Diabetes Asia Journal
Vol. 1, Issue 4, Dec 2024, Edition: Online
Publisher: Diabetes Asia Journal under JHRC
eISSN: 3048-8192
Cross Ref DOI: 10.62996/daj.41122024
Journal Homepage: https://diabetesasia.org/journal/

The Innovative Approaches to Prevent GDM and Align with SDGs Sustainable Development Goals

* **Prashant Dehire[2], Sanjeev Davey[2], Rajesh Jain[3]**

[1]Associate Prof, SRTR Medical College, Community Medicine, Ambajogai, India
Professor & HOD, Govt Medical College Auraiya, Chamaraua, Uttar Pradesh, India
[3]*Consultant, Jain hospital & Research Centre, Kanpur, India

Submitted: 22 Dec 2024; Accepted: 27 Dec 2024; Published: 30 Dec 2024

Corresponding Author: [3]*Dr Rajesh Jain, MD, Jain hospital & Research Centre, Kanpur, India email: drrajeshjain@diabetesasia.org

Diabetes mellitus, usually recognized as diabetes, is a collection of metabolic disorders that are manifest by high levels of blood sugar over a prolonged period. The condition arises from dysfunction related to the secretion or consumption of insulin, which is critical for control of blood glucose levels. The global prevalence and impact of diabetes are significant, making it a crucial focus area inside numerous of the United Nations' Sustainable Development Goals.

First and foremost, SDG affected by diabetes is SDG 3, which highlights "Good Health and Well-being[1]. This goal underscores the importance of precautionary measures, early screening, diagnosis, and effective treatment of chronic conditions like diabetes mellitus. The target aspires to reduce the disease's mortality rate and improve the quality of life for those living with diabetes. Implementing approaches for improved healthcare access, raising awareness about diabetes, investing in health systems, and researching advanced treatment options are critical in achieving this goal.

Diabetes also has a robust link with SDG 2, "Zero Hunger[2]," which targets the end of all types of hunger and malnutrition. This target is closely connected to diabetes treatment control and prevention; as a balanced diet rich in protein and healthy fats and a good diet are key in controlling hyperglycaemia. Encouraging sustainable safe agriculture and guaranteeing access to healthy, nutritious food can meaningfully reduce the risk of developing type 2 diabetes and Diabetes in Pregnancy. This Objective also highlights the role of education on healthy foods behaviour, which is important in control and treating diabetes.

SDG 1, "No or zero Poverty," and SDG 10[3], "Reduced Inequalities. Diabetes mainly affects excessively and impacts socioeconomically weak society. People in poverty are more likely to develop diabetes due to the limited availability of healthy food, the absence of healthcare facilities, and substandard living conditions. This inequality highlights the need for equitable healthcare access and support for poor populations. Highlighting these inequalities is indispensable for reducing the new diabetes and its complications among these groups.

To add more, diabetes is intensely connected with SDG 4, Education[4]. Education plays an important role in diabetes control and treatment. Educating the communities about the complications and risk factors linked with diabetes, the importance of regular screening health visits, lifestyle modifications, and the treatment of the complications can reduce its prevalence. Professional colleges, schools, clubs, health centres, and healthcare facilities are key stands for spreading information about GDM, and diabetes and promoting healthy lifestyle choices. The association between diabetes and the SDGs Sustainable Development Goals is a good example of how the health system is entwined with various Goals of sustainable development. Addressing GDM and diabetes efficiently requires a multi-layered method that incorporates a healthcare system, healthy nutrition, quality education, and socioeconomic equality. Efforts to fight diabetes help to the wide agenda of sustainable Equitable development, addressing the unified nature of these Universal goals. By concentrating on protective measures, capacity-building healthcare systems, encouraging healthy lifestyles, and addressing socio-cultural aspects of health, noteworthy progress can be made toward the SDGs and the fight against diabetes.

World Diabetes Day 2024 Awareness Initiative: Globally, Diabetes is a pandemic and a major major health concern. On the 14th Nov, World Diabetes Day, every year people around the world unite to raise awareness and advocate changes in lifestyle and diet by empowering the health system to unite for a better future. Diabetes, an NCD non-communicable disease, disturbs millions across the globe. Although, not all are conscious of its consequences or preventive actions.

World Diabetes Day 2024 provides a stage for everyone – from medical professionals to the general public – to educate, learn, share, and action. Diabetes Mellitus Global Classification, risk factors, and clinical presentation of are important for creating awareness about early screening, identification of complication and management new modalities for curtailing this pandemic. The DN Diabetic neuropathy is the most devastating complication that can cause substantial morbidity and mortality in type 1 and type 2 diabetic patients. It is essential to notice symptoms of diabetic neuropathy and detect risk features as early as possible to devise interventions and prevent further neuronal impairment.

The goal of SDG 3.4 is to lower by one-third mortality from NCDS non-communicable diseases through early detection, prevention, and treatment; promote mental health and well-being.

