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# Differences in experiences with episodic virtual care based on language of comfort for healthcare services in New Brunswick, Canada

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## Abstract

**Background** Communication plays a central role in accessing healthcare, but few studies have investigated how language shapes the full continuum of access, from perceptions of the system to experiences of care. We sought to clarify how preferred language for healthcare services differentiates patterns of episodic virtual care (EVC) use and explored differences in experiences with EVC services based on the language of comfort of those who used eVisitNB in New Brunswick (NB), Canada.

**Methods** We analyzed NB residents aged 18 years and older who reported using eVisitNB in the past year using an online survey from 12/2023 to 2/2025. The survey used complex branching to achieve specificity in the questions being asked and queried on various aspects of the process of healthcare access, from perceptions and care seeking through to experiences of service use. We analysed distributions of respondent characteristics and eVisitNB use using Chi-square tests, and we constructed multivariate logistic regressions to estimate associations between visit experience measures and official language of comfort for healthcare. We analyzed free-text responses when they pertained to language of care. We stratified all analyses by official language of comfort for healthcare.

**Results** 66.0% of respondents ( $n = 1,639$ ; 68.0% female) reported their preferred language for healthcare services as English, 24.8% as French, and 9.2% as French or English. Regardless of preferred language, respondents rated perceptions and acceptable uses of eVisitNB similarly, and half reported that eVisitNB could meet their day-to-day health needs. In the past 12-months, participants who reported French as their language of comfort for health services reported the most frequent use. Respondents who prefer French were more likely to report that eVisitNB met their needs (Odds ratio, 95% Confidence interval: 2.00, 1.40–2.87), but this was challenged by free-text survey responses underscoring difficulty for French speakers to access a healthcare provider with a shared language.

**Conclusions** Findings suggest slight differences in eVisitNB experiences based on NB citizens official language of comfort for healthcare. However, paradoxical findings between quantitative and free-text responses highlight

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healthcare access inequities in language groups in NB, and underscore ongoing challenges in deploying healthcare technologies that are appropriate for citizens' language of comfort for healthcare.

**Keywords** Telehealth, eHealth, Language preference, Language minority, Virtual care

## Background

Communication plays a central role in accessing healthcare. Individuals who are not proficient in the language of the healthcare system may face important health inequities because of language barriers. When patients and healthcare providers share a language, patient assessments, examinations, diagnoses, and prescribed treatments are more accurate [1, 2]. However, language barriers increase the risk of in-hospital adverse events [3–6], poor patient assessments and misdiagnoses [7, 8], and lower quality care [7, 9]. In addition, individuals living in linguistic minority settings have a lesser likelihood of care seeking [10, 11] and care access [2, 10, 12, 13], and may have a more negative perception of the health system [14]. While there is substantial research examining patterns of healthcare access and use among minority language populations [2, 10, 12, 13, 15] there is much more limited research examining the full continuum of access, including perceptions of the health system and care seeking behaviours through to experiences of services received.

Despite significant expansion of episodic virtual care (EVC) in the hopes of facilitating primary care access [16], it is currently unclear where EVC should fit into the primary care landscape [16, 17]. In particular, EVC contrasts longitudinal primary care by providing accelerated access to a healthcare professional, but with limited care and follow-up options for ongoing conditions [18, 19]. In addition, EVC usually includes text, phone, or video consultations with a clinician delivered through an online browser or app [20], which might further exacerbate growing inequities in care access [21, 22]. Nevertheless, the extant literature highlights that patterns of EVC use are shaped by patient characteristics, medical complexity, and attachment status (e.g., having a regular place of care) [19, 23]. Despite this growing body of research examining virtual care use among individuals facing language barriers [24], no studies have been conducted to investigate how language may be associated with virtual care use, perceptions, and experiences in Canada.

New Brunswick (NB) represents an ideal context in understanding how language shapes healthcare access, since it is the only officially bilingual province in Canada [25]. This means the province recognizes both French and English as its' official languages and has laws to ensure equal language rights for its' citizens. Specifically, New Brunswick's Official Languages Act mandates that provincial health organizations (and its' extensions) have the obligation to serve its' citizens in the official language

of their choice [25]. Despite this, citizen-reported data indicate that aside from primary care, healthcare access gaps persist for NB citizens who prefer receiving their healthcare services in French [26], particularly for EVC services. Therefore, we sought to clarify how language of comfort for healthcare may differentiate between patterns of EVC use and explored differences in experiences with EVC services based on the language of comfort of those who used these services in NB.

## Methods

Data for this analysis were drawn from a cross-provincial survey of EVC use describe elsewhere [20]. Briefly, New Brunswick (NB) and Nova Scotia (NS), were chosen for this study because they are unique within Canada of their partnership with Maple, a private, for-profit virtual care platform in order to address gaps in primary care access [20]. We analysed data from NB only, given too few responses from individuals who prefer receiving their health services in French in NS ( $n = 12$ ). In NB, all residents eligible for provincial health insurance have had free access to EVC through Maple since January 2022, including people with a regular place of care.

