“WOT” Do We Know and Do About Physical Activity of Children and Adolescents With Disabilities? A SWOT-Oriented Synthesis of Para Report Cards

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The purpose was to synthesize information gathered from the interpretation and conclusion sections of the Global Matrix of Para Report Cards on the physical activity
of children and adolescents with disabilities. The synthesis was based on the strengths, weaknesses, opportunities, and threats framework. The procedure consisted of three stages: (a) the application of the International Classification of Functioning, Disability and Health as the theoretical framework; (b) identifying and aligning Global Matrix indicators and benchmarks with the International Classification of Functioning, Disability and Health components through a Delphi approach; and (c) using content analysis to identify themes from specific report cards. Outcomes reveal that further attention toward including children and adolescents with disabilities in fitness assessments is needed as well as adapted assessment methods. Program availability, equipment and facilities, and professional training emerged as strengths but need further development to overcome weaknesses. Paralympic inspiration was an opportunity, whereas extreme weather conditions presented potential threats to physical activity participation among children and adolescents with disabilities.

Keywords: participation, inclusion, youth, sport, programs, impairment

Children and adolescents with disabilities (CAWD) experience greater challenges than children and adolescents without disabilities in initiating and maintaining physical activity (PA) programs (Aviram et al., 2021; Hutzler et al., 2021). Therefore, they are less likely to meet the World Health Organization PA guidelines for health (Bull et al., 2020) and maintain a healthy and active lifestyle (Martin Ginis et al., 2021; Ng et al., 2017). Furthermore, CAWD are more likely than their peers without disabilities to experience detrimental chronic health outcomes in later life, such as increased obesity, diabetes, and reduced cardiopulmonary and muscular function (e.g., Rimmer et al., 2007).

Several authors have described barriers and facilitators to PA participation, as perceived among CAWD (see review in Martin Ginis et al., 2016), parents of CAWD (McGarty & Melville, 2018), their educators (Haegle et al., 2018), or from mixed groups of stakeholders (Shields & Synnot, 2016; Steinhardt et al., 2021; Wright et al., 2019). In a comprehensive review of 22 review articles, Martin Ginis et al. (2016) identified over 200 barriers and facilitators to leisure-time PA in children and adults with physical disabilities and associated them with the International Classification of Functioning, Disability and Health (ICF; WHO, 2001). Among the various models used to identify facilitators and barriers to PA for CAWD, the ICF is based on a biopsychosocial model of health (Talo & Rytökoski, 2016) and has particular importance due to its utilization among health professionals worldwide. The ICF is a model that positions an interaction between a person’s impairment (body function and structures), activity limitations, and participation restrictions with contextual (personal and environment) factors (WHO, 2001). The environmental factors could represent physical or social components.

Utilizing PA as a form of health promotion has a long history going back to ancient China and Greece (MacAuley, 1994) and continuing up to the recent decade (Fletcher et al., 2018). The Active Healthy Kids Global Alliance was established in 2014 in Canada following a 10-year development process to advance knowledge in promoting PA among children and adolescents through an international group of researchers, health professionals, and additional stakeholders (Tremblay et al., 2014). In 2021, member countries or jurisdictions were encouraged to report grades based on disability data as ongoing gaps in knowledge occurred in the Active Healthy Kids...
Global Alliance Global Matrix 3.0 (Tremblay et al., 2016). In response to a call for abstracts posted by Adapted Physical Activity Quarterly (2022), 16 countries or jurisdictions created teams to collate and report the best and most recent data specific to CAWD related to the 10 PA report card indicators (overall PA, organized sport and PA, active play, active transportation, sedentary behaviors, physical fitness, family and peers, school, community and environment, and government). Two countries dropped out, leaving 14 countries or jurisdictions from Asia, Europe, and North and South America involved in the process. These country or jurisdiction-specific reports formed a Global Matrix of Para Report Cards on PA of CAWD (in short, GM Para Report Cards). The intention of the teams was to critically investigate what the grades mean in practice and research as well as to generate knowledge from the report cards that should be transferred into practice by professionals, policymakers, people with disabilities, and other stakeholders (Ng, Sit, et al., in press).

The SWOT analysis is a comprehensive analysis framework that guides the examination of an organization’s strengths, weaknesses, opportunities, and threats (Kotler & Armstrong, 2014). A SWOT analysis is typically performed using a two-by-two matrix, which enables exposing the internal organization’s capabilities and deficiencies on one axis as well as the external enablers and barriers on the other axis (David, 2003; Gürel, 2017). The purpose of the current study was to summarize and synthesize the information gathered via the SWOT on the national or regional Para Report Cards. Specifically, we were interested in exposing internal and external factors limiting or facilitating PA participation among CAWD. For this goal, we used principles from the European Joint Action on Chronic Diseases and Promoting Healthy Ageing Across the Life Cycle. The current SWOT analysis of the Para Report Cards is based on a multitude of sources, such as “the single experts’ points of view or shared scenarios with other stakeholders” (Giusti et al., 2020, p. 2).

