

KNOWLEDGE, AWARENESS AND PERCEPTION OF
HYPERTENSION

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By

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DECLARATION BY THE STUDENT

I hereby declare that this dissertation titled “**KNOWLEDGE, AWARENESS AND PERCEPTION OF HYPERTENSION**” is the bonafide record of my original researchwork. I declare that it has not been submitted to any other university or institution for the award of any degree or diploma. Information derived from the published or unpublished work of others has been duly acknowledged in this text.

Date: 01-06-2023

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DECLARATION BY THE FACULTY GUIDE

This is to certify that dissertation titled “**KNOWLEDGE, AWARENESS AND PERCEPTION OF HYPERTENSION**” is a record of the research work undertaken by **Ayush Tiwari** in partial fulfilment of the requirements for the award of the degree of MBA – Pharmaceutical Management from the IIHMR University, Jaipur under my guidance and supervision and her approach to the research study has been sincere, scientific, and analytical.

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ABSTRACT

This report provides an overview of hypertension (HTN) or high blood pressure, its complications, classification into primary and secondary types, risk factors, blood pressure measurement, treatment methods, and the need for preventive practices. The analysis suggests a lack of adherence to preventive measures and a varying level of awareness among respondents, even in families with a history of HTN. It emphasizes the importance of awareness campaigns, regular check-ups, and adherence to preventive practices to improve early diagnosis and reduce the impact of HTN.

Keywords: - HTN (Hypertension), HBP (High Blood Pressure), CAD (Coronary Artery Disease), HF (Heart Failure), AF (Atrial Fibrillation), PAD (Peripheral Arterial Disease), Primary HBP (Primary High Blood Pressure), Secondary HBP (Secondary High Blood Pressure), Risk Factors, Measurement, Treatment, Preventive Practices, Awareness Campaigns, Lifestyle Changes, Genetic Factors

ACKNOWLEDGEMENT

As I have come towards the completion of my project report, I would like to seize this opportunity to acknowledge all the valuable contribution in my study.

It is the pleasure to utilize this unique opportunity to express my deep sense of gratitude and offer my most sincere and humble regard to my esteemed Faculty & guide **Dr. ASHOK PEEPLIWAL, Associate Professor, School of Pharmaceutical Management, IIMR, Jaipur**, for his unparalleled and excellent, continuous encouragement and support for completion of my course and dissertation. His disciplines, principles, simplicity, and fearless work environment was cherished during the course.

I owe a great deal of application & gratitude to him as without his cooperation it would have been difficult to shape my project work.

I often wonder, if one gets to see “GOD” in the mortal life they might be like parents who shower their best fortunes always on me. From the deepest depth of my heart to express my thanks. I bow my head to the feet of my loved Parents, brother and family members, who’s uncompromising life principles, love and affection has always been unshared and showered upon me at all stages of life and giving me more than what I deserved in my life and without whose encouragement, co-operation and good wishes the work would have been impossible.

Last but not the least, I wish to express my gratitude towards “GOD- Almighty ” who gave me the strength and courage to fulfill my dream and showered me his choicest blessings.

Date: 25-05-2023

Place: Jaipur

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Introduction

A chronic medical disorder called hypertension (HTN), commonly referred to as high blood pressure (HBP), is characterised by persistently raised blood pressure in the arteries. It can result in a number of consequences if untreated. These complications include some.

- Coronary artery disease (CAD)
- Heart Failure (HF)
- Atrial Fibrillation (AF)
- Peripheral Arterial Disease
- Dementia (others)

HTN is classified into two types: Primary HBP and Secondary HBP.

Primary HBP accounts for about 90-95% of cases and is not directly caused by any specific underlying medical condition. Secondary HBP, on the other hand, makes up the remaining 5-10% and is caused by identifiable signs, symptoms, or other ailments such as chronic kidney disease, kidney artery narrowing, endocrine disorders, or the use of birth control pills.

Primary HBP can develop as a result of a number of reasons, including generic lifestyle variables and hereditary factors. Excessive salt intake, being overweight, smoking, and alcohol use are all lifestyle choices that raise the chance of developing Primary HBP.

Systolic blood pressure (the highest BP) and diastolic blood pressure (the lowest BP) are the two parameters used to assess HTN. For most persons, a normal resting blood pressure range is defined as 60 to 80 mmHg for diastolic blood pressure and 100 to 130 mmHg for systolic blood pressure. When an adult's resting blood pressure is persistently at or higher than 130/80 mmHg or 140/90 mmHg, they are often diagnosed with high blood pressure. When determining a child's blood pressure, different standards apply.

To express blood pressure, you need two numbers. The heart's blood vessel pressure experienced during each beating is referred to as systolic pressure, or the first number. The second number refers to diastole, the pressure in the blood vessels experienced between heartbeats.

The main methods for treating hypertension are lifestyle changes (such as salt restriction, maintaining a healthy body weight, regular exercise, moderation in alcohol consumption, and quitting smoking) and drug therapies, according to a number of published hypertension treatment guidelines. These approaches can, however, somewhat diverge.

The table below depicts the different levels of BP which represent different levels of HTN when measured accordingly.

Category	Systolic (mm/Hg)	Diastolic (mm/hg)
Hypotension	< 90	< 60
Normal	90–119 90–129	60–79 60–84
Prehypertension (high normal, elevated)	120–129 130–139	60–79 85–89
Stage 1 hypertension	130–139 140–159	80–89 90–99
Stage 2 hypertension	>140 160–179	>90 100–109
Hypertensive crises	≥ 180	≥ 120
Isolated systolic hypertension	≥ 160	< 90 to 110
Isolated diastolic hypertension	< 140	≥ 90

RESEARCH ENVISAGED

A little over 1 billion individuals, or around 22% of the world's population, has hypertension (HTN) as of 2014. Men are somewhat more likely than women to experience it, and people with lower socioeconomic position frequently report experiencing it. As people become older, HTN is more common.

