Lunch is ready... but not healthy: An analysis of lunches served in childcare centres in two Canadian provinces

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ABSTRACT

OBJECTIVES: Childcare centres (CCs) typically offer one meal and snacks daily. This study compared what is served in CCs with what the nutritional recommendations are; described and compared the nutritional composition of lunches served in CCs in New Brunswick and Saskatchewan; and examined differences between French and English, and urban and rural centres.

METHODS: The study involved 61 randomly selected CCs in New Brunswick and Saskatchewan, Canada. Lunch content was measured on two consecutive days by weighing each food item served to children and by visually documenting the food items using digital photography. Food items were categorized into food groups according to Health Canada's *Eating Well with Canada's Food Guide*, and nutrients were analyzed using a nutritional analysis software. One-sample *t* tests compared lunch content with nutritional recommendations. Independent *t* tests compared the nutrient and food group content of lunches in New Brunswick and Saskatchewan, French and English, and urban and rural CCs.

RESULTS: On average, CCs did not meet provincial recommendations. Lunches in both provinces were low in calories (<517 kcal) and fibre (<7 g). Overall, Saskatchewan centres served greater amounts of food than New Brunswick centres ($p < 0.05$). French-speaking centres provided less fat ($p = 0.047$), less saturated fat ($p = 0.01$), and fewer servings of meat and alternatives ($p = 0.02$), and more *trans* fat ($p = 0.03$) than English-speaking centres. There were no differences between rural and urban centres.

CONCLUSIONS: Few CC lunches met nutritional recommendations. Interventions are required to improve the quality of foods offered in CCs. Reviewing or developing comprehensive nutrition guidelines is warranted.

KEY WORDS: Child day care centers; food quality; lunch; nutritional value

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

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In Canada, over half of children between 6 months and 5 years of age spend close to 30 hours a week in childcare centres (CCs).¹ Children attending these centres full time typically receive one to two meals and up to two snacks per day, as recommended by most provincial nutrition policies.^{2–4} Therefore, CCs can significantly contribute to children's daily recommended intakes of foods and nutrients. Some studies have shown that children attending full time consume half to three-quarters of their daily energy requirements when they attend CCs;^{5,6} however, US cross-sectional studies have reported that children in the childcare setting consume too few vegetables, fruit (with the exception of fruit juices), and whole grain products, and too much saturated fat and sugar.^{7,8} Little is known about the quality of the foods served in CCs in Canada.

Nutrition guidelines or policies for Canadian CCs vary greatly across provinces. For example, Nova Scotia and Prince Edward Island have detailed requirements specifying which foods are, or are not, to be served to children in CCs.^{4,9} Nova Scotia guidelines also specify the quantity of foods to be served and recommend that foods of a variety of colours, flavours, textures, shapes and temperatures be served during the day.⁴ In other provinces, including New Brunswick and Saskatchewan, nutrition guidelines are much less detailed, recommending only that CCs offer a certain

number of servings of each of the four main food groups presented in Health Canada's *Eating Well with Canada's Food Guide* (i.e., vegetables and fruit, grain products, milk and substitutes, and meat and substitutes).^{2,3} Implementation of such guidelines requires that childcare staff know the food guide and know what

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constitutes a serving of each food group. Since it has been reported that childcare staff's nutrition-related knowledge is relatively low,¹⁰ it is possible that nutrition guidelines that are too broad lead CCs to offer suboptimal quality of food to children. Moreover, since linguistic¹¹ and regional¹² differences in the quality of lunches served in public schools have been documented, further examination in other linguistic and geographic contexts is warranted.

The purpose of this study was to 1) evaluate what is served in CCs compared with nutritional recommendations, 2) describe and compare the nutritional composition of lunches served in CCs in New Brunswick and Saskatchewan, and 3) examine differences between lunch content in nutrients and food groups in French and English, and urban and rural CCs.