**Method**

Consensus building, also known as “collective agreement,” is employed in a variety of circumstances, notably to develop guidelines and policies in situations of limited evidence (Fink et al., 1984). Such approaches are designed to achieve consensus among a group of stakeholders who are familiar with the content and context of the terms on which agreement is desired (Hutchings et al., 2006). We followed the Delphi technique, whereby participants typically respond to multiple iterations of anonymized questionnaires, usually up to three sessions (Von der Gracht, 2012). Additional fundamental criteria of the Delphi process are informed feedback and utilization of statistics to afford participants the opportunity to reconsider their previous responses in subsequent sessions and thereby assist in decision making. Our expert group included seven authors involved in the Para Report Cards, who were knowledgeable in utilizing the ICF or the Para Report Card indicators. The group met twice in online discussion sessions, and the third session followed via email communication.

We used a three-step process. First, the ICF was used for organizing the GM Para Report Card indicators and benchmarks. Next, the 10 indicators of the Para Report Cards and their associated benchmarks were cross-linked with the components of the ICF through a consensus building Delphi approach. Finally, a content analytical procedure was performed on the SWOT analysis that was
conducted in each local Para Report Card. Where countries or jurisdictions did not include a SWOT section, the discussion sections of the Para Report Cards were interpreted by the first and last authors (Y.H. and K.N.) to address PA promotion challenges regarding CAWD.

**Step 1: Selection of the ICF for Classifying Indicators and Benchmarks**

Selecting a theoretical frame of reference is useful for developing an informed analysis and synthesis of scholarly endeavors. During the first Delphi session, the group leader and mediator (Y.H.) outlined the purpose of the Delphi sessions and proposed the procedure to be used for consensus building. Members of the group were invited to provide initial narrative remarks regarding a preliminary association of the 10 GM Para Report Card indicators and their benchmark criteria with the ICF components.

**Step 2: Cross-Linking the ICF With the GM Para Report Card Indicators and Benchmarks**

After the first Delphi session, an online questionnaire was developed and disseminated to group members. The questionnaire included 10 questions, each referring to one of the indicators and its associated benchmarks, and six multiple-choice options resembling the ICF components. Respondents matched the indicator with one or more relevant ICF components and reported the rationale and supporting evidence for their selection. Responses were then summarized and disseminated to group members prior to the second online session. During this second session, group members added verbal comments regarding their responses. In cases of disagreement, the selection was reduced to binary decisions on a link between an ICF component and the GM Para Report Card indicators. When there was more than 67% agreement among experts on a nominal scale (yes/no), a consensus was considered to have been reached (Alexandrov et al., 1996).

During the second online session, the group facilitator (Y.H.) reported the statistical outcome of the questionnaire survey, and respondents explained their votes. The indicators considered as sources of influence (i.e., family and peers, school, community and environment), and government were unanimously classified within the ICF environmental factor component. There was a unanimous agreement for the physical fitness indicator to be classified within the ICF body function and structures component. Active play and organized sport and PA were unanimously agreed to be classified within the ICF participation component, whereas the indicators of overall PA and sedentary behavior were classified within the ICF activity component (66% and 71% agreement, respectively). However, after the results of the second session were disseminated, an additional online discussion was held, suggesting the inclusion of the indicators of overall PA and sedentary behavior within the participation ICF component. Utilizing supporting literature (Fekete & Rauch, 2012; Limsakul et al., 2020; Rimmer, 2006; Schiariti et al., 2014) and additional external expert consultation with an ICF expert, a final recommendation by the group was to describe indicators that were originally linked to either the ICF activities or participation components within a unified ICF component of activities and participation. This unified activities and participation component aligned with the ICF coding structure whereby activities...
and participation were coded in the same chapters (Kostanjsek, 2011). The recommendation was accepted unanimously among experts. Finally, after three online group sessions of the Delphi procedure, a consensus was achieved regarding the classification of the Para Report Cards indicators and GM benchmarks within the components of the ICF (Figure 1).

**Step 3: Cross-National SWOT Synthesis**

Local teams that participated in the Para Report Cards within this special issue were asked to include interpretations related to their report cards’ grades, and it was recommended to use a SWOT analysis framework. Specifically, submitted manuscripts from Brazil (Silva & da Silva, 2022), Canada (Arbour-Nicitopoulos et al., 2022), Finland (Asunta et al., 2022), France (Aubert, Verdot et al., 2022), Hong Kong (Sit, Huang et al., 2022), Ireland (Ng, Healy et al., 2022), Israel (Hutzler et al., 2022), Lithuania (Pozieriene et al., in press), South Korea (Lee et al., 2022), Spain (López-Gil et al., in press), and the United States (Stanish et al., 2023) were collated for this synthesis. Documents submitted at the time of auditor review were used for Chile, Philippines (Kang et al., 2022), and Poland.

