



A regional Report Card on physical activity in children and adolescents: The case of Extremadura (Spain) in the Global Matrix 4.0

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ABSTRACT

Background/objective: This study presents the first Report Card from Extremadura (Spain), concerning the 4th edition of Global Matrix (GM), which aimed to provide an assessment of Physical Activity (PA) in children and adolescents based on 10 common indicators defined by GM.

Methods: This Report Card was developed by 34 experts from 8 public institutions and 5 research groups from Extremadura and audited by the Active Healthy Kids Global Alliance (AHKGA). All documents, up to July 2021, were analyzed to grade the 10 indicators according to the benchmarks set out by the AHKGA (scale ranging from A to F).

Results: Information was reported in 8 of the 10 indicators, only *Active Play* and *Active Transportation* were not reported due to a lack of local information. The other 8 indicators were graded as follows: *Overall Physical Activity*: F; *Organized Sport and Physical Activity*: D+, *Sedentary Behavior*: D, *Physical Fitness*: C+, *Family and Peers*: A, *School*: C+, *Community and Environment*: B, and *Government*: C-. In addition, some of the indicators were evaluated according to gender; boys scored higher than girls in *Overall Physical Activity* (D-vs. F); *Organized Sport and Physical Activity* (C vs. D) and *Physical Fitness* (C- vs. D+).

Conclusion: The first Report Card from Extremadura in the GM initiative revealed low compliance with international guidelines on PA and sedentary behavior. Despite high grades for sources of influence, the implemented actions have not been effective yet, and there is no information on *Active Play* and *Active Transportation*. These results will allow regional authorities to act at a more local level, as Extremadura's administrative framework allows public administrations and political institutions to act in terms of legislative and budgetary powers among others, which is important for resource allocation.

1. Introduction

Physical inactivity is defined as the inability to achieve the recommended levels of physical activity (PA) for health,¹ and it is currently considered one of the most important problems for society. Physical inactivity is one of the main risk factors for non-communicable diseases¹

and due to the high levels of physical inactivity worldwide, it is considered a pandemic. The National Centre for Chronic Disease Prevention and Health Promotion stresses that not enough PA can lead to heart disease, obesity, high blood pressure, high blood cholesterol and type 2 diabetes²; and the World Health Organization (WHO) states that people who are not active enough have a 20-30% higher risk of death

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than active people.³ Thus, numerous studies have demonstrated the health benefits of PA, as well as its importance in disease prevention.⁴ Environmental factors and lifestyle play a very important role in adherence to PA and therefore health prevention, so physical exercise is paramount.⁵

Previous studies^{6–8} have assessed physical inactivity in children and young people, reporting worrying results. In Spain, the PASOS study⁶ showed that only 36.7% of children and young people met the WHO recommendations.³ In addition, this study indicated that the percentage of inactivity was higher in girls than in boys (70.1% vs. 56.1%) and in adolescence than in childhood (69.9% vs. 56.1%).⁶ The Study on Diet, Physical Activity, Childhood Development and Obesity (ALADINO) 2015⁷ report showed that 68% of children, aged 6–9 years, performed less than 4 h of PA per week. Unfortunately, the update of the ALADINO report, in 2019, ratified the worrying data of 2015, and in 2019 the percentage of boys doing less than 4 h of PA per week increased to 69.7%, while in girls it was 80.6%.⁸ Therefore, all previous studies that have analyzed physical inactivity in children and young people agree on the high degree of physical inactivity in this population, with girls being more inactive than boys.

Global Matrix (GM) is an international initiative in which multidisciplinary teams of experts from many countries collaborate to simultaneously produce a global map of PA in children of all ages, in turn producing a national report for their country.^{9–12} This initiative is spearheaded by the Active Healthy Kids Global Alliance (AHKGA), an incorporated non-profit organization dedicated to improving PA in children and youth around the world. In 2022, AHKGA had already published the GM 4.0 report,¹² which compiled ratings from 57 different territories/countries, for 10 PA indicators: five behavioral indicators (*Overall Physical Activity, Organized Sport and Physical Activity, Active Play, Active Transport, and Sedentary Behavior*), one individual characteristic indicator (*Physical Fitness*), and four influential source indicators (*Family and Peers, School, Community and Environment, and Government*). The main findings from each participating country were summarized in fifty-seven short reports and the results were published in terms of the pre-determined Human Development Index for each country.¹²

