Canadian Journal of Rural Medicine
CJRM CMR
Journal canadien de la médecine rurale

Original Article
Article original

Workload of French-speaking family physicians in francophone rural and northern communities in Ontario

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This article has been peer reviewed.

Introduction: Previous studies have shown that French-speaking family physicians (FSPs) in Ontario are less numerous in areas with high proportions of francophones. The purpose of the current study was to assess whether the degree of concordance between physicians' language of competence and the linguistic profile of the community in which they practise is associated with workload and to explore variations in this relation in rural and northern regions of the province.
Methods: This was a secondary analysis of the 2013 College of Physicians and Surgeons of Ontario Annual Membership Renewal Survey. We analyzed the primary practice location and language of competence of family physicians/general practitioners. We compared the practice characteristics of FSPs and non–French-speaking physicians (NFSPs) by the proportion of the francophone population, geographic location (north vs. south) and community size (urban vs. rural).
Results: Data for 10 548 family physician/general practitioners were analyzed. In areas densely populated by francophones, FSPs worked more hours per week on average and had a greater mean number of patient visits than NFSPs. Non–French-speaking physicians working in areas densely populated by francophones had fewer patient visits per hour on average than FSPs. In most cases, the results were particularly accentuated in rural and northern communities.
Conclusion: Our findings suggest that, compared to NFSPs, the demands placed on FSPs are disproportionately greater in communities where the need for French-language health care services is greatest and the supply of FSPs is the smallest. Our results underline the importance of properly preparing family physicians to work in areas densely populated by francophones.

Introduction : Des études antérieures ont révélé que les médecins de famille francophones (MFF) en Ontario sont moins nombreux dans les régions à forte population francophone. L'objectif de cette étude était de déterminer si le degré de concordance entre la langue de compétence des médecins et le profil linguistique de la collectivité dans laquelle ils exercent est associé à la charge de travail, et d'examiner les variations de cette relation dans les régions rurales et nordiques de la province.
Méthodes : Il s'agit d'une analyse secondaire des données du sondage de 2013 sur le renouvellement annuel de l'inscription à l'Ordre des médecins et chirurgiens de l'Ontario. Nous avons déterminé le principal lieu de pratique et la langue de compétence de médecins de famille et d'omnipraticiens. Nous avons comparé les caractéristiques de la pratique des MFF et des médecins de famille non francophones (MFNF) par rapport à la proportion de la population francophone, l'emplacement géographique (nord par opposition à sud) et la taille de la collectivité (urbaine par opposition à rurale).
Résultats : Nous avons analysé les données provenant de 10 548 médecins de famille ou omnipraticiens. Dans les régions à forte population francophone, les MFF travaillaient en moyenne davantage d'heures par semaine et accueillaient en moyenne plus de patients que les MFNF. Les médecins non francophones qui travaillaient en régions à forte population francophone accueillaient en moyenne moins de patients

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par heure que les MFF. Dans la plupart des cas, les résultats étaient particulièrement marqués dans les collectivités rurales et nordiques de la province.
Conclusion : Nos résultats suggèrent que les demandes imposées aux MFF sont disproportionnées par rapport à celles imposées aux MFNF dans les collectivités où le besoin de services de santé en français est le plus élevé et où la disponibilité de MFF est la plus faible. Nos résultats mettent en lumière l'importance de bien préparer les médecins de famille à travailler dans les régions à forte population francophone.

INTRODUCTION

Access to French-speaking family physicians (FSPs) in Ontario may be an issue not of quantity but, rather, of maldistribution of services.[1] A 2013 study revealed that the smallest ratios of FSPs to French-speaking populations in Ontario were in communities densely populated by francophones, the majority of which are in northern or rural areas.[2] Anecdotal evidence from family physicians working in areas densely populated by francophones suggests that these physicians face differing working conditions. Namely, FSPs report being under greater demand, and non–French-speaking physicians (NFSPs) feel it requires more time to adequately provide services to French-speaking patients.[3]