Based on the content of the submitted manuscript sections,¹ we used a mixed deductive and inductive approach to analyze the content (Mayring, 2014; Sparkes & Smith, 2014). In particular, an iterative process was used to organize the

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Figure 1 — Charting Para Report Card indicators across the International Classification of Functioning, Disability and Health components.

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thematic map of categories as follows. First, the thematic framework developed during the consensus building phase was imposed, using the ICF components (body function and structures, activities and participation, and environmental factors). Next, themes generated within the interpretation sections of the 11 Para Report Cards were inductively categorized into the ICF components. Finally, the first and last authors (Y.H. and K.N.) made a synthesis of the themes within the SWOT framework. Disagreement was resolved in a discussion between the first and last authors (Y.H. and K.N.). This synthesis was helpful in meaningfully mapping the inductively emerging themes within the multifaceted theoretical framework. While doing so, we followed Braun and Clarke’s (2012) six stages of thematic analysis: (a) data familiarization, (b) creation of initial codes, (c) theme generation, (d) reviewing themes, (e) defining and naming themes, and (f) writing the report.

Trustworthiness was based on the fact that all authors were participants in Para Report Cards teams and, therefore, had an in-depth perspective of the Para Report Cards development and associated SWOT analyses. A rigorous process was applied for theme generation in the following manner: The lead author (Y.H.) developed the coding matrix that was reviewed by the last author (K.N.). The matrix included 56 proposed codes along with their corresponding ICF category, compatibility with Para Report Card indicators, and proposed theme description and SWOT domain. The first and last authors (Y.H. and K.N.) performed a quality check (Braun & Clarke, 2012) whereby themes were changed, merged, or collapsed, paying attention to theme thickness, usefulness, boundaries, and diversity. Note that, in some cases, the same theme was interpreted on different poles of the same axis (e.g., strength or weakness). In such cases, the authors referred to the relevant axis. In addition, themes were removed if reported in only one country or jurisdiction (e.g., national fitness trends reported by the French team and lack of peers to play with reported by the Finnish team). As qualitative thematic analyses often go beyond merely organizing and describing the data, and attempt to link it to research topics, we merged the “Results” and “Discussion” sections to form a solid comprehensive section, as is commonly done in qualitative inquiry literature (Braun et al., 2016).

Results and Discussion

Cross-National SWOT Synthesis Across ICF Components

Within the interpretation sections of the submitted GM Para Report Cards, the author teams presented a variety of formats (Table 1): Two teams (Finland and France) structured their interpretation using a matrix and matched the Para Report Cards indicators with the SWOT domains. The Israel and Lithuania teams narratively based their interpretation on the four SWOT domains. Several teams provided charts of the main topics within the four squares of the biaxial SWOT model (Brazil and Lithuania) or, more comprehensively, all 10 indicators across the four SWOT domains (Finland and France). Seven of the 14 teams preferred to generally interpret their report outcomes. In those cases, the first and last authors (Y.H. and K.N.) used their expertise to interpret associations with the relevant SWOT domains.
In the sections that follow, a thematic analysis is presented, referring to the general framework of ICF components with linked Para Report Cards indicators and the generated themes across each of the ICF components with respect to the four SWOT domains. It should be acknowledged that some of the themes are shared among different Para Report Cards indicators and across the ICF components. However, interpretation of the themes, in terms of the SWOT domains, is not necessarily similar and requires a complex framework. Thus, the themes within each of the ICF components will be referred to the relevant SWOT axes (internal and external) and specific domain. The overall structure of the generated themes appears in Figure 2.

**Body Function and Structures**

The physical fitness indicator of the Para Report Card was linked to the body function and structures component of the ICF. Most \((n=8)\) reporting teams did not have the physical fitness indicator in their SWOT analysis and interpretation. Three teams classified this indicator as a weakness or a threat. Three themes were generated and linked to physical fitness provision and assessment (lack of data, measurement protocols, and national prioritization).

**Weaknesses and Threats**

**Lacking Measurement Protocols.** Due to various motor and cognitive functioning issues, specialized measurement protocols are encouraged for the collection of fitness-level data in CAWD \((Wouters, Evenhuis, et al., 2017)\).
Figure 2 — Overall associations of the generated themes with International Classification of Functioning, Disability and Health components, Para Report Card indicators, and SWOT analysis framework. T = threats; O = opportunities; W = weaknesses; S = strengths.
Therefore, not being able to select and use such protocols was characterized as a weakness. Specifically, the Spanish and French teams reported a “lack of adapted testing protocols, with associated normative values” (Aubert, Verdot, et al., 2022).

