



# Facilitators And Barriers to Hypertension Control, Following the Implementation of India Hypertension Control Initiative (IHCI) In Thiruvananthapuram District – A Qualitative Study

Balamurali V<sup>1</sup>, Lavanya P<sup>2</sup>, Kumar Sumit<sup>3</sup>

<sup>1,3</sup>Prasanna School of Public Health, Manipal Academy of Higher Education, Manipal, India

<sup>2</sup>JIPMER, Puducherry, India

## ABSTRACT

**Background:** India Hypertension Control Initiative (IHCI) was launched in 2017 to improve the control rate of hypertensive patients on treatment. Thiruvananthapuram was one of the 26 districts in the country where the programme was initially rolled out.

**Methods:** A qualitative cross-sectional study was conducted among stakeholders involved in the implementation of IHCI of Thiruvananthapuram district. Purposive sampling method was used for the selection of samples. A total of 25 in-depth interviews were carried out.

**Results:** The major facilitators which propelled hypertension control were uniformity in drug prescription, proper documentation of patient data along with indicators for measuring control rates and a defaulter tracking mechanism. Clinical inertia among doctors, increased workload and sending of bystanders for monthly follow-up are the major barriers that affected hypertension control.

**Conclusions:** Replication of good practices performed under IHCI into similar health settings or programmes can be encouraged. Apart from the few barriers seen at the programme level, the already existing barriers at the health system level need to be addressed immediately through efforts such as e-Health incorporation and trainings.

**Keywords:** IHCI, Thiruvananthapuram, Facilitators, Barriers

## INTRODUCTION

Hypertension is a significant risk factor for Non-Communicable Diseases (NCDs) such as cardiovascular diseases, which is considered to be the leading cause of mortality and morbidity worldwide.<sup>1</sup> As per the WHO report globally, only one in every seven people has their high blood pressure under control. If it is properly controlled, the mortality due to cardiovascular diseases can be reduced as much as by 30%.<sup>2</sup>

The national prevalence of hypertension among the adult population is 24%.<sup>1</sup> It is expected that the

number of hypertensive individuals in the country to double from 118 million in 2000 to 213 million by 2025.<sup>3</sup> In spite of having efficient treatments, early detection and control rate of hypertension in India is meager.<sup>4</sup> Kerala is a state that is undergoing rapid epidemiological transitions, with high morbidity and mortality from NCDs.<sup>5</sup> According to the DLHS-4 report, the prevalence of hypertension in Kerala is 34%, which is higher than the national level. As of 2016-17 report, among people with hypertension, only 44% were aware of their status. The percentage of people on treatment was 37% with a controlled rate of just 13%.<sup>6</sup>

**How to cite this article:** Balamurali V, Lavanya P, Kumar S. Facilitators and Barriers to Hypertension Control, Following the Implementation of India Hypertension Control Initiative (IHCI) In Thiruvananthapuram District – A Qualitative Study. *Natl J Community Med* 2022;13(11):815-820. DOI: 10.55489/njcm.131120222410

**Financial Support:** None declared

**Conflict of Interest:** None declared

**Date of Submission:** 03-09-2022

**Date of Acceptance:** 05-11-2022

**Date of Publication:** 30-11-2022

**Correspondence:** Dr. Balamurali V (Email: balamurali94@gmail.com)

**Copy Right:** The Authors retain the copyrights of this article, with first publication rights granted to Medsci Publications.

Compared to any other primary care programme, control and treatment of hypertension, can result in saving more lives. Majority of the hypertension cases can be managed at the primary care level. A well-functioning programme for the control of hypertension may transmit discipline in the management of NCDs in the primary health care system, thus increasing the faith of the system in managing NCDs.<sup>7</sup>

The India Hypertension Control Initiative (IHCI) (erstwhile India Hypertension Management Initiative) was launched in November 2017. It is a multi-partner, initiative between the Ministry of Health & Family Welfare (MoHFW), Indian Council of Medical Research (ICMR), State Governments, WHO and Resolve to Save Lives initiative of Vital Strategies. It is considered a model initiative directed towards achieving the target of 25% reduction in the prevalence of hypertension by 2025 set out by MoHFW. This initiative is therefore being implemented to support the cardiovascular component of the existing National Programme for the Prevention and Control of Cancer, Diabetes, CVD and Stroke (NPCDCS) and to improve the control rate of hypertensive patients on treatment.<sup>8</sup>

The present study was carried out with the objective of determining the facilitators and barriers that affected hypertension control, following the implementation of IHCI in Thiruvananthapuram district. The study explored the perspective of the stakeholders who were involved in the implementation of IHCI in the district.

