Journal of Public Health
https://doi.org/10.1007/s10389-025-02452-x

ORIGINAL ARTICLE

Widening inequalities in sport participation among Italian children, 1997–2022: an observational study

Filippo Oncini[1] · **Sara Giunti**[2]

Received: 3 December 2024 / Accepted: 10 March 2025

Abstract

Aim This study examines trends in children's sports participation in Italy from 1997 to 2022, focusing on socioeconomic and gender disparities and their evolution amidst economic and societal disruptions.

Subject and methods Data from the Multipurpose Survey of Daily Life conducted by ISTAT (1997–2022), including 134,348 respondents aged 6–17, were analysed. A multinomial logistic regression model was employed to investigate trends in sports participation, emphasizing parental education, gender, and their interaction over time.

Results The findings reveal widening socioeconomic disparities in sports engagement. From 1997 to 2019, regular participation rose among children with tertiary-educated parents (71.9%, 95% CI 69.2–74.6 to 79.5%, 95% CI 77.3–81.7) but stagnated for those from less-educated backgrounds (52.5%, 95% CI 51.0–54.0 to 51.7%, 95% CI 48.8–54.7). Between 2010 and 2013, participation dropped 7.4 percentage points for disadvantaged children (58.6%, 95% CI 56.5–60.6 to 51.2%, 95% CI 47.6–54.8), with no recovery, while those of tertiary-educated parents rebounded by 2015. The COVID- 19 pandemic caused a 15-point drop, from 79.5% (95% CI 77.3–81.7) to 65.1% (95% CI 62.7–67.5) for advantaged children and from 51.7% (95% CI 48.8–54.7) to 38.1% (95% CI 34.9.8–41.3) for disadvantaged ones. Gender disparities worsened: disadvantaged girls' participation fell 12.4 points more than boys' during the Debt Crisis (51.8%, 95% CI 49.4–54.2 to 39.4%, 95% CI 36.4–42.4), and during COVID- 19, they saw a 37% drop (45.6%, 95% CI 42.2–49.0 to 28.7%, 95% CI 25.7–31.7). Gender disparities worsened: disadvantaged girls experienced a 23% drop in sports participation during the Debt Crisis, compared to a 5% drop for disadvantaged boys. Similarly, during COVID- 19, sports participation among girls from less-educated backgrounds declined by 37%, compared to a 19% reduction for boys from similar backgrounds.

Conclusion Socioeconomic and gender inequalities in children's sports participation have intensified over the study period. Economic shocks exacerbate these disparities, posing long-term risks to health equity. Targeted policies are essential to promote universal access to sports, particularly for socioeconomically disadvantaged and female children. These measures could mitigate disparities and enhance physical, psychological, and social well-being among vulnerable groups.

Keywords Gender · Health determinants · Inequalities · Physical activity · Sport

Background

Regular physical activity is particularly crucial for the health of children and adolescents. According to the World Health Organization, minors aged 5 to 17 should engage in at least 60 min of moderate or intense physical activity per day and limit as much as possible sedentary behaviours, such as time spent in front of a computer, phone, or television (WHO 2020). The dramatic rise in childhood obesity over the past 40 years has made physical activity even more central, and countless initiatives have been undertaken to decrease children's sedentary behaviour (Biddle et al. 2014).

✉ Filippo Oncini
filippo.oncini@maastrichtuniversity.nl

[1] Maastricht Sustainability Institute (MSI), Maastricht University, Tapijnkazerne 11, 6211 ME Maastricht, Netherlands

[2] Department of Economics, Management and Quantitative Methods, University of Milan, Via Conservatorio 7, 20122 Milan, Italy

Published online: 10 April 2025

While physical activity or exercise generally refer to "any bodily movement produced by skeletal muscles that requires energy expenditure" (WHO 2020, 14), sport activity is instead something more specific – but more far reaching – than mere physical exercise. According to the European Sports Charter (2021, 3), sports are defined as "all forms of physical activity which, through casual or organised participation, are aimed at maintaining or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels". The social dimension – even when we talk about individual sports – is therefore central to sports, which have, over time, become carriers of universal values, instruments of institutional and political communication, and a primary means of promoting physical exercise among children and adolescents.