Introduces Gestational diabetes and diabetes and promotes past, present, and future accomplishments in this area. The Target of SDG 3.4.1 is to bring down the mortality rate due to CVD cardiovascular disease, diabetes, cancer, and chronic pulmonary disease. DR Diabetic Retinopathy is one of the main origins of preventable blindness in the working-age diabetic population around the world, which may lead to lifelong blindness if not diagnosed in the early period. The prevalence of DR among diabetics in India was 10% and 16.9% in 2014 and 2019, respectively. In 2019, IDF the International Diabetes Federation projected that Type 2 Diabetes Mellitus is supposed to lead 101 million people in India by 2030; the highest number in the world. Diabetes Digital Health technology, Socioeconomic factors, access to and use of diabetes technologies; SDGs 3 and 10 explain how individuals with diabetes who are of lower socioeconomic status are more likely to have poorer diabetes-related outcomes. Digital health technology will support low-cost health solutions and lower inequities for this high-risk NCD population group.

Gestational Diabetes Mellitus

Gestational diabetes mellitus is the most common type of hyperglycaemia (HIP) during pregnancy, which is detected for the first time in pregnancy. DIP diabetes in pregnancy, before pregnancy, is a severe type of HIP and can be difficult to control causes severe hyperglycaemia during pregnancy that persists after delivery; Gestational diabetes usually causes mild to moderate hyperglycaemia that also develops in 50-60 % of women within 5 years of delivery. As the pregnancy is not mostly planned and happens naturally, it can lead to insulin resistance and a rise in blood sugar as the pregnancy advances. The subsequent hyperglycaemia in healthy pregnant women is remunerated by pancreatic β-cell more insulin secretion by hyperplasia to meet the extra metabolism demand. However, due to various genetic and environmental factors, GDM cannot be compensated for, leading to hyperglycaemia. GDM is connected with maternal foetal problems.

In postpartum after birth also GDM women are 11 times more likely to develop type 2 diabetes compared to women Non-GDM. Strict screening, monitoring, and control actions for women with postpartum GDM can help reduce T2DM in future and diabetes pandemic in population. Due to the rise in the current global prevalence of T2DM, the postpartum period of women with GDM is important in all countries, particularly in patients with a history of Gestational diabetes mellitus (DM). India is the most populated country and has the second-highest number of adults with T2DM in the world, and the number is projected to increase by approximately 75% in the next two decades.

Post-Partum Screening is Low and How Postpartum screening can be increased specially soon after birth which have very high sensitivity and as good as 4-6 weeks after delivery, because most women are lost to follow up.

Post-partum screening can increase chances of early detection of impaired glucose tolerance and diabetes so that necessary action can be taken in the form of counselling to mother related to positive affect of breast on diabetes prevention later on, healthy lifestyle, nutritious diet and exercise.

Background

Type 2 diabetes mellitus (T2DM) has reached epidemic levels globally, with seven Southeast Asian countries—Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan, and Sri Lanka—being among the most severely impacted by diabetes and gestational diabetes mellitus (GDM). This region is responsible for nearly one-third of the world's diabetes and prediabetes cases.

As of 2019, Southeast Asia had 88 million adults living with diabetes, and shockingly, over half (57%) of these cases remain undiagnosed. If current trends persist, it is projected that by 2045, 114 million Indians will be affected by diabetes, potentially making India the diabetes capital of the world, overtaking China. The International Diabetes Federation (IDF) warns that the number of people with diabetes in Southeast Asia is expected to surge by 68%, reaching 152 million by 2045. A comprehensive analysis of 69 studies, involving 1,778,706 adults in India, reveals a stark increase in T2DM prevalence—from 2.4% to 15% in rural areas and from 3.3% to 19% in urban areas—between 1972 and 2019[5]. Given the close relationship between GDM and impaired glucose tolerance (IGT), rising blood glucose levels in pregnant women must be addressed urgently. The prevalence of GDM in Asia exceeds that of Europe, and recent data highlights a troubling trend: T2DM is increasingly affecting young women diagnosed with hyperglycemia in pregnancy (HIP). Immediate and decisive action is essential; without it, the morbidity and mortality related to diabetes and GDM will escalate unchecked. Recognizing that women represent nearly 50% of the population and that GDM is a significant precursor to T2DM, it is imperative to implement early intervention measures for GDM during pregnancy and to conduct thorough screening after childbirth. This approach is critical for preventing the future surge of T2DM.Others Guidelines for Diagnosis of GDM

Around the Globe methods for GDM diagnosis are diversely complicated and confusing, with slight agreement. In the USA, the 1979 National Guidelines was one of the initial hard work to conduct a systematic study of Diabetes and Gestational diabetes. After this first guideline and four Global workshops on Gestational diabetes between 1979 and 1997, the endorsements planned changes in the diagnosis of GDM. During the next 2 years, ADA and ACOG proposed new guidelines for HIP and Gestational diabetes, The WHO came up with its Guidelines in 1980,1985 and revised in 1999 and the IADPSG in 2013; The National Institute for Health and Care Excellence (NICE), the Canadian Diabetes Association (CDA), and the Australian Gestational Diabetes Association (ADIPS) are other organization who updates their guidelines. Therefore, during the last decades extensive research and efforts by health agencies have resulted in improvements in the diagnosis and management of GDM with post-delivery care.

