

Editorial

Type 2 diabetes mellitus: answering the call for need-sensitive, evidence-based interventions

Type 2 diabetes mellitus (T2DM) is a major global health issue with socioeconomic consequences. It is associated with macro- and microvascular complications, and increases mortality.¹ Globally, it is estimated that around 463 million adults (aged 20 to 79 years) are living with diabetes.¹ T2DM is the most common type of diabetes, accounting for approximately 90% of all diabetes cases worldwide.¹ Some ethnic groups are at greater risk of developing T2DM, for example, Asian, African-Caribbean, and Black African-origin people.¹ There is unacceptable variation in the prevention and management of T2DM, with poor national economic and health systems worsening the situation.^{2,3} The countries with the highest number of people with diabetes are China and India.¹ This is likely an underestimation of the burden in low- and middle-income countries (LMICs) because it is estimated that more than three out of four adults have diabetes and four out of five adults have undiagnosed diabetes.¹ Around 87% of diabetes-related deaths occur in LMICs, but only one-third of health expenditure in these countries is related to diabetes.¹

The management of T2DM across the world centers on using evidence-based interventions, which are recommended in good-quality clinical guidelines for controlling blood glucose levels in people with T2DM. This mainly includes pharmacological interventions, including Western medicines, and non-pharmacological complex interventions, such as diet and physical activity for self-management.⁴ However, the assumption of a one-size-fits-all model made by many health care providers is too restrictive in controlling blood glucose levels in people with T2DM. It is likely that there are people whose needs are unmet, and other approaches for preventing and managing T2DM, such as evidence-based regional diets, physical activities, and indigenous therapies, should be considered. The content, structure, and delivery methods of such interventions should also be need-sensitive and evidence-based. These approaches should go beyond the biomedical model and take into account individual- and country-level factors known to influence the needs, such as culture, religion, and psychological factors (eg, anxiety, stress), which are addressed in the qualitative review by Nixon et al. in this issue.⁵

In many parts of the world, people use traditional therapies, such as Ayurveda, traditional Chinese medicine, and yoga, for preventing and managing a range of short- and longer-term

conditions, including T2DM.⁶⁻⁹ One of the main reasons for the widespread use of traditional therapies is their alignment with the respective health beliefs and culture.⁶ Also, the popularity of traditional therapies may be because Western medicines, including those for T2DM management, are perceived to have concerning side effects and are costly, and there may be a fear of the mode of administration (eg, injections).⁶ Thus, there is a need to consider these issues when developing, evaluating, and implementing interventions for T2DM prevention and management.

It should be noted that many traditional therapies are not evidence-based and may have serious adverse effects.¹⁰ Unfortunately, in many parts of the world, the scaling up of such need-sensitive interventions is typically conducted with no, or inadequate, evaluation of the intervention, which is likely to lead to inefficient use of scarce resources and, most importantly, could lead to harm.¹⁰ Therefore, the intervention must be need-sensitive as well as evidence-based.

In continuation with the global effort to tackle diabetes, the need of the hour is to move beyond the one-size-fits-all biomedical model and to develop, evaluate, and implement need-sensitive, evidence-based interventions to prevent and manage T2DM among different population groups.

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References

1. International Diabetes Federation. IDF diabetes atlas. 9th ed. Brussels: International Diabetes Federation; 2019.

2. Gamble J-M, Butalia S. Medical practice variations in diabetes mellitus. In: Johnson A, Stukel T, editors. Medical practice variations. Health services research. Boston: Springer; 2016.
3. World Health Organization. Global report on diabetes. Geneva: World Health Organization; 2016.
4. Ng JY, Verma KD. Identifying the quantity and assessing the quality of clinical practice guidelines for the treatment and management of type 2 diabetes: a systematic review. *Diabetes Res Clin Pract.* 2020;168:108365.
5. Nixon AL, Leonardi-Bee J, Wang H, Chattopadhyay K. Barriers and facilitators to type 2 diabetes management in the Caribbean region: a qualitative systematic review. *JBIM Evid Synth.* 2021;19(5):XX-XX.
6. Chattopadhyay K, Panniyammakal J, Biswas TK, Heinrich M, Lewis SA, Greenfield SM, et al. Effectiveness and safety of Ayurvedic medicines in type-2 diabetes mellitus management: a systematic review protocol. *JBIM Evid Synth.* 2020;18(11):2380-9.
7. Suksomboon N, Poolsup N, Boonkaew S, Suthisisang CC. Meta-analysis of the effect of herbal supplement on glycemic control in type 2 diabetes. *J Ethnopharmacol.* 2011;137(3):1328-33.
8. Woolley A, Li L, Solomon J, Li J, Huang K, Chahal P, et al. What are the development priorities for management of type 2 diabetes by general practitioners in Ningbo, China: a qualitative study of patients' and practitioners' perspectives. *BMJ Open.* 2020;10(9):e037215.
9. Chattopadhyay K, Mishra P, Manjunath NK, Harris T, Hamer M, Greenfield SM, et al. Development of a yoga program for type-2 diabetes prevention (YOGA-DP) among high-risk people in India. *Front Public Health.* 2020;8:548674.
10. Misra A, Gulati S, Luthra A. Alternative medicines for diabetes in India: maximum hype, minimum science. *Lancet Diabetes Endocrinol.* 2016;4(4):302-3.