Results and SWOT Analysis of the 2022 Hong Kong Report Card on Physical Activity for Children and Adolescents With Special Educational Needs

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Background: Following the 2019 Hong Kong Para Report Card, the 2022 Hong Kong Para Report Card aimed to provide an updated and evidence-based assessment for nine indicators related to physical activity in children and adolescents with special educational needs and to assess the results using a SWOT (strengths, weaknesses, opportunities, and threats) analysis. Methods: Using a systematic process, the best available data on nine indicators were searched from the past 10 years and were assessed by a research work group. Letter grades were assigned and considered by stakeholders and auditors. Results: Four indicators were assigned a letter grade (overall physical activity: F [mixed device-measured and self-reported data]; sedentary behaviors: D [device-measured data]; active transportation: D−; government strategies & investment: C+). SWOT analysis highlighted opportunities for facilitating children and adolescents with special educational needs to achieve health recommendations. Conclusion: There were deteriorating trends in physical activity and sedentary behaviors. Effective, multilevel, and cross-sector interventions are recommended to promote active behavior in children and adolescents with special educational needs.

Keywords: sedentary behavior, disability, young people, special schools, Para Report Card

Despite the known health benefits of physical activity, children and adolescents with disabilities are less physically active and tend to engage in more sedentary pursuits than their peers with typical development (Martin Ginis et al., 2021).
Physical inactivity remains a global health challenge in this special population and is associated with premature deaths and noncommunicable diseases such as cardiovascular disease, as well as with poor physical and mental health (World Health Organization [WHO], 2015). In 2020, the WHO released the first global physical activity and sedentary behavior guidelines for persons including children and adolescents living with a disability and recommended that they should engage in on average 60 min of moderate-to-vigorous physical activity while reducing the amount of time, particularly recreational screen time, they spend being sedentary (Carty et al., 2021). Yet, evidence indicates that Hong Kong children and adolescents with disabilities are insufficiently active to achieve health benefits and tend to adopt a sedentary lifestyle (e.g., Sit, Li, et al., 2019; Sit, McKenzie, et al., 2017).

The Global Matrix initiative of the Active Healthy Kids Global Alliance promotes physical activity in children and adolescents and facilitates the development of the Report Cards in countries or regions around the world (Aubert et al., 2019). The Report Card is a synthesis of the best available evidence on physical activity and its settings and sources of influence that have a known impact on physical activity participation in children and adolescents. The Netherlands (Burghard et al., 2018), Finland (Kämppi et al., 2018), and Hong Kong (Sit et al., 2020) included children and adolescents with a disability or a chronic condition in their Para Report Card. Regardless of countries or regions, in general, over 75% of children and adolescents with disabilities did not meet the physical activity guideline (WHO, 2020). As in Hong Kong, only 5% of children and adolescents with special educational needs (SEN) met the guideline on physical activity. Meanwhile, more than half of the indicators could not be graded due to insufficient data, suggesting many surveillance and research gaps in physical activity in children and adolescents with SEN.

Following the 2019 Hong Kong Para Report Card, the same Research Work Group (RWG; consisting of six researchers with expertise in physical activity, exercise science, and public health from universities in Hong Kong) developed the 2022 Hong Kong Para Report Card, the second report of its kind. The purposes of the report were to: (a) provide an updated evidence-based assessment for nine indicators of physical activity behaviors and related sources of influence in 6- to 17-year-olds with SEN in Hong Kong and (b) assess the results using a SWOT (strengths, weaknesses, opportunities, and threats) analysis.

**Method**

Same as the 2019 Hong Kong Para Report Card, SEN was operationalized into 10 disability types (Education Bureau, 2018; Sit et al., 2020). Using a systematic process set by the Active Healthy Kids Global Alliance, the best available data, including published journal articles, and governmental, and organizational reports on nine indicators were searched from the past 10 years (i.e., from January 2012 to December 2021). The indicators consisted of five behavior indicators (overall physical activity, organized sport participation, active play, active transportation, sedentary behaviors, family and peers, school, community and environment, and government strategies and investments).

The comprehensive search resulted in 3,736 sources of evidence after removing duplicates. The RWG considered which source was the most appropriate
for grading and considered the characteristics of the sample (e.g., How recent/representative/relevant was the sample?) and the measurement of the indicators (e.g., Was the measurement relatively unbiased such as the use of validated questionnaires and accelerometers?). The RWG then discussed and consolidated the literature search outcomes. Out of these 3,736 located sources, 17 were used for assigning initial letter grades for indicators with reference to predefined international benchmarks (Sit et al., 2020).

Views and comments from 40 stakeholders including higher education institutions, schools, professional organizations, national sports associations, and nongovernment organizations were collected through an online platform between March and April 2022. Agreement for all the initial grades was achieved from 97% of the stakeholder members who provided responses. SWOT analysis was also conducted to explore ways on how to promote physical activity in children and adolescents with SEN. Ten participants including RWG members and stakeholders who were adapted physical activity researchers and practitioners were invited to respond to open-ended questions on how to promote physical activity opportunities and participation in children and adolescents with SEN using a SWOT analysis (Giusti et al., 2020).

