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DOCTORS' PERSPECTIVES ON THE CHALLENGES OF TREATING HYPERTENSION IN CHENNAI

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INTRODUCTION:

Hypertension is an iceberg disease, meaning most patients show little to no signs of the disease, making it hugely underdiagnosed and undertreated.

A [study](#) ⁽¹⁾ conducted in Chennai in 2024 revealed that only 37.3% of individuals with high blood pressure were aware of their condition. Among those aware, 50% were taking medication, and of those on medication, only 40% had their blood pressure under control.

The following findings were observed from another [cross-sectional research](#) ⁽²⁾ conducted in **India**, in 2022:

48.5% (95% CI: 47.8%-49.3%) of people with high blood pressure were unaware that they were hypertensive. Of those with confirmed hypertension, 72% (95% CI: 71.2%-72.8%) did not receive hypertension therapy. 39.8% (95% CI: 38.7%-40.9%) of the treated individuals had uncontrolled hypertension.

The [TN STEPS survey 2020](#) ⁽³⁾ showed the prevalence of hypertension at 33.9% of the population and control rate at only 7.3% of patients, for those put on hypertension treatment.

While these findings are concerning, and convey the true burden of hypertension, these are not completely new findings. In 1970, research demonstrated the **Rule of Halves** in hypertension ⁽⁴⁾, stating,

“Only about half of the hypertensive subjects in the general population of most developed countries are aware of their condition, only about half of those aware are treated, and only about half of those treated were considered adequately treated.”

It is evident that throughout the past 52 years despite improvements in the science of hypertension diagnosis and treatment, outcomes themselves have not changed by much.

The rule of halves still appears applicable at all three stages of hypertension: awareness, treatment, and control. Hence, studies at different levels are important to better understand management of the disease.

The recent [Makkalai Thedi Maruthuvam](#) ⁽⁵⁾ initiative by the Tamil Nadu government established many schemes such as community screening for hypertension and diabetes, home based NCD screening and drug delivery systems to address this issue.

The [Indian Hypertension Control Initiative \(IHCI\)](#) ⁽⁶⁾ set a target of reducing the number of cases of hypertension by 25% by 2025 and many initiatives have been developed at the national and state level to achieve this goal.

In May, 2023 the Union Health Ministry launched the [75/25 initiative](#) - standardization of care for 75 million people with diabetes and hypertension by the year 2025 through public health centres. OBJECTIVE OF THE STUDY:

In early 2024, CAG carried out a pilot study [analysing patient perspectives](#) of hypertension care available to them through the primary health services in Tiruvannamalai. This study aimed to understand doctors' perspectives on difficulties encountered in treating hypertension. Hypertension is a disease affecting multiple systems; hence, for a holistic approach, doctors from all specialties treating patients with hypertension were interviewed.

This study conducted in Chennai aims to give an overview of diagnostic and treatment difficulties of the condition. An analysis of findings can aid in setting relevant targets and goals adapted specifically for the locality under study.

STUDY DESIGN AND METHODOLOGY:

A one-on-one interview supplemented with a questionnaire containing open-ended questions was administered to multiple doctors, and the results were reviewed. Doctors in different fields such as general practitioners, cardiologists, and neurologists were surveyed. To understand the increasing incidence of hypertension among the adolescent and preadolescent population, a pediatrician's opinion was also obtained. The study's physicians were chosen through recommendations and snowballing. Doctors in both public and private sectors were interviewed.

16 general practitioners, 2 cardiologists, 3 nephrologists, 2 diabetologists, 1 pediatrician, and 1 neurologist with a total of 25 doctors were contacted and interviewed from different localities of Chennai, including Anna Nagar, Mogappair, Kilpauk, K.K. Nagar, Villivakkam, Pallikarnai, Erkuncherry, Chrompet, Korattur, Central Chennai, Maduravoyal, and Poonamallee. This analysis consists of findings from doctors working in both tertiary centers and private clinics.