Due to several lifestyle variables and cultural changes, HTN has emerged as a serious problem in both developed and developing nations. These variables include urbanisation, socioeconomic changes that promote sedentary lifestyles, ageing populations, obesity, alcohol use, and excessive salt consumption, among others. The prevalence of HTN and other cardiovascular diseases (CVD) has increased as a result of these developments.

Pharmacological treatments for HTN have proven effective in reducing blood pressure levels and subsequent cardiovascular events. However, in some cases, the reduced blood pressure levels may still be higher than those observed in individuals without HTN.

Prevention plays a crucial role in controlling this condition, emphasizing the importance of increasing public knowledge and awareness while promoting attitude and behavior changes.

Aim of the study:

- ✓ Research to gauge *students' Knowledge, Awareness, and Perception (KAP)* regarding hypertension.
- ✓ Also, to study the *Adherence to Prevention Guidelines* of the same among students.
- ✓ The relevance of Systolic Blood Pressure (SBP), which has been recognized as one of the key criteria in identifying the existence of Hypertension, is also to be raised.

LITERATURE REVIEW

Article 1

REVIEW ARTICLE – KAA in a Hypertensive Population, March 2005

- **AUTHORS** – Susan A Oliveria, Roland S Chen, Bruce D McCarthy, Catherine C Davis and Martha N Hill
- **PUBLISHED AT** – *Journal of General Internal Medicine*
- **METHODOLOGY** – Random Control Study
- **OUTCOME** - The majority of HTN patients were aware that reducing blood pressure would improve their health, and 91% said a health care provider (HCP) had informed them of their condition. A quarter of patients (24%) were unsure of the ideal SBP or DBP level.
- **REMARKS/CONCLUSION** - The findings revealed that although the patients' basic knowledge and awareness of HTN was sufficient, they did not have a thorough comprehension of it.

Article 2

REVIEW ARTICLE – KAP on HTN in a country in Epidemiological Transition, May 1998

- **AUTHORS** – Line Aubert, Pascal Bovet, Jean-Pierre Gervasoni, Anne Rwebogora, Bernard Waeber, Fred Paccaud
- **PUBLISHED AT** – *American Heart Association*
- **METHODOLOGY** – Random Sample Study
- **OUTCOME** – Only a tiny fraction (10%) of hypertension people had their blood pressure under control, whereas a middle share (50%) of people with high blood pressure were aware that they were hypertensive.

- **REMARKS/CONCLUSION** – It is probable that biases crept into the research since HTN was still a major developing public health issue at the time.

However, it was already acknowledged at the time that in order to achieve effective HTN management as soon as possible, it is critical to maximize the effectiveness of HTN preventive programs in various nations.

Article 3

REVIEW ARTICLE – K & A of HTN among Patients from a Health Maintenance Organization, July-August 2003

- **AUTHORS** – Alexander M, Gordon NP, Davis CC, Chen RS.
- **PUBLISHED AT** – *Journal of Clinical Hypertension (Greenwich, Conn.)*
- **METHODOLOGY** – Randomized Sample Study
- **OUTCOME** – According to the JNC's sixth report on prevention, detection, evaluation, and treatment of high blood pressure guidelines, a large number of sufferers were unable to provide information on a target SBP or DBP or identify higher targets.
- **REMARKS/CONCLUSION** – The majority of patients thought that DBP was a more significant risk factor than SBP. The level of HTN patient's knowledge of BP objectives and present HTN management status was subpar.

Article 4

REVIEW ARTICLE – KAAP of HTN among Patients in Koor & Biabanak, Winter 2011

- **AUTHORS** – Fakhri Sabouhi, Sima Babaee, Homayoon Naji, and Akbar Hassan Zadeh.
- **PUBLISHED AT** – *Iran Journal of Nursing and Midwifery*

- **METHODOLOGY** – Cross-sectional correlational Descriptive study
- **OUTCOME** – Their findings indicated that there was significant relationship between awareness and knowledge; awareness and attitude; awareness and practice.
- **REMARKS/CONCLUSION** – Although individuals had relatively high levels of awareness, education, and a positive attitude towards their condition, it was found that their HTN was still not under control. Additionally, their findings recommended additional research to develop fresher, more powerful solutions to this issue.

Article 5

REVIEW ARTICLE – KAP of HTN among rural residents in Southern Zimbabwe, June 2019

- **AUTHORS** – Chimberengwa PT, Naidoo M; cooperative inquiry group
- **PUBLISHED AT** – *PLoS One*
- **METHODOLOGY** – Descriptive Cross-sectional Survey
- **OUTCOME** – A quarter of responders who were taking the medication were unaware of their BP control status. Poor knowledge about HTN was combined with a belief in HTN myths.
- **REMARKS/CONCLUSION** – It was found that community people had significant beliefs in misconceptions concerning HTN, herbal and traditional remedies, as well as little understanding and little education about the condition. Poor understanding was associated to dietary risk factors.

Article 6

REVIEW ARTICLE - Hypertension knowledge, awareness, and attitudes in a hypertensive population, March 2005

- **AUTHORS** - Oliveria SA, Chen RS, McCarthy BD, Davis CC, Hill MN.
- **PUBLISHED AT** – *Journal of General Internal Medicine*
- **METHODOLOGY** – Randomized Control Study
- **OUTCOME** – The findings revealed that although the patients had a broad comprehension of HTN that was competent, they did not fully comprehend the illness.
- **REMARKS/CONCLUSION** - There was a chance to concentrate patient education initiatives and programs on raising public consciousness and enhancing understanding of the cardiovascular risks related to uncontrolled HTN, particularly increased Systolic BP values.