Summary: India established incredible progress in achieving diabetes in pregnancy Screening through the “Universal Single Test Procedure” advocated by DIPSI Diabetes in pregnancy study group and promoted by the Federal Government through Guidelines in 2014 and 2018. Metformin was introduced in 2018 along with Insulin for the management of GDM. Metformin is safe as the embryonic stage is over by the 10th week. It is preferable to use metformin as an adjunct or alternative to insulin in the preconception period and during pregnancy when likely benefit from improved blood glucose control outweighs the potential for harm. The European Working Group EWG and NICE Guidelines have also approved Metformin during Pregnancy as safe.

The GDM management is easy with MNT and metformin if required; If screened, detected treated, and followed up after delivery, it will support in reduction of the burden of T2DM in the future generations. Therefore, GDM diagnosis and control have a high possibility of changing future predictions and pandemics regarding T2DM.

Treating maternal hyperglycaemia at this time can prevent irreversible foetal programming.

Prevention of NCD should start during the intrauterine period and should be sustained in life through early childhood with Prevention of type 2 diabetes; early screening especially in the first trimester is key for diabetes prevention and timely intervention which should start in pregnancy and continue in the future.

The Global Health Impact World Diabetes Day 2025 aims to highlight the consequences of uncontrolled diabetes on global health. By understanding its impact, we can develop strategies to combat its rise and ensure a healthier future for everyone. **Joining Hands for a Cause** While World Diabetes Day 2025 takes place on a single day, its message is timeless. We must come together, share resources, and collectively work towards reducing the global diabetes footprint. The theme of World Diabetes Day 2025, "Empowering Global Health," serves as a beacon of hope. It reminds us that by uniting, understanding, caring, and acting, we can create a world where diabetes does not control our lives[6]

Conclusion: Maternal and child health is inseparably connected with NCDS non-communicable diseases and risk factors, explicitly as prenatal malnourishment and LBW microsomia or low birth weight which produce a tendency to overweight, obesity, high blood pressure, cardiovascular risk and Gestational diabetes, diabetes future life, and pregnancy environments, such as maternal obesity and GDM, are related with similar dangers in the mother and her children. The pregnancy is an exceptional opening to mix maternal and child health care with health elevation and NCD primordial prevention, therefore providing a bridge to produce more unified services at the peripheral and decentralized level. The effort on NCD anticipation and control should begin with significant attention to preconception and maternal well-being. The Policy makers and Government, civil societies,

international health organizations, WHO and UNICEF must act systematically to address the concern of maternal nutrition, obesity, and hyperglycaemia in women and pregnancy, there are chances that the last decade gain in maternal and child health undermine the epidemic of diabetes and obesity To resolve this task and convert it into a prospect for enhanced health consequences for mothers and their new-borns curtail the growing curve of NCDs and progress future population health.

References:

1. Ensure Healthy Lives and Promote Well-being for all at all Ages.https://sdgresources.relx.com/goal-3-good-health-and-well-being/useful-links
2. Goal 2: Zero hunger. https://www.un.org/sustainabledevelopment/hunger/
3. Reduce Inequality within and among Countries. https://sdgresources.relx.com/goal-10-reduced-inequalities/useful-links
4. Ensure Inclusive and Equitable Quality Education and Promote lifelong learning opportunities for all. https://sdgresources.relx.com/goal-4-quality-education/useful-links
5. Ranasinghe P, Jayawardena R, Gamage N, Sivanandam N, Misra A. Prevalence and trends of the diabetes epidemic in urban and rural India: A pooled systematic review and meta-analysis of 1.7 million adults. Ann Epidemiol. 2021 Jun; 58:128-148. doi: 10.1016/j.annepidem.2021.02.016.
6. **World Diabetes Day 2025: Empowering Global Health.** November 14, 2025. https://sdgresources.relx.com/events/world-diabetes-day-2025

- **Informed Consent**

  Written Consent taken from Patients

- **Conflict of Interest Statement**

  All the authors declared “No Conflict of Interest” with this publication.

- **Additional Information**

- **DOI:** 10.62996/daj.41122024

Cite this Article: Prashant Dehire[1], Sanjeev Davey[2], Rajesh Jain[3] **.The Innovative Approaches to Prevent GDM and Align with SDGs Sustainable Development Goals.** .2024; 1(4):53-56. https://doi.org/10.62996/daj.41122024