However, such protocols are available, such as, for example, the Brockport test battery (Winnick & Short, 1999). This resource includes guidelines and standards for a variety of conditions and has been utilized in several scholarly reports (e.g., Baran et al., 2013). Another resource is the EUROFIT test battery, adapted for persons with intellectual disabilities (Donncha et al., 1999; Skowroński et al., 2009). It appears that their usage was limited or did not exist in the countries or jurisdictions providing the Para Report Cards. Additional studies have used a variety of treadmills (Lotan et al., 2004; Vashdi et al., 2008) or functional tests (Barak et al., 2019) and have provided benchmark values for the assessment of children and adolescents with intellectual disabilities. There is also a range of fitness testing tools for CAWD with other conditions, such as cerebral palsy (Verschuren et al., 2009) or spina bifida (Crytzer et al., 2013). The American College of Sports Medicine has also published a comprehensive volume on exercise management for persons with chronic diseases and disabilities (Moore et al., 2016). Nevertheless, it appears that although guidelines for utilizing such measures in CAWD have been published (Klavina et al., 2017), there remains a lack of knowledge for where to find the appropriate assessment tools and how best to use such tools among researchers and professionals serving CAWD.

It should be acknowledged that these resources were not included in the adapted Active Healthy Kids Global Alliance Global Matrix benchmarks provided to the Para Report Card teams (Ng, Healy, et al., 2022). Finding appropriate normative values for CAWD is a complex task and requires further development (Király et al., 2019). Therefore, sharing of such resources may be useful for Para Report Card teams in the future to advocate for more data on this indicator.

Lacking Data. Some Para Report Cards teams acknowledged the lack of data on the fitness levels among CAWD as a weakness. For example, Lithuania, Ireland, and Israel reported “insufficient research findings.” The Spanish team only found and reported fitness data corresponding to children and adolescents with Down syndrome. The theme of missing data often appeared in the Para Report Cards in different contexts and is reported in countries’ Supplementary Material (available online) as one of the reasons for the incomplete grade in 13 of the 14 Para Report Cards (92.86%) for the physical fitness indicator (Ng, Healy, et al., 2022). Comparatively, within the general Global Matrix 4.0, this indicator received an incomplete grade in 31 of the 57 country report cards (Aubert, Barnes, et al., 2022).

Information pertaining to physical fitness is important for several reasons. First, physical fitness is a good measure of the body’s ability to perform PA, and it is also an important summative indicator of health (Baran et al., 2013). For example, a prospective negative association was found between muscular fitness in children and adolescents with cardiometabolic parameters and adiposity in later life (García-Hermoso et al., 2019). Moreover, these authors reported a positive association between bone health and fitness. Considering the higher prevalence of comorbidities among CAWD, fitness measures and their association with health have even greater importance and implications. Unfortunately, attempts to measure physical fitness in CAWD, relevant to the Para Report Cards, were focused on select impairment groups and with small samples, and therefore, most teams (excluding South Korea;
Lee et al., 2022) gave a grade of incomplete. The recommendations for using the normative values from Tomkinson et al.’s (2018) study were also criticized and deemed as inappropriate for CAWD (Arbour-Nicitopoulos et al., 2022).

**Lacking National Prioritization.** Although the insufficiency of measurement protocols was mentioned in several Para Report Cards, external threats were also identified. Not prioritizing physical fitness within the education and sports curricula is such a threat. In one report, the Israeli team explained that fitness measurements have intentionally been removed from the curricular program since the 1990s (Hutzler et al., 2022). The Lithuanian team further explained that even when there was an intention to develop higher capacity for PA among CAWD, due to improper translation into the practice, measurements were eventually not performed (Pozeriene et al., in press). National physical fitness systems were utilized only in the Finnish and South Korean Para Report Cards. There were different methodologies, though, whereby in Finland, adapted test instructions for the national system were provided for teachers to administer (Asunta & Lindeman, 2021), whereas in South Korea, CAWD attended regional centers to be tested (Lee et al., 2022). Given the importance of physical fitness as a strong predictor for lifelong PA (Janssen & LeBlanc, 2010; Lang et al., 2018), it is recommended that countries or regions develop simple and easy-to-use methods for assessing physical fitness across impairments, ages, sexes, and genders. Such methods may focus on body composition, cardiorespiratory fitness, and muscle endurance (Wouters, Van Der Zanden, et al., 2017).

**Ableism.** Insights about alienation, misrepresentation, and disrespectful language have been addressed within adapted PA literature and have led to a slow but substantial change in the way researchers write about people with disabilities (Peers et al., 2014). Smith et al. (2021) have also advocated the need to use more sensitive language in public health messages that avoids the ableistic language of “sit less” that has consequently made people who sit in wheelchairs feel left out from such messages. As such, it is essential to create guidelines and accomplish respectful monitoring systems for persons with disabilities on the account of various impairments (Martin Ginis & West, 2020).

