2022 Para Report Card on Physical Activity of Israeli Children and Adolescents With Disabilities

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Children and adolescents with disabilities (CAWD) represent 11% of Israeli children and adolescents. The 10 core indicators of the Global Matrix on Para Report Cards of physical activity (PA) of CAWD were used to create the 2022 Israeli Para Report Card. A panel of four experts reviewed resources and synthesized evidence of PA behaviors and policies for CAWD in Israel, converted the data to grades, and charted subcategories of language, sex, and disability across population. Data sources were surveys, reports, and memberships in sport federations and clubs. Among CAWD, levels of participation in daily PA were poor (<20%; Grade F), and participation of CAWD in sports was even lower (<10%; Grade F). A lack of environmental infrastructure may explain the low levels of participation. Females, Arabic speakers, and physiological CAWD need particular attention. Establishing governmental policies and interventions is required to increase overall PA and participation in sports among CAWD.

Keywords: fitness, inclusion, behavior, school, sport

Israel is a small Mediterranean country with a total size of 22,145 km² and a population of 9,217 million people (World Bank, 2020). The population in Israel consists of 76% Jewish, 21% Muslims, a minority of Christian, and Druze (Central Bureau of Statistics, 2020a, 2020b). The state education system in the country is divided between Hebrew and Arabic speakers. The Hebrew-speaking school
attendants are also divided according to religious practice (i.e., secular or nationally religious systems). Based on a representative survey, approximately 326,000 Israeli children and adolescents (11%) are considered children and adolescents with disabilities (CAWD). In 2020, approximately 265,000 children and adolescents received special education services (10% of the school’s student population). About 61% of these children attended general schools with some supportive educational measures, about 19% attended special classes within general-education schools, and the remaining 20% attended special schools (Barlev et al., 2022). For the purpose of this paper, all of them will be considered CAWD. In 2019, the Ministry of Education made it mandatory for schools to provide satisfactory accessibility to CAWD (Zur, 2018).

Physical education teacher preparation programs are 4-year programs situated in academic colleges of education for Bachelor’s studies in Education (B.Ed.). Since the early 1990s, colleges of education have included at least one introductory course in their core curriculum pertaining to CAWD. Such courses are often not specific to adapted physical education or inclusion practices. Unsurprisingly, researchers investigated the self-efficacy of 160 Muslim and Christian in-service teachers serving in the Arab sector in northern Israel and indicated that training and experience in the inclusion of CAWD significantly and positively impacted self-efficacy to teach children with disabilities in physical education (Hutzler & Daniel-Shama, 2017).

The specific outcomes of the inclusion efforts on physical activity (PA) participation have not yet been officially reported. However, evidence exists, where the prevalence of meeting WHO (2010) PA guidelines (60 min/day moderate–vigorous PA) was statistically significantly lower in CAWD than in those without disabilities (Hutzler et al., 2021). Since the early 1960s, CAWD have opportunities to exercise and train in a variety of Paralympic sports at the two Ilan foundation’s sports centers in Ramat-Gan, near Tel Aviv, and in Haifa, where about 200 of the students yearly with great success in swimming during the 2021 Tokyo Paralympics (Spiro, 2021). The Special Olympics Organization provides access to a growing number of sports, Etgarim (Challenge) Foundation supports CAWD to participate in outdoor activities, Eitan Foundation supports CAWD to participate in fitness activities, and the Israel School Sport Federation hosts school competitions in boccia and athletics. Based on informal communications with these organizations, it is estimated that several hundreds of participants engage in all those activities. However, coaches and instructors have less formal nonacademic degree training, without official requirements to work in disability sports in Israel.

