CHAPTER 6: CONCLUSION

AUTHORS

Fatema M. Ali

Ghazal S. Fazli

Lorraine L. Lipscombe

OVERVIEW

This report presents the current risk and burden of type 2 diabetes in the Peel Region to understand the impact of several upstream, macro (built environment), meso (health behavioural and community-level risk factors), as well as downstream, micro-level indicators (quality of care) that contribute to the rising prevalence and incidence of diabetes in Peel. The findings in this report are a first step in identifying and informing future research and policy priorities and actions necessary for reducing the burden of diabetes in the region.

KEY FINDINGS

1. Understanding How to Create Healthy Environments in the Peel Region (Macro Level):

Across the Peel Region, our findings demonstrate considerable variation in several neighbourhood characteristics explored in this report, including access to green space, transit, walkability, fast food, housing, air quality and housing needs. For neighbourhood walkability, several neighbourhoods in Peel are low-density neighbourhoods with few walkable destinations, and these areas may lead to fewer opportunities for walking, cycling and other forms of active transit. However, there is relatively good access to public parks and greenspace throughout the region. The extent to which residents can and do access these greenspaces must be explored further.

In addition, access to frequent transit is present only in certain parts of the regions (i.e., along the lakeshore and in central areas of Mississauga and Brampton) and completely absent in others (i.e., Caledon). This creates a significant barrier to active transportation as an alternative to automobiles. The spread of other neighbourhood characteristics associated with diabetes risk (i.e., unhealthy food options such as fast foods and unmet housing needs) is also highly variable across the region. This is an important area that requires further investigation to disentangle how these neighbourhood effects are driving diabetes risk and among whom.

Additionally, poor air quality is highly concentrated in communities surrounding the airport and major transportation routes, which warrants a closer look into urban design policies and their health impacts on the populations. In areas where diabetes prevalence appears to be very high, there are one or more neighbourhood characteristics that make it challenging to adopt healthy behaviours. In summary, the spatial overlap between key environmental indicators and diabetes rates underscores the importance of assessing a range of social and environmental characteristics that individually and collectively affect risk of diabetes. Therefore, our findings suggest that there is much to be explored more closely to understand

how these neighbourhood characteristics can be understood further and to investigate the effectiveness of urban planning and policy interventions to create supportive environments that promote healthy living and meet the community's diverse needs.

2. Understanding the Patterns and Factors that Impact Healthy Living and Behaviours (Meso Level):

Over half of the population in Peel Region is represented by those who identify as a visible or ethnic minority, and nearly three-quarters of those living with diabetes were immigrants to Canada. In addition, social disadvantages due to low socioeconomic status and food insecurity, and overweight/obesity and physical inactivity were highly prevalent risk factors for diabetes burden among residents in Peel Region.

The 10-year risk of developing new diabetes for residents of Peel Region overall is 11.5%; with an additional 102,000 adults older than 20 years of age estimated to be living with diabetes by 2028. Populations with one or more risk factors are also those who are most likely to develop type 2 diabetes over the next ten years in Peel Region, as elsewhere. In addition to older age groups, persons who identify as visible or ethnic minorities or immigrants, persons with a low household income and experiencing food insecurity, and persons who reported being overweight or obese and physically inactive have the highest risk of developing diabetes.

Therefore, in the ensuing years, new cases of diabetes in Peel are projected to increase rapidly, particularly among those experiencing a greater degree of social disadvantage and inequities in leading healthier lives. Also, the future risk of diabetes is disproportionately elevated among visible minorities and immigrant groups. These findings are important to prompt future research and policy interventions to target these modifiable risk factors to reduce the impact of rising diabetes cases on populations and health care systems as well.