Ableism emerged as an external threat. The Canadian team (Arbour-Nicitopoulos et al., 2022) specified their concern regarding the use of a one-size-fits-all (normative) approach of the benchmarks for the indicators of physical fitness, overall PA, and sedentary behaviors rather than applying a focus on individual progress and using measures that are reliable and accurate for measuring the capabilities of all CAWD.

Another source of ableism was pointed out by the Spanish team, who suggested that “the representation of people with disabilities in Spanish physical education textbooks is very limited” (López-Gil et al., in press). These concerns may be conceptualized as a regulatory mechanism for maintaining the current formats of social practice, social capital, and social power. Thereby, ableism may impact the possibility for CAWD to self-determine their access to and participation in PAs and sports due to a reduction in their perceived competence, autonomy, and relatedness (Brittain et al., 2020). Ableist thinking among service providers may further restrict CAWD from consuming community PA opportunities (Block & Fines, 2022).
**Strengths and Opportunities**

There were no body function and structures themes linked to the strengths or opportunities SWOT domains. Given that gaps between desired and actual fitness measurements among CAWD have been previously identified (e.g., Winnick & Short, 1999), the Para Report Cards may reflect that in most countries, no sustainable application of the developed measures has yet been achieved. Given that commonly used fitness measurements occur during physical education classes (e.g., Verschuren et al., 2009), specialized knowledge and expertise may be necessary to use adapted fitness tests and, therefore, restrict the likelihood of accomplishing the fitness assessments of CAWD.

**Activity and Participation**

Several themes were inductively generated across the SWOT domains and linked to the ICF activities and participation component, which integrated the Para Report Card indicators of overall PA, organized sport and PA, active play, active transport, and sedentary behaviors. Within the internal SWOT axis, three themes that reflected service provision (program availability, professional development, and equipment and facilities) were generated. These themes were considered differently across countries or regions. That is, the same theme was regarded as a strength by some teams and as a weakness by others. Regarding the external axis, that is, the influence of factors external to the service providers, one theme (Paralympic inspiration) was considered to be an opportunity and two themes (weather and local transport) as threats.

**Internal Domains—Strength and Weaknesses**

**Insufficient Data.** Similar to the physical fitness indicator, reporting on the overall PA participation of CAWD was linked to limited data. The Spanish team reported a lack of data about the PA participation levels of CAWD and specified, “Overall PA indicators were relatively recently published (all during the last decade), which means that research on this topic in Spain is relatively emergent” (López-Gil et al., in press). Much of the data in the Para Report Cards were collected from self-report and proxy surveys in national representative studies (Ng, Sit, et al., in press). Inclusion of CAWD in such surveys has restrictions as, occasionally, there are CAWD who need support to complete the surveys (Ng, Asunta, et al., 2022) or are not included in the main sampling frame (Freeman et al., 2015). The Irish and Canadian teams reported a “lack of appropriate accelerometer data,” which projects further challenges to collecting PA data accurately. It should be acknowledged in this regard that atypical gait as well as wheelchair use are still not accurately measured using off-the-shelf wearable smart devices (Benning et al., 2021). To fill this gap, the Canadian team challenged the policymakers to create “population-specific guidelines” customized for CAWD (Arbour-Nicitopoulos et al., 2022).

**Community Sports Programs.** In general, a low participation volume was reflected in many of the Para Report Cards, as described in the grading of the organized sport and PA indicator. With the exception of Canada and Finland, all other teams graded this indicator as C− (34%–46%) or less, or incomplete. The reference to participation in community sports programs depicted different perspectives across
countries or jurisdictions. For example, the Brazilian team acknowledged the “absence of at least one program/action with main focus on promoting adapted physical activity” (Silva & da Silva, 2022). In contrast, Hong Kong reported “increasing numbers of innovative and evidence-based PA interventions in the community” (Sit, Aubert, et al., 2022; Sit, Huang, et al., 2022). In addition, the Canadian team brought up the issue of quality participation, which should be guiding program leaders, and recommended that measurement of organized sport and PA participation needs to go beyond being “present” in a program and focus on quality participation experiences of CAWD (i.e., that they are actively participating, having fun, and feeling satisfied; Arbour-Nicitopoulos et al., 2022). It appears that some programs are being developed in communities worldwide, but these are still underdeveloped and do not sufficiently meet quantity and quality participation needs among CAWD, such as friendship and enjoyment (Steinhardt et al., 2021). Community sports programs should be inclusive for CAWD. However, when sports club participation is aimed toward competition, this can be seen as intimidating and hinder the participation of CAWD (Darcy et al., 2020; Steinhardt et al., 2021).