METHODS

Participants

This study used baseline data collected from CCs that participated in the Healthy Start/Départ Santé study, a cluster randomized controlled trial in Saskatchewan and New Brunswick involving preschoolers (aged 3–5 years). A detailed protocol of this study can be found elsewhere.¹³ Briefly, a registry of all licenced CCs (all of which were privately owned) in both provinces was used as the sampling frame, and centres were deemed eligible if they had not previously been part of a physical activity or nutrition-promoting intervention, provided lunch to children, offered a preschool program, and had more than 20 preschoolers registered. The CCs were then stratified according to their region (urban or rural) and language spoken (English or French). CCs were randomly selected within the rural/urban and language strata and invited to participate in the Healthy Start/Départ Santé study. Those that declined participation were replaced by others randomly selected from the same stratum. In total, 24 CCs were recruited in New Brunswick (33% English-speaking, 58% urban), and 37 CCs were recruited in Saskatchewan (95% English-speaking, 59% urban). The study received approval from Health Canada, the University of Saskatchewan and the Centre Hospitalier de l'Université de Sherbrooke (Université de Sherbrooke Hospital Center) ethics review boards.

Data collection

Nutritional Composition of Lunches

Data were obtained at lunch on two consecutive days in each CC. On each day, each serving of food given to the children was analyzed through the weighed plate waste method, which involved weighing each food item separately using a calibrated digital food scale (Instyle, Home Hardware, Canada). Digital photography was then used to document the weight of the food items indicated on the scale, as well as the type or composition of the item (e.g., mixed dish). This process is the first part of the weighed plate waste method, which is considered a precise measurement of dietary intake.^{14,15} The second part, which consists of weighing children's food after they have eaten, was also performed but not used for this study's analyses. When available, a copy of the recipe used for the meal was obtained. When the recipe was not available, cooks gave detailed cooking instructions and research assistants took pictures of all food products used. Each recipe or food item was then entered

into nutritional analysis software (Esha Food Processor, version 10.10.00) using the Canadian Nutrient File, which provides the nutrient content of food items in the Canadian food market. Since it has been reported that Canadian children consume excessive amounts of sodium, as well as high levels of sugar and high-fat foods,¹⁶ Esha Food Processor was used to assess the quantity of these nutrients in the lunches served. Servings of all food groups (vegetables and fruit, grains, milk and alternatives, meat and alternatives) as well as fluid milk were also assessed, using Health Canada's definition of a serving for each food item served.¹⁷

Rurality and Language

The rurality of CCs was determined from publicly available geospatial information obtained from the Community Information Database 2006.¹⁸ A CC was identified as urban if it was located in a region classified as "Urban – census metropolitan areas", "Urban – census agglomerations", and "Rural – strong metropolitan influenced zone (MIZ)". CCs located in regions identified as "Rural – moderate MIZ", "Rural – weak MIZ", and "Rural – no MIZ" were considered as rural. CCs were also classified as French- or English-speaking, according to the main language spoken at the CC.

Data analyses

Descriptive analyses were conducted using R Statistical Software, version 3.1.3 (R Foundation). Recommendations for total fat, saturated fat, *trans* fat, and sugar were based on the percentage of total energy intake for preschoolers, and the recommendation for calories was based on the mean of energy requirements for boys and girls 3–4 and 4–5 years old, as suggested by the World Health Organization and the Food and Agriculture Organization of the United Nations.^{19,20} Since no estimated energy requirements or recommended dietary allowance are available for fibre and sodium, recommendations were based on the adequate intake for both of those nutrients for children aged 3–5.²¹ While the adequate intake is not equivalent to the estimated energy requirement or the recommended dietary allowance, it is believed to cover the needs of a group of healthy individuals of a specific age and sex.²¹ Means of calories, fibre, fat, saturated fat, *trans* fat, sodium, and sugar for each CC were compared with 33% of the recommendations listed above using one-sample *t* tests, which is in line with the standards used by the US Department of Agriculture in the Early Childhood and Child Care Study.⁵ The amount of servings of fruit, vegetables, grains, milk and alternatives, meat and alternatives, and fluid milk served at lunch were compared with New Brunswick and Saskatchewan nutritional recommendations for lunch in CCs^{2,3} using one-sample *t* tests. Two-sample Welch unequal variances *t* tests were used to test for statistical differences between the means of each nutrient and food group served in New Brunswick and Saskatchewan, French and English, and rural and urban CCs.

RESULTS

Food and nutrient composition of lunches served compared with recommendations

Regardless of language spoken or rurality, the average amount of both fruits and vegetables served in CCs in New Brunswick and Saskatchewan represented less than one complete serving (Table 1).

