

Trends in prevalence of self-reported visual impairment in Canadians with and without diabetes: findings from population-based surveys from 1994 to 2014

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Introduction

Due to an ageing population as well as increasing prevalence of diabetes, visual impairment (VI) is becoming a major public health issue in many countries [1]. Few studies have evaluated the prevalence of and trends in prevalence of visual impairment in Canada, especially among people with diabetes [2].

Objective: To assess trends in the prevalence of VI among Canadians with and without diabetes aged 40 and older.

Methods

Data from respondents aged 40+ participating in seven nationwide surveys were analyzed: the National Population Health Survey in 1994/1995 (n=17,626), 1996/1997 (n=81,804) and 1998/1999 (n=17,244) and the Canadian Community Health Survey in 2000/2001 (n=130,880), 2008/2009 (Healthy Aging, n=30,865), 2009/2010 (n=124,188) and 2013/2014 (n=127,462). Using the 2016 Canadian population as the standard population, the age- and sex-standardized prevalence of VI was calculated. For analyses stratified by levels of education and income, sex-standardized prevalence was calculated.

Results

- From 1994 to 2014, the prevalence of VI was roughly 2 times higher in people with diabetes versus those without
- The prevalence of VI decreased in both groups over the study period (**Figure 1**).
- Among the diabetes group, the number of individuals with VI increased in 2013/2014 (57,000; p<0.05) compared to 1994/1997 (55,000). Among the non-diabetes group, the number of VI individuals decreased from 1994/1997 (339,000) to 2013/2014 (220,000; p<0.05) (**Figure 2**)
- For those both with and without diabetes, the standardized VI prevalence decreased in those with high and low levels of income (**Figure 3**) and education (**Figure 4**) over the 20 years studied

Results cont'd

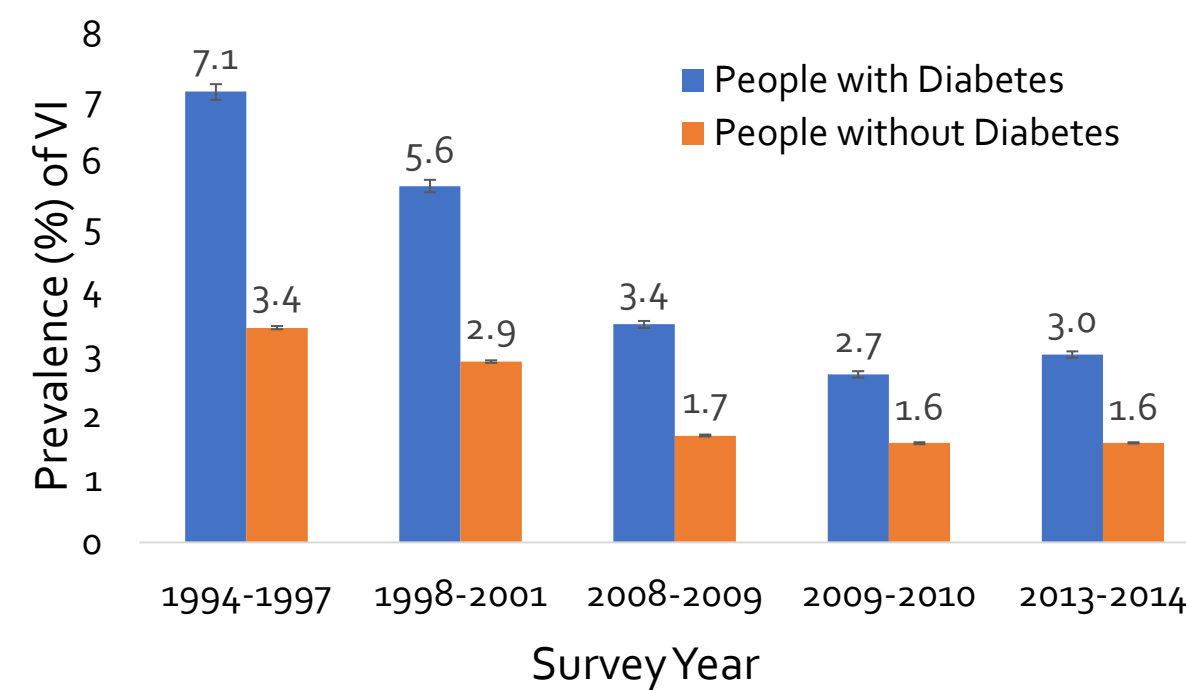


Figure 1. Overall prevalence (%) of VI in people with and without diabetes from 1994-2014