Results and Discussion

The 2022 Hong Kong Para Report Card was the second Report Card for children and adolescents with SEN in Hong Kong. Table 1 presents the grades for indicators based on the evidence meeting benchmarks. Four indicators were assigned a letter grade. Children and adolescents with SEN performed the worst in overall physical activity and were assigned grade F (mixed device-measured and self-reported data). Sedentary behaviors and active transportation were graded D (device-measured data) and D−, respectively. Government strategies & investments received a grade C+. The remaining five indicators (organized sport participation, active play, family & peers, school, and community & environment) could not be graded due to insufficient data. In general, grades for overall physical activity and sedentary behaviors deteriorated as compared with the 2019 Para Report Card. Although the school indicator was not assigned a letter grade this time, the indicator of government strategies & investments showed improvement from C− to C+.

SWOT analysis was conducted to assess the results. In terms of strengths, successful strategies included increasing awareness of health associated with physical activity, collaborative efforts from various (non)governmental organizations in providing physical activity support for children and adolescents with SEN and their families. Weaknesses were lack of adapted physical activity training to teachers and community coaches, limited physical space and facilities, and inactive and busy working parents. Examples of opportunities were stronger sports culture in society after Tokyo Olympic and Paralympic Games, more funding to support disabled sports by the government, increasing number of innovative and evidence-based physical activity interventions in school and community settings, strengthening partnerships among universities, schools, and community organizations and greater availability of continuous professional development for physical educators and allied health professionals. Threats included emphasis on academic
### Table 1 Grades for Indicators Based on the Evidence Meeting Benchmarks

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<thead>
<tr>
<th>Indicator and grade</th>
<th>Benchmark</th>
<th>Evidence meeting benchmark</th>
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| 1. Overall Physical Activity (grade: F; 12.3%) | % of children and youth who meet PA guideline (≥60 min/day of MVPA) | • Device-measured data: one (0.39%; Sit, McKenzie, et al., 2017) and none (0%; Sit, Huang, et al., 2019) of 259 children with five disability types (mean age = 13.04 ± 4.45 years) met the PA guideline, resulting in an average of 0.2% of them met the benchmark.  
• Device-measured data: 73 of 88 children with DCD aged 6–10 years had valid data. Two of 73 (2.74%) children met the benchmark (Sit, Masters, et al., 2017; Sit, Yu, et al., 2019; Yu et al., 2021).  
• Self-reported data: 32 of 524 (6.1%) children with ID (mean age = 12.1 ± 3.9 years) met the benchmark (Wang et al., 2018).  
• Device-measured baseline data: 82 of 203 (40.18%) children with ID (mean age = 12.8 ± 2.8 years) met the benchmark (Lau et al., 2020). |
| 2. Organized Sport Participation (grade: INC) | % of children and youth who participate in organized sport ≥once/week | Nil |
| 3. Active Play (grade: INC) | % of children and youth who participate in nonorganized sport ≥once/week | Nil |
| 4. Active Transportation (grade: D−; 23.8%) | % of children and youth who use active transportation | • Among 69,400 students/persons receiving skills training with seven disability types, 16,500 of them (23.8%) traveled to/from school/training center on foot (Census and Statistics Department, 2021). |

(continued)
### Table 1 (continued)

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<thead>
<tr>
<th>Indicator and grade</th>
<th>Evidence meeting benchmark</th>
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<tr>
<td><strong>5. Sedentary Behaviors</strong>&lt;br&gt;(grade: D³; 29.3%)</td>
<td>% of children and youth who sit continuously &lt;60 min/day</td>
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<td><strong>Benchmark</strong></td>
<td>• Device-measured data: 198 of 259 children with five disability types (mean age = 13.04 ± 4.45 years) had valid data. Overall, children spent 289 min in sedentary behaviors at school. Fifty of 198 (25.3%) children continuously sat for &lt;60 min/day on all the three measurement days (Sit, McKenzie, et al., 2017).</td>
</tr>
<tr>
<td><strong>Evidence meeting benchmark</strong></td>
<td>• Device-measured data: 73 of 88 children with DCD aged 6–10 years had valid data. On average, children spent 398.3 min in sedentary behaviors per day. Thirty-two of them (43.8%) continuously sat for &lt;60 min/day on all the three measurement days (Sit, Masters, et al., 2017; Sit, Yu, et al., 2019; Yu et al., 2021).</td>
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<td><strong>6. Family &amp; Peers (grade: INC)</strong></td>
<td>% of parents who facilitate PA and sport opportunities for children and youth</td>
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<td><strong>Benchmark</strong></td>
<td>% of friends/peers who encourage and support PA for children and youth</td>
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<tr>
<td><strong>Evidence meeting benchmark</strong></td>
<td>Nil</td>
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<td><strong>7. School (grade: INC)</strong></td>
<td>% of schools where the majority of students are offered ≥70 min of PE per week</td>
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<td><strong>Benchmark</strong></td>
<td>% of schools with students who have regular access to facilities and equipment that support PA</td>
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<tr>
<td><strong>Evidence meeting benchmark</strong></td>
<td>% of schools that offer PA opportunities to the majority of their students in addition to PE</td>
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<td><strong>8. Community &amp; Environment (Grade: INC)</strong></td>
<td>% of communities/municipalities that report they have infrastructure specifically geared toward promoting PA</td>
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<tr>
<td><strong>Benchmark</strong></td>
<td>Nil</td>
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<tr>
<td><strong>Evidence meeting benchmark</strong></td>
<td>Nil</td>
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### Table 1  (continued)

