

# The influence of patient–clinician ethnocultural and language concordance on continuity and quality of care: a cross-sectional analysis

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## Abstract

**Background:** Concordance refers to shared characteristics between a clinician and patient, such as ethnicity or language. The purpose of this study was to examine whether patient–clinician concordance is associated with patient-reported continuity of care (relational, informational and management) and patient-reported impacts of care (quality and empowerment).

**Methods:** This is a secondary analysis of cross-sectional patient surveys that were administered across British Columbia, Manitoba and Quebec using random digit dialling. Participants were adults who spoke English, French, Mandarin, Cantonese or Punjabi and who had visited a primary care clinician in the previous 12 months ( $n = 3156$ ). Patients self-identified as being of European, Chinese, South Asian and Indigenous descent. Outcome measures included patients' perceptions of continuity, quality and empowerment. Adjusted logistic regression models and odds ratio were generated.

**Results:** More than 64% of non-Indigenous respondents reported ethnocultural concordance. Ethnocultural concordance was associated with higher odds of relational and management continuity. This same pattern held when there was both ethnocultural and language concordance. No association was found between language concordance and any outcome measure. Chinese participants reported lower quality (odds ratio [OR] 0.24, 95% confidence interval [CI] 0.12–0.48), as did South Asian participants (OR 0.17, 95% CI 0.09–0.31) than did participants of European descent.

**Interpretation:** Higher relational and management continuity is more likely with the presence of patient–clinician ethnocultural and language concordance. Lower continuity and quality reported by Chinese and South Asian participants could indicate important health care disparities.

Gaps in health care may, in part, be attributable to cultural or linguistic incongruity between patients and clinicians. Most Canadian family clinicians were born in Canada and speak English or French; about 23% of clinicians graduated outside Canada, mainly in European countries, followed by African and Asian countries.<sup>1</sup> Much of Canada's population growth comes from the high number of immigrants; 200 000–250 000 people are admitted to Canada each year.<sup>2</sup> In 2016, 22% of the Canadian population declared a language other than English or French as their preferred language,<sup>3</sup> with 23% of new residents reporting not having literacy in either of Canada's official languages.<sup>4</sup> The largest sources of immigrants to Canada are from Asia, particularly the Philippines, India and China.<sup>4</sup> Indigenous peoples (the original peoples of North America and their descendants) constitute 4% of the total Canadian population, 25% of whom can carry out a conversation in an Indigenous language, but most of whom speak English or French.<sup>5</sup> People of non-European descent are more likely to have poor health

outcomes, given multiple intersecting factors including worse health care experiences<sup>6,7</sup> and historical and ongoing forms of structural violence.<sup>8</sup> Patient–clinician discordance might contribute to health care disparities because of the potential to negatively impact the patient–clinician interaction.<sup>9</sup> Health care in countries including the United States<sup>10</sup> and United Kingdom<sup>11</sup> have been challenged by ethnic, lingual, cultural and social discordant relationships.<sup>12</sup>

Concordance is most often defined as similarities or characteristics between a clinician and patient based on demographic attributes.<sup>13</sup> Greater concordance may be perceived by patients

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if they have additional commonalities with their clinician such as similar values, communication styles or shared experiences. The use of trained interpreters during health care consultation is one strategy for overcoming linguistic barriers;<sup>14</sup> however, an “optimal situation” would include language concordance (i.e., the clinician speaking the patient’s first language). Previous studies suggest that the use of an interpreter could compromise certain aspects of patient–clinician communication,<sup>10,15</sup> which could lead to less than ideal clinical outcomes.<sup>14</sup>

Continuity of care is considered a core attribute of a high-performing primary care system,<sup>16</sup> essential for delivering high-quality patient care<sup>17,18</sup> and an important result of the patient-centred medical home.<sup>19</sup> It is defined as patients experiencing care that is connected and coherent, over time, with their health needs being met. Continuity of care can be understood as the result of care coordination, consisting of 3 interrelated types:<sup>20,21</sup> relational, informational and management. Patients’ experiences in primary care are positively associated with their confidence, activation and empowerment to manage their own health.<sup>22–25</sup> Patients who are empowered influence their own health outcomes,<sup>25</sup> are more likely to seek care when necessary and are more likely to adhere to recommended treatments.<sup>26–31</sup> Evidence that supports patient–clinician ethnocultural concordance with positive health outcomes for ethnic minorities remains inconclusive.<sup>9,32</sup> No work has examined the relationship among concordance, continuity of care and patient empowerment. The purpose of this study is to examine whether patient–clinician concordance is associated with patient-reported continuity of care (relational, informational and management) and patient-reported impacts of care (quality and empowerment).

