

Association between the physical activity levels of parents and their children: a review update of Brazilian studies – Report Card Brazil

Associação entre os níveis de atividade física dos pais e dos filhos: uma atualização de estudos brasileiros – Report Card Brasil

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Abstract – This updated systematic review aimed to expand and update the available evidence, based on studies conducted in Brazil, regarding the relationship between the physical activity levels of parents and their children. Searches were conducted in September 2025 and were performed in the following databases: Medline via OVID, Embase, CINAHL via EBSCO, LILACS, and SPORTDiscus via EBSCO. Terms related to physical activity (i.e. physical exercise, walking, running, sport, motor activity) children/adolescents (i.e. child, adolescent, preschool), and social support (i.e. encouragement, incentive) were used. Longitudinal studies, clinical trials, and cross-sectional studies investigating the level of physical activity of children and adolescents (under 18 years of age) and their respective parents were included. As exclusion criteria, systematic review was not included. The results were described narratively and presented in figures. Initially, 3,507 studies were reported, of which 8 were included in the update. Total of 7,740 children and adolescents (47% to 59% female), with at least one parent being evaluated, totaling 7,039 adults (50% to 92% mothers). All included studies showed a positive association between the level of physical activity of parents and their respective children. According to this updated systematic review, the parental physical activity was positively associated with children's physical activity in Brazilian samples.

Key words: Youth; Life style; Fathers; Mothers; Familiar support.

Resumo – Esta atualização de revisão sistemática teve como objetivo ampliar e atualizar as evidências disponíveis, com base em estudos realizados no Brasil, sobre a relação entre os níveis de atividade física dos pais e de seus filhos. As pesquisas foram realizadas em setembro de 2025 nas seguintes bases de dados: Medline via OVID, Embase, CINAHL via EBSCO, LILACS e SPORTDiscus via EBSCO. Foram utilizados termos relacionados à atividade física – exercício físico, caminhada, corrida, esporte, atividade motora –, a crianças/adolescentes – criança, adolescente, pré-escolar – e ao apoio social – encorajamento, incentivo. Foram incluídos estudos longitudinais, ensaios clínicos e estudos transversais que investigaram o nível de atividade física de crianças e adolescentes (menores de 18 anos) e de seus pais. Como critérios de exclusão, revisões sistemáticas não foram incluídas. Os resultados foram descritos narrativamente e apresentados em figuras. Inicialmente, foram encontrados 3.507 estudos, dos quais oito foram incluídos na atualização. Um total de 7.740 crianças e adolescentes (47% e 59% do sexo feminino, respectivamente), com pelo menos um dos pais sendo avaliado, totalizando 7.039 adultos (50% e 92% mães, respectivamente). Todos os estudos incluídos mostraram uma associação positiva entre o nível de atividade física dos pais e de seus filhos. De acordo com esta revisão sistemática atualizada, a atividade física dos pais foi associada positivamente à atividade física das crianças em amostras brasileiras.

Palavras-chave: Jovens; Estilo de vida; Pais; Mães; Apoio familiar.



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INTRODUCTION

Physical activity among children and adolescents is strongly endorsed by the scientific community due to the numerous physical, mental, and educational benefits¹⁻³. Global recommendations from the World Health Organization, as well as the Physical Activity Guide for the Brazilian population, indicate that children and adolescents should engage in 60 minutes of moderate-to-vigorous physical activity (MVPA) daily^{4,5}. Despite these well-established recommendations and the recognized benefits of regular physical activity, approximately 81% of children and adolescents worldwide remain insufficiently active^{6,7}. In Brazil, about 29.9% of children and adolescents meet these recommendations⁸.

Evidence suggests that physical activity during childhood and adolescence is strongly associated with its maintenance into adulthood and with certain outcomes related to physical and mental health^{9,10}. According to the systematic review by Hu *et al* the practice and adherence to physical activity among children and adolescents is determined by a complex interaction of intrapersonal, interpersonal, organizational, community, and public policy factors¹. In this context, the family environment plays a crucial role, especially regarding the influence of parents on the active behavior of children and adolescents¹¹.