STUDY FINDINGS:

1. How many patients get newly diagnosed with hypertension in a day? (on a scale of per 10 patients)

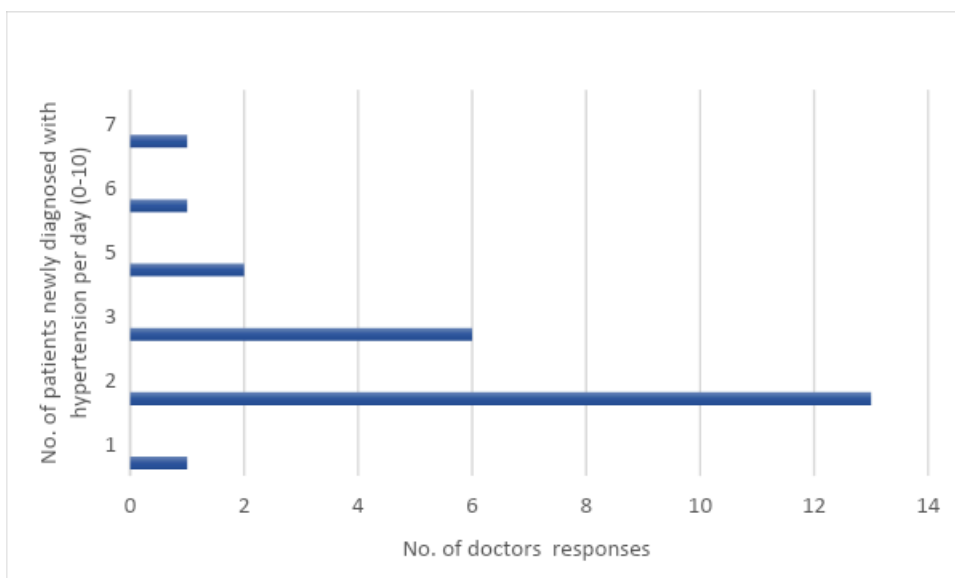


Figure 1: A cluster bar chart showing number of patients diagnosed with hypertension, per 10 patients

Doctors reported an average (mean) diagnosis of 2.8 for every 10 patients seen by them.

Higher rates of diagnosis (5-7) are reported by diabetologists and nephrologists.

The paediatrician reported about 12 patients in his 7 years of clinical experience, with diagnosis of primary hypertension showing an upward trend.

2. How is hypertension diagnosed?

76% of doctors responded that systolic blood pressure (SBP) measuring >140 mm Hg and diastolic blood pressure (DBP) >90 mm Hg readings for more than two consecutive times at different settings led to a diagnosis of hypertension.

Nephrologists and diabetologists (20%) say that patients with SBP > 130 mm Hg and DBP > 80 mm Hg at 2 or more readings were considered hypertensive.

According to the paediatrician, in the paediatric population, hypertension is categorized based on [percentiles with charts](#).⁽⁷⁾ Elevated blood pressure is between the 50th and 90th percentiles. Diagnosis of hypertension is done when blood pressure is more than the 90th percentile.

3. What are the initial symptoms that patients present with before diagnosis of hypertension?

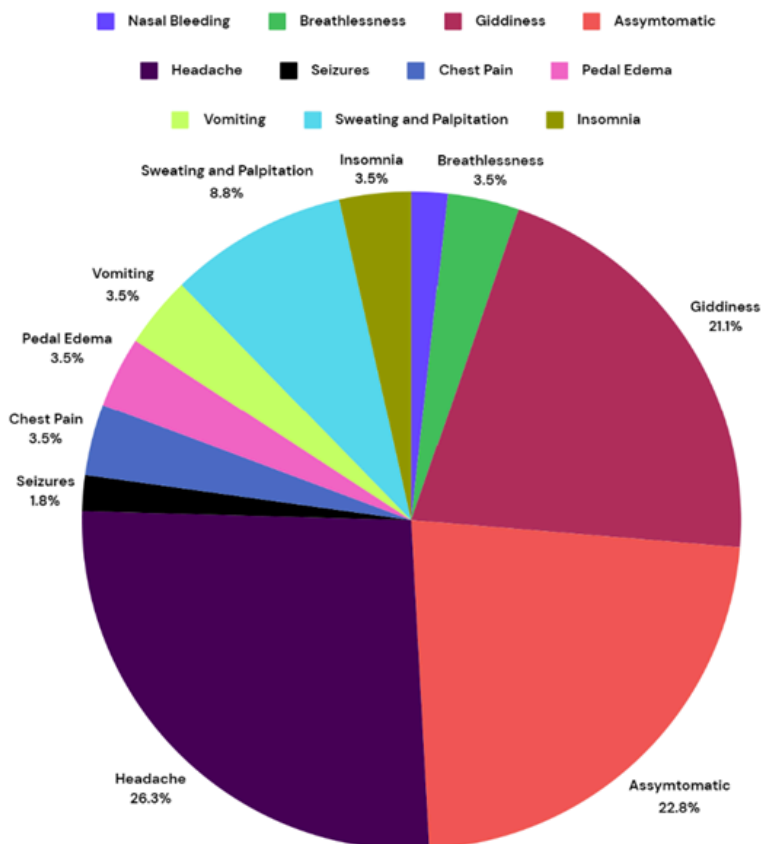


Figure 2: A pie chart showing the different symptoms reported by doctors that patients present with and the percentage of doctors reporting them.