## Methods

### Study design and participants

This is a secondary analysis of a cross-sectional telephone-administered survey, with data collected between January and June 2011, to measure patient experiences and effects of primary health care across different ethnic and linguistic groups. The study was originally designed to enrol 3000 participants to assess the reliability and validity of the items and scales used to measure patients’ experiences in primary care. The survey was pilot tested in a smaller sample of Mandarin/Cantonese-speaking ( $n = 121$ ) and Punjabi-speaking ( $n = 131$ ) participants to ensure operational equivalence (e.g., administration using low-literacy terms and correct skip patterns). The development and use of the questionnaire is described in more detail elsewhere.<sup>22</sup> Participants from 3 provinces answered the survey: British Columbia (West Coast), Manitoba (Prairies) and Quebec (East Coast).

Participants were recruited using random digit dialling. A random sample of telephone numbers was obtained from each province’s census divisions, based on relative population for the selection of participants. For example, the Greater Vancouver Regional District (GVRD) contained 51% of BC’s population, thus the same percentage of the sample was drawn from the GVRD. To increase the probability of contacting people speaking either Mandarin, Cantonese or Punjabi, we

oversampled telephone numbers in census divisions where there was a high likelihood of speaking these languages at home. We also oversampled Chinese and South Asian households where the listed surname for the telephone number matched the list of Chinese or South Asian surnames maintained by ASDE, which maintains the ASDE Survey Sampler.<sup>33</sup> Computer-assisted telephone interviews were conducted in English, French, Mandarin, Cantonese and Punjabi.

### Data collection procedures

Using a standard telephone script, one adult per household was randomly selected by the interviewer asking to speak to the adult with the next birthday. Eligibility criteria included age 19–90 years, speaking 1 of the 5 languages, no cognitive impairments and having visited a family physician or nurse practitioner in the preceding 12 months. Cognitive impairment was assessed as follows: repeating 3 words back to the interviewer, and stating the correct date of the interview, Canada’s current prime minister and the current US president. Verbal consent was obtained from each participant.

### Measures

Independent variables of interest were patient–clinician concordance (ethnocultural and language, separately and combined) and the patient’s ethnocultural group. Participants self-identified their ethnocultural background by selecting their country of origin. Participants who self-identified as Canadian were asked about the origins of their ancestors who first came to North America. Participants were categorized into 4 ethnocultural groups: European, Chinese, South Asian and Indigenous peoples (including First Nations, Métis and Inuit). Respondents who did not identify with any of these ethnocultural groups were excluded ( $n = 28$ ).

Ethnocultural concordance was determined by patients reporting that their regular clinician was from the same ethnocultural background as they were. Language concordance was defined as the same language most comfortably spoken by the patient and clinician. We categorized language concordance only for French, Punjabi and Mandarin/Cantonese; we assumed that patients who spoke English at home also did so during their health care consultation.

Outcome variables were patient-reported continuity of care and patient-reported impacts of care<sup>34,35</sup>: overall quality of care<sup>36</sup> and patient empowerment (Appendix 1, available at [www.cmajopen.ca/content/6/3/E276/suppl/DC1](http://www.cmajopen.ca/content/6/3/E276/suppl/DC1))<sup>37</sup>. The empowerment scale consists of 6 items such that a higher score indicates a higher level of empowerment. The scale was originally developed by Stewart and colleagues<sup>35</sup> and tested among US-based samples. The internal consistency reliability in this sample was 0.88.