The importance of this distinction is well-recognized in the scientific literature (Khan et al. 2012). Sports share with physical exercise a range of health benefits: they improve motor skills, prevent obesity, reduce the risk of cardiovascular diseases, increase bone density, and improve musculoskeletal and mental health (Ortega et al. 2008; Janssen and LeBlanc 2010). At the same time, particularly for children and adolescents, participation in sports is positively associated with psychological aspects such as emotional control and well-being, self-esteem, self-control, and calmness, and with social aspects such as the ability to cooperate, interact positively with others, and work as a team (Eime et al. 2013).

Over the past decades, international agencies, national governments, and sports associations have promoted programs and policies to encourage sports participation among young people. For instance, the WHO's Global Action Plan for Physical Activity 2018–2030 places "Sport for All" at the centre of policy recommendations for the next decade (WHO 2020). In Italy, the "Sport and Integration" manifesto, promoted by the Italian National Olympic Committee (CONI) and the Ministry of Labor and Social Policies, speaks of sports as a right for all and emphasizes that access to sports must be universally guaranteed. Despite efforts in this direction, a large body of research shows that children's social origins and gender significantly affect their participation in physical activity and sports, with girls and children from lower socioeconomic backgrounds consistently less likely to engage in regular physical activity or organized sports (Wijtzes et al. 2014; Spaaij et al. 2015; Somerset and Hoare 2018; Andersen and Bakken 2019; Nobis and El-Kayed 2019; Tandon et al. 2021; Owen et al. 2022). While existing research has extensively documented the presence of inequality patterns in children's physical activity and sports participation, no study to date has systematically examined how these disparities have evolved over time. This oversight is particularly notable given that the past few decades have been marked by both significant policy efforts aimed at reducing inactivity among children and a concurrent rise in economic inequalities, exacerbated by major global events such as the Great Recession and the Debt Crisis that followed, the COVID- 19 pandemic, and the subsequent cost-of-living increases (Webster 2024). Drawing on a unique, repeated cross-sectional survey on children's physical activity and sports participation this paper fills this knowledge gap by studying the evolution of parental education and gender-based inequalities among children in Italy from 1997 to 2022.

Methods

Data

The study makes use of the Multipurpose Survey of Daily Life by the Italian National Statistical Institute (ISTAT) from 1997 to 2022. Every year, the survey collects fine-grained information on the daily habits of a representative sample of the Italian families, including children. Our analytical sample includes all respondents aged 6 to 17, for a total of 138,814 respondents – between 2301 and 9549 depending on the wave. The final pooled sample consisted of 134,348 cases with non-missing values for all selected variables (96.8% of the original sample with a random distribution of missing values, which varied between 0.1 and 1.8% for each variable).

Dependent variables

The dataset collects information concerning sport participation and physical activity carried out in free time – hence not at school – by respondents. The questions follow a hierarchical sequence, with each question branching depending on the respondent's prior answers. The sequence begins by asking whether the respondent *regularly* engages in one or more sports during their leisure time, offering a binary response of "No" or "Yes." If the respondent answers "No" to this question, they are then asked whether they practice sports *occasionally*, again with the option to respond "No" or "Yes." For those who do not engage in sports, a follow-up question explores whether they participate in other physical activities during their free time, such as "walking at least two kilometres, swimming, or cycling". The responses for this question are differentiated by frequency, ranging from engaging in these activities once or more times a week, once or more times a month, less frequently, or never.

On the basis of these variables, we built our categorical dependent variable to measure sport participation distinguishing between children engaging in regular or occasional sport activity, children doing physical activity at least once per month, and sedentary children.

Independent variables

The main independent variables are children's parental education (tertiary or higher, secondary, or lower secondary or less), gender (binary), and wave dummies. While parental cultural and economic resources can exert different effects on children's health outcomes (Oncini and Guetto 2017, 2018; Oncini 2019), parental education is an antecedent factor, consistently measured across all the years, that reliably captures long-standing inequality trends across generations. For parental education, we relied on the dominance approach, attributing to children the highest educational level reached by either parent. Additionally, we control for several variables that could influence children's participation in sports and physical activity, namely the number of children in the household, the age of the older parent, family type (couple, single parent, or other), region of residence, and the lowest level of parental self-reported health satisfaction (very well, well enough, not much, not at all).