From the study, it is noted that 26% of the doctors report that one common presentation is headache, 23% report that patients have no symptoms, and 21% report it as giddiness. They also report a varied range of other symptoms as an initial presentation. Chest pain and breathlessness are more common with patients of cardiologists as reported by cardiologists themselves. The paediatrician reported that children present with a completely different set of symptoms, such as obesity and a decrease in urine output (seen in secondary hypertension). The pediatrician also states that children usually don't complain of headaches but present with different complications, such as papilledema causing blurring of vision and intraventricular bleeding in the brain.

4. When do you ask for biochemical tests and other additional tests?

37% (10) of doctors advise all (Complete Blood Count, liver function tests, Lipid Profile, renal function tests, random blood glucose, electrocardiography, chest X-ray) as screening tests to all patients, 33% (9) advise these only to young patients, 19% (5) of doctors advise only for renal dysfunction, 7% (2) for refractory hypertension, and 4% (1) prescribe these tests only on the report of unusual symptoms and/or family history of hypertension.

5. What is the initial response of patients when first receiving a diagnosis of hypertension?

After receiving a diagnosis, 58.33% of physicians state that most patients are in denial, 25% state that most patients accept the diagnosis, 8.33% state that patients develop a dread of the illness, and the remaining 8.33% of physicians state that the majority of patients are unhappy with the diagnosis.

6. Treatment protocols

76% of doctors (19 out of 25) advise lifestyle modification at a patient's first visit and later start them on antihypertensive medications. In case high readings (SBP > 150 mmHg or DBP > 100 mmHg) are observed on the first visit, selective drugs are prescribed following [JNC 8 Guidelines](#)⁽⁸⁾. 24% doctors (6 out of 25), especially all diabetologists (8%) and all nephrologists (12%), suggest early prescription of antihypertensive medication i.e., during the first visit where patients present with elevated blood pressure (SBP>130mmHg, DBP>80mmHg). Usually follow-up is advised in 2 weeks, and patients reviewing with nephrologists are seen in 3 days initially to assess

compliance. Later, monthly, quarterly, or biannual follow-up is advised by all 25 (100%) doctors.

7. When do you believe the treatment is successful?

Doctors believe that treatment is successful based on the patient achieving target blood pressure goals, patient adherence to regimens, and absence of complications.

40% doctors believe that hypertension is controlled when target blood pressure (SBP <120-130 and DBP<80-90) is achieved; 32% doctors believe that treatment is successful when target blood pressure is achieved and patient is symptom free on subsequent 2 or 3 visits; 12% doctors believe treatment to be successful when patients adhere to medication and target blood pressure is achieved; 12% doctors believe that treatment is successful when patient does not develop any complication over a period of 5 years.

8. In patients in need of ambulatory blood pressure monitoring, what other alternatives do you advise and can the patient afford it?

Ambulatory blood pressure monitoring (24 hours blood pressure monitoring) is required in White Coat hypertension or masked hypertension and some other conditions. White coat hypertension is described as elevated blood pressure values only seen in hospital or doctor-observed situations as a result of anxiety, and vice versa for masked hypertension. 72% doctors recommended home-based blood pressure monitoring and using the nearest health center facilities if two or more high readings have occurred. 28% doctors suggested visiting local clinics, Primary health Centres, or Community Health Centres to have blood pressure checked only by a healthcare worker for greater reliability. Doctors reported that both appear affordable and manageable for patients.

9. Mention the most common reasons for why patients miss follow up.

92% of the doctors reported that at least some patients miss follow up. 8% percent of the physicians responded that every patient was thoroughly followed up with utilizing a variety of techniques, including phone or message reminders and follow-ups at home. 30% of doctors report that missed follow-ups are due to symptoms being resolved and the patient feeling better after the initial regimen; 25% report that missed appointments are likely due to a lack of time owing to stressful job; 15% of doctors report patients are perhaps unaware of complications and course of the disease; 15% of doctors

report that patients miss appointments on account of financial difficulties , and 15% of doctors report that patients are just negligent.