Potential confounders included sex, age, province (BC, Manitoba and Quebec), level of education (less than high school, completed high school, some university or completed college, completed undergraduate degree and completed graduate degree), yearly household income (< Can\$10 000, Can\$10 001–30 000, Can\$30 001–50 000, Can\$50 001–80 000, Can\$80 001–100 000 and > Can\$100 000), born in

Canada and self-rated health status (excellent/very good, good and fair/poor). We also considered the potentially confounding effects of patient–clinician sex concordance and other variables related to patient-reported experiences of care; accessibility (ability to obtain routine and urgent care: the same day, next working day, 2–3 working days,  $\geq 4$  working days), interpersonal communication (clinician speaks too fast, uses words hard to understand: never/rarely, sometimes, usually/always) and continuity of care (to control for potential influencing effect on quality of care and empowerment).

### Data analysis

Descriptive statistics characterize the sample by patient–clinician concordance. Missing data were very low for sociodemographic items, with the highest amount of missing data being income (10% missing, 3% did not know). For ethnocultural patient–clinician concordance, 4.3% of data were missing and less than 1% was missing for language concordance. Missing data for outcome variables ranged from less than 1% to 16.4% (first-contact accessibility: urgent care).

A series of logistic regression models were generated to examine the relationships between patient–clinician ethnocultural and language concordance, patient's ethnocultural group and (i) continuity of care and (ii) quality of care and empowerment. For the outcome variables, Likert scales were recoded into dichotomous measures (0 = good, fair and poor; 1 = excellent and very good). The item measuring management continuity was also dichotomized (0 = never; 1 = once or more). For each outcome measure, a logistic regression model was created, where European descent was taken as the reference group, and the other relevant variables (including patient–clinician concordance) were added as covariates in the same model. Thus, in each model, the patient's ethnocultural groups were adjusted for patient–clinician concordance and vice versa. All models were further adjusted for patient-reported experiences of care and sociodemographic characteristics and excluded respondents with missing data. Adjusted odds ratios (ORs) with 95% confidence intervals (CIs) are reported.

We analyzed the interaction effect between ethnocultural group and concordance in all models. These models were not significant, therefore, we report only the results for the simpler model. Statistical analyses were done using RStudio version 1.0.136.<sup>38</sup>

### Ethics approval

The study was approved by the research ethics board of the University of British Columbia.

### Results

A total of 3156 participants are included in this analysis. Response rates to the original interview ranged from 25% (European descent) to 50% (Chinese). Reasons for non-response included an out-of-service telephone number, no answer and refusal. Once potential participants responded to the telephone interviewer, the cooperation rate ranged from 79% (South Asian) to 94% (Chinese). Most participants were

of European descent ( $n = 2358$ , 75%), followed by South Asian ( $n = 352$ , 11%), Chinese ( $n = 329$ , 10%) and Indigenous ( $n = 117$ , 4%). Most South Asian (90%) and Chinese (73%) participants were from BC, whereas most of the Indigenous participants lived in Quebec or Manitoba (84%). More Chinese, South Asian and Indigenous participants reported lower educational attainment and lower income (Can\$30 000 or less) compared with those of European descent. Although 72% of participants were born in Canada, there were much smaller percentages of Canadian-born participants in the Chinese (5%) and South Asian (4%) groups. More than half (56%) of the participants with European descent rated their health as excellent or very good, followed by Indigenous (43%), South Asian (35%) and Chinese (25%) participants.

Sociodemographic characteristics by concordance group are shown in Table 1, where language concordance is high (93%), with fewer reaching ethnocultural concordance (63%). Just over half (54%) of the Chinese and South Asian participants reported ethnocultural and language concordance.

Table 2 shows participants' reports of their experiences and impacts of primary care. There were differences in patient experiences of care between patient–clinician concordant groups, but with no consistent pattern. Most patients with a clinician of the same ethnocultural and linguistic background were able to access care within a timely manner and reported fewer interpersonal communication difficulties. Although 94% patients who experienced concordance reported having a regular provider, almost one-third (28%) reported that their clinician had only good, fair or poor accumulated knowledge of them and 24% were sometimes, rarely or never up-to-date with information regarding any specialist care.

Three-quarters of participants rated the quality of primary care as excellent or very good, and almost 60% of patients with an ethnoculturally concordant provider reported being always or usually empowered by their clinician. The regression models show that ethnocultural concordance was significantly associated with higher adjusted odds of both measures of relational and management continuity. This same pattern held when there was both ethnocultural and language concordance. Compared with those of European descent, Chinese patients reported lower accumulated knowledge by their regular clinician about their medical history, worse information transfer and poorer primary care follow-up after a specialist visit but fewer duplicate tests (Table 3).