Article 7

REVIEW ARTICLE – Effectiveness of valsartan for treatment of hypertension: patient profiling and hierarchical modelling of determinants and outcomes (the PREVIEW study), May 2009

- **AUTHORS** – Van der Niepen P, Woestenburg A, Brié H, Vancayzeele S, MacDonaldK, Denhaerynck K, Lee C, Hermans C, Abraham I.
- **PUBLISHED AT** – *The Annals of Pharmacotherapy*
- **METHODOLOGY** - Prospective Cohort Trial
- **OUTCOME** - The study's sample size (n=1063; 35.4%) was extremely fragile. In this, it was shown that physician-related factors were responsible for a variation of 24% in SBP and 25% in DBP. The other 76% and 75% of SBP and DBP, correspondingly, were shown to be caused by a variety of patient characteristics, including age, non-adherence, associated problems, and non-compliance.
- **REMARKS/CONCLUSION** - In a variety of individuals whose first treatment for hypertension had failed, the drug Valsartan was shown to be both efficacious and effectively absorbed.

Article 8

REVIEW ARTICLE – Knowledge, Attitude and Self-Care Practice towards Control of Hypertension among Hypertensive Patients on Follow-up at St. Paul's Hospital, Addis Ababa, July 2019.

- **AUTHORS** – Bacha D, Abera H
- **PUBLISHED AT** – *Ethiopian Journal of Health Sciences*
- **METHODOLOGY** - Cohort Controlled Trial
- **OUTCOME** - Nearly half (48.6%) of the HTN patients reported positive attitudes and good awareness of the condition. About 39.5% of the individuals had good habits when it came to HTN control.
- **REMARKS/CONCLUSION** - The findings indicated that self-care practises, attitudes, and understanding on HTN were typically subpar and insufficient. Individuals with low levels of education and women from remote areas need special care.

Article 9

REVIEW ARTICLE – Training nurses in task-shifting strategies for the management and control of hypertension in Ghana, February 2013.

- **AUTHORS** – Joyce G, Jacob P-R, Juliet I, Debbie Lee, Sarah R. Blackstone, Alicia Mitchell, Kingsley A, Bamidele T, Kwasi T-A, Richard C and Gbenga O.
- **PUBLISHED AT** – *BMC Health Services*
- **METHODOLOGY** – A mixed methods study
- **OUTCOME** – The 64 participating nurses were evaluated both before and after the

training. The findings revealed a noticeable increase in their procedures and understanding about the identification and effective delivery of hypertension patients' treatments. The study's main benefits, according to nurses, were enhanced interpersonal abilities and education for patients.

- **REMARKS/CONCLUSION** – This study suggests that every year, even if it is just a quick session, all nurses should get training in managing and controlling hypertension. This would help low-income nations like Ghana achieve significant public health advantages. To determine the execution accuracy and durability of these treatments, additional study is advised to be done.

RESEARCH METHODOLOGY, SAMPLING AND DATA COLLECTION

Research Type: Descriptive Study

Data Collection: Primary data will be obtained through an unbiased questionnaire completed by individuals, while secondary data will be gathered from published journals, literature, and reference books. Various statistical techniques will be utilized to present the data in a quantifiable manner.

Sample Size: A total of 152 participants were initially considered, of which 138 provided consent and participated.

Data Analysis: Data analysis for this study will involve using simple statistical tools such as those available in MS Excel. Graphs and results will be generated using MS Excel, based on the data collected from the 138 respondents.

Inclusion and Exclusion Criteria: Both male and female respondents above 18 years of age are eligible to participate, excluding individuals who have completed higher studies (post-graduation) or are currently employed, as well as senior citizens who have distinct lifestyles.

Study Area: PAN India

Duration: 3 months

Questionnaire: The questionnaire was created and distributed via Google Forms, and divided into 3 sections which are as follows:

General Information

- ✓ Consent, Gender, Age, marital Status, History of High BP or Hypertension(HTN) in family,

- ✓ Do you smoke tobacco?
- ✓ Number of cups of coffee per day
- ✓ Have you recently been advised that your blood cholesterol level was high by an HCP (healthcare professional)?
- ✓ When did you last get your blood pressure measured by a health-care professional (HCP)
- ✓ Do you have a blood pressure measuring machine at home? Accurate reason for having it?
- ✓ How often do you check your blood pressure excluding the point of visiting a HCP and getting it checked?

Knowledge Assessment Test

- ✓ If a person's blood pressure is 115/75, it might be classified as High, Low, Normal, or Unknown.
- ✓ Blood pressure readings of 160/100 are classified as High, Low, Normal, or Unknown.
- ✓ Once someone has high blood pressure, it often lasts for a few years, five to ten years, the rest of their lives, or does not know.
- ✓ People with high blood pressure should take their medication on a daily, weekly, or as-needed basis, or just when they are feeling unwell.
- ✓ Blood Pressure often goes up, down, stays the same, or does not change as a person loses weight.
- ✓ Blood pressure often increases, decreases, stays the same, or does not change after eating less salt.
- ✓ Yes/No/Unknown: High blood pressure (BP) can lead to heart attacks.
- ✓ High blood pressure can lead to cancer: Yes/No/Unknown
- ✓ High blood pressure can lead to kidney problems or diabetes, depending on the situation.
- ✓ Do you know/do not know if high blood pressure can lead to a stroke?

- ✓ Lowering blood pressure is achieved by 30 minutes of moderate to intense activity, three to five times per week. Yes/No/Don't Know
- ✓ True/False/Unknown: Smoking one pack of cigarettes per day has no impact on a person's likelihood of developing hypertension.
- ✓ True/False/Unknown: High blood pressure cannot be treated.
- ✓ Eat extra fruits and vegetables if you have high blood pressure. Yes/No/Don't Know

Adherence Practices

- ✓ Do you Pray to relieve stress/reduce BP levels?
- ✓ Do you use any alternative medicine for lowering BP levels?
- ✓ Do you use any Vitamins/Dietary Supplements for lowering BP level?
- ✓ Do you follow any body-based techniques to lower BP level?