Studies around the world have investigated the behavior of the family environment and even more specifically of dyads; father/child; mother/child. In Canada, it was observed that if parents increased physical activity by 20 minutes, their children tended to increase it by 5 to 10 minutes as well¹². Another study in the United States showed that parents who practiced physical activity with their children, the latter were two to three times more likely to achieve the level of adequate physical activity¹³. Corroborating, in the Czech Republic, father-child dyads showed a stronger association in physical activity compared to mother-child dyads, and also, mothers who had a higher level of vigorous physical activity had children with greater chances of reaching the recommendations than mothers who were not very active¹⁴.

In Brazil, a 2023 study pointed out that parents with more active behavior, who verbally encouraged their children, and monitored their behaviors, had more active children¹⁵. Another more recent Brazilian study corroborated showing that in families in which parents practice physical activity and spend less time in sedentary behavior, children tend to be more active and spend less time in sedentary behavior as well, compared to families in which parents are less active and more sedentary¹⁶.

A preliminary literature review, encompassing Brazilian studies published up to December 2019, indicated that most investigations identified a positive association between the level of physical activity of parents and that of their children¹⁷. Given this scenario, the present systematic review aimed to update the available evidence, analyzing the relationship between parental physical activity and the physical activity of children and adolescents in studies conducted in the Brazilian context. This work is part of Report Card Brazil; a research project focused on the systematization and dissemination of indicators related to the physical activity of Brazilian children and adolescent⁸.

METHODS

This systematic review is part of the research project Report Card Brazil: Health indicators for children and adolescents (4th edition). The macro-project

protocol is registered on an open access platform and can be accessed at <https://osf.io/y2q8z/>. An update study was conducted of previously published systematic reviews that investigated the relationship between parental physical activity and children's physical activity in the Brazilian population. The searches were conducted in September 2025 and were performed in the following databases: Medline via OVID, Embase, CINAHL via EBSCO, LILACS, and SPORTDiscus via EBSCO. Terms related to physical activity (i.e. physical exercise, walking, running, sport, motor activity) children/adolescents (i.e. child, adolescent, preschool), and social support (i.e. encouragement, incentive) were used. As this was an update, searches were limited to studies published between January 2020 and September 2025. Table 1 shows the search strategy used in Medline. Longitudinal studies, clinical trials, and cross-sectional studies investigating the level of physical activity of children and adolescents (under 18 years of age) and their respective parents were included. Both subjective measures (questionnaires, physical activity diaries) and objective measures (accelerometer, pedometer) were considered for the assessment of physical activity levels. As exclusion criteria, systematic review was not included.

Two independent authors (RVV and GDG) screened the titles and abstracts and subsequently selected the potentially eligible full texts. In case of disagreement, a third author (DGDC) was responsible for resolving any potential disagreements. Two independent authors (RVV and GDG) extracted the following data from the included studies: sample characteristics (size, age, sex); study type (longitudinal, clinical trials); method of physical activity assessment (questionnaires, accelerometer); and main results (positive, negative, or no association). The results were described narratively and presented in figures.

Table 1. Search strategy (Medline).

1. exercise.mp. or Exercise
2. exercise.mp.
3. exercis*.mp.
4. motor activit*.mp.
5. Exercise
6. leisure activit*.mp.
7. physical fitness.mp.
8. physical endurance.mp
9. Physical Endurance/
10. exercise tolerance.mp.
11. Exercise Tolerance/
12. aerobic.mp.
13. physical activity.mp.
14. Motor Activity/
15. or/1-14
16. children.mp.
17. child*.mp.
18. parent*.mp.
19. mother*.mp.
20. father*.mp.
21. caregiver*.mp.
22. young person.mp.
23. young people.mp.
24. teenage*.mp.
25. adolescent*.mp.
26. boy*.mp.

Table 1. Continued...