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<thead>
<tr>
<th>Indicator and grade</th>
<th>Evidence of leadership and commitment in providing PA opportunities for all youth Allocate funds and resources for implementation of PA promotion strategies Demonstrate policy-making progress</th>
</tr>
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<tr>
<td>Evidence meeting benchmark</td>
<td>• LCSD provided half-rate concession to Holders of Registration Cards for PWDs of all ages and their carers for participating in sports programs (<a href="#">Leisure and Cultural Services Department, 2021a</a>); offered concessory rates for PWDs and their carers and free-of-charge sports training programs for PWDs; created a one-stop website to provide relevant information (<a href="#">Leisure and Cultural Services Department, 2020b</a>); expanded the number of sport types and the total number of hours in School Sports Programs for Special Schools (<a href="#">Leisure and Cultural Services Department, 2021b</a>). Similar evidence was supported by a consultancy study (<a href="#">Hong Kong Baptist University &amp; Dr. Stephen Hui Research Centre for Physical Recreation and Wellness, 2016</a>).</td>
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<td>• HAB provided diversified sports training programs on a pilot basis for 430 PWDs; and 110 tailor-made programs for 5,300 students from special schools; organized events for PWDs in the Hong Kong Games (<a href="#">Home Affairs Bureau, 2021</a>).</td>
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<td>• EDB and HAB jointly implemented the Opening up School Facilities for Promotion of Sports Development Scheme (including special schools) from 2017 to 2018, and increased the upper limit of subsidy for each participating school and expanded the list of eligible sports organizations (<a href="#">Education Bureau, 2019</a>); promoted “Active Students, Active People” Campaign to help students in regular and special schools achieve MVPA 60 guideline (<a href="#">Education Bureau, 2021</a>).</td>
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<td>• EDB updated the Physical Education Key Learning Area Curriculum Guide (Primary 1 to Secondary 6) to emphasize the provision of equal educational opportunities for students with SEN to participate in PE (<a href="#">Curriculum Development Council, 2017</a>).</td>
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<td>• For the estimates of expenditure in 2020–2021, overall expenditure on sports development and activities between 2015 and 2020 ranged from HK$20.8 million to HK$35.2 million, of which the proportion allocated specifically to PWDs was 4.9% in 2015–2016, 4.9% in 2016–2017, 4.2% in 2017–2018, 5.4% in 2018–2019, and 6.0% in 2019–2020 (<a href="#">Leisure and Cultural Services Department, 2020a</a>).</td>
</tr>
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*Note. Grading scheme: A+ = 94%–100%; A = 87%–93%; A− = 80%–86%; B+ = 74%–79%; B = 67%–73%; B− = 60%–66%; C+ = 54%–59%; C = 47%–53%; C− = 40%–46%; D+ = 34%–39%; D = 27%–33%; D− = 20%–26%; F < 20%; INC = incomplete data. DCD = developmental coordination disorder; EDB = Education Bureau; HAB = Home Affairs Bureau; ID = intellectual disabilities; LCSD = Leisure and Cultural Services Department; MVPA = moderate to vigorous physical activity; PA = physical activity; PE = physical education; PWDs = persons with disabilities; SEN = special educational needs. 

*aMixed device-measured and self-reported data.  
*bDevice-measured data.
achievements rather than sports, lockdown, and physical and social distancing that hinder physical activity participation during the pandemic, and prejudice/discrimination toward special populations in society.

Collectively, there is a need to enable children and adolescents with SEN to fully participate in health-promoting physical activities through the concerted efforts of researchers, schoolteachers, parents, and community partners.

**Study Strengths and Limitations**

The 2022 Hong Kong Para Report Card provides an updated evidence-based assessment that helps inform research and practice. The indicators of the Para Report Card provide a robust and comprehensive assessment of physical activity for children and adolescents with SEN, which allow for cross-cultural comparisons and temporal trend analysis. However, only four of nine indicators were graded, suggesting that more research is much needed to identify missing gaps that geared toward physical activity promotion in this population group.

**Conclusion**

The results of the 2022 Hong Kong Para Report Card indicate that children and adolescents with SEN did not have an adequate level of physical activity. Compared with the 2019 Para Report Card, there were deteriorating trends in overall physical activity and sedentary behaviors. There is a pressing need to foster school–family–government cross-sector collaborations and to establish an evaluation system in order to improve physical activity surveillance.

**Acknowledgments**

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