Expert Appraisal of the 2022 Canadian Para Report Card on Physical Activity for Children and Adolescents with Disabilities

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RUNNING HEAD: Physical Activity Disability Reporting in Canada

Expert Appraisal of the 2022 Canadian Para Report Card on Physical Activity for Children and Adolescents with Disabilities

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Abstract

This report provides an expert appraisal of the Canadian Para Report Card on Physical Activity (PA) for Children and Adolescents with Disabilities (CAWD). Thirteen indicators were graded by a panel of researchers, representatives from disability and PA organizations, and parents of CAWD using benchmarks of the Global Matrix 4.0 and previous Canadian PA Report Cards. Facilitated panel discussions were used to appraise the available evidence based on data gaps, opportunities, and recommendations. The available data sources included four nationally generalizable or representative datasets. Grades were assigned to 8/13 indicators and ranged from B+ to F. Data gaps in measurement and national surveillance systems were identified. Ableism was an issue identified within some of the reporting benchmarks. The absence of PA from existing accessibility legislations in Canada was a policy gap of concern. Recommendations related to research, surveillance, and policy are provided to enhance PA among CAWD in Canada.

Keywords: childhood disability, youth, advocacy, child health, Global Matrix

In Canada, 4% of children and 13% of adolescents experience disability (Statistics Canada, 2011; 2018). Participation in physical activity (PA) provides health and developmental benefits for all children and adolescents (Murphy & Carbone, 2008). In 2010, Canada ratified the United Nations Convention on the Rights of Persons with Disabilities (2008), making a commitment to ensure equality and non-discrimination of persons with disabilities in all areas, including education and recreation. Provincial and territorial accessibility acts also exist, and in 2019, the national Accessible Canada Act was passed (Minister of Justice, 2022), with the aim of eliminating barriers in employment, the built environment, information and communication technologies, customer service, programs/services, and transportation by 2040. The Framework for Recreation in Canada (Canadian Parks and Recreation/Interprovincial Sport and Recreation Council, 2015) and the Canadian Sport Policy (Sport Canada, 2012) emphasize inclusion and access, among other priorities, to enable all Canadians to participate in sport and recreation. Yet, many social, institutional, community, and policy barriers continue to limit the participation of Canadian children and adolescents with disabilities (CAWD) in PA (Martin Ginis et al., 2016).

For almost two decades, the ParticipACTION Report Card on PA for Children and Youth has been disseminated across Canada. Using available data from national surveillance and peer-reviewed literature, this Canadian Report Card provides a timely update on PA participation rates, as well as sedentary and sleep behaviors, among Canadian children and adolescents. It also grades characteristics of the environment important for supporting PA, and government strategies and investments for PA of children and adolescents. Report Card data spanning from 2015 to 2020 indicate that Canadian children and adolescents are “moving too little”, based on low ratings (D+ to F) for Overall PA and Sedentary Behaviors, yet indicators for settings (e.g., School), Family & Peers, and Government have received better grades (A- to C+).

While the Canadian Report Card has included some data on CAWD, limited efforts have been made to disaggregate the data specific to CAWD. Such an approach is needed to ensure the resulting grades and recommendations consider the unique barriers to PA that CAWD encounter and, ultimately, give effect to the participation rights of CAWD (United Nations, 2008). This report provides an overview of the Canadian Para Report Card on PA for CAWD and expert appraisal of the data gaps, opportunities, and recommendations for enhancing PA in CAWD.

Methods

Three national, representative datasets (Canadian Health Measures Survey, 2018-2019; Canadian Health Survey on Children and Youth, 2019; Health Behaviors of School-aged Children study in Canada, 2018) and data from one national survey designed for parents of CAWD (National Physical Activity Measurement study, 2018-2020) were the primary data sources for this Canadian Para Report Card (see Supplement Data Source Profiles for references to and detailed descriptions of these data sources). Table 1 provides an overview of the data sources and the factors that were considered for each dataset during the grading process. These nationally generalizable or representative data sources were selected for their inclusion of (i) CAWD and (ii) data related to one or more of the indicators and benchmarks of the Global Matrix 4.0 (see Ng et al., under review) and/or the Canadian Report Cards (e.g., Sleep and Physical Literacy; ParticipACTION, 2020). Supplement Table A shows indicators and their respective benchmarks that the data were graded against.

