



## **AWARENESS OF BP AMONG OUTPATIENTS**

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#### **Key words:**

Blood pressure, hypertension

### **ABSTRACT**

**Topic:** Awareness of high blood pressure among out patients

**Aim:** To establish awareness amongst out patients about high blood pressure

**Objective:** To conduct a survey to understand the knowledge among out patients regarding high blood pressure and educate them regarding complications and treatment

**Background:** Blood pressure is the pressure of the blood against the walls of the arteries. High blood pressure is a common disease in which blood flows through arteries at higher than normal pressure. High blood pressure is one of the most crucial health problems and the most common chronic disease in developed and underdeveloped countries. It is called the silent killer which is usually diagnosed incidentally. Although it is a preventable and treatable condition but without treatment it leads to serious and life threatening complications such as heart, kidney and brain disorders.

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### **INTRODUCTION**

Blood pressure is the pressure exerted on the walls of the arteries during ventricular systole and diastole which is affected by factors such as cardiac output, blood vessel elasticity, volume, velocity, viscosity of the blood and peripheral resistance<sup>[1]</sup>. Essential hypertension accounts for 90 to 95% of all types hypertension. There are many risk factors for essential hypertension such as advance in age, sex and family history of hypertension, obesity, atherosclerosis<sup>[2]</sup>. Centre for Disease Control and Prevention 2013, has stated that hypertension is a widespread health problem and is called the “silent killer” because it often has no warning signs or symptoms, and many people don’t realize they have it<sup>[3]</sup>. Hypertension is a major contributing factor for cardiovascular diseases and it may lead to many complications such as stroke, retinopathy, coronary artery disease and renal failure<sup>[4]</sup>. In this modern world, stress is increasing in everyone’s life which is also a major contributing factor for hypertension. Hypertension can be treated by pharmacological and nonpharmacological methods. Pharmacological methods involve use of antihypertensive drugs and nonpharmacological intervention includes salt restriction, dietary modification, fat restriction, avoidance of caffeine, smoking and alcohol, yoga, exercise and relaxation technique<sup>[2]</sup>.<sup>[4]</sup> Family history is an important non-modifiable risk factor for hypertension. The hereditary nature of hypertension

is well established by numerous family studies<sup>[5]</sup>, demonstrating associations of blood pressure among siblings and between parents and children<sup>[6]</sup>. About 30 % of the blood pressure variance can be attributed to genetic factors<sup>[7]</sup>, and was found to vary from 25 % in pedigree studies to 65 % in twin studies<sup>[6]</sup>. Among various mechanisms proposed to explain the relation between hypertension and positive family history of hypertension, are the increased renal proximal sodium reabsorption<sup>[8]</sup>, genetic traits related to high blood pressure such as high sodium-lithium counter-transport, low urinary kallikrein excretion, elevated uric acid level, high fasting plasma insulin concentrations, high-density LDL sub-fractions, fat pattern index, oxidative stress and body mass index, as well as shared environmental factors such as sodium intake and heavy metal exposure<sup>[9-12]</sup>.

Stress is an important factor which causes blood pressure<sup>[13]</sup>. Excess dietary sodium predisposes to high BP<sup>[14,15]</sup>. Approximately 90% of individuals with prehypertension have at least one other cardiovascular risk factor and 68% have at least one significant clinical risk factor for heart disease or stroke<sup>[16]</sup>. Some studies have demonstrated that prehypertension is an independent risk factor for cardiovascular disease (CVD)<sup>[17,18,19,20]</sup>.

### **MATERIALS AND METHODS**

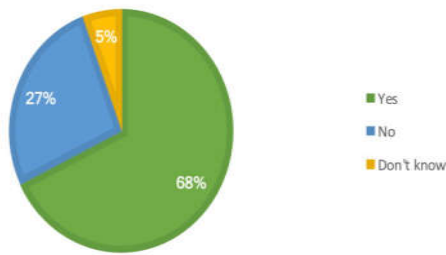
The sample size of this study was 100 outpatients. This was a questionnaire based study. The questionnaire comprised of 15 questions relating to blood pressure. It covered factors like age, sex and so on. It also covered factors like stress, salt uptake, medication and basic knowledge of blood pressure.

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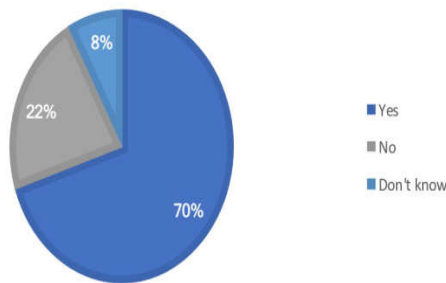
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Sex factors are male and female. A general survey was taken through a standardised questionnaire distributed to 100 people.