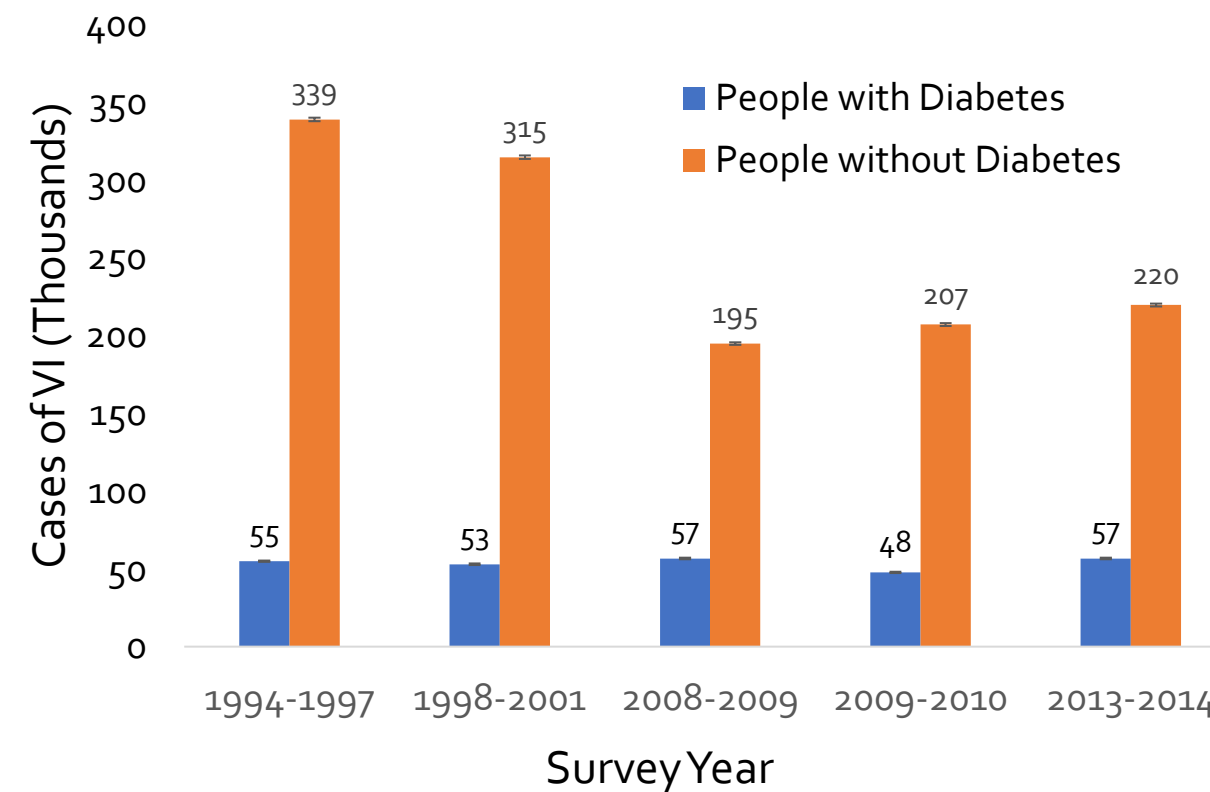


Figure 2. Cases of VI (thousands) in people with and without diabetes from 1994-2014

References

- Ackland P, Resnikoff S, Bourne R. World blindness and visual impairment: despite many successes, the problem is growing. *Community Eye Health.* 2017;30(100):71-3.
- Aljied R, Aubin M-J, Buhrmann R, Sabeti S, Freeman EE. Prevalence and determinants of visual impairment in Canada: cross-sectional data from the Canadian Longitudinal Study on Aging. *Can J Ophthalmol.* 2018;53(3):291-7.