Statistical analysis

Using Stata 18, we applied multinomial logistic regression to examine how inequalities in sport participation evolved over the past 25 years, interacting year dummies with parental education (Fig. 1) and then also with gender (Fig. 2) and controlling for all other independent variables. Our primary focus was on the two extreme categories of our dependent variable – regular sport participation versus sedentary behavior. To facilitate interpretation, we computed predicted probabilities, which allowed us to estimate the probability of being sedentary across different educational backgrounds over time. Results are presented as marginal effects with 95% confidence intervals. For each model, we also report the pseudo R-square, the generalized Hosmer–Lemeshow, and likelihood ratio test below the figures.

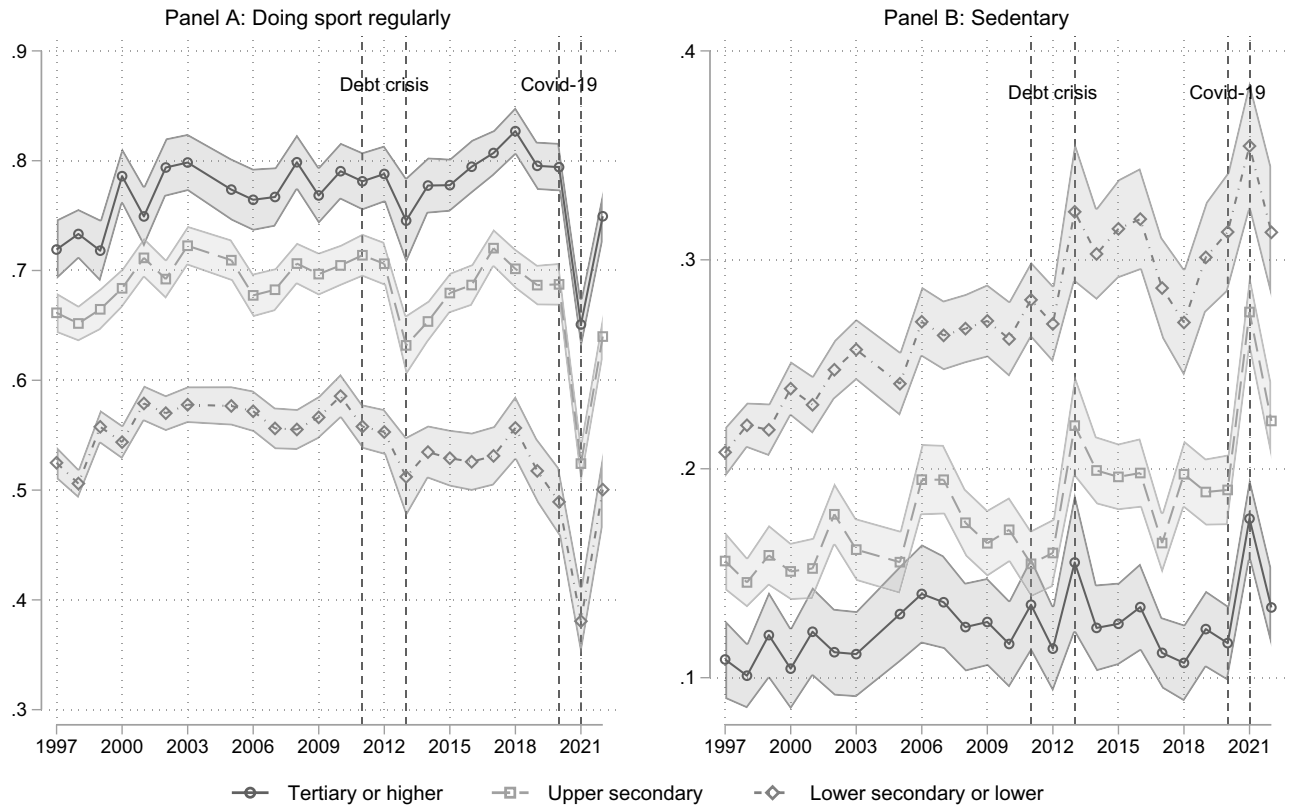

Fig. 1 Sport participation among Italian children aged 6–17, 1997–2022. Notes: Authors' elaboration of Multipurpose Survey of Daily Life 1997–2022. The dependent variables identify children engaging in regular or occasional sport activity and sedentary children in panel A and B, respectively. Controls for gender, number of children in the household, age of the older parent, family type (couple, single parent, or other), region of residence, and level of parental self-reported health satisfaction and wave fixed effects are included. Pseudo R-square 0.0770. Hosmer–Lemeshow test Chi2 66.359 (p value 0.000). Likelihood ratio tests chi^2 18,573.27 (p value 0.000)