Section for positively tested patients or their familial relatives

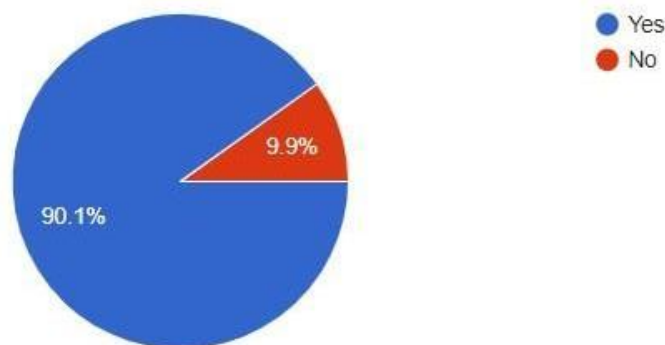
- ✓ If you have been tested positive for Hypertension or High BP, how old were you when you were first told that you had it? (in number of years)
- ✓ If you have not tested positive for High BP or Hypertension, then please give the Age of the familial relative who has been (in number of years).
- ✓ Gender of the familial relative
- ✓ How old were they when they were first told that they had Hypertension or High Blood Pressure?
- ✓ Have you/they been told by a HCP in the past year (12 months) that you/they have elevated blood pressure or hypertension?
- ✓ Has a doctor in the past year ordered you/them to change your/their way of life, in order to lower your/their blood pressure?
- ✓ How did you/they come to know about your/their hypertension?
- ✓ Where were you/they first diagnosed as having hypertension?

- ✓ Are you/they currently taking medication prescribed by a doctor to lower your/their blood pressure?
- ✓ If so, please provide a complete list of prescription drugs you have ever used for high blood pressure, along with a brief description of any adverse effects you may have had.

DATA ANALYSIS

General Information

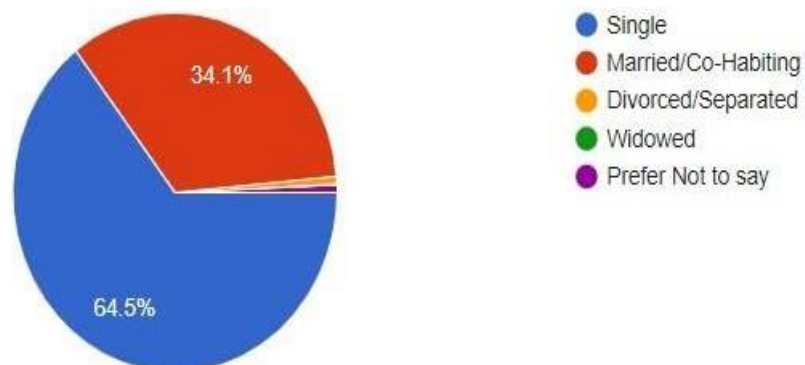
Number of people who gave consent for the survey: - It was observed that about 10% of the respondents either refused to give consent or just were not comfortable with giving the answers to all the questions



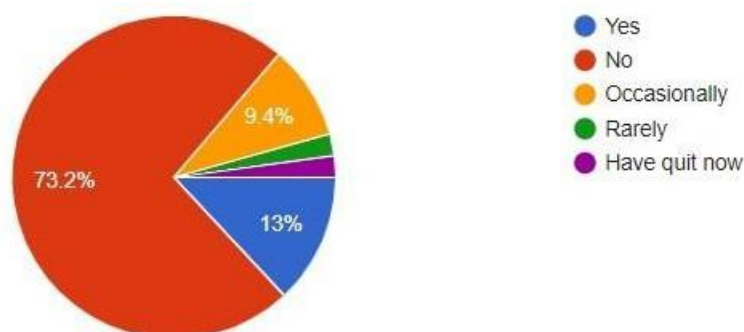
Gender: - It was observed that out of the 138 consenting respondents, the number of males and females was overall the same.



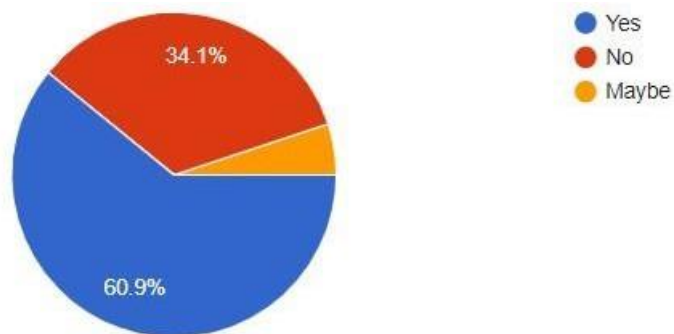
Marital Status: - It was observed that most of the respondents were either single or married. Very few respondents were Divorced and even fewer were either Widowed or Preferred not to disclose the information.



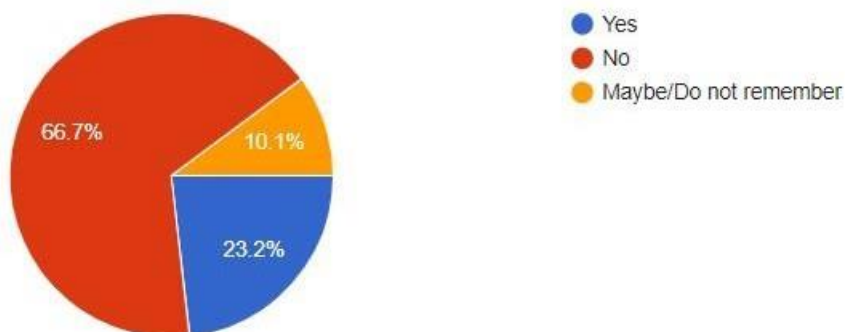
People who smoke Tobacco: - A majority of the respondents did not smoke, while a minority were only occasional smokers.



