Alcohol distribution reforms and school proximity to liquor sales outlets in New Brunswick

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ABSTRACT

OBJECTIVES: The purpose of this project was to evaluate how changes to the sale of alcohol in New Brunswick would be distributed across urban and rural communities, and low- and high-income neighbourhoods. The study objectives were to 1) estimate the population living close to alcohol outlets before and after liquor distribution reforms, 2) identify communities or regions that would be more or less affected, and 3) determine whether expanding access to alcohol products would reduce school proximity to retailers.

METHODS: Data from Statistics Canada, Desktop Mapping Technologies Inc. (DMTI), and geocoded publicly available information were spatially linked and analyzed using descriptive statistics. The populations living within 499 m, 500–999 m and 1–5 km of an outlet were estimated, and the distances from schools to stores were examined by geographic characteristics and neighbourhood socio-economic status.

RESULTS: Permitting the sale of alcohol in all grocery stores throughout the province would increase the number of liquor outlets from 153 to 282 and would increase the population residing within 499 m of an outlet by 97.49%, from 19 886 to 39 273 residents. The sale of alcohol in grocery stores would result in an additional 35 liquor sales outlets being located within 499 m of schools. Low-income neighbourhoods would have the highest number and proportion of stores within 499 m of schools.

CONCLUSION: The findings of this study demonstrate the importance of considering social, economic and health inequities in the context of alcohol policy reforms that will disproportionately affect low-income neighbourhoods and youth living within these areas.

KEY WORDS: Alcohol policy; public health; youth; substance abuse

La traduction du résumé se trouve à la fin de l'article.

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In the past decade, there has been a strategic shift towards alcohol-related trade liberalization in both developed and developing countries that has led to the deregulation of liquor control policies and the development of pro-market practices in the alcohol sector.^{1,2} In the past two years, several Canadian provinces, such as New Brunswick, Ontario and British Columbia, have expanded the distribution of alcohol to allow the sale of wine and/or beer in private agency and grocery stores that are not owned or operated by the provincial liquor corporation.^{3–6}

Greater alcohol availability has been identified as a significant public health concern because of the increased consumption and associated alcohol-related harms that result from expanding the places where liquor can be sold in the community.⁷ Previous research has found a strong relationship between liquor outlet proximity, alcohol availability, and higher rates of consumption and alcohol-related harms, such as premature mortality and risk of injury, among youth and adults.^{8–10} Youth have been found to be especially vulnerable to increased alcohol availability as a result of early exposure to alcohol-related marketing and the normalization of alcohol consumption, which are both strong predictors of substance abuse problems in adulthood.^{11–13} Off-sales locations such as agency and grocery stores have been found to be problematic because of poor controls over the sale of alcohol to minors and the availability of large quantities of liquor that can be freely consumed in the community.^{14–16} Previous research has

shown that outlet density and proximity are important determinants of alcohol consumption among young people.^{8,17,18} This has been attributed to underage youth obtaining alcohol from off-sales locations with less stringent selling practices, and the demonstrated relationship between outlet density and exposure to illicit drugs and violence.^{8,9,15,19,20}

Despite the known relationship between outlet density, proximity, and alcohol-related harms, there has been limited

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research completed on how recent changes to liquor policy will affect exposure to, and the availability of, alcohol products in Canadian communities. New Brunswick is an ideal case study to examine liquor policy reform measures and access to alcohol products because of modifications to the distribution of alcohol in recent years, and the high rates of alcohol abuse and binge drinking among youth and adults.²¹ The criminal justice, societal, and health care costs associated with alcohol abuse in New Brunswick are the highest in Canada, equalling \$597 per resident.²² Among young people, 43.9% of students in Grade 12 reported binge drinking in the previous month.²¹

In October 2016, the Province of New Brunswick began allowing the sale of wine in selected grocery stores with the goals of improving customer convenience and increasing the revenue generated through the provincial liquor board (NB-Liquor).^{4,23} As in other Canadian provinces, New Brunswick's alcohol retail system functions within a governmental monopoly, and its operations are monitored by the Ministry of Public Safety and the Solicitor General.²⁴ NB-Liquor monitors the sale of alcohol to minors through "mystery shopper" tests in conjunction with liquor inspectors and local law enforcement; however, the findings and impact of this internal monitoring system are unclear.²⁴ To date, an unknown number of grocery stores have been permitted to sell wine in addition to the initial six pilot store sites.²⁵ Prior to the sale of alcohol in grocery stores, only agency stores ($N = 110$) were allowed to sell spirits, beer and wine in addition to the existing NB-Liquor stores ($N = 43$). The purpose of this project was to evaluate how these changes are distributed across urban and rural communities and low- and high-income neighbourhoods. The objectives were to 1) estimate the population living close to alcohol outlets before and after liquor distribution reforms, 2) identify communities or regions that would be more or less affected, and 3) determine whether expanding access to alcohol products would reduce school proximity to retailers.