Adjusted models for patient-reported impacts of care are shown in Table 4. Notably, the significant association between patient–clinician concordance and impacts of care were attenuated by all 3 patient-reported experiences of care (first-contact accessibility, interpersonal communication and continuity of care). Chinese and South Asian participants reported significantly lower quality of care compared with those of European descent. Neither patient–clinician concordance nor ethnocultural group were related to patient-reported experiences of care. Better reports of relational and informational continuity are more closely related to better reports of quality and empowerment compared with those for accessibility or communication.

### Interpretation

Our results suggest that most of the participants in this study reported ethnocultural and language concordance with their primary care provider. Patients who belonged to a minority group in the US and had the ability to choose their primary

care clinician were more likely to have a clinician from the same ethnocultural background.<sup>39-41</sup> Our results further suggest that ethnocultural and language concordance were associated with higher odds of relational and management continuity. However, Chinese and South Asian patients reported receiving lower quality of care than patients of European descent.

**Table 1: Sociodemographic characteristics of participants (n = 3156) in total sample and by patient-clinician concordance group**

Characteristic	No. (%) <sup>*</sup>			
	Total n = 3156	Ethnocultural concordance <sup>†</sup> n = 1915	Language concordance <sup>‡</sup> n = 2912	Ethnocultural and language concordance <sup>§</sup> n = 1824
<b>Ethnocultural group</b>				
European descent	2358 (74.7)	1423 (63.6)	2334 (99.0)	1410 (63.0)
Chinese	329 (10.4)	202 (64.5)	229 (70.2)	170 (54.8)
South Asian	352 (11.2)	234 (66.9)	232 (66.7)	188 (54.3)
Indigenous	117 (3.7)	56 (47.9)	117 (100.0)	56 (47.9)
<b>Province</b>				
British Columbia	1169 (37.0)	756 (68.2)	1007 (86.6)	688 (62.4)
Manitoba	992 (31.4)	421 (45.0)	992 (100.0)	421 (45.0)
Quebec	995 (31.5)	738 (75.8)	913 (91.9)	715 (73.6)
Female sex	1803 (57.1)	1084 (63.1)	1661 (92.3)	1033 (60.3)
Age, yr, mean ± SD <sup>¶</sup>	54.2 ± 14.8	55.3 ± 14.7	54.6 ± 14.8	55.6 ± 14.6
Level of education <sup>‡</sup>	334 (10.6)			
Less than high school	670 (21.3)	233 (71.5)	303 (91.0)	224 (68.9)
Completed high school	986 (31.4)	440 (68.8)	629 (94.3)	423 (66.4)
Some university or completed college	719 (22.9)	539 (57.3)	937 (95.1)	515 (54.8)
Completed undergraduate degree	430 (13.7)	446 (64.4)	632 (88.3)	415 (60.1)
Completed graduate degree		252 (62.1)	395 (91.9)	242 (59.6)
<b>Yearly household income<sup>**</sup></b>				
< Can\$10 000	126 (4.6)	85 (69.7)	112 (88.9)	78 (63.9)
Can\$10 001–30 000	615 (22.4)	391 (66.2)	572 (93.8)	375 (64.0)
Can\$30 001–50 000	637 (23.2)	398 (65.0)	581 (91.4)	376 (61.5)
Can\$50 001–80 000	588 (21.5)	374 (66.1)	555 (94.4)	361 (63.8)
Can\$80 001–100 000	285 (10.4)	153 (56.5)	261 (91.6)	146 (53.9)
> Can\$100 000	489 (17.8)	294 (62.3)	465 (95.1)	282 (59.7)
Born in Canada	2256 (71.6)	1368 (63.7)	2227 (98.8)	1353 (63.0)
<b>Self-rated health status<sup>‡</sup></b>				
Excellent or very good	1568 (49.7)	930 (62.3)	1479 (94.6)	894 (60.1)
Good	962 (30.5)	593 (64.0)	875 (91.0)	564 (60.9)
Fair or poor	622 (19.8)	389 (65.2)	555 (89.8)	363 (61.2)

Note: Percentages in the Total column sum to 100% for each characteristic, whereas the remaining 3 columns show percentages of existing patient-physician concordance in parentheses. SD = standard deviation.  
<sup>\*</sup>Unless otherwise indicated  
<sup>†</sup>4.3% missing.  
<sup>‡</sup>< 1% missing.  
<sup>§</sup>4.6% missing.  
<sup>¶</sup>8.0% missing.  
<sup>\*\*</sup>13.2% missing.

