

Blood Pressure Assessment Practices of Dental Hygienists

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Abstract

An estimated 50 million Americans have high blood pressure (HBP), with 30% of them unaware of their condition. Both the American Dental Association (ADA) and the American Dental Hygienists' Association (ADHA) have advocated including recording blood pressure during the dental appointment. Recording blood pressure is also a standard procedure in patient care. This study surveyed 236 dental hygienists attending a continuing education program to document their blood pressure assessment practices. The majority (55%) of participants indicated they *rarely* or *never* record blood pressure. The primary reason cited by 51% of the participants was *a lack of time in the appointment*. Based on these findings, a recommendation was made for dental offices to modify their patient check-in procedures to include recording blood pressure.

Keywords: Hypertension, high blood pressure, HBP, assessment, dentist, dental hygienist

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Introduction

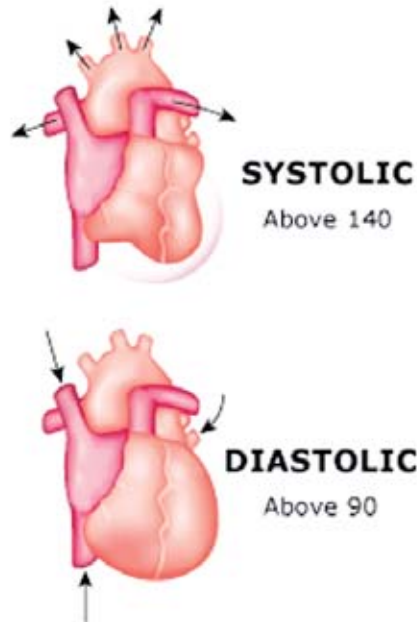
The American Heart Association (AHA) defines hypertension, or high blood pressure (HBP), as systolic pressure of 140 mm Hg or higher, diastolic pressure of 90 mm Hg or higher, or taking an antihypertensive medication.¹ As many as 65 million Americans age six and older have HBP, with approximately 30% of these individuals unaware they have this condition.² The Centers for Disease Control (CDC) estimate of the individuals who are aware they have HBP, only 34% have the condition under control.³

HBP increases the risk of heart disease and stroke, the first and third leading causes of death in the United States.^{4,5} The AHA estimates the cost of heart disease and stroke—both direct costs such as physicians' treatment and medications and the indirect costs of lost productivity resulting from morbidity and mortality—will be \$368.4 billion for the year 2004.¹ While the death rates from heart disease and stroke have declined in recent years, the number of deaths directly attributed to HBP increased by 2.9% from 2001 to 2002.⁴

The AHA reports the prevalence of HBP in blacks in the United States is among the highest in the world.¹ The southeastern United States has a higher prevalence of HBP among blacks and whites combined than any other region of the nation. In addition death rates from stroke are highest in the southeast.⁶

The United States Department of Health and Human Services, Office of Disease Prevention and Health Promotion, developed Healthy People 2010, a set of health objectives for the nation to achieve in the first ten years of this century. The goals of Healthy People 2010 are to (1) increase life expectancy and quality of life and to (2) eliminate health disparities among different segments of the population.⁷ Twenty-eight focus areas were identified in order for these goals to be attained. The focus area of heart disease and stroke listed a disparity in the number of existing cases of HBP in blacks when compared to whites. This focus area further reiterated the need for a multidisciplinary team approach to education and identification of HBP.⁷

In December 2003 the National High Blood Pressure Education Program released the



Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure (JNC 7).⁸ This report stated most Americans are more aware of HBP and are being treated for this condition more frequently than in the past. However, the report indicated this improvement is not evident in all segments of the population and reiterated previous reports stating approximately 30% of adults are still unaware of their hypertension.^{2,6,7,8} According to the report, “undiagnosed, untreated, and uncontrolled hypertension clearly places a substantial strain on the healthcare delivery system.”⁸

JNC 7 introduced a new classification of blood pressure in order to identify individuals who are at an increased risk of developing HBP. The designation “prehypertension” was given to those individuals whose blood pressure readings on two or more office visits average a systolic pressure of 120-139 mm Hg or a diastolic pressure of 80-89 mm Hg. The prehypertension designation is not considered a disease category but rather a signal to alert clinicians and patients of the risk of developing HBP and the need for lifestyle changes to lower the blood pressure reading.⁸ Similar to previous JNC reports, JNC 7 called for the cooperation of all healthcare providers—including dental professionals—in identifying HBP and reinforcing strategies for treatment and control.

