

APPENDIX.

Adoption of the 2017 American College of Cardiology/American Heart Association (ACC/AHA) Hypertension Guideline in Hong Kong: a pilot study

This pilot study was conducted to investigate the adoption and perception of the American College of Cardiology/American Heart Association (ACC/AHA) guideline among Hong Kong medical doctors, and to investigate factors associated with adherence to the current guidelines among Hong Kong medical doctors.

In December 2020, an online questionnaire was distributed to medical doctors working in the Hong Kong healthcare system through different media, including email and direct electronic message via WhatsApp. All surveys were completed voluntarily and were self-administered. Confidentiality was ensured by storing the survey results using password-protected software; only members of the research group could access the collected data. This survey was approved by the Survey and Behavioural Research Ethics Committee of The Chinese University of Hong Kong (Ref: SBRE-20-194).

The required sample size was calculated using the following formula: $n = (Z^2 \times p(1-p)) / e^2$, where n is the sample size, Z is the Z score, e is the margin of error, and p is the sample proportion. For a 95% confidence level, the Z score is 1.96; the margin of error was set to 12%, and a 50% sample proportion is used for this pilot study. The calculated sample size was 67 responses required.

A total of 88 responses were received. Descriptive statistical analyses were used to organise and summarise the data into tables.

More than 80% of respondents adopted the 2017 ACC/AHA hypertension guideline either partially or completely, whereas only 16% of them did not adopt the new guideline at all. The most common reasons for guideline adoption were that it helped to raise patient awareness (61.6%) and that it was beneficial to patients (61.6%).

Most respondents (71.6%) selected new research findings as the most important factor in updating the diagnostic benchmark for hypertension. Moreover, changes in medical resources available, mortality rate of hypertension, increasing trend of earlier age of onset of hypertension and the availability of new treatment options were considered important by more than one third of respondents. Respondents considered other factors less important in defining hypertension, including increased incidence of co-morbidities associated with hypertension, and influence of pharmaceutical companies.

A larger proportion of younger doctors (aged ≤ 30 years) and less experienced (≤ 10 years of experience) did not adopt the new guideline; in contrast, a higher adoption rate was seen among older and more experienced doctors. The proportion of respondents working in the private sector adopting the new guideline was higher than that of those in the public sector. Respondents who trained outside Hong Kong had a higher adoption rate than those trained in Hong Kong.

SUPPLEMENTARY TABLE 1. Adoption rate of the 2017 ACC/AHA hypertension guideline by medical doctors in Hong Kong, and their reasons for this (n=88)*

Are you adopting the above guideline in your clinical practice? (n=88)	
Adoption rate	
Yes, completely (both the threshold of hypertension and management guidelines)	12 (13.6%)
Yes, partially (either the threshold of hypertension or management guideline only)	62 (70.5%)
No	14 (15.9%)
If you adopt the ACC/AHA guideline, why? (Respondents may choose more than 1 answer) [n=74]	
It increases patient's awareness to their hypertensive conditions	45 (60.8%)
It is beneficial to patients	45 (60.8%)
It allows earlier screening of hypertension	30 (40.5%)
It increases patient's motivation to improve their hypertensive conditions	30 (40.5%)
It relieves the burden of the medical sector	17 (23.0%)
There is some evidence that lower blood pressure has cerebrovascular benefits, especially in younger patients	1 (1.4%)

Abbreviations: ACC = American College of Cardiology; AHA = American Heart Association

* Data are shown as No. (%)

SUPPLEMENTARY TABLE 2. Opinions of Hong Kong doctors on factors for considering an update to the diagnostic benchmark for hypertension (n=88)

Factors	No. (%) of respondents
Changes in the medical resources available	33 (37.5%)
Changes in prevalence	15 (17.0%)
Population dynamics	17 (19.3%)
Mortality rate of hypertension	30 (34.1%)
Increasing trend of earlier age of onset of hypertension	35 (39.8%)
Availability of new treatment options	30 (34.1%)
New research findings	63 (71.6%)
Increased incidence of co-morbidities associated with hypertension	1 (1.1%)
Influence of the pharmaceutical company	1 (1.1%)

SUPPLEMENTARY TABLE 3. Respondent characteristics and adoption status of ACC/AHA hypertension guideline

	Adoption (n=74)	No adoption (n=14)
Age, y		
≤30	7 (63.6%)	4 (36.4%)
31-60	54 (85.7%)	9 (14.3%)
>60	13 (92.9%)	1 (7.1%)
Practice experience, y		
≤10	15 (75.0%)	5 (25.0%)
11-20	15 (88.2%)	2 (11.8%)
21-30	20 (87.0%)	3 (13.0%)
>30	24 (85.7%)	4 (14.3%)
Clinical practice		
Public sector	29 (74.4%)	10 (25.6%)
Private sector	34 (89.5%)	4 (10.5%)
Others	11 (100.0%)	0 (0.0%)
Place of medical training		
Hong Kong	57 (81.4%)	13 (18.6%)
Non-Hong Kong	17 (94.4%)	1 (5.6%)

Abbreviations: ACC = American College of Cardiology; AHA = American Heart Association

* Data are shown as No. (%)