METHOD

Data sources

Data from Statistics Canada, Desktop Mapping Technologies Inc. (DMTI), and geospatial publicly available data were linked and analyzed using ArcGIS 10.1, SAS 9.3 and SPSS 23.^{26,27} The latitude and longitude of NB-Liquor and agency stores were obtained from the NB-Liquor website.²⁸ The locations of kindergarten to grade 12 schools and grocery stores were sourced from the DMTI Enhanced Point of Interest database.²⁹ Statistics Canada's PCCF+ (Postal Code Conversion File) was used to obtain neighbourhood socio-economic status and metropolitan influenced zone (MIZ) ranking of postal codes.³⁰ Data on binge drinking by youth was sourced from the New Brunswick Health Council's "My Community at a Glance" Community Profiles.³¹ The data were compiled and spatially linked to Census Dissemination Areas (DAs) for geospatial analysis.

Data analysis

To estimate the population living within 499 m, 500–999 m and 1–5 km of a liquor sales outlet, buffers were created around each of the geocoded data points using road network data. Statistics Canada's Ecumene file was used to remove geographic areas with

no residents from the buffers to more accurately represent the distribution of the population within each buffer.³² The area of DAs was calculated in metres squared. The population within the buffers was measured using a tabulated intersection that estimated the proportion of the DAs contained within the buffer. This process was repeated for each of the buffers representing ≤ 499 m, 500–999 m, and 1–5 km of liquor store, agency store and grocery store locations. The distance from schools to liquor, agency and grocery stores was measured using road files that were modelled by means of the network analysis tool in ArcGIS. The proximity of schools to each type of store was measured in metres and examined for urban and rural, and low-, middle and high-income DAs. The chi-square test of association (χ^2) was used to measure the association between distance to schools, store type and urban–rural status.

Measures

Distance

We defined close proximity to liquor outlets as a distance up to 499 m or a six minute walk. This distance was selected because it has been used in previous research that has examined school proximity to other retailers, such as fast-food restaurants, that sell products relevant to public health.^{33,34}

Neighbourhood Socio-economic Status

Socio-economic status was measured at the DA level using the PCCF+ program that was created by Statistics Canada.³⁰ Two variables were used to rank DAs into quintiles that summarized the "neighbourhood income per person equivalent" based on the adjusted household income and the low-income cut-off used in the 2006 Census.³⁰ The first measure of socio-economic status is described by Statistics Canada as QAIPPE. This scale ranks DAs on the basis of income distribution within the local Census Metropolitan Area (CMA). In contrast, the second measure (QNIPPE) ranks DAs using the national distribution of income quintiles from across Canada, which provides a method to compare communities irrespective of local trends in neighbourhood socio-economic status by province or region.³⁰

Metropolitan Influenced Zones

Urban, suburban, and rural communities were identified using the Statistics Canada MIZ scale, which is used to define suburban, rural and remote places outside of CMAs (urban areas with a population over 100 000 that have 50 000 persons living in the core area) and Census Agglomerations (CAs) (population of 10 000).³⁰ The MIZ scale is based on the proportion of the population in a census subdivision that commutes to a nearby CMA or CA.

Schools

All public and private kindergarten to grade 12 schools listed in the DMTI Enhanced Points of Interest database were included in the study ($N = 378$).

Store Types

Liquor

NB-Liquor stores are stand-alone stores operated by the provincial New Brunswick Liquor Corporation and staffed by unionized employees of NB-Liquor.²⁸

Agency

Agency stores are convenience stores, gas stations and other small businesses that sell a selection of NB-Liquor products.³⁵ Agency stores typically sell between \$350,000 and \$3,000,000 worth of alcohol products annually alongside a selection of grocery, automobile and other items.³⁵

Grocery

Grocery stores predominantly sell produce, meat and other food-related products. In New Brunswick, most grocery stores are owned and operated by Cooperatives ($N = 18$), Sobeys ($N = 13$), Superstore ($N = 14$), Foodland ($N = 5$), Price Chopper ($N = 4$) and Save Easy ($N = 9$).