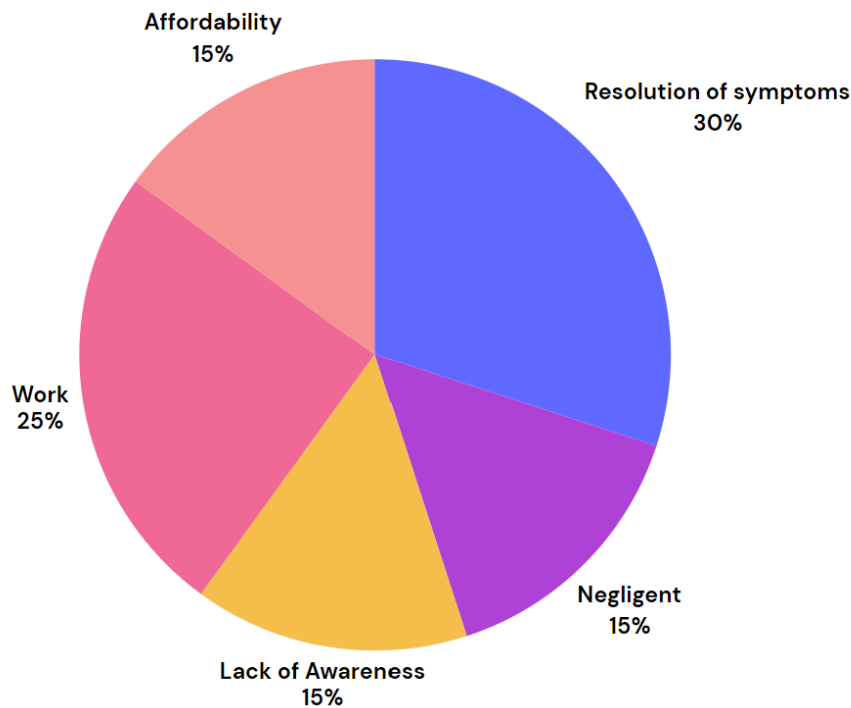


Figure 3: A pie chart showing the most common reasons given by patients for missing follow up reported by doctors.

10. Do patients comply with lifestyle modification recommendations ?

80% of the doctors (20 out of 25) report that their patients usually show good compliance with lifestyle modification, especially salt restriction; non-compliance is seen more often for physical exercises and when adding medications. The remaining 20% of doctors (5) say their patients complain about not having enough time or procrastinating to engage in regular physical activity.

11. If non-adherence to medicine is found, mention the most common reason for it.

Doctors state that the reason for non-adherence to medications is seen in patients who are prescribed multiple drugs and multiple frequencies of dosing.

Non-compliance and non-adherence are also seen more in patients with addiction, such as alcoholics, smokers, and patients with poor hygiene habits.

12. Do patients complain of non-affordability of medication or health care?

54% of the doctors reported that there are patients who cannot afford medication in private settings and were hence referred to government settings.

13. In case of an emergency, how far is the next higher centre away from the facility? (only if applicable)

All of 25 doctors had access to a tertiary health center that was approachable within an hour, the stipulated golden period for any life-threatening emergencies.

14. What do patients do in case there are side effects of drugs or persistence of symptoms?

In case of side effects, alternative drugs are typically prescribed by doctors, with respective biochemical tests to rule out other causes of side effects; 50% of the doctors report that in case of side-effects, patients do come back to the centre, 12 % of doctors state that patients switch doctors and 38% state that patients stop taking the prescribed medication without reporting the side effects or persistence of symptoms or side effects of the drug.

