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Review Article

Primary and Secondary Prevention of Obesity in Mexico: Why Drug Treatments and Technology-Supported Care Must Work Alongside Earlier Strategies

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Abstract

Obesity is a critical health issue in Mexico, driving cardiometabolic diseases and health expenditure. Despite efforts in primary prevention, obesity continues to be highly prevalent and persistent throughout the population.

This article seeks to explore the challenges of primary prevention in high-prevalence contexts, and the need to complement primary prevention with secondary prevention measures, such as pharmacological and technological interventions, to limit disease progression and its long-term burden.

Methods: The article presents a narrative policy analysis based on evidence from national surveys (ENSANUT), Global Burden of Disease (GBD) statistics and literature on obesity, socioeconomic factors and health-care interventions.

Findings: Primary prevention measures, while crucial, are not sufficient to quickly turn around the obesity epidemic in Mexico given the high prevalence and retention of obesity over time. Research suggests a significant number of people are obese in the long term, further raising the risk of diabetes, heart disease and renal disease.

Conclusion: Mexico needs an integrated approach that includes primary and secondary prevention strategies. The use of medical treatments and technology-supported care can help prevent complications, enhance quality of life, and reduce the economic burden.

More Information

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Keywords: Obesity; Mexico; Secondary prevention; Cardiometabolic disease; Public health policy; Health systems

Introduction

Background: Obesity's burden in Mexico is already cardiometabolic and costly

Overweight and obesity in Mexico function as a population-level risk factor with immediate down-stream clinical consequences. Using the Global Burden of Disease (GBD) framework, High Body Mass Index (H-BMI) accounted for >118,000 deaths in 2021 (10.6% of total deaths) and >4.2 million disability-adjusted life years (DALYs) lost in Mexico [1]. The burden is not evenly distributed across out-comes: diabetes mellitus and chronic kidney disease contribute substantially, and meaningful contributions are also observed for ischemic heart disease and hypertensive heart disease [1]. Mortality at-tributable to H-BMI is highest in older adults (especially ≥70 years) [1]. This matters because Mexico's demographic transition increases the probability that obesity-related complications will accumulate rather than dissipate.

Beyond burden magnitude, there is also persistence. In a 20-year study of Mexican adults aged 50 and older, obesity was the most consistent nutritional issue. About 72% of people who were obese stayed obese. Meanwhile, the stability

of normal weight increased from 63% to 71% over time [2]. This "stock" behavior implies that prevention benefits depend not only on preventing new weight gain, but on avoiding deterioration among people already living with excess weight - the core rationale for secondary prevention.

Primary prevention: meaningful strategies with partial effects in a high-prevalence environment

Mexico has implemented primary prevention strategies aligned with the multifactorial nature of obesity. In the context of H-BMI control, the adopted prevention logic includes: (1) individual and public responsibility for prevention and control as risks for other CNCDs, (2) efficient and timely medical care for diagnosed people or those with risk factors, and (3) health and tax policies regulating exposure to advertising of unhealthy foods and beverages and supporting labelling [1]. These pillars reflect an understanding that prevention requires changes in the environment as well as in behavior.

However, primary prevention must be evaluated against the epidemiologic reality that Mexico is already at a high prevalence. In adults (≥20 years), ENSANUT Continua 2020-2023 estimated an overall obesity rate of 37.1%. This figure includes 41.0% of women and 33.0% of men. Modeling work suggests it might reach around 45% by 20307. Even where recent increases appear to stabilize, the base rate remains high enough that primary prevention - by design - cannot rapidly reverse the population's cardiometabolic risk.

Adolescents/children: Obesity prevention must start early, but prevention cannot carry the full burden alone

The 2022-2023 National Health and Nutrition Survey (ENSANUT) highlights the serious issue of overweight and obesity among adolescents aged 12 to 19. Rates range from 40% to 41.1%. The obesity rate exceeds 17% and affects girls more significantly. Furthermore, the rate is notably higher in rural areas. These estimates illustrate a significant risk group at a stage of life that is a strong predictor of cardiovascular and metabolic health in adulthood. Therefore, primary prevention is clearly needed in schools, families, and communities.

Yet, even with successful childhood prevention, Mexico will still face a medium-to-long-term challenge: (i) a large fraction of the population will already be living with excess weight or early cardiometabolic changes, and (ii) obesity has demonstrated persistence in longitudinal data in older adults [2]. Therefore, primary prevention must be paired with secondary prevention so that obesity-related progression is interrupted in people who already have excess weight - before irreversible complications accumulate.

Anthropology and multifactorial drivers: Why obesity persists even when prevention exists

Obesity in Mexico is not produced by "choices" in isolation; it is produced by interacting systems that shape exposure and default behaviors. From an anthropological and social determinants perspective, one large study in low-income rural Mexican adults found that BMI was positively associated with multiple Socioeconomic Status (SES) measures - education, occupation, housing conditions, household assets, and subjective social status - and that beverage consumption patterns (carbonated sugar beverages and alcohol) were associated with higher BMI [3]. This supports the interpretation that nutrition transition processes and cultural/household realities influence exposure to energy-dense diets in ways that vary by context.

