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Results from Chile's 2022 report card on physical activity for children and adolescents

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ABSTRACT

Purpose: To summarize the results of Chile's 2022 Report Card (RC) on physical activity (PA) for Children and Adolescents.

Methods: Chile's 2022 RC included ten core PA indicators common to the Global Matrix 4.0. Evidence from scientific articles, reports, and databases published between 2018 and January 2022 was included for each indicator. The data were collected and analyzed by a national scientific committee, which assigned letter grades (A to F) using a consensus based on benchmarks defined and revised by the Active Healthy Kids Global Alliance.

Results: The committee assigned the following grades: Overall PA, D–; Organized Sports and Physical Activity Participation, C–; Active Play, Incomplete; Active Transportation, D; Sedentary Behavior, D–; Physical Fitness, Incomplete; Family and Peers, D; School, C; Community and Environment, D+; Government, A–.

Conclusions: Chile's 2022 RC, like its previous versions, shows persistently low grades for most indicators. Overall PA remained nearly unchanged, while Community and Environment scored lower. Slight improvements were seen in Organized Sports, Family and Peers, and School Environment. While Chile has endeavored to increase children's activity levels, policies require implementation through a systemic, coherent framework to promote sustainable changes and reach a larger portion of children and youth.

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1. Introduction

Physical inactivity is alarmingly high among children and adolescents globally.¹ To address this issue, an initiative called the Global Matrix of Report Cards (RC) on Physical Activity (PA) for Children and Youth was developed and organized by the Active Healthy Kids Global Alliance (AHKGA) to assess and compare PA and related factors across countries worldwide.² Its purpose is to collect comprehensive data, enabling countries to identify areas for improvement, prioritize policies and interventions, and promote PA among young people. The Global Matrix serves as a powerful advocacy tool to develop evidence-based strategies and interventions to enhance PA opportunities and create supportive environments for children and youth globally, addressing the crisis of physical inactivity.³

In Chile, physical inactivity levels among children and youth are concerningly high. About one out of five children and youth are physically inactive, among the world's most inactive countries.⁴ For this reason, the development of comprehensive monitoring and advocacy tools such as the RC on PA is needed. The first two versions of the Chilean RC on the PA of Children and Adolescents, released in 2016 and 2018, have shown consistently low prevalences (about 15–20 %) of children and youth meeting the PA guidelines.^{4–6} This has resulted in scoring low grades on Chile's PA indicators in the second and third Global Matrices on PA for children and youth.^{7,8} Although Chile has made some improvements in policies and investments in infrastructure, this has not been reflected in improvements in PA in children and adolescents.^{4,9} In addition to low grades in the two previous RCs, Chile has shown significant disparities in PA participation across sociodemographic factors such as sex, race/ethnicity, age, and family income/education.¹⁰

The two previous versions of the Chilean RCs have been well-received by governmental offices and decision-makers. For example, the RCs influenced the release of the first National Survey on Physical Activity and Sports Habits on Children and Youth 2019 (NSPASHCY 2019)¹¹ which has served as one of the primary sources for the current RC. Also, the RC has been used when presenting law proposals for PA promotion by members of the Chamber of Deputies and Senators.¹² Considering that the RC has the potential to guide current and future national processes for PA promotion for children and adolescents, a new version of the RC has been developed. This study aims to summarize the findings of the third Chilean RC on PA for children and adolescents as part of the Global Matrix 4.0 by the AHKGA.²

2. Methods

Chile's 2022 RC included ten core PA indicators common to the Global Matrix 4.0: Overall PA, Organized Sport Participation, Active Play, Active Transportation, Sedentary Behaviors, Physical Fitness, Family and Peers, School, Community and Environment, and Government.² More details of the Global Matrix 4.0 methodology can be found elsewhere.² For each indicator, evidence from scientific articles, reports, and databases from different ministries (e.g. Health, Education, Housing and Urban Planning, Sports and Interior and Public Security) and public entities (e.g. Agencia de Calidad de la Educación, Biblioteca del Congreso Nacional de Chile) available or released from 2018 until January 2022 was included. A national scientific committee collected and analyzed the data, which assigned letter grades (A to F) using a consensus based on the benchmarks defined and revised by the AHKGA. Those indicators with insufficient data to be graded were scored as incomplete (INC). The National Scientific Committee included researchers from different Chilean universities. Most members have participated in previous versions of the RC, given their trajectory as PA researchers. New members were invited as they initiated collaborations with members of the RC team in other PA studies for children and adolescents in the country. In addition, for the first time, the Government indicator was graded using a standardized grading rubric to facilitate

international comparisons.¹³ Finally, the grades were also converted into the Chilean national grading system from 1 to 7 to facilitate the interpretation and dissemination of the results in the country. A passing grade was defined as scoring C or higher using the international system or 4.0 with the Chilean grading system. The National Scientific Committee also developed a consensus for measures and actions for improving future grades of each RC indicator (see Fig. 1).