Two authors (NK, KAN) extracted and synthesized relevant data from each data source. The data synthesis was reviewed by an expert panel before the grading process. The panel included representation from parents of CAWD, community-service providers, disability advisory committees, researchers with expertise in disability and movement behaviors, the

Canadian Fitness and Lifestyle Research Institute (Canada's long-standing research organization of national PA monitoring), and ParticipACTION (a non-profit PA and thought leadership organization in Canada). Barnes et al.'s (2016) evidence-informed grading process was carried out by the panel. During two, 3-hour online meetings, a team member (NK) presented the data summary for each indicator's benchmark(s) and a suggested grade, consistent with the Global Matrix 4.0 grading criteria (Ng et al., under review). Then, the panel discussed the evidence, appropriateness of the benchmark, data gaps and opportunities, and recommendations for research, practice and policy. Where necessary, the panel revised the indicator grade until full consensus was reached. Discussions were audio-recorded to inform the supporting narrative of each grade. Grades were audited as described by Ng et al. (under review), and if a grade changed during the audit (e.g., School indicator), consensus was again reached by the panel.

Results and Discussion

Report Card Grades. Supplement Table B provides the grade and rationale for each of the 13 indicators. Eight of the indicators were assigned grades: B+ (Sleep), C+ (Organized Sport & PA), C- (Government), D (Overall PA, Sedentary Behaviors), D- (Active Transportation), and F (Active Play, 24-Hour Movement Behaviors). Insufficient national data were available to grade Physical Fitness, Physical Literacy, Family & Peers, and Community & Environment.

Measurement Gaps for CAWD. PA measurement in CAWD poses many challenges given the diverse movement patterns, communication styles, and levels of cognition of this population. Apart from the Overall PA indicator, the evidence used to grade the indicators was limited to child and parent report measures. For Overall PA, accelerometer data from the Canadian Health Measures Survey was used, in addition to parent and child report data, to determine the proportion of CAWD meeting the benchmark of an average of 60 minutes of

144 moderate-to-vigorous PA each day. Based on the Global Matrix grading guidelines, data sources
145 that include device-based measures are more strongly weighted than self-report data in the
146 overall indicator grade. Yet, the lack of validity for accelerometry as a measure of PA in persons
147 with mobility impairments (Martin Ginis et al., 2021), and no representation of children with
148 severe disabilities in the dataset, resulted in the panel downgrading this indicator to a D. The
149 panel recommended that greater consideration be given to the balanced representation and
150 weighting of multiple data collection methods in the grading of indicators to reliably assess PA
151 participation of CAWD. Prioritizing one method as the 'gold standard' measure of a benchmark
152 risks providing a limited and biased representation of PA participation in CAWD.

153 The lack of attention to quality of participation was another measurement concern. The
154 panel noted that the Global Matrix benchmarks are simply the number of CAWD who participate
155 (e.g., benchmark for Organized Sport & PA is % of CAWD who participate in programs). But
156 for CAWD, simply being there is not the same as the United Nations' (2008) protected right of
157 full and effective participation. Simply counting participants may allow for easy international
158 comparison of grades, but it does not provide a complete picture of the extent and quality of
159 participation for CAWD. Taking a quality measurement approach to PA participation within the
160 benchmarks would mean not only considering whether CAWD are 'present' but also whether
161 they feel satisfied, are having fun in the activities, and achieving meaningful outcomes from their
162 involvement in the program (Evans et al., 2018).

163 A final measurement consideration relates to the data and benchmarks of Family & Peers.
164 After much discussion of the evidence, a grade of INC was given to this indicator. The available
165 data suggest that parents of CAWD do not appear to be supportive of their child's PA (score low
166 on facilitating PA and sport opportunities, meeting the PA guidelines, and being active with their

child). It was noted by the panel that the existing instruments used to assess parental support for PA among CAWD are based on research in families of children and adolescents without disabilities, and therefore are not contextualized within the many PA barriers (e.g., staff training, facility accessibility; Martin Ginis et al., 2016), and labour-intensive ways (Goodwin & Ebert, 2018), that parents of CAWD must navigate to support their child's PA. Parents of CAWD are often gatekeepers of their child's PA; they may spend countless hours searching for a suitable PA program for their child, co-facilitating staff and peer interactions and, at times, take on a coaching role to safeguard their child's participation in PA programs. Parent knowledge-users on the panel also shared their concerns and experiences with the lack of access to programs for their children and having to start-up a PA program to fill this programming gap. The panel highlighted the need for research that develops and validates measures that capture the labour-intensive ways in which parents of CAWD support their child's PA.