## METHODS

We used qualitative cross-sectional design. The study was conducted among the state and district level stakeholders in the public health facilities of Thiruvananthapuram district. There are 54 PHCs, 16 FHCs and 22 CHCs in the district and IHCI was implemented in all these 92 institutions.

The programme officers such as State NCD nodal officer, Regional NCD coordinator, IHCI District coordinator (CVHO), Senior Treatment Supervisor (STS), IHCI and the service providers such as Medical Officers (MO), Staff Nurses (SN), Pharmacists (PH), Health Inspectors (HI), Junior Health Inspectors (JHI), Junior Public Health Nurses (JPHN) who were involved in the implementation of IHCI were included and the duration of the study is from January 2020- June 2020.

**Sample Size:** A total of 25 in-depth interviews were administered, until data saturation. 4 in-depth interviews among the Programme officers and 21 in-depth interviews among the service providers were conducted.

**Data sources and collection methods:** Descriptive approach was used for qualitative data collection. Before the interviews, the interview guide was pre-

tested among a few members to assess its appropriateness; changes were made wherever necessary.

The principal investigator was fluent in the local language and had training in qualitative interviews. Written consent was obtained briefing the purpose of the study. The participants were interviewed for 15–20 min in their local language, Malayalam. Face-to-face interviews were conducted in a separate room to ensure privacy and convenience for the participants. Two sets of interview guide with open-ended questions were developed in discussions with experts in the field, one set for the category of programme managers and the other for service providers. All interviews were audio-recorded, and field notes were taken during the interview to capture all important information.

**Data entry and analysis:** Audio-recorded interviews were transcribed verbatim into Malayalam and translated to English on the same day of interview. By content analysis, using MAXQDA software for coding was carried out to generate categories or themes. The result was analyzed to determine the facilitators and barriers to hypertension control, following the implementation of IHCI.

**Ethical clearance:** The ethical clearance was obtained from Institutional Ethical Committee (IEC no: 837/2019) and there after the administrative permissions required for the study was taken from Directorate of Health Services (DHS), Kerala (order no: MC5- 78049/2019/DHS).

## RESULTS

A total of 25 In-depth interviews were conducted among the state and district level stakeholders in the public health facilities of Thiruvananthapuram district. Themes and codes were generated to build a conceptual framework