Table 1. Average proportion of recommended servings of fruit, vegetables, fluid milk, grains, milk and alternatives, and meat and alternatives served at lunch per child in New Brunswick and Saskatchewan childcare centres ($n = 61$)

	New Brunswick ($n = 24$)					Saskatchewan ($n = 37$)				
	Fruit	Vegetables†	Fluid milk	Grains	Milk and alternatives	Fruit	Vegetables†	Fluid milk	Grains	Milk and alternatives
Number of recommended servings†	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Average number of servings served	0.16***	0.46***	0.31***	0.94	0.39***	0.14***	0.67***	0.40***	0.76**	0.51***
Average number of servings served	0.20***	0.42***	0.32***	0.93	0.42***	0.07***	0.72*	0.35***	0.81	0.45***
Average number of servings served	0.14***	0.49***	0.30***	0.94	0.37***	0.19***	0.64***	0.43***	0.72*	0.55***
Average number of servings served	0.22***	0.49***	0.34***	1.04	0.42***	0.38	0.65	0.23	0.40	0.35
Average number of servings served	0.05***	0.39***	0.25***	0.74	0.34***	0.12***	0.67***	0.41***	0.78*	0.52***

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

† Vegetables include potatoes.

‡ Based on New Brunswick and Saskatchewan nutritional recommendations for lunch in CCs.^{2,3} Health Canada's definition of a serving was used to determine how many servings of each food item were served.¹⁷ Results obtained from one-sample t tests.

Potatoes, which excluded fried potatoes or packaged French fries, accounted for approximately 38% of the servings of vegetables in New Brunswick and 28% in Saskatchewan. Despite the recommendation that preschool children be served one serving (250 mL) of fluid milk at lunch, approximately a third of the recommended serving was served in New Brunswick (0.31 serving) and two fifths (0.40 serving) was served in Saskatchewan. On average, lunches in New Brunswick and Saskatchewan CCs provided too few calories and insufficient amounts of fibre compared with the recommendations (Table 2). However, food content in fat, saturated fat, *trans* fat, and sugar were within the maximum recommended amounts in both provinces. In general, sodium content was significantly higher than the maximum recommendations in all Saskatchewan CCs ($p < 0.01$), except for French-speaking CCs ($p = 0.62$). While no significant differences were observed between the maximum sodium content recommended and the sodium content in lunch served in English-speaking, rural and urban CCs in New Brunswick ($p > 0.09$), on average the lunches served in French-speaking CCs were found to contain significantly higher amounts of sodium than the recommended maximum amounts ($p = 0.03$).

Inter-provincial, rural, and language comparisons

On average, Saskatchewan CCs served significantly more servings of vegetables ($p = 0.03$), meat and alternatives ($p < 0.001$), and milk and alternatives ($p = 0.03$), and lunch contents were higher in fat ($p = 0.002$), saturated fat ($p < 0.001$), and sodium ($p = 0.03$) than in New Brunswick (Table 3). Differences were also found between French- and English-speaking CCs. In general, French-speaking centres served less fat ($p = 0.047$), less saturated fat ($p = 0.01$), and fewer servings of meats and alternatives ($p = 0.002$) than English-speaking centres. However, lunches served in French-speaking centres also provided more *trans* fat ($p = 0.03$). No statistically significant differences were found between urban and rural CCs (all $p \geq 0.26$).

DISCUSSION

To our knowledge, this is the first study to objectively assess the quality and quantity of food served at lunch in CCs in Canada. A representative sample of CCs was drawn from New Brunswick and Saskatchewan, and CCs provided lunches that, on average, did not meet all of the nutritional recommendations. Regardless of geographic location and language, lunches served in CCs were low in all food groups, except for grains, and in fibre.

A study by Briley et al.²² found that two of the main factors that directly influence CC menus are staff's perceptions of children's food preferences and food cost. Staff who believe that children do not like fruit or vegetables may be more likely to serve smaller portions in an attempt to limit waste and reduce costs, thus potentially explaining why lunches in our study were low in calories, fibre, and fruit and vegetables. Furthermore, even an appropriate quantity of vegetables may be of low nutritional value since, similar to Padget and Briley's findings,⁸ potatoes were the vegetable most often served. Although potatoes are a good source of some micronutrients, they also provide large amounts of calories and carbohydrates, and contain proportionally less fibre than dark-coloured vegetables.²³ The low quantity of fibre served could be the result of the low quantity of fruit and vegetables, which have high

