



RESEARCH ARTICLE

PREVALENCE OF HYPERTENSION AMONG THE DENTAL COLLEGE PATIENT POPULATION

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ABSTRACT

Aim: The aim of this study is to evaluate the prevalence of Hypertension in individuals among the dental college patients of Uttarakhand. **Objectives:** The objective of this study is to determine the overall incidence of hypertension in individuals among the population of Uttarakhand and assess the awareness level of hypertensive patients regarding their condition. The study also highlights the potential benefits of screening for hypertension in general dental practice. **Materials & Methods:** The study was conducted on a total of 260 subjects of age group 18-85 years. Blood pressure of the subjects (patients visiting the dental college for dental check-up) was measured using a validated and calibrated blood pressure measurement device i.e. automated digital sphygmomanometer. A standardized protocol for blood pressure measurement was developed to ensure consistency and accuracy across all measurements and the guidelines set by American Heart Association for blood pressure measurement were followed. Along with this data is collected by asking the patient for the medical history of hypertension and filling the patient data form. The collected data subsequently underwent statistical analysis. **Results:** Total no. of patients screened 260 between age 18 to 85 years. The prevalence rate of hypertensive among the dental patient is 36%. Total males are 44.23% and females are 55.76%. Amongst all males 36% and amongst all female 37% had elevated blood pressure. 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. **Conclusion:** A considerable number of patients with hypertension visit dental institutions, making routine blood pressure measurement essential for all dental patients. The presence of high blood pressure justifies the need for a thorough medical examination before dental treatment to prevent potential complications. Additionally, many patients were unaware of their hypertension prior to their dental visit.

INTRODUCTION

Hypertension, is a common health condition that can significantly impact a dental patient's oral and overall health. As a dental professional, it is essential to understand the need for studying hypertension in dental patients to provide optimal care and manage potential complications. The majority of dental patient were unaware for their blood pressure level hence for screening of hypertension in general dental practice may be beneficial to patient.¹

- Understanding the impact of hypertension on oral health: Hypertension can lead to various oral health issues such as periodontal (gum) disease, tooth loss, and an increased risk of oral infections. Studying these connections can help dental professionals identify early signs of hypertension and manage the patient's oral health more effectively.³

- Adapting treatment techniques: Patients with hypertension may require modified dental treatment approaches to minimize risks associated with their condition. This includes adjusting the use of local anaesthetics, sedation techniques, and managing any potential drug interactions between medications taken for hypertension and those used during dental procedures².
- Patient education: Educating dental patients about the link between hypertension and oral health can encourage them to maintain proper dental hygiene and seek timely medical care for their condition. This can ultimately lead to better overall health outcomes. Dental health care workers should be able to recognize risk factors associated with hypertension and counsel patients in an effort to reduce those that are present. In addition, dental professionals should recognize how these risk factors and associated hypertension affect the provision of dental care⁵.

- Interdisciplinary collaboration: Encouraging collaboration between dental professionals and other healthcare specialists, such as cardiologists and primary care physicians, can help ensure that patients with hypertension receive comprehensive and coordinated care³.
- Research and development: Continued research into the relationship between hypertension and oral health can lead to the development of new diagnostic tools, treatment methods, and preventive strategies. This can ultimately improve the quality of care provided to dental patients with hypertension. The research was conducted because of the number of individuals who suffer from hypertension and the fact that the dental setting is viewed as a stressful environment for some individuals⁴.

MATERIALS AND METHODS

Study Design: The study was conducted on a total of 260 subjects over a period of 3 months after obtaining ethical clearance from the ethical committee of the institution. The subjects employed included patients visiting the dental college for dental checkup in the age group 18-85 years with/without a history of hypertension. Written informed consent of all the subjects was taken.

Materials: To check hypertension, we used blood pressure monitor (the automated digital sphygmomanometer) along with its other accessory components like disposable cuffs.

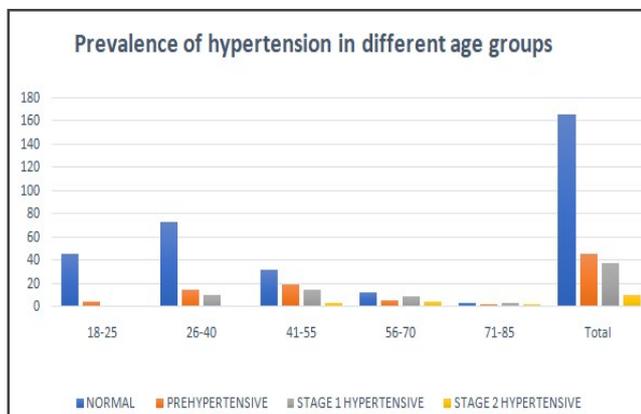
Methodology: Data is collected by asking the patient for the medical history of hypertension during the routine OPD examination and then by checking the systolic and diastolic blood pressure by the help of sphygmomanometer.