3. Results

Chile's 2022 RC average grade for all indicators was a D+. Grades ranged from D- (Sedentary Behavior) to A- (Government). Only two indicators (School and Government) had passing grades. Eight of the ten indicators were assigned grades, as two indicators (Active Play and Physical Fitness) were graded as INC as they did not have enough data to grade them. The grades and rationale for the RC indicators are presented in Table 1.

When comparing the three Chilean RCs, grades have remained low and stable (Table 2). Overall PA remained very low (F in 2016, D-in 2018, and D+ in 2022), while Sedentary Behavior (D in 2016, C- in 2018, and D-in 2022) and Community and Environment (C in 2016, B in 2018, and D+ in 2022) scored lower. However, some indicators showed slight improvements, such as Organized Sports and Physical Activity Participation (D in 2016, D-in 2018, and C- in 2022), Family and Peers (D in 2016, F in 2018, and D in 2022), and School (D in 2016, D in 2018, and C in 2022).

4. Discussion

This manuscript summarizes the findings of the third Chile's RC on PA for children and adolescents. Compared to previous Chile's RCs, the overall grade slightly improved from D (3) to D+ (3.3), but it is not enough to obtain a passing grade. Most grades for the indicators remained low and stable compared with previous versions of the RC, and only two indicators had passing grades (School and Government). Although the Government indicator scored a high grade, this has not been reflected in improvement for Overall PA and related behaviors.

The development of the current RC has been facilitated by the implementation of the NSPASHCY 2019, as the design of this survey was mainly based on the Global Matrix and RCs indicators. Therefore, this survey has helped obtain nationally representative data on several RC indicators. For example, the NSPASHCY 2019 has improved the representativeness of data for children aged 5 to 8 in the current RC compared with previous RCs.^{4–6} On the other hand, we were unable to obtain data on Active Play and Physical Fitness. This gap should be addressed in future surveys by adding specific questions and measures for these indicators. Also, we encourage researchers and policymakers to measure Physical Literacy as we plan to include this indicator in the next Chilean RC due to its importance in PA promotion throughout the lifespan. This may require consensus about the concept and domains of physical literacy and the most appropriate measurement tool to capture it in the Chilean context.

Regarding the Government indicator, cross-country comparisons should be cautious because the scoring rubric used does not consider an agreed inter-country definition of what should or should not be considered a policy. Furthermore, this instrument "rewards" the existence of a greater number of policies without taking into account the quality and integration among them.¹³ Based on the current RC, we have found that Chile shows great atomization among those who implement policies in the different sectors of the state, in addition to a lack of evaluation of the quality of implementation. Given the instrument's limitations in capturing the latter aspects, the score assigned could be overestimating Chile's performance in this domain. In future versions of the Global Matrix, the standardized rubric to assess the Government indicator may consider quality and impact analysis of policies to better capture that aspect of this indicator.



Fig. 1. Chile's 2022 Report Card cover.

4.1. Overall and specific recommendations

Chile has initiated efforts to enhance PA opportunities for children and adolescents.¹² However, policies must be better implemented through a systemic, coordinated, and coherent perspective (i.e., PA in all policies) to foster sustainable changes and encompass a broader demographic of children and youth. Therefore, national efforts should move from investments in infrastructure towards investments in

creating a system that properly integrates policies from the sports, recreation, education, transport, environment, urban planning, tourism, work and employment, public finance, social development, research, and interior and public security sectors. These political efforts should be one of the main priorities for overcoming the current physical inactivity crisis observed in the last decade. Based on the current results of Chile's 2022 RC, the National Scientific Committee developed specific recommendations to improve the grades for each indicator, which are

Table 1
Grades and rationale for Chile's 2022 Report Card.