3. Chronic Disease Care within Mississauga (Micro Level):

Between 2019 and 2022, the quality of diabetes services in the Mississauga Ontario Health Team (OHT) fell short of guideline recommendations on some key indicators. Less than 60% of patients with diabetes received recommended cholesterol and eye testing, less than half had recommended diabetes testing, and just under two-thirds met targets for diabetes and cholesterol control. These trends were broadly comparable to those seen for Ontario as a whole, with some indicators showing greater differences than others. The COVID-19 pandemic had a more negative impact on laboratory testing in the Mississauga OHT than in Ontario. Within the Mississauga OHT, those living within Mississauga generally appeared to have more

favourable indicators than those living outside Mississauga.

Hospitalizations for short-term and long-term complications were less common in the Mississauga OHT than in Ontario. These differences may be driven in part by a younger age distribution of people with diabetes in the Mississauga OHT compared to the rest of Ontario. There was a larger reduction in hospitalizations for long-term complications than for short-term complications associated with the COVID-19 pandemic. The impact of policy interventions to address gaps in health services and quality of care can be reliably measured over time using a variety of indicators.

FUTURE DIRECTIONS

Peel's population is heterogeneous and ethnically and culturally very diverse. This offers a unique opportunity for future research and policy interventions to collaborate with community partners across different sectors and agencies and engage with patients and community members in all stages of the research and policymaking process to understand how we can intervene early and identify sustainable, effective, and equitable solutions for diabetes prevention and management that will impact the quality of life of those living in Peel and beyond.

These efforts require a deeper understanding of the needs of local residents and their perceptions of their neighbourhood environment to identify interventions that will meaningfully promote healthy living. This step is vital to understand the meanings and implications of these findings for the community and to co-create knowledge to determine 'research needs and scope,' 'what intervention and prevention strategies are necessary', 'what works for whom,' and 'under what local contexts'.

Such engagements with relevant decision-makers across different sectors and agencies and representations are integral for current and future diabetes research and policy efforts to collectively identify multi-faceted approaches to addressing the projected risk of diabetes in the Peel Region. Moreover, future policy interventions must consider the interconnected nature of the many socioeconomic disadvantages that drive diabetes risk and identify prevention strategies that target the macro, meso, and micro-level determinants of diabetes explored in this report. The benefits of introducing effective approaches to prevention will extend beyond diabetes to reduce risk of other obesity-related conditions such as hypertension, some cancers, gallbladder disease and osteoarthritis.

NEXT STEPS

NHP aims to continue to understand the burden of diabetes and chronic disease in the Peel Region through a series of key next steps. We aim to further build and develop the preliminary work showcased in this report and ensure that the findings are shared with the community and applied in our upcoming NHP Catalyst grant.

Baseline Data Strategy Phase 2: The research streams of this report each focus on a specific level of diabetes and chronic disease burden – from the health care system to communities to living environments. Efforts within each stream overlap and interconnect to address the overall goal of reducing the risk and burden of diabetes and related conditions for healthier populations in Peel Region and beyond.

As the aim of this report was to describe the problem, the next phase will be to identify causes and factors that are contributing to the problem and to map areas of greatest need. Phase 2 of the Baseline Data Strategy, beginning in 2023, will leverage the team's foundational report to support the development of further co-designed research projects. The Network will support additional analyses to identify priorities and unmet needs for the prevention and care of diabetes and other chronic diseases within the region, build on existing or planned initiatives, and leverage resources. Interventions may include community programs, education and outreach initiatives, urban re-design, or new policies. Furthermore, the Network is dedicated to training and preparing the next generation of health leaders to address the rising risk and burden of diabetes and other chronic diseases. Therefore, a key aspect of phase 2 of the Baseline Data Strategy is to build capacity for this research by including undergraduate, medical/health professional students and graduate students in participating and leading key projects.

Current State of Type 2 Diabetes in the Peel Region

This report is published by the Novo Nordisk Network for Healthy Populations at the University of Toronto.

This publication may be reproduced in whole or in part for non-commercial purposes only and on the condition that the original content of the publication or portion of the publication not be altered in any way without the express written permission of the University of Toronto's Novo Nordisk Network for Healthy Populations. To seek this permission, please contact director.novonordiskhp@utoronto.ca.