U.S. Physical Activity Para Report Card for Children and Adolescents With Disabilities

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The U.S. Report Card on Physical Activity for Children and Youth has tracked 10 physical activity (PA) indicators common to the Active Healthy Kids Global Matrix since 2014. This article expands on the U.S. report cards by presenting PA indicator assessments among children and adolescents with disabilities. Grades for indicators were assigned based on a search of peer-reviewed articles presenting nationally representative data. The Global Matrix 3.0 benchmarks and grading framework guided the process. Grades for overall PA, sedentary behaviors, organized sports, and school were F, D+, D+, and D, respectively. Insufficient evidence existed to assign grades to the remaining six indicators. There is a need in the United States for targeted PA promotion strategies that are specific to children and adolescents with disabilities. Without a commitment to this effort across sectors and settings, the low grades identified in this para report card are expected to remain.

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The U.S. Report Card on Physical Activity for Children and Youth “aims to assess the levels of physical activity (PA) and sedentary behaviors (SB) in American children and youth, facilitators and barriers for PA, and health outcomes related to PA” (National Physical Activity Plan, n.d.). The U.S. Report Card, member of the Active Healthy Kids Global Alliance, was first released in 2014, with updated reports in 2016 and 2018 (National Physical Activity Plan, n.d.). The U.S. report cards have noted gaps in PA participation and opportunities across children of different ages, genders, race/ethnicities, incomes, and abilities. A growing body of evidence identifies disparities in PA (Healy et al., 2020) and related health outcomes, such as obesity (Bandini et al., 2005), in children and adolescents with disabilities.
marking this population as a high priority for PA surveillance and intervention. This article represents the first U.S. Para Report Card on PA for children and adolescents with disabilities, with the intention to serve as a resource and advocacy tool to influence priorities and practice for increasing PA in this population group.

Method

The authors of the U.S. Para Report Card comprise a group of researchers with diverse expertise in adapted physical activity and experience analyzing U.S. national surveillance data. The task of creating and publishing this para report card involved identifying the best available population-based data sources to inform grades on the 10 PA indicators from the Global Matrix 3.0 (Aubert et al., 2018) and following the instructions provided by Adapted Physical Activity Quarterly guest and associate editors for this special issue. We made decisions at the outset that were central to the development of the report, including (a) reliance exclusively on peer-reviewed articles presenting national surveillance data as the source of evidence to inform the grade assignments—our own analysis of publicly available data sets was used only to supplement our assessment of indicators with very little published evidence; (b) focusing our search on reports published in the last decade and placing more emphasis on data published in the last 5 years; (c) emphasis on data sources that were derived pre-COVID to avoid the influence of the pandemic on the assessment; and (d) agreement on a conservative approach when assessing mixed findings so that the assigned grades were not inflated. It was a priority to assign grades to as many indicators as possible, and we endeavored to gather sufficient evidence on Global Matrix benchmark(s) to do so. Incomplete (INC) was given to indicators with no published evidence with disability-specific data on the markers, but we aimed to provide insight into these indicators using information from reputable sources when possible.

The authors synthesized data from multiple sources to inform and assign the grades. Data sources relied upon most heavily were published reports of the National Survey of Children’s Health (NSCH) and National Health and Nutrition Examination Survey (NHANES) between 2015 and 2020. NSCH and NHANES are annual, household surveys conducted by the U.S. Centers for Disease Control and Prevention (Ghandour et al., 2018; Zipf et al., 2013). These surveillance systems monitor the health of the U.S. population across the lifespan; the NSCH includes children aged 0–17 years, and NHANES includes individuals aged 6 months to 74 years. In alignment with NSCH and NHANES age categories, the U.S. Para Report Card defines children as 6–11 years and adolescents as 12–17 years. Within these surveys, children with disabilities may be identified by parent-report diagnoses (e.g., autism spectrum disorder) or by functional limitations (e.g., significant difficulty with mobility). Following U.S. Department of Health and Human Services (USDHHS) guidance on data standards for disability reporting, disability status was broadly defined in this report as functional limitations in one or more domains of sensory, mobility, cognition, or self-care (USDHHS, 2011).

The U.S. Para Report Card was developed over a 6-month period and involved several teleconferences and frequent email communication among the authors. Dyads of authors led each indicator and were tasked with compiling the published evidence, assessing the benchmarks, proposing a grade, interpreting findings, and writing...
specific sections of the report based on their scholarly expertise. Final consensus on the grades was derived during a meeting of the group when evidence for each indicator was carefully reviewed and considered in the decision making. The proposed grades underwent two rounds of audits by external reviewers and were modified according to the feedback from the auditors until final grades were approved.