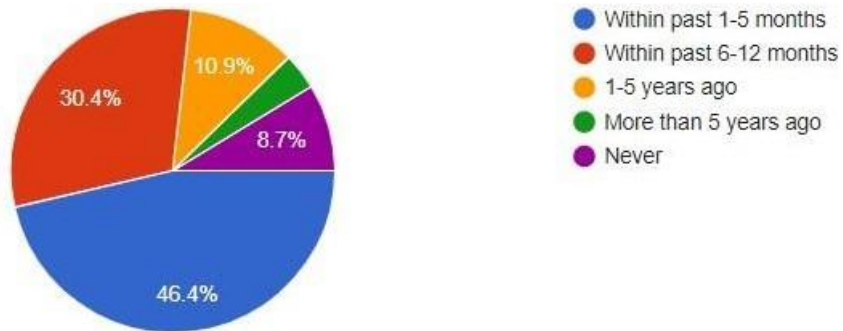
History of High BP or HTN in family:- It can be seen about 60% of the respondents had some history of HTN or High BP in the family,



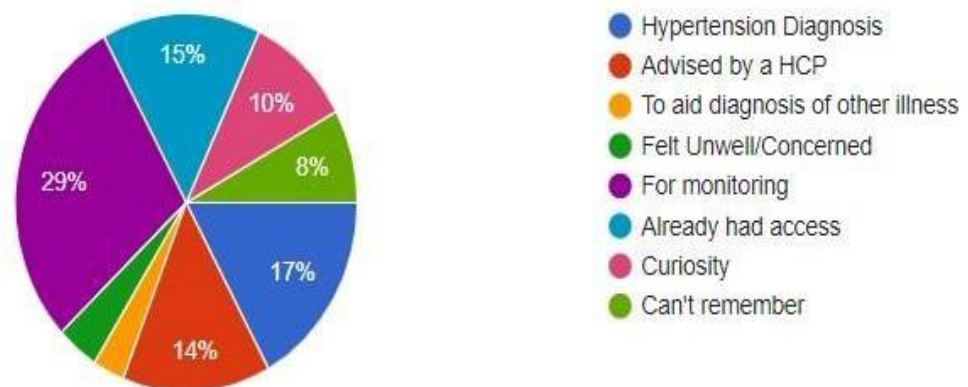
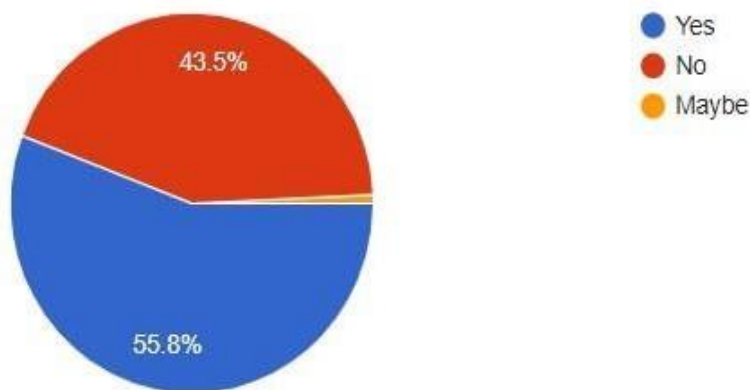
People who were previously informed by a Health-Care Professional (HCPs) about their Blood Cholesterol Level:- Approximately 66% of the respondents did not have a HCP telling them that their blood cholesterol level as being high.



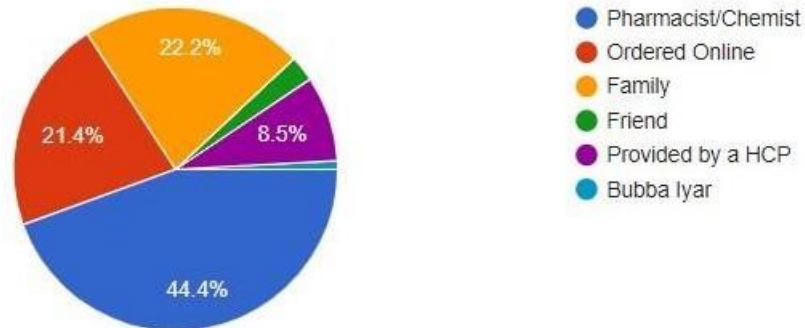
Time period of when they had last gone to a HCP to measure their Blood Pressure Levels (BP Levels): - A HCP tested the blood pressure of almost 76% of the respondents within the last 12 months.



Whether they had a Blood Pressure monitoring machine at their residence and the most accurate reason for having it along with its source: - More than 50% of the respondents reported as already having an BP measuring machine at home and about 30% stated their reason as for regular monitoring.



About 44% had visited a pharmacist and bought their machines from them after seeing product physically



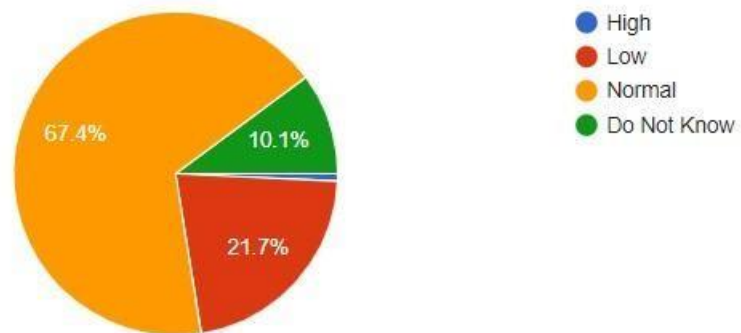
Frequency of measuring their BP level at their own discretion: - It can be observed that the respondents are quite evenly distributed in this pie chart reporting that the frequency of checking one's BP level varies hugely among different respondents.