Average proportion of recommended amounts of nutrients from food served at lunch per child in New Brunswick and Saskatchewan childcare centres													
	New Brunswick (n = 24)							Saskatchewan (n = 37)					
	Calories (kcal)	Fibre (g)	Fat (g)	Saturated fat (g)	Trans fat (g)	Sodium (mg)	Sugar (g)	Calories (kcal)	Fibre (g)	Fat (g)	Saturated fat (g)	Trans fat (g)	Sodium (mg)
Recommended [†]	502.0	7.0	17.0	5.7	0.6	400.0	13.0	502.0	7.0	17.0	5.7	0.6	400.0
All centres (n = 61)													
	284.3***	2.5***	8.8***	3.1***	0.3***	486.1	12.8	311.8***	2.7***	12.2***	4.7**	0.2***	660.2***
	0.57	0.36	0.52	0.54	0.5	1.22	0.85	0.62	0.39	0.72	0.82	0.33	1.63
Rural centres (n = 25)													
	269.4***	2.5***	9.1***	3.3***	0.4*	551.8	11.0	300.1***	2.8***	11.1***	4.3**	0.2***	603.9***
	0.54	0.36	0.54	0.58	0.67	1.38	0.84	0.60	0.4	0.65	0.75	0.33	1.51
Urban centres (n = 36)													
	295.0***	2.5***	8.6***	2.9***	0.3***	439.1	14.1	319.7***	2.6***	12.9**	5.0***	0.2***	698.6***
	0.59	0.36	0.51	0.51	0.50	1.10	1.08	0.64	0.37	0.76	0.88	0.33	1.73
French-speaking centres (n = 18)													
	318.2***	2.8***	9.5***	3.2***	0.4**	544.2*	15.2	214.5	2.3**	7.5	3.5	0.2	624.2
	0.63	0.4	17.0	0.56	0.67	1.36	1.17	0.43	0.33	0.44	0.61	0.33	1.56
English-speaking centres (n = 43)													
	216.6***	2.0***	7.3***	2.7***	0.2***	369.8	8.0***	317.3***	2.7***	12.4***	4.8*	0.2***	662.3***
	0.43	0.29	0.43	0.47	0.33	0.92	0.62	0.63	0.39	0.73	0.84	0.33	1.66

[†] p < 0.01; *** p < 0.001.
% of the Canadian estimated average requirements. Fat based on 30% of energy; saturated fat based on 10% of energy; trans fat based on 1% of energy; sugar based on 10% of energy.¹⁹ Results obtained from two-sample Welch unequal variances *t* tests.

Comparison of average nutrients and food groups served in New Brunswick and Saskatchewan, English and French, and rural and urban childcare centres (childcare centres)								
	Province			Rurality			Language	
	Saskatchewan, n = 37, M (SD)	New Brunswick, n = 24, M (SD)	p value*	Urban, n = 25, M (SD)	Rural, n = 36, M (SD)	p value*	English, n = 43, M (SD)	French, n = 18, M (SD)
Calories (kcal)	311.8 (86.6)	284.3 (96.9)	0.27	310.1 (96.4)	287.8 (82.8)	0.34	298.6 (92.2)	306.6 (90.6)
Fibre (g)	2.7 (1.0)	2.5 (1.00)	0.50	2.6 (0.9)	2.7 (1.2)	0.76	2.6 (1.0)	2.7 (1.00)
Fat (g)	12.2 (4.8)	8.8 (3.4)	0.002	11.2 (5.1)	10.3 (3.7)	0.41	11.5 (4.9)	9.3 (3.3)
Saturated fat (g)	4.7 (2.0)	3.1 (1.2)	<0.001	4.2 (2.1)	3.9 (1.6)	0.54	4.4 (2.1)	3.3 (1.2)
Trans fat (g)	0.2 (0.2)	0.3 (0.2)	0.05	0.2 (0.2)	0.3 (0.2)	0.37	0.2 (0.2)	0.4 (0.2)
Sodium (mg)	660.2 (386.4)	486.1 (237.4)	0.03	597.7 (396.3)	583.1 (259.2)	0.86	607.9 (378.3)	553.1 (250.3)
Sugar (g)	10.7 (4.0)	12.80 (9.9)	0.34	12.5 (7.9)	10.2 (5.0)	0.18	10.3 (4.1)	14.6 (10.6)
Vegetables (servings)	0.8 (0.4)	0.6 (0.4)	0.07	0.7 (0.3)	0.7 (0.5)	0.88	0.7 (0.4)	0.8 (0.4)
Vegetables [†] (servings)	0.6 (0.3)	0.5 (0.3)	0.03	0.6 (0.3)	0.5 (0.3)	0.26	0.6 (0.3)	0.6 (0.4)
Legumes (servings)	0.7 (0.4)	0.5 (0.3)	0.03	0.6 (0.4)	0.6 (0.5)	0.88	0.6 (0.4)	0.5 (0.4)
Whole grains (servings)	0.5 (0.3)	0.3 (0.2)	0.004	0.4 (0.3)	0.4 (0.3)	0.43	0.4 (0.3)	0.3 (0.3)
Low-fat dairy (servings)	0.8 (0.5)	0.9 (0.5)	0.04	0.8 (0.5)	0.9 (0.5)	0.71	0.8 (0.5)	1.00 (0.5)
Protein alternatives (servings)	0.5 (0.3)	0.3 (0.2)	<0.001	0.5 (0.3)	0.4 (0.2)	0.81	0.5 (0.3)	0.3 (0.2)
Plant-based alternatives (servings)	0.5 (0.2)	0.4 (0.2)	0.03	0.5 (0.2)	0.4 (0.2)	0.38	0.5 (0.2)	0.4 (0.2)
Added sugars (servings)	0.4 (0.2)	0.3 (0.2)	0.07	0.4 (0.2)	0.3 (0.2)	0.43	0.4 (0.2)	0.3 (0.2)