## Participants

We included survey respondents who resided in NB aged 18 years and older, and who reported using eVisitNB in the past year. We determined eVisitNB use with the question: "Have you used free services from eVisitNB for yourself or a family member?" Response options included *Yes; No; No, I had no need; No, other reasons; Other/unsure (explain)*. Among participants who responded 'Yes', we asked a follow up question about frequency of use: "How many times have you used eVisitNB to get care for yourself or a family member in the last 12 months?" Response options included: *I haven't used these services in the last 12 months, Once, 2–3 times, 4–5 times, and 6 or more times*. To approximate the provincial population, we applied survey weights based on the most recent Census estimates in Atlantic Canada (e.g., provinces on Canada's East Coast: New Brunswick, Nova Scotia, Prince Edward Island, and Newfoundland and Labrador) for participant sex (female/male), age (age brackets: 18–29, 30–49, 50–64, 65+) and education (highest level achieved: high school or below, college or trade school, university degree).

### Data collection

The survey period spanned December 2024 to February 2025. NB residents who registered for eVisitNB services through the Maple platform in NB within the preceding 12 months (12/2023 to 01/2025) were sent the survey link by Maple. In addition, we oversampled NB residents via VoxPop Labs (a national public opinion firm) who administered the survey by sending a closed survey link to their panel members via email. VoxPop labs used quota sampling to increase representation across demographic cohorts, (i.e., gender, age, education level), among people who had and had not used eVisitNB.

### Data source

We used a pre-tested, online, bilingual (French/English), structured survey to collect data (Appendix 1). The survey collected data on primary care and EVC service use and demographic and personal characteristics. The survey used complex branching to achieve specificity in the questions being asked and queried on various aspects of the process of healthcare access, from perceptions and care seeking through to experiences of service use. Specifically, EVC use was queried by asking the frequency of EVC use, and what type of clinician delivered the latest service. Access questions surrounded what type of device was used to access the service and what kind of method was used for EVC (e.g., telephone call, video chat, text messaging, etc.). EVC experience measures queried whether the visit met user needs, and if they felt like they were treated with respect. Response options were given on Likert scales or using exclusive or exhaustive answers.

To determine participants' language of comfort for healthcare, we asked participants: "Which language are you most comfortable speaking when accessing healthcare services? If you are equally comfortable in more than one language, please select all that apply". Response options were *French, English, Mi'kmawí'simk/Mi'kmaq or Wolastoqey/Maliseet, Another language (please specify) or prefer not to answer*. Based on respondent answers, we grouped participants into one of three categories for their language of comfort for healthcare: French, French or English, and English. Participants were grouped according to their answers, and those who indicated both French and English were grouped into French or English. Participants who did not indicate an official language of comfort for healthcare or preferred not to respond were excluded from the analysis ( $n = 14$ ).

### Analysis

We analyzed survey responses descriptively (counts and percentages) to report various aspects of patients' experiences with EVC and stratified by respondent's language of comfort for healthcare. We used  $\chi^2$  tests to compare distribution of respondent characteristics and

EVC use across language strata. We constructed bivariate and multivariate logistic regression models to estimate whether respondents' official language of comfort was associated with visit experience measures, where each experience measure was stratified into two categories (e.g., Strongly Agree/Agree vs. all others). Adjusted models controlled for respondent age, gender, education, comfort with technology, self-reported health status, healthcare attachment status, ability to make ends meet, and type of living community. We performed analyses using SAS University Edition. We manually searched and analyzed free-text responses specifically relating to language of services to identify recurring themes related to dimensions of healthcare access.