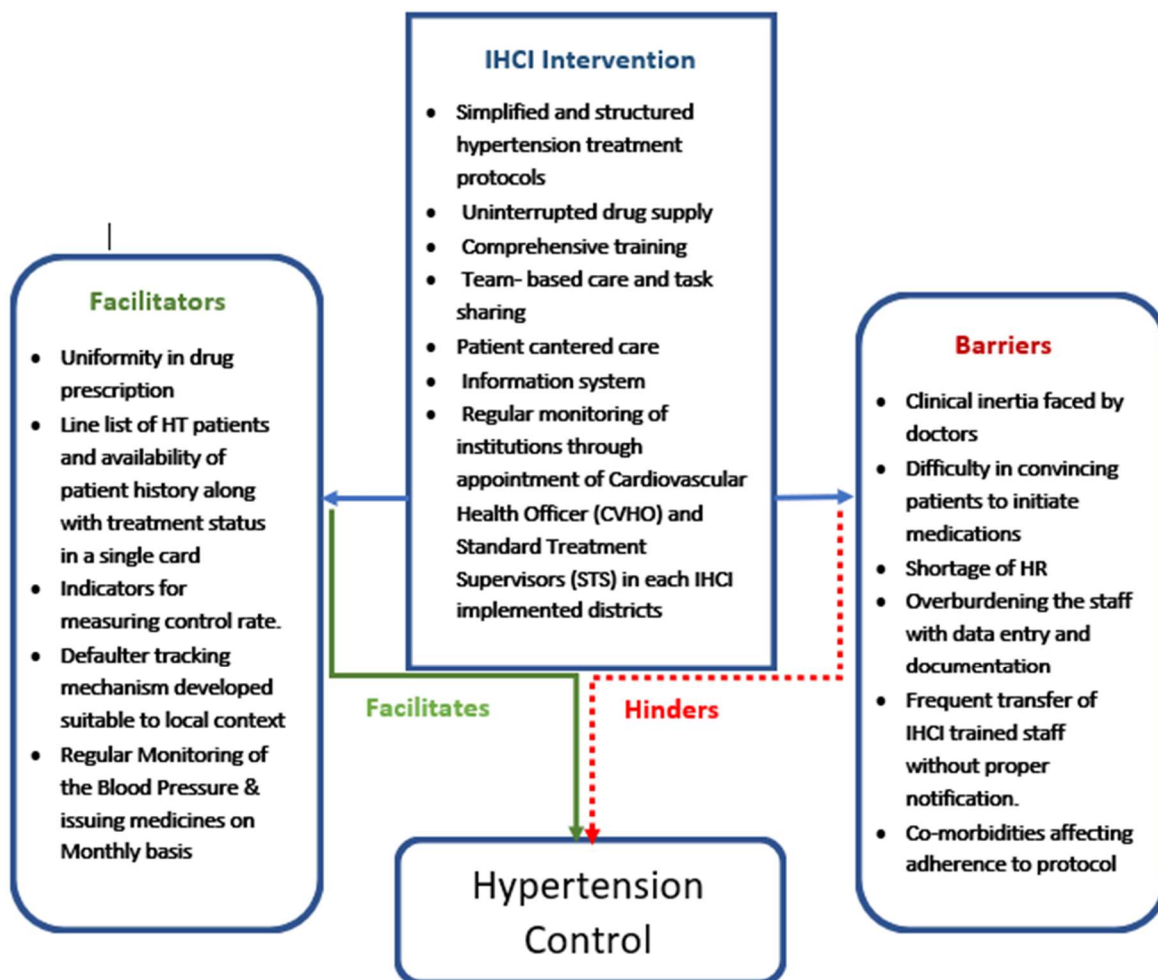
### Facilitators

#### Treatment related

Uniformity in the prescription of anti-hypertensive has occurred following the implementation of IHCI. Now the physicians are supposed to prescribe drugs that are listed under IHCI protocol.

Previously they used to prescribe different combination of drugs and drugs which will not be available at the pharmacy of concerned facility.

*“Clarity has come in everything related with treatment of Hypertension. Earlier doctors used different combination of drugs. They used to prescribe drugs that should be brought from outside. Now there is an order and uniformity in prescription of drugs. Now they are supposed to prescribe only the drugs listed under IHCI protocol”. (Respondent Pharmacist-2)*



**Flowchart 1: Facilitators and barriers to hypertension control, following the implementation of India Hypertension Control Initiative (IHCI) in Thiruvananthapuram district**

### Information system related

It has developed a good system with respect to documentation of hypertensive patients. There is line listing of each patient and are given a unique ID number. The patient data is documented with a treatment card maintained for every patient at facility level and a passbook at patient level. Details of patients registered with treatment card are line listed in a Hypertension facility register. Every facility has to send a monthly outcome sheet. Every three months the patient data is evaluated for control rate and outcomes are generated.

*“After getting registered in the initiative, every patient will be given a unique ID number and will be issued a treatment card. A facility-based hypertension register will also be maintained. After registering they will be followed up for a cohort of 3-6 months to keep a track on their BP values. After say three months their BP values will be evaluated, whether it is under control or not and the outcomes will be analyzed and presented”. (Respondent Programme Manager-3)*

*“The BP of patients is getting controlled through this programme. It is clearly understood from the outcome sheet which we are sending every month. Since I am*

*only entering data into outcome sheet, I can clearly make that out”. (Respondent Junior Health Inspector-5)*

### Follow-up related

Patient follow-up has become more regular following the implementation of the initiative. Now as medicines are given on a monthly basis, they appear regularly as advised by the service providers. The tracking of defaulters has also become efficient after the arrival of IHCI. A mechanism to track defaulter was developed under each facility. The basic idea is to identify all defaulters by the end of each month and retrieve them back either by phone call or through field workers.