Well-designed community sport and PA clubs that support participation of CAWD in inclusive settings are needed to overcome personal and structural constraints, including apprehension (“Cotton-Wooling”) experienced by parents of CAWD (Darcy et al., 2020). For example, the Finnish Paralympic Committee supports a program that links CAWD with a mentor who aims to find a suitable leisure-time PA that they would like to continue to do. The program includes tryouts at the activity and work between the mentor and the club to have an appropriate environment for CAWD to participate within the club (Saari et al., 2020). In other places, specialized community programs are also feasible for CAWD and often report fitness, skill, and psychosocial benefits (e.g., Barak et al., 2019; Baran et al., 2013).

Professional Development. This theme mostly appeared in the overall PA and organized sport and PA indicators. The training of professionals who have the knowledge and skills needed to adapt PA for the capabilities of CAWD is an inevitable and important pillar in every inclusive or specialized PA program (Lidor & Hutzler, 2019). The professional development of programs in the reporting countries or regions varied. In Hong Kong, for example, a “lack of adapted physical activity [APA] trained community coaches” was mentioned (Sit, Huang, et al., 2022). In Finland, the absence of experts from sports clubs was documented, and researchers from Lithuania noticed a “slow change of stereotypical attitudes towards CAWD” (Pozeriene et al., in press). In contrast, Brazil reported “availability of qualified personnel to supervise [sport] actions [with CAWD]” (Silva & da Silva, 2022). Nevertheless, the outcomes of a recently published quantitative survey (Healy, 2022) indicated that individuals who report having a disability were significantly less likely to receive a positive membership or personal training response from both the autonomous and chain fitness centers. Therefore, it is imperative that community sport and fitness coaches, including those from specialized programs (e.g., within Special Olympics), acquire specific training in adapted PA to address unique accommodations, limitations, and engagement techniques (Barak et al., 2019; Pires et al., 2021).

Lack of Adapted Equipment and Facilities. Adapted equipment and accessible facilities are essential assets for providing quality PA opportunities for
CAWD in either physical education, recreation, or elite-level sports (Berardi et al., 2021). Equipment is often costly and, therefore, constitutes a weakness. The Israeli team addressed a specific example: “Costs of sports wheelchairs and other equipment needed for facilitating movement in children and adolescents with physiological disabilities makes this population particularly vulnerable to reduced PA participation” (Hutzler et al., 2022). Indeed, although going out for a jog only requires a pair of sports shoes available for 100 USD, a racing sports wheelchair might cost 10 times this amount. The high purchase and maintenance costs of sports and other PA equipment are a restrictive factor mostly in developing countries (Osam et al., 2021).

**External Domains**

**Paralympic Inspiration.** This theme reflects the motivation inspired within CAWD through exposure to Paralympic (or Special Olympics) athletes. It was mostly linked not only to the indicators of overall PA and organized sports and PA but also appeared in the community and environment indicator. In France, this elite-level athlete inspiration was experienced as an opportunity, generated through the Paralympic movement preparing itself for the forthcoming Paris 2024 Paralympic Games. Also, the Hong Kong team reported inspiration coming from the Tokyo 2021 Paralympic Games (Sit, Aubert, et al., 2022). Paralympic athletes can be seen as role models to CAWD and can change societal attitudes toward people with disabilities (Coates & Vickerman, 2016). The Paralympic legacy as a driver for program and participation development has been encouraged by means of inspirational media coverage, which has gradually increased in the recent three decades (Ferez et al., 2020). Similar experiences have been made regarding Special Olympics World Games (Carter & Williams, 2012). However, this opportunity may be restricted as various countries or regions that have hosted the Paralympic Games have realized barriers to endorse its legacy. One such barrier was the fact that trained staff who worked in the community to promote PA prior to and during the games may move on to other sectors after the games. Also, the personal connection between Paralympic athletes and CAWD, which is necessary for inspiring the latter, can be lost without continued media and administrative attention (Brown & Pappous, 2018).

**Local Transport and Environment.** The long travel distances to specialized institutions required authorities in some countries or regions to develop a system of “organized adapted transportation modes, generally not including active options” (Aubert, Verdot, et al., 2022), as proposed by the French team. Another example is the Hong Kong team, who reported a “convenient and cheap transportation system . . . results in passive transport” and makes “active travel uncommon” (Sit, Huang, et al., 2022). It appears that in most countries, the environmental conditions do not support active transportation to and from school for CAWD. This could be the result of the expected need to provide transport services for CAWD to and from schools and the improvement of services provided by the drivers of such transport (Ross et al., 2020). Less studied are the balances between the safety to allow CAWD to attend school through active transport and as a means of being physically active.
Weather Conditions. As many PAs are done outdoors, weather conditions and pollution status may play a role as a barrier, mainly during active transport. In particular, under “winter conditions with reduced mobility” (Asunta et al., 2022), such as in Finland, or having to cope with “hot and humid weather that hinders (outdoor) play; high air pollution” (Sit, Huang, et al., 2022), such as in Hong Kong, active transport as well as outdoor PAs seem to be restrictive for CAWD. In Martin Ginis et al.’s (2016) review, the weather was considered a barrier to PA for CAWD as creating programs for outdoor training and competition was seen as difficult to resolve when weather conditions were unpredictable. Further evidence from interviews with CAWD pointed out several vulnerabilities and barriers to being outside during the winter (Lindsay & Yantzi, 2014), suggesting the need to update the Para Report Card benchmarks to also indicate participation in indoor activities (Arbour-Nicitopoulos et al., 2022).