Binge Drinking

Alcohol use among youth was measured as “5 or more drinks at one time, at least once a month in the past 12 months” for young people in grades 9–12.³¹ These data were collected in 2009 by the Government of New Brunswick as part of the Department of Healthy and Inclusive Communities, Student Wellness Survey.³⁶

RESULTS

Alcohol availability and retail expansion

A total of 153 NB-Liquor ($N = 43$) and agency stores ($N = 110$) selling alcohol products were identified once geocoded locations had been merged with ecological data from the PCCF+.³⁰ The locations of liquor outlets by store type are displayed in Figure 1. Permitting the sale of alcohol in all grocery stores throughout the province would increase the number of alcohol outlets by 84.4%, from 153 to 282. Table 1 summarizes the proportion and count of stores by community characteristics. The highest proportion of NB-Liquor (62.79%, $N = 27$) and agency stores (47.27%, $N = 52$) were located in urban areas. Allowing the sale of alcohol in all existing grocery stores would increase the overall number of retail outlets in urban areas from 79 to 141 stores. In suburban areas, an additional 40 liquor outlets would be established, and the number of stores would double in rural communities from 26 points of sale to 53.

The local measure of neighbourhood socio-economic status (QAIPPE) ranked 46.1% ($N = 130$) of stores as located in low-income areas. In contrast, the national indicator (QNIPPE) ranked 78.72% ($N = 222$) of stores as being in low-income areas. Both

Figure 1. Liquor sales outlets by store type

Table 1. Community characteristics by store type

	Liquor store type, proportion (number)		
	NB-Liquor store	Agency store	Grocery store
Metropolitan influence zone			
Urban	62.79 (27)	47.27 (52)	48.06 (62)
Suburban	20.93 (9)	35.45 (39)	31.08 (40)
Rural	16.28 (7)	17.27 (19)	20.93 (27)
Neighbourhood socio-economic status			
QAIPPE			
Low	41.86 (18)	47.27 (52)	46.51 (60)
Middle	41.86 (18)	29.09 (43)	41.86 (54)
High	16.28 (7)	13.64 (15)	11.63 (15)
QNIPPE			
Low	72.09 (31)	77.27 (85)	82.17 (106)
Middle	25.58 (11)	21.87 (24)	14.72 (19)
High	2.32 (1)	0.91 (1)	3.10 (4)
Mean distance to school (minimum, maximum)*	1133.4 (23.76, 3690.15)	4501.9 (92.21, 39 522.06)	2607.1 (68.18, 28 146.77)
Mean distance to another liquor outlet (minimum, maximum)*	1688.1 (6.79, 10 361.71)	10 874.0 (3.77, 42 770.31)	2768.6 (3.79, 30 816.08)

Distance is measured in metres using the New Brunswick Road Network files.

measures of neighbourhood socio-economic status indicated that most existing NB-Liquor (QAIPPE: 41.86%, $N = 18$; QNIPPE: 72.09%, $N = 31$) and agency stores (QAIPPE: 47.27%, $N = 52$; QNIPPE: 77.27%, $N = 85$) were located in low-income communities. Using the national scale of neighbourhood socio-economic status (QNIPPE), allowing grocery stores to sell alcohol would increase the number of outlets by 91.38% in low-income communities from 116 to 222, compared with a 54.29% increase in middle-income areas from 35 outlets to 54.

Population proximity to liquor outlets

The populations residing within 499 m, 500–999 m, and 1–5 km of agency, NB-Liquor and grocery stores are described in Table 2 and displayed in Figure 2. Expanding liquor sales to grocery stores would increase the population that lives within 5 km of an outlet from 386 686 to 412 982, representing 54.98% of the total population of the province. The largest increase would occur in the population residing within 0–499 m of a liquor sales outlet (either agency, NB-Liquor or grocery store): by 97.49%, from 19 886 to 39 273 residents, if all grocery stores became liquor sales outlets. In contrast, the population living within 500–999 m of a

liquor outlet would grow by 66.99% from 52 755 to 88 094, and the number of residents within 1–5 km of a liquor outlet would increase from 341 479 to 386 686.