Wenghofer and colleagues[4] recently found that the geographic location in which physicians choose to practise can affect the nature of their work. Although rural and northern family physicians and general practitioners work more hours per week than their counterparts in other parts of the province, they see fewer patients. Several suggestions have been made to explain the greater workload of family physicians/general practitioners in rural areas. Foro and colleagues[5] outlined 2 groups of factors that influence physician workload. First, there are factors related to the practice itself, such as patient characteristics, provider characteristics and the mode of practice, referred to as immediate factors. Second, there are global factors beyond the practice (e.g., population characteristics, cultural norms, geographic location and available resources) that indirectly affect workload. Considering immediate factors, younger and male physicians have been found to work more hours than older and female physicians,[6,7] whereas female physicians and physicians over the age of 45 have been found to see fewer patients than their male and younger counterparts.[8] Interestingly, physicians in rural northern Ontario are predominantly young and male.[9] Considering global factors, populations in rural Canada are generally older and of lower socioeconomic status than those in other regions,[10] and it has been shown that economically disadvantaged patients generate a higher workload than their more advantaged counterparts[11] and that older patients require more visits than younger patients.[12] Furthermore, rural populations have lower levels of education than urban populations and behaviours that are less conducive to good health.[10] In Ontario, these characteristics are even more prominent in francophones.[13] Presumably, physicians in rural northern areas work longer hours but see fewer patients because they must spend more time with patients in general, who are older and more ill than in other parts of the province.[4] These increased time commitments would also be exacerbated in the presence of a linguistic discordance between the patient and the physician,[14] the potential for which is greater in rural and northern locations.[2]

Northern Ontario is home to only 6% of the population; however, its land mass covers 88% of the province.[15] Over one-third (36%) of the population in northern Ontario is classified as rural, with the remainder residing in 7 urban centres that are largely separated by uninhabited wilderness.[16] In rural and northern areas, many locations are medically underserved because of the low population density and the distances between centres.[17] For instance, because there are few specialists in rural and northern areas, family physicians have heavier hospital responsibilities, and the range of services they offer to patients is more extensive than that of their colleagues in southern urban centres.[18] Such circumstances may explain the higher number of hours worked by rural physicians while limiting the number of patients they see.[4]

Rural and northern Ontario practice results in the convergence of many factors that can increase a physician's workload. However, the extent to which physician linguistic competences (i.e., French-speaking vs. non–French-speaking) and certain community characteristics (i.e., francophone population density) affect workload is not yet well

known. Therefore, the objectives of this study were to assess whether the degree of concordance between a physician's language of competence and community linguistic profile is associated with workload and the extent to which this interaction varies in rural and northern practices. We hypothesized that 1) FSPs in communities densely populated by francophones work more hours and have more patient visits than their NFSPs owing to the possibly higher demand and 2) visits with NFSPs in communities densely populated by francophones overall take longer (fewer visits per hour) than those with FSPs owing to the increased likelihood of a language barrier.

METHODS

Data source

This study consisted of a secondary analysis of data from the 2013 College of Physicians and Surgeons of Ontario registry and Annual Membership Renewal Survey. The college, which is the licensing and regulatory body of physicians in Ontario, regularly collects practice data as part of its licensing and certification process. This annual "census" of all Ontario physicians allows for descriptive comparisons without the need for inferential statistical analysis. The current analyses focused on family physicians/general practitioners with an active independent primary practice located in Ontario.

Variables and data analyses

We categorized physicians as French-speaking if they reported to the College of Physicians and Surgeons of Ontario that they were competent enough to practise in French; all other physicians were considered non–French-speaking. Practice characteristics analyzed in this study were the self-reported number of hours worked per week and the number of patient visits per week. In addition, we calculated the number of patient visits per hour by dividing the number of visits by the number of hours worked. Physicians not in direct patient care or primary care (e.g., postsecondary institution, research facility, regulatory organization) were excluded from the study. Physicians who reported practice characteristics that were beyond 3 standard deviations from the mean were also eliminated, as these atypical physicians could potentially skew results, particularly in rural and northern communities, where fewer physicians are located.

We compared the practice characteristics of FSPs and NFSPs by the degree of francophonie (proportion of francophone residents, as per the 2011 population census) of the primary practice address. We used our previously established degree of francophonie to categorize communities: those with a francophone population of 25% or greater were classified as strong French communities, those with a francophone population between 10% and 24.9% were classified as moderate French communities, and those with a francophone population of less than 10% were classified as weak French communities.[2] We also explored differences between FSPs and NFSPs according to their geographic location (north vs. south, based on Local Health Integration Network [LHIN] boundaries, with the North West LHIN and the North East LHIN representing the north[19]) and size of the community (rural vs. urban, based on Statistics Canada's Statistical Area Classification definition, whereby communities with populations < 10 000 are considered rural[20]).

We explored the influence of 3 factors on the physicians' practice characteristics: 1) the independent influence of the linguistic profile of the community (regardless of the physician's language of competence), 2) the independent influence of the physician's language of competence (regardless of the community in which he or she practised) and 3) the combined influence of language of competence and linguistic profile of the community.

Ethics approval

This study received ethics approval from Laurentian University's institutional research ethics board.

