

Prevalence of Active Play in Brazilian children and adolescents: an updated systematic review for the Brazil's Report Card

Prevalência de brincadeiras ativas em crianças e adolescentes brasileiros: uma revisão sistemática atualizada para o Report Card Brasil

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Abstract – The objective of the present study was to identify, synthesize, and evaluate Brazilian studies that address active play in children and/or adolescents. Electronic databases PubMed, SciELO, Web of Science, and LILACS were searched for the period from 2020 to 2024. As inclusion criteria, studies were considered if they involved Brazilian children and/or adolescents up to 19 years of age; were observational (cross-sectional or longitudinal); were published between 2020 and 2024 in English, Spanish, or Portuguese; and addressed active play and/or active leisure activities. Studies conducted with athletes and/or involving structured or school-based physical activity were excluded. Initially, 914 studies were identified. Considering the inclusion criteria, 15 studies were analyzed, comprising a total of 552,172 children/adolescents aged 0 to 19 years. The prevalence of leisure-time physical activity/active play among children ranged from 41.3% to 76%, with a mean daily duration of 34 minutes when measured by accelerometry and 188.7 minutes when assessed using questionnaires. Among adolescents, the mean prevalence of leisure-time physical activity/active play was 45.2%. In both children and adolescents, the mean prevalence of active play/leisure-time physical activity was higher in boys compared with girls. Playing outdoors, living in houses with a yard, and attending schools with courtyards and playgrounds were associated with higher levels of movement and moderate-to-vigorous physical activity. The prevalence of active play varied across the studies analyzed, was higher among boys, but some methodological gaps indicate caution in the interpretation of the findings.

Key words: Leisure activities; Brazil; Play; Observational study.

Resumo – O objetivo do presente estudo foi identificar, sintetizar e avaliar os estudos brasileiros que abordam brincadeiras ativas em crianças e/ou adolescentes. Foram consultadas as bases de dados eletrônicas Pubmed, Scielo, Web of Science e Lilacs, no período delimitado de 2020 a 2024. Como critério de inclusão, foram considerados estudos com crianças e/ou adolescentes brasileiros com até 19 anos de idade, observacionais (transversal ou longitudinal), publicados de 2020 a 2024 em inglês, espanhol ou português, que abordassem brincadeiras ativas e/ou atividades de lazer ativo. Foram excluídos estudos realizados com atletas e/ou com atividade física estruturada ou escolar. Inicialmente, foram identificados 914 estudos. Considerando-se os critérios de inclusão, foram analisados 15 estudos que incluíram 552.172 crianças/adolescentes com idades de 0 a 19 anos. A prevalência de atividade física no lazer/active play em crianças variou de 41,3% a 76%, com tempo médio diário de 34 minutos, quando medido por acelerometria, e 188,7 minutos, quando avaliado por questionários. Nos adolescentes, a prevalência média de atividade física no lazer/active play foi de 45,2%. Tanto em crianças quanto em adolescentes, a prevalência média de atividade física no lazer/active play foi superior nos meninos se comparada à prevalência média nas meninas. Brincar ao ar livre, residir em casas com quintal e frequentar escolas com pátio e playground estiveram associados a níveis maiores de movimento e de atividade física moderada a vigorosa. A prevalência de active play variou entre os estudos analisados e mostrou-se maior nos meninos, mas algumas lacunas metodológicas indicam cautela na interpretação dos achados.

Palavras-chave: Atividades de lazer; Brasil; Brincadeiras; Estudo observacional.

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INTRODUCTION

The decline in physical activity levels and the increase in sedentary behavior among children and adolescents have been frequently discussed in the literature¹⁻⁴. Specifically in Brazil, data from the most recent National School-Based Health Survey (PeNSE)⁵, conducted in 2019, revealed that only 31.1% of ninth-grade students in elementary school met the recommendation of 300 minutes per week of physical activity proposed by the World Health Organization (WHO)¹. Conversely, 61.6% of these students remained seated for more than three hours per day, and 40.0% watched more than two hours of television daily⁵.

Even among young populations, such as children and adolescents, low levels of physical activity have been associated with conditions such as obesity, diabetes, dyslipidemia, and others⁶. Additionally, studies have shown that engaging in physical activity throughout childhood and adolescence promotes important benefits for individual development⁷. These benefits are not limited to improvements in physical capacities but also encompass psychological and social aspects⁸.

In this context, among the possibilities for engaging in physical activity, active play emerges as an important tool for promoting a more active lifestyle. Previous studies using interventions based on active play have reported increases in physical activity levels and improvements in the development of fundamental movement skills and cognitive function in children⁹⁻¹¹.

In Brazil, two systematic review studies on the prevalence of active play among children and adolescents have been published. In the first, seven studies were included, revealing an active play prevalence of 36.0%¹². In the second, only two studies were included in the systematic review, and the findings were conflicting¹³.

