

Socioeconomic Influences on Hypertension Care Access and Adherence in Urban Chennai: A Health Economics Perspective

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Abstract

Hypertension has been a significant contributor of cardiovascular morbidity and death in urban India. The access to care and adherence to long-term treatment is influenced by combination of socioeconomic factors and the conditions of health systems used in certain cities such as those provided by Greater Chennai Corporation. The unequal income, health literacy and the existence of both the public and the private healthcare services in the same setting are part of the environment where continuity of care is not necessarily identical. This review explores these questions in terms of the health economics where they affect the access to hypertension care, adherence to treatment and the trends of healthcare utilization in Chennai.

Available evidence indicates that individuals with poorer socioeconomic status and low health literacy are more likely to experience poor diagnosis, disruption of care, and antihypertensive therapy nonadherence. A degree of financial coverage, through which individuals are in a position to enjoy some degree of protection through the services offered by the social healthcare, but questions regarding continuity and confidence regarding the services offered to the patients, do have an effect on the care-seeking behaviour. Makkalai Thedhi Maruthuvam programme, among them, appear to be promising in the sense that they increase access through community-based delivery to them, but these analyses are not to be seriously considered and assessed on a long-term basis. Such lapses will have to be filled by a mixture of increased patient awareness, more rigorous primary care or more specific attention to the economic facts, which determine the choices of treatment made by patients.

The literature review will be based on the peer-reviewed literature, national surveys, and policy documents to determine the relationship between socioeconomic status and health literacy and access to hypertension services among urban households. It also takes into consideration the aspects that affect the treatment compliance and the decision between the public and the private healthcare, with special focus on affordability, continuity, perceived quality and out-of-pocket spending. Also, the review addresses the consciousness and emergent peculiarity of Makkalai Thedhi Maruthuvam programme in enhancing accessibility and continuum of care in doorstep services.

Keywords: Hypertension, Health economics, Access to care, Treatment adherence, Urban primary care, Health equity.

1. Introduction

Hypertension remains one of the greatest public health issues and is well known to be one of the most significant changeable threats to cardiovascular disease, stroke and early death across the globe [1,2]. Most commonly in clinical practice it is handled as a common and manageable condition in the daily routine clinical practice which occasionally obscures its long-term effects. In India, hypertension as a burden in the population has been steadily growing especially in the last twenty years mainly because of the high rates of urbanisation, demographic transition and changes in lifestyle, which include less physical activity and change in diets [3, 4]. Although there are effective and affordable treatment options, the overall control rates are suboptimal, which indicates that other factors than clinical management remain an issue [5,6].

Even though it is usually believed that people in the city have a greater access to healthcare, things are not always that simple. In some cities like Chennai, health centres might be physically available in the city but continuous and frequent care is not equally used by all groups. Cost, time and perceived benefit are important factors affecting access to care among many patients (particularly those with lower socioeconomic status) instead of being limited to availability. Patients not seeing the value of follow-up visits or simply changing providers at the time of immediate convenience is not uncommon and can impact disease control in the long run [5,8].

This issue is even more complex with health literacy. Real life experience will show that once patients start improving, they will quit taking the medication thus this is an indication of lack of understanding of hypertension as a lifelong illness. The false information concerning the long-term use of the drug and the fear of side effects is commonly reported. On the other side, more knowledgeable individuals will become more active consumers of the healthcare facilities and will be more receptive to adhering to treatment [7,18].

The issue of whether to conform or not is a complex one. Clinical recommendations are quite essential though they are normally superseded by practical aspects such as drug prices, the necessity to travel and the time taken in health centers. Rural patients are usually exposed to the public, as well as the private health care system, and they attempt to achieve a happy medium between cost and convenience. This trend, even though it makes sense, may result in discontinuous care and incomplete follow-up [8,9,12].

There has been a significant improvement in enhancing the public health system in Tamil Nadu especially in the fields of primary care. Efforts undertaken by urban local governments such as Greater Chennai Corporation have tried to seal the loopholes in non-communicable disease control. Makkalai Thedhi Maruthuvam scheme is a scheme like this one which is seeking to enhance access by delivering healthcare services through doorsteps. Its long-term effect on adherence and continuity of care is yet to be comprehended, though its initial reports are encouraging [10,11].