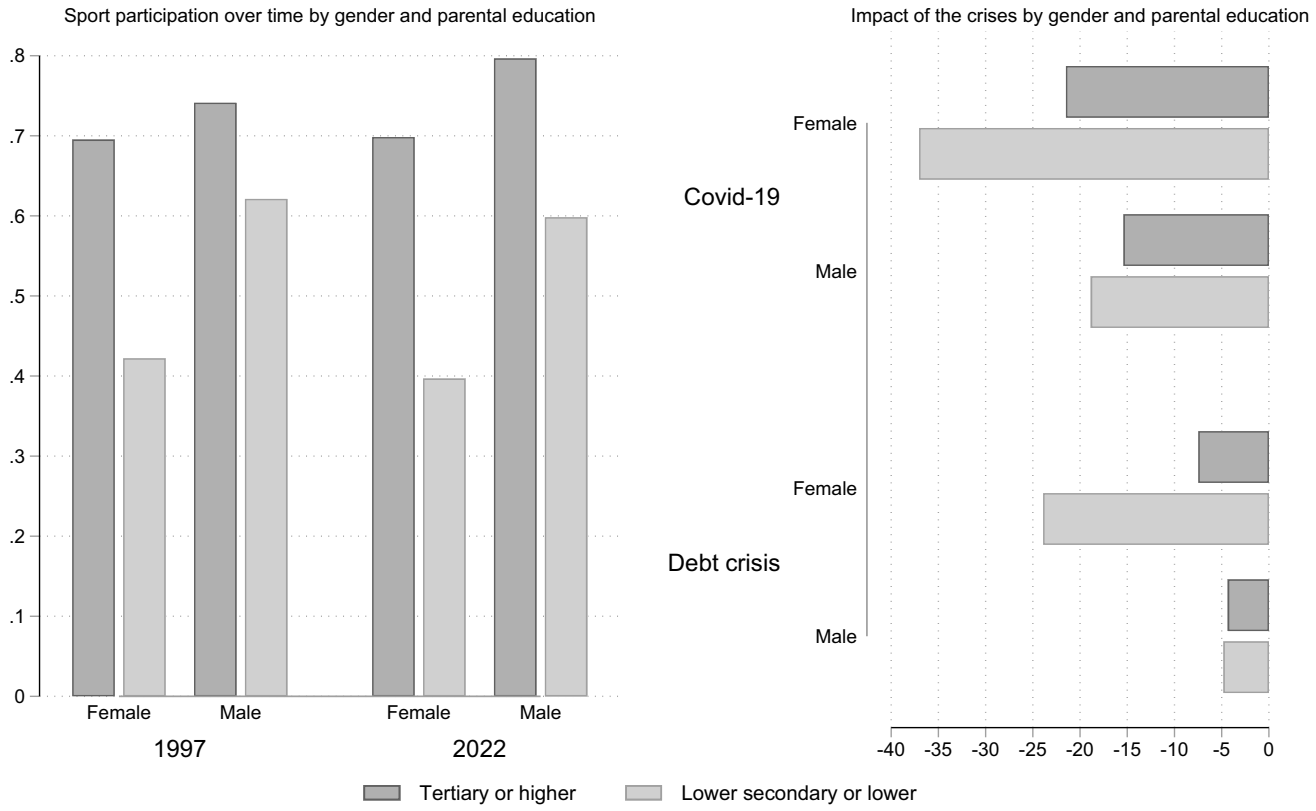

Fig. 2 Gender inequalities in sport participation among Italian children aged 6–17, 1997–2022. Notes: Authors' elaboration of Multipurpose Survey of Daily Life 1997–2022. The dependent variable in both panels identifies children engaging in regular or occasional sport activity. Controls for gender, number of children in the household, age of the older parent, family type (couple, single parent, or other), region of residence, and level of parental self-reported health satisfaction and wave fixed effects are included. Pseudo R-square 0.0782. Hosmer–Lemeshow test Chi^2 37.200 (p value 0.002). Likelihood ratio tests Chi^2 18,854.17 (p value 0.000)