In light of the above, the objective of the present study was to identify, synthesize, and evaluate Brazilian studies that address unstructured active play, at any intensity, in indoor or outdoor environments, among children and/or adolescents. Additionally, this study sought to identify the percentage of children/adolescents who participate in active play, the time spent in these activities, and the most frequently performed active play activities.

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/>. This systematic review represents an update of the systematic review on Active Play published in 2021 by Westphal et al.¹³, and followed the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines¹⁴. The research question was formulated using the PI(E)COS strategy, encompassing Population (children and adolescents up to 19 years of age), Exposure (active play), Comparison/Control (not applicable), Outcome (prevalence of active play, playtime, and related outcomes), and Study design (observational). The PI(E)COS question focused on identifying the percentage of Brazilian children and adolescents who engage in active play, the duration of active play, as well as exploring its associations with physical and psychosocial health outcomes in children and adolescents.

Eligibility criteria

The criteria used to determine article eligibility were: (1) inclusion of Brazilian children and/or adolescents up to 19 years of age; (2) addressing active play and/or active leisure activities; (3) observational studies (cross-sectional or longitudinal); and (4) publication between 2020 and 2024 in English, Spanish, or Portuguese. Studies conducted with athletes (members of competitive sports teams); studies involving structured or school-based physical activity; studies with overlapping samples (e.g., adolescents and adults combined without separation in the analyses); review studies; editorials, commentaries, case studies and protocols; books and book chapters; and theses and dissertations were excluded.

Search strategy, study selection, data extraction, and data synthesis

The systematic search for studies was conducted in the PubMed, SciELO, Web of Science, and LILACS databases, with no language restrictions. The search began in May 2025 and was completed in June 2025. The search was conducted independently by two authors, and a third reviewer was responsible for resolving discrepancies. Three descriptor blocks were used in the search: Block 1: (“active play”) OR (“active behavior”) OR (“unstructured physical activity”) OR (“active leisure”) OR (“active free time”) OR (“leisure time”) OR (“active video game”) OR (“exergames”) OR (“playground activity”); Block 2: (“children”) OR (“adolescents”) OR (“youth”); Block 3: (“Brasil”) OR (“Brazil”). Within each block, the Boolean operator “OR” was used, and between blocks, the operator “AND” was applied. The search was performed using descriptors in English and Portuguese. Quotation marks were used to search for exact terms or expressions. An asterisk was used to search for all words derived from the same prefix. The automatic filters “publication date,” “article type (observational study),” and “age (0–19 years)” were applied. The reference lists of the included studies and previous reviews were examined to identify any additional relevant articles.

The search results from each database were exported to an Excel spreadsheet, and duplicates were removed. Subsequently, data were extracted and entered into a customized spreadsheet that included author names, age range, sample size, location, study objective, and main findings.

It should be noted that, because the term *active play* is not consistently established in the literature, studies addressing physical activity performed during leisure time, at any intensity, were considered, provided that it was practiced in a free and unstructured manner. Such studies were included because most studies involving adolescents do not investigate active play specifically and because there is a scarcity of studies that analyze active play separately from overall physical activity.

Quality assessment

The methodological quality assessment of observational (cross-sectional) studies was conducted using the Joanna Briggs Institute (JBI) tool, which consists of nine questions. For all criteria, there are four possible response options for each question: “Yes,” “No,” “Unclear” (when it was not clear how the topic was addressed), and “Not applicable” (when the item does not apply to what is being analyzed).

The documents guiding the application of the tool do not specify a cutoff point for interpretation; however, they indicate that the research team should make the criteria explicit and reach consensus to determine whether a study is of “Low,” “Moderate,” or “High” quality¹⁵.

In the present study, methodological quality was categorized as “Low” when the study received up to four “Yes” responses for the assessed items; “Moderate” when the study received five to seven “Yes” responses; and “High” when the study achieved eight or more “Yes” responses. Two independent reviewers (DTS and ESN) assessed study quality, and a third reviewer (YLF) was consulted to resolve discrepancies.

RESULTS

A total of 914 articles were identified (PubMed = 531; SciELO = 169; Web of Science = 140; LILACS = 74), but 102 were removed due to duplication. After screening titles and abstracts, 38 articles were read in full. Of these, 15 were included in this review^{4,16-29} (Figure 1).