Ableism and the Benchmarks. Several disability and PA scholars have criticized the limited, and in some cases, conflicting evidence informing (inter)national public health PA guidelines for persons with disabilities (e.g., Martin Ginis et al., 2021; Smith, Mallick, Monforte & Foster, 2021). Bearing in mind that the Global Matrix benchmarks are based on empirical evidence of PA among children and adolescents without disabilities, the panel raised several concerns of the appropriateness of some of these benchmarks for CAWD. For example, despite being called *Overall* PA, this indicator's benchmark only focuses on the moderate-to-vigorous PA guideline of an average of 60 minutes each day, and for which limited evidence is currently available for a subgroup of CAWD (Bull et al., 2020). The panel recommended that future iterations of the Global Matrix consider light-intensity PA within the benchmark of Overall PA, or even as its own indicator. This recommendation aligns with the recently developed PA

guidelines in the United Kingdom for CAWD, for which CAWD expressed how activity intensity was "an unnecessary, irrelevant, and confusing" message to communicate (Department of Health & Social Care, 2022). Consistent with this work, the panel called for the prioritization of research to establish the dose-response relationship between movement behaviors (PA, sedentary, and sleep), active play, and health outcomes, based on different impairment types and severities. With this evidence, guidelines must be created that are customized for CAWD rather than a one-size-fits-all approach that is currently taken in research and practice (Bull et al., 2020). Without this evidence base and population-specific guidelines, we cannot confidently say that existing benchmarks of the Global Matrix are appropriate for CAWD.

The language used within some of the benchmarks was another example of ableism (i.e., belief of the superiority of typical abilities; Smith et al., 2021) identified by the panel. In many instances, the benchmarks indirectly suggest a notion of there being only one way for children and adolescents to be physically active or healthy. The most striking example is illustrated in the benchmarks of Physical Fitness. In the Global Matrix 4.0, the terms *criterion-referenced standards* and *age- and sex-specific international normative data* are used as the basis for grading children and adolescents on their cardiorespiratory fitness, muscular endurance, and flexibility. While Ng et al. (under review) attempted to reduce the focus of the Physical Fitness benchmarks on age- and sex-specific standards, the revised benchmark still refers to comparisons with European *normative* values for children and adolescents. A more representative illustration of CAWD's levels of physical fitness, as well as their PA, requires greater investment from researchers and practitioners in developing reliable and valid instruments for use across impairment types and benchmarks that focus on individual progress versus making comparisons with values or standards that fail to account for the many ways CAWD move, learn, and play.

Better Surveillance of PA in Canadian CAWD. For the School and Community & Environment indicators, a lack of surveillance data on inclusive resources and infrastructure to support PA participation of CAWD compromised grading most of the respective benchmarks. Representative and adequately statistically powered population-level data for diverse impairment types is needed within existing Canadian PA monitoring and surveillance systems (Martin Ginis et al., 2021). These systems must consider access and quality of the school (including physical education) and community settings, and the disability/inclusion training of professionals (e.g., teachers, sport coaches). During panel discussions, the Canadian Fitness and Lifestyle Research Institute's efforts were noted to surveille accessibility in schools. In March 2022, survey items on disability inclusion policies and the provision of adapted infrastructure in schools were added to the organization's setting-based studies. These data will assist in future grading of the School indicator. Crowd sourcing data from mobile applications (e.g., Access Now, Jooay), and organization audit tools (e.g., The Blueprint for Quality Participation; Evans et al., 2018) were other opportunities identified by the panel for future collection of surveillance data on accessibility and user experience of community facilities and spaces.

Prioritizing the PA of Canadian CAWD in Policies and Funding. A review of the existing provincial and federal accessibility acts showed a limited focus on actions specific or relevant to PA in these policies. For example, as part of its built environment standard, the Accessibility for Ontarians Disability Act has accessibility requirements for outdoor playspaces. The lack of reference to funding to support actions towards PA for CAWD within the reviewed accessibility policies was an identified policy gap. In relation to sport policy, the current renewal of the 2012 Canadian Sport Policy was recognized by the panel as an opportunity for greater government

investment in quality sport programming (including coach training) and funding to support participation among CAWD across all levels of the Canadian sport system.