Patient–clinician ethnocultural and language concordance was associated with 2 types of continuity: relational and management. With reference to relational continuity, past work has identified associations between different types of concordance and specific elements of the patient–clinician relationship, such as communication<sup>42–45</sup> or trust.<sup>13,46</sup> This study further substantiates that the patient–clinician relationship is strengthened when patients perceive shared commonalities with their clinician, such as personal beliefs, values, communi-

cation<sup>13</sup> and shared experiences. This may explain why concordant patients rate their primary care clinician as excellent<sup>47</sup> and are satisfied with their overall health care.<sup>41,47–49</sup> With regard to management continuity, the association between ethnocultural and language concordance and the unnecessary duplication of tests and procedures was unique. We suggest that an interrelationship between the types of continuity of care, particularly relational continuity enhancing the other types,<sup>50</sup> might contribute to this finding. A recent study across

**Table 2 (part 1 of 2): Patient-reported experiences (first-contact accessibility, interpersonal communication and continuity of care) and impacts of care (overall quality of care, patient empowerment) by patient–clinician concordance group**

Characteristic	No. (%)			
	Total n = 3156	Ethnocultural concordance* n = 1915	Language concordance† n = 2912	Ethnocultural and language concordance‡ n = 1824
<b>Patient-reported experiences of care</b>				
<b>First-contact accessibility</b>				
Routine care§				
Same day	431 (14.8)	258 (14.4)	386 (14.3)	237 (13.8)
Next working day	308 (10.5)	207 (11.5)	280 (10.4)	194 (11.3)
Between 2 and 3 working days	561 (19.2)	308 (17.2)	509 (18.8)	293 (17.1)
4 or more working days	1603 (55.5)	1022 (56.9)	1528 (56.6)	990 (57.8)
Urgent care¶				
Same day	1243 (47.1)	767 (47.3)	1136 (46.6)	724 (47.0)
Next working day	451 (17.1)	279 (17.2)	406 (16.7)	262 (17.0)
Between 2 and 3 working days	399 (15.1)	225 (13.9)	376 (15.4)	213 (13.8)
4 or more working days	545 (20.6)	349 (21.5)	520 (21.4)	343 (22.2)
<b>Interpersonal communication</b>				
Physician speaking too fast††				
Never, rarely	2795 (89.4)	1738 (91.3)	2607 (90.3)	1670 (92.0)
Sometimes	230 (7.4)	116 (6.1)	195 (6.8)	103 (5.7)
Usually, always	102 (3.3)	50 (2.6)	86 (3.0)	42 (2.3)
Physician using words hard to understand‡				
Never, rarely	2826 (90.3)	1770 (92.8)	2637 (91.2)	1695 (93.2)
Sometimes	267 (8.5)	123 (6.4)	221 (7.6)	111 (6.1)
Usually, always	37 (1.2)	14 (0.7)	32 (1.1)	12 (0.7)
<b>Continuity of care</b>				
<b>Relational continuity</b>				
Concentrated care with regular provider**				
Always, usually	2833 (91.4)	1776 (93.9)	2631 (92.0)	1700 (94.3)
Sometimes	132 (4.3)	60 (3.2)	110 (3.8)	54 (3.0)
Rarely, never	133 (4.3)	55 (2.9)	118 (4.1)	49 (2.7)
Accumulated knowledge‡‡				
Excellent, very good	2073 (67.1)	1353 (71.5)	1962 (68.6)	1308 (72.4)
Good	595 (19.3)	342 (18.1)	522 (18.3)	320 (17.7)
Fair, poor	422 (13.7)	196 (10.4)	375 (13.1)	179 (9.9)