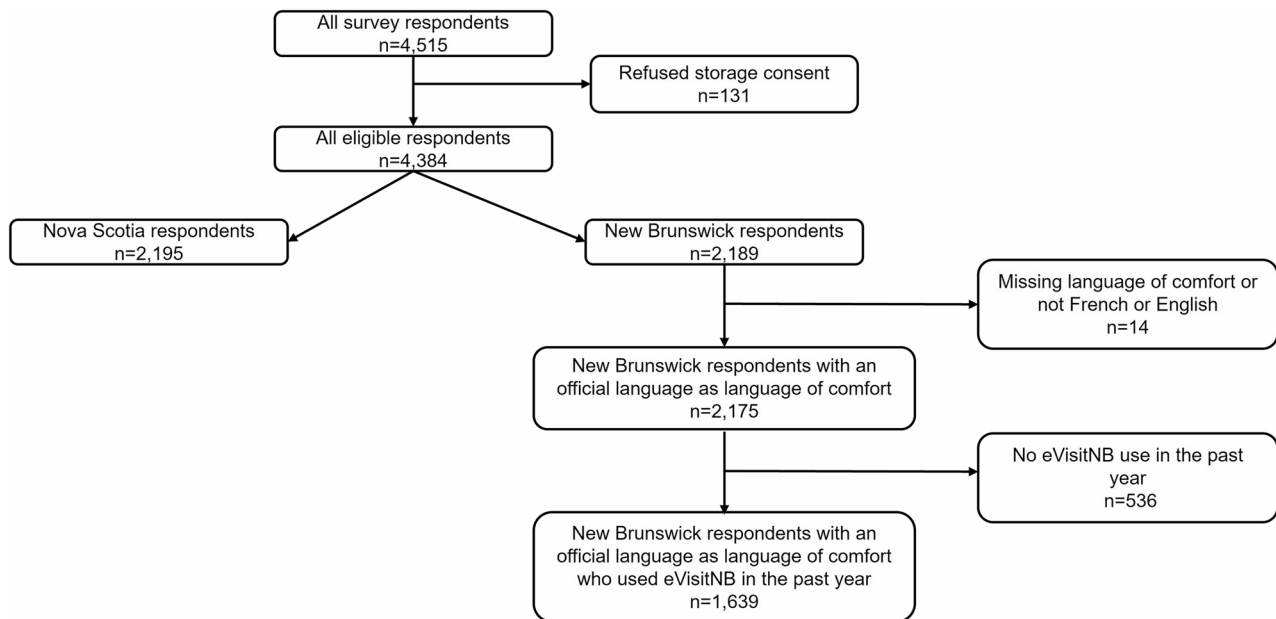
### Ethics

Research ethics board approval was received from Nova Scotia Health for activities in both NS and NB (#1030932). This research was conducted under Canada's Tri-Council Policy Statement: Ethical Conduct for research involving humans (TCPS 2) which is designed to be in accordance with the principles of the Declaration of Helsinki. Informed consent was obtained from respondents. Survey data were anonymized prior to analysis.

### Results

A total of 1,639 New Brunswick survey respondents were included in the analysis (Fig. 1). Two-thirds (66.0%) of participants reported their language of comfort for receiving healthcare as English, 24.8% as French, and 9.2% as French or English. Overall, 24.9% of all survey responses were completed in French, with 92.5% of those who indicated French as their language of comfort for healthcare responding to the survey in French. Among those equally comfortable in French or English, 68.0% responded to the survey in English. Compared to participants who are comfortable in English, those comfortable in French were younger ( $p < 0.0001$ ) and more likely to be women ( $p = 0.0027$ ; Table 1). They were also more likely to report being comfortable with technology ( $p = 0.0006$ ), rated their experience with the healthcare system in general more favourably ( $p = 0.0155$ ) and reported the most trust in the healthcare system in general ( $p < 0.0001$ ). Survey respondents who are indicate French or English as their language of comfort for healthcare were more likely to report a regular place of care (70.0%) than those comfortable in French (60.4%) or English (53.5%) ( $p = 0.0001$ ). Overall, 92.3% of participants were recruited through the link shared by Maple.

Perceptions of episodic virtual care and acceptable uses of episodic virtual care were largely similar across survey respondent language of comfort for healthcare. Most prominently, and irrespective of language, over 90% of survey respondents 'agreed/strongly agreed' that it was



**Fig. 1** Flowchart of participants included in the study sample

important for them that the clinician had access to their records, and over 80% of survey respondents reported that a virtual visit with someone who isn't their regular provider is a good option for some issues (Appendix 1, Table S1, Figure S1). Roughly half of participants 'agreed/strongly agreed' that episodic virtual care could meet day-to-day needs. Participants reported that episodic virtual care would be most acceptable for minor short-term health conditions and least acceptable for mental health concerns. The only difference between language of comfort for healthcare was that those who are comfortable in French were less likely to report that EVC was acceptable for a new prescription (Appendix 1, Table S2, Figure S2).

Participants who indicate French as their language of comfort for healthcare reported slightly more eVisitNB use, whereas those who reported who are comfortable French or English equally reported using the service mostly once (44.7%;  $p = 0.0388$ ; Table 2). The most used device to access health services were cellphones for all participants (58.8%) and the most frequent modality used during the visit was chat/text (76.7%; Table 2). Across all language strata, the most frequent uses of EVC were for short-term health concerns, prescription renewals, and a referral for a lab or diagnostic test (Appendix 1, Figure S3), whereas the most frequent outcomes of visits were a new prescription, a prescription renewal, or a new diagnosis (Appendix 1, Figure S4).