Results and Discussion

There was adequate evidence to assign grades to four of the 10 indicators, ranging from F to D+ (0%–39% of children and adolescents with disabilities meeting benchmarks). Grades of INC, which were assigned to the remaining six indicators due to a lack of peer-reviewed articles using nationally representative surveillance data, are discussed cumulatively after the graded indicators. Prevalence estimates reported in subsequent sections are weighted estimates and represent the national U.S. population of children and adolescents with disabilities (broadly defined). An overall grade was assigned to each indicator and was not stratified by age or disability type.

Overall Physical Activity: F

Published data from 2016 to 2019 NSCH was relied on most heavily to estimate that overall, less than 20% of U.S. children and adolescents with disabilities participate in at least 60 min of PA daily (in alignment with current U.S. Physical Activity Guidelines, second edition, USDHHS, 2018). Reports on children and adolescents with specific disabling conditions, as well as those on broader/combined groups, support this notion. For example, 10.6%–25.8%, 22.2%, and 12.5%–23.2% of children and adolescents with autism spectrum disorder (Corvey et al., 2016; Healy et al., 2019; McCoy & Morgan, 2020), attention deficit hyperactivity disorder (Mercurio et al., 2021), and visual impairments (Haegerle et al., 2019, 2020) met the U.S. PA guidelines (USDHHS, 2018), respectively. Furthermore, 19% of children with developmental disabilities (combined group of five chronic conditions; Case et al., 2020); 21.2% of children with neurodevelopmental disabilities (combined group of 12 chronic conditions; Brown et al., 2021); 23.8% of children and 16.6% of adolescents with disabilities (broadly defined; Ross et al., 2020); and 18% children with chronic conditions (combined group of 19 chronic conditions; Healy et al., 2020) met the U.S. PA guidelines. In the Healy et al. (2020) report, the prevalence of meeting the U.S. PA guidelines was below 20% in almost every condition (e.g., cerebral palsy, hearing impairment, intellectual disability, Down syndrome). We acknowledge that the Global Recommendation on PA for Health is an average of 60 min/day of moderate- to vigorous-intensity PA (MVPA) in a week and that in the absence of an estimated average, 4 days/week is the benchmark for this indicator. However, published articles using U.S. data overwhelmingly reported the percentage of children and adolescents achieving 60 min/day (7 days/week). As such, the grade of F was assigned based on 7 days/week guidelines. Of note, published data from 2016 to 2017 NSCH indicate that 32.4% of children with Down syndrome participated in at least 60 min of MVPA on 4 days/week or more (Diaz, 2020). Grades for overall PA would likely be higher if we had used this benchmark.
Organized Sport and PA: D+

An estimated 33.7% of children and 40.8% of adolescents with disabilities (broadly defined) participate on sports teams or take part in sports lessons after school or on the weekends, based on published data from 2016 to 2017 NSCH (Ross et al., 2020). Notably, lower participation rates were observed among subsamples, including children and adolescents with functional disabilities (17.3%) and mobility disabilities (24.1%; Ross et al., 2020), and among those who received special education services (11.5%; Haegele, Aigner, & Healy, 2020). The grade D+ was assigned given that approximately, or less than, 40% of children and adolescents with disabilities participated in organized sports.

Sedentary Behavior: D+

Evidence supports that SB (assessed mostly as television viewing) for more than 2 hr/day is associated with unfavorable health outcomes in children and youth, and time spent watching television and engaging in other sedentary activities should be minimized (Tremblay et al., 2011). Consequently, 2 hr/day or less of screen time was used as the criterion for “meeting” or “not meeting” the SB guideline in these analyses. Available SB data utilizing U.S. national data sets suggest that about, or just less than, 40% of children and adolescents with disabilities engage in 2 hr/day or less of recreational screen time (Healy et al., 2020; Wilson et al., 2016). Healy et al. (2020), who examined adherence to this guideline among youth with 19 different chronic conditions using 2016 NSCH data, found that adolescents with most of the conditions fell within the range of 35.5%–42.6%. Adolescents identified with nine of the conditions were within the D+ grade range, and those with four of the conditions were within the C− grade range (autism, blindness, speech disorder, and cerebral palsy). Similarly, just 42.4% of children receiving special education services from 2011 to 2014 NHANES (Wilson et al., 2016), and 43.8% of youth with attention deficit hyperactivity disorder from 2018 to 2019 NSCH (Wang et al., 2022), were identified as meeting the SB guideline. There were some outliers in the extant literature (Haegele, Zhu, et al., 2020) that examined SB among 561 youth with visual impairments from the 2016 to 2017 NSCH data set and found that 73.2% engaged in 2 hr/day or less of screen time. In addition, Brown et al. (2021) found that 47.6% of children with neurodevelopmental disabilities from 2018 to 2019 NSCH met the SB guideline. However, most reports demonstrate an approximate adherence rate less than 40% and, therefore, warrant a D+ grade. It is important to note that these scores are based generally on questions associated with recreational screen time, which has been used often as a proxy for SB, and do not account for other forms of SB such as riding in a bus or car, eating while sitting, or reading a book.