Distance to schools

There were 30 existing agency ($N = 19$) and NB-Liquor stores ($N = 11$) identified that were located within 499 m of a school (Table 3). Permitting the sale of alcohol in grocery stores would result in an additional 35 liquor sales outlets being located within 499 m of schools. Urban areas had the highest proportion of stores located within 499 m of a school (28.92%, $N = 35$), followed by rural communities (26.67%, $N = 12$). Low-income neighbourhoods, as measured using the QNIPPE and QAIPPE socio-economic scales, had the greatest number of stores that were within 499 m of a school (QAIPPE: $N = 35$, QNIPPE: $N = 58$).

A summary of liquor outlet proximities to schools by health region is contained within Table 4, and a map of health regions and the location of liquor outlets within 499 m of schools is provided in Figure 3. Zone 3 (Fredericton/River Valley Area) had the greatest number of liquor outlets (with and without the introduction of grocery stores) within 499 m of schools (agency and NB-Liquor stores $N = 9$; total $N = 16$) followed by Zone 1 (Moncton/South-East Area; agency and NB-Liquor stores $N = 6$; total $N = 13$), and Zone 2 (Fundy Shore/Saint John Area; agency and NB-Liquor stores $N = 5$; total $N = 12$). As shown in Figure 3, rural areas had substantially fewer liquor outlets within 499 m of a school; however, these regions would have large increases relative to their existing liquor outlets if all grocery stores were permitted to sell alcohol products. For example, the number of liquor outlets within 499 m of a school would double in Zone 6 (Bathurst/Acadian Peninsula Area) from 4 to 8, and it would triple in Zone 7 (Miramichi Area) from 1 to 4. Although no direct causation can be established between outlet proximity and youth binge drinking in this study, the rural health regions that would experience some of the greatest growth in alcohol outlets are regions that have some of the highest rates of youth binge drinking in the province (e.g., Restigouche, Bathurst, and the Acadian Peninsula area, see Table 4).

DISCUSSION

Population proximity to liquor outlets

Allowing grocery stores to sell liquor products would increase the proportion of the population that resides within 5 km of an outlet by 9.47%, from 377 264 to 412 982, whereas there would be a 97.49% increase in the population living within 0–499 m of a

Table 2. Population estimates by distance to NB-Liquor, agency, and grocery stores

Distance*	NB-Liquor store	Agency	NB-Liquor or agency store	Grocery store	Proportion and number of the provincial population within distance of a NB-Liquor, agency, or grocery store
≤499 m	12 912	7002	19 886 [†]	27 412	5.23% (39,273) [†]
500–999 m	37 361	18 862	52 755 [†]	56 025	11.72% (88,094) [†]
1–5 km	268 856	180 596	341 479 [†]	264 516	51.48% (386,686) [†]
Total [‡]	306 218	206 462	377 264 [‡]	347 958	54.98% (412,982) [‡]

* Distance is measured in metres using the New Brunswick road network files.

[†] Totals exceed 100% because of distance bands overlapping between one or more locations by store type.

[‡] Final population estimates with dissolved distance bands to eliminate overlapping boundaries between stores.

Figure 2. Proximity to liquor, agency, and grocery stores by urban, rural, and suburban area

Table 3. Distance to school by store type and community characteristics			
	Distance to school		
	≤499 m	500-999 m	1-5 km
Store type (proportion, N)* $\chi^2 = 25.041$, $df = 6$, $p = 0.001$			
Liquor store	16.92 (11)	18.33 (11)	18.91 (21)
Agency store	29.23 (19)	28.33 (17)	38.74 (43)
Grocery store	53.85 (35)	53.33 (32)	42.34 (47)
Metropolitan influence zone* $\chi^2 = 9.662$, $df = 6$, $p = 0.140$			
Urban	53.85 (35)	56.67 (34)	46.85 (52)
Suburban	27.69 (18)	18.33 (11)	36.94 (41)
Rural	18.46 (12)	25.00 (15)	16.22 (18)
QAIPE*†			
Low	53.85 (35)	60.00 (36)	33.33 (37)
Middle	33.85 (22)	35.00 (21)	49.55 (55)
High	12.31 (8)	5.00 (3)	17.12 (19)
QNIPPE*†			
Low	89.23 (58)	81.67 (49)	67.57 (75)
Middle	9.23 (6)	16.67 (10)	28.83 (32)
High	1.54 (1)	1.67 (1)	3.6 (4)

* About 46 stores were located more than 5 km away from schools.
† χ^2 was not conducted as one or more cells had a count of less than five.