* from two-sample Welch unequal variances *t* tests.
[†] include potatoes.

fibre content.²³ Our results showed significant differences in the amounts of nutrients and food groups served in Saskatchewan and New Brunswick CCs. On average, New Brunswick CCs consistently served smaller portions of all food groups than Saskatchewan CCs, with the exception of grain products. Regional differences in consumption patterns have been reported in a previous Canadian study,¹⁶ suggesting that cultural differences may affect what is served in CCs. Garriguet, using nationally representative data collected in 2004, reported that children (4–18 years) residing in the Atlantic provinces consumed 32% of their caloric intake as snacks compared with 29.5% in the Prairies.¹⁶ Since the current study did not measure snack intake, it is possible that New Brunswick children were served or consumed larger amounts of food at snack time than Saskatchewan children. If larger snacks are offered during the day, CCs may offer smaller portions of food at lunch time. This could explain why our study found that New Brunswick CCs offered significantly less meat and alternatives, milk and alternatives, and vegetables than Saskatchewan CCs.

Our results may also reflect issues with current provincial nutritional recommendations. While CCs are encouraged to use the *Eating Well with Canada's Food Guide* to determine serving sizes, these may not be appropriate for younger children, as they require smaller portions of food than adults.²⁴ It has been suggested that an appropriate serving size for 2- to 3-year-old children should be approximately two thirds of an adult serving.²⁴ It is also recommended that young children be offered smaller servings and allowed to ask for more.²⁴ It is therefore possible that CCs are offering appropriate serving sizes to children, despite not following their provincial guidelines.

Unlike previous studies,^{7,25} sugar content was within recommended amounts in the lunches served in our study. Adults and parents agree that limiting sugar is important to prevent childhood obesity.²⁶ Therefore, CCs may be more cognizant of foods that contain high amounts of sugar and may be actively trying to limit serving these foods to children. While current recommendations stipulate that free sugars be limited to less than 10% of total energy intake, the World Health Organization also suggests a further reduction of free sugars to below 5% of total energy intake.²⁷ Since sugar content represented 10% and 8% of total calories consumed at lunch in CCs in New Brunswick and Saskatchewan respectively, further reduction of sugar content will require that CCs be provided with the knowledge and resources needed to choose foods that are low in added sugars.

While neither French- nor English-speaking CCs met all nutritional recommendations in our study, two-sample unequal variances *t* tests showed that French-speaking CCs provided lunches that were lower in fat, saturated fat, and meat and alternatives, and higher in *trans fat* than English-speaking CCs. Differences between francophone and anglophone dietary intakes in Canadian adults have been reported in a study by Batal et al. (2013).²⁸ These authors found that Canadian minority francophone men and women between 19 and 30 years of age consumed less energy from meats and alternatives than their anglophone counterparts.²⁸ It is possible that our findings reflect differences that may exist between francophones and anglophones in terms of social norms and food choices.²⁸ Further research is needed to better understand the factors that influence the

differences between dietary intakes of francophones and anglophones and how these can be considered when designing interventions aimed at improving the quality and quantity of food served in CCs of majority and minority linguistic groups.