School: D

There was insufficient published evidence using U.S. national data sets for the markers of this indicator, including the percentage of children and adolescents with disabilities who have regular access to facilities and equipment that support PA (e.g., gymnasium, equipment in good condition), the extent to which they are taught by physical education (PE) specialists, and whether they are receiving the
mandated amount of PE in school. As such, we gathered data to provide some insight into how children and adolescents with disabilities are faring in the school environment to determine a grade. Despite federal mandates to provide PE services to all students with disabilities, the 2013–2016 NHANES data indicated that only 27.9% of children receiving special education services participated in school sports and PA (Kim et al., 2022). Therefore, the D grade was assigned. Although not a benchmark for this indicator, only 47.6% of PE teachers reported providing quality instructional methods to teach children with disabilities (Jung et al., 2022). Furthermore, 56.9% of children with long-term physical/medical disabilities and 26.3% of children with cognitive disabilities received exemptions from participating in PE, according to the 2012 Physical Education Profiles (Center for Disease Control and Prevention, 2013). Physical activity promotion strategies are not often a focus of adapted PE (APE) teacher training programs (Yun & Beamer, 2018), and only 3.6% of secondary schools have implemented a comprehensive school physical activity program to promote PA among all students. Therefore, it is likely that children and adolescents with disabilities are not receiving adequate PA promotion efforts in schools.

**Six INC Indicators**

To our knowledge, there is a lack of nationally representative data available to assign grades for six of the indicators: (a) active play, (b) active transport, (c) physical fitness, (d) family and peers, (e) community and environment, and (f) government. Because of this, we have assigned INC grades to each. Despite the INC, some data provide insight into the general area of the benchmarks for children and adolescents with disabilities, even if insufficient for grading purposes. For example, regarding active transport, the 2017 National Household Transportation Survey Brief by the U.S. Department of Transportation demonstrated that 12.6% of children without disabilities (out of over 50 million) walked or used some other nonmotorized means of transportation to school (Federal Highway Administration, 2017). Data from 2015 to 2016 NHANES demonstrated that 38% of adolescents walked or used a bicycle for at least 10 min continuously once or more in a typical week to get to and from places (National Center for Health Statistics, 2016). These data suggest a low grade for children and adolescents without disabilities and, plausibly, an even lower grade for those with disabilities who experience substantial transportation and environmental barriers (Institute of Medicine Committee on Disability in America, 2007). Nevertheless, a grade of INC was assigned for active transport as these data do not directly reflect the explicated benchmarks.

Similarly, there is insufficient representative data or benchmarks to evaluate how communities and built environments in the United States are conducive to PA among children and adolescents with disabilities. Whereas available 2017–2018 NSCH data demonstrated that most children with disabilities lived in neighborhoods with sidewalks or walking paths (72.0%), a park or playground (72.6%), and a neighborhood perceived to be safe (89.6%; unpublished data), the accessibility of the neighborhood and the infrastructure and amenities within it were not well evidenced. Furthermore, children with specific conditions (such as autism spectrum disorder or visual impairments) may interact differently in a given environment, which can modify the association of these indicators to PA (Fiscella et al., 2021; Haegele et al., 2019).
There is insufficient data of leadership and commitment by the U.S. government to provide PA opportunities that explicitly consider children and adolescents with disabilities. We acknowledge federal investments for two National Centers on Health Promotion for People with Disabilities and that national initiatives such as Healthy People 2030 (ODPHP, n.d.) and the National Youth Sport Strategy (USDHHS, 2019) use broad language around “all children,” which is generally inclusive of those with disabilities, yet, it is unclear to what extent the U.S. government is succeeding on the benchmarks. To date, the United States has not demonstrated progress through the key stages of public policy making, which is a benchmark for this indicator. There appears a need for national leadership to take further interest in promoting PA specifically for children and adolescents with disabilities.

Conclusions

Overall, there was sufficient nationally representative, published data to assign grades to four of the 10 Global Matrix 4.0 indicators. In general, the grades reflect that a small percentage of children and adolescents with disabilities in the U.S. participate in 60 min/day of PA (<20%), engage in 2 hr/day or less of recreational screen time (34%–39%), and participate in organized sport (34%–39%) or school sport programs (27%–33%). Six indicators were assigned INC grades, reflecting a critical need to increase representation of children and adolescents with disabilities in U.S. national surveillance efforts. This first U.S. PA Para Report Card for children and adolescents with disabilities establishes a baseline for monitoring PA trends for this priority population. The report parallels the U.S. Report Card on Physical Activity for Children and Youth, allowing for future population comparisons.

References