Overall, participants rated experiences with eVisitNB as positive (Appendix 1 Figures S5-S7). For all statements, the overall proportion of participants ranking 'agree' or 'strongly agree' was similar across statements and language of comfort for healthcare. However,

participants who indicate French as their language of comfort for healthcare responded 'strongly agreed' more often than those comfortable in English or French, or English. In adjusted logistic regression models (Table 3), survey respondents who are comfortable in French were more likely to report that the visit met their needs and were treated with respect than survey respondents who are comfortable in English (odds ratio (95% confidence interval) 2.00 (1.40–2.87); 2.00 (1.15–3.48), respectively). However, language of comfort for healthcare was not associated with reported ability to communicate needs.

Among free-text survey responses related to language of services, nearly all ( $n = 26/28$ ) were in French, and mostly from participants aged 25–44 years ( $n = 14$ ; Appendix 2). The most consistently identified theme was disappointment about the inability to receive the service in French ( $n = 15$ ), followed by frustrations with long wait times to access services in French ( $n = 4$ ). Ironically, both English-language comments related to clinicians who spoke 'bad English'. These comments align with the appropriateness dimension of care access, highlighting a disconnect between the service offered and patient language needs.

## Discussion

Among eVisitNB users, perception, use, and experience did not substantially differ according to survey respondent's language of comfort for healthcare. While gaps in service availability exist for linguistic minorities in NB, many of eVisitNB users who indicate French as their language of comfort for health services in French rated their experiences and perceptions of eVisitNB positively.

**Table 1** Demographic characteristics of survey respondents who used eVisitNB in the past year by official language of comfort for healthcare ( $n = 1,639$ )