Global Matrix Para Report Cards

The Active Healthy Kids Global Alliance was established in 2014 following a 10-year development process and aims to advance PA in children and adolescents through an international network of experts (Tremblay et al., 2014). Israel joined the Active Healthy Kids Global Alliance in 2022 and a working group of experts in disability, health, and active lifestyle was established early on to produce the Para Report Cards on PA of CAWD. In accordance with the methodology for the Para
Report Cards (Ng et al., in press), the group discussed the 10 core indicators (overall PA, organized sport, active play, active transport, physical fitness, sedentary behavior, family and peers, school, community and environment, and government). The Israeli panel included three experts with academic affiliations at different institutions as well as 20–35 years of involvement in leadership positions in sports services provision for children and adolescents and particularly for CAWD. Another member was the sports coordinator of the Ilan Foundation. The panel followed the same systematic process applied among the general Report Card team (Ng et al., 2017) to (a) discuss criteria for acquisition and inclusion/exclusion of data sources; (b) create data summary tables, whereby evidence-based data sources were reviewed and synthesized for grading (from A to F and incomplete) activity behaviors and environmental factors on CAWD in relation to the benchmarks; (c) discuss the data via several Zoom meetings; and (d) achieve consensus on grades and interpreting results in line with the strengths, weaknesses, opportunities, and threats (SWOT) lens (Hutzler et al., in press).

**Method**

Data acquisition was based on four main methods: a survey of CAWD, a survey among special education teachers, official reports, and membership lists from sport organizations. The following is a brief description of each method. The purposes of the present paper were: (a) to compile and grade the best-available evidence of PA participation and related indicators in Israeli CAWD and (b) present the SWOT perceived by PA experts for maintaining the recommended levels of PA in CAWD.

**Survey of CAWD**

Overall PA, active transportation, sedentary behavior, family and peers, and the community and environment indicators were based on a data subset of 11- to 18-year-olds who completed the 2018/2019 Health Behavior in School-Aged Children study ($N = 4,407$ children and adolescents in total; $N = 993$ CAWD). The authors received permission to use the Israeli Health Behavior in School-Aged Children survey data. The survey was distributed throughout Hebrew secular Jewish, nationally religious Jewish, and Arabic schools; recruitment through special education schools was not included in the sampling frame. This accounted for around 60% of CAWD. The Health Behavior in School-Aged Children survey included the self-report version of the UNICEF/Washington Group on Disability Statistics (Cappa et al., 2018). These items covered functional capacities such as seeing, hearing, walking, self-care, remembering, learning, and concentrating on a 4-point response scale: “No difficulties,” “Some difficulties,” “A lot of difficulties,” and “Cannot do.” Disability was dichotomized where “a lot of difficulties” or “cannot do” were recorded as having a disability. Types of disability were grouped by physiological functions (i.e., seeing, hearing, talking, walking, self-care), and cognitive functions (i.e., remembering, learning, concentrating). There were responders with more than one disability. This means that the same respondent may be included under several disability types. More specifically, there were $n = 284$ responders with
only physiological disability, \( n = 283 \) responders with only cognitive disability, and \( n = 426 \) responders with both physiological and cognitive disability. Differences between gender (boys vs. girls), intercultural background (Hebrew vs. Arab speaking), and disability groups (physiological vs. cognitive difficulty) were tested by the chi-square test of independence. Only statistically significant differences \((p < .05)\) are reported in the “Results” section.

**Special Education Teachers’ Survey**

Additional data came from 17 teachers from 15 of the special education institutions who responded to a survey between December 2021 and January 2022 with questions referring to grading the Para Report Card indicators and reporting SWOT concerning CAWD. The special education teachers were recruited following calls in networks presented by special education and physical education inspectors. Grading was based on percentage ranges proposed in the Global Matrix rubric (Aubert et al., 2018). In addition, four open-ended questions were included, each to indicate the SWOT “of the special education system regarding physical education and health promotion of the child with special needs.”

**Official Reports and Membership Lists**

Data were obtained from The Knesset (Parliament) research reports. Membership lists were provided by the Israel Sports Federation for the Disabled, Ilan, Etgarim, Eitan, and the Israel School Sport Federation.