The latest GM 3.0¹¹ and 4.0¹², showed that the global situation regarding PA in children and adolescents remains a serious public health concern, with the latest of these studies reporting that only a small proportion (27–33%) meet the recommended amount of PA required for health and well-being.¹² The report on Spain, 2018, concluded that there was a low level of PA in children and young people especially among girls and women,¹³ and the 2022 report showed little improvement in the previous grades, except for the *Overall Physical Activity, Organized Sport and Physical Activity* and *Active Play* indicators.¹²

Extremadura is one of the Autonomous Communities of Spain, which has particular economic, territorial and population characteristics that have conditioned it to present a slight socioeconomic lag compared to the rest of the Spanish regions, with the risk of poverty 10 points above the national average (21.7% vs. 32.3%).¹⁴ There is a lack of specific and updated epidemiological data on the factors that may influence physical inactivity, which is particularly striking in the 10–17 age group. Therefore, in 2020, Extremadura took part in the GM project, as a local region in Spain, to monitor the situation and to be able to take the appropriate measures in a more specific way. Extremadura, as a particular region of Spain, has through its Regional Council of Sports among its functions “*The promotion, coordination and support of sporting activity, as well as the promotion of sport at school age, sport for people with functional diversity and the promotion of institutional and social initiatives that favor the practice of physical exercise and enjoyment of such activity by citizens in conditions of equality*”.¹⁵

Therefore, this study aimed to describe the results of the Extremadura Report Card 2022 on PA in children and adolescents, based on the analysis of the 10 indicators of GM 4.0.

2. Methods

The Extremadura 2022 Report Card was developed by a total of 34 people from 8 institutions and 5 research groups from this region. The participants were divided into two groups, with differentiated roles, i.e., the committee of experts and the working group. The committee of experts was composed of 21 people, belonging to 2 research groups from the University of Extremadura (Behavioral Analysis of Physical Activity and Sport Research Group and Physical Activity, Quality of Life and Health Research Group), 5 governmental bodies from the Government of Extremadura (General Sport Directorate, General Directorate for Social Services and Childhood and Family Affairs, General Directorate for Public Health, General Directorate for Educational Innovation and Inclusion and the Caceres city Council), and two Foundations linked to the regional government (Fundesalud and Youth and Sport Foundation). This committee had the functions of assisting in the search for information, providing information and helping to obtain data from governmental sources. In addition, they later actively participated in the Report Card grading process, approving the Report Card after two meetings.

The working group was composed of 13 researchers from 3 research groups from the University of Extremadura (Promoting a Healthy Society Research Group, Social Impact and Innovation in Health, and Economy, Motricity and Education), whose main function was to search for information, compile and summarize the information provided by the committee of experts and prepare the final document.

Fig. 1 summarizes the phases of the process followed from the first meeting of the expert committee and working group to the drafting of the final report.

As depicted in Fig. 1, the data search process started with the first meeting between the committee of experts and the working group, where all parties involved were asked to access unpublished information. Subsequently, the working group was divided into 2 sub-groups that carried out specific searches on the different indicators in different sources: databases and scientific journals, websites and governmental repositories (regional and national policy documents, etc.). Finally, after data extraction, meetings were held within the working group to compare results and reach a consensus. In cases where there was no consensus, in a subsequent meeting, the committee of experts decided on the most appropriate decision.

Thus, all studies, databases and government documents, up to July 2021, related to the 10 indicators included in GM¹² were taken into account to obtain the grades: *Overall Physical Activity, Organized Sport and Physical Activity, Active Play, Active Transportation, Sedentary Behavior, Physical Fitness, Family and Peers, School, Community and Environment, and Government*.

The process of grading the indicators was carried out according to the GM system¹: A+ = 94–100%; A = 87–93%; A- = 80–86%; B+ = 74–79%; B = 67–73%; B- = 60–66%; C+ = 54–59%; C = 47–53%; C- = 40–46%; D+ = 34–39%; D = 27–33%; D- = 20–26%; F = < 20%; INC = Incomplete—insufficient or inadequate information to assign a grade.

Once the indicators were approved by all participants of the committee of experts and working group, they were submitted to the AHKGA, which is responsible for the development of the GM initiative. Three members of the AHKGA audited the indicators and grades in 3 rounds of revisions after which the grades were approved.