Indicator	International grading system	Chilean grading system	Rationale
Overall Physical Activity ^a	D+	3.3	37.0 % of children and adolescents (5–17 years old) reported being physically active for 60 min on at least 4 days per week. ¹¹
Organized Sports and Physical Activity Participation	C-	3.5	43.0 % of children and adolescents reported participation in sports activities (e.g., football, basketball, dancing, athletics, others) either at school (31.8 %) or after school (21.7 %). ¹¹
Active Play	INC	INC	Lack of data to provide a grade for this indicator.
Active Transportation	D	3.0	31.5 % of children and youth use active modes of transportation to (26.9 %) or from (30.5 %) schools based on the NSPASHCY 2019. ¹¹
Sedentary Behavior	D-	2.5	Only 24.0 % of youth (13–17 years old) meet the screen time recommendation (no more than 2 h) within the Canadian 24-Hour Movement Guidelines for Children and Youth. ¹¹ There were no nationally representative data for children under 13 years of age.
Physical Fitness	INC	INC	There were no nationally representative data on physical fitness after Chile's Report Card 2018.
Family and Peers	D	3.0	This grade was based on the following data: 1) 42 % of children and youth reported doing physical activity or sports with peers. However, this percentage considerably drops from 69 % for 5- to 9-year-olds to 13 % for those aged 13–17 years; ¹¹ 2) 36.6 % of children and youth reported playing outdoors or doing sports with an adult family member (e.g., parents, grandparents, uncles/aunts, etc.); ¹¹ 3) 29.4 % of children and youth (10 years and older) reported that an adult transports them to do physical activity or sports; ¹¹ this percentage increases for those that participate in sporting activities outside school hours (42.6 %); 4) Only 13.3 % ¹⁴ to 18.7 % ¹⁵ of adults engage in leisure PA for 30 min for 3 or more times per week.

Table 1 (continued)

Indicator	International grading system	Chilean grading system	Rationale
School	C	4.0	The grade was based on the following data: 1) A third of children and youth reported participation in sporting activities apart from physical education at school; ¹¹ 2) 76.6 % of school principals reported that they offer sport-related activities in their schools; ¹⁶ 3) Physical education is mandatory from years 1–10. At least four pedagogic hours per week from years 1–4 (180 min/week) and two pedagogic hours per week from years 5–10 (90 min/week) ^{17,18} ; therefore, physical education is optional for years 11 and 12 students; ¹⁹ 4) When physical education lessons are delivered must be taught by a specialist (i. e., a physical educator) only from years 9–12 of education; ²⁰ 5) At a national level, schools score 64 out of 100 points on average in the indicator related to promoting actions for physical activity in the school community within the domain of healthy lifestyle for students in year 8; ²¹ 6) Public sports infrastructure is available for all public schools (44.7 % of all schools in Chile) in their respective councils. However, there were no data on their use; ²²
Community and Environment	D+	3.3	This year's grade was based on the following sources: 1) 42.6 % of youth and 34.4 % of adults reported feeling safe or very safe when walking alone in the dark in their neighborhood; ²³ 2) 30.2 % of youth and 72.4 % of adults reported feeling safe or very safe while waiting for public transport alone in their neighborhood; ²³ 3) 49.6 % of youth reported good/very good quality and 47 % good/very good accessibility of the public infrastructure (e. g., fields, skate parks, etc.) specifically geared

(continued on next page)

Table 1 (continued)

Indicator	International grading system	Chilean grading system	Rationale
Government ^b	A-	6.0	<p>toward promoting sports practice;²⁴</p> <p>4) 9.5 % of children and youth (10 years and older) reported having bike paths or skate parks nearby.¹¹</p> <p>Unlike past versions, Chile adopted an objective method for scoring this domain developed by Ward et al.¹³ The score obtained was 81 %, which reflects the large number of national policies that may have an impact on children’s physical activity in any of its forms (recreational activities, leisure time activities, outdoor life, adventure tourism, hiking, play, walking, cycling, sport) that were implemented to some extent during 2019 and 2020, totaling 26. It also reflects the diversity of sectors (10 in total) implementing these policies, including Municipalities, the Ministry of Health, the Ministry of Education, Ministry of Social Development and Family, the Ministry of Housing and Urbanism, the Ministry of Interior, the Ministry of Economy, the Ministry of Sports, the Ministry of Transportation and Regional Governments.</p>

Abbreviations: INC, incomplete; NSPASHCY 2019, National Survey on Physical Activity and Sports Habits in Children and Youth; PA, physical activity.

^a The first two RCs used the criterion of doing physical activity for at least 60 min in all seven days to be considered physically active.

^b The references of the analyzed policies are included as supplementary files.

summarized in Table 3.

4.2. Strengths and limitations

The current RC has included nationally representative data for several indicators but still had two incomplete grades due to the lack of current and relevant available data for Active Play and Physical Fitness. In addition, comparisons between this Chilean RC and its previous editions should be interpreted cautiously, as some indicators are better represented in the current version. Notably, this RC marks the first inclusion of nationally representative data for children and adolescents in Organized Sports and Physical Activity Participation and Active Transportation. Also, the criterion used for classifying children and adolescents as physically active from self-report in the current RC changed compared with the two previous RCs (% of children and adolescents meeting the guidelines on at least four days/week when an average cannot be estimated in RC 2022 vs. meeting the guidelines on all seven days/week in RCs 2018 and 2016) due to the release of the new WHO guidelines on PA for children and adolescents that currently recommends doing at least 60 min per day of moderate to vigorous PA (MVPA) on average rather than doing MVPA at least 60 min each day.² Therefore, the slight grade improvement in overall PA is due to this change.