Knowledge Assessment Test

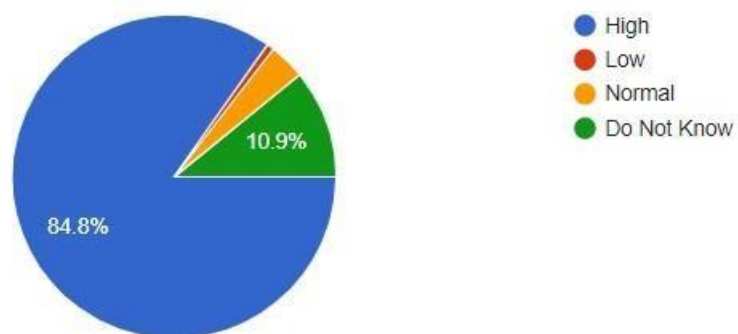
If someone's Blood Pressure is 115/75, it is...

138 responses



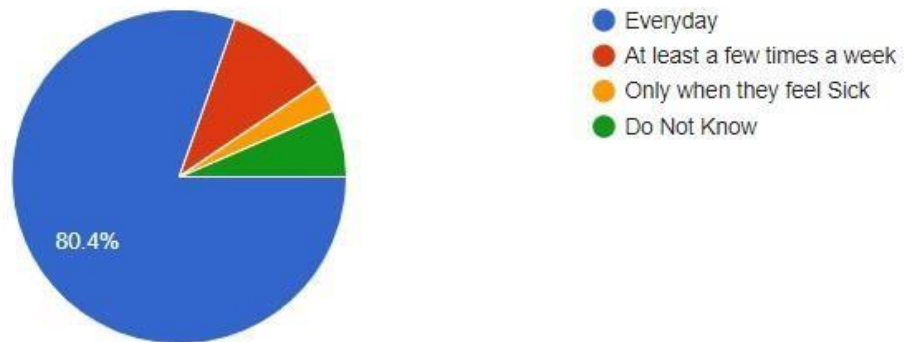
If someone's blood pressure is 160/100, it is...

138 responses



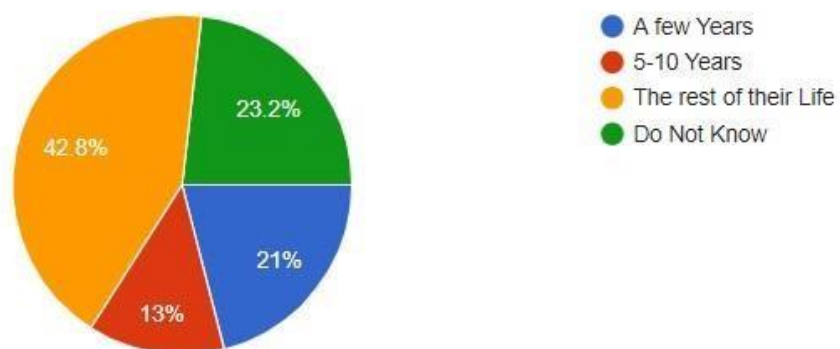
People with High Blood Pressure should take their medicine...

138 responses



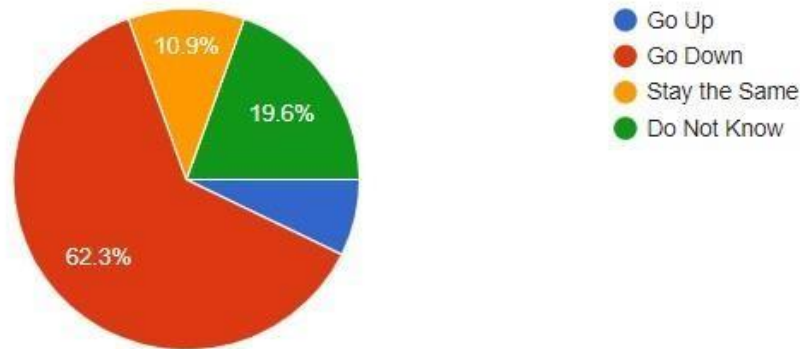
Once someone has a High BP, it usually lasts for...

138 responses



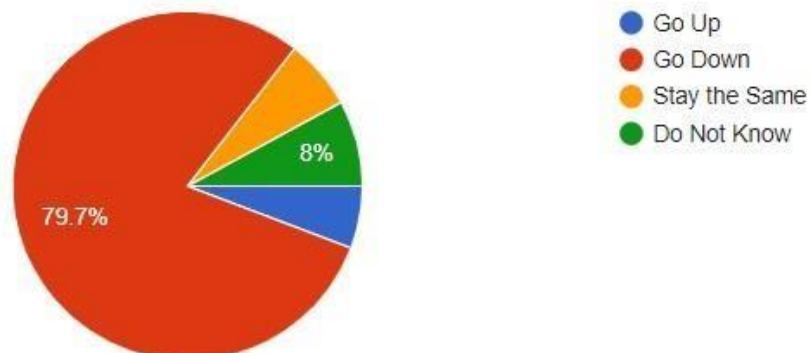
Losing weight usually makes Blood Pressure...

138 responses



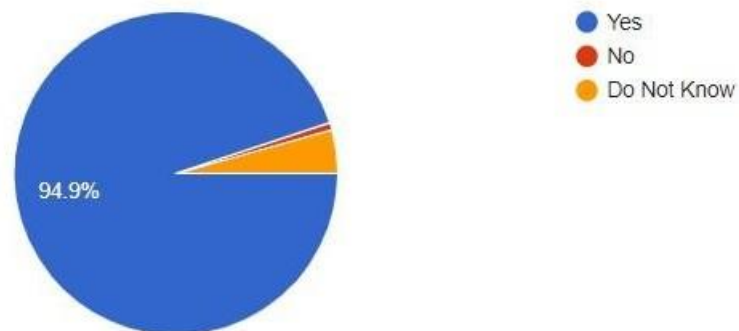
Eating less salt usually makes blood pressure...

