

Eye care utilisation in Newfoundland and Labrador: access barriers and vision health outcomes

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ABSTRACT •

Objective: Our prior study revealed significantly lower use of eye care providers in Newfoundland and Labrador (NFLD). This study reports factors associated with this low use and related vision health outcomes.

Design: Cross-sectional survey.

Participants: A total of 14 925 Caucasian respondents to the Canadian Community Health Survey – Healthy Aging 2008/2009 aged ≥ 65 years.

Methods: Univariate and multivariate analyses were performed using self-reported survey data.

Results: NFLD, along with 3 other provinces, does not insure seniors for routine eye examinations. Among seniors without self-reported glaucoma, cataracts, and diabetes, the use of eye care providers in NFLD (36.3%) is the lowest compared with provinces with (50.7%, $p < 0.05$) and without (42.2%, $p > 0.05$) government-insured eye examinations. Among seniors with known eye disease insured for eye care in all provinces, eye care utilisation in NFLD (63.1%) is still the lowest across all provinces (69.4% –71.3%, $p > 0.05$). Compared with the national average, NFLD seniors have significantly higher proportions of low income (61.7% vs 47.4%), no postsecondary education (53.6% vs 42.2%), and rural residency (40.6% vs 18.9%). These factors are all associated with low levels of eye care utilisation. Compared with insured provinces, NFLD has a significantly lower prevalence of self-reported cataracts (16.7% vs 23.1) and glaucoma (3.8% vs 7.0%), and a slightly higher prevalence of presenting visual impairment (4.0% vs 3.5%).

Conclusions: Lack of government insurance, low socioeconomic status, and living in nonurbanised areas all contribute to the underutilisation of eye care providers in NFLD. This underutilisation appears to be associated with reduced detection of eye diseases.

Low vision and blindness produce public health economic and social burdens. In Canada, the main causes of irreversible vision loss include age-related macular degeneration, diabetic retinopathy, and glaucoma.¹ The risk of these ocular diseases increases significantly with age.^{2–5} Consequently, seniors (i.e., those aged 65 years and older) are mostly affected, with greater than 80% reporting vision problems.⁶ The senior population in Canada is expected to more than double over the next 20 years.⁷ The prevalence of eye diseases will thus increase proportionally.¹ It is projected that by 2032, the economic burden of vision loss will be 30.3 billion dollars in Canada.¹

Routine eye examinations are important to detect early stage of eye diseases and are cost-effective to the Canadian provincial governments.^{8,9} The Canadian Ophthalmological Society recommends routine eye examinations annually for high risk seniors and biennially for low risk seniors.¹⁰ Eye examinations are expensive,¹¹ and government insurance for eye examinations varies greatly across Canada.¹² Some provinces provide routine eye examinations to seniors annually or biennially, while others provide no coverage at all. This has created discrepancies in eye care utilisation between provinces.¹² In

Newfoundland and Labrador (NFLD), routine eye examinations for seniors were delisted in 1991, and eye care is only insured after clinical manifestations of ocular diseases have become apparent.¹³

In 2011, our group reported that NFLD had the lowest utilisation of eye care providers (i.e., ophthalmologists and optometrists) across Canada.¹² To follow up this finding, we examined factors related to this low utilisation and evaluated associated vision health outcomes.

METHODS

Data source

Data were collected from the Canadian Community Health Survey (CCHS) – Healthy Aging 2008–2009.¹⁴ The CCHS – Healthy Aging is a nationwide, self-reported, cross-sectional survey conducted among Canadians aged 45+ years by Statistics Canada.¹⁵ The survey included 10 Canadian provinces. The response rate was 80.8% at the household level and 74.4% at the individual level.¹⁵

In this study, respondents 45–64 years of age were excluded from the analysis. This is because none of the

provincial health insurance plans covered routine eye examinations for this age group in 2008–2009, leading to no variations for comparisons. Also excluded were respondents who self-reported as non-Caucasians for 3 reasons:

- (1) The prevalence of eye diseases is different between Caucasians and non-Caucasians^{4,5,16,17};
- (2) In Canada, the proportion of non-Caucasians varies among provinces (e.g., 3.5% in NFLD vs 13.2% in Ontario). In NFLD, residents are predominantly Caucasian. Including only Caucasians makes province-wide comparisons valid;
- (3) The sample size for non-Caucasian respondents in NFLD ($n = 36$) was inadequate to allow for a meaningful subanalysis.^{18,19}

In total, 14 925 responses from Caucasian seniors were included in this analysis.

