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The health care situation of people living with diabetes in Mexico

The analysis of diabetes health care in Mexico reveals that a largely working-age population faces a growing prevalence of diabetes, which has increased over the past decades. Lack of adherence to a healthy lifestyle, characterized by an unbalanced diet and lack of physical activity, has contributed to this situation.

The health care system, although fragmented, strives to address these challenges. However, the quality of care varies across different centers, and universal coverage remains a goal to be achieved. Primary Health Care emerges as a crucial component for improving diabetes care, focusing on promoting healthy lifestyles and health education.

Strengthening the health care system with an emphasis on Primary Health Care, along with multidisciplinary and inter-institutional collaboration, offers opportunities to effectively address the challenge of diabetes in Mexico. It is essential to implement innovative and cost-effective preventive measures and promote universal access to information and innovative diabetes therapies.

PREVALENCE OF DIABETES IN MEXICO

Mexico, with a population of approximately 126 million people (National Institute of Statistics and Geography - INEGI, 2021), has experienced significant demographic changes due to public policies that have reduced fertility and mortality rates. These changes have led to a reconfiguration in age structure, with a higher proportion of people in working-age (15 to 64 years) (INEGI, 2023).

According to the International Diabetes Federation (IDF), Mexico ranks 7th in the world in terms of the number of people living with diabetes (IDF, 2021). Additionally, data from the National Institute of Public Health indicate that the prevalence of diabetes in Mexico is 18.3%, with 22.1% having prediabetes (Basto-Abreu et al., 2023). Diabetes also ranks as the **second leading cause of death** in the Mexican population (INEGI, 2024).

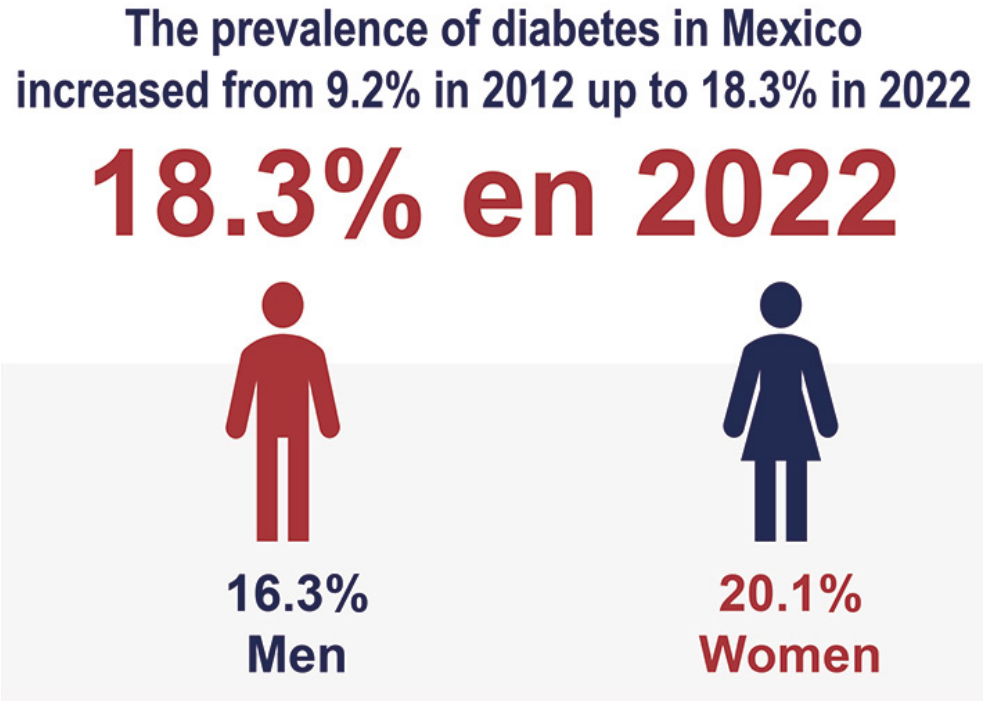
The increase in diabetes prevalence in Mexico over recent decades highlights the need for effective coordination in health care involving public, private, and social sectors.