Limitations

The limitations of this study must be acknowledged. While foods served at snack times were not assessed in this study, they may have influenced the quantity and types of foods served to children at lunch. Measuring snacks and lunch would have provided a more complete picture of what is typically served in CCs. As a strength of our study we objectively measured the food served to children. However, foods served at lunch were measured only on two consecutive days, which may not have been enough to accurately represent what is usually served to children or take into account seasonal variability. Although this study assessed the most commonly reported food groups and nutrients, assessing other macro and micronutrients may have provided additional information on the quality of the foods served.

Given the use of multiple statistical tests, it is possible that the null hypothesis was rejected as a result of an error of the first kind.²⁹ Further, although representative of centres with at least 20 children in New Brunswick and Saskatchewan, our results may not be generalizable to smaller CCs. It is also possible that the presence of research assistants may have influenced the amount of foods served to children. However, on data collection days, centres were asked to follow their routine practices and provide lunch as typically done.

IMPLICATION OF FINDINGS

Lunches served to preschoolers in New Brunswick, and Saskatchewan CCs are generally of low nutritional quality. Although rurality was not associated with the content of the lunch in terms of nutrients or food groups in either province, regional and cultural differences may affect the quality of lunches served in various provinces and in French- and English-speaking CCs. Government agencies working with CCs can use these results to guide them in the revision and creation of more detailed and comprehensive provincial nutrition guidelines. Interventions, potentially including nutrition education to staff in CCs, should also be considered and assessed.

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RÉSUMÉ

OBJECTIFS : Les centres de la petite enfance (CPE) offrent généralement un repas par jour et des collations. Dans cette étude, nous avons : comparé ce qui est servi dans les CPE aux recommandations nutritionnelles; décrit et comparé la composition nutritionnelle des déjeuners servis dans les CPE au Nouveau-Brunswick et en Saskatchewan; et examiné les différences entre les centres francophones et anglophones, urbains et ruraux.

MÉTHODE : Ont participé à l'étude 61 CPE sélectionnés au hasard au Nouveau-Brunswick et en Saskatchewan, au Canada. Le contenu des déjeuners a été mesuré deux jours de suite en pesant chaque produit alimentaire servi aux enfants et en consignait visuellement les produits alimentaires à l'aide de photographies numériques. Les produits alimentaires ont été classés en groupes d'aliments conformément au document *Bien manger avec le Guide alimentaire canadien* de Santé Canada, et les nutriments ont été analysés à l'aide d'un logiciel d'analyse nutritionnelle. Des tests *t* à échantillon unique ont permis de comparer le contenu des déjeuners aux recommandations nutritionnelles. Des tests *t* indépendants ont permis de comparer le contenu nutritionnel et les groupes d'aliments des déjeuners servis dans les CPE francophones et anglophones, urbains et ruraux du Nouveau-Brunswick et de la Saskatchewan.

RÉSULTATS : En moyenne, les CPE ne respectaient pas les recommandations provinciales. Dans les deux provinces, les déjeuners étaient faibles en calories (<517 kcal) et en fibres (<7 g). Dans l'ensemble, les centres de la Saskatchewan servaient de plus grandes quantités de nourriture que ceux du Nouveau-Brunswick ($p < 0,05$). Les centres francophones offraient moins de matières grasses ($p = 0,047$), moins de graisses saturées ($p = 0,01$), moins de portions de viandes et substituts ($p = 0,02$) et plus de gras *trans* ($p = 0,03$) que les centres anglophones. Il n'y avait aucun écart entre les centres ruraux et urbains.

CONCLUSIONS : Peu de déjeuners offerts dans les CPE respectaient les recommandations nutritionnelles. Il faudrait intervenir pour améliorer la qualité des aliments offerts dans les CPE. La révision ou l'élaboration de directives nutritionnelles complètes s'impose.

MOTS CLÉS : garderies d'enfants; qualité alimentaire; déjeuner; valeur nutritionnelle