3. Results

The grades of the Extremadura 2022 Report represent the first analysis of PA and influencing factors in children and adolescents in Extremadura following the GM procedures. These grades were summarized in the document “Report on active and healthy schoolchildren and adolescents in Extremadura”, in 5 different languages (Spanish, English, Fala de Xalima, Extremaduran and Rhaeto-Portuguese).¹⁶

The results of the Report Card were obtained mainly from the Health

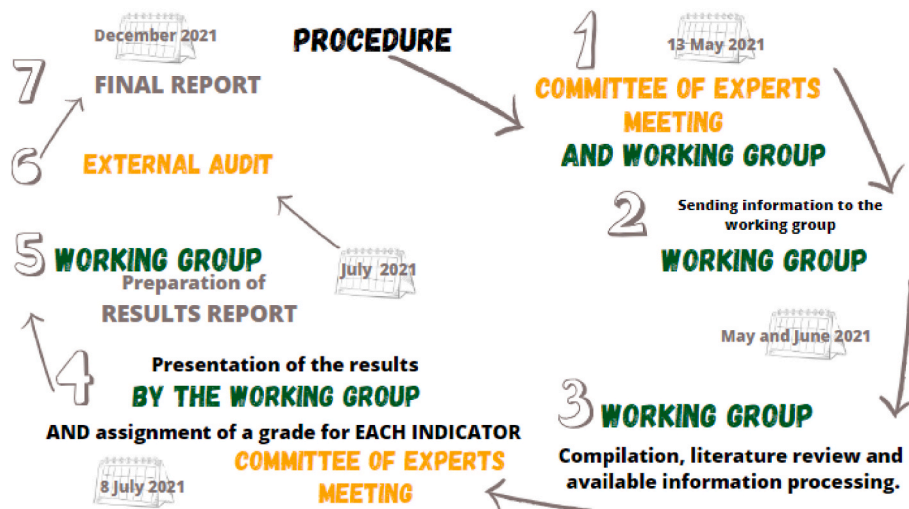


Fig. 1. Procedure for the preparation of the Extremadura Report Card 2022.

Behavior in School-aged Children (HBSC) study,¹⁷ the National Health Survey,¹⁸ and studies developed by researchers at the University of Extremadura,^{19,20} as well as different governmental documents.^{21–23}

More specifically, Table 1 shows the grades reported for each indicator, as well as their justification. The most favorable scores are for the indicators *Family and Peers* and *Community and Environments*, while the lowest scores are in the *Overall Physical Activity* and *Sedentary Behavior* indicators. In addition, Table 1 shows INC for the indicators *Active Play* and *Active Transportation* because no significant studies were obtained to rate these indicators. The grades reported are expressed according to gender (Table 1).

4. Discussion

This study aimed to create the first Report Card developed in Extremadura and one of the first analyses at the regional level following the GM procedures, gathering all the available evidence on PA, and analyzing each of its most relevant indicators in children and adolescents in Extremadura. The main findings of this report show that the indicators referring to the sources of influence on PA (*Family and peers*, *Community and Built Environment*, *School* and *Government*) received the highest grades, while those referring to PA behavior and compliance with PA guidelines (*Overall Physical Activity*, *Sedentary Behavior* and *Organized Sport and Physical Activity*) were given lower grades. In addition, the indicators *Active Play* and *Active Transportation* were graded as INC due to the lack of relevant data and studies in our community to rate these indicators.

A) Individual Characteristic Indicator

With regard to the individual characteristic indicator, *Physical Fitness* it was graded as a C+. It should be noted that most of the countries included in the international project GM 4.0 present this indicator with a grade of INC as indicated in the GM that includes the summary of the results obtained in each report of the 54 countries and 3 territories analyzed.¹² Extremadura not only presents available data on this indicator, but also ranks as one of the most successful regions regarding this indicator with a grade of C+. This grade is in line with data from different studies that state that children and adolescents from Extremadura present good values for very important qualities for physical fitness such as strength and cardiorespiratory endurance,^{28–30} thus agreeing with the results for the same capacities measured in the physical fitness tests that have been assessed for the evaluation of this indicator. The fact that the data correspond to a small region, as well as the interest of several research groups in the region in this topic^{28–33} is

an advantage and makes it possible to monitor this indicator over time. However, the grade for this indicator is only representative of adolescents between 12 and 17 years old, so it is also particularly necessary to extend the study of this indicator to children under 12 years old.