**Table 2 (part 2 of 2): Patient-reported experiences (first-contact accessibility, interpersonal communication and continuity of care) and impacts of care (overall quality of care, patient empowerment) by patient–clinician concordance group**

Characteristic	No. (%)			
	Total n = 3156	Ethnocultural concordance* n = 1915	Language concordance† n = 2912	Ethnocultural and language concordance‡ n = 1824
<b>Informational continuity</b>				
Information transfer‡‡				
Always, usually	1534 (73.5)	967 (75.1)	1454 (74.6)	933 (75.7)
Sometimes	199 (9.5)	112 (8.7)	180 (9.2)	107 (8.7)
Rarely, never	353 (16.9)	208 (16.2)	316 (16.2)	193 (15.7)
<b>Management continuity</b>				
No duplication of tests**				
0 duplication	2903 (93.7)	1784 (94.3)	2672 (93.6)	1700 (94.4)
1 or 2 duplications	153 (4.9)	85 (4.5)	144 (5.0)	79 (4.4)
3 or more duplications	42 (1.4)	22 (1.2)	40 (1.4)	21 (1.2)
Primary care follow-up§§				
Yes	1362 (60.9)	833 (62.1)	1289 (61.4)	799 (62.3)
No	875 (39.1)	509 (37.9)	810 (38.6)	484 (37.7)
<b>Patient-reported impacts of care</b>				
Quality of care¶¶				
Excellent, very good	2135 (71.0)	1361 (73.5)	2064 (73.6)	1323 (75.0)
Good	559 (18.6)	326 (17.6)	472 (17.0)	299 (16.9)
Fair, poor	315 (10.5)	164 (8.9)	261 (9.4)	143 (8.1)
Patient empowerment‡‡‡				
Always, usually	1735 (55.5)	1100 (57.7)	1640 (56.8)	1060 (58.4)
Sometimes	622 (19.9)	356 (18.7)	570 (19.8)	339 (18.7)
Rarely, never	768 (24.6)	449 (23.6)	676 (23.4)	416 (22.9)
*4.3% missing. †< 1% missing. ‡4.6% missing. §7.4% missing. ¶16.4% missing. **1.8% missing. ‡‡2.1% missing. ‡‡‡2.3% missing and 31.6% did not see a specialist. §§29.1% did not see a specialist. ¶¶14.7% missing.				

11 countries found that an established patient–clinician relationship was significantly associated with patients’ reporting better care coordination, including no duplication of tests.<sup>51</sup> Decreased clinician continuity is also associated with an overall increase in overuse of unnecessary tests.<sup>50,52,53</sup>

Regardless of patient–clinician concordance, Chinese and South Asian participants, most of whom were immigrants, reported much lower quality of care, which is similar to a previous study conducted only in British Columbia.<sup>54</sup> Although health care inequities are documented for these groups in the US<sup>24,25</sup> and UK,<sup>55</sup> more work is needed to examine why these groups report lower quality of care despite having concordant

consultations. Those with experience in Chinese or South Asian health care systems could perceive that having to use primary care first, before seeing a specialist, is not desirable. People in China tend to use hospital outpatient services even for minor illnesses, which is evidence of low trust in the primary care system.<sup>56,57</sup>

**Limitations**

This is a cross-sectional study where causation cannot be inferred, and a secondary analysis of existing data, where data were collected for other study purposes.<sup>58</sup> The use of telephone surveys is limited to those who have a telephone, live in

**Table 3: Logistic regression showing the relationship between patient’s ethnocultural group, patient–clinician concordance and continuity of care**