Environmental Factors

In this section, themes were generated resulting from the Para Report Cards across the sources of influence indicators (school, family and peers, community and environment, and government; Figure 1), which have been linked to the ICF environmental factors. Some of the themes addressed in this section (program availability, equipment and facilities, and professional development) were also interrelated with the ICF activities and participation component. Another theme (national priorities) was linked to the physical fitness indicator of the Para Report Card within the ICF body function and structures component (Figure 2).

Internal Domains—Strengths and Weaknesses

School Program Availability. The school system plays a significant role in the personal and social development of children and adolescents, whether in regular or special education systems. The physical education experiences gained at school may have a negative impact on lifelong PA participation (Cardinal et al., 2013). Therefore, attention should be given to how attempts of inclusive physical education are performed within the general school. Some authors have described negative experiences by CAWD in this regard (Blinde & McCallister, 1998; Haegele & Zhu, 2017; Tanure Alves et al., 2018). In the Para Report Cards, the evaluation of the school indicator varied considerably (Ng, Sit, et al., in press). From the interpretations within the GM Para Report Cards, it appears that school programs can be characterized as a promising opportunity for increasing PA participation among CAWD. The Israeli team outlined, “The schools’ indicator had the highest grade (B−), meaning that between 60% and 66% of CAWD receive at least 2 hr of PE per week, are taught by qualified PE teachers” (Hutzler et al., 2022). The Hong Kong team further indicated the implementation of an “increasing number of innovative and evidence-based PA interventions in schools.” Eventually, governments and communities should adopt the adapted PA practices reported in Australia (Bellamy et al., 2020) and the Netherlands (Zwinkels et al., 2018) of after-school sports programs successfully experimented within special education facilities. However, such programs are uncommon in inclusive physical education. There are several models for how to develop such experiences, such as student peer-facilitated groups (Shields et al., 2018) or Unified Sports groups (Baran et al., 2013). Nevertheless, long-lasting and broad-scale
facilitation of such endeavors is lacking. New opportunities must be developed and facilitated to promote PA among CAWD. For example, in Europe, a variety of funding tracks can occur through either nongovernmental organizations, Paralympic committees and associations, or national sports agencies or ministries of sport, health, or education (European Parliamentary Research Service, 2021).

Equipment and Facility Availability in Schools. Although equipment has already been described within the ICF activity and participation component, it was also mentioned with an emphasis on the school environment. The Irish team explained, “Most CAWD felt schools had adequate sport facilities” (Ng, Healy, et al., 2022). The involvement of children with and without disabilities in a collaborative and reflective use of adapted tools and equipment was found useful for developing inclusive learning strategies (Kristén et al., 2022). However, access to adapted equipment and supportive personnel may not guarantee successful inclusion (Haegele et al., 2021). Also, the French team perceived an “improved accessibility of school sports equipment.”

School Professional Development. The focus on adapted physical education programs and specialized equipment needs to be linked to specific training of physical education teachers toward inclusion of CAWD or providing them with unique programs. Evidence of effective professional development has been reported in Lithuania where degree programs to train new and existing professionals in adapted PA have taken place “to build competencies.” In contrast, several teams expressed concern about “lack of APA trained teachers” (Hong Kong) or, more specifically,

If you can’t get trained instructors in school clubs [then] you don’t get a message to those parents, and if you don’t do this long enough, the clubs won’t reach people with disabilities, or about the lack of integration in physical education (Finland).

Furthermore, the French team specified the threat remaining within the inclusive programs, suggesting that without training of general physical educators to adapt and without sufficient collaboration of adapted and general physical educators, inclusion in physical education becomes an unmanageable challenge, often with an outcome of marginalizing CAWD. Physical education teacher training for inclusion has a long history in the United States (e.g., Block & Obrusnikova, 2007) and is increasingly growing in other countries. However, it is necessary to provide appropriate training of inclusive knowledge and skills for teachers and sport instructors, including through remote access to improve the experiences and, therefore, the inclusion of CAWD in physical education (Hutzler et al., 2021; Ng, Klavina, et al., 2021).