Statistical Analysis

Prevalence of hypertension in different age groups

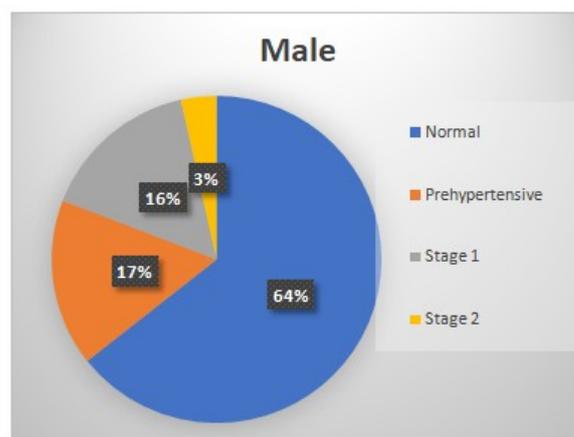
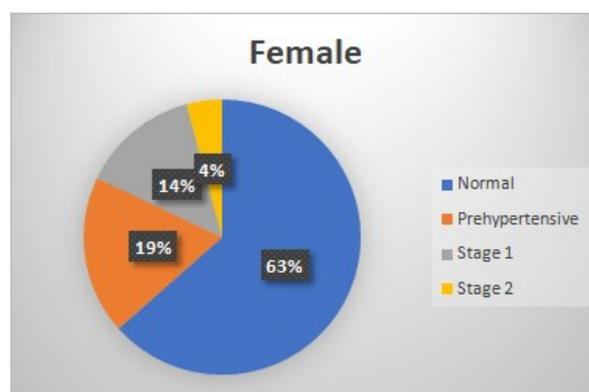
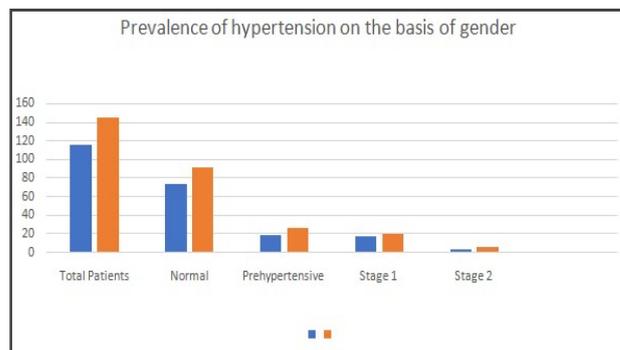
Number of patients

Age group	Normal	Prehypertensive	Stage 1 Hypertensive	Stage 2 Hypertensive	Total
18-25	46	4	1	0	51
26-40	73	15	10	0	98
41-55	32	19	15	3	69
56-70	12	6	9	5	32
71-85	3	2	3	2	10
Total	166	46	38	10	260



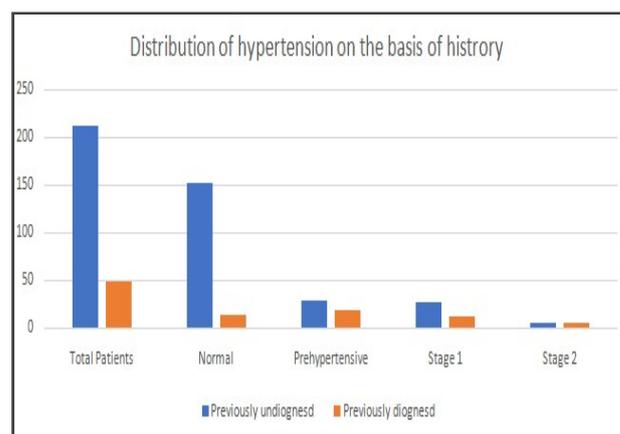
Prevalence of hypertension on basis of gender

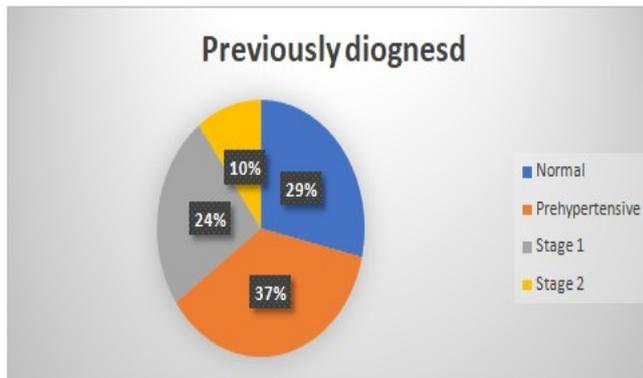
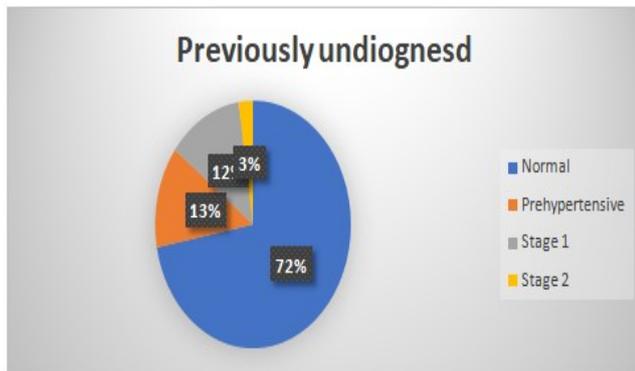
Gender	Total Patients	Normal	Prehypertensive	Stage 1	Stage 2
Male	115	74	19	18	4
Female	145	92	27	20	6



