VIEWPOINT

Democracy in Diabetes Care: Acting Upon the Three A's – Accessibility, Affordability and Awareness

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ABSTRACT

Diabetes care is the right of every individual living with diabetes. In this communication, we describe the epidemiology of diabetes in India, draw parallels between democracy and diabetes, and call for the democratization of diabetes care. We highlight the three A's – Accessibility, Affordability and Awareness—that are essential for democratic diabetes care and share best practices towards this end.

Keywords: Diabetes, patient-centered care, person-centered care, type 1 diabetes, type 2 diabetes

The prevalence of diabetes is out of control. Previously thought to be a disease of the affluent "Western" nations, type 2 diabetes has spread globally and is now a leading cause of disability and mortality, impacting even younger age groups. At least 537 million people live with diabetes across the globe, and this number is expected to rise to 783 million by 2045.[1]

To add to this, 3 in 4 people with diabetes live in low- and middle-income countries. In India, diabetes has risen from 7.1% in 2009 to 8.9% in 2019.[2] India ranks second with 74.2 million people living with diabetes, which is expected to rise to 124.9 million by 2045.[1] Of these, 53.1% are undiagnosed. India has the third-highest (0.6 million) annual deaths due to diabetes, after China and the United States.[1]

A large community-based study in North India (STEPS survey) showed that out of 5,127 diabetes patients, 18%, 51% and 31% were in the age groups 18-24, 25-44 and 45-69 years, respectively; however, the prevalence of diabetes mellitus was found to be significantly higher among those aged 45-69 years (18.0%).[3] An increase in the prevalence of patients with diabetes (≥20 years) was reported in 2016 (7.7% [6.9-8.4]) compared to 1990 (5.5% [4.9-6.1]).[4]

According to several studies, the burden of diabetes is shared differently by genders due to various factors.[5] Studies in northern India show that women are more likely to develop diabetes, whereas those from southern India show that males are more likely to be diagnosed with diabetes.[6] Researchers have examined socioeconomic disparities in diabetes prevalence, but the gender disparity has not been investigated.[7] Few other studies have focused either on a single state or the geographical variation in the prevalence of diabetes in the country.[8]

The *India State-Level Disease Burden Initiative Diabetes* study reported the highest prevalence of diabetes in Tamil Nadu, followed by Kerala, Delhi, Punjab, Goa and Karnataka.[4] Another study showed that states with higher per capita gross domestic product (GDP) and those belonging to higher socioeconomic status had more diabetes cases. This led to a clear epidemiological transition with a higher prevalence of diabetes in the low section of urban areas in the more economically developed states.[9]

According to the DIABetes study, the largest nationally representative epidemiological survey of India (data from 15 states/union territories), diabetes prevalence ranged from 3.5% to 8.7% and 5.8% to 15.5% in rural and

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urban areas, respectively, with the figure ranging from 4.3% in Bihar to 13.6% in Chandigarh.[10] This indicates that the prevalence of diabetes was higher in urban areas (11.2%) than in the rural areas (5.2%).[10]

THE RESPONSE

Weak public health systems have been identified as a significant hindrance in providing quality diabetic care in low- and middle-income countries. Under the National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS), as part of the National Health Mission (NHM), Ministry of Health & Family Welfare, the Government of India focuses on strengthening infrastructure, equipment, human resource development, health promotion and awareness generation for prevention, early diagnosis, management and referral to an appropriate level of the health care facility for treatment of the noncommunicable diseases (NCDs).[10] Under NPCDCS, 682 district NCD clinics, 191 district cardiac care units and 5,408 community health center NCD clinics have been set up across India. A total of 7,04,631 Accredited Social Health Activists (ASHAs), 2,19,113 Auxiliary Nurse Midwife (ANM)/ Multipurpose Workers (MPW), 28,912 staff nurses, 76,567 Community Health Officers (CHOs) and 29,648 Medical Officers (MOs) have been trained on universal screening of common NCDs.[10] Besides the government infrastructure stated above, multiple private diabetes care set-ups, varying from small diabetes clinics to corporate hospitals and chains of diabetes care clinics are taking care of diabetes patients across the country.

THE RESULT

Despite these resources, 3/4th of the Indian population (76.6%) had poor glycemic control (glycated hemoglobin [HbA1c] ≥7%), as reported by a large real-world study (n = 55,633 type 2 diabetes mellitus [T2DM] patients). In this study, one-third of the patients had microvascular complications.[11] To add to this, the ICMR-INDIAB study found that only 31% of persons with self-reported diabetes had an HbA1c below 7%. More than 60% of patients had not checked their HbA1c in the past year.[9]

The major challenges in achieving glycemic targets are clinical inertia, poor drug adherence and low disease awareness. Poor adherence can be because of the cost of the treatment, accessibility to health care or lack of awareness. Self-monitoring of blood glucose (SMBG) levels and enhancing medication adherence can contribute to meaningful improvements in HbA1c control.[12] Additionally, the quality of diabetes management in India varies considerably with physicians' awareness levels, attitudes and perceptions of diabetes care.[13]

THE RIGHT

In this scenario, we look towards our great Indian Constitution for guidance. It lays out every citizen's fundamental rights and duties. Although it does not explicitly define the "Right to Health", several references are made about public health that can serve as a beacon of hope toward universal health care. The Apex Court reaffirmed that every citizen of India has the right to health. Consequently, the "Right to Diabetes Care" is under this obligation and should be provided to every citizen, ensuring it is accorded affordably and appropriately.