RISK FACTORS AND SOCIAL DETERMINANTS

The Mexican population faces a high genetic predisposition to diabetes (Saavedra, 2019), with diet, particularly high in carbohydrates, playing a crucial role in its development. According to the National Health and Nutrition Survey 2022, the consumption of sugary drinks is significantly high compared to the low intake of healthy foods among Mexicans (Gaona-Pineda et al., 2023).

Furthermore, there is **widespread non-compliance with physical activity recommendations**, with 65% of children not meeting them and spending more than 2 hours a day in front of screens. Additionally, 91% of adolescents spend more than 2 hours in front of screens, and over 30% of adolescents and adults do not meet physical activity recommendations (Medina et al., 2023).

These factors contribute to overweight, estimated at 38.3%, and obesity, affecting 36.9% of the population. Abdominal obesity is notably high at 81.0%, with women being 1.4 times more likely to suffer from obesity and abdominal obesity compared to men (Campos-Nonato et al., 2023). »



THE PREVALENCE OF DIABETES IN MEXICO IS 18.3%, WITH 22.1% HAVING PREDIABETES

» The **high consumption of sugary drinks**, with an alarming figure of 133.6 liters per person in Mexico in 2022 (Statista, 2023), further exacerbates these public health issues.

QUALITY OF DIABETES CARE

Mexico's health care system is structured into 3 segments: employment-linked social security, public assistance focused on the uninsured, and the private sector, including independent insured individuals and private service providers. According to INEGI, 73.5% of the population is affiliated with health services (INEGI, 2021).

Health services in Mexico are distributed among various institutions, with the Mexican Institute of Social Security, the Ministry of Health, and the Institute of Security and Social Services for State Workers being the main government entities responsible for the medical care of the population. Each of these institutions has specific medical care models directed at their affiliates living with diabetes.

The National Basic Health Information System (SINBA) evaluates the performance and quality of medical services in Mexico at the primary level of care of the Ministry of Health. Through the Diabetes Care Quality Index in Mexico (ICAD), the quality of care is monitored, consisting of 3 main elements: patient retention, effective consultation, and health impact. The ICAD received a national rating of 63.3 out of 100 as of February 2024[1].

Additionally, the HbA1c test provides information on glucose monitoring for people living with diabetes. According to the Chronic Disease Information System (SIC) of the Ministry of Health, **only 36.6% of diabetic patients have had, at least, 1 HbA1c measurement**[2]. Of this group, only 45.8% have achieved HbA1c levels < 7.0%.

Regarding treatments, 84.4% of diabetes treatment regimens include metformin, followed by insulin and glibenclamide.
The Diabetes Mellitus Type 2 Hospital Epidemiological Surveillance System of the Ministry of Health is a sentinel model system that provides accurate and up-to-date information on hospitalized patients with type 2 diabetes. By 3Q of 2023, a total of 32,168 admissions of patients with a diagnosis of type 2 diabetes mellitus had already been saved in the system.

In terms of hospitalization demographics for diabetes, 48.8% of cases were men and 51.1% were women, with the most affected age groups being 60 to 64 years for women and 55 to 59 years for men. It was observed that only 15.7% of patients reported engaging in daily physical activity of, at least, 30 minutes, while 2908 (9.0%) were active smokers, and 5203 (16.16%) were cases of alcoholism. Notably, a total of 1476 cases (4.5%) were unaware that they had diabetes, and among those with a diagnosis of diabetes, the median number of years since diagnosis was 12 years. Additionally, the most common comorbidities identified were hypertension, obesity, and chronic kidney disease. Diabetic foot was the most common cause of admission, and foot examinations were the most widely performed quality care action. Regarding care and follow-up, we found that medical reviews such as ophthalmological (58.6%) and nutritional reviews (56.5%) were not conducted at any time (Ministry of Health, 2023).