Results

We examine the longitudinal trajectories of sport participation among Italian children from 1997 to 2022 by parental educational attainment in Fig. 1, focusing on regular sports engagement and complete sedentary behaviour. Our findings reveal substantial and increasing socioeconomic disparities in sport participation patterns. In 1997, the predicted probability of regular sport participation exhibited a clear educational gradient 71.9% (95% CI 69.2–74.6) for children of parents with tertiary education, 66.2% (95% CI 64.3–68.0) for those with secondary education, and 52.5% (95% CI 51.0–54.0) for those with lower secondary education or below. This disparity widened significantly over the observed period (see Fig. 1, panel A). By 2019 (pre-pandemic), while participation remained 51.7% (95% CI 48.8–54.7) for children of parents with lower secondary education, it increased to 68.7% (95% CI 66.8–70.5) for those with secondary education and rose to 79.5% (95% CI 77.3–81.7) (an 8-percentage point increase) for those with tertiary-educated parents. These results are confirmed when using an alternative measure for regular sport participation defined as attending sport activities at least once per week (see Fig. A1 in Appendix).

Concurrent trends in sedentary behaviour further emphasize this socioeconomic divergence. Children of parents with lower educational attainment experienced a notable increase in sedentary behaviour, rising approximately 10 percentage points, from 20.8% (95% CI 19.6–22.0) in 1997 to 30.1% (95% CI 27.5–32.8) in 2019 (see Fig. 1, panel B). In contrast, sedentary behaviour among children of tertiary-educated parents remained relatively stable, fluctuating around 12%. These parallel trends indicate a growing polarization: children of highly educated parents increasingly engaged in regular physical activity, while their counterparts from less-educated backgrounds showed stagnant sports participation and an increased risk of sedentary behaviour.

Our analysis also reveals significant socioeconomic heterogeneity in the impact of economic crises on children's sports participation. Focusing specifically on 2010–2013 – when Italy experienced the compounded effects of the Great Recession and Sovereign Debt Crisis – we observe

distinct patterns of disruption and recovery across parental education levels. Children of parents with the lowest educational attainment experienced a substantial decline in sports participation, with the probability of regular engagement decreasing by 7.4 percentage points, from 58.6% (95% CI 56.5–60.6) in 2010 to 51.2% (95% CI 47.6–54.8) in 2013. Notably, this group's participation rates failed to recover to pre-crisis levels in subsequent years. In contrast, while children of tertiary-educated parents also experienced a drop during the crisis (from 79.0% (95% CI 76.4–81.6) in 2010 to 74.5% (95% CI 70.6–78.5) in 2013), their recovery trajectory demonstrated rapid resilience, returning to 77.8% (95% CI 75.3–80.2) by 2015 and maintaining an upward trajectory through 2019. These divergent patterns suggest that economic shocks exacerbate existing socioeconomic disparities in physical activity engagement, with lasting consequences particularly evident among socioeconomically disadvantaged groups. Parallel developments in sedentary behaviour further emphasize this socioeconomic divergence.

The COVID- 19 pandemic had a substantial impact on children's sports participation patterns, causing a 15 percentage point decline in regular sports engagement across the population. Importantly, data collection was suspended during the 2020 lockdown, meaning sports activity measures for that year reflect participation either before March 2020 or during the summer months when restrictions were partially lifted. The full impact became apparent in the spring 2021 data collection. While the absolute reduction in sports participation was relatively uniform across parental education levels, relative impacts revealed notable socioeconomic disparities. Children of parents with lower secondary education experienced a 26% reduction, from 51.7% (95% CI 48.8–54.7) in 2019 to 38.1% (95% CI 34.9–41.3) in 2021. By contrast, children from tertiary-educated families saw a 18% decline, from 79.5% (95% CI 77.3–81.7) in 2019 to 65.1% (95% CI 62.7–67.5) in 2021. However, unlike after the economic crisis, by 2022, children from lower socioeconomic backgrounds recovered to near pre-pandemic levels (50.0%, 95% CI 46.6–53.5), whereas their more advantaged peers remained 4 percentage points below pre-pandemic levels (74.9%, 95% CI 72.6–77.3).