liquor outlet, from 19 886 to 39 273. These findings suggest that selling liquor products in grocery stores would potentially affect the density of liquor outlets in neighbourhoods that are already well served as opposed to expanding into areas with poor access to

alcohol products. Existing research has consistently found that greater access to alcohol leads to increased levels of alcohol consumption and alcohol-related harms, such as interpersonal violence, injury, and the development of alcohol-related physical and mental health problems.^{5,37-40} Research focusing on the introduction of alcohol retail into grocery stores has found increased levels of consumption of the liquor products stocked within the grocery store setting.⁴¹ Other studies support these findings, adding that not only does selling alcohol within grocery stores increase alcohol consumption but that the highest increases can occur in female and rural populations.⁴² Research from other Canadian provinces, such as British Columbia, has identified increases in alcohol-related risk outcomes and alcohol-attributable mortality following the expansion of alcohol retail outlets.^{5,6} Communities with greater access to alcohol have also been shown to generally have higher rates of violent crime and growth in the number of hospital visits for stress, anxiety and depression.⁴³⁻⁴⁶

Neighbourhood socio-economic status

While levels of alcohol consumption tend to be somewhat uniform across a population, individuals of lower socio-economic status tend to experience greater levels of alcohol-related harm than individuals of a higher socio-economic status.⁴⁷ Exacerbating this issue is the finding that communities with a lower socio-economic status tend to have higher levels of alcohol outlet density and thus greater access to alcohol than those of higher socio-economic

Table 4. Distance to school by health region and store type

	Health region						
	Zone 1 – Moncton/ South-East Area	Zone 2 – Fundy Shore/ Saint John Area	Zone 3 – Fredericton/ River Valley Area	Zone 4 – Madawaska/ North West Area	Zone 5 – Restigouche Area	Zone 6 – Bathurst/ Acadian Peninsula Area	Zone 7 – Miramichi Area
Youth binge drinking mean (minimum, maximum)	51.8 (39, 59)	42.7 (17, 59)	49.2 (17, 68)	57.0 (40, 68)	59.0 (53, 68)	58.2 (53, 68)	56.4 (50, 67)
≤499 m to school (Proportion, N)							
Liquor store	15.4 (2)	16.7 (2)	18.8 (3)	11.1 (1)	33.3 (1)	12.5 (1)	25.0 (1)
Agency store	30.8 (4)	25.0 (3)	37.5 (6)	22.2 (2)	33.3 (1)	37.5 (3)	0 (0)
Grocery store	53.8 (7)	58.3 (7)	43.8 (7)	66.7 (6)	33.3 (1)	50.0 (4)	75.0 (3)
Total	20 (13)	18.5 (12)	24.6 (16)	13.8 (9)	4.6 (3)	12.3 (8)	6.1 (4)
500–999 m to school (Proportion, N)							
Liquor store	21.4 (3)	36.4 (4)	0 (0)	0 (0)	0 (0)	27.3 (3)	20 (1)
Agency store	14.3 (2)	27.3 (3)	36.4 (4)	66.7 (4)	0 (0)	18.2 (2)	40 (2)
Grocery store	64.3 (9)	36.4 (4)	63.6 (7)	33.33 (2)	100 (2)	54.5 (6)	40 (2)
Total	23.3 (14)	18.3 (11)	18.3 (11)	10 (6)	3.3 (2)	18.3 (11)	8.3 (5)

Figure 3. Liquor outlets within 499 m of schools by store type, community characteristics, and health region. *Health Regions: 1) Moncton; 2) Saint John; 3) Fredericton; 4) Edmundston; 5) Campbellton; 6) Bathurst; and 7) Miramichi

status.⁴⁴ Furthermore, outlet proximity to schools has been identified in previous research as a risk factor for youth alcohol consumption.⁴³ In this study, we found that low-income communities have a higher proportion of outlets located near schools, and opening new points of liquor sales in these communities would disproportionately negatively affect youth living there. Overall, regional alcohol policies are a primary determining factor for local levels of alcohol consumption and alcohol-related harm; therefore, strong alcohol control systems can

help to mitigate inequitable alcohol-related health impacts across socio-economic groups.⁴⁸ Alcohol monopolies represent one of the most effective mechanisms for regulating alcohol in a responsible manner to minimize harm to the public.^{37,48} Government-run alcohol monopolies have the potential to regulate alcohol as a controlled substance, as opposed to a regular commodity comparable with subsistence items, such as food, commonly found in grocery store settings. Monopolies offer an opportunity for the government to regulate access, availability, and alcohol

marketing in order to encourage responsible consumption and reduce alcohol-related harms, such as drinking and driving, and the sale of liquor products to minors.^{5,37}