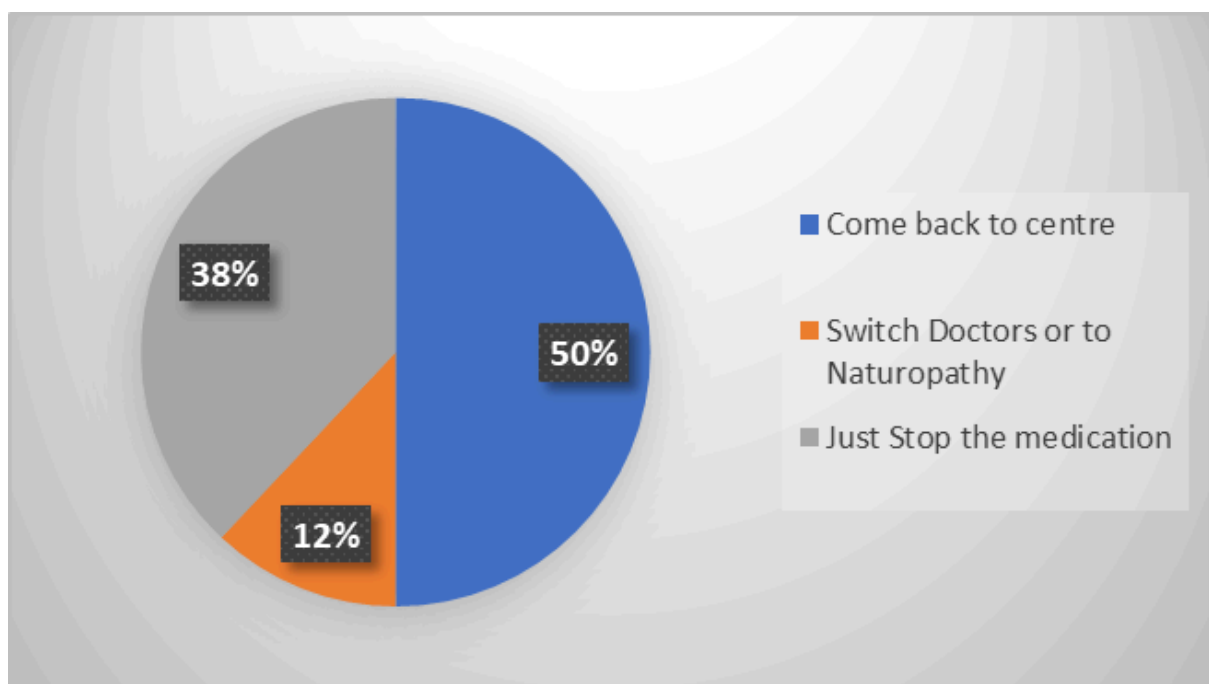


Figure 4: A pie chart showing percentages of patients in case of side effects of drugs or persistence of symptoms.

15. Briefly state possible measures that can be implemented to improve treatment for hypertension.

These are the suggestions given by doctors to improve the management of hypertension:

- Awareness to be raised on risk factors, disease progression, and especially, complications of the illness.
- Mass screening and workplace screening for hypertension.
- Encouraging family support to build compliance.
- Encouraging patients who work nights or have demanding professions with deadlines to maintain a work-life balance and improve their diets. .
- Calorie restrictions and physical activity in both children and adults.
- Doctors also suggest single dosing and Fixed Drug Combination (FDC) to reduce the frequency and quantity of medications. Side effects should be explained prior to the commencement of drugs.
- Focus on a holistic approach rather than a medication-based approach such as monthly dietary counseling.
- Promotion of home care and monitoring by paramedical staff.
- Promoting health education in school-going children; therefore, children mediated awareness creation in adults.
- Reducing the placement of table salt on restaurant tables.
- Using social media and television to create awareness on complications of hypertension.

DISCUSSION:

All doctors interviewed report using evidence-based protocols for determining treatment. While all cardiologists in the study follow the JNC 8 Guidelines for treating hypertension and related issues, many physicians follow [JNC 7 Guidelines](#)⁽⁹⁾. Patients with renal disease and diabetes are at increased risk of developing associated hypertension. They also have a synergistic influence on the progression of complications. Hence, diabetologists and nephrologists are

more cautious and prefer starting medication earlier. The availability of resources is also reported as adequate (access to tertiary care centres and free drug distribution by government).

Almost all doctors believe that hypertension should be treated with multiple interventions, including weight reduction, diet modification (DASH diet- limiting salt intake to less than 5 g/day, diet rich in fruits, vegetables and low dairy products, limiting fried and oily foods), physical exercise, moderation of alcohol, stress management, work-life balance, family support, and medication, rather than symptomatic treatment with only medication for long-term control.