B) Indicators of sources of influence

Results showed that within the sources of influence, school was the one with the highest grade. This is because its main value lies in the strict compliance with the weekly hours of physical education (3 h in primary level and 2 h in secondary level) by all schools (A+) in Extremadura, in line with other countries such as China³⁴ and Taiwan.³⁵ However, it would be interesting for future research to know the percentage of pupils attending classes by means of self-reported questionnaires, as well as to establish a new analysis that considers the pupils' socio-economic status. Taking into account that school is considered a very influential factor in promoting PA for children and adolescents,³⁶ it should be studied whether all schools in Extremadura have adequate facilities for PA, as the grade of this indicator could drop considerably due to less successful school policies and practices.³⁷ Gender-disaggregated data for this indicator were not available, which represents a challenge for the future.

According to the above data, Extremadura reinforces the implementation of favorable policies to enhance physical education in the regional education system, which is reflected in a similar ranking (C-) to the previous one in the *Government* indicator. It should be noted that Extremadura has obtained the same grade as the average obtained in this indicator in countries with a high level of human development.¹² The Extremadura Sports Games (JUDEX) and the Extremadura Special Sports Games (JEDES) appear as a fundamental instrument for the promotion of sports practice at school age. Moreover, considering that it is an autonomous community, the budget allocated is quite high with a total of 4,045,000 euros, of which 45% has been earmarked for school sport. This positive figure is thanks to the sufficient funds available in the general budget of the country,³⁸ as well as being the result of a governmental policy that prioritizes school sport in our educational system.

The indicator *Family and Peers* was graded (A), which represents one of the highest grades among all the indicators graded in this Report Card. This is important information, as a significant proportion of GM 4.0 participant countries/territories have not graded this indicator, such as Uruguay,³⁹ Colombia, England, Greenland, Hong Kong ... etc.,¹² or the grade reported was lower, such as Australia, Israel, etc.¹² This could mean that in our region there is a great deal of support and influence from family and friends towards children's PA. Moreover, a possible hypothesis that may explain this indicator is the fact that the region of

Table 1
Summary of grades assigned to indicators in the 2022 Extremadura Report Card on Physical Activity for Children and Adolescents.

Indicator	Grade	Male	Female	
Overall Physical Activity	F	D-	F	The assignment of grades in this indicator was based on the HBSC study, ¹⁷ updated in 2018, containing data from schoolchildren and adolescents in Extremadura. These data indicate the frequency with which children and adolescents engage in PA during their free time until they become sweaty or out of breath. Only 15 % met this requirement (male 21% vs. female 10%). * Data collected for this indicator cannot be considered representative of the Autonomous Community of Extremadura, so their interpretation should be made with caution. * In addition, these data were reinforced by the study provided by the ACAFYDE Group which, through the PAQ-A questionnaire, reaffirmed <20% of active children. ²⁴
Organized Sport and Physical Activity	D+	C	D	The assignment of grades in this indicator has been based on the data provided by the Regional Sports Council ²¹ pertaining to schoolchildren and adolescents in Extremadura. The data indicate that 34% (male 47% vs. female 30%) of children and adolescents are enrolled in some sport modality in 2017-18.
Active Play	INC	INC	INC	The assignment of a grade for this indicator is not possible due to insufficient data and bibliographic resources.
Active Transportation	INC	INC	INC	The assignment of a grade for this indicator is not possible due to insufficient data and bibliographic resources. A study (Why are young people from Cáceres not more active in their journey to school? Pilot study on barriers to active travel. Cuadernos de Investigación en Juventud) has found that 39% of children and adolescents use active transport as their usual means of getting to and from school (e.g. walking or cycling), but the data collected for the assessment of this indicator refer to a single city in Extremadura and should therefore be interpreted with caution. ²⁵
Sedentary Behaviors	D	D	D	The assignment of grades in this indicator has been based on the National Health Survey ¹⁸ conducted in Spain, updated in 2017. The data refer to the PA, Rest and Leisure section, and to the number of children and adolescents who spend practically all of their free time in a sedentary way. Grade (Percentage): Total D (29%), Boys D (32%), Girls D (27%) Limitation: the rating

Table 1 (continued)