Gender stratification emerges as a critical dimension in sport participation disparities. Figure A2 in the Appendix presents longitudinal trajectories of regular sport engagement by gender and parental educational attainment, revealing three key patterns. First, female children consistently exhibit lower participation rates compared to male children. Second, educational inequalities are greater among girls, in 1997. Children of parents with lower educational attainment showed a participation deficit of approximately 12.0 percentage points among boys (62.1%, 95% CI 60.1–64.1) compared to girls (42.2%, 95% CI 40.1–44.4). By contrast, among tertiary-educated parents, male participation stood at 74.1% (95% CI 70.3–77.9), while female participation was 69.5% (95% CI 65.5–73.6).

Third, educational inequalities widened over time, particularly among boys. By 2019, the participation gap between children from tertiary- and lower-educated families grew by 65% among boys (from 12.0 to 19.6 percentage points, 83.8%, 95% CI 81.0–86.6 vs. 57.6%, 95% CI 53.4–61.7). Among girls, the disparity increased by 52% (from 26.0 to 39.5 percentage points, 75.1%, 95% CI 71.6–78.5 vs. 45.6%, 95% CI 41.4–49.8).

The analysis of crisis-induced disruptions, depicted in Fig. 2, panel B, reveals substantial heterogeneity in sport participation declines across gender and parental education levels during both the Debt Crisis (2010–2013) and the COVID- 19 pandemic (2019–2021). Female participants from lower-educated backgrounds emerged as the most vulnerable demographic group in both crises.

Male children exhibited relatively homogeneous declines across parental education levels. During the Debt Crisis (2010–2013), participation declined by 4.3 percentage points among children of tertiary-educated parents (83.3%, 95% CI 80.1–86.5 in 2010 to 79.7%, 95% CI 74.5–85.0 in 2013) and by 4.8 percentage points among those from lower-educated families (65.0%, 95% CI 62.2–67.8 in 2010 to 61.9%, 95% CI 57.1–66.7 in 2013). Similarly, during the COVID- 19 pandemic (2019–2021), participation declined by 15.4 percentage points for children of tertiary-educated parents (83.8%, 95% CI 81.0–86.6 in 2019 to 70.9%, 95% CI 67.6–74.2 in 2021) and by 18.8 percentage points for those from lower-educated families (57.6%, 95% CI 53.4–61.7 in 2019 to 46.7%, 95% CI 42.2–51.2 in 2021).

Female children experienced larger reductions in participation, with more pronounced educational disparities. During the Debt Crisis, participation declined by 7.0 percentage points for girls from highly educated families (74.6%, 95% CI 70.4–78.7 in 2010 to 69.0%, 95% CI 63.1–74.9 in 2013), whereas their counterparts from lower-educated backgrounds saw a 23.0 percentage point decline (51.8%, 95% CI 48.8–54.8 in 2010 to 39.4%, 95% CI 34.0–44.8 in 2013). These disparities widened during the COVID- 19 pandemic, with reductions of 21.0 percentage points for highly educated girls (75.1%, 95% CI 71.6–78.5 in 2019 to 58.9%, 95% CI 55.3–62.5 in 2021) and 37.0 percentage points for girls from lower-educated backgrounds (45.6%, 95% CI 41.4–49.8 in 2019 to 28.7%, 95% CI 24.3–33.2 in 2021). These findings confirm that gender is a crucial determinant of sport participation, with girls consistently exhibiting lower engagement rates and greater educational disparities than their male counterparts. Furthermore, economic downturns exacerbate these gender inequalities. Conversely, Fig. A3 in the Appendix shows that long-term participation trends remain stable across the 6–10 and 11–17 age cohorts.

Discussion

Using repeated cross-sectional data from the Multipurpose Survey of Daily Life conducted by ISTAT between 1997 and 2022, this paper investigated the sport participation rates of Italian children aged 6 to 17. The analysis focuses on understanding how these rates have evolved over time, with particular attention to familial social origins – measured through parental education – and gender. By examining trends across a 25-year period marked by significant economic and societal disruptions, including the Great Recession and the COVID- 19 pandemic, this study provides a comprehensive assessment of the interplay between socioeconomic background, gender, and external shocks in shaping children's engagement in sports.