RESULTS

Descriptive statistics

A total of 10 719 family physicians/general practitioners were initially included in the analyses; after removal of outliers, 10 548 physicians remained. Of these, 1478 (14.0%) self-identified as being competent enough to practise in French. Most physicians were located in weak French communities of southern Ontario; the fewest were located in rural strong and moderate French communities (Table 1). French-speaking physicians were younger than NFSPs (mean age 49.8 yr vs. 51.7 yr). This age difference remained relatively consistent across the province (Table 1). A higher proportion of FSPs than NFSPs were female (46.1% vs. 43.6%).

Table 1: Distribution, age and sex of French-speaking and non–French-speaking family physicians across Ontario, 2013

Location/community size; community type	French-speaking	Non–French-speaking	Total
Ontario			
Strong French			
No. of physicians	155	158	313
Age, yr, mean ± SD	48.6 ± 11.9	50.0 ± 12.4	49.3 ± 11.9
% women	36.1	36.7	36.4
Moderate French			
No. of physicians	539	735	1274
Age, yr, mean ± SD	50.1 ± 11.8	51.0 ± 11.7	50.6 ± 11.8
% women	51.0	53.5	52.4
Weak French			
No. of physicians	780	8168	8948
Age, yr, mean ± SD	49.9 ± 12.1	51.8 ± 12.2	51.6 ± 12.2
% women	44.6	42.8	43.0

Geographic location	**North**			**South**		
	French-speaking	Non–French-speaking	Total	French-speaking	Non–French-speaking	Total
Strong French						
No. of physicians	87	144	231	68	14	82
Age, yr, mean ± SD	47.4 ± 11.7	49.9 ± 12.4	48.9 ± 12.2	50.2 ± 10.9	52.0 ± 13.4	50.5 ± 11.3
% women	37.9	37.5	37.7	33.8	28.6	32.9
Moderate French						
No. of physicians	30	83	113	509	652	1161
Age, yr, mean ± SD	52.7 ± 11.7	52.0 ± 11.0	52.2 ± 11.1	49.9 ± 11.8	50.9 ± 11.8	50.5 ± 11.8
% women	30.0	25.3	26.5	52.3	57.1	55.0
Weak French						
No. of physicians	52	341	393	728	7827	8555
Age, yr, mean ± SD	47.9 ± 10.2	49.6 ± 11.1	49.3 ± 11.4	50.0 ± 12.2	51.9 ± 12.2	51.7 ± 12.2
% women	38.5	41.6	41.2	45.1	42.9	43.0

Community size	**Rural**			**Urban**		
	French-speaking	Non–French-speaking	Total	French-speaking	Non–French-speaking	Total
Strong French						
No. of physicians	47	36	83	108	122	230
Age, yr, mean ± SD	50.7 ± 12.3	50.5 ± 11.4	50.6 ± 11.8	47.7 ± 10.9	50.0 ± 12.8	48.9 ± 12.0
% women	38.3	36.1	37.3	35.2	36.9	36.1
Moderate French						
No. of physicians	17	25	42	522	710	1232
Age, yr, mean ± SD	51.5 ± 11.1	52.8 ± 9.9	52.3 ± 10.3	50.0 ± 11.8	51.0 ± 11.8	50.6 ± 11.8
% women	29.4	32.0	31.0	51.7	54.2	53.2
Weak French						
No. of physicians	96	709	805	684	7459	8143
Age, yr, mean ± SD	48.1 ± 11.6	51.5 ± 11.9	50.1 ± 11.9	50.1 ± 12.1	51.8 ± 12.2	51.7 ± 12.3
% women	35.4	39.1	38.6	45.9	43.2	43.4

SD = standard deviation.

Practice characteristics

The 3-way interaction among community size, geographic location and linguistic profile produced many small cells (for instance, there were practically no NFSPs practising in southern rural moderate French communities or urban strong French communities). The results of larger cell sizes are discussed when appropriate but are not presented.

Hours worked per week

Overall, Ontario physicians reported working an average of 38.8 hours per week. Physicians who practised in strong French communities worked