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Results cont'd

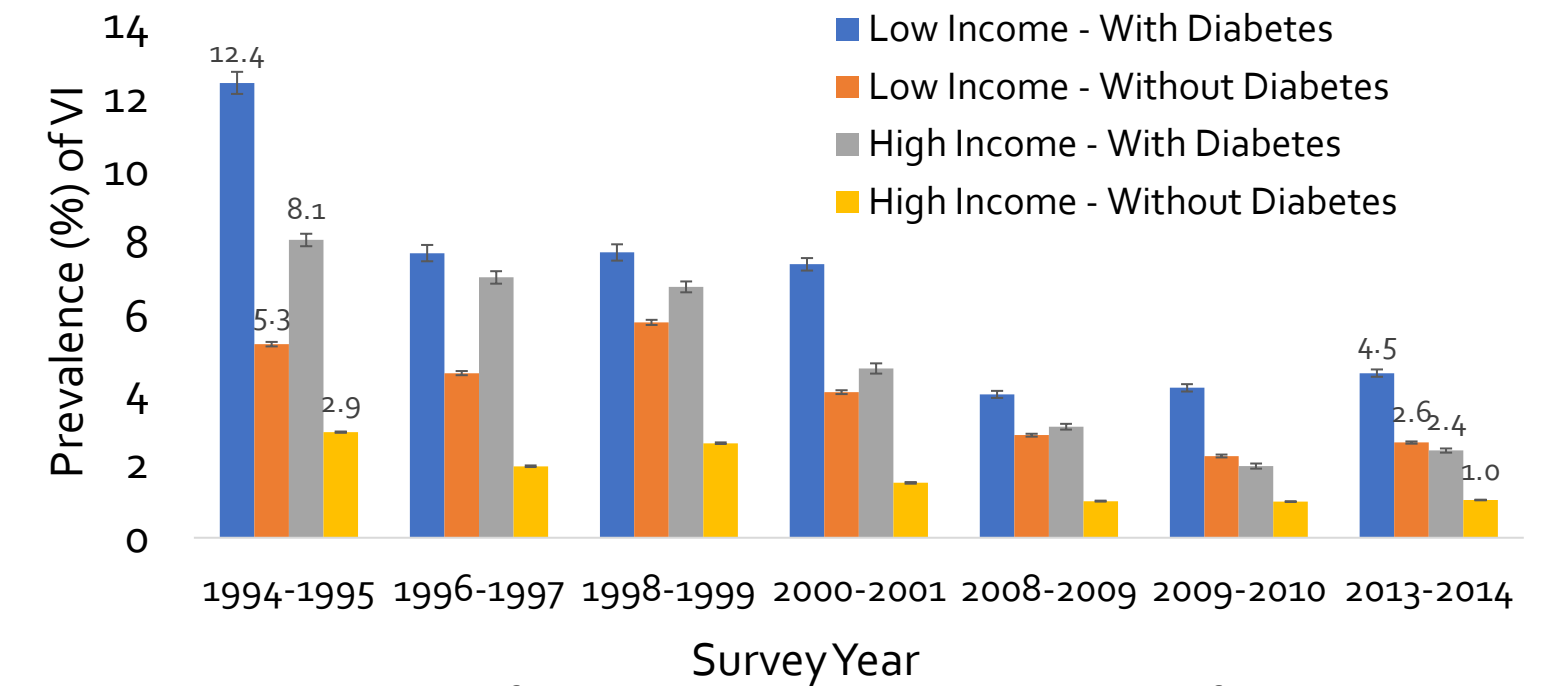


Figure 3. Prevalence (%) of VI in people with and without diabetes from 1994-2014 stratified by income levels