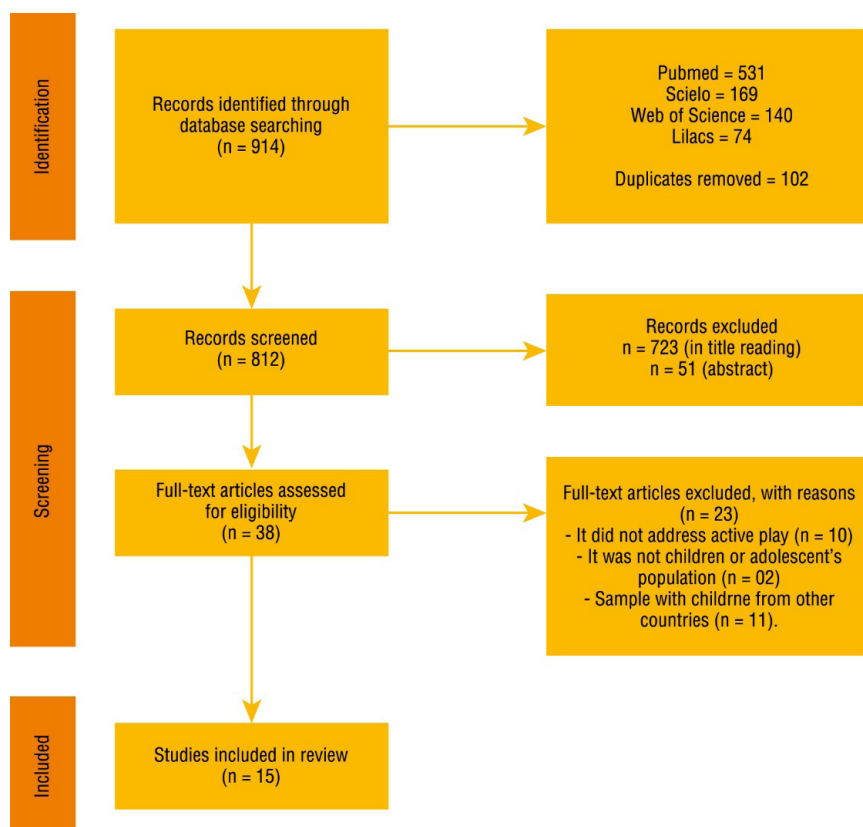


Figure 1. Flow chart of the systematic review.

Four studies included participants from different regions of Brazil; three were conducted in the Northeast region; four in the South region; one in the Southeast; one in the Midwest; one included international data; and one did not report the exact location. Only one study had a longitudinal design¹⁶, while the remaining studies were characterized as cross-sectional. Sample sizes ranged from 51 to 74.589 participants, and the age range varied from 0 to 18 years. The main characteristics of the studies are presented in Table 1.

Table 1. Characteristics of Brazilian studies included in the review (n = 15).

Authors	Age range	n	Region	Objective
Albuquerque and Günther ¹⁷	Children	Not reported	Brasília-DF, Brazil	To identify the main activities carried out by children and older people in their respective dwellings
Volz et al. ¹⁸	15 to 18 years	462	Southern Region of Brazil	To verify the association between the degree of wisdom and the level of leisure-time physical activity of students from a federal public school in southern Brazil.
Jesus et al. ¹⁹	7 to 12 years	2.477	Feira de Santana-BA, Brazil	Analyzed the association between Weekly attendance in physical education classes and daily frequencies of different forms of physical activity (active play, non-active play, structured physical activity), and overall daily frequencies of physical activity and sedentary behaviors among schoolchildren.
Andrade et al. ²⁰	12 to 17 years	74.589	273 Brazilian municipalities	To determine whether biological and sociodemographic factors at birth and current factors are associated with insufficient physical activity during leisure among Brazilian adolescents.
Jesus et al. ²¹	7 to 12 years	3.458	Feira de Santana-BA, Brazil	To analyze gender inequalities in types of physical activity (PA) and in the use of screen-based devices among schoolchildren from both urban and rural areas in Brazil.
Ferreira et al. ²²	12 to 17 years	73.399	27 state capitals and 5 groups of Brazilian municipalities	To investigate the association of physical inactivity in leisure and school time with common mental disorders during adolescence.
Valentini et al. ²³	4 to 10 years	352	Southern Region of Brazil	To examine whether socioeconomic status, school's spaces for children's movement, active play, screen time, motor skill proficiency, perceived motor competence, and engagement in the physical education lessons were associated with physical activity and body mass index in children with typical development, at risk of Developmental Coordination Disorder (r-DCD), and with DCD.
Gomez-Baya et al. ²⁴	10 years	886	Brazil, Chile, and Spain	To analyze subjective happiness in relation to leisure time in 10-year-old boys and girls from Brazil, Chile and Spain and to determine which leisure time activity has a greater effect on their subjective happiness and whether there are differences according to gender.
Gonçalves et al. ²⁵	3 to 6 years	73	Caruaru-PE, Brazil	Examined parental influences on physical activity and high screen time among preschool-aged children from low-income families in Brazil.
Confortin et al. ²⁶	18 and 19 years	2.515	Ribeirão Preto (SP), Pelotas (RS) and São Luís (MA), Brazil	To describe the prevalence of physical activity among subjects from birth cohorts of three cities located in different regions of Brazil according to sociodemographic characteristics and sex, comparing the relationships within and between cohorts.
Nobre et al. ²⁷	3 to 6 years	51	Brazilian municipality	To develop an index to measure the environmental opportunities of free active play for preschoolers of middle-income countries and to check the relationship and contribution of the index to explain objectively the level of physical activity.
Dall'Alba et al. ²⁸	0 to 2 years	53	Southern Region of Brazil	To investigate the associations between caregivers practices and knowledge and the motor performance of children from zero to two years of age.
Sehn et al. ¹⁶	6 to 17 years	331	Southern Region of Brazil	To investigate the longitudinal relationships between ST, sleep duration, leisure PA, body mass index, and cardiometabolic risk score (cMetS) in children and adolescents; and to verify scores and prevalence of cMetS risk zones at baseline and follow-up.
Soares et al. ⁴	13 to 17 years	392.922	Different regions of Brazil	To analyze the physical activity trend of Brazilian schoolchildren and the associations with demographic, socioeconomic, and behavioral variables by using the Brazilian National Survey of School Health (PeNSE) in its four editions – 2009, 2012, 2015, and 2019
Coledam et al. ²⁹	14 to 18 years	604	São Paulo – SP, Brazil	To analyze the association between volume and intensity of physical activity and mental health among adolescents.