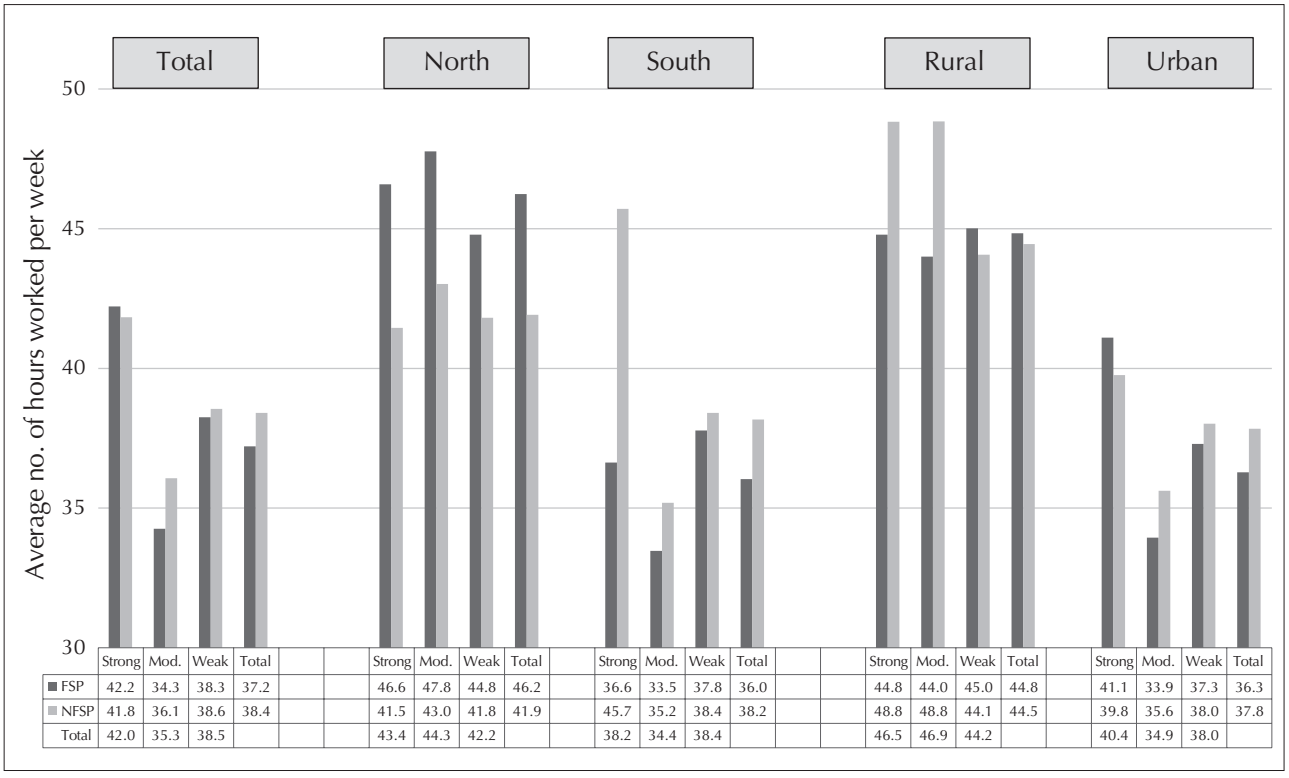
more hours per week on average (42.0) than those in moderate or weak French communities (35.3 and 38.5, respectively). Non–French-speaking physicians worked slightly more hours per week (average 1.2) than FSPs. However, FSPs in strong French communities worked the most hours of any group (mean 42.2, 0.4 more hours than NFSPs) (Fig. 1).

Considering the combined impact of the physician's language of competence and the linguistic profile of the community, with higher degrees of francophonie, there was an overall tendency for FSPs to work more hours than NFSPs. However, a more detailed exploration of geographic variations revealed that this tendency was observed only in northern and urban regions of the province. In northern Ontario, FSPs in strong and moderate French communities worked the most hours (average of 46.6 and 47.8, respectively) and worked an average of 5.1 and 4.8 more hours, respectively, than NFSPs. The reverse trend was observed in the south, where NFSPs consistently worked more hours than FSPs, particularly in strong French communities, where the latter worked 9.1 fewer hours on average. French-speaking physicians in urban strong French communities worked more hours per week (by an average of 1.3 h) than NFSPs, whereas those in rural strong and moderate French communities worked fewer hours on average than NFSPs (by 4.0 h and 4.8 h, respectively). Nevertheless, analysis of the combined interaction of degree of francophonie, community size and geographic location revealed that FSPs practising in northern rural strong French communities worked the most hours of any group (average 55.4) (data not shown owing to small cell sizes) and worked 5.4 more hours on average than NFSPs.

