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EDITORIAL

Digital linkage between Community Clinic and Upazila Health Complex: A solution for an effective management of Non-Communicable Diseases in rural Bangladesh

Aliya Naheed[1*], Shah Monir Hossain[2]

[1]Scientist, Non-Communicable Diseases, Nutrition Research Division, icddr,b, Mohakhali, Dhaka, Bangladesh,
[2]Former Director General, Directorate General of Health Services, Mohakhali, Dhaka, Bangladesh.

The prevalence of non-communicable diseases (NCDs) such as hypertension (HTN) and diabetes mellitus (DM) has surged in Bangladesh, posing significant challenges to the healthcare systems. The National STEPS Survey 2018 reported 21% of adults with hypertension.[1] while the Bangladesh Demography and Health Survey 2017-18 found a prevalence of 39.4% among adults aged 18 and older and 10% have raised blood glucose.[2] These trends underscore the urgent need for effective interventions. Evidence suggests that proportion of uncontrolled hypertension is 60% among hypertensive individuals.[3-4] Stroke and MI are the leading cause of death among hypertensive patient and the prevalence is higher in rural Bangladesh than to Pakistan and Sri Lanka.[3]

According to the global burden of disease, raised blood pressure and raised blood glucose were the top risk factors for cardiovascular disease (CVD) in Bangladesh from 1990 to 2019.[4] In 1990 only one of the top ten risk factors for all-cause DALYs was a single metabolic risk, high systolic blood pressure that ranked ninth. By 2019, high systolic blood pressure had become the number one risk factor accounting for 10.7% of DALYs.[5-6] This rapid increase in NCDs poses a major challenge for the healthcare system in Bangladesh.[7]

In 2015 a pilot study demonstrated the promise of a multicomponent intervention (MCI) for hypertensive individuals achieving a 4.5 mmHg reduction in systolic blood pressure and enhancing healthcare access.[8] Building on promising pilot data, a cluster-randomized controlled trial, the Control of Blood Pressure and Risk Attenuation–Bangladesh, Pakistan, and Sri Lanka (COBRA-BPS) study, was conducted from 2016 to 2020. This two-year initiative in rural communities across three South Asian countries evaluated the effectiveness of a scalable multicomponent intervention specifically designed for hypertension management. The intervention comprised five key components: (1) home health education (ii) blood pressure (BP) monitoring and stepped-up referral, (iii) training public and private providers in management of hypertension, (iv) hypertension triage counters and dedicated care coordinators and (v) financing model providing compensation for additional health services and subsidies for low-income individuals with poorly controlled hypertension.[9]

The COBRA-BPS trial confirmed that the effectiveness of intervention by clinically significant reduction of Systolic Blood Pressure by 5.2 mmHg over 24 months and improving blood pressure control in rural Bangladesh, Pakistan and Sri Lanka.[10] This study further identified that proactive home visits by trained community health workers, linked to existing infrastructure were key to this success.[11] This study also estimated the cost-effective approach with a first-year per-participant cost of US$10.65 in Bangladesh, offers a promising solution to control hypertension for rural communities.[12] Beyond blood pressure reduction, the COBRA-BPS trial identified access barriers faced by patients, highlighting the need for enhanced community-worker involvement in disseminating information and expanding patient pathways to care.[11]

The Non-Communicable Diseases Control (NCDC) Program at Directorate General of health Services, Ministry of Health and Family Welfare in Bangladesh has been proactive in tackling HTN and DM through comprehensive primary healthcare strategies and health systems strengthening. Currently, the NCDC has established NCD corner at more than 250 Upazila

***Correspondence:** Dr. Aliya Naheed, Scientist, Non-Communicable Diseases, NRD, icddr,b, Mohakhali, Dhaka.*
Email: anaheed@icddrb.org
ORCID: 0000-0002-6016-5603

Health Complex (UHC) in Bangladesh where HTN and DM service are available. Regular screening for NCDs at primary health care settings has increased early detection rates. While the program benefits diagnosed patients having HTN or DM through improved access to essential medicines and integrated healthcare services, maintaining these benefits presents ongoing challenges. Ensuring consistent availability of medications and quality care requires robust supply chain management and continuous training of healthcare professionals. Furthermore, addressing the needs of patients necessitates ongoing support and follow-up to prevent disease progression and manage complications effectively.