Youth exposure to alcohol products

Allowing the sale of alcohol in grocery stores would more than double the number of liquor outlets within 499 m of schools, from 30 to 65. This would expand youth exposure to alcohol products and contribute to the normalization of alcohol consumption through product placement in grocery stores that are frequented by youth with and without their parents. Research demonstrates that alcohol marketing in childhood lowers the age that youth begin drinking and increases the amount of alcohol consumed.^{49–53} Permitting alcohol retail within grocery stores increases youth exposure to alcohol marketing (including product labeling), which has been found to be an effective method of increasing youth alcohol consumption.⁵⁴ Not only does exposure to in-store alcohol marketing pose a risk factor for children and youth but the real and perceived availability of alcohol within the community also influences alcohol consumption by minors.^{55,56} In the New Brunswick grocery store sites, alcohol products have been co-located with soda drinks, as well as candy, produce and other non-drug commodities. In this context, it is important to consider the historic and strategic convergence of the soda pop and alcohol markets over time as they target the youth market in an attempt to build brand loyalty at an early age.^{57–59} From a public health perspective, placing alcohol products in grocery stores also increases community exposure to end-of-aisle, point-of-purchase, and entryway displays of liquor products that have been found to be effective mechanisms to increase alcohol purchases.⁶⁰

Limitations

There are a number of limitations to consider when interpreting the results of this study. The approach used to estimate the population within each buffered DA assumes that the population is evenly distributed across the area, which is unlikely. We attempted to reduce this limitation by applying Ecumene boundaries to the buffered areas to exclude land within each DA that was not inhabited. The retail store data used for this study were sourced in May 2016 and it is possible that stores have opened or closed during this period.

CONCLUSION

The results of this study demonstrate the impact of recent and proposed changes to alcohol distribution on access to liquor products, and the proximity of points of sale relative to schools in urban and rural, and low-, middle- and high-income communities in New Brunswick. Expanding the sale of alcohol to all grocery stores will predominantly affect low-income neighbourhoods and increase youth exposure to alcohol products in low-income socio-economic areas that have the greatest number of schools within 499 m of a liquor outlet. The findings of this study show the importance of considering social, economic and health inequities in the context of formulating responsible alcohol control policies that minimize alcohol-related harms.

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RÉSUMÉ

OBJECTIFS : Ce projet visait à évaluer comment des changements au réseau de vente d'alcool du Nouveau-Brunswick se répartiraient entre les communautés urbaines et rurales et les quartiers à faible revenu et à revenu élevé. Les objectifs étaient : 1) d'estimer la population vivant près de points de vente d'alcool avant et après les réformes apportées à la distribution des spiritueux, 2) de repérer les communautés ou les régions les plus ou les moins touchées et 3) de déterminer si l'accès élargi aux produits alcoolisés réduirait la distance entre les écoles et les détaillants.

MÉTHODE : Les données de Statistique Canada et de DMTI et l'information géocodée publiquement disponible ont été liées spatialement et analysées à l'aide de statistiques descriptives. Les populations vivant à moins de 500 m, d'1 km et de 5 km d'un point de vente ont été estimées, et les distances entre les écoles et les magasins ont été examinées en fonction des caractéristiques géographiques et du statut socioéconomique du quartier.

RÉSULTATS : Le fait de permettre la vente d'alcool dans toutes les épiceries de la province ferait passer le nombre de points de vente de spiritueux de 153 à 282 et augmenterait de 97,49 % la population vivant à moins de 499 m d'un point de vente, soit de 19 886 à 39 273 habitants. La vente d'alcool dans les épiceries créerait 35 nouveaux points de vente de spiritueux situés à moins de 499 m d'une école. Les quartiers à faible revenu afficheraient le plus grand nombre et la plus grande proportion de magasins à moins de 499 m d'une école.

CONCLUSION : D'après les constatations de cette étude, il est important de tenir compte des inégalités sociales, économiques et de santé lorsque les réformes de la politique sur l'alcool toucheront démesurément les quartiers à faible revenu et les jeunes vivant dans ces quartiers.

MOTS CLÉS : politique sur l'alcool; santé publique; jeunes; abus de substances