Patient visits per week

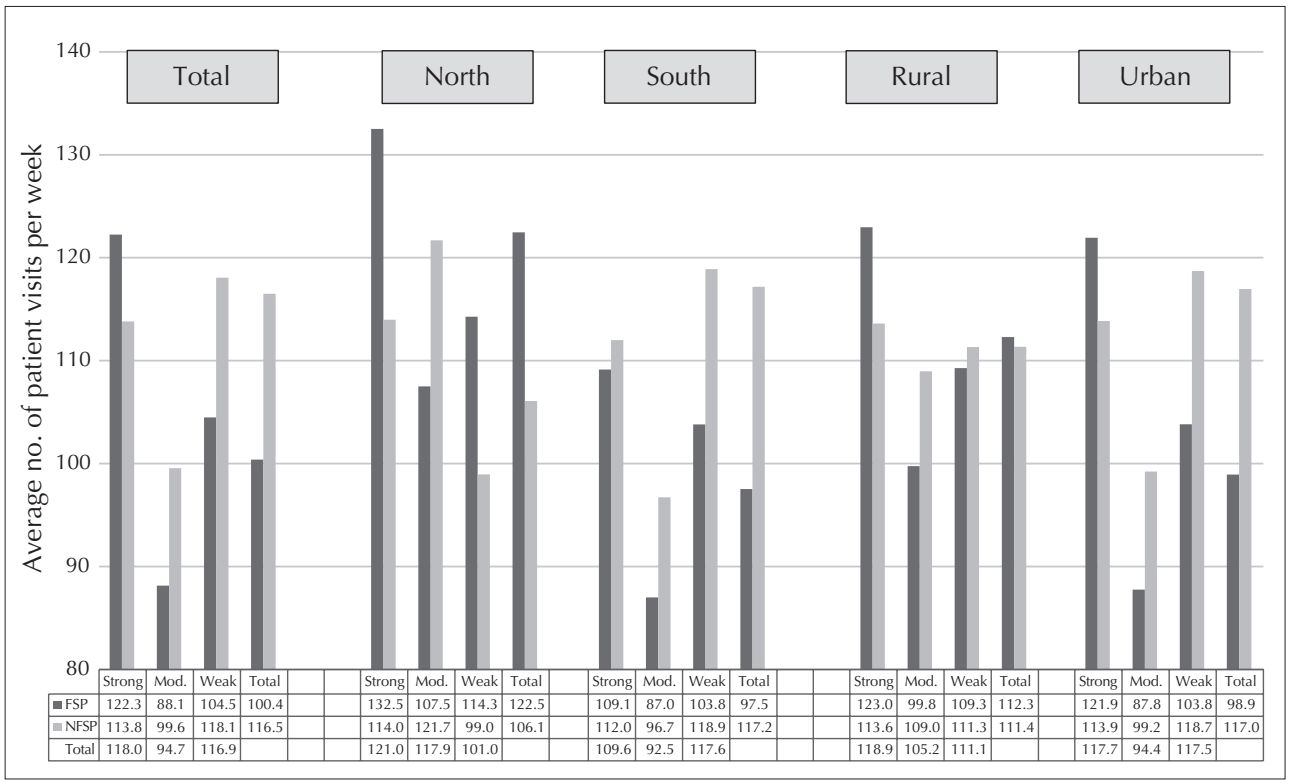
Physicians reported an average of 113.5 patient visits per week. Those in strong French communities had the most patient visits per week (average 118.0), followed by those in weak French (116.9) and moderate French (94.7) communities. Non–French-speaking physicians had more patient visits (by an average of 16.1) than FSPs; however, FSPs working in strong French communities had the most patient visits per week of any group (average 122.3) and had 8.5 more visits on average then NFSPs. Non–French-speaking physicians practising in moderate and weak French communities had more visits (by an average of 11.4 and 13.6, respectively) than FSPs (Fig. 2).

Overall, there was a tendency for FSPs to have more patient visits per week than NFSPs with



	Total				North				South				Rural				Urban			
	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total
FSP	42.2	34.3	38.3	37.2	46.6	47.8	44.8	46.2	36.6	33.5	37.8	36.0	44.8	44.0	45.0	44.8	41.1	33.9	37.3	36.3
NFSP	41.8	36.1	38.6	38.4	41.5	43.0	41.8	41.9	45.7	35.2	38.4	38.2	48.8	48.8	44.1	44.5	39.8	35.6	38.0	37.8
Total	42.0	35.3	38.5		43.4	44.3	42.2		38.2	34.4	38.4		46.5	46.9	44.2		40.4	34.9	38.0	

Fig. 1: Average number of hours worked per week overall and by geographic location (north vs. south) and size of community (rural vs. urban), according to linguistic profile of community (strong French, moderate [mod.] French or weak French). FSP = French-speaking family physician, NFSP = non–French-speaking family physician.