Indicator	Grade	Male	Female	
				corresponds to the population of Extremadura, although the report does not indicate the exact sample assessed in that community.
Physical Fitness	C+	C-	D+	The assignment of grades in this indicator has been based on the database generated from the Observatory of Childhood Obesity, Motricity and Well-being by the HEME, PHeSo and inHEALTH research groups. ¹⁹ The data refer to the mean percentile of the results obtained by adolescents based on their sex and age in the following tests: Course Navette and long jump. The percentiles established as a reference were those published by Tonkinson et al. ²⁶ Grade (Percentage): Total (39.96%). Boys (41.2%); Girls (38.82%). Limitation: the grade only corresponds to the adolescent population of Extremadura. Additionally, it is only based on two physical condition tests, one related to strength and the other to cardiorespiratory endurance. It should also be noted that there is another study on adolescents from which it has not been possible to obtain the grade of the indicator as the percentiles for each participant were not available (Adherence to the Mediterranean diet, and importance of the PA and screen time in High School adolescents from Extremadura (Spain)). ²⁴
Family and Peers	A	N/A	N/A	The assignment of grades in this indicator has been based on the study: "Importance of the family role in the practice of physical activity and BMI of adolescent schoolchildren". ²⁰ The data refer to the number of children and adolescents who are encouraged by their family and friends to engage in PA. The data collected for the assessment of this indicator cannot be considered representative of the Autonomous Community of Extremadura and should therefore be treated with caution. Grade (Percentage): Total A (88%).
School	C+	N/A	N/A	The assignment of scores on this indicator has been based on: 1. Physical education at school. All schools respect the physical education timetable established by the Regional Ministry of Education and Employment of Extremadura (from 3 h per week in primary to 2 h per week in secondary) ^{22,23} ; Overall Rating A+ (100%). 2. Physical education programs at school. Participation of schools in the program

(continued on next page)

Table 1 (continued)

Indicator	Grade	Male	Female
			<p>“Health Education Activity against Child and Youth Obesity” in 2019²⁷: 151 out of 639 (23.63%); Overall Rating D- (24%).</p> <p>3. Other physical education programs at school. PROADES is a program of the General Directorate of Sports in collaboration with the different sports federations of Extremadura focused on the educational development of students, which aimed at the acquisition of healthy lifestyle habits, active participation and sports recreation in the 2018-19 academic year.</p> <p>Since part “1” corresponds to compulsory physical education and part “2” and “3” to other school policies and practices, a combination of parts “2” and “3” has been considered before the combination with part “1”. Therefore, the grade assigned to this indicator is C+.</p> <p>The assignment of grades in this indicator has been based on two items of the HBSC study¹⁷ updated in 2018, whose data pertain to children and adolescents in Extremadura, showing the number of children and adolescents who consider that they feel safe in the area where they live (70%) and who consider it safe for younger children to play outside during the day (68%), which makes it easier for them to be physically active.</p> <p>The data collected for the assessment of this indicator refer to a perception variable and should therefore be interpreted with caution.</p> <p>The Statute of Autonomy of Extremadura attributes to its Autonomous Community exclusive competence in matters of “Sport. Promotion, regulation and planning of sports activities and equipment and other leisure activities”. In the development of this competence, Law 2/1995, of 6 April 1995, on Sport in Extremadura, was passed and contemplates the promotion and development of PA and sport in all educational and social spheres as a guiding principle of the sports policy of the Autonomous Community, paying special attention to the formative and educational nature of sport at school age. In this context, the Extremadura Sports Games (JUDEX) and the Extremadura Special Sports Games (JEDES) appear as a fundamental instrument for the promotion of sports practice at school age.</p> <p>The assignment of grades in this</p>
Community and Environment	B	N/A	N/A
Government	C-	N/A	N/A

Table 1 (continued)

Indicator	Grade	Male	Female
			<p>indicator has been based on data provided by the Regional Sports Council²¹ carried out in 2020, where the report states that a total of 4,045,000 euros has been paid to the sports federations, 45% of which has been allocated to school sport (JUDEX - JEDES), including the following programs:</p> <p>The JUDEX program revolves around the consideration of school-age sport as a formative and educational element, and this idea is placed before any other approach or competition design and is manifested in the commitment of all those involved in the program to respect fair play, sportsmanship and the educational values of sport.</p> <p>The JEDES are offered to all sportspeople from Extremadura who, registered in a sports club or physical-sports activity entity formally constituted in Extremadura, have some kind of functional diversity, whether intellectual, physical and/or cerebral palsy or sensory. They are characterized by a marked social orientation, where sport appears as an important instrument for the acquisition of confidence, participation, integration and personal improvement for the target group.</p> <p>The PROADES program of the General Council of Sports in collaboration with the different sports federations of Extremadura, focused on the educational development of students, aimed at the acquisition of healthy life habits, active participation and sports recreation through the development and practice of physical and sports activities, where the competition factor may appear as a means to improve the motivation of the participants and not as an end in itself.</p>