PRIMARY PREVENTION IN DIABETES MANAGEMENT

Certain factors associated with a higher risk of developing diabetes in the Mexican population have been identified. "Healthy eating"—a balanced and nutritious diet—can positively influence diabetes prevention. A "higher level of education" suggests that education may be associated with better knowledge about health and healthy lifestyle habits, which in turn can reduce the risk of diabetes. Body mass index (BMI) is an indicator of the weight-to-height ratio, and a high BMI, indicating overweight or obesity, has consistently been associated with a higher risk of type 2 diabetes. Finally, hypertension has been identified as a commonly associated risk factor for diabetes, as both conditions may be associated with underlying health issues such as insulin resistance and chronic inflammation (Picazzo-Palencia et al., 2021).

Health literacy involves having the knowledge, access, understanding, valuation, and capacity to apply information to make health-related decisions at both individual and community levels. Findings suggest that early intervention may be more effective in addressing the problem of overweight and obesity. This implies that implementing preventive, educational, or therapeutic measures from early stages of life could impact the prevention or management of diabetes. Additionally, it suggests that attention and support directed at younger age groups may be crucial for promoting optimal long-term outcomes (Picazzo-Palencia et al., 2021). »

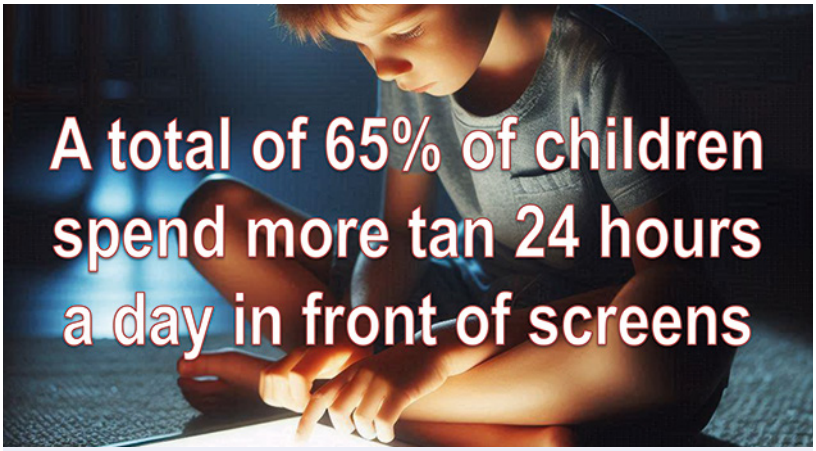
1.- Diabetes Care Quality Index in Mexico (ICAD): Results as of February 29, 2024, based on a sample of 474,894 people living with diabetes from 11,301 health care units across the 32 states of Mexico.

2.- Chronic Disease Information System (SIC): Sample of 1,110,939 patients living with diabetes with, at least, 1 A1c measurement.

» CHALLENGES AND OPPORTUNITIES FOR IMPROVING CARE

The challenges and opportunities for improving diabetes care are multifaceted and require a comprehensive approach within the health care system. Promoting chronic disease prevention, such as diabetes, and maintaining the population's health in optimal conditions for as long as possible are crucial aspects of high-quality health care systems. However, designing and implementing innovative and economically viable preventive measures to reduce demand and spending on health care for potentially preventable diseases represents a complex challenge that must be addressed effectively.

Establishing a health promotion and education process that considers biological, psychological, social, and cultural aspects and develops appropriate strategies to address health issues comprehensively is essential. Integrating the Mexican health care system with universal coverage is crucial to achieving this goal. This holistic approach should drive education on diabetes, ensure access to necessary drugs and laboratory tests, and involve a multidisciplinary team of health professionals who empower people living with diabetes, as well as their families and communities, to adopt healthy lifestyles. This integration will promote more effective and patient-centered care, thus improving diabetes-related health outcomes in Mexico. D



CONCLUSIONS

Strengthening health care systems through models focused on Primary Health Care, which emphasize the importance of the person, family, and community, along with multidisciplinary, intersectoral, and interinstitutional collaboration, is crucial for effectively addressing the challenge of diabetes in Mexico. This approach should include universal and free access to information on healthy habits, such as diet, physical activity, sleep, and hygiene, as well as policies that empower health institutions to provide medical care and access to innovative diabetes therapies for both insured and uninsured populations. Implementing these measures in a comprehensive and coordinated manner can contribute to the prevention, early detection, and effective management of diabetes Mexico.

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