCPs	
Recognition of HBPM perceived by HCPs	
Highly	184 (64.6)
Moderate to poorly	101 (35.4)
Barrier when HCPs moderate to poorly recognized HBPM # (n = 101)	
Lack of guidelines for HBPM	49 (17.2)
Lack of understanding of HBPM	82 (28.8)
Recommendation of HBPM is low in the guidelines	34 (11.9)
No reimbursement for HBPM	23 (8.1)
Scepticism about HBPM	14 (4.9)
Too much burden for physician	8 (2.8)
Concern on reliability and accuracy of HBPM device	40 (14.0)
High cost of the device	47 (16.5)
Inertia of physician on practice of hypertension	1 (0.4)
HCPs think that recognition of HBPM are perceived by patients	
Highly	139 (48.8)
Moderate to poorly	146 (51.2)
Barrier when HCPs think that their patient moderate to poorly recognized HBPM # (n = 146)	
Lack of understanding of HBPM	120 (42.1)
No Recommendation to patients by physician	45 (15.8)
Scepticism about HBPM	30 (10.5)
Too much burden for patients	55 (19.3)
Concern on reliability and accuracy of HBPM device	70 (24.6)
High cost of the device	94 (33.0)
Low educational level	84 (29.5)
Optimal Practice of HBPM Instruction Methods by HCPs to Their Hypertensive Patients	
Level of optimal instruction practice of HBPM by HCPs to their hypertensive patients	
Optimal practice of HBPM	40 (14.4)
Non-optimal practice of HBPM	245 (85.6)
Awareness of normal home BP level	
Level of awareness of normal home BP reference value	
Good awareness	60 (21.1)
Poor awareness	225 (78.9)

The item is multiple-choice answer where the respondent can choose more than one answer option.

Table III: The assessment of the factors affecting optimal practice of the respondents using simple logistic regression (SLR) and multiple logistic regression (MLR) analysis

Simple Logistic Regression			
Variable	**Crude OR**	**95.0% CI**	**p-value**
Age (Years)	1.02	0.97, 1.07	0.442
Gender			
Male	0.32	0.22, 1.62	0.315
Female	1.00		
Ethnicity			
Others	0.58	0.08, 4.27	0.596
Indian	1.27	0.18, 8.89	0.808
Chinese	0.52	0.10, 2.61	0.427
Malay	1.00		
Educational level			
Primary & secondary education	0.46	0.13, 1.56	0.210
Tertiary education	1.00		
Type of profession			
Doctors	0.34	0.17, 0.67	0.002*
Non-Doctors	1.00		
Duration of practice (Years)	1.02	0.97, 1.08	0.464
Attended HBPM training			
Yes	3.79	1.43, 10.02	0.007*
No	1.00		
Interaction with hypertensive patients (%)	1.01	1.00, 1.02	0.042*
Recommendation of HBPM to hypertensive patients			
Yes	-	-	0.999
No	1.00		
Percentage of hypertensive patients who have HBPM devices (%)	1.01	0.99, 1.02	0.369
Percentage of hypertensive patients who measure their own BP (%)	1.01	1.00, 1.03	0.070
Recognition of HBPM perceived by HCPs			
Highly	1.53	0.73, 3.21	0.260
Moderate to poorly	1.00		
HCPs think that recognition of HBPM are perceived by patients			
Highly	1.92	0.96, 3.81	0.064
Moderate to poorly	1.00		
Level of awareness of normal home BP reference value			
Good awareness	0.33	0.16, 0.67	0.002*
Poor awareness	1.00		
Multiple Logistic Regression			
Variable	**Adjusted OR**	**95.0% CI**	**p-value**
Attended HBPM training			
Yes	3.48	1.29, 9.34	0.013*
No	1.00		

* Significant p-value < 0.05

nurses). The majority of the respondents (76.6%) attended training on HBPM. The median (IQR) percentage of hypertensive patients seen by HCPs in a week was 45.0% (47.5%).

In Table II, almost all HCPs (98.9%) recommended HBPM, with about half (52.6%) doing so for newly diagnosed cases. About 50.0% of patients owned and practised HBPM. Regarding recognition, 64.6% of HCPs perceived HBPM to be highly recognised among themselves, and 48.8% perceived their patients has high recognition on HBPM. However, only 14.4% of HCPs demonstrated optimal practice of HBPM instruction methods. Among those reporting moderate or poor recognition, the most cited barriers were lack of understanding of HBPM (28.8%), lack of guidelines (17.2%), and high device cost (16.5%). HCPs also identified patient-related barriers, including lack of understanding (42.1%), high cost of automatic devices (33.0%), and low education level (29.5%). Only 21.1% of respondents had good awareness of the normal home BP reference value.

Based on Table III, the significant factors associated with optimal practice of instruction methods to hypertensive patients by HCPs from the SLR analysis included attending HBPM training, being a doctor, weekly interaction with hypertensive patients, and good awareness of normal BP level thresholds. In the MLR analysis, attending HBPM training was the only significant associated factor identified. Respondents who attended HBPM training had 3.5 times the odds of practising optimal instruction of HBPM to their hypertensive patients compared to those who did not (adjusted OR 3.48, 95% CI 1.29-9.34, p = 0.013).

