

EDITORIAL



Integrating health education on diabetes prevention for young people in higher institutions

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Diabetes mellitus (DM) is a chronic metabolic condition characterized by elevated blood glucose levels due to the body's inability to produce sufficient insulin or effectively utilize the insulin produced [1,2]. The prevalence and incidence of DM are increasing globally. In 2024, approximately 588.7 million individuals worldwide were living with DM, and projections indicate that this number could rise to 852.5 million individuals aged 20 to 79 years by 2050 if current trends continue [3]. A survey conducted in South Africa revealed a prevalence of pre-diabetes and DM at 67% and 22%, respectively [4]. Among those who had never been tested for DM prior to the survey, 10% of females and 6% of males were found to have pre-diabetes, with 67% of both males and females exhibiting pre-diabetic conditions [4]. The International Diabetes Federation emphasizes that pre-diabetes predisposes young individuals to a high risk of developing Type 2 Diabetes (T2D), underscoring DM as one of the fastest-growing global health emergencies.

Accumulating evidence indicates that among the three main types of DM, T2D is the most preventable yet the most prevalent, accounting for 90% of all global DM cases. Notably, three out of four adults living with T2D reside in low- and middle-income countries (LMICs), with approximately 59% of DM cases remaining undiagnosed despite the availability of affordable and proven preventive measures. The onset of T2D is often asymptomatic, making it difficult to determine, and unmanaged T2D can lead to severe complications [5,6].

Although specific epidemiological data on the number of individuals living with T2D in LMICs are lacking, the burden of T2D has overwhelmed many healthcare systems in these regions and poses an increased financial burden on high-income countries [7]. In the United Kingdom, the National Health Service (NHS) allocates approximately £10 billion annually to DM and its related complications, equivalent to 10% of the national budget [8]. Sedentary lifestyles, poor eating habits, and low physical activity levels are closely linked to T2D [9]. Additionally, high consumption of sweetened beverages and unhealthy foods are contributing factor to obesity, a precursor to T2D [10].

DM education remains a cornerstone for the prevention and management of pre-diabetes and T2D. Educational initiatives promote the prevention of obesity and its contributing factors, making education a pivotal element in T2D management and pre-diabetes mitigation. In India, the

Prediabetes Education Programme (PEP) significantly improved the knowledge and attitudes of individuals with pre-diabetes towards lifestyle modification [11]. Education encourages lifestyle changes, healthy eating, regular physical activity to halt pre-diabetes progression, and smoking cessation to improve glycaemic profiles [12-15].

Reducing alcohol consumption aids in maintaining a healthy body weight [16]. Diabetes remission was observed in 61% of participants in an intervention group who received education and achieved an annual body weight reduction of about 12kg [17]. However, Baker et al. caution that the content, modality, setting, and providers of DM education should ensure the delivery of high-quality and comprehensive DM education [18]. Therefore, when educating young individuals in higher education, DM educators should collaborate with academics to deliver effective DM education.

Young individuals often juggle school and work commitments and may seek health information on social media. While accurate health information can be obtained via social media, there is a risk of encountering misleading and non-evidence-based information. Research conducted across Europe, the USA, Pakistan, Canada, and India by Horigan et al. suggests that the busy lifestyles of young individuals may explain the non-attendance of 2,260 young patients with diabetes at scheduled structured DM educational sessions. Zowgar et al. conducted a DM knowledge test for 942 patients in Saudi Arabia, including 209 university-level young adults (28.1%), all of whom demonstrated a lack of DM literacy [19-21].

Structured DM education within routine practice has shown clinically significant benefits for young individuals in Australia. In Nigeria, Bosun-Arije et al. identified knowledge and information deficiencies as factors contributing to the high prevalence and incidence of T2D [2]. The high prevalence of overweight and obesity is a significant public health concern that exceeds geographical boundaries within Africa, necessitating innovative weight-management education and interventions for young individuals [22-24].

T2D can be silent and progressive. Epidemiological analyses suggest that identifying and educating populations and subgroups at risk of T2D and its complications is an innovative approach to curbing the condition [25]. If left unchecked, T2D can lead to a range of microvascular and macrovascular

complications, posing a significant health challenge to young individuals, families, healthcare facilities, and societies. If ignored, up to 40% of individuals diagnosed with T2D may develop chronic kidney disease (CKD), placing them at higher risk of cardiovascular disease (CVD), kidney failure, and fatality [7].

This editorial advocates for the importance of diabetes education in higher education to enhance DM literacy and awareness among young individuals. These efforts can provide a pragmatic approach to T2D prevention, aligning with the IDF strategic agenda, which aims to keep T2D in the public spotlight and promote coordinated and concerted actions to address the impacts of T2D and other types of DM in the 21st century [7,26].

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