Distribution of hypertension on the basis of history

History of hypertension	Total Patients	Normal	Prehypertensive	Stage 1	Stage 2
Previously undiagnosed	211	152	28	26	5
Previously diagnosed	49	14	18	12	5





RESULTS

Total no. of patients screened 260 between age 18 to 85 years. The prevalence rate of hypertensive among the dental patient is 36%. Total males are 44.23% and females are 55.76%. Amongst all males 36% and amongst all female 37% had elevated blood pressure. Both sexes share comparable rates of normal blood pressure, but the rate of prehypertension is slightly higher among females. Males had a greater percentage of patients in Stage 1 hypertension, and Stage 2 hypertension is more common among females. 81% of dental patient did not know about their hypertensive condition out of which 28% patient have elevated blood pressure. Patient who did not aware of their blood pressure were 211 patients. Among which 152 patients have normal blood pressure (72%), 28 patients were prehypertensive (13.3%), 26 patients were in Stage 1 hypertension. (12.3%), 5 patients are at Stage 2 hypertension. (2.4%). Patient who were under stage 2 hypertensive all the elective procedures and tooth extraction were postponed until the blood pressure is controlled and written consent from the Physicians: Medical Practitioners is given. Patient who were under stage 1 hypertensive, Blood pressure and stress level are monitored throughout treatment. Approximately 34% of dental patient who were previously diagnosed with hypertensive condition had not control their blood pressure properly.

DISCUSSION

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.⁹ This research was conducted to raise awareness of the challenges in diagnosing and treating

hypertensive patients within the dental setting. To the best of our knowledge, this study is the first to investigate the prevalence of hypertension among the dental patient population in Uttarakhand, India, providing valuable insights into the cardiovascular health of individuals seeking dental care. The results of this study revealed that the prevalence rate of hypertensive among the dental patient is 36%. 81% of dental patient did not know about their hypertensive condition out of which 28% patient have elevated blood pressure. In a similar study carried out by Abdullah et al., the prevalence of elevated blood pressure among the dental patients was 18.97%, out of these about 51.92% were unaware about their hypertensive state. In a similar study carried out by Kellogg et al., the prevalence of elevated blood pressure among the dental patients was 32% and 49% of these patients were unaware of their high blood pressure prior to being screened at the dental clinic. In similar study carried out by Shahzan et al the prevalence of hypertension was found to be 4.8%. In a similar study 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. In other similar study carried out by Ojenan et al., noted a prevalence of amount 19.7% of participant among these 52.5% of patients were unaware of their hypertensive status. Our findings indicate that the prevalence of hypertension among dental patients is alarmingly high in Uttarakhand state, with 36% of the patients presenting with hypertensive conditions. A critical observation is that a significant proportion of these patients approximately 81% were unaware of their hypertensive status, highlighting a major gap in hypertension awareness within this patient group suggesting a need for increased awareness and screening in dental settings among the different private dental clinic and dental college. Additionally, 28% of the patients had elevated blood pressure, which further emphasizes the importance of routine screening in the dental setting. The reason for the different in this prevalence may be due to Variations in sample size, life style, dietary habits and psychosocial aspects. In our study female (55.76) were more than male (44.23), and the females tend to show higher overall levels of high blood pressure, particularly in the more severe forms. A higher percentage of males have Stage 1 hypertension, indicating that among those with high blood pressure, more males are in the early stage and stage 2 hypertension is more common among females, which suggests that, although fewer females are in the initial stage (Stage 1), those who do have high blood pressure are more likely to have more severe, Stage 2 hypertension. But In similar study carried out by Shahzm et al they found Hypertension was more prevalent in males 55.04% than females 44.96%. In other similar study carried out by Ojenan et al., 57.2% of the hypertensive patient were male and female were 42.8%. 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.¹

CONCLUSION

As large numbers of patients with hypertension are reporting to dental institutions, routine measurement of blood pressure in all dental patients is necessary. The presence of high blood pressure warrants medical examination in dental patients, to avoid complications during dental treatment. Many of the subjects examined were not aware of their high blood pressure levels; caution is needed before performing dental procedures. The patients with elevated blood pressure levels should be referred to a physician for a comprehensive medical examination. As the blood pressure increases with age, elderly patients should get their blood pressure checked before dental procedures. Therefore, the presence of high blood pressure justifies medical examination in dental patients.

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