27. girl*.mp.
28. or/16-27
29. social support*.mp.
30. family.mp.
31. peer.mp.
32. friend.mp.
33. school.mp.
34. support.mp.
35. encourage*.mp.
36. help.mp.
37. assist*.mp.
38. emotion*.mp.
39. instruction*.mp.
40. information*.mp.
41. psychosocial.mp.
42. or/29-41
43. Brazil/
44. brasil.mp.
45. brazilian.mp.
46. or/43-45
47. 15 and 28 and 42 and 46

RESULTS

The initial search reported 3,507 studies, of which 8 were included in the update after the selection stages. The reasons for exclusion and the studies selected at each stage are shown in Figure 1. The total sample consisted of 7,740 children and adolescents (47% to 59% female), with at least one parent being evaluated, totaling 7,039 adults (50% to 92% mothers). One study conducted in Rio Grande do Sul, the parental group consisted exclusively of mothers¹⁸.

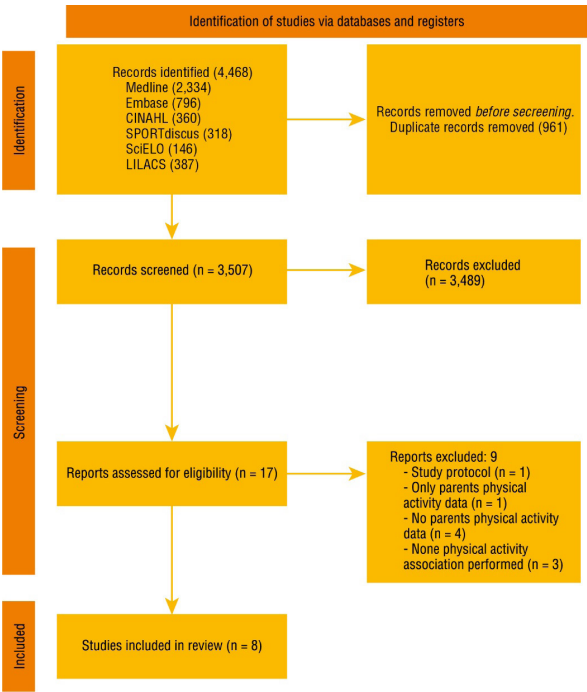


Figure 1. Flowchart of studies selection process.

As presented in Table 2, there was a discrepancy in the number of studies according to the region of the country. Most of the studies, five, were conducted in southern Brazil, and two studies were conducted in the southeast. Only one study was conducted in northeastern Brazil¹⁵. No studies were included for the northern and midwestern regions of the country.

Table 2. Geographic distribution of included studies (n=8).

Brazil Area	Number of studies (state)
South	5 (3 Rio Grande do Sul e 2 Paraná)
Southeast	2 (São Paulo e Minas Gerais)
Northeast	1 (Pernambuco)

When considering the number of studies by year of publication, it can be observed that in the period that this update aimed to analyze, from 2020 to 2025, there was a balance in publications. Highlighting that only in 2021 were there no publications. Further information about the publications is provided in Figure 2.

Regarding the method used to assess physical activity levels, four studies used accelerometers and three studies used questionnaires. One study used both instruments for assessment¹⁵. Considering the study design, most (four) were cross-sectional studies and only two were longitudinal studies. Supplementary Material Table 1 presents the characteristics of the included studies. Finally, all included studies showed a positive association between the level of physical activity of parents and their respective children. Further details of this association are shown in Supplementary Material Table 1.

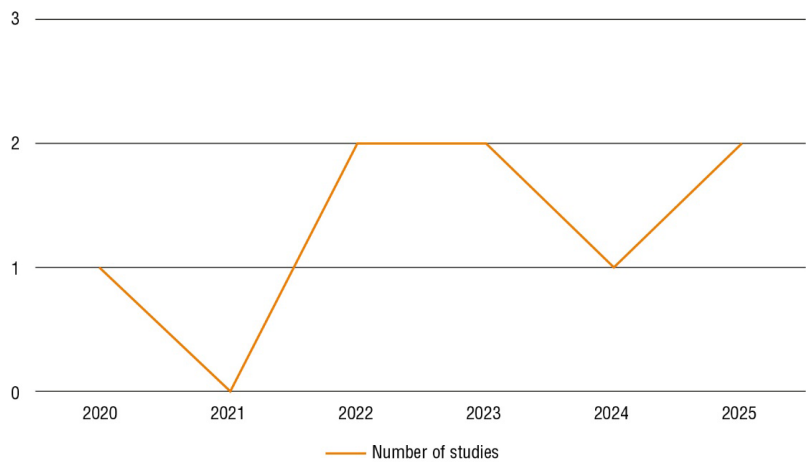


Figure 2. Number of studies according to year of publication (n=8).