|                                | French ( $n = 407$ ) | French or English ( $n = 150$ ) | English ( $n = 1,082$ ) | <i>p</i> -value | Total ( $n = 1,639$ ) |
|--------------------------------|----------------------|---------------------------------|-------------------------|-----------------|-----------------------|
| Age                            |                      |                                 |                         | <0.0001         |                       |
| 18–34                          | 67 (16.5)            | 20 (13.3)                       | 96 (8.9)                |                 | 183 (11.7)            |
| 35–44                          | 117 (28.8)           | 43 (28.7)                       | 202 (18.7)              |                 | 362 (22.1)            |
| 45–54                          | 95 (23.3)            | 34 (22.7)                       | 220 (20.3)              |                 | 349 (21.9)            |
| 55–64                          | 70 (17.2)            | 29 (19.3)                       | 258 (23.8)              |                 | 357 (21.8)            |
| 65+                            | 58 (14.3)            | 24 (16.0)                       | 306 (28.3)              |                 | 388 (23.7)            |
| Gender                         |                      |                                 |                         | 0.0027          |                       |
| Female                         | 308 (75.7)           | 104 (69.3)                      | 703 (65.0)              |                 | 1,115 (68.0)          |
| Male                           | 93 (22.9)            | 44 (29.3)                       | 636 (33.6)              |                 | 500 (30.5)            |
| Diverse/Prefer not to answer   | 6 (1.5)              | 2 (1.3)                         | 16 (1.5)                |                 | 24 (1.5)              |
| Response language              |                      |                                 |                         | < 0.0001        |                       |
| French                         | 377 (92.6)           | 49 (32.7)                       | 2 (0.2)                 |                 | 428 (26.1)            |
| English                        | 30 (7.4)             | 101 (67.3)                      | 1,080 (99.8)            |                 | 1,211 (73.9)          |
| Recruitment method             |                      |                                 |                         | 0.0498          |                       |
| Maple                          | 387 (95.1)           | 136 (90.7)                      | 990 (91.5)              |                 | 1,513 (92.3)          |
| VoxPop panel                   | 20 (4.9)             | 14 (9.3)                        | 92 (8.5)                |                 | 126 (7.7)             |
| Education                      |                      |                                 |                         | 0.2537          |                       |
| University degree              | 149 (36.6)           | 56 (37.3)                       | 379 (35.0)              |                 | 584 (35.6)            |
| Trades or college              | 128 (31.5)           | 57 (38.0)                       | 340 (31.4)              |                 | 525 (32.0)            |
| High school or below           | 42 (10.3)            | 14 (9.3)                        | 145 (13.4)              |                 | 201 (12.3)            |
| NA/prefer not to answer        | 88 (21.6)            | 23 (15.3)                       | 218 (20.2)              |                 | 329 (20.1)            |
| Self-reported health status    |                      |                                 |                         | 0.0001          |                       |
| Basic/routine                  | 362 (88.9)           | 130 (86.7)                      | 881 (81.4)              |                 | 1,373 (83.8)          |
| Complex                        | 36 (8.9)             | 15 (10.0)                       | 187 (17.3)              |                 | 238 (14.5)            |
| NA/prefer not to answer        | 9 (2.2)              | 5 (3.3)                         | 14 (1.3)                |                 | 28 (1.7)              |
| Attachment status              |                      |                                 |                         | 0.0001          |                       |
| Yes                            | 246 (60.4)           | 105 (70.0)                      | 579 (53.5)              |                 | 930 (56.7)            |
| No                             | 161 (39.6)           | 45 (30.0)                       | 503 (46.5)              |                 | 709 (43.3)            |
| Disability status              |                      |                                 |                         | 0.0007          |                       |
| Yes                            | 28 (6.9)             | 20 (13.3)                       | 163 (15.1)              |                 | 211 (12.9)            |
| No                             | 372 (91.4)           | 126 (84.0)                      | 891 (82.4)              |                 | 1,389 (84.8)          |
| NA/prefer not to answer        | 7 (1.72)             | 4 (2.7)                         | 28 (2.6)                |                 | 39 (2.4)              |
| Type of living community       |                      |                                 |                         | < 0.0001        |                       |
| Urban                          | 130 (31.9)           | 50 (33.3)                       | 361 (33.4)              |                 | 541 (33.0)            |
| Sub-urban                      | 46 (11.3)            | 26 (17.3)                       | 255 (23.6)              |                 | 327 (20.0)            |
| Rural                          | 202 (49.6)           | 70 (46.7)                       | 431 (39.8)              |                 | 703 (42.9)            |
| NA/prefer not to answer        | 29 (7.1)             | 4 (2.7)                         | 35 (3.2)                |                 | 68 (4.2)              |
| Marital status                 |                      |                                 |                         | 0.0017          |                       |
| Married / common law           | 293 (72.0)           | 105 (70.0)                      | 749 (69.2)              |                 | 1,147 (70.0)          |
| Divorced or widowed            | 26 (6.4)             | 18 (12.0)                       | 155 (14.3)              |                 | 199 (12.1)            |
| Never married                  | 69 (17.0)            | 23 (15.3)                       | 147 (13.6)              |                 | 239 (14.6)            |
| Prefer not to answer           | 19 (4.7)             | 4 (2.7)                         | 31 (2.9)                |                 | 54 (3.29)             |
| Difficulty of making ends meet |                      |                                 |                         | 0.3866          |                       |
| Never                          | 199 (48.9)           | 81 (54.0)                       | 511 (47.2)              |                 | 791 (48.3)            |
| Sometimes                      | 114 (28.0)           | 39 (26.0)                       | 331 (30.6)              |                 | 484 (29.5)            |
| Most months                    | 46 (11.3)            | 20 (13.3)                       | 136 (12.6)              |                 | 202 (12.3)            |
| NA/prefer not to answer        | 48 (11.8)            | 10 (6.7)                        | 104 (9.6)               |                 | 162 (9.9)             |
| Comfort with technology        |                      |                                 |                         | 0.0006          |                       |
| Very comfortable/ comfortable  | 348 (85.5)           | 125 (83.3)                      | 845 (78.1)              |                 | 1,318 (80.4)          |
| Uncomfortable                  | 54 (13.3)            | 22 (14.7)                       | 232 (21.4)              |                 | 308 (18.8)            |
| NA/prefer not to answer        | 5 (1.2)              | 3 (2.0)                         | 5 (0.5)                 |                 | 13 (0.8)              |
| Unmet needs                    |                      |                                 |                         | 0.8916          |                       |

**Table 1** (continued)

|                                  | French (n=407) | French or English (n=150) | English (n=1,082) | p-value  | Total (n=1,639) |
|----------------------------------|----------------|---------------------------|-------------------|----------|-----------------|
| Yes                              | 225 (55.3)     | 84 (56.0)                 | 626 (57.9)        |          | 935 (57.1)      |
| No                               | 162 (39.8)     | 56 (37.3)                 | 381 (36.1)        |          | 609 (37.2)      |
| Unsure                           | 18 (4.4)       | 9 (6.0)                   | 59 (5.5)          |          | 86 (5.3)        |
| NA                               | 2 (0.5)        | 1 (0.7)                   | 6 (0.6)           |          | 9 (0.6)         |
| Trust in the healthcare system   |                |                           |                   | < 0.0001 |                 |
| Fully trust                      | 81 (19.9)      | 13 (8.7)                  | 96 (8.9)          |          | 190 (11.6)      |
| Somewhat trust                   | 140 (34.4)     | 55 (36.7)                 | 347 (32.1)        |          | 542 (33.1)      |
| Neither trust nor distrust       | 71 (17.4)      | 21 (14.0)                 | 127 (11.7)        |          | 219 (13.4)      |
| Somewhat distrust                | 92 (22.6)      | 45 (30.0)                 | 335 (31.0)        |          | 472 (28.8)      |
| Fully distrust                   | 14 (3.4)       | 15 (10.0)                 | 166 (15.3)        |          | 195 (11.9)      |
| NA                               | 9 (2.2)        | 1 (0.7)                   | 11 (1.0)          |          | 21 (1.3)        |
| Overall experience in healthcare |                |                           |                   | 0.0155   |                 |
| Excellent                        | 24 (5.9)       | 14 (9.3)                  | 62 (5.7)          |          | 100 (6.1)       |
| Very good                        | 100 (24.5)     | 30 (20.0)                 | 207 (19.1)        |          | 337 (20.6)      |
| Good                             | 159 (39.1)     | 58 (38.7)                 | 377 (34.8)        |          | 594 (36.2)      |
| Fair                             | 88 (21.6)      | 26 (17.3)                 | 273 (25.2)        |          | 387 (23.6)      |
| Poor                             | 34 (8.4)       | 21 (14.0)                 | 154 (14.2)        |          | 209 (12.8)      |
| NA                               | 2 (0.5)        | 1 (0.7)                   | 9 (0.8)           |          | 12 (0.7)        |