138 responses



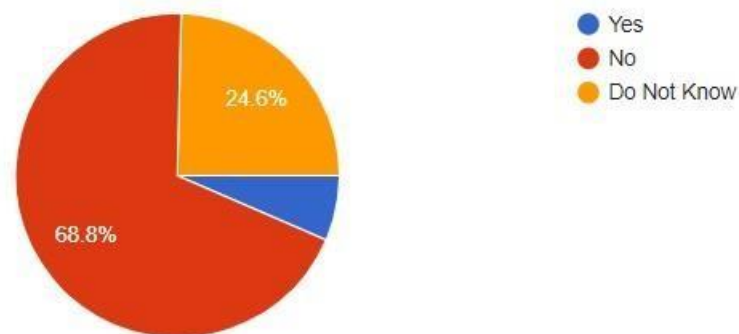
High Blood Pressure can cause Heart attacks.

138 responses



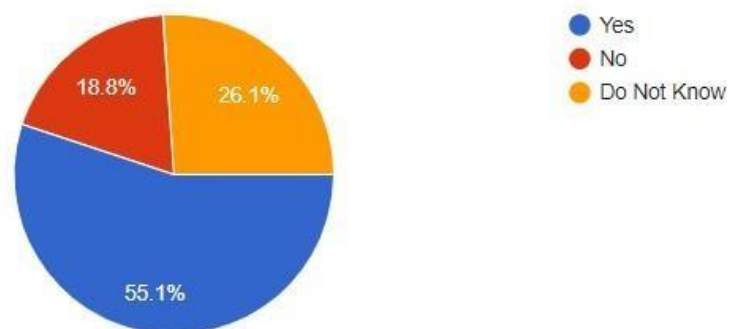
High BP can cause Cancer

138 responses



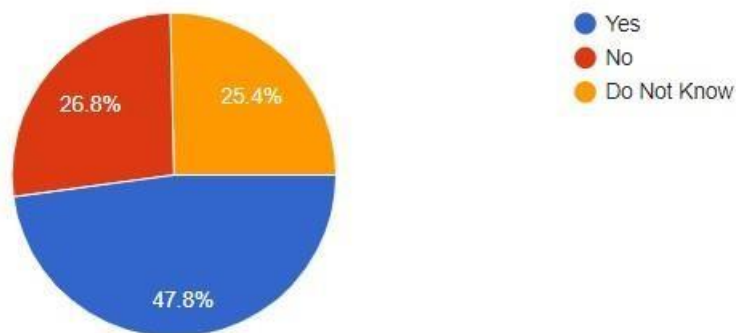
High BP can cause Kidney Problems.

138 responses



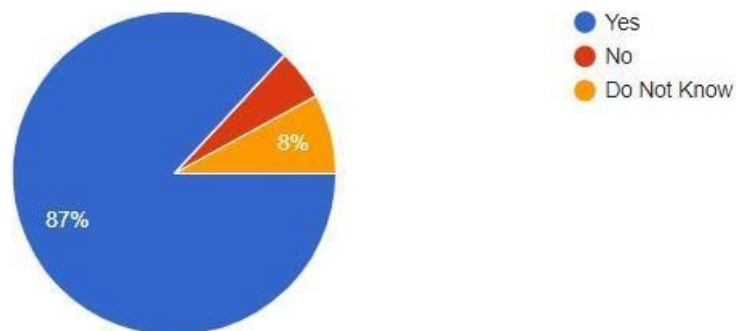
High BP can cause Diabetes.

138 responses



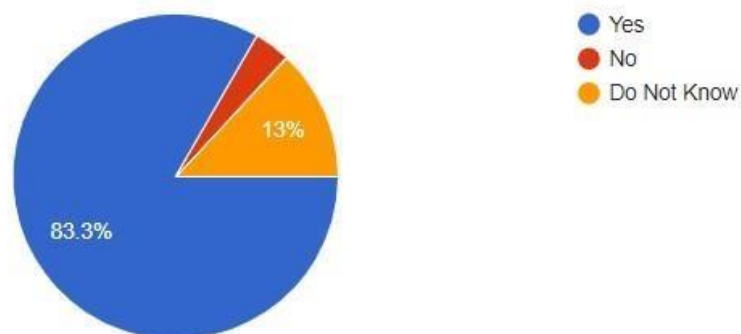
High BP can cause a person to have a stroke.

138 responses



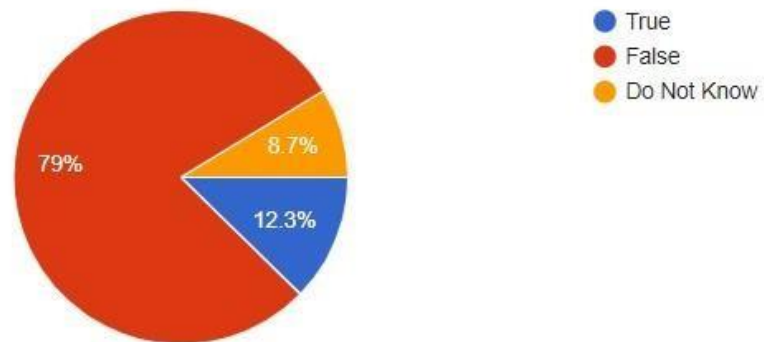
Moderate to vigorous exercise 30 mins/day 3-5 times a week lowers BP.