*“Regular follow up by patients is one of the best things that happened after implementation of this programme. As medicines are issued on monthly basis, patients are following up regularly as we are instructing. Earlier if we give medicines for 5 days, they used to do follow up as they wish. It is also easy to track patients now. There is a proper mechanism to track defaulters”. (Respondent Medical Officer-1)*

Regular monitoring of the programme is carried out

by IHCI team comprising of a Cardio Vascular Health Officer (CVHO) and Senior Treatment Supervisors (STS). They do supportive supervision and also provide on-site training as per requirement to every facility.

## Barriers

### Treatment related

The lack of adherence shown by few doctors towards treatment protocol was a constant challenge according to respondents. The doctors won't intensify treatment (clinical inertia) as per the protocol in some of the cases. It is difficult to attain BP control in such cases. They won't deviate from their treatment modality.

*"Another block that has come is that every doctor will be having their own treatment modality and discretion. When we insist them to follow the protocol, a therapeutic inertia is felt in that". (Respondent Programme Manager-1)*

According to doctors it was not practical to follow the protocol in the case of every patient. In the case of patients already on treatment and in patients with other co-morbidities there was difficulty in following the protocol. But most respondents agreed that in the case of newly diagnosed hypertensive patients, the protocol proved to be effective.

*"The main challenge is in sticking on to the treatment protocol. It is not practical to follow these guidelines in every case. I don't think the BP will be getting controlled by sticking on to these drugs alone. Most patients who are coming here will already be on treatment from Medical College. They will be taking medicines like beta blockers, and some will be having co-morbidities as well. It is difficult to stop giving such medications and to start giving drugs under IHCI". (Respondent Medical Officer-4)*

Difficulty was faced by doctors in convincing some of the patients to start medication. The patient themselves should get any symptoms of high BP and then only they will start taking medicines. There were few patients who stopped taking medicines themselves once they felt that their BP had come under control. That was also a barrier which affected the blood pressure getting controlled.

*"Some patients will stop taking medicines themselves if they feel that their BP is under control. For such patients BP will be high again during next visit". (Respondent Medical Officer-3)*

### Information system related

Another important barrier that came up was the difficulty in carrying documentation related to IHCI. Implementation of IHCI has increased the rush of patients, which was difficult to manage for the existing staff. Respondents were of the opinion that more staff should be appointed for carrying registrations,

data entry and reporting. There is an increased workload among existing staff. They had to maintain a lot of IHCI related documents which are to be filled out manually. Most of the respondents suggested that by incorporating IHCI into the already existing e-Health, these issues can be solved.

*"They should assign a data entry operator and staff for reporting. Now we are only entering data into the computer, doing registration etc. We have to do field activities also. Our workload is*

*increasing so much after implementation of this programme and that is affecting the quality of our - work". (Respondent Junior Health Inspector-2)*

### Follow-up related

Many of the respondents pointed out the sending of bystanders by a few patients for the monthly follow-up visit. Monitoring blood pressure and other related activities will be difficult for such patients.

There were also issues related to the frequent transfer of staff who were trained at IHCI without proper notification to concerned programme officials. Follow-up and other related programme activities will be disrupted through this.

## DISCUSSION

The present study was an effort to explore the facilitators and barriers to hypertension control following the implementation of IHCI in the district of Thiruvananthapuram. It was mainly explained in relation to the treatment, information system, follow up and control rate of hypertensive cases. Uniformity in the prescription of anti-hypertensive drugs, better documentation and evaluation of patient data, mechanism to track defaulters and regular monitoring by programme managers were the main factors that facilitated hypertension control following the implementation of IHCI. Clinical inertia among doctors, refusal to initiate medication by patients, increased workload among staff and sending of bystanders for follow-up visit largely stood as barriers.