The findings of this study provide compelling evidence of widening socioeconomic and gender disparities in children's sports participation in Italy over the past 25 years. By examining trends from 1997 to 2022, we capture how socioeconomic background and gender interact to shape patterns of engagement in sports, a critical component of children's physical, psychological, and social well-being (Eime et al. 2013). This analysis underscores the persistence and intensification of inequalities despite various policy efforts to promote universal access to physical activity. The results highlight a concerning polarization in sport participation. While children of tertiary-educated parents increasingly engage in regular sports, those from less-educated backgrounds show stagnation or rising sedentary behaviour. These disparities were further amplified during periods of economic disruption, with disadvantaged children experiencing greater declines in participation and slower recovery. Gender inequalities compound this issue, as girls from lower socioeconomic backgrounds consistently demonstrate lower participation rates and are more vulnerable to external shocks, such as economic crises and the COVID- 19 pandemic.

These findings emphasize the resilience of advantaged groups in maintaining or even enhancing sports engagement during challenging times, contrasting sharply with the vulnerability of less-advantaged groups. This growing divide raises important questions about the long-term implications for health equity, particularly for children from socioeconomically and culturally marginalized communities. The intersection of socioeconomic and gender inequalities in sport participation signals the need for targeted interventions to address the structural barriers faced by disadvantaged groups, including addressing financial constraints, accessibility issues, and sociocultural norms that may discourage participation, particularly among girls.

This study contributes to the existing literature by offering a systematic analysis of long-term trends in sports participation inequalities and situating these trends within the broader context of societal and economic disruptions. The findings shed light on how economic crises disproportionately affect vulnerable groups and highlight the critical role of targeted policies in mitigating these effects. However, the study also points to several limitations and areas for future research, which are discussed in the following section.

Despite its contributions, this study has several limitations that warrant discussion. First, parental education was used as the sole indicator of socioeconomic status, which, while consistently measured over time, does not capture the full spectrum of family resources (Oncini and Guetto 2017, 2018; Oncini 2019). Factors such as household income, time availability, and social support are also critical in understanding the mechanisms through which socioeconomic disadvantage impacts sports participation. Second, the measure of sports participation, while useful for broad comparisons, does not account for variations in the type or quality of sports activities children engage in, which could reveal further dimensions of inequality. Third, the study does not delve into the causal mechanisms behind the observed declines in children's sports participation during economic crises, leaving unexplored the structural conditions and policy responses that might mitigate these adverse effects. Finally, the limited time window for data following the COVID- 19 pandemic restricts our ability to fully assess the medium-term recovery patterns, particularly in light of subsequent shocks such as the cost-of-living crisis. Future research should aim to address these limitations by incorporating more comprehensive measures of socioeconomic status, examining causal pathways, and exploring the long-term impacts of external shocks on sports participation.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s10389-025-02452-x.

Authors' contributions All authors made substantial contributions to the conception or design of the work, or the acquisition, analysis, or interpretation of data for the work. They were involved in drafting the manuscript or critically reviewing it for important intellectual content. Each author has given final approval for the version to be published and agrees to be accountable for all aspects of the work, ensuring that questions related to accuracy or integrity are appropriately investigated and resolved.

Conceptualization: Filippo Oncini, Sara Giunti; Methodology: Filippo Oncini, Sara Giunti; Formal analysis: Filippo Oncini, Sara Giunti; Investigation: Filippo Oncini, Sara Giunti; Writing – original draft preparation: Filippo Oncini, Sara Giunti; Writing – review and editing: Filippo Oncini, Sara Giunti; Visualization: Filippo Oncini, Sara Giunti.

Funding The authors did not receive support from any organization for the submitted work.

Data availability The data used in this study cannot be published but can be made available upon reasonable request from the authors.

Code availability The Stata code used for the analysis can be provided along with the data upon request.

Declarations

Ethics approval Ethics approval was waived as this research relies exclusively on publicly available retrospective data.

