Validation of the HONSUN LD-578 blood pressure monitor for home blood pressure monitoring according to the European Society of Hypertension International Protocol.

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Abstract

OBJECTIVE: This study aimed to evaluate the accuracy of the automated oscillometric upper arm blood pressure monitor LD-578 (HONSUN Group, Shanghai, China) for home blood pressure monitoring according to the International Protocol.

METHOD: Systolic and diastolic blood pressures were sequentially measured in 33 adult Chinese using a mercury sphygmomanometer (two observers) and the LD-578 device (one supervisor). Ninety-nine pairs of comparisons were obtained from 15 participants in phase 1 and a further 18 participants in phase 2 of the validation study. Data analysis was performed using the ESHIP Analyzer.

RESULTS: The LD-578 device successfully passed phase 1 of the validation study with a number of absolute differences between device and observers within 5, 10, and 15 mmHg for at least 32 of 45, 41 of 45, and 45 of 45 measurements (required 25, 35, and 40), respectively. The device also achieved the targets for phase 2.1, with 67 of 99, 90 of 99, and 98 of 99 differences within 5, 10, and 15 mmHg, respectively, for systolic blood pressure, and with 69 of 99, 95 of 99, and 98 of 99 within 5, 10, and 15 mmHg, respectively, for diastolic blood pressure. In phase 2.2, 24 participants had at least two of the three device-observers differences within 5 mmHg (required >or=22) for systolic and diastolic blood pressure.

CONCLUSION: The HONSUN upper arm blood pressure monitor LD-578 can be recommended for home use in adults.