Findings further highlight that only investigating patterns of access precludes understanding of the full spectrum of healthcare, from access to use to experience. Understanding how services are perceived and experienced is important to providing services that meet the needs of people who are comfortable using languages other than what is most often spoken in healthcare. Finally, results suggest that while eVisitNB can play a role in meeting healthcare needs of linguistic minorities, more focused strategies to ensure access to comprehensive care remain.

Our results help contextualise eVisitNB use in New Brunswick. Past surveys showed that less than 50% of NB citizens who prefer their healthcare in French reported access to language concordant telehealth services (e.g., eVisitNB), compared to 95% of NB citizens who prefer receiving their services in English [26]. This gap reflects multiple public complaints [27, 28] and has resulted in investigations by the Office of the Commissioner of Official Languages [29]. While survey free-text responses echo complaints of limited access to eHealth services in French, results from the survey suggest that when users can get an appointment, experiences are rated positively. However, it is crucial to keep in mind that in our sample, those who indicate French as their language of comfort for healthcare were younger, and more comfortable with technology, which may have influenced positive ratings. At the same time, people comfortable with technology are also likely to be overrepresented among EVC users, our population of focus, and by extension, biased towards younger age groups. This also does not adequately represent the average Francophone in NB, who are typically older, less educated, live in rural areas, and have reported

poorer experiences with the healthcare system. Nevertheless, the sample may reflect a segment of the population for whom EVC services may be a viable and important care pathway, corroborating findings from British Columbia [23]. In addition, our data collection did not capture NB citizens who tried to use eVisitNB but were unable to access care in their preferred language and subsequently stopped trying, nor did we record the language in which the consultation took place. More in-depth research would be required to tease out the frequency of language concordant care in New Brunswick. Explicitly, phenomenological studies should be conducted to better understand how and why bilingual NB citizens choose which language to use in certain situations.

This analysis provides insight into perceptions, care seeking behaviours, and experiences of NB citizens who used eVisitNB services in the past year according to their language of comfort for healthcare. Survey respondents perceived virtual care as useful and reported reasons for consultation mostly in line with expected use of virtual care (e.g., minor short term health concerns) [30, 31]. However, survey respondents most commonly reported that visits resulted in a new prescription, a prescription renewal, or a new diagnosis. Given that new diagnoses were a common outcome for a virtual visit underscores the need for further study, especially considering that three quarters of visits in our survey were carried out exclusively via text messaging. Whereas previous research has often focused on synchronous phone or video encounters with a known clinician [31–33], survey respondents overwhelmingly reported that informational continuity (e.g., that it is important that the clinician