Comparison groups

Based on government insurance status for routine eye examinations, we established 4 comparison groups: government-uninsured NFLD, other government-uninsured provinces, and provinces with routine eye examinations insured by government annually and biennially.

NFLD does not provide government-insured eye examinations for seniors.¹² Other provinces that do not provide routine eye examinations for seniors include New Brunswick, Prince Edward Island, and Saskatchewan. Provinces that insure eye examinations for seniors include Alberta, British Columbia, Ontario, Quebec, Manitoba, and Nova Scotia. Except for Manitoba and Nova Scotia that are insured biennially, the others are insured annually. The 3 territories were not included in the analysis because the survey did not include them. Furthermore, the majority of the population in the territories comprises of indigenous peoples.²⁰

Outcomes

The primary study outcome was the utilisation rate of eye care providers. We compared eye care utilisation in NFLD versus the rest of the Canadian provinces. The secondary study outcomes were self-reported glaucoma, cataracts, and visual impairment not corrected by use of lenses.

Data on eye care utilisation was obtained from the survey question: “Not counting when you were an overnight patient, in the past 12 months, have you seen, or talked to... an eye specialist, such as an ophthalmologist or optometrist... about your physical, emotional or mental health?” A positive response was considered as utilized eye care services.

Information on vision-related conditions was collected from the question “Now I’d like to ask about certain

chronic health conditions which you may have. We are interested in ‘long-term conditions’ which are expected to last, or have already lasted 6 months or more and that have been diagnosed by a health professional.” After this opening question, a list of conditions was presented, including “Do you have cataracts?”, “Do you have glaucoma?”, and “Do you have diabetes?” A positive answer was considered having the said condition.

Information on presenting visual impairment was acquired by a series of survey questions:

- “Are you usually able to see well enough to read ordinary newspaper *without* glasses or contact lenses?”
- “Are you usually able to see well enough to read ordinary newspaper *with* glasses or contact lenses?”
- “Are you able to see at all?”
- “Are you able to see well enough to recognize a friend on the other side of the street *without* glasses or contact lenses?”
- “Are you usually able to see well enough to recognize a friend on the other side of the street *with* glasses or contact lenses?”

Answers to these questions were grouped into 5 mutually exclusive groups by Statistics Canada:

- (1) no visual problems;
- (2) problems corrected by lenses (distance, close, or both);
- (3) problems seeing distance with or without correction;
- (4) problems seeing close with or without correction; and
- (5) problems seeing close and distance, or no sight at all.

In this study, we define “presenting visual impairment” as visual impairment uncorrected by lenses for near vision, distance vision, or both, or no sight at all (i.e., any of the above [3], [4], and [5]).

Other information

Apart from public insurance, data regarding age, sex, the presence of existing eye diseases, sociodemographic factors (e.g., education, household income, rural residency, and smoking status) were collected.

Information on the highest level of education achieved was obtained through responses to a series of questions that were grouped into 2 categories: less than secondary school education and greater than or equal to secondary school education.

Household income was grouped into 10 deciles by Statistics Canada based on adjusted ratio of respondents’ total household income to the low income cut-off corresponding to household and community size.¹⁴ These deciles were consolidated into 3 categories in analyses: low (decile 1–3), middle (decile 4–6), and high (decile 7–10) household income level.

Urban residency was defined, according to Statistics Canada’s definition, as an area with a population of at least

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