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SPECIAL SECTION ON COVID-19: COMMENTARY

Regional differences in access to the outdoors and outdoor play of Canadian children and youth during the COVID-19 outbreak

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Abstract

To reduce the spread of COVID-19, public health authorities across the country have recommended that Canadians keep their distance, wash their hands, and stay home. To enforce these measures, restrictions on outdoor behaviour have been implemented, limiting access to parks and recreational outdoor spaces. New evidence shows that COVID-19 restrictions are associated with an overall lower amount of time spent in outdoor play among Canadian children and youth. This is concerning, as outdoor play is important for children's physical and mental health and helps provide them with a sense of control during times of uncertainty and stress. As policies on access to the outdoors during the COVID-19 outbreak vary by province, it is possible that policy differences have led to regional differences in changes in outdoor play among children and youth. In this commentary, we examine regional differences in outdoor play among children and youth across Canada, and the association between provincial policies related to COVID-19 and outdoor play. We argue that through the recovery process, in the event of a second wave of infections, and in preparing for future public health challenges, policy decisions should consider ways to preserve outdoor play for Canadian children and youth.

Résumé

Pour réduire la propagation de la COVID-19, les autorités de santé publique du pays ont recommandé aux Canadiens de garder leurs distances, de se laver les mains et de rester chez eux. Pour faire respecter ces mesures, des restrictions ont été appliquées aux comportements en plein air en limitant l'accès aux parcs et aux espaces récréatifs à l'extérieur. De nouvelles données probantes montrent que les restrictions en lien avec la COVID-19 sont associées à une baisse générale du temps consacré au jeu à l'extérieur par les enfants et les jeunes du Canada. C'est préoccupant, car le jeu à l'extérieur est important pour leur santé physique et mentale et leur donne un sentiment de contrôle en période d'incertitude et de stress. Comme les politiques d'accès à l'extérieur durant l'éclosion de COVID-19 varient d'une province à l'autre, il est possible que différentes politiques aient donné lieu à des écarts régionaux dans l'évolution du jeu à l'extérieur chez les enfants et les jeunes. Dans notre commentaire, nous examinons les différences régionales du jeu à l'extérieur chez les enfants et les jeunes au Canada et l'association entre les politiques provinciales liées à la COVID-19 et le jeu à l'extérieur. Nous faisons valoir que tant durant le processus de reprise qu'en cas de seconde vague

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d'infections et en prévision des futurs problèmes de santé publique, les décisions stratégiques devraient songer aux moyens de préserver le jeu à l'extérieur pour les enfants et les jeunes du Canada.

Keywords COVID-19 · Outdoor play · Policy · Children and youth · Health

Mots-clés COVID-19 · jeu à l'extérieur · politique (principe) · enfants et jeunes · santé

Introduction

The coronavirus disease 2019 (COVID-19) outbreak has led public health authorities across the country to strongly recommend or require that Canadians practice physical distancing, avoid touching communal surfaces, wash their hands regularly, and in general, stay at home. These measures have been effective in flattening the overall curve; in April, the national rate of increase in cases was > 15%, and at the beginning of May, it was closer to 3% (Treble, 2020).

However, restrictions on access to the outdoors, including parks, playgrounds, conservation areas, and recreational spaces, have meant that opportunities for Canadians of all ages to get outside have been limited. Counterbalancing efforts to create more space outdoors, such as making select roadways car-free, have focused primarily on active transportation and exercise. Far fewer efforts have been made to facilitate children's outdoor play. The consequence is that children are playing less outside than before the COVID-19 outbreak (Moore et al., 2020), which may have immediate and lasting negative health impacts (Tremblay et al., 2015). The severity of these restrictions, as well as counterbalancing efforts, vary substantially by province. In this commentary, we descriptively explore regional differences in COVID-19-related restrictions on access to the outdoors and compare these differences to regional changes in outdoor play of Canadian children and youth. Our aim was to identify those policies that have successfully balanced efforts to contain the spread of COVID-19, with efforts to ensure the continued health and well-being of citizens by supporting access to the outdoors and outdoor play.

Importance of access to outdoor play for children and youth

Outdoor play is important for healthy child development. As stated in the 2015 Position Statement on Active Outdoor Play (Tremblay et al., 2015), "when children are outside they move more, sit less, and play longer." The Council of Chief Medical Officers of Health have endorsed this statement (Pan-Canadian Public Health Network, 2018). An active lifestyle among children is associated with a more favourable cardiometabolic profile (Ekelund et al., 2012), lower risk of severe obesity (Porter et al., 2018), and improved fitness (Gray et al., 2015). Outdoor play provides an important and substantially healthier option than screen time, helps youth sleep better (Sampasa-Kanyinga et al., 2020), and is important for physical-emotional skill building (Pacilli et al., 2013), school readiness, and future positive mental health (Hinkley et al., 2018).