DISCUSSION

This study demonstrated that only 14.4% of HCPs practised optimal HBPM instruction methods with their hypertensive patients in the primary health clinics of Putrajaya, indicating that the rest of the patients had not received proper instructions methods on how to perform HBPM effectively. HBPM and other settings outside the clinic, the practice of

HBPM relies entirely on the patient's knowledge and awareness, which in turn depends on the quality of instruction provided by the HCPs. The better the quality of instruction by HCPs, the more effective the HBPM practice among hypertensive patients. This finding shows not much difference with a similar study done among physicians in Japan, where only 10.4 - 12.7% of them provided optimal instruction of HBPM, aligned with the clinical practice guidelines.10 Similarly, a multi-country study revealed that the physicians often recommended HBPM to their patients but failed to ensure correct patient instructions.[17]

In this study, the most frequently reported barrier to HBPM recognition among HCPs (in a sequential manner) was a lack of understanding of HBPM (28.8%), a lack of guidelines (17.2%) and the high cost of BP measurement devices (16.5%). These findings are supported by the Asia HBPM survey study, where nearly half of physicians agreed that lack of understanding of HBPM (49.7%), absence of clear guidelines (49.6%) as important key barriers.[17] From the HCPs' thought and perspective, the top three most significant patient-related barriers were a lack of understanding of HBPM (42.1%), followed by high device cost (33.0%) and low education level (29.5%). Similarly, in the Asia HBPM survey study, 65.5% of physicians cited poor understanding, low education (48.5%), and the high cost of BP measurement devices (44.3%) as major barriers.[17]

This study also demonstrated that attending HBPM training was a significant factor associated with the optimal practice of HBPM instruction methods given by HCPs to their patients (adjusted OR 3.48, 95.0% CI 1.29, 9.34, p = 0.013). This finding is supported by other studies, which demonstrated that structured training significantly improves HCPs' guideline-based BP monitoring instruction and patient counselling quality.[29-31] The evidence clearly demonstrates that HBPM training plays a pivotal role in elevating the standard of patient care. Although other studies often report multiple predictors of HBPM implementation, such as telemonitoring, team-based care, baseline knowledge gaps, HCP self-efficacy, and access to resources.[32-35] Our findings suggest that HBPM training alone is a significant predictor, reflecting unique contextual factors in Malaysia. However, the underlying mechanisms require further exploration, as qualitative research on why training has a disproportionate impact in certain settings remains limited.

The important findings from this study show that the capacity building of the HCPs on HBPM should be enhanced at the primary health clinics. Training of HBPM should be conducted regularly using a variety of modules and involve all levels of professions. To date, there is no available guideline on HBPM in Malaysia. Therefore, we recommend developing national HBPM guidelines as a standard guidance for HCPs. Low education level among hypertensive patients is something that cannot be changed (non-modifiable factor), which also reflects the low literacy and understanding of HBPM practice. However, HCPs who are equipped with the skill set of optimal practice of the HBPM instruction methods may help their patients better understand that practice.

In the situation where the high cost of BP measurement devices is inevitable, the HCPs should have options to offer to their patients, for example, BP measurement can be done at their localities through the "*Komuniti Sihat Perkasa Negara* (KOSPEN)" program, the "*Panel Penasihat Klinik Kesihatan*" Program or the "Pemeriksaan Kendiri" station at the nearest primary health clinics with no cost. Collaboration can be done with the Family Health Development Division, MOH Malaysia, as a stakeholder to incorporate these patient-centred support (HBPM) into existing programs as stated above. These efforts are crucial for enhancing HBPM implementation in Malaysian primary care settings and ensuring that patients benefit from effective HBPM.

STRENGTHS AND LIMITATIONS

To the best of our knowledge, this is among the earliest studies in Malaysia that apply a validated Malay version *i-HBPM* questionnaire and assess the optimal practice of HBPM instruction methods by HCPs to their hypertensive patients at the primary health clinics setting. Most of the studies (including those done in Malaysia) focus on the trend and pattern of HBPM practice among the hypertensive patients, but not the HCPs, who play an essential role in ensuring proper instruction of HBPM practice. Without baseline data in the Malaysian setting, we could not make informed decisions to improve the quality of patient care, particularly in HBPM. A further limitation is that the *i-HBPM* questionnaire, although suitable for measuring HBPM practice patterns, was not originally developed as a predictive instrument. Its use as an outcome in association analysis may therefore introduce construct limitations, and the results should be interpreted cautiously. Future studies should consider validating instruments specifically intended for predictive analysis of HBPM instruction behaviours.

However, this study also has its limitations. First, the majority of the respondents were Malay (84.2%), which does not represent the actual composition of the Malaysian population in terms of ethnicity. Putrajaya is known to be the centre of federal government administration, where most government servants working here are mainly Malays.[36] Participation of the right proportion of other ethnicities in the future study could provide more meaningful findings. Second, Putrajaya is a comparatively urbanised administrative region with better-resourced healthcare facilities and greater capacity for professional development than many rural or semi-urban areas in Malaysia. These contextual features may have facilitated higher levels of HBPM instruction and training uptake among HCPs than might be available in less-urban districts. Accordingly, caution is warranted when extrapolating our results to healthcare providers working in rural settings, remote regions or clinics with more constrained resources. Expanding this study to a larger scale involving different geographical and socioeconomic settings would give us different findings and perspectives.

Furthermore, a small number of respondents with optimal practice (14.4%) may have affected the reliability of the logistic regression model. Low event-per-variable ratios can lead to imprecise parameter estimates, wider confidence

intervals, and instability in regression coefficients. As such, the predictive strength of the model may be constrained, and the results should be interpreted with caution. Thus, larger samples or higher event counts in future studies would strengthen model robustness.

CONCLUSION

This study demonstrated a low prevalence of optimal practice in HBPM instruction methods provided by HCPs to their hypertensive patients at 14.4%, despite a high percentage of HCPs recognising and recommending HBPM to their patients. The findings indicate that HCPs had good attitudes towards the implementation of HBPM to their patients but had limited knowledge on how to instruct their patients in practising HBPM. Regular HBPM training for HCPs is crucial to improve their knowledge and consultation skills on HBPM, subsequently enabling them to assist their patients in practising HBPM.

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CONFLICT OF INTEREST

None.

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