N/A: not applicable. ACAFYDE: Análisis Comportamental de la Actividad física y el Deporte [Behavioral analysis of physical activity and sport]; BMI: Body Mass Index; HBSC: Health Behaviour in School-aged Children; HEME: Health, Economy, Motricity and Education; inHEALTH: Social Impact and Innovation in Health; JEDES: Juegos Extremeños del Deporte Especial [Extremaduran Games for Special Sport]; JUDEX: Juegos Deportivos Extremeños [Extremaduran Sport Games]; PA: Physical Activity; PHeSo: Promoting a Healthy Society Research Group; PROADES: Promoción y Ayuda al Deporte Escolar [Promotion and Aid for School Sport]. INC: Incomplete—insufficient or inadequate information to assign a grade.

Extremadura, especially in its rural areas, is characterized as a safe and calm environment, which provides families with surroundings that are conducive to the care and development of their children, where they can have greater peace of mind and confidence in their well-being and safety. More specifically, another relevant characteristic of this region is the lower traffic congestion compared to other parts of the country, thus

facilitating access to activities and reducing travel time for families. This also allows for greater flexibility and the possibility to take advantage of different activity opportunities due to the shorter distances between locations. This factor and generally the geographical proximity among family members, where grandparents are more likely to live close to their children and grandchildren, facilitates greater interaction and involvement in the daily care of the children, allowing grandparents to provide support, whether in daily care, transport to activities or in emergencies. These data are very positive considering that the importance of the influence of family and close environment behaviors on children's and adolescents' PA has been demonstrated.^{40,41} However, there is still a strong bias that the data collected are not representative of our community, but they could serve as a reference for future studies and reports on PA.

Along the same lines, another aspect equally as influential as the human factor is the *Community and Built Environment* indicator, considered crucial in the participation of children and adolescents in PA.⁴² In line with the previous grade, it obtained a B score, which is also considered quite successful. In this case, it can be considered that the region of Extremadura is perceived by children and adolescents as a safe environment and therefore suitable for the practice of PA, unlike some other countries.⁴³ Furthermore, the fact that rural areas predominate in the region of Extremadura has a strong influence on this result, as there is evidence that children and adolescents are more physically active in these areas than in urban areas.²⁸

C) Behavioral indicators

The indicators with the lowest grades were found in the group of Behavioral indicators. The highest grade among them was *Organized Sport and Physical Activity (D+)*. The strong promotion of sport in Extremadura through the JUDEX and JEDES, mentioned previously in the *Government* indicator, has a strong influence in this indicator, and data shows that 34% of children and adolescents are enrolled in some sport modality, with a lower percentage in the female sex in line with studies showing that girls practice less organized sport than boys^{44–46} Governmental institutions, federations, clubs, and other institutions related to organized sport should take measures to increase the number of participants and decrease the gender gap, and the monitoring system should be further improved for more accurate tracking, as the latest data obtained date from 2017 to 18.

A similar grade was also reported for *Sedentary Behavior (D-)*, where it was observed that in contrast to the previous indicator, there is a lower percentage of girls who spend their entire time in sedentary behavior than boys, in line with previous scientific evidence.^{47,48} The possible explanation is that girls are more likely to participate in moderate PA rather than intense and competitive sports and are more aware of the health benefits of PA.⁴⁹ However, unlike other reports, the fact that the data source is from a national survey that does not include data by regions is an important bias for assessing this indicator specifically in Extremadura. Also, it would be necessary to assess whether the growing increase in the use of screens and social networks influences this indicator over time, therefore, the data in this Report can serve as a reference point.