Similarly, while the federal budget for 2021 to 2026 pledged $80M to remove barriers to local organized sports programs that are ‘accessible to all’ and $400M to build new and expanded networks of pathways, bike lanes, trails, and pedestrian bridges, there is no specific allocation of these funds for CAWD. Additionally, the federal budget allocated $503.3M to support a more equal Canada for persons with disabilities through the creation of several strategies and benefits programs, yet there is no specific mention of PA within these federal funding commitments. Meanwhile, the panel acknowledged funding leadership from non-government organizations, such as the 5-year commitment of $50M from Canadian Tire Jumpstart Charities towards inclusive infrastructure (playgrounds and multi-sport courts) and programming opportunities for CAWD in sport and play. Policy action frameworks and dedicated government budgets were identified priorities by the panel to ensure the rights to full and effective participation in PA at school and in the community among CAWD in Canada.

Conclusion

This Canadian Para Report Card is a first step to address the limited representation of CAWD in national PA reporting, surveillance, and policy. With five of the 13 indicators graded as INC, many gaps must be addressed to provide a holistic picture of PA and its sources of influence for CAWD in Canada. Several recommendations were made to enhance research, surveillance, and policy for PA among CAWD, including the use of reliable and valid instruments for measuring the capabilities of CAWD, incorporating quality of PA participation in measurement and benchmarks, avoiding ableist language and standards in benchmarks, and prioritizing funding and policies to make PA accessible and inclusive for CAWD.

References

Barnes, J. D., Cameron, C., Carson, V., Chaput, J.- P., Faulkner, G. E., Janson, K., Janssen, I., Kramers, R., LeBlanc, A. G., Spence, J. C., & Tremblay, M. S. (2016). Results from Canada's 2016 ParticipACTION report card on physical activity for children. *Journal of Physical Activity and Health, 13 (Supp 2),* S110-S116. **http://dx.doi.org/10.1123/jpah.2016-0300**

Bull, F. C., Al-Ansari, S. S., Biddle, S., Borodulin, K., Buman, M. P., Cardon, G., Carty, C., Chaput, J. -P., Chastin, S., Chou, R., Dempsey, P. C., DiPietro, L., Ekelund, U., Firth, J., Friedenreich, C. M., Garcia, L., Gichu, M., Jago, R., Katzmarzyk, P. T., … Willumsen, J. F. (2020). World Health Organization 2020 guidelines on physical activity and sedentary behaviour. *British Journal of Sports Medicine*, *54(24)*, 1451-1462. **http://dx.doi.org/10.1136/bjsports-2020-102955**

Canadian Parks and Recreation Association/Interprovincial Sport and Recreation Council. (2015, February). *A framework for recreation in Canada – 2015: Pathways to wellbeing.* Canadian Parks and Recreation Association. **https://cpra.ca/wp-content/uploads/2021/04/FrameworkForRecreationInCanada-2016wcitation.pdf**

Department of Health & Social Care. (2022, April). *UK Chief Medical Officers' physical activity guidelines for disabled children and disabled young people: methodology.* GOV.UK. **https://www.gov.uk/government/publications/physical-activity-guidelines-for-disabled-children-and-disabled-young-people-methodology/uk-chief-medical-officers-physical-activity-guidelines-for-disabled-children-and-disabled-young-people-methodology**

Evans, M. B., Shirazipour, C. H., Allan, V., Zanhour, M., Sweet, S. N., Martin Ginis, K. A., & Latimer-Cheung, A. E. (2018). Integrating insights from the parasport community to

understand optimal experiences: The Quality Parasport Participation Framework. *Psychology of Sport and Exercise, 37,* 79-90. **http://dx.doi.org/10.1016/j.psychsport.2018.04.009**

Goodwin, D. L., & Ebert, A. (2018). Physical activity for disabled youth: Hidden parental labour. *Adapted Physical Activity Quarterly, 35(4),* 342-360. **http://dx.doi.org/10.1123/apaq.2017-0110**

Martin Ginis, K. A., Ma, J. K., Latimer-Cheung, A. E., & Rimmer, J. H. (2016). A systematic review of review articles addressing factors related to physical activity participation among children and adults with physical disabilities. *Health Psychology Review, 10*(4), 478-494. **http://dx.doi.org/10.1080/17437199.2016.1198240**

Martin Ginis, K. A., van der Ploeg, H. P., Foster, C., Lai, B., McBride, C. B., Ng, K., Pratt, M., Shirazipour, C. H., Smith, B., Vasquéz, P. M., & Heath, G. W. (2021). Participation of people living with disabilities in physical activity: a global perspective. *Lancet,* 398, 443–455. **http://dx.doi.org/10.1016/S0140-6736(21)01164-8**

Minister of Justice. (June, 2022). *Accessible Canada Act*. Government of Canada. **https://laws-lois.justice.gc.ca/PDF/A-0.6.pdf**