Characteristic	Relational continuity		Informational continuity	Management continuity	
	Concentrated care with regular provider OR (95% CI)	Accumulated knowledge OR (95% CI)	Information transfer OR (95% CI)	No duplication of tests OR (95% CI)	Primary care follow-up OR (95% CI)
<b>Patient’s ethnocultural group</b>					
European descent	Reference (–)	Reference (–)	Reference (–)	Reference (–)	
Chinese	1.27 (0.64–2.50)	0.18 (0.12–0.27)*	0.34 (0.19–0.59)*	3.26 (1.32–8.02)*	0.49 (0.30–0.79)*
South Asian	3.47 (1.66–7.23)*	0.87 (0.58–1.31)	0.78 (0.47–1.28)	1.33 (0.68–2.61)	0.72 (0.47–1.10)
Indigenous	0.65 (0.38–1.11)	1.29 (0.86–1.94)	1.04 (0.67–1.62)	0.68 (0.38–1.22)	1.19 (0.78–1.80)
<b>Patient–clinician concordance</b>					
Ethnocultural	1.41 (1.05–1.88)*	1.50 (1.26–1.79)*	1.20 (0.96–1.50)	1.41 (1.04–1.91)*	1.16 (0.96–1.40)
Language	1.81 (1.00–3.28)	0.92 (0.62–1.37)	1.37 (0.83–2.27)	0.75 (0.35–1.16)	0.94 (0.58–1.52)
Ethnocultural and language	1.57 (1.18–2.07)*	1.47 (1.24–1.74)*	1.25 (1.00–1.55)	1.46 (1.08–1.96)*	1.14 (0.95–1.38)

Note: CI = confidence interval, OR = odds ratio (adjusted for patient sociodemographic characteristics [sex, age, level of education, annual household income and born in Canada], self-rated health status and province, in addition to patient-reported experiences of care [first-contact accessibility and interpersonal communication] and patient–clinician sex concordance).  
\*Statistically significant ( $p < 0.05$ ). Responses of continuity of care were recoded into a dichotomous measure, where e.g., 0 = good/fair/poor and 1 = excellent/very good.

**Table 4: Logistic regression models showing the relationship between a patient’s ethnocultural group, patient–clinician concordance, and outcomes of quality of care and patient empowerment**

Characteristic	Quality of care OR (95% CI)	Patient empowerment OR (95% CI)
<b>Patient’s ethnocultural group</b>		
European descent	Reference (–)	Reference (–)
Chinese	0.24 (0.12–0.48)*	0.79 (0.42–1.50)
South Asian	0.17 (0.09–0.31)*	0.60 (0.34–1.06)
Indigenous	0.56 (0.31–1.00)	1.05 (0.63–1.75)
<b>Patient–clinician concordance</b>		
Ethnocultural	1.11 (0.84–1.48)	1.11 (0.87–1.42)
Language	1.11 (0.60–2.05)	0.73 (0.41–1.31)
Ethnocultural and language	1.10 (0.83–1.45)	1.11 (0.87–1.41)
<b>Patient-reported experiences of care</b>		
First contact accessibility	1.20 (1.09–1.33)*	1.15 (1.06–1.25)
Interpersonal communication	1.53 (1.27–1.86)*	1.61 (1.36–1.91)
<b>Continuity of care</b>		
Concentrated care with regular provider	1.97 (1.24–3.11)*	2.05 (1.38–3.06)
Accumulated knowledge	10.18 (7.72–13.43)*	3.79 (2.99–4.81)
Information transfer	2.17 (1.64–2.86)*	2.68 (2.11–3.40)
No duplication of tests	1.05 (0.67–1.63)	0.68 (0.46–1.02)

Note: CI = confidence interval, OR = odds ratio (adjusted for patient sociodemographic characteristics [sex, age, level of education, annual household income and born in Canada], self-rated health status, province).  
\*Significant ( $p < 0.05$ ). Responses of quality of care and patient empowerment were recoded into a dichotomous measure, where 0 = never/rarely/sometimes and 1 = usually/always.

the community and choose to answer their phone. As with any data collection method, random digit dialing is limited to capturing those who lived in that household and who happened to be home. Surveys should be conducted in other parts of Canada, particularly with larger samples of ethnocultural groups, and in other countries to allow for extending generalizability to other populations.

## Conclusion

Ethnocultural and language concordance are important in increasing continuity of care. All 3 continuity types are important influences on patient-reported impacts of care: quality of care and empowerment. Primary care clinician ethnic and linguistic diversity allows for greater patient-clinician concordance and may be a way to improve continuity of care for members of ethnic minority groups.<sup>40,48,49</sup> Ethnocultural concordance was lowest for Indigenous patients. This could have implications for health inequities, but more work is needed to examine whether this type of concordance leads to better health care outcomes. Importantly, discordant relationships are not the only defining characteristics of the patient-clinician relationship. Patients' experiences in primary care are important to their reports of quality of care and empowerment.

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