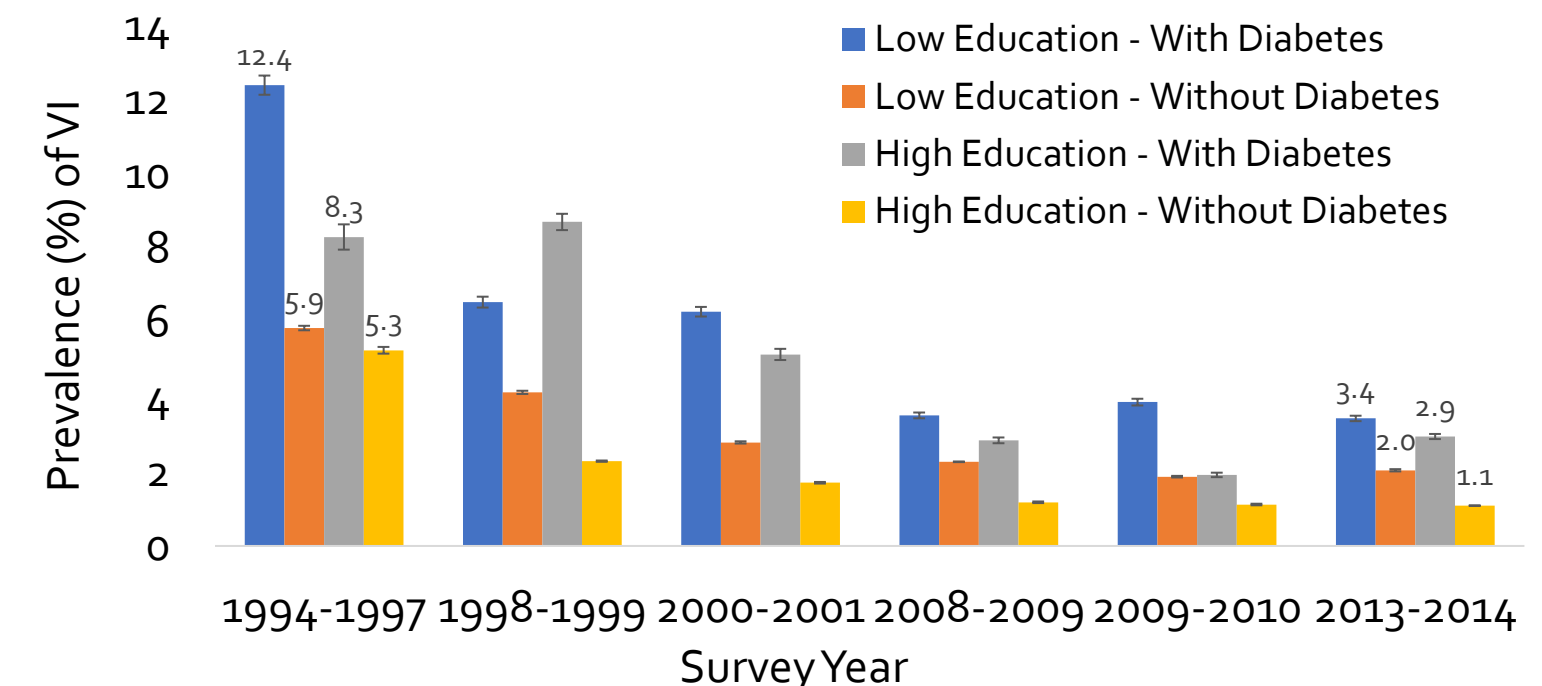


Figure 4. Prevalence (%) of VI in people with and without diabetes from 1994-2014 stratified by education levels

Conclusion & Discussion

- The prevalence of self-reported VI in Canadians with and without diabetes has decreased over the past 20 years
- The prevalence of VI was around 2 times higher among those with diabetes compared to those without throughout the study period
- These results likely reflect the effectiveness of the collective efforts by eye care providers, researchers, the public and government.
- Despite decreased prevalence in people with diabetes, the number of Canadians with VI from diabetes increased slightly, due to the growing diabetes pandemic
- We must continue our efforts to increase access to eye care for Canadians while improving the standard of care for diabetic screening