The grade reported in the previous indicator contradicts the grade F observed in the *Overall Physical Activity* indicator, which may be due to the fact that the data were not representative of the Extremadura community, since they came from the National study,¹⁷ which reports data for ages between 11 and 18 (a wider range than for the physical fitness indicator, which includes only adolescents). It also indicates the frequency with which children and adolescents engage in PA during their free time until they get sweaty or out of breath, which may be a limitation as it does not talk about the time spent in this activity, as stated in the GM 4.0 benchmarks (i.e., % of children and adolescents meeting the Global Recommendations on PA for Health, doing at least 60 min of moderate to vigorous intensity PA per day on average).¹² Despite this,

this grade is in line with the results of the study by Tapia-Serrano, Vaquero-Solís, López-Gajardo and Sánchez-Miguel²⁴ conducted with adolescents from Extremadura, where they stated that less than 20% of the participants in their study can be considered active. Thus, this indicator, graded with the lowest grade assigned in the present report, is the most alarming and the one that needs to be improved by the competent institutions, since the fact that less than 20% of children and adolescents are active can have many consequences for the physical and mental health of this population,⁵⁰ and may have repercussions on the worsening of the grades for the rest of the indicators.

The indicators *Active Play* and *Active Transportation* received a grade of INC due to insufficient available data. Regarding the first, no information was available to grade this indicator. With regard to the second, the Herrero, Solís, Prieto, Miguel and Serrano²⁵ study on barriers to active transportation was reviewed, and it was found that 39% of children and adolescents used active transport (e.g. walking or cycling) as their usual means of getting to and from school. However, this study referred to only one city in Extremadura and was therefore not considered for grading the indicator.

4.1. Strengths and limitations

This Report offers data on 8 out of 10 indicators established by GM. Although a full report will be needed in the future and it is considered a limitation of the current study, at least it represents a relevant part of the factors influencing the PA of children and adolescents in the region of Extremadura. This Report Card also serves to highlight the current lack of valid data on the promotion of PA in the young population that would allow comparisons with other regions and countries, as well as contribute to the global cause for adherence to PA worldwide.

The main value of this article is the nature of the report, which is one of the first to conduct this analysis on a regional level. Moreover, it has been shown that similar patterns of PA are followed with respect to the national report and the GM, placing Extremadura at the same level, thus demonstrating that regional public policies are in line with those established at the national level.

The stakeholder group is made up of people from governmental and non-governmental sectors with expertise in most of the PA areas covered by the Report Card. Some of the members helped to access the relevant datasets and addressed the respective indicators that could not otherwise be rated. This Report also provides benchmark ratings, which is valuable for future comparisons.

In addition, it should be noted that some of the indicators on PA and its related factors were comprehensively assessed through questionnaires and surveys reported by schoolchildren and their parents. It would be interesting to know the actual levels through larger sample sizes and objective instruments for the assessment of PA.

The assessment presented in this regional Report Card is particularly relevant to Extremadura, which has an autonomous regional Parliament with legislative and budgetary powers, among others. This framework is crucial when it comes to policy making, legislation, and resource allocation, as it enables the creation of policies and laws that encourage PA and promote a healthy lifestyle. The regional government can allocate financial and human resources for the development of programs and projects that encourage PA in the community, such as grants to sports organizations, support for sports and recreational events, and the promotion of physical exercise initiatives in collaboration with other agencies and entities. It can also establish partnerships and collaborate with sports organizations, educational entities, health institutions, and other relevant entities, conduct evaluations and monitoring of policies and programs, and organize awareness and sensitization campaigns on the importance of PA for health and well-being.

Thus, public administrations as well as political institutions could make valuable use of this Report Card to establish policies that enhance or improve children's and adolescents' health.

5. Conclusion

The first Extremadura 2022 Report Card presents the evaluation of the 10 PA-related indicators assessed in Global Matrix 4.0. on children and adolescents. In general, the main finding of this study shows very low levels of PA in children and adolescents in Extremadura (Spain), despite presenting high and favorable grades in sources of influence. Specifically, *Family and Peers*, *Community and Built Environment* and *School* together with the individual indicator *Physical Fitness* received the highest grades, while *Overall Physical Activity*, *Sedentary Behavior* and *Organized Sport and Physical Activity* received lower grades. The indicators *Active Play* and *Active Transport* were not graded due to lack of enough information.

In conclusion, Extremadura presents a government that supports and offers continuous resources and efforts aimed at improving the PA of young people and increasing their participation in organized sport. Moreover, due to the administrative framework of Spain, and Extremadura in particular, public administrations and political institutions could make valuable use of this Report Card, knowing the situation of children and adolescents regarding PA, and act accordingly.

Authorship & conflicts of interest statement

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