Another major challenge is the poor early screening and diagnosis of new patients. This leads to many individuals presenting with advanced stages of NCDs, where treatment is less effective, and outcomes are poorer. Limited access to screening facilities and lack of awareness about the importance of early detection exacerbate this issue. The lack of community engagement in the process of accelerating hypertension care in the community through individual lifestyle modifications is one of the most significant challenges in the NCDC's NCD control program. The limited access to screening facilities, particularly in rural and underserved areas, remains a significant barrier. Many individuals do not have the means or knowledge to seek out screening services, resulting in delayed diagnosis and treatment. Additionally, lack of awareness about NCD risk factors and the importance of preventive measures further hinder early detection efforts. Education campaigns need to be more pervasive and culturally sensitive to effectively reach diverse communities.

The rapidly growing burden of non-communicable diseases (NCDs) like hypertension and diabetes poses a critical challenge to Bangladesh's primary care system. Effectively tracking patients from identification to lifelong management, particularly in rural communities remains a major hurdle. Exacerbating this struggle are COVID-19 disruptions, limited healthcare facilities and overburdened to the health workers leading to gaps in care and worsening NCD outcomes. Without active community engagement, the understanding and implementation of necessary lifestyle changes remain limited. As a result, interventions become less effective, and the long-term sustainability of the program is compromised. Community participation is crucial for creating a supportive environment where individuals feel empowered to take control of their health. To improve early screening rates, the program must enhance its outreach efforts, increase the availability of screening services, and raise awareness about the benefits of early diagnosis among the general population.

The Sheikh Hasina Initiative (TSHI) is a groundbreaking effort to improve rural healthcare through Community Clinics (CCs).[13] TSHI presents multiple opportunities to enhance public health, including NCD management. The flag ship program of the government of Bangladesh directly contributes to achieve SDG 3 (good health and well-being) by providing preventive and curative healthcare services in the community, thus alleviating the burden of NCDs. Essential healthcare services are brought closer to rural populations through CCs. Regularization curative care, referrals those diagnosed as HTN and DM, preventive care including lifestyle modification, home health education at CCs offer. Engagement through Community Groups (CGs) and Community Support Groups (CSGs) fosters local ownership and leadership development. Women and children benefit from focused healthcare services, leading to improved maternal and child health outcomes. Health education empowers individuals to adopt healthier lifestyles, crucial for NCD prevention. Better health outcomes contribute to economic stability and social cohesion in rural communities.

The innovative linkage between Community Clinics and Upazila Health Complex using a digital platform to effectively manage hypertension has the potential to become a flagship initiative for Bangladesh, serving as a scalable model for other countries and a testament to Prime Minister Sheikh Hasina's unwavering commitment to healthcare equity. Routine screening for HTN and DM, effective referral for those diagnosed with HTN and DM, periodic medicine disbursement from CCs, preventive care including lifestyle modification through home health education offered at CCs, and more can be brought under the flagship program of TSHI with support of effective digital platforms for alleviating the burden of CVDs in rural areas. This synergy improves efficiency, optimizes NCD outcomes, and empowers both patients and healthcare providers. Investing in digitizing services offered a CCs targeting NCDs can significantly reduce the potential workload on the community health

workers, leading to a stronger healthcare system and supporting improved individual and public health in rural communities.

Research can guide the augmentation of TSHI through assessing health outcomes, patient satisfaction, and cost-effectiveness of any new program at CCs. By leveraging evidence-based strategies through enhancing the scopes of The Sheikh Hasina Initiative NCD Control Program can improve healthcare delivery, empower communities, and promote sustainable health improvements across Bangladesh. An evidence-based model if successful would pave the way for national scale-up, aligning with the Non-Communicable Disease Control Program's goals and bringing accessible NCD management within reach for all.

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