138 responses



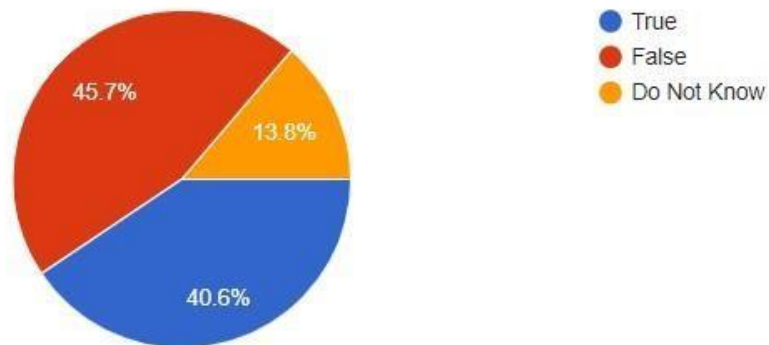
Smoking a pack of cigarettes a day will not affect a person's risk of Hypertension.

138 responses



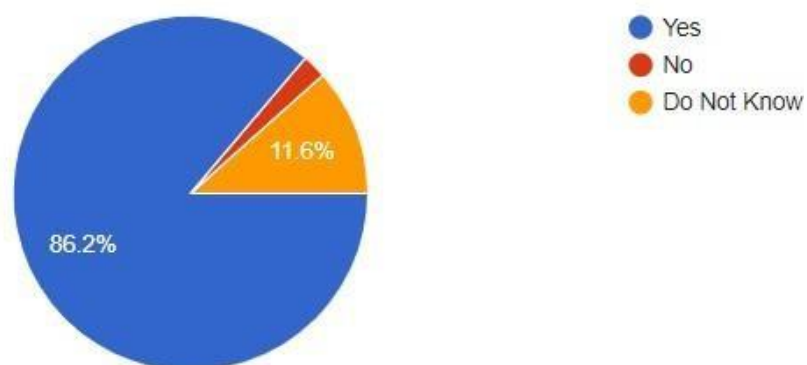
High BP cannot be cured.

138 responses



A person who has High BP should eat more fruits and vegetables.

138 responses

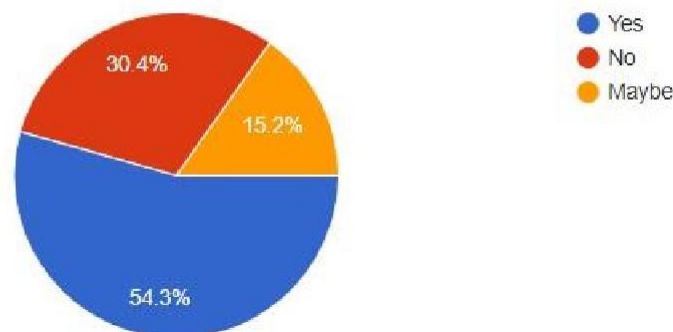


Adherence Practices

It can be observed from the pie chart given below that more than 54% of the respondents pray to relieve stress and reduce their BP levels and more than 15% are not sure about it.

Do you Pray to relieve stress/reduce BP levels?

138 responses



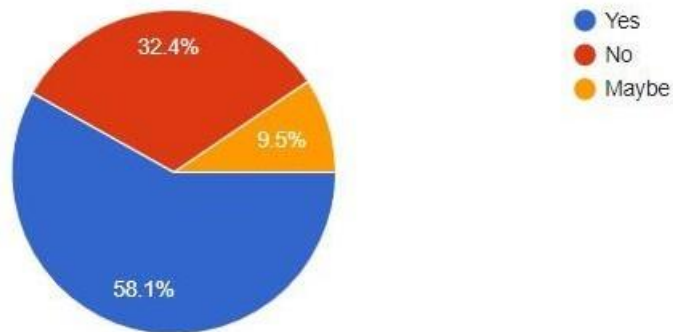
- ✓ Approximately 62% of the respondents stated and not using any alternative medicine for prevention of possible rising of the BP levels.
- ✓ More than 42% of the respondents also denied using any Vitamins/Dietary Supplements for prevention of high BP levels. o About 30% of the respondents also denied following anybody-based techniques to prevent high BP levels. But, about 47% stated that they were performing Regular Exercise and about 12% indulge in Massage Therapy to reduce risk of possible High BP levels.

Section for positively tested patients or their familial relatives

- ✓ It can be observed that most of the respondents (approximately 30%) have stated that they were informed about them having HTN or High BP in last decade itself.
- ✓ It can be inferred from the responses that most of the familial relatives who have tested positive for High BP or HTN were first told about their condition when they were post 45 years of age (early 2000s). Of this it can be observed that about 59%

are Male.

- ✓ More than 54% of them did not have an HCP informing them that their BP levels were, or they had HTN, but a doctor had ordered them to change their way of life in order to lower their BP levels, amounting to 58%



- ✓ About 45% of them reported that, they had come to know about their HTN in a routine medical check-up, while more than 19% reported having it diagnosed in screening program.

CONCLUSION

Based on the data analysis, it can be inferred that large number of respondents reported having elevated blood pressure or hypertension in their families, increasing their risk of being diagnosed with the condition in the future or during their old age. However, overall, there is a significant lack of adherence to preventive practices for high BP or HTN, even among families with a history of the illness.

The findings from the Knowledge Assessment Test indicate that respondents had varying levels of awareness about HTN. Some individuals expressed curiosity about the condition and had started conducting independent research to prevent its occurrence by following preventive measures.

Despite having access to blood pressure monitoring devices, a large proportion of the respondents either did not use them regularly or failed to adhere to preventive practices even after noticing an increase in their own blood pressure levels or being informed by healthcare professionals. This issue can be addressed through awareness campaigns aimed at educating the general public.

The study suggests that organizing regular health check-up camps would greatly contribute to improving the situation. Adhering to preventive practices and undergoing regular check-ups would help in early diagnosis and reduce the number of cases with a family history of HTN. Such adherence is crucial in maximizing the clinical benefits of therapeutic treatments.

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