The combined data were synthesized for each indicator based on the benchmarks outlined elsewhere in this special issue (see Ng et al., in press). The grades were sent for external audits before they were finalized for this report. In a follow-up procedure, SWOT to PA participation of CAWD addressed in the special education teachers’ survey and by the expert panel members were synthesized.

**Results**

The Para Report Card grading and main benchmark data with gender and intercultural differences can be found in Table 1. Specific data-based justification and rationale for the grades can be found in Supplementary Materials S1 and S2 (available online). No physical fitness measurements on CAWD have been reported around the country. The government indicator was graded C, based on consensus among panel experts to estimate the overall legislative and financial opportunities enabled by Education, Social Welfare, and Health ministries for promoting physical activities among CAWD.

Male CAWD were significantly more physically active every day than females (11.5% vs. 6.9%, respectively; \(p < .001\)) and spent less time in sedentary behavior at least hour a day (30.7% vs. 40%, respectively; \(p < .001\)). Arab CAWD had better PA behaviors (overall PA, active transport, walking with parents, and lower sedentary behaviors) than Hebrew-speaking CAWD (Table 1). More CAWD with physiological difficulties (31.7%) reported going out for walks with parents than CAWD with cognitive disabilities (24.2%, \(p < .001\)). A greater proportion
<table>
<thead>
<tr>
<th>Indicator</th>
<th>Grade</th>
<th>Hebrew (%)</th>
<th>Arabic (%)</th>
<th>p</th>
<th>Boys (%)</th>
<th>Girls (%)</th>
<th>p</th>
<th>SPED (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall physical activity</td>
<td>F⁺ᵃ</td>
<td>7.6</td>
<td>10.1</td>
<td>.16</td>
<td>11.5</td>
<td>6.9</td>
<td>&lt;.001</td>
<td>40–46</td>
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<tr>
<td>Organized sport participation</td>
<td>F⁺ᵃ</td>
<td></td>
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<td>Active play</td>
<td>D⁺</td>
<td></td>
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<td></td>
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<td>27–33</td>
</tr>
<tr>
<td>Active transport</td>
<td>D⁺</td>
<td>41.24</td>
<td>48</td>
<td>.03</td>
<td>45.7</td>
<td>44.3</td>
<td>.65</td>
<td>&lt;20</td>
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<tr>
<td>Sedentary behaviors</td>
<td>C⁺ᵃ</td>
<td>42.1</td>
<td>58.3</td>
<td>&lt;.001</td>
<td>46.5</td>
<td>56.1</td>
<td>&lt;.001</td>
<td>60–66</td>
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<tr>
<td>Physical fitness</td>
<td>INC</td>
<td></td>
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<td></td>
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<tr>
<td>Family and peers</td>
<td>D⁻</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>20–26</td>
</tr>
<tr>
<td>Sports with parents</td>
<td></td>
<td>14.8</td>
<td>29.9</td>
<td>&lt;.001</td>
<td>24.1</td>
<td>22</td>
<td>.43</td>
<td></td>
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<tr>
<td>Walks with parents</td>
<td></td>
<td>10.7</td>
<td>39.8</td>
<td>&lt;.001</td>
<td>25.2</td>
<td>27.4</td>
<td>.43</td>
<td></td>
</tr>
<tr>
<td>School</td>
<td>B⁻</td>
<td>100</td>
<td>97</td>
<td></td>
<td></td>
<td></td>
<td>74–79</td>
<td></td>
</tr>
<tr>
<td>2 hr physical education/week</td>
<td></td>
<td></td>
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<td>Certified physical education teachers</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>87–93</td>
<td></td>
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<tr>
<td>School gymnasium access</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>60–66</td>
<td></td>
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<tr>
<td>Community and environment</td>
<td>C⁻ᵇᶜ</td>
<td>70.3</td>
<td>41.3</td>
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<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Available facilities</td>
<td></td>
<td>45.2</td>
<td>19.7</td>
<td>&lt;.001</td>
<td>33.6</td>
<td>29.6</td>
<td>.017</td>
<td></td>
</tr>
<tr>
<td>No sport facilities at alldᵈ</td>
<td></td>
<td>6.8</td>
<td>34.8</td>
<td>&lt;.001</td>
<td>19.4</td>
<td>23.9</td>
<td>.08</td>
<td></td>
</tr>
<tr>
<td>Neighborhood safety</td>
<td></td>
<td>61.1</td>
<td>51.4</td>
<td>&lt;.001</td>
<td>59.8</td>
<td>52.6</td>
<td>.02</td>
<td></td>
</tr>
<tr>
<td>Government</td>
<td>C</td>
<td></td>
<td></td>
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</table>