Parallels can be drawn from the Constitution towards diabetes health care against the backdrop of the three values that the constitution assures its citizens – justice, equality and liberty. These can serve as the basis for driving a change around making diabetes care universal. Justice, in the diabetes care scenario, would imply offering the correct screening, diagnostic, monitoring and therapeutic tools to all those in need. Equality would mean that all people seeking health care be treated equally, without discrimination on any grounds. Liberty supports the right to freedom in patient-centered care (PCC) and patient autonomy. PCC is "providing respectful care and responsiveness to individual patient preferences, needs and values and ensuring that patient values guide all clinical decisions."

Every citizen of India must be accorded the right to euglycemia. It is not just the biochemical parameters but a holistic approach. It is about creating an environment conducive to promoting euglycemia by encouraging appropriate individual and community lifestyle and diet changes. It is paramount that the model is sustainable, self-sufficient, universal and patient-centric.

THE THREE A'S

Utilizing the principles behind the three values as enshrined in our constitution, we should aim towards the right to euglycemia, following a path built on the 3A's – Accessibility, Affordability and Awareness. These would ensure that each citizen of India is provided with genuine quality diabetes care irrespective of economic stature, social standing, educational background, age, gender, etc.

Accessibility

Accessibility to diabetes care is hampered because of the high patient-to-provider ratio and geographical location, particularly in rural areas where people have to travel several hours to get their investigations done or consult a specialist. Management of T2DM in low- and middle-income settings is suboptimal due to less access to medications, comorbidities and the growing population of patients, which is responsible for the overuse of existing resources.[14] There are often delays in diagnosis, creating a greater burden for patients with complications.[15]

Digital Health Solutions in the form of blood glucose tracking Apps can be an answer to some of these issues and can shape the future of diabetes care in the country. One such tool is BeatO, which is committed to creating a digital health care ecosystem, and which can be accessed by all on their smart phones. It aims at increasing awareness and bringing behavioral changes by delivering personalized, actionable insights, reminders, caregiver alerts, diabetes educator support and guidance, educational content, doctor consultation and doorstep medicine delivery. As of today, it is already serving over 5 lakh diabetes patients across the country.[16] It has been instrumental in providing an ecosystem and delivering outcomes for the monitoring population and has been responsible for expanding the diabetes care landscape. Around 70% of its members are from tier 2 cities and beyond, 55% of members using this monitoring device are first-time glucometer users, and 83% of members have had their first interaction with a diabetes educator or coach on this platform. The depth and relevance of engagement have increased the time spent on the app—on average; a member spends approximately 10 minutes and 5 seconds daily on the platform.[16]

Affordability

Considering the high cost incurred at various steps of screening, diagnosis, monitoring and management, it is necessary to implement cost-effective measures for diabetes care. A systematic review on the costs of diabetes treatment in low- and middle-income countries reported that diabetes care is costly as many people have no health insurance and have to pay from their pocket.[17] In India, the average cost of outpatient diabetes care is about Rs. 11,000 per annum.[18] This poses a tremendous financial burden on the family, and there is a need to find ways to make diabetes care more affordable for the masses. Various studies have shown that low adherence to the medication is responsible for up to 50% of treatment failures, leading to complications. In the lower-income group, the cost of medication is a major reason for the poor adherence to antidiabetic medications.[19]

Digital technology that gives easy access to quality health care facilities will reduce the cost of diabetes care and improve patient outcomes. BeatO, for instance, has provided the right affordable tools (glucometer and strips) and free mobile application for the diabetes population, which has aided in lifting the financial burden by empowering the members to monitor more frequently in the last 5 years, thus driving better outcomes and lowering the cost for management over time.

Awareness

In a countrywide National NCD Monitoring Survey on Prevalence, Awareness, Treatment and Control of Diabetes in India, only 45.8% of patients were aware of their disease. Even among people who have been diagnosed with diabetes, only 40.6% were aware that diabetes could damage their vital organs. In another general population study, less than 30% of subjects knew about complications related to kidneys, eyes and nerves.[20]

Mobile health interventions help to improve diabetes risk behaviors and increase awareness about diabetes and its complications, etiology and manifestations. In the mDiabetes program implemented by Arogya World, there was an 11% increase in daily exercise, a 15% increase in the intake of 2 to 3 servings of fruits a day, and an 8% increase in 2 to 3 servings of vegetables per day by just text messages.[21]

RESOLUTION

To make India the Diabetes Care Capital of the World, we can take the help of the philosophy of Gandhi Ji's "Sarvodaya through Antyodaya", which means the development of all through the welfare of the weakest section of society.[22] A comprehensive, structured diabetes care program designed to provide holistic care to people living with diabetes will help ensure the democratization of diabetes care in India and beyond.

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