	Total						North						South						Rural						Urban			
	Strong	Mod.	Weak	Total			Strong	Mod.	Weak	Total			Strong	Mod.	Weak	Total			Strong	Mod.	Weak	Total			Strong	Mod.	Weak	Total
FSP	122.3	88.1	104.5	100.4			132.5	107.5	114.3	122.5			109.1	87.0	103.8	97.5			123.0	99.8	109.3	112.3			121.9	87.8	103.8	98.9
NFSP	113.8	99.6	118.1	116.5			114.0	121.7	99.0	106.1			112.0	96.7	118.9	117.2			113.6	109.0	111.3	111.4			113.9	99.2	118.7	117.0
Total	118.0	94.7	116.9				121.0	117.9	101.0				109.6	92.5	117.6				118.9	105.2	111.1				117.7	94.4	117.5	

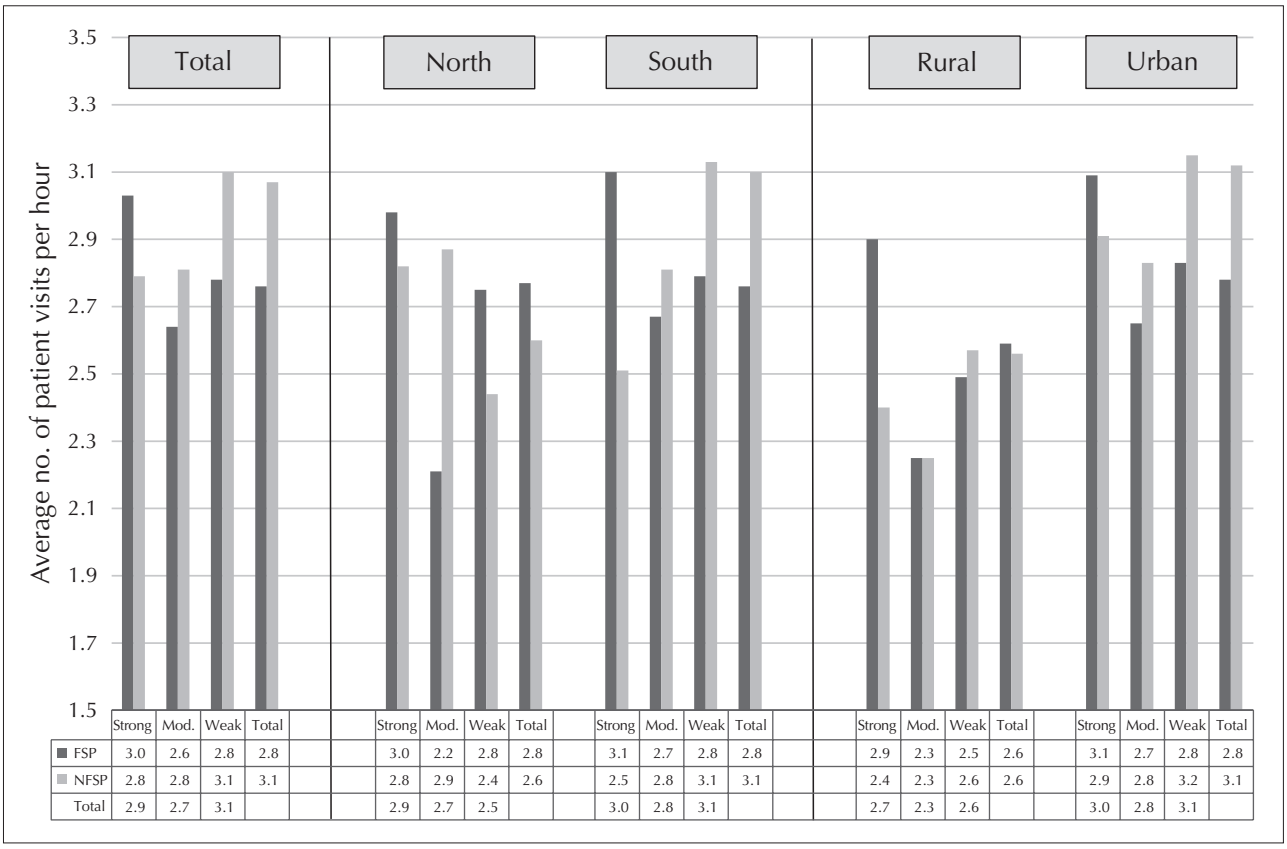
Fig. 2: Average number of patient visits per week overall and by geographic location (north vs. south) and size of community (rural vs. urban), according to linguistic profile of community (strong French, moderate [mod.] French or weak French). FSP = French-speaking family physician, NFSP = non–French-speaking family physician.

