Healthcare staffs Adherence to Guidelines for Measuring Blood Pressure in practice; Self-Reported Study

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Abstract

Objectives: Obviously, diagnosis of hypertension, treatment, and follow-up depend on accurate measurement. The current study attempted to determine whether healthcare staffs are all measuring blood pressure (BP) according to Canadian guidelines.

Methods: A short survey was distributed to all educating healthcare staffs within the University Medical Centers, Gorgan, Iran.

Results: Seventy-nine percent of the surveys were completed and returned. Eleven of the recommendations were followed "always or most of the time." BP is measured manually by 65% of the respondents, and the most frequent barrier to following the recommendations was considered time.

Conclusion: The findings of the survey showed that measurement of BP according to Canadian Hypertension Education Program recommendations was felt to be essential and fulfilled in most cases, but there is even more room for perfection.

Introduction

Correct, reproducible measurement of blood pressure (BP) is critical when making decisions for patients' health care. Diagnosis of hypertension, treatment, and follow-up lie on accurate measurement. There are various effective medications to treat BP, but their use undertakes accurate measurement. The Committee on Utilization, Research and Education of Golestan University of Medical Sciences (GOUMS) tried to determine whether healthcare staffs are measuring BP in the same way and according to Canadian guidelines.

The 2010 Canadian Hypertension Education Program (CHEP) included detailed recommendations (1) for how BP should be measured. The Committee on Utilization, Research and Education of GOUMS settled a survey to discover how the majority of healthcare staffs measure BP in their own practices and to determine whether it is practical to follow the guidelines.

Methods

Practicing Residents, Interns, Externs and Nursing and Midwifery students from the GOUMS Medical Centers, Gorgan, Iran, were invited through available survey distribution to participate. They were requested to identify the frequency (using a 5-point Likert scale) with which they surveyed 11 selected CHEP recommendations for measuring a patient's BP. They also were asked to identify which of the recommendations they believed important as well as obstacles to following the recommendations. They were questioned who measured patient BP and how was it measured. Analysis was performed using SPSS Statistics Base version 16.0 (IBM, Chicago, IL)

Results

Of 236 participants invited to participate, 186 (79%) gave back the survey. BP measurement is a shared responsibility (physician/nurse/assistant) in 50% of the family practices that responded. BP is measured manually in 65% of the offices and measurement is automated in 22% of the offices, whereas 15% use both. On average, four readings were taken when an automatic machine was applied. One of the most frequent (73%) barriers to following the recommendations was time and set-up availability (27%) as the second.

The participants' responses on the 5-point scale were collapsed into 3 response categories: "always or most of the time," "sometimes," and "rarely and never followed." As seen in Table 1, 8 of the 11 recommendations (A through E and I through K) were reportedly followed "always or most of the time." Five of these items (C, E, I, J, and K) were not rated as important items to follow: their importance ratings varied between 9% and 39%.

Table 1: *Survey Responses from 186 healthcare staffs.*

Chep Recommendation	Always/Most Times	Sometimes	Rarely/ Never	Important	Ratio (Importance to Adherence)
A. Patient should be seated comfortably, back supported, feet flat, and legs not crossed.	169 (91)	11 (6)	6 (3)	123 (66)	71
B. Patient should be resting comfortably for 5 min in a seated position before measuring BP.	143 (77)	34 (18)	9 (5)	100 (54)	73
C. The patient's arm should be bare and supported at heart level.	151 (81)	28 (15)	7 (4)	71 (38)	48
D. A cuff appropriate to the size of the patient's arm should always be used.	186 (100)	0	0	110 (59)	60
E. There should be no talking and legs should not be crossed.	160 (86)	20 (11)	6 (3)	61 (33)	43
F. At least 3 measurements should be taken, no oftener than 1 min apart.	70 (38)	60 (32)	56 (30)	41 (22)	72
G. BP should also be measured with the patient standing for 2 minutes, with arm supported.	26 (11)	28 (15)	132 (74)	4 (2)	35
H. Reading should be taken at least once on both arms. If one arm gives a considerably higher reading, that arm should be used for future measurements.	64 (34)	48 (26)	74 (40)	19 (10)	39
I. Pressure should be rapidly increased to 30 mm above the point at which the radial pulse disappears.	136 (73)	28 (15)	22 (12)	30 (16)	29
J. Cuff deflation rate should be 2 mmHg per heartbeat.	112 (60)	33 (18)	41 (22)	17 (9)	16

K. In the case of arrhythmia, additional readings should be taken.	100 (54)	66 (35)	24 (13)	10 (19)	5
Values delivered as n (%). BP, blood pressure; CHEP, Canadian Hypertension Education Program.					

- Who is responsible for measuring the BP in the clinic: Nurse [56 (30)], Physician [130 (70)]
- The most important items (A to K), in your opinion, is: "B "[130 (70)]

Discussion

The results of the survey indicated that measurement of BP according to CHEP recommendations was felt to be important and was directed in most cases. It would seem that there is room for improvement yet. This may have been partially accomplished in our department by basically completing the survey. The practicality of following all CHEP guidelines could be probed. The importance or "weighting" of several guidelines should be elucidated. [1,2] Although inaccurate technique or incorrect tools may produce BP values that are consistent from time to time in a given office, these values may not be applicable for therapeutic decision making and may not be equal to values obtained by another observer in different settings, including self-measurement by patients at home. [3-6]

Because there is a large number of medications to treat high BP and because guidelines seem to be suggesting lower and lower targets, leading to the potential for defining more patients as hypertensive, it would seem critical that BP be measured precisely and reproducibly. Many environmental or procedural factors may alter BP values as much as or more than medications. For example, as stated in the 2005 American Heart Association BP measurement recommendations, [3] "The individual should be comfortably seated, with the legs uncrossed, and the back and arm supported, such that the middle of the cuff on the upper arm is at the level of the right atrium (the mid-point of the sternum)." Overlooking this factor may cause a systematic error in blood pressure readings of as much as 10 mm Hg. [4-6]

Conflict of interest

The authors declare no conflict of interest

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