Equally important roles of dental hygienists are: clinician, educator/health promoter, consumer advocate, administrator/manager, change agent, and researcher.⁹ The traditional clinician role of the dental hygienist involves a process of care including assessment, diagnosis, planning, implementation, and evaluation of treatment for prevention, intervention, and control of oral diseases. The assessment phase of care includes patient data collection through the health questionnaire, vital signs, radiographs, and oral examination of soft and hard tissues. Adult vital signs include body temperature, pulse rate, respiration, tobacco use, and blood pressure.⁹

Both the American Dental Association (ADA) and the American Dental Hygienists' Association (ADHA) have adopted policy in support of screening for HBP during oral healthcare appointments.^{10,11} Practitioners are encouraged to become involved in the detection and management of this widespread condition.¹² Unfortunately, recording blood pressure is often omitted during dental appointments even though studies have shown the prevalence of HBP.^{13,14,15,16} Kellogg and Gobetti found 32% (160/500) of the patients screened in a dental school setting suffered from hypertension.¹⁷ Thompson reported 60.8% (374/615) of the patients in a dental hygiene school patient population had prehypertension and 14.1% (87/615) had hypertension.¹⁸

The purpose of this study was to assess the blood pressure screening practices of dental hygienists. Specifically, the study measured the frequency of taking blood pressure and investigated reasons why some dental hygienists do not include this screening during patient assessment.

Method and Materials

Non-experimental survey research was used to collect data in this study.

A convenience sample of dental hygienists attending a continuing education course sponsored by the Medical College of Georgia (MCG) was utilized for the study. The study protocol was approved by the MCG Human Assurance Committee. Three hundred eighty-four dental hygienists received the surveys in their



course registration materials. Completion of the survey signified the individuals' voluntary consent to participate in the study. Participants received verbal instructions to complete surveys anonymously and place them in designated containers.

Data was entered and analyzed using SPSS 12.0 statistical software. Cross tabulations were run to detect significant differences among nominal and ordinal level variables. If the calculated critical values for chi-square were at least as large as the respective critical values at the .05 alpha (α) level, then the calculations were considered statistically significant in this study.

Results

Two hundred thirty-six surveys were returned, yielding a response rate of 61% (236/384). The majority of the participants reported practicing in three states as shown in Figure 1.

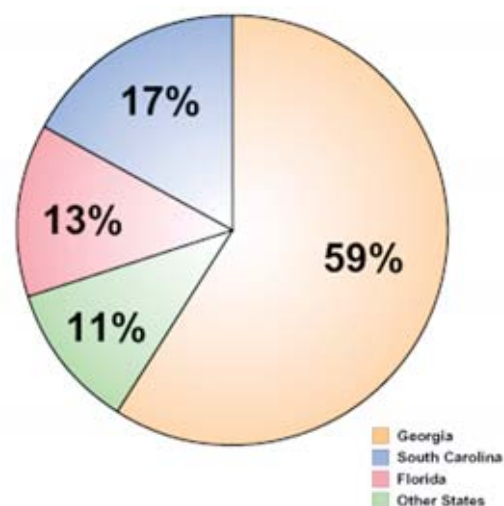


Figure 1.