Notes: SPED = special education teachers’ estimated % range corresponding to grades; self-report HBSC 2018/19, ISFD, Data on Sport Facilities, Audit Data Ministry of Education; HBSC = Health Behavior in School-Aged Children.

ᵃCustom Analysis; Health Behaviors in School Age Children, 2019. Conducted in Israel every 4 years with a representative sample of students in Grades 6, 8, 10, and 11–12 (N = 13,845). HBSC Israel includes representation of Arab, General Jewish, and Orthodox Jewish populations in Israel. Disability data come from Loeb et al. (2018).

ᵇCustom Analysis. The telephone cross-sectional survey was conducted in 2016–2017 with a representative sample of Hebrew- and Arabic-speaking Israeli residents aged 21+ years. The survey included 1,413 parents with one child or more ages 0–18. National Survey of Physical Activity of Israel Residents aged 21+, 2016 Israel Centers for Disease Control and Ministry of Culture and Sports.

ᶜCustom Analysis; Data on Sports Facilities, Ministry of Culture and Sports, 2021. Based on a mapping of facilities and parks in all local authorities in Israel conducted by the Ministry of Culture and Sports in 2020. This database is updated annually with information about the variety of facilities and equipment in place across the country.

ᵈThe percentages of those reporting having access to none of the nine types of facilities listed in Table 2 in the Supplementary Material S1 (available online).
Data Interpretation and Conclusions

Based on the data synthesis and grading of the PA indicators, the main themes were grouped and interpreted following the SWOT scheme for PA participation among CAWD in Israel.

Strengths

This is the first time Israel has joined the Active Healthy Kids Global Matrix (GM 4.0); immediately, it created a task force to focus on disability data. This is an inclusive approach to reporting PA among children and adolescents in Israel and aligns with the Convention on the Rights of Persons With Disabilities (UN, 2006). Such reporting can inform policy to support the inclusion of CAWD in PA reports. The expert panel identified data for nine indicators and defined grades according to the structure and benchmarks used in the Global Matrix of Para Report Cards (Ng et al., in press). This is a good starting point to measure changes, create interventions, and work with policymakers to address the low levels of PA among CAWD.

The schools’ indicator had the highest grade (B−), meaning that between 60% and 66% of CAWD receive at least 2 hr of physical education per week, are taught by qualified physical education teachers, and under a third of schools are within the Health Promoting Schools program. As CAWD spend much of their time in schools, the high grade in this environment lends to learning opportunities to participate in PA.

Weaknesses

There was one indicator—physical fitness—with insufficient data. In Israel, measuring and enhancing physical fitness was common until the 1990s, but has since ceased. Furthermore, although this is considered a weakness from the data perspective, the benchmarks were also questionable since setting benchmarks against norms may not yield meaningful information on the health of CAWD (Hutzler et al., in press). In addition, documents support the physical education curriculum to include students with disabilities (Ministry of Education and Sport, 1996), yet other official information regarding how to include and promote the participation of CAWD in physical education is still lacking.