In the context of the COVID-19 outbreak, active outdoor play is also important to help maintain and promote a robust immune system (Lasselin et al., 2016). Provided that children are dressed appropriately, children are less likely to get sick when outdoors than indoors (Willem et al., 2012). Outdoor play can provide children with a sense of control and agency over their own actions, and is therefore important to help children process their own emotional responses during times of uncertainty and stress (Yogman et al., 2018) as with the COVID-19 outbreak.

Provincial and municipal policies on access to the outdoors during COVID-19

The importance of the outdoors for mental and physical health is reflected by repeated calls from public health officials (CBC News, 2020a; CTV News, 2020a) that Canadians of all ages—provided they are healthy and keep their distance—should go outside and enjoy the outdoors during the current outbreak. However, the implementation of COVID-19-related policies as they relate to the outdoors has varied substantially across the country. Oakville completely banned access to municipal parks, and Toronto was the last major city in the country to implement road closures to facilitate safe outdoor activity (CTV News, 2020b). Ottawa limited park use to "walk-through only" purposes, essentially banning play from these spaces, and heavily ticketed those who deviated from that rule (Ottawa Citizen, 2020a). All National Parks (Parks Canada, 2020) were closed on March 25, 2020, and most Provincial Parks followed suit. Vancouver, by comparison, was one of the first places in the country to institute measures to promote safe access to the outdoors by banning car access to Stanley Park (City of Vancouver, 2020). Alberta Provincial Parks permitted access to visitors arriving by foot, bicycle, or horse (Alberta Parks, 2020), with the Alberta Recreation and Parks Association stepping up early with a statement outlining efforts to continue working with the Alberta government to ensure continued safe access to parks (Cowie & Allan, 2020).

Table 1 Selection of policies on access to the outdoors and COVID-19 cases, by province

Province	Policies facilitating access to outdoor spaces	Policies restricting access to outdoor spaces	Number of COVID-19 cases*(Statistics Canada, 2020)
Canada-wide		National parks closed until June 1st (Parks Canada, 2020)	122,087 322/100,000 people
British Columbia	Vancouver: Stanley Park became car-free on April 8th to encourage physical activity (City of Vancouver, 2020) The majority of regional parks in Metro Vancouver remained open (Metro Vancouver, 2020) Victoria: Active transportation routes expanded as of May 14th (Bains, 2020)	Provincial parks closed until May 14th (BC Centre for Disease Control, 2020)	4358 85/100,000 people
Alberta	Provincial parks remained open to those accessing parks by foot, bicycle, or horse (Alberta Parks, 2020) Alberta Recreation and Parks Association announced on March 25th that they would work with the Alberta government to ensure continued safe access to the outdoors (Cowie and Allan, 2020) Calgary: Select traffic lanes blocked off on March 28th to support active transportation (CBC News, 2020b) Municipal parks remained open with physical distancing guidelines in effect (Calgary, 2020) Edmonton: Bike lanes on select streets converted to shared space on April 9th to support active transportation (CBC News, 2020b) Municipal parks remained open with physical distancing guidelines in effect (Edmonton, 2020)		12,053 273/100,000 people
Saskatchewan	Regina: Wascana Lake loop turned into one-way path to promote active transportation while adhering to physical distancing guidelines (Global News, 2020a) Saskatoon: All parks and trails remained open (Giles, 2020)	Provincial parks closed until May 4th (Tourism Saskatchewan, 2020)	1580 134/100,000 people
Manitoba	Winnipeg: Select streets closed to car traffic on April 6th to support outdoor enjoyment (CBC News, 2020c) Municipal parks remained open with physical distancing guidelines in effect (Winnipeg, 2020)	Provincial parks closed until May 4th (Manitoba Parks, 2020)	697 51/100,000 people
Ontario	Rideau Valley: Trails remained open at select locations with physical distancing guidelines in effect (Rideau Valley Conservation Authority, 2020) Ottawa: Car access on select streets restricted to local traffic only on April 9th to support active transportation (Ottawa Citizen, 2020b) Toronto: Select streets closed to car traffic on May 14th to support physical activity (CTV News, 2020b) Municipal parks remained accessible with physical distancing guidelines in effect (Toronto, 2020)	Provincial parks closed until May 11th (Ontario Parks, 2020) National Capital Commission: Trails and parks open for walk-through only until May 6th with heavy ticketing for those lingering in parks (Ottawa Citizen, 2020a) Toronto: A proposal to make Yonge Street car-free was struck down (Toronto.com, 2020) Oakville: Outdoor recreation areas and parks closed until May 16th with heavy ticketing for those in violation (Oakville, 2020) (Global News, 2020b)	40,646 276/100,000 people
Quebec	Montreal: Select streets restricted to local traffic only on April 9th to support active transportation. Municipal parks remained open (Montreal, 2020)	Quebec national parks closed until May 20th (Government of Quebec, 2020)	61,151 716/100,000 people
New Brunswick	Moncton: All parks and trails remained open with one-way routes on park paths instituted to facilitate physical distancing (Walker, 2020)	Provincial parks closed until April 24th (New Brunswick, 2020)	186 24/100,000 people
Nova Scotia	Halifax: Motion to increase active transportation routes passed on April 29th (Brand, 2020)	Provincial parks closed until May 1st (Nova Scotia Provincial Parks, 2020) Halifax: All municipal parks closed until May 1st (Groff, 2020)	1074 110/100,000 people

