

Prevalence of Hypertension among Dental Patients Attending the College of Dentistry, Aljouf University

Abdullah AlKhalidi^{1*}, Asmat Ullah Khattak², Ravi Kumar Gudipaneni², Santosh R Patil²

¹Intern, ²Assistant Professor,
College of Dentistry, AlJouf University, Kingdom Of Saudi Arabia.

ABSTRACT

Objective: To determine the prevalence of hypertension among dental patients attending the college of Dentistry, AlJouf University.

Method: Measurement of the blood pressure of all the patients aged 18 to 85 years who were attending the dental clinic was carried out using Joycare JC-110M Digital Blood Pressure Monitor. Patients diagnosed as hypertensive a physician or those with systolic blood pressure reading greater than 140 mm Hg and diastolic blood pressure greater than 90 mm Hg were included in the study.

Results: Out of 274 participants, 52 patients met the inclusion criteria, the overall prevalence of hypertension among dental patients was 18.97% and among these about 51.92% were unaware about their hypertensive state.

Conclusion: The observation of this suggests that majority of dental patients were unaware of their blood pressure levels and screening for hypertension in general dental practice may

be of benefit to the population at large.

Keywords: Hypertension, Dental patients, Diagnosis, Patient care.


*Correspondence to:

Dr. Abdullah AlKhalidi,
Intern, College of Dentistry,
AlJouf University,
Kingdom Of Saudi Arabia.

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INTRODUCTION

Hypertension is one of the cardiovascular diseases which has been reported as one of the common cause of death worldwide.^{1,2} Hypertension can be diagnosed by measuring a patients blood pressure and once detected, treatment methods have reduced the risk of cardiovascular diseases and fatality to a reasonable level.³ Since many patients do not routinely take their own blood pressure readings, hypertension often goes unnoticed and some of the hypertensive patients on treatment may not be controlled. The prevalence of hypertension in populations have been reported to differ geographically since it may be influenced by environmental factors.⁴

Hypertension is regarded as the major risk factor for death in the Kingdom of Saudi Arabia by Global Burden of Disease 2010.⁵ From 1990 to 2010 the burden of hypertension remained very high in KSA.^{5,6} Studies in the literature reports increased levels of blood pressure in Saudi Arabia ranging from 26.1% to 25.5%.⁷⁻¹⁰ Hypertension is a common disease encountered in dental setting. Its wide spreading, terrible consequences, and life-long treatment require an attentive approach by dentists. Hypertension management in dental office includes disease recognition and correct measurement, knowledge of its treatment and oral adverse effects, and risk assessment for dental treatment. Dentist role in

screening undiagnosed and undertreated hypertension is very important since this may lead to improved monitoring and treatment.^{1,2} Patients with hypertension are at increased risk of developing adverse effects in a dental office. Therefore, measuring BP will be done in the dental office to every new patient, for each visit. In patients with chronic systemic diseases, BP measurement will be carried out during more complicated dental interventions as oral surgery, restorative treatment complicated with longer sessions, placing dental implants, and periodontal surgery. Routine measurement of BP may reduce the risk of cardiovascular events and acute complications during dental treatment, especially when conscious sedation or general anesthesia is required. BP monitoring is vital for emergency treatment of patients who have side effects. Routine monitoring of patients with known hypertension allows the dentist to determine if BP is adequately controlled.⁵

This research was carried out because of the increase in the number of hypertensive individuals and the fact that the dental setting is viewed as a stressful environment for some individuals. The combination of high blood pressure and a stressful environment may have harmful, even fatal consequences for patients.

MATERIAL AND METHODS

This study was carried out in the College of Dentistry AlJouf University, the sample comprised of 274 dental patients aged 18 years and above attending with various complaints. Consent from all of the participants that their data could be used in this research and the procedures that we carried were accordingly part of the work. Data were recorded from the patients on a specially prepared Proforma. Participants were categorized into 2 groups (1) Those diagnosed with HTN and (2) those who were undiagnosed. A patient was considered hypertensive if he or she reported being diagnosed having HTN previously and is taking antihypertensive drugs. A subject was included as undiagnosed hypertensive, when exhibited an elevated blood pressure reading, at the initial screening (systolic reading > 140 mm Hg and diastolic > 90 mm Hg). The patient's blood pressure at initial screening appointments was determined and recorded, using a sphygmomanometer and a stethoscope following the standard method.¹¹ Those patients exhibiting elevated blood pressure were categorized according to classification given by JNC 7 report.¹² Statistical analyses were performed using Chi-square test. The cuff was placed on the arm 2cm (approximately two finger-breadths) above the elbow. It was made sure that the tubing is placed at the centre of your arm facing the front, and that the sensor is correctly placed. The end of the cuff I pulled so that it is

wrapped evenly and firmly around the arm. Tightness of the cuff is checked to see is it appropriate (operator was able to just slip two fingertips beneath the cuff, near its edge at the top end). Before starting, the patient was asked to relaxed for a few moments and to kee still and quiet during measurement. The cuff was then inflated and deflated slowly. After the measurement was completed, readings of the systolic and diastolic blood pressures were recorded, the readings were again recorded after 5 minutes and the average was recorded. The data were entered into Excel (Microsoft version 14.5.20) and were presented as descriptive values.