Consent to participate Consent for participation was obtained by the Italian Statistical Institute (ISTAT) during the original data collection process.

Consent for publication Consent for publication of the data was also obtained by the Italian Statistical Institute at the time of data collection.

Competing interest The authors have no relevant financial or non-financial interests to disclose.

References

Andersen PL, Bakken A (2019) Social class differences in youths' participation in organized sports: what are the mechanisms? Int Rev Sociol Sport 54(8):921–937. https://doi.org/10.1177/1012690218764626

Biddle SJ, Petrolini I, Pearson N (2014) Interventions designed to reduce sedentary behaviours in young people: a review of reviews. Br J Sports Med 48(3):182–186. https://doi.org/10.1136/bjsports-2013-093078

Eime RM, Young JA, Harvey JT, Charity MJ, Payne WR (2013) A systematic review of the psychological and social benefits of participation in sport for children and adolescents: informing development of a conceptual model of health through sport. Int J Behav Nutr Phys Act 10(1):1–21. https://doi.org/10.1186/1479-5868-10-98

European Sports Charter (2021) Recommendation CM/Rec(2021)5 of the Committee of Ministers to member States on the Revised European Sports Charter. https://tinyurl.com/5n8u5928. Accessed 5 Mar 2025

Janssen I, LeBlanc AG (2010) Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. Int J Behav Nutr Phys Act 7:1–16. https://doi.org/10.1186/1479-5868-7-40

Khan KM, Thompson AM, Blair SN, Sallis JF, Powell KE, Bull FC, Bauman AE (2012) Sport and exercise as contributors to the health of nations. Lancet 380(9836):59–64. https://doi.org/10.1016/S0140-6736(12)60865-4

Nobis T, El-Kayed N (2019) Social inequality and sport in Germany–a multidimensional and intersectional perspective. Eur J Sport Soc 16(1):5–26. https://doi.org/10.1080/16138171.2019.1577328

Oncini F (2019) Feeding distinction: economic and cultural capital in the making of food boundaries. Poetics 73:17–31

Oncini F, Guetto R (2017) Determinants of dietary compliance among Italian children: disentangling the effect of social origins using Bourdieu's cultural capital theory. Sociol Health Illn 39(1):47–62

Oncini F, Guetto R (2018) Cultural capital and gender differences in health behaviours: a study on eating, smoking and drinking patterns. Health Sociol Rev 27(1):15–30

Ortega FB, Ruiz JR, Castillo MJ, Sjöström M (2008) Physical fitness in childhood and adolescence: a powerful marker of health. Int J Obes 32(1):1–11. https://doi.org/10.1038/sj.ijo.0803774

Owen KB, Nau T, Reece LJ, Bellow W, Rose C, Bauman A, Halim NK, Smith BJ (2022) Fair play? Participation equity in organised sport and physical activity among children and adolescents in high income countries: a systematic review and meta-analysis. Int J Behav Nutr Phys Act 19(1):27. https://doi.org/10.1186/s12966-022-01263-7

Somerset S, Hoare DJ (2018) Barriers to voluntary participation in sport for children: a systematic review. BMC Pediatr 18:47. https://doi.org/10.1186/s12887-018-1014-1

Spaaij R, Farquharson K, Marjoribanks T (2015) Sport and social inequalities. Sociol. Compass 9(5):400–411. https://doi.org/10.1111/soc4.12254

Tandon PS, Kroshus E, Olsen K, Garrett K, Qu P, McCleery J (2021) Socioeconomic inequities in youth participation in physical activity and sports. Int J Environ Res Public Health 18(13):6946. https://doi.org/10.3390/ijerph18136946

Webster P (2024) Inequality—we should overcome, but will we? J Public Health 46(3):303–304. https://doi.org/10.1093/pubmed/fdae128

WHO (2020) WHO guidelines on physical activity and sedentary behaviour. Geneva: World Health Organization. https://tinyurl.com/3a7fat4a. Accessed 5 Mar 2025

Wijtzes AI, Jansen W, Bouthoorn SH, Pot N, Hofman A, Jaddoe VW, Raat H (2014) Social inequalities in young children's sports participation and outdoor play. Int J Behav Nutr Phys Act 11:1–10. https://doi.org/10.1186/s12966-014-0155-3