Uniformity in the management of hypertension has also come. In the previous system, doctors used to prescribe drugs according to their discretion, whereas now they are only supposed to prescribe drugs mentioned under IHCI protocol. A study by Frieden TR, King SM, Wright JS, (2013) reveals that standardized treatment protocol helps improve control rates.<sup>9</sup> Hence, a standard protocol is essential in attaining and maintaining optimum blood pressure and can help prevent cardiovascular diseases.

The standard protocol and the availability of the drugs in the Programmeme has brought in uniformity and good treatment outcomes. A study conducted by Jaffe MG et al, (2018) states that reducing medicinal cost ensures accessibility and adherence to the prescribed medications.<sup>10</sup> Therefore, a standard treatment protocol ensures uniformity and the uninter-

rupted, free drug supply would improve adherence, improving control rates.

IHCI differs from the other NCD control programmes because of the line listing of patients and defaulter tracking mechanism. A systematic review and qualitative analysis paper by Heller DJ et al., (2019)<sup>11</sup> identifies difficulty in tracking patients as an important barrier in delivering care for NCDs. However, the IHCI has overcome this barrier by having a defaulter tracking mechanism in place where the defaulters are identified through IHCI treatment card or defaulter register and tracked through phone or field workers.

We identified that there are difficulties in adhering to the treatment protocol if the patients present with certain co-morbidities. The medical officers were finding it less practical to adhere to the treatment protocols in all cases. In the case of newly identified patients, there were not many problems in following it. However, in the case of patients who were already on medications and who were having any kind of co-morbidities, it was difficult to follow. Likewise, a systematic review and meta-analysis study by Khatib R et al., (2014)<sup>12</sup> stated that guidelines may not always be practical to use. Thus, the barriers to adherence to the protocol in patients with co-morbidities may be evaluated and instructions for the same can be provided.

A study by Khatib R et al., (2014) and a study by Kashyap VH, Shivaswamy MS (2019) on assessing implementation of NPCDCs in Belgavi district, identified lack of staff and increased workload as an essential barrier.<sup>(12,13)</sup> Likewise, similar barriers such as lack of manpower, overburdening of the existing staff and transfer of trained staff have been mentioned in the current study. In the modern era of digitalization, many paper based documentations are being maintained under IHCI in the district. Given the fact that mobile applications such as "Simple" specifically designed for IHCI are being used in some of the States, maintaining these documents is increasing the workload among health workers in a system which is already facing shortage of staff. As these issues still exist, it requires immediate attention at the systemic level. Without addressing these, there cannot be hazard-free implementation of any public health programme. Therefore, it is important that efforts should be made for incorporating IHCI into e-Health as in the context of Kerala.

Despite the above-mentioned barriers, there has been a marked improvement in the hypertension control rate of patients on treatment, according to the information provided by the stakeholders. Data regarding "control rates" and for the first time, regarding "defaulter rate" are being generated under the programme. IHCI has developed a good system for documenting patient data and defaulter tracking that can be replicated in similar health settings or other NCD control programme. A review paper by Gupta R et al., has mentioned the importance of roll-

ing out high-quality programmes for control and management of hypertension within national programmes<sup>14</sup>. There is a huge potential for IHCI to turn out like that, but for that, the existing barriers need to be addressed.

This strength of the study is that the Consolidated Criteria for Reporting Qualitative Research guidelines for reporting the qualitative components was adhered to. A limitation of this study is that it has been conducted in only one district of India thus it does not uniformly represent the entire public health sector in India and the potential variation in stakeholders' responses can occur. Furthermore, the recommended sample size used in qualitative interviews is smaller than used in quantitative research studies, and ranges between 20 and 30 interviews.

## CONCLUSION

It was found that the standardized simplified treatment protocol, regular monitoring, systematic documentation and defaulter – tracking are the main factors that facilitated hypertension control. On the other hand, Clinical inertia among doctors, shortage of manpower, patient attitude, frequent transfer of IHCI trained staff, overburdening of staff with paperwork are the barriers to hypertension management. The category of facilitators and barriers emerged out from the study may inform formulation of evidence-based changes in the programme tailored to the local setting and thereby can improve the outcomes related to treatment, documentation and follow-up of hypertensive patients.