**Table 2** eVisitNB use by language of comfort for healthcare ( $n = 1,639$ )

|                                     | French only ( $n = 407$ ) | French or English ( $n = 150$ ) | English only ( $n = 1,082$ ) | <i>p</i> -value | Total ( $n = 1,639$ ) |
|-------------------------------------|---------------------------|---------------------------------|------------------------------|-----------------|-----------------------|
| eVisitNB use (past 12-months)       |                           |                                 |                              | 0.0388          |                       |
| Once                                | 139 (34.2)                | 67 (44.7)                       | 438 (40.5)                   |                 | 644 (39.3)            |
| 2–3 times                           | 186 (45.7)                | 60 (40.0)                       | 480 (44.4)                   |                 | 726 (44.3)            |
| 4–5 times                           | 58 (14.3)                 | 13 (8.7)                        | 124 (11.5)                   |                 | 195 (11.9)            |
| 6 or more times                     | 24 (5.9)                  | 10 (6.7)                        | 40 (3.7)                     |                 | 74 (4.5)              |
| Needed help to navigate             |                           |                                 |                              | 0.9343          |                       |
| Yes                                 | 67 (16.5)                 | 26 (17.3)                       | 186 (17.2)                   |                 | 273 (17.0)            |
| No                                  | 338 (83.1)                | 124 (82.7)                      | 891 (82.4)                   |                 | 1,353 (82.6)          |
| Device used                         |                           |                                 |                              | 0.0051          |                       |
| Cellphone                           | 253 (62.8)                | 102 (68.5)                      | 606 (56.0)                   |                 | 961 (58.8)            |
| Computer/laptop                     | 59 (14.6)                 | 28 (18.8)                       | 247 (22.8)                   |                 | 334 (20.4)            |
| Tablet                              | 33 (8.2)                  | 6 (4.0)                         | 91 (8.4)                     |                 | 130 (8.0)             |
| Landline                            | 6 (1.5)                   | 0                               | 11 (1.0)                     |                 | 17 (1.0)              |
| Multiple                            | 52 (12.9)                 | 13 (8.7)                        | 127 (11.7)                   |                 | 192 (11.8)            |
| Method used during visit            |                           |                                 |                              | 0.5862          |                       |
| Video                               | 9 (2.2)                   | 3 (2.0)                         | 27 (2.5)                     |                 | 39 (2.4)              |
| Audio/phone call                    | 139 (8.5)                 | 11 (7.3)                        | 100 (9.3)                    |                 | 139 (8.5)             |
| Chat/text                           | 314 (77.7)                | 112 (74.7)                      | 823 (76.6)                   |                 | 1,249 (76.7)          |
| Multiple                            | 53 (13.1)                 | 24 (16.0)                       | 125 (11.6)                   |                 | 202 (12.4)            |
| Clinician who delivered the visit   |                           |                                 |                              | 0.0596          |                       |
| Doctor                              | 31 (7.6)                  | 15 (10.0)                       | 60 (5.6)                     |                 | 106 (6.5)             |
| Nurse practitioner                  | 310 (76.2)                | 118 (78.7)                      | 892 (82.4)                   |                 | 1,320 (80.5)          |
| Unsure                              | 62 (15.2)                 | 17 (11.3)                       | 124 (11.5)                   |                 | 203 (12.4)            |
| Previous contact with the clinician |                           |                                 |                              | < 0.0001        |                       |
| Yes                                 | 45 (11.1)                 | 5 (3.3)                         | 28 (2.6)                     |                 | 78 (4.8)              |
| No                                  | 345 (84.8)                | 140 (93.3)                      | 1,005 (92.9)                 |                 | 1,490 (90.9)          |
| Unsure                              | 16 (3.9)                  | 5 (3.3)                         | 42 (3.9)                     |                 | 63 (3.8)              |
| Self-reported urgency of care       |                           |                                 |                              | 0.048           |                       |
| Emergency                           | 3 (0.7)                   | 0                               | 15 (1.4)                     |                 | 18 (1.1)              |
| Within 24 h                         | 139 (34.2)                | 54 (36.0)                       | 330 (30.5)                   |                 | 523 (31.9)            |
| Within 24–48 h                      | 133 (32.7)                | 46 (30.7)                       | 314 (29.0)                   |                 | 493 (30.1)            |
| Within a week                       | 66 (16.2)                 | 20 (13.3)                       | 207 (19.1)                   |                 | 293 (17.9)            |
| A week or more                      | 57 (14.0)                 | 30 (20.0)                       | 203 (18.9)                   |                 | 290 (17.7)            |

**Table 3** Unadjusted and adjusted odds ratios and 95% confidence intervals for visit experiences by survey respondent's official language of comfort for healthcare ( $n = 1,484$ )

|                   | I was able to communicate my needs |                       | I was treated with respect        |                                   | The visit met my needs            |                                   |
|-------------------|------------------------------------|-----------------------|-----------------------------------|-----------------------------------|-----------------------------------|-----------------------------------|
|                   | Unadjusted                         | Adjusted <sup>a</sup> | Unadjusted                        | Adjusted <sup>a</sup>             | Unadjusted                        | Adjusted <sup>a</sup>             |
| English           | 1.00                               | 1.00                  | 1.00                              | 1.00                              | 1.00                              | 1.00                              |
| French            | <b>1.81</b><br><b>(1.20–2.72)</b>  | 1.46<br>(0.94–2.25)   | <b>1.95</b><br><b>(1.19–3.19)</b> | <b>2.00</b><br><b>(1.15–3.48)</b> | <b>1.99</b><br><b>(1.44–2.77)</b> | <b>2.00</b><br><b>(1.40–2.87)</b> |
| French or English | 0.99<br>(0.59–1.66)                | 0.83<br>(0.47–1.45)   | 1.85<br>(0.88–3.88)               | 1.89<br>(0.84–4.28)               | 1.29<br>(0.84–2.00)               | 1.25<br>(0.78–2.01)               |

<sup>a</sup>Adjusted for age, gender, education, comfort with technology, self-reported health status, attachment status, ability to make ends meet, and rurality; bold represents statistical significance

has access to my records) was very important to them. Despite this, and as currently deployed, EVC clinicians do not have access to a patients' records. While ongoing interoperability efforts [34, 35] may help curb potential diagnosis-related harm, careful thought into integration of and access to patient records will need to be fleshed out. Until comprehensive information systems are implemented, the question whether lack of access to a patients'

clinical history has an impact on potential overprescribing or misdiagnoses from visits with eHealth professionals remains. Further, the quality of care resulting from a text-based conversation on symptoms merits further investigation [31].