In the light of these realities, it may not be adequate to merely investigate hypertension care in a clinical perspective. The socioeconomic factors, patient awareness and the nature of the health system tend to interplay in such a manner that they affect the utilisation of healthcare. One of these useful approaches, though, is a health economic lens that might assist in better comprehending these trends and where to go to improve.

2. Methods

The purpose of conducting this review was to perform a narrative synthesis of the literature available regarding the socioeconomic determinants of access to hypertension care and adherence to treatment in

urban India (in reference to Chennai). The use of a narrative approach was explained by the fact that the topic under consideration touches upon clinical, behavioural, and policy aspects, and it would be hard to limit the analysis to one study design [13]. Even though it was not a full systematic review, a time was devoted to adhering to a systematic approach in locating and selecting literature.

The databases used in the search were PubMed, Scopus and Google Scholar. Besides journal articles, there were also government reports, policy documents, and programme related publications which were considered as these give a great background to the operation of the health system. The keywords were hypertension, urban health, socioeconomic status, health literacy, adherence, healthcare utilisation and Tamil Nadu. In other cases, reference lists of the chosen papers have been scanned to find other sources, especially when dealing with aspects of policy [14].

Preference was extended to the research studies carried out in India particularly those carried out on urban population. Nevertheless, international literature was also selected as long as it provided pertinent information on health economics or health system behaviour. The quantitative and qualitative studies have been taken into account since they play different roles in the explanation of access and adherence due to the nature of the topic [15].

Instead of trying to consolidate data, the findings were grouped into general themes, such as socioeconomic factors, health literacy, compliance behaviour, and healthcare seeking patterns. This method made it possible to have a more lenient interpretation of evidence especially in the areas where the data were not very abundant or heterogeneous.

As this review was based solely on published and publicly available materials, no primary data were gathered and no ethical approval was needed.

3. Socioeconomic Status, Health Literacy, and Access to Hypertension Care

The access to hypertension care in Indian cities is not only related to the availability of healthcare facilities. In places such as Chennai, the poor individuals experience real life challenges which interrupt an ongoing treatment and delay diagnosis. These need not be so much related to direct medical costs, these are loss of a day wage, transportation and other family needs. As individuals are at work such as informal or daily-waged workers, conducting routine checkups on such a condition as hypertension, most of which lacks clear symptoms does not always appear as an immediate thing to do [16].

Socioeconomic status is another factor that determines how a person copes with the care after being diagnosed. Research in Indian urban areas indicates that poorer and less educated individuals receive care only when they become sick, withdraw treatment once they are better or even miss follow-ups. More affluent communities, in their turn, are capable of paying more easily to visit, conduct tests and routine checks. In the long run, this forms an unequivocal disparity in the control of hypertension with poorer groups experiencing poorer results [17].

Health literacy is a significant factor in this case, because it will either bridge the gap or widen it. In most urban communities, particularly the aged and less educated individuals, individuals have not quite understood that hypertension is a lifetime challenge that requires constant control. Misunderstandings about medications, concerns regarding the side effects, and the belief that you can stop treatment, once you have gotten better are the most common ones. Individuals who are more health literate, however, adhere more to medications, have more self-care, and have more access to primary health services [18,32].

These conditions, poor health literacy and low socioeconomic status, do not operate in isolation but

rather they serve as contributors to one another. Lack of finances restricts access to good information and services and lack of awareness leads to the difficulty of realizing the worth of using time and money on long term care. Even in a situation where services are in proximity they may still be out of reach to the at-risk groups.

The solution to this does not entail construction of additional clinics. There is need of better primary care in cities, more conversations between patients and programs and physicians that deal with both the money and knowledge barriers. On the bigger scale, the care of hypertension would become more equitable, which would contribute to the improvement of personal health and offset the cost of the long-term expenses of uncontrolled blood pressure complications.

4. Determinants that affect Treatment Adherence and Healthcare Services Choice.

Staying on antihypertensive medications is difficult in long-term and especially in metropolitan areas where patients have options among various forms of care. In realistic case, continuation of treatment is often a habit which is based on everyday life and lifestyle and not on the words of a doctor. High blood pressure is not symptomatic; therefore, not every one of them will experience immediate outcomes of medications and it discourages them, particularly when it concerns resources and money [19].

Money is a major concern among such factors. Drug price, visit fees and tests plan an encumbrance on budgets in the long run. It is exacerbated by wastage of time and traveling to appointments. Even so, the researches that have been carried out in urban India show that even the out-of-pocket costs even of that small amount lead to missed doses, postponed visits or treatment interruptions with low-income earners being mostly affected [20].