Murphy, N., & Carbone, P. M. (2008). Promoting the participation of children with disabilities in sports, recreation, and physical activities. *Pediatrics, 121(5)*, 1057-1061. **http://dx.doi.org/10.1542/peds.2008-0566**

Ng, K., Sit, C., Arbour-Nicitopoulos, K. P., Aubert, S., Stanish, H., Hutzler, Y., Augusto Santos Silva, D. A., Kang, M. -G., Francisco Lopez-Gil, J., Young Lee, E., Asunta, P., Pozeriene, J., Kazimierz Urbanski, P., Aguilar Farias, N., Wilson, O. W. A., & Reilly, J. (under review). A Global Matrix of Para report cards for children and adolescents with disabilities. *Adapted Physical Activity Quarterly.*

ParticipACTION. (2020). Family influence: The role of the family in the physical activity, sedentary and sleep behaviours of children and youth. The 2020 ParticipACTION report card on physical activity for children and youth. **https://www.participaction.com/en-ca/resources/children-and-youth-report-card**

Smith, B., Mallick, K., Monforte, J. & Foster, C. (2021). Disability, the communication of physical activity, sedentary behavior, and ableism: a call for inclusive messages. *British Journal of Sports Medicine, 55(20*), 1121-1122. **http://dx.doi.org/10.1136/bjsports-2020-103780**

Sports Canada. (2012, June). *Canadian Sport Policy 2012.* **https://sirc.ca/wp-content/uploads/files/content/docs/Document/csp2012_en.pdf**

Statistics Canada. (2011). *Disability in Canada: A 2006 Profile*. Human Resources and Skills Development. **http://publications.gc.ca/collections/collection_2011/rhdcc-hrsdc/HS64-11-2010-eng.pdf**

Statistics Canada. (2018, November). *Canadian Survey on Disability, 2017*. **https://www150.statcan.gc.ca/n1/daily-quotidien/181128/dq181128a-eng.htm**

United Nations. (2008). *United Nations Convention on the Rights of Persons with Disabilities and Optional Protocol.* **https://www.un.org/disabilities/documents/convention/convoptprot-e.pdf**

Table 1.

Data sources profiles and alignment with report card indicators.

Data Source	Data Collection Period	Sample Size	Age Range (Years)	Disability Measure	Movement Behavior Measure	Dataset Considerations	Indicators Assessed
Canadian Health Measures Survey (CHMS)	2018-2019 (Cycle 6)	610 (with a disability) 621 (no disability)	6 to 17	Self- or parent-reported *Mild, moderate, or severe (as per the Health Utilities Index Questionnaire)*	Self- or parent-report Accelerometry (PA only)	-low cell count of children with severe disability (suppression of data as per the Statistics Act) for some indicators (e.g., Overall PA) -random selection of households	**Overall PA, Active Play, Active Transportation, Sedentary Behaviors, School**
Canadian Health Survey on Children and Youth (CHSCY)	2019	4,500 (with a disability) 47,871 (no disability)	2 to 17	Self- or parent-reported *Any functional limitations vs. no functional limitations*	Self- or parent-report	-focuses on the presence vs. absence of functional limitations (not specific impairment type) -bootstrap weighting used, nationally representative	**Organized Sport & PA, Active Play,** Sleep, **Family & Peers, School Community & Environment**
Health Behaviors of School-Aged Children (HBSC) study in Canada	2018	2,349 (with a disability) 19,404 (no disability)	10 to 16	Self-reported *Intellectual disability; autism; severe vision or hearing impairment; physical disability; and mental illness; no disability*	Self-report	- weighted probability technique for sampling - Uses an administrator (school principal) questionnaire for classroom data collection	**Overall PA, Organized Sport & PA, Active Play, Active Transportation, Sedentary Behaviors, School,** Sleep, 24-Hour Movement Behaviors
National Physical Activity Measurement (NPAM) study	2018-2020	494 (with a disability)	4 to 17	Parent-reported *Physical, sensory, and developmental disabilities*	Parent-report	-sampling bias with recruitment through community (sports) programs -only dataset intentionally focused on CYD	**Overall PA, Organized Sport & PA, Active Transportation, Sedentary Behaviors, School, Family & Peers,** Sleep, 24-Hour Movement Behaviors

Note. Indicators common to the Global Matrix 4.0 are in bold font. The terms used for the disability measure in the datasets are in italicized font. PA = physical activity.