External Domains—Opportunities and Threats

National Priorities. Together with the school system, government policies were considered in many countries as relatively supportive and were graded higher than the other indicators (Ng, Sit, et al., in press). The perception of policies as an
opportunity has also been confirmed (Sit, Aubert, et al., 2022). For example, the Spanish team assigned their highest grade to the government indicator (C+) and considered it a remarkable strength: “This grade was mainly due to the Inclusive Sports program, which seeks to promote organized sports participation among CAWD as a tool for their social integration” (López-Gil et al., in press). In Ireland, the government indicator scored the highest grade, partly due to the “investment of one million Euro for professional community staff” (Ng, Healy, et al., 2022). Similarly, in Finland, “a wide range of funding opportunities and various projects to promote equality” (Asunta et al., 2022) have been opened by governmental bodies. It appears that European governments have adopted inclusive policies wherein diversity in performance is accepted and cherished. However, given the information obtained regarding low grading in the other indicators, it may be that translation of such policies into the daily life of sport clubs is still underdeveloped. When issuing policies and calls for action, governments should request more focus on developing and evaluating strategies that address PA initiation, self-efficacy development, and behavior change techniques (Jaarsma & Smith, 2018). Health ministries should recommend collaborating with pediatricians to promote PA participation of CAWD (Murphy et al., 2008). Sport ministries should be aware of the need to support not only the elite athletes but also CAWD to acquire sufficient physical literacy for lifelong participation through sports at all levels (Vickerman & DePauw, 2010).

Social Gap. Although government policy has been perceived as supportive, a threatening factor was the inequality between different sections in the community. The threat of inequality in resource allocation due to the social gap was discussed in three Para Report Cards. For example, the Hong Kong team highlighted that there was an “equity issue due to the big gap between the rich and the poor” (Sit, Huang, et al., 2022). The Finnish team added that because adapted PA service provision will be reformed from 2023, “Tight resources can weaken the situation of some municipalities” (Asunta et al., 2022). In France, the low socioeconomic status of parents was reported as a general threat to the PA of CAWD. People of low socioeconomic status are more likely to avoid PA participation, which leads, in part, to poorer health and shorter life expectancy than those of higher socioeconomic status (Rawal et al., 2020). There are elevated costs attributed to PA in CAWD that come from specialized equipment and travel to adapted programs, particularly for individuals who live in remote places. Governments and service providers should focus particular attention on providing PA opportunities that are locally accessible and adapted.

Summary and Conclusions

Based on the thematic analysis performed on the interpretations presented within the Para Report Cards, themes were generated representing strengths, weaknesses, opportunities, and threats. An international perspective was provided within this paper with data from five of the seven regions of the International Federation of Adapted Physical Activity. Although one country in a geographic region is not representative of others, the GM Para Report Cards highlight the collective efforts to collate information from various parts of the globe. An overriding theme
describing the lack of data for more accurately and comprehensively estimating the degree of fitness and PA participation has been identified. Greater attention must be directed at the national surveillance of PA in CAWD using adequately powered and representative samples as well as using valid and reliable measures of PA (Martin Ginis et al., 2021).

Within the internal axis of the SWOT, no current strengths were identified, leaving only WOT. Program availability, equipment, facilities, and professional development appear to be important assets for developing PA participation of CAWD in schools and communities. Some countries or regions reported examples of positive experiences in program and professional development. However, it appears that there is still much work to be done for satisfying the PA needs of different populations with particular reference to ethnic groups and females.

Regarding the external axis, Paralympic inspiration appears to be an opportunity for increasing awareness of the benefits embedded in PA participation. Inspirational speakers who are current and retired athletes as well as “Paralympic Sports Day” (e.g., McKay et al., 2015) or “reverse integration” workshops in schools (Hutzler et al., 2013; Leo & Goodwin, 2014) are examples of useful methods for delivering experiences that “ability rather than disability counts.” Several external threats to PA participation have been acknowledged. Extreme weather conditions, either hot and humid or cold and snowy, were mentioned as potential threats to PA participation. Ministerial and community decision makers are encouraged to provide indoor facilities as well as adapted equipment for counteracting this threat and include it within their national prioritization, which has also been acknowledged as lacking the consideration of CAWD. Efficient local transport systems in Western communities have been reported to reduce the amount of active transportation and, thereby, address another threat to the overall PA of CAWD. Low-cost renting opportunities for active foot- or hand-cycling devices or sports wheelchairs are one way to cope with this threat (Kraaijenbrink et al., 2021). Finally, the social gap between established and socioeconomically underprivileged communities has been addressed as a threat to CAWD belonging to these communities.

Note

1. The interpretation sections used for the thematic analysis were the first drafts of the individual papers, submitted to APAQ, which may differ from the final ones published in the special issue.

References