increasing proportions of francophones in the community. This tendency was present in all geographic locations and community sizes except the south. In the north, FSPs in strong French communities had the most patient visits (average 132.5) and had 18.5 more patient visits on average than NFSPs. Once again, this trend was reversed in the south, where NFSPs consistently had more patient visits than FSPs. It should be noted, however, that the difference between the 2 groups was smallest in southern strong French communities. In both rural and urban areas, FSPs in strong French communities had the most patient visits per week (average 123.0 in rural and 121.9 in urban strong French communities) and had an average of 9.4 and 8.1 more visits than NFSPs in rural and urban strong French communities, respectively. Conversely, in both rural and urban areas, NFSPs had more patient visits in moderate and weak French communities. Analysis of the combined interaction of degree of francophonie, community size and geographic location revealed that FSPs in northern rural strong French communities had the most patient visits per week of any group (average 135.7), followed closely by FSPs in northern urban strong French communities (average 131.4). These FSPs had an average of 19.2 and 17.9 more patient visits, respectively, than NFSPs (data not shown owing to small cell sizes).

Patient visits per hour

We calculated an average of 2.9 patient visits per hour. Physicians in weak French communities had the most patient visits per hour (average 3.1), followed by those in strong French (2.9) and moderate French (2.7) communities. Non–French-speaking physicians had 0.3 more patient visits per hour on average than FSPs. Non–French-speaking physicians in weak French communities had the most patient visits per hour (average 3.1) and had an average of 0.3 more patient visits per hour than FSPs, followed closely by FSPs in strong French communities, who had an average of 3.0 visits per hour and 0.2 more visits per hour on average than NFSPs (Fig. 3).

For all geographic locations and community sizes, with increasing proportions of francophones, there was a clear tendency for NFSPs to have fewer patient visits per hour than FSPs. Non–French-speaking physicians had an average of 0.2 and 0.6 fewer visits per hour than FSPs in northern strong French communities and southern strong French communities, respectively. The same trend



	Total				North				South				Rural				Urban			
	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total	Strong	Mod.	Weak	Total
FSP	3.0	2.6	2.8	2.8	3.0	2.2	2.8	2.8	3.1	2.7	2.8	2.8	2.9	2.3	2.5	2.6	3.1	2.7	2.8	2.8
NFSP	2.8	2.8	3.1	3.1	2.8	2.9	2.4	2.6	2.5	2.8	3.1	3.1	2.4	2.3	2.6	2.6	2.9	2.8	3.2	3.1
Total	2.9	2.7	3.1		2.9	2.7	2.5		3.0	2.8	3.1		2.7	2.3	2.6		3.0	2.8	3.1	

Fig. 3: Average number of patient visits per hour overall and by geographic location (north vs. south) and size of community (rural vs. urban), according to linguistic profile of community (strong French, moderate [mod.] French or weak French). FSP = French-speaking family physician, NFSP = non–French-speaking family physician.

persisted in both rural and urban strong French communities, where NFSPs had an average of 0.5 and 0.2 fewer visits per hour, respectively, than FSPs. In nearly all instances, NFSPs had more patient visits per hour than FSPs in moderate French communities and even more so in strong French communities. Analysis of the combined interaction of community size, geographic location and degree of francophonie confirmed that NFSPs consistently had fewer patient visits per hour than FSPs in all strong French communities. Of note were southern rural and northern urban strong French communities, where FSPs had an average of 0.9 and 0.3 more visits per hour, respectively, than NFSPs (data not shown owing to small cell sizes).

DISCUSSION

In this study, we sought to verify existing anecdotal evidence suggesting that family physicians who advertise themselves as being able to offer services in French may be inundated by francophone patients soliciting their services[3,21] and that NFSPs face additional time commitments when treating francophone patients.[3] Both of these situations are more likely to occur in strong French communities (those with a francophone population ≥ 25%). Overall, physicians who practised in strong French communities had a tendency to work more hours and to have more patient visits per week than those who work in moderate and weak French communities, whereas NFSPs had larger workloads than FSPs. The combined influence of the linguistic profile of the community and the physician's language of competence confirms our initial hypothesis that FSPs in strong French communities have more patient visits and work more hours than NFSPs in the same communities. Such work conditions may help explain why many physicians who can speak French have chosen to practise in communities where they are less likely to encounter francophone patients.[2] Our results further suggest that, with increasing degrees of francophonie, FSPs have a tendency to have heavier workloads than NFSPs. However, the extent of this difference is somewhat dependent on geographic location. Of note are northern rural strong French communities, where not only did FSPs have the heaviest workload in the province, but also the greatest difference in workload was found between FSPs and NFSPs. In fact, FSPs in northern rural

strong French communities reported working an average of 5.4 more hours a week than NFSPs. If we consider that the latter reported working an average of almost 50 hours a week (or 10 h/d during a 5-d week), these FSPs were working over half a day more per week than NFSPs. In addition, they had an average of 19.2 more patient visits per week than NFSPs. If we consider that the average NFSP in northern rural strong French communities reported 116 patient visits per week, FSPs had nearly the equivalent of 1 day's worth of visits more per week.