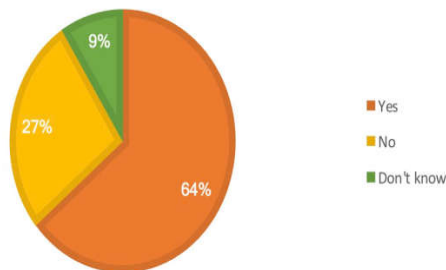
DO YOU KNOW WHAT BP IS?



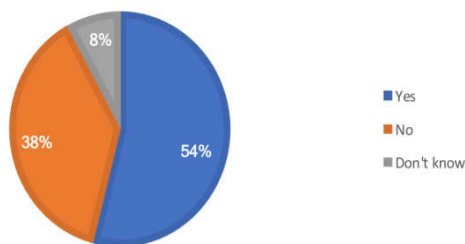
CAN STRESS LEAD TO INCREASE IN BP



CAN HEART DISEASE BE CAUSED BY BP?



SHOULD MEDICATION FOR BP SHOULD BE TAKEN LIFE LONG?



## RESULTS AND DISCUSSION

68% of the sample knew what BP stood for and knew that it is the pressure in the arteries while 27% were not aware of such

a thing. 5% had heard the term quite frequently but didn't know what it was exactly. Majority of the sample have knowledge about BP but there is not enough awareness about the same. The prevalence of hypertension is higher in those with a family history of hypertension at all levels (parents, grandparents, siblings and children) than those without a family history<sup>[21]</sup>

70% of the test group believed that stress can increase blood pressure. This stress can be of many types since many different age groups were seen. The stress can be of academics among the younger population, work pressure and family pressure among the older population. 22% of the population did not think that stress can lead to an increase in the blood pressure and thought of them both are completely independent variables. Stress can cause hypertension through repeated blood pressure elevations as well as by prolonged exposure to vasoconstricting hormones that increase blood pressure. Factors affecting blood pressure through stress include job strain, race, social environment, and emotional distress. Overall, studies show that stress does not directly cause hypertension, but can have an effect on its development.<sup>[22]</sup>

64% believes that heart disease can be caused by blood pressure but they could not explain the relationship between blood pressure and heart disease. 27% was unaware about the correlation of blood pressure with heart disease. They believe that there is no relation between blood pressure and heart diseases and mainly thought of diet and lifestyle as the reasons for heart disease. The physical impact of high BP can cause endothelial injury. Injured endothelium results in impairment in the synthesis and the release of the potent vasodilator-nitric oxide and also promotes the accumulation of reactive oxygen species and other inflammatory factors which mediate the development of atherosclerosis, thrombosis, and vascular occlusion. This inflammatory process is a prominent feature in the pathogenesis of both hypertension and atherosclerosis<sup>[23]</sup>. Nitric oxide stimulates guanylyl cyclase to form 3',5'-cyclic guanosine monophosphate, which results in vasodilatation of vascular smooth muscle cells, prevention of platelet adhesion and aggregation, and exertion of anti-inflammatory, antiproliferative, and antimigratory effects on leukocytes, endothelial cells, and vascular smooth muscle cells, thus providing protection from atherosclerosis. Attenuated nitrogen oxide bioavailability, the main characteristic of endothelial dysfunction, is present in arterial hypertension<sup>[24,25,26]</sup>

Hypertension by itself can cause myocardial ischemia in the absence of coronary heart disease (CHD). Increased afterload due to hypertension can result in significant left ventricular hypertrophy (LVH), which may impair ventricular relaxation and compromise coronary blood flow during diastole. Although genetic factors have been associated with LVH, chronic uncontrolled hypertension appears to be the major cause<sup>[27,28]</sup>

Only 54% knows that if a person is suffering from high blood pressure, the medication for it must be taken throughout the individual's life. 38% of the population didn't think it was necessary for a person suffering from high blood pressure to take the medication throughout their life. They believed that once the blood pressure was brought back to normal the

medication can be stopped. This is a false notion. This is because once the medication stops, the blood pressure can shoot back up or even higher than before and this fluctuation can be very dangerous.

## CONCLUSION

Blood pressure is a very common disorder and if it is controlled, life span and quality of life can be improved greatly. It can be seen that knowledge about blood pressure and the various factors contributing to it and its effects is moderate but not enough. Only a little more than half the population know about blood pressure. The lack of awareness can be quite dangerous in the future for the individuals. Individuals with high blood pressure can reduce it by taking medication but they can also make lifestyle changes like dietary changes, taking part in physical activity and exercising. Since mild to moderate hypertension is asymptomatic, everyone over 40 yrs should check their blood pressure regularly because the sooner hypertension is detected and treated, the better.

This survey is done to create awareness among the society that prevention is better than cure when it comes to blood pressure. Therefore a small awareness will lead to a great health benefit among the growing population.

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