The current work also underlines the importance of specifically naming language as a core variable within current frameworks of healthcare access [36].

Specifically, the Levesque et al. conceptual framework for healthcare access highlights important components in care seeking behaviours and access to healthcare, but while implicit, language is not named specifically as a component in the model [36]. Language intersects multiple dimensions of access through its relationship with culture, geography, personal and social values, as well as health literacy, health communication, and health beliefs. This necessarily influences the perceptions of needs and desire for healthcare and may inadvertently influence, in the case of New Brunswick specifically, healthcare reaching behaviours (e.g., Francophones report inability to access a French-speaking provider; French free-text responses reported switching to English services to receive faster care). Moreover, New Brunswick represents an interesting context for studying language dynamics in healthcare, as referenced by the disparity in language-concordance among language of comfort and language used to respond to the survey (e.g., 7.4% of respondents who are most comfortable receiving healthcare in French responded to the survey in English, whereas 67.3% of those equally comfortable in both languages responded in English). This may be particularly important in understanding cases where a Francophone may report preferring their services in English if they only experience poor quality of care in French or have lower access to language concordant care. Therefore, identifying where language fits into healthcare access pathways is required, and minimally, language should be named as a central variable within conceptual models of healthcare access to facilitate further research.

It is likely that our sample represents a selection bias of individuals who have had a positive experience with eVisitNB and continued using the service while under-representing NB citizens who tried to access eVisitNB but were unable to connect with a care provider in their language of comfort and stopped using the service. Many free-text responses indicated increased time burden leading to frustration and lower access when selecting French as the language of service. More information on how these platforms are staffed (e.g., clinician mix (e.g., physicians/nurse practitioners), language preferences and skills) would allow more comprehensive analysis of patient experience. In addition, we were unable to measure if services received were obtained in the participants' language of comfort, which could have further helped contextualise our results. Furthermore, despite including both official languages in our survey, a small proportion of all participants reported being comfortable in a language other than French or English for their health services. Therefore, considering that the number of individuals who do not speak French or English is likely to increase, more targeted research and needs assessments of language in healthcare are necessary to facilitate equity

in the healthcare system. Our team did not have access to the total number of panel members and patients who received the survey link, which precluded our ability to calculate a response rate to the survey. Existing literature points to more negative healthcare experiences among linguistic minorities, but no formal a priori sample size calculations were conducted and no adjustments for multiple comparisons were performed. Therefore, findings should be interpreted with appropriate caution. We nevertheless weighted the sample using gender, age, and education to better represent the provincial population. Finally, the question used to determine language of comfort for healthcare was more general and not specific to EVC. Having asked about linguistic preference specifically for EVC may have been more germane with the aims of the study and could have provided an opportunity to better tease out experience outcomes of EVC use.

## Conclusions

This study highlighted only slight differences in eVisitNB use and experiences based on NB citizens official language of comfort for healthcare. Results support that EVC can represent a viable option for care for certain health conditions, if individuals have the skills necessary to access the services. Assessments of the adequacy of care received and alternative options for those who do not speak French or English are required before fully integrating EVC within the current healthcare system.

## Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12875-026-03329-y>.

Supplementary Material 1.

Supplementary Material 2.

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Not applicable.

## Authors' contributions

MRL conceived the study and designed the survey. FG, MRL identified analysis objectives. FG drafted the manuscript and conducted the analyses. FG, MRL, EF, JM interpreted the results and read and approved the final manuscript.

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## Data availability

Data are available upon reasonable request to [ruth.lavergne@dal.ca](mailto:ruth.lavergne@dal.ca).

## Declarations

### Ethics approval and consent to participate

Research ethics board approval was received from Nova Scotia Health for activities in both NS and NB (#1030932). This research was conducted under Canada's Tri-Council Policy Statement: Ethical Conduct for research involving humans (TCPS 2) which is designed to be in accordance with the principles of

the Declaration of Helsinki. Informed consent was obtained from respondents. Survey data were anonymized prior to analysis.

#### Consent for publication

Not applicable.

#### Competing interests

The authors declare no competing interests.

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