Our results also confirm our second hypothesis that visits with NFSPs in strong French communities take longer than those with FSPs. If we consider that the average NFSP in northern rural strong French communities had 0.9 fewer visits per hour than FSPs, this would amount to the equivalent of 45 fewer patient visits per week (for physicians who work 50 h a week).

These results strongly suggest that the linguistic profile of the community, together with the physician's language of competence, affects workload, particularly for FSPs practising in strong French communities. Past research has shown variations in workload based on the geographic location of the practice (rural and northern family physicians work more hours than family physicians in other parts of the province[4]) and the age and sex of the physician (younger and male physicians work more hours[6,7] and see more patients[8] than older and female physicians). However, the present findings cannot be explained by these factors: although we also found regional differences in workload, our analyses suggest that these differences have a disproportionate impact on FSPs in rural and northern strong French communities, who had heavier workloads than NFSPs. In addition, the age and sex of the 2 groups were virtually identical in these strong French communities, with both having a 36% female representation and with FSPs being only 1.4 years younger on average than NFSPs.

The present findings have implications both for physicians and for agencies that plan health care services. First, our results support the need for agencies to provide the right services in the right places. There is an obvious need to increase the FSP workforce in areas that have the greatest demand. In doing so, physicians working in isolated locations, French-speaking and non–French-speaking alike, may experience a reduction in pressure to meet the needs of francophone patients. Rural communities across Canada have long faced challenges in recruiting and retaining physicians.[22] As a result, 2 strategies have recently been implemented to increase the FSP workforce. At the provincial level, the Northern Ontario School of Medicine was established in 2005 with a social accountability mandate to respond to the health care needs of northern populations,[23] including the linguistic needs of francophones. To this end, the school actively recruits and selects French-speaking students and provides them with learning opportunities in francophone communities. At the national level, the Association of Faculties of Medicine of Canada developed the Franco Doc initiative, which identifies French-speaking students in English-language medical schools, prepares them for French-language practice and recruits them for placements in francophone communities across Canada.[24] However, the extent to which these strategies have improved the availability of FSPs in rural and northern strong French communities of Ontario has yet to be evaluated.

The fact that NFSPs working in strong French communities had fewer patient visits per hour than FSPs can be interpreted in 1 of 2 ways. Either NFSPs were less efficient than FSPs, given the greater likelihood of language discordance with their patients, or FSPs had more patient visits per hour than NFSPs, given the greater need to meet demand. Both possibilities raise concerns pertaining to patient care. Language barriers have been linked to reduced compliance with physician instructions, increased hospital admission and adverse medication reactions.[25,26] Longer patient encounters can become a barrier to access by contributing to longer wait times for all patients. Conversely, if high demand is causing FSPs to have more patient visits per hour, they are subsequently spending less time with individual patients, which has been found to have a negative impact on patient satisfaction, chronic health outcomes and risk of malpractice claims.[27] Both of these concerns could be addressed by increasing the supply of FSPs in strong French communities.

Limitations

In interpreting the present findings, it should be kept in mind that we have drawn conclusions based on 2 important assumptions. First, our analysis is based on physicians' self-reported work activities and linguistic proficiency, both of which are subject to recall bias and misjudgment. Second, we assumed language concordance/discordance based on the physician's language of competence and the linguistic profile of the community in which they worked. We present convincing tendencies of the impact of the relation between physician language of competence and

community linguistic profile on workload yet were unable to measure it at the individual level and could not account for other global factors that differ from one community to the next, both of which may explain some of our conflicting results. The actual existence of this relation can be confirmed only with the collection of additional primary data, which should be the focus of future research efforts and may be achieved only through collaboration with regulatory authorities. For instance, collecting data on patients' linguistic preferences would help planning efforts by identifying both physician needs and gaps in services.

Conclusion

We present empirical evidence to support anecdotal conclusions that FSPs located in areas densely populated by francophones are in higher demand than NFSPs. Our findings suggest that, compared to NFSPs, the demands placed on FSPs are disproportionately greater in communities where the need for French-language health care services is greatest and the supply of FSPs is smallest, namely, in strong French communities of rural and northern Ontario. Thus, our study underlines the importance of properly preparing family physicians to work in areas densely populated by francophones.

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Competing interests: None declared.