## RECOMMENDATIONS

The existing barriers may be addressed by notifying the shortage and transfer of IHCI trained staff and taking appropriate measures for the same. The overburdening of existing staff with paperwork for documentation may be addressed through efforts such as incorporating IHCI into already existing e-Health project in the State. Also, providing instructions to treat patients with co-morbidities and educating the patients to adhere to medication will further enhance the control rates.

## ACKNOWLEDGEMENTS

The author would like to thank the officials of Directorate of health services and IHCI Officials of the state for the immense support and for letting to carry out the study in the best possible way.

## REFERENCES

1. Noncommunicable diseases country profiles 2018. Geneva: World Health Organization; 2018. License: CC BY-NC-SA 3.0 IGO.
2. WHO Global action plan for the prevention and control of

- noncommunicable diseases 2013- 2020, World Health Organization, Geneva, Switzerland (2013)
3. Reddy KS, Shah B, Varghese C, Ramadoss A. Responding to the threat of chronic diseases in India. *The Lancet*. 2005 Nov 12;366(9498):1744-9
  4. Prenissl J, Manne-Goehler J, Jaacks LM, Prabhakaran D, Awasthi A, Bischofs AC, et al. Hypertension screening, awareness, treatment, and control in India: A nationally representative cross-sectional study among individuals aged 15 to 49 years. *PLoS medicine*. 2019 May;16(5).
  5. Soman CR, Shahulhameed S, Ramankutty V, Vijayakumar K, Kunjukrishnapillai R, Ajayan K, et al. PROLIFE study group. Cohort profile: the PROLIFE study in Kerala, India. *International journal of epidemiology*. 2011 Feb 1;40(1):10-4.
  6. Achutha Menon Centre for Health Science Studies (AMCHSS). Prevention and Control of Noncommunicable Diseases in Kerala. Trivandrum: s.n., 2016-17.
  7. Links community, IHCI Training Manual. Available from: [https://linkscommunity.org/assets/PDFs/htn-draft-training-module-non-simple\\_05122019-for-print.pdf](https://linkscommunity.org/assets/PDFs/htn-draft-training-module-non-simple_05122019-for-print.pdf). Accessed 12 May 2020
  8. ICMR, Press release-Expansion for India Hypertension Control Initiative (IHCI). Available from: [https://www.icmr.nic.in/sites/default/files/press\\_release\\_files/IHCI\\_op.pdf](https://www.icmr.nic.in/sites/default/files/press_release_files/IHCI_op.pdf). Accessed on 07 May 2020].
  9. Frieden TR, King SM, Wright JS. Protocol-based treatment of hypertension: a critical step on the pathway to progress. *JAMA*. 2014 Jan 1;311(1):21-2.
  10. Jaffe MG, Frieden TR, Campbell NRC, Matsushita K, Appel LJ, Lackland DT, et al. Recommended treatment protocols to improve management of hypertension globally: A statement by Resolve to Save Lives and the World Hypertension League (WHL). *J Clin Hypertens (Greenwich)*. 2018 May;20(5):829-836.
  11. Heller DJ, Kumar A, Kishore SP, Horowitz CR, Joshi R, Vedanthan R. Assessment of Barriers and Facilitators to the Delivery of Care for Noncommunicable Diseases by Nonphysician Health Workers in Low-and Middle-Income Countries: A Systematic Review and Qualitative Analysis. *JAMA Network Open*. 2019 Dec 2;2(12):e1916545-
  12. Khatib R, Schwalm JD, Yusuf S, Haynes RB, McKee M, Khan M, Nieuwlaat R. Patient and healthcare provider barriers to hypertension awareness, treatment and follow up: a systematic review and meta-analysis of qualitative and quantitative studies. *PLoS one*. 2014;9(1).
  13. Kashyap VH, Shivaswamy MS. Assessment of implementation of the national programme for the prevention and control of cancer, diabetes, cardiovascular diseases, and stroke at subcenters of Belagavi taluka: A cross-sectional study. *Indian Journal of Health Sciences and Biomedical Research (KLEU)*. 2019 Jan 1;12(1):21.
  14. Gupta R, Khedar RS, Panwar RB. Strategies for better hypertension control in India and other lower middle-income countries. *J Assoc Physicians India*. 2016 Sep;64(9):58-64.