MODIFICATION	RECOMMENDATION	APPROXIMATE SBP REDUCTION (RANGE)
Weight reduction	Maintain normal body weight (body mass index 18.5–24.9 kg/m ²).	5–20 mmHg/10 kg weight loss ^{23,24}
Adopt DASH eating plan	Consume a diet rich in fruits, vegetables, and lowfat dairy products with a reduced content of saturated and total fat.	8–14 mmHg ^{25,26}
Dietary sodium reduction	Reduce dietary sodium intake to no more than 100 mmol per day (2.4 g sodium or 6 g sodium chloride).	2–8 mmHg ^{25,27}
Physical activity	Engage in regular aerobic physical activity such as brisk walking (at least 30 min per day, most days of the week).	4–9 mmHg ^{28,29}
Moderation of alcohol consumption	Limit consumption to no more than 2 drinks (1 oz or 30 mL ethanol; e.g., 24 oz beer, 10 oz wine, or 3 oz 80-proof whiskey) per day in most men and to no more than 1 drink per day in women and lighter weight persons.	2–4 mmHg ³⁰

DASH, Dietary Approaches to Stop Hypertension.

* For overall cardiovascular risk reduction, stop smoking.

† The effects of implementing these modifications are dose and time dependent, and could be greater for some individuals.

[Figure 5: A table showing different life style modifications and respective approximate systolic blood pressure reduction](#) ⁽¹⁰⁾

In reference to the above figure, it is evident that the management of hypertension involves both lifestyle modification and medications. Equal emphasis on both is important. Doctors report that patients are usually non compliant to physical exercise and medication. Since the definition of lifestyle modification is arbitrary, it is advised to create a customized regimen for each patient with the involvement of several professionals. Doctors have found that when numerous drugs are taken many times a day, the rates of nonadherence increases. Hence a [fixed drug combination of drugs](#), as recommended and approved by guidelines, is recommended.

50% of the doctors report that patients change their doctors or stop taking medications in case of side effects or recurrence of symptoms. This also affects the compliance to the treatment. Hence detailed education regarding side effects, course of the treatment and follow up prior to commencement of medication is recommended.

Awareness about hypertension and also its long term progression, morbidity and mortality need to be raised among the public consistently. While on the one hand, patients are anxious which does not help their treatment outcomes, there are also a number of patients who are negligent, perhaps because of a lack of awareness of the condition itself. Both need to be addressed, as compliance is key to hypertension management.

CONCLUSION:

Doctors report that poor follow up and poor long term adherence to treatment makes treating hypertension difficult. Doctors believe that patients react differently to hypertension diagnosis, with many initially rejecting it. To combat this, awareness about hypertension's long-term progression, morbidity, and mortality should be raised. Hypertension should be treated with multiple interventions, including weight reduction, diet modification, physical exercise, stress management, and medication. All of this primarily needs patient compliance for successful outcomes.

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APPENDIX:

QUESTIONNAIRE FOR PERCEPTION OF DOCTORS REGARDING CHALLENGES FACED BY DOCTORS IN TREATING HYPERTENSION

Name of the Doctor:

Mobile Number:

Speciality:

Experience (in years):

Name of the Clinic /Hospital:

Location:

1. How many patients get newly diagnosed with hypertension in a day? (in a scale of per 10 patients)
2. How is hypertension diagnosed?
3. What are the initial symptoms that patients present with before diagnosis of hypertension?
4. When do you ask for biochemical tests and other additional tests?
5. What is the initial response of patients when first receiving a diagnosis of hypertension?
6. What do you prescribe after a patient is diagnosed?
7. If only Lifestyle modification is suggested, how often is follow up advised and when do you start prescribing medication?
8. How often is follow up done after diagnosis of hypertension?
9. In case of an emergency, how far is the next higher centre away from the facility? (only if applicable)
10. When do you believe the treatment is successful?
11. Is there any protocol/ guidelines available for follow up of patients?
12. In patients in need of Ambulatory Blood Pressure Monitoring (ABPM), what other alternative do you advise and can the patient afford it?
13. Mention the most common Reasons for why patients miss follow up?
14. Mention the most common reason for non-adherence of medication?
15. Do patients complain of non-affordability of medication or health care?
16. Do patients comply with Lifestyle modification treatments?
17. If non compliance is seen, mention the reason given for it?
18. What response do you suggest to patients with side effects of treatment and recurrence of symptoms?
19. What do patients do in case there are side effects of drugs or persistence of symptoms?
20. Briefly state possible measures that can be implemented to improve treatment for hypertension.