From a health system and access to innovation perspective, this is important. Primary prevention campaigns can be based on evidence but may still fall short if they do not align with how people actually access, afford, and understand food, drinks, and activity options. A human ecology view of health reinforces that lifestyles and health outcomes are shaped by interrelated layers (people, social capital, economy, activities, and built environment) and that health impacts can be sequential rather than immediate [4]. In such a system, secondary prevention becomes the mechanism through which health services mitigate harm when upstream shifts are incomplete or uneven.

Secondary prevention: Progression prevention and underlying cardiometabolic disease management are now required

In a setting where obesity prevalence is high and where obesity persists over time, secondary prevention should be framed as risk reduction for clinical endpoints - especially diabetes, kidney dis-ease, ischemic heart disease, and hypertension related outcomes.

GBD evidence supports a significant risk group at a life stage that strongly predicts adult heart and metabolic health. Therefore, primary prevention is clearly needed in schools, families, and communities [1]. Therefore, the clinical pathway for secondary prevention should not treat obesity as a standalone variable; it must actively manage the underlying metabolic disease processes that mediate severe outcomes.

This argument in favor of using technology and medications in secondary prevention aligns with preventing disease progression and reducing complications. In Mexico, this means identifying and classifying overweight, obesity, and cardiometabolic risk early. This allows for intervention before serious health problems develop and, consequently, before higher costs for the healthcare sector. We need organized, ongoing care processes that use technology for follow-up. Tools like care coordination, adherence monitoring, and decision support can help bridge gaps in managing chronic diseases.

Pharmacological anti-obesity treatment, when clinically appropriate, should be integrated into a comprehensive obesity care plan rather than used as an isolated rescue.

Concurrent treatment of underlying conditions (especially diabetes and hypertension) is essential because these conditions are central to the obesity-attributable burden of death and DALYs [1].

This approach directly aligns with the persistent evidence in older adults: when ~72% of baseline obesity persists over two decades [2], secondary prevention becomes the policy "pressure release valve" that prevents the health system from absorbing a growing tide of obesity-related complications.

Costs: Economic burden already exists and will likely intensify with aging and persistence

The economic rationale is substantial. One estimate places the annual cost of overweight and obesity in Mexico (2015) at ~85 billion pesos, with 73% attributed to medical treatment and additional costs related to productivity loss and premature mortality [1]. Given that (i) obesity prevalence remains high in adults [5], (ii) obesity persists over time in longitudinal cohorts [2], and (iii) obesity-attributable outcomes concentrate on diabetes, kidney disease, and cardiovascular complications [1], costs should be expected to grow further as the population ages.

Secondary prevention that reduces progression and complications should be seen as both a clinical approach and a way to avoid costs. Preventing end-organ disease cuts down on later medical use, disability, and death. This, in turn, lowers high costs for the healthcare system and society [1].

Discussion

This analysis underscores the urgent need to bridge the gap between the magnitude of the obesity epidemic in Mexico and the effectiveness of the current prevention approaches. Primary prevention will be critical, but it is, by nature, slow and limited in a population where many people are already overweight [1,5].

The persistence of obesity seen in longitudinal analyses highlights the need for a more integrated approach. Secondary prevention offers a chance to catch people earlier in the disease process, preventing the progression to severe cardiometabolic diseases [2]. This strategy is consistent with international evidence on the importance of integrated care pathways that integrate lifestyle and clinical care [1].

Additionally, the integration of technology in health care provides opportunities to enhance adherence, monitoring, and care coordination. E-health platforms, remote consultations, and clinical decision support systems can improve patient engagement and assist health professionals in managing chronic health conditions [3,6].

Medications, when integrated into a care delivery framework, can support lifestyle changes and enhance outcomes for people with obesity. But their use in public health strategies must consider issues of access, cost, and health system capacity [1].

Conclusion

Primary prevention is necessary, but secondary prevention is essential for medium- to long-term control

Mexico has primary prevention strategies that target upstream determinants through public health and environmental policy measures [1]. Adult obesity prevalence remains high at 37.1%. Model-based projections suggest it will continue to be high in the next decade without stronger measures to change this trend. In adolescents, the ENSANUT 2022-2023 report shows that over 40% are over-weight or obese, with more than 17% classified as obese. This confirms that the risk of obesity starts early in life.

Because obesity shows persistence over time in older adults [2] and because H-BMI's attributable bur-den is already concentrated in severe cardiometabolic outcomes [1,7], Mexico requires an integrated prevention-and-care continuum. While primary prevention should remain the foundation, especially to contain and actually prevent, secondary prevention (innovation-enabled pathways: pharmacological and technology-supported) plays a fundamental role in supporting a change in trend, correcting and preventing future health problems and economic burden.

Author contributions

The author was solely responsible for the conceptualization, data analysis, interpretation, and writing of this manuscript.

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Conflict of interest

The author is affiliated with Novo Nordisk México. This affiliation may be perceived as a potential conflict of interest. However, the analysis presented in this article is based on publicly available data and scientific evidence.

Ethical statement

This study is based on previously published data and does not involve human participants or primary data collection. Therefore, ethical approval was not required.

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