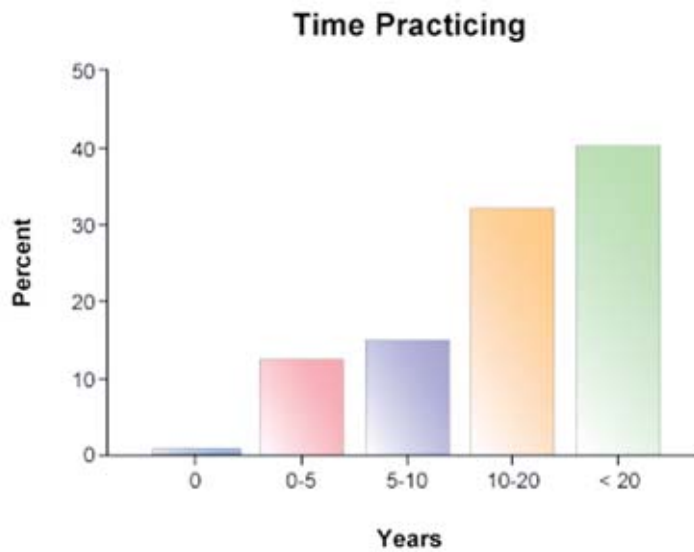


Figure 2.

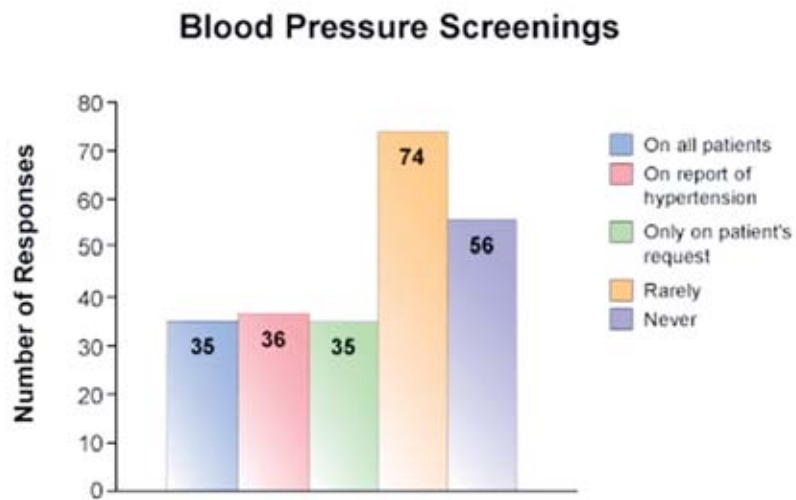


Figure 3.

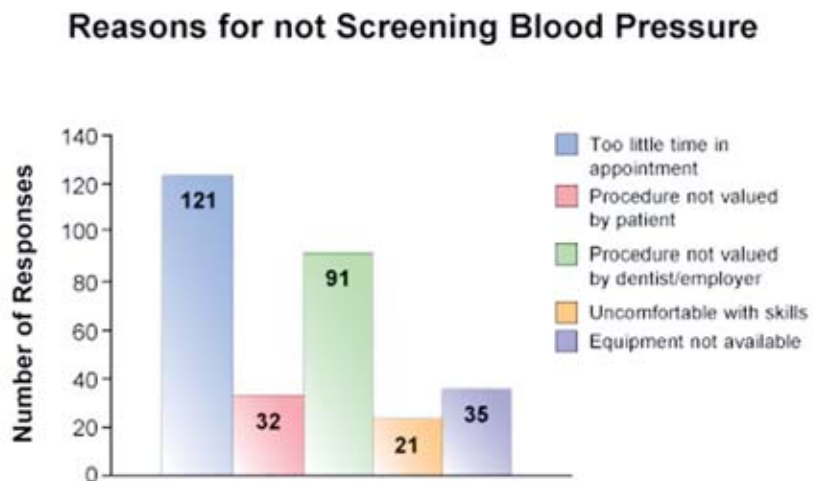


Figure 4.