Table 1 (continued)

Province	Policies facilitating access to outdoor spaces	Policies restricting access to outdoor spaces	Number of COVID-19 cases*(Statistics Canada, 2020)
Prince Edward Island	Provincial park trails remained open without services; services returning June 5th (Prince Edward Island, 2020)		41 26/100,000 people
Newfoundland and Labrador	St John's: Decision to widen select streets made on May 5th to promote active transportation (Mercer, 2020)	Provincial Parks closed until further notice (Newfoundland and Labrador, 2020a, b) Municipal parks closed until May 11th (Newfoundland and Labrador, 2020a, b)	268 51/100,000 people

* As of August 17, 2020

Manitoba also kept their parks open (Manitoba Parks, 2020) and Prince Edward Island (Prince Edward Island, 2020) closed their park services, but permitted day-use access to trails. A map of restrictions and how they vary across the country (Canadian Urban Institute, 2020), including access to parks and trails, showed that at the height of the outbreak in mid-March, restrictions were the greatest in Ontario, and the least in Western Canada. The severity of restrictions, in general, maps closely with the severity of reported COVID-19 cases.

Severity of COVID-19 cases across the provinces

As of August 17, there have been a total of 122,087 documented cases of COVID-19 in Canada (Statistics Canada, 2020). Quebec has been the hardest hit, with a total of 61,151 confirmed cases (716 cases per 100,000 people). Ontario has the next highest case load, with 40,646 cases (276 cases per 100,000 people). British Columbia, on the other hand, has only a total of 4358 cases (85 cases per 100,000 people) (Statistics Canada, 2020) but at the start of the outbreak was the Canadian epicentre, home to 5 of the first 10 reported cases of COVID-19, and had a comparable number of cases to Ontario on March 17 when both provinces announced a state of emergency (Breton & Tabbara, 2020) (Table 1).

Differences in outdoor play across the country

It is logical to assume that differences in provincial policies on access to the outdoors during the COVID-19 outbreak would lead to regional differences in outdoor play. To explore potential regional differences, we used survey data collected in collaboration with ParticipACTION (Moore et al., 2020). In the national survey, in April, parents were asked about their child's movement behaviours (physical activity, sleep, sedentary time, time spent outdoors and in outdoor play) in the last week, and were then asked to compare their child's behaviours before and during the COVID-19 outbreak. A cross-sectional sample of 1472 parents of children and youth aged 5–17 years from across the country was recruited via a third-party market research company, Maru/Matchbox. For the purposes of this commentary, we looked at differences between regions of Canada (British Columbia, the Prairies, Ontario, Quebec, Atlantic Canada) in terms of change in time spent outdoors and in outdoor play.

In the survey, change in child and youth outdoor behaviour ranged from 1 (much less play) to 5 (much more play) with 3 representing no change. Overall, we found that all regions exhibited a decrease in time spent outdoors and in outdoor play (i.e., below 3), with Ontario having experienced the greatest decline in both time spent outdoors and in outdoor play ($p < 0.001$) (Fig. 1).