Issue of whether to use public or private care is also a matter that is taken into consideration by the patients, and influences adherence. There are more low/no charge drugs in the public places, and the long wait lines, line congestion and quality concerns cause people to turn to regular use.

The used private care appears to be quicker and better but unreliable high costs limit their long-term dependency [21].

People often tend to switch between systems- public because it is cheaper and private because it is convenient or better. This will manage the immediate demands but will result in spotty care, and plans will not be followed up. It is painful to conform and discipline.

The importance of trust and physician-patient dialogue is the most important yet overvalued. Patients are more likely to remain with therapy when they feel heeded, provided with direct explanations, and by the same provider. Intermittent guidance, switch of providers or poor counseling cultivates suspicion and attrition.

In general, adherence should be increased with a wide push. Protecting the finances is not enough but working on how to provide better services delivery, continuity of care and establish better patient centered communication in both the public and private setups. The major socioeconomic and behavioural factors and health system determinants affecting access to care and treatment adherence are highlighted in Table 1.

Domain	Determinant	Influence on Access/Adherence	Health economics interpretation
Socioeconomic status	Income level	Lower income associated with delayed diagnosis and treatment interruption	Financial barriers increase opportunity cost

Education	Health literacy	Limited understanding of chronic nature of hypertension	Information asymmetry
Employment	Daily wage work	Missed follow-ups due to loss of income	Indirect cost of care
Health system	Public sector services	Improved affordability but variable continuity	Equity vs efficiency trade-off
Health system	Private sector services	Greater convenience but higher OOP expenditure	Financial risk exposure
Patient factors	Perceived severity	Asymptomatic nature reduces adherence	Low perceived benefit

Table 1. Socioeconomic, health literacy, and health system determinants influencing access to and adherence to hypertension care in urban India

5. Awareness and Impact of the “Makkalai Thedhi Maruthuvam” Scheme on Hypertension Care

The public health programs are used to bridge the gaps in the chronic disease care, particularly in the cities where money and access gaps are still prevalent. The Makkalai Thedhi Maruthuvam scheme in Tamil Nadu is a change in actual sense as it makes primary care accessible to doorsteps. It aims to make services accessible to individuals who can afford to skip care because of the cost or the inconveniences. Consciousness is a determinant of the success of these programs and it is uneven in the urban locations—lower among the elderly, less-educated and poorer localities. Here, doorstep delivery is useful: it enhances access to the physical environment and creates a constant communication with health workers. Such a repetition exercise can in due time clarify what hypertension is and why the treatment should be carried on [22,23].

Continuity is another strength. Clinic-based care may discontinue regular check-in and prescription of medications that are essential to the maintenance of hypertension. Community level follow-ups minimized such disruptions in travelling, time limitation or individual visits. This could be a great variation in cities in which the individuals switch providers [24, 25, 34].

Practically, the scheme fringe-benefits out of pocket utilizing the failure to make regular clinic appointments and linking to community drugs. Regarding vulnerable populations, such financial and logistical challenges can be mitigated, which will raise the levels of compliance and control in the long-term. Having said that, the limited good evidence on its influence remains scarce. Most of the data is descriptive regarding reports on the program with little independent evaluation of the long-term achievements like the treatment adherence, blood pressure or cost-effectiveness. We need good groups reach, use and performance controls during its expansion.

Basically, Makkalai Thedhi Maruthuvam [13] shows how doorstep models can be used to improve access, uniform care and equity in managing hypertension in the city. In order to realize its full potentials in destinations such as Chennai, it is important to have increased monitoring and patient contribution. Table 2 gives a summary of the major public health initiatives that are pertinent to the treatment of hypertension in urban Tamil Nadu.

Programme/Initiative	Key components	Intended impact on hypertension care	Policy relevance
NPCDCS	Screening, referral, drug provision	Early detection and standardised care	National NCD framework
Urban Primary Health Centres	Proximity-based primary care	Improved access and follow-up	Urban health strengthening
Makkalai Thedhi Maruthuvam	Doorstep delivery, follow-up	Reduced access barriers, improved continuity	Equity-oriented intervention
Drug procurement systems	Free/subsidised medicines	Reduced out-of-pocket expenditure	Financial risk protection

Table 2. Public health initiatives addressing access, continuity, and equity in hypertension care in urban Tamil Nadu.