One hundred thirty-eight (59%) practice in the state of Georgia, 26 (11%) in South Carolina, 31 (13%) in Florida, and 41 (17%) in either North Carolina, Kentucky, New York, or New Jersey. There was no significant difference between the practice state and the frequency of assessing blood pressure.

The majority, 72% (169/234), have practiced more than ten years as shown in Figure 2.

Of those, 32% (75/234) have practiced between ten and 20 years, and 40% (94/234) have practiced over 20 years. Chi-square analysis revealed a statistically significant difference between the frequency of taking blood pressure and the years of practice ($p = 0.046$). In the sample dental hygienists who have practiced zero to five or five to ten years took blood pressure more often than those who have practiced 20 or more years.

Fifteen percent of the participants (35/236) indicated they take blood pressure readings on all patients. However, most reported (55%, 130/236) taking blood pressure readings *rarely* or *never* as shown in Figure 3. Reasons selected for not taking blood pressure are shown in Figure 4.

The majority, 51% (121/236), cited *too little time in the dental appointment* as the reason for not assessing blood pressure. Ninety-one participants (39%) reported the *procedure is not valued by their dentist/employer*. Other reasons selected were: *procedure is not valued by the patient* (14%), *uncomfortable with skills of screening blood pressure* (9%), and *equipment for recording blood pressure is not available* (15%).

Discussion

Since participants in this study are not representative of dental hygienists in every region, caution must be utilized in generalizing the results to the entire population. However, results of this study are validated by those found in a 2004 pilot study published by the researchers.¹⁶ In the pilot study 66% reported rarely or never taking blood pressure readings on their patients, compared to 55% in the current study. Similarly, 50% of the participants cited insufficient time in the appointment as the reason

for not assessing blood pressure, compared to 51% in the current study. Other reasons selected in the pilot study included: procedure is not valued by the dentist/employer (31%) and equipment for recording blood pressure is not available (19%). These reasons compare to those reported in the current study, 39% and 15%, respectively.



The results of this study showed 55% of participants do not routinely record blood pressure, which closely mirrors those found in 2001 by Carlin and Rothenberger who surveyed Nebraska dental hygienists and dentists. They found the majority of respondents felt it was appropriate to assess blood pressure but only 47% actually implemented it in the dental office.¹⁵ They similarly noted more than half of the participants cited lack of time as the reason for not taking blood pressure which closely compares to the 51% documented in the current study.

A 1984 study by Ramaprasad and others surveyed dental practitioners in New Jersey and found while 74% of the dentists felt blood pressure assessment was important, only 33% reported it was actually assessed in their offices.¹³ In the current sample, almost 20 years later, the number of practitioners assessing blood pressure has decreased to 15%.

The importance of assessing blood pressure has been emphasized by the AHA, the United States Department of Health and Human Services, and most recently by the new classification of blood pressure readings released by the National High Blood Pressure Education Program.^{1,7,8} Assessing blood pressure is a standard procedure in patient care. This ethical and legal responsibility is further supported in policies of the ADA and the ADHA.^{10,11}

In several studies time is reported as the major barrier to assessing blood pressure in the dental office.^{13,15,16} Therefore, the researchers recommend dental staff modify their patient check-in procedures to include recording blood pressure. The availability of reliable electronic equipment facilitates recording by properly trained staff. These readings can then be reviewed by the dentist or dental hygienist during the assessment phase of care. Thus, office efficiency is maximized without compromising the quality of total patient care.

Conclusion

Patients who consider themselves healthy will often visit their dentist more frequently than their physician. Consequently, the possibility of encountering patients who are unaware of their hypertension is high. Dental professionals have a unique opportunity to screen, educate, and refer patients who may be at risk for hypertension.

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Ms. Hughes received her dental hygiene degree from the Medical College of Georgia and her Master of Education from Cambridge College. She has over twenty years experience as a clinician, educator, and speaker. A former instructor for the Medical College of Georgia Department of Dental Hygiene, she is currently a corporate dental hygiene administrator for CoastDental in Tampa, FL.

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