Conclusion

It is unsurprising that in the provinces that have had the highest number of COVID-19 cases, there have been the most stringent restrictions on access to the outdoors. It is also unsurprising that these same provinces have had the greatest decline in time spent outdoors and in outdoor play among children and youth. While the recommendations to stay apart, stay at home, and wash your hands have clearly been effective in flattening the curve, the collateral damage of these restrictions on childhood access to outdoor play and the associated physical, emotional, and social benefits is also evident and is a major public health concern. Preserving and promoting access to outdoor play by keeping public green spaces open, and promoting outdoor play when children return to schools (Lawson Foundation, 2020) should be a top public health priority.

This has been an unprecedented global health crisis and it is important to acknowledge that each province has acted with the health of its citizens in mind. However, it is debatable

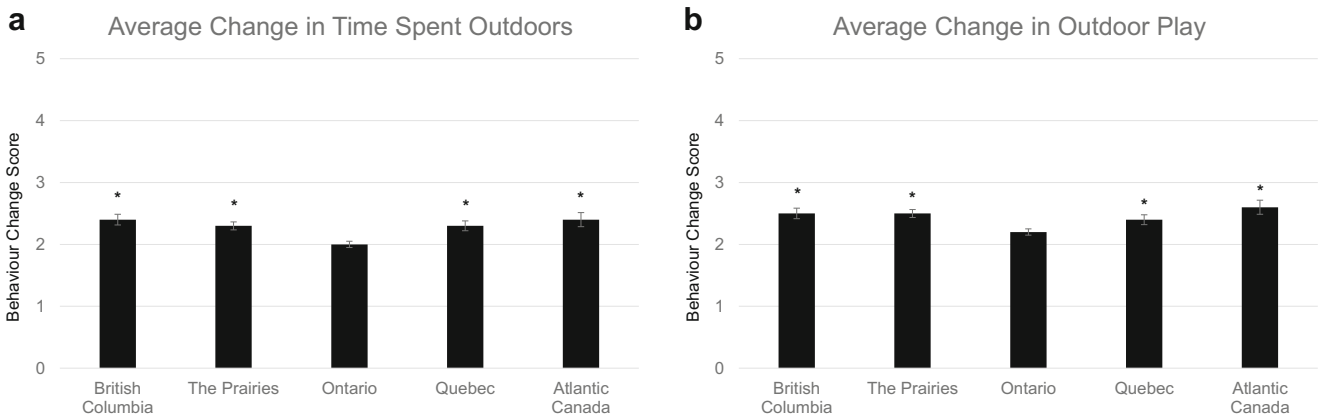

Fig. 1 Change in time spent outdoors and in outdoor play among children and youth across Canada during COVID-19 restrictions. **a** Average (±SE) change in time spent outdoors within each region of Canada. **b** Average (±SE) change in outdoor play within each region of Canada. Behaviour change scores range from 1 (much less outdoor time or play) to 5 (much more outdoor time or play) with 3 representing no change. Data represent average change scores from 1472 parents of children and youth aged 5–17 years from across the country (British Columbia ($n = 196$), The Prairies ($n = 292$), Ontario ($n = 585$), Quebec ($n = 268$), Atlantic Canada ($n = 131$)). Asterisk indicates significantly different from Ontario at $p < 0.001$

whether the most severe restrictions on access to the outdoors were warranted, given the benefits of the outdoors in promoting a healthy immune system and maintaining physical and mental health. Moreover, recent evidence suggests that transmission of COVID-19 is low outdoors compared with indoors (Morawska & Milton, 2020), reinforcing the notion that access to the outdoors should be preserved.

British Columbia was home to some of the first cases of COVID-19, had one of the highest numbers of cases at the time when most provinces announced a state of emergency, and, under the direction of their provincial Medical Officer of Health, Dr. Bonnie Henry, repeatedly told their citizens to go outside and play (CBC News, 2020a). Once COVID-19 is far behind us, a case study on the decisions made in British Columbia may be warranted to help shape future preparedness plans. Such a case study is especially pertinent to municipal decision makers, whose bylaw decisions on which aspects of the public realm remain open in the face of a second wave may substantially impact the health and well-being of communities.

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Compliance with ethical standards

Conflict of interest GF, RER, and MST are members of the ParticipACTION Research Advisory Group (RAG). The RAG provides advice to ParticipACTION about the direction that should be pursued with respect to its research, evaluation, and knowledge translation. ParticipACTION provides meeting expenses for the RAG to meet but does not provide any additional compensation.

Ethical approval Maru/Matchbox panellists consented to participate in survey-based research when they signed up for the panel and when they agreed to complete this survey. Consequently, ethical approval was not needed according to articles 2.4 and 5.5 of the Canadian Tri-Council Policy Statement regarding ethical conduct of human research reporting on secondary analyses of minimal risk and anonymous data.

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