6. Health Economics Interpretation

The case of the urban hypertension care also demonstrates one clear picture, and that is an abundance of services in city areas such as Chennai and a decline in steady use. It is not only a matter of availability it is whether people can and will continue to engage in the long term.

Getting deeper, money is still a ball-games in such decisions. Even inexpensive medicines are accumulated with visits, tests, traveling, and work. With the shaky-income families, the slightest ailment, such as high blood pressure, is not always a priority and consequently there is a delay or a gap before the issues are experienced [29, 30].

Equity looms large too. The needy are downgraded into economic barriers through the medium of communal services but waits, quality issue and follow-up patchiness guide people elsewhere. The majority of them are cheaper and faster combined, i.e. public and private, which only meets the emergency demands but destroys care and results [31, 32].

Access fixes are not sufficient, however. Unless they understand the life-long requirements of hypertension, individuals will not adhere to it- hence mentioning why cash shields should be combined with understandable talk and participation [33, 34]. It economically is prudent to lean towards primary and preventive care. Early compliance reduces costly fall out such as heart failure and strokes [35]. It is not only good medicine, but it is good spending that cuts down later bills and raises the health in general. In general, the management of hypertension in urban India requires more than additional clinics to be integrated. Reduce direct and indirect expenditures, handoff over providers, and focus on patients. The economics of baking into designs also offers more equitable, more economical, and sustainable benefits. This can be related to the socioeconomic and system factors in Table 1.

7. Discussion

The results of this review indicate that the problem of hypertension management in an urban environment has more to do with the availability of healthcare services than the utilization of these services. This may be better in the city such as Chennai where the public and the private providers are widespread. This is however not always the case and as such, availability does not necessarily translate into effective utilization.

The economic factors seem to take a key role in influencing the behaviour of the patient. The overall burden of care, such as traveling, consultation charges and lost working days, may prove challenging

even in a case where the cost of medication is relatively low. To most people, particularly the informally employed, this set of indirect costs can typically be more powerful than the direct medical costs. Consequently, treatment can be intermittent with patients coming to care when the symptoms are evident [25,26].

The other significant factor is how patients go through the health care system. The switching of providers between public and private is quite common and is based on the needs and the circumstances at a particular time. Although it may appear advantageous, it might result in areas of continuity of care. The variations in the treatment recommendations, non-observance, and irregular monitoring could eventually influence long-term outcomes [27,28].

Meanwhile, the knowledge of the condition by the patients cannot be neglected. Hypertension is not always taken seriously especially when it does not bring complications. This perception affects adherence especially in situations where treatment fails to yield some immediate benefits that are observable. The enhancement of awareness, in turn, is a crucial aspect of a successful intervention.

In a larger sense, the process of empowering the primary healthcare systems seems to be one of the most feasible means of enhancing outcomes. Follow-up and continuity of care can significantly reduce the risk of complications and this is best carried out early to intervene. Such measures though demand some investment, but would tend to be cost effective over time especially when weighed against the economic prices incurred with advanced cardiovascular disease.

In general, these observations lead to the conclusion that a more coordinated way to address hypertension is required the one that would take into account not only clinical factors, but also economic and behavioral realities that patients experience.

8. Conclusion

Urban Indian hypertension management is a conglomeration of socioeconomic stress, insufficiency of information related to health and system failure. The services are well covered in the cities like Chennai but in many cases, there is constant and good care that is not available. Money Problems, hidden costs and broken paths encourage spotty compliance and uncontrolled control. The sole manner of achieving a real progress is by utilizing patient-first strategies: reinforcing primary care, improving communication, and removing daily obstacles to follow-ups. The doorstep and community models will be beneficial particularly to at-risk populations, that will improve accessibility and continuity of care.

This review also has disadvantages. It relies on only secondary sources papers and policies; hence it is only as healthy as that. The studies involved are of varying methodologies and groups of people and therefore direct comparison is hard. The data that is specific to Chennai is highly sparse and the current program details are rather descriptive rather than rigorously tested. Continuing, we ought to be more sophisticated to urban research to follow-up clinical results and real patient conduct over the long term. The tight control of the community interventions under a long perspective and their long term impacts and the cost worthiness would inform better policies. Sticking-power solutions would be achieved through designs that are more literate, based on continuity of care, and cost barriers. Nevertheless, ultimately, it would seem vital to incorporate reach and engagement on a continuous basis when it comes to the issues of hypertension urbanization.

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