5. Conclusion

Chile’s 2022 RC on PA for Children and Adolescents has shown low grades for most indicators. The grades reflected that there is still a large gap between policy design and implementation. Chile must commit to critically evaluating the quality and impact of its current policies and intensify efforts to implement a robust system capable of setting achievable goals, planning, prioritizing the allocation of resources, monitoring, and coordinating efforts with the local levels of administration where policies are finally implemented. As this third RC illustrates, perpetuating current strategies is insufficient to overcome the physical inactivity crisis among Chile’s children and adolescents.

Authors statement

During the preparation of this work the authors did not use any tool of generative artificial intelligence (AI) or AI-assisted technologies in the writing process.

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Table 2
Grades comparison between Chile’s Report Cards 2016, 2018 and 2022.

Indicator	2016 Grade		2018 Grade		2022 Grade	
	International grading system	Chilean grading system	International grading system	Chilean grading system	International grading system	Chilean grading system
Overall Physical Activity	F	2	D-	2.5	D+	3.3
Organized Sport and Physical Activity Participation	D	3	D-	2.5	C-	3.5
Active Play	INC	INC	INC	INC	INC	INC
Active Transportation	C-	3.5	F	2	D	3
Sedentary Behavior	D	3	C-	3.5	D-	2.5
Physical fitness	F	2	D	3	INC	INC
Family and Peers	D	3	F	2	D	3
School	D	3	D	3	C	4
Community and Environment	C	4	B	5	D+	3.3
Government	C	4	B-	4.5	A-	6
Overall grade	D	3	D	3	D+	3.3

The letter grading system was defined as follows: A is 80 %–100 %; B is 60 %–79 %; C is 40 %–59 %; D is 20 %–39 %; F is <20 %; INC is Incomplete data. In the Chilean numerical system scoring under 4 denotes failure. In the case of adverse outcomes such as sedentary behavior a reversed order of the percentages was considered for grading.

Table 3

Measures and actions for improving future grades of the Report Card developed by the National Scientific Committee.

Overall Physical Activity

- To integrate physical activity into all policies (e.g., sport, recreation, education, transport, environment, urban planning, tourism, work and employment, public finance, social development, research interior and public security sectors).
- To implement and assess the impact of the national physical activity policy.
- To install the right to play as a principle in all settings (educational, built environment, safety in streets, etc.).

Organized Sports and Physical Activity Participation

- To strengthen organized sports and physical activity at school ensuring participation in diverse opportunities for all children and youth.
- To emphasize sport and physical activity participation for all levels of development and skills rather than focusing on the detection and selection of sports talent at early stages.
- To increase the diversity of sports to be practiced with a particular focus on promoting/favoring participation in girls.

Active Play

- To measure active play in future national surveys.
- To prioritize the development of spaces and programs for free playing in open areas (e.g., play infrastructure for young children and play streets).
- To regulate and supervise the availability of spaces for active playing at schools and to facilitate wearing sport-like uniforms rather than formal uniforms at schools.

Active Transportation

- To strengthen inspection and enforcement of the new road coexistence law in Chile.
- To implement programs for facilitating active transportation at schools.
- To strengthen the bike path networks to and from schools.

Sedentary Behavior

- To implement a campaign about recommendations for the safe and effective use of screens in all settings.
- To offer more opportunities to be physically active by providing better environments in neighborhoods and schools.
- To balance/reduce the use of screens for educational or entertainment purposes at schools.

Physical Fitness

- To measure physical fitness in future national surveys.
- To promote participation and activation of all children during physical education classes and organized sports while promoting enjoyment.
- To promote physical activity using a whole-school approach.

Family and Peers

- To offer opportunities to be physically active in neighborhoods and green areas through programs such as open or play streets.
- To integrate parents in programs and organized sports activities for children and youth.
- To emphasize the benefits of active living (with the family) in future regulations for reducing working hours and improving work environments.

School

- To promote physical activity using a whole-school approach.
- To increase capacities among education professionals for implementing active classes.
- To improve the design of open spaces at schools to promote active living.

Community and Environment

- To offer opportunities to be physically active in neighborhoods and green areas through programs such open or play streets.
- To improve the quality of pedestrian and bike paths and green areas (e.g., proper shade).
- To improve street safety by providing better lightning and enforcing speed limits in residential areas.

Government

- To implement a comprehensive process assessment of the physical activity policies in Chile.
- To ensure funding for the implementation of the national PA policy in Chile.
- To better coordinate efforts between different ministries using the Global Action Plan on Physical Activity as a central point for implementing PA in all policies.

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Declaration of competing interest

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.jesf.2024.07.004>.

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