The lowest grade was the organized sport indicator (Grade F). This could be due to the lack of supporting policies or sufficient number of professionals trained in adapting physical activities for CAWD (Hutzler & Barak, 2017; Hutzler & Daniel-Shama, 2017). Furthermore, the grade for overall PA was F, and the prevalence of daily moderate to vigorous PA was 10%. Improvements in rates of PA can take several years, with WHO targets of 15% year-on-year improvement.
Provided this target is reached among CAWD in Israel, it would not be until 2027 before 20% (i.e., D−) would be possible.

**Opportunities**

The behavioral outcomes in the current report represent very poor health-related potential. Opportunities in the school sector appear promising, particularly given the availability of professional physical education teachers and sports facilities. A preliminary sign (based on informal communications) for development in this sector is the appointment of a coordinator for CAWD within the Israel School Sport Federation, focusing on the organization of clubs and tournaments within the school framework. Peer mentors with a disability may be one resource of empowerment and modeling for participation in PA among CAWD (Turnnidge et al., 2012). Summer camps for CAWD are another promising opportunity, affecting attitudes toward sports participation (Papaioannou & Evaggelinou, 2014). Such programs have been successfully implemented for the first time in Israel in 2021 through the Ilan Foundation. Reverse integrated activities for example in wheelchair basketball (Hutzler et al., 2013) or in Unified Sports (e.g., Özer et al., 2012) are alternatives in facilitating the participation of CAWD in PA. Such activities may easily be carried out in cooperation between general and special schools. In conclusion, considering the multidimensionality of disability and its interaction with the environment, it is important in the future to integrate school and club sports using a variety of evidence-based practice models in order to capture the holistic PA behaviors and opportunities in the lives of CAWD.

**Threats**

In the current report, it appears that gender and intercultural factors are associated with PA behaviors. Although gender and culture are primarily internal factors, their context is impacted by external trends such as culture and tradition. For example, the prevalence of inactivity among children and adolescents is high across countries and regions and is generally higher among girls (Ng et al., 2017). Lower PA among girls can be attributed, among other factors, to cultural gender norms, including the need for girls to be chaperoned in public spaces, wear a conservative dress that is not suitable for PA, and the paucity of gender-segregated fitness facilities (Sharara et al., 2018). In the nondisabled population, Jewish adolescents reported higher levels of PA compared to Arabic-speaking peers (Tesler et al., 2019). Across both ethnicities, girls were significantly less physically active than boys. Thus, gender norms converge to discourage PA, especially among girls in certain religious groups in Israel such as Arabic-speaking and ultra-orthodox Jews. Therefore, attention is required toward national policies that promote adaptive settings not only addressing disabling but also sociocultural barriers to promote active living through the engagement of CAWD in PA. Furthermore, the heterogeneity of the disability population can make actions and interventions either too targeted with low reach or missing the specificity needed for effective interventions (Martin Ginis et al., 2021). This is compounded by the way teachers in special education report the lack of appropriate adapted sports equipment for CAWD. Accessibility of facilities, transportation, and costs...
of equipment needed for facilitating movement, like wheelchairs, in CAWD make this population particularly vulnerable to reduced PA participation (Shields & Synnot, 2014).

**Summary and Conclusions**

The current situation is not meeting the PA needs of Israeli CAWD, particularly in the general school system and in communities. Despite some activities in the fields of PA participation opportunities, school, community, transportation, and environmental factors are not yet fully prepared to provide the needed adaptations to enable the participation of CAWD in the recommended volume and intensity of PA. Furthermore, differences across several indicators highlight the vulnerability of specific sectors of CAWD. Particularly, CAWD living in Arabic-speaking families, females with disabilities, and children and adolescents having physiological difficulties face significant environmental barriers. CAWD with cognitive difficulties face a lack of family engagement to be physically active.

**References**


Zur, Y. (2018). Schools will have to provide access to students with a disability at the beginning of the school year (Hebrew). *Haaretz: Education and Culture News.* https://www.haaretz.co.il/news/education/.premium-1.5742515