RESULTS

The total number of patients screened was 274 belonging to the age range between 18 to 85 years. The distribution of participants by age is mentioned in table 1 and age wise distribution of hypertensives was mentioned in table 2. The prevalence of elevated blood pressure among the patients was 18.97%, out of these about 51.92% were unaware about their hypertensive state. Out of 52 patients diagnosed with hypertension, 146 (53.38%) were in normal range, 76 (27.73%) were in pre-hypertension state, 31 (11.31%) patients were in stage I hypertensive group and 21 (7.66%) patients were in stage II hypertensive group (Table 3).

Table 1: Distribution of subjects by age

Age group	n	%
18-25 years	74	27.0
26-40 years	83	30.2
41-55 years	58	21.16
56-70 years	37	13.50
71-85 years	22	8.0

Table 2: Age and gender wise distribution of hypertensive subjects

	18-25 years	26-40 years	41-55 years	56-70 years	71-85 years	Total
▪ Diagnosed	0	2	5	11	7	25
▪ Previously undiagnosed	0	3	6	10	8	27
▪ Total	0	5	11	21	15	52

Table 3: Age wise distribution of hypertensives according to JNC VII classification

Age range	Normal < 120/80 mm Hg	Prehypertension 120/80-139/89 mm Hg	Stage I hypertension 140/90-159/99 mm Hg	Stage II hypertension > 160/100 mm Hg	Total
18-25	59	15	0	0	74
26-40	62	16	04	01	83
41-55	18	29	08	03	58
56-70	06	10	15	06	37
71-85	01	06	04	11	22
Total	146	76	31	21	274

DISCUSSION

There is currently a lack of perceived need among dental practitioners to routinely measure blood pressure or to give health and lifestyle advice to patients with regard to vascular risk factors. Many practitioners do not feel that this is a role that dentists should undertake and it may provoke hostility from patients who are not used to receiving this type of advice from their dentist.¹³

Only few people aware of the risk of hypertension may realize that they are walking around with this disease undiagnosed. Therefore, the role of dentists in detecting undiagnosed hypertension is crucial and should be emphasized in our specialty as a standard of care. Doing so will hopefully help to decreasing the risk of death from this silent killer disease worldwide and prevent the development of life-threatening complications such as strokes or cardiovascular diseases during or after dental treatment. It is important for dentists to be aware of the medications his or her patients are taking. Dentists need to inform patients that hypertension may have serious health consequences and could necessitate changes in their dental treatment. Dental care should focus on the actions, interactions, and adverse effects of antihypertensive medications.¹⁴

To the best of our knowledge, our study is the first to report the prevalence of hypertension patients in the patients attending a Dental College in Saudi Arabia, previously Bogari et al., report the prevalence of hypertension patients in an endodontic clinic in Jeddah.¹⁵

The results of this study revealed that the prevalence of elevated blood pressure readings among screened patients in the clinic was 18.97%, out of these Nearly 51.92% of these patients were unaware about their hypertension. Whereas Bogari et al., observed that the prevalence of hypertension in endodontic clinic was 63.7% and 52.9% of those patients were unaware they had hypertension. The prevalence rate of the hypertension was very but the percentage of unaware patients were similar to our study.¹⁵

In a study carried out by Kellogg et al., 32% of the participants were reported to be hypertensive, and 49% of these patients were unaware of their high blood pressure prior to being screened at the dental clinic.¹⁶ Fernández-Feijoo et al., recorded about 29% of participants with hypertension among the patients attending a dental clinic.¹⁷ Similar to our study, Ojenan et al., noted a prevalence of among 19.7% of participants and among these 52.5% of patients were unaware of their hypertensive status.¹⁸ Michael et al., observed 1,343 samples from various dental offices over a two month time period and observed that about 12% of patients had high blood pressure and out of these patients, 35% were diagnosed with hypertension during the screening process and confirmed to be unaware of hypertension.¹⁹

The undiagnosed 27 patients who were unaware of their hypertensive state, presented with an elevated blood pressure level, and all of them were referred/advised to general physician for further diagnosis and treatment.

Even though very much disparity in the prevalence of hypertension was observed between our study and the studies previously reported in the literature, the percentage of undiagnosed hypertension remains high and averages about 50%. The reason for the disparity in this prevalence may be due to Variations in sample size, life style, dietary habits and

psychosocial aspects may be reason for the disparity in hypertension.

Dentists should further be aware of the importance of anxiety control of their (medicated and nonmedicated) hypertensive patients. Anxiety and psychosocial stressors have been linked to elevated blood pressure in susceptible patients. Practitioners may find it beneficial to premedicate with an anxiolytic agent the evening before the morning of a dental appointment when treating the anxious, hypertensive population. According to professional standards of care, the dentist should record the blood pressure of every new patient, refer the patients with questionable results, to a general physician, monitor and diagnose patients at each visit, and re-evaluate all patients annually.

SUMMARY

Hypertension is the most commonly diagnosed disease worldwide and is associated with increased cardiovascular risk and mortality. Many patients with hypertension have uncontrolled disease. The dentist has an important role in screening undiagnosed and undertreated hypertension, which may lead to improved monitoring and treatment. Based on the evidence presented in this study, dentists should place an emphasis on the detection and referral of patients suffering from high blood pressure.

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