DISCUSSION

The present systematic review aimed to update the existing evidence on the relationship between parental physical activity and children’s physical activity based on data from Brazilian samples published between 2020 and 2025. The results show that all studies reported associations between parental physical activity and children’s physical activity, with some studies observing domain-specific associations or associations observed for only one parent.

The results of this update show that over the last five years there has been a decrease in the number of publications investigating the associations between physical activity among parents and children in Brazil. The latest version of this report card included fourteen studies, eight from the South, three from the Southeast, and three from the Northeast, while in the current document, the numbers have decreased to five, two, and one, respectively¹⁷. On the other hand, there has been an increase in the number of longitudinal studies and studies that analysed physical activity through accelerometry, which indicates a methodological shift toward the use of objective measures to examine parent-child physical activity associations^{15,16,19,20}.

Similar to previous reviews, no studies from the North or Midwest regions of Brazil were identified. This geographical gap limits the external validity of the conclusions and highlights the need for further research in these underrepresented regions. Given Brazil's considerable socioeconomic and cultural heterogeneity, the absence of evidence from these areas hinders a comprehensive understanding of the associations between parental and child physical.

This review reinforces the importance of the family environment, especially the role of parents in shaping their children's lifestyles, such as physical activity. It is worth remembering that reviews like this are important assessments of one of the most important relationships in the pediatric population, even more so when considering reversing one of the legacies of the COVID-19 pandemic, which is the decline in physical activity among young people²¹. Public policies involving parents can be an effective strategy in promoting physical activity among children and adolescents.

One of the main limitations of this review was the limited number of articles included in this update. In addition, most studies were concentrated in the southern and southeastern regions of Brazil, with only one study conducted in the northeastern region. No studies were found with data from the northern and central-western regions, and from most Brazilian states, which should be taken into account when extrapolating the findings (of the 27 Brazilian federal units, data were available for only five). Furthermore, only two studies had a longitudinal design, which limits causal inference. Another limitation was that, in some studies, physical activity data were obtained using questionnaires, which may have introduced response bias.

Given the still limited evidence regarding representativeness and causal inference, further research is warranted. In addition to expanding the number of longitudinal studies, future investigations conducted in underrepresented regions may enhance the representativeness of the evidence base and strengthen the understanding of parent-child physical activity associations.

CONCLUSION

According to this updated systematic review of the literature, based on studies from the selected period, the findings indicate that parental physical activity was positively associated with children's physical activity in Brazilian samples. This update reinforces the importance of the family environment, particularly parental physical activity levels, in increasing physical activity levels among children and adolescents. Public health strategies aimed at increasing physical activity levels in the pediatric population should consider the importance of parents and the family environment.

COMPLIANCE WITH ETHICAL STANDARDS

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Data Availability Statement

Research data is only available upon request.

Ethical approval

This research is in accordance with the standards set by the Declaration of Helsinki

Conflict of interest statement

The authors have no conflict of interests to declare.

Author Contributions

Conceived and designed the experiments: RVCV, GHDG, DTF, EPA, SCBS, ABS, BTCS, ERV, DGDC; Performed the experiments: RVCV, GHDG, DTF, EPA, SCBS; Analyzed the data: ABS, BTCS, ERV, DGDC; Contributed reagents/materials/analysis tools: RVCV, GHDG, DTF, EPA, SCBS, ABS, BTCS, ERV, DGDC; Wrote the paper: RVCV, GHDG, DTF, EPA, SCBS, ABS, BTCS, ERV, DGDC.

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SUPPLEMENTARY MATERIAL

Supplementary material accompanies this paper.

Supplementary File 1: Free access in <https://osf.io/xcv52/overview>

This material is available as part of the online article from <https://doi.org/10.1590/1980-0037.2026v28e111877>