The methodological quality of the studies is presented in Table 2. Among the included studies, four showed moderate methodological quality and two showed low methodological quality. Aspects related to the sampling process (Q1; Q2; Q3) were not adequately reported, particularly in studies of low and moderate quality.

Table 2. Quality assessment of the included studies.

Studies	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Total	Quality
Study 1	S	U	U	U	S	S	NA	S	NA	4	Low
Study 2	S	N	S	N	S	S	S	S	S	7	Moderate
Study 3	S	S	S	S	S	S	S	S	S	9	High
Study 4	S	S	S	S	S	S	S	S	S	9	High
Study 5	S	S	S	S	S	S	S	S	S	9	High
Study 6	S	S	S	S	S	S	S	S	S	9	High
Study 7	U	U	U	S	S	S	S	S	S	6	Moderate
Study 8	S	U	S	S	S	S	S	S	S	8	High
Study 9	U	N	U	N	S	S	S	S	N	4	Low
Study 10	U	U	U	S	S	S	S	S	S	6	Moderate
Study 11	S	U	S	S	S	S	S	S	S	8	High
Study 12	N	N	N	S	S	S	S	S	S	6	Moderate
Study 13	S	S	S	S	S	S	S	S	S	9	High
Study 14	S	S	S	S	S	S	S	S	S	9	High
Study 15	S	S	S	S	S	S	S	S	S	9	High

Note. Y= Yes; N= No; U= Unclear; NA= Not applicable; Q1. Was the sample frame appropriate to address the target population? Q2. Were study participants sampled in an appropriate way? Q3. Was the sample size adequate? Q4. Were the study subjects and the setting described in detail? Q5. Was the data analysis conducted with sufficient coverage of the identified sample? Q6. Were valid methods used for the identification of the condition? Q7. Was the condition measured in a standard, reliable way for all participants? Q8. Was there appropriate statistical analysis? Q9. Was the response rate adequate, and if not, was the low response rate managed appropriately?

Note: Methodological quality was categorized as “Low” when a study obtained up to four “Yes” responses for the assessed items; “Moderate” when a study obtained five to seven “Yes” responses; and “High” when a study achieved eight or more “Yes” responses.

When analyzing the objectives of the selected studies, it was identified that only three mentioned active play in their objectives. Most studies focused on investigating physical activity, including leisure-time physical activity, and associated factors. Active play and/or leisure activities were analyzed secondarily in order to identify the types and settings of physical activity practices most frequently performed by children and adolescents^{17,19,23,27}.

Regarding the prevalence of children's participation in active play, values ranged from 41.3%²⁴ to 76%¹⁷. The mean time spent in active play ranged from 34 minutes/day when measured by accelerometry²⁵ to 188.7 minutes per day when assessed using a parent-reported questionnaire²³. Girls spent less time in active play (28 min/day) than boys (40 min/day)²⁵. The percentage of Brazilian children who reported playing/spending time outdoors every day was 41.3%²⁴. The only study conducted with infants (zero to two years of age) indicated that parental practices, including active play, are protective factors for motor development²⁸.

Among adolescents, the prevalence of leisure-time physical activity was 45.2%, being higher among boys (60.9%) compared with girls (29.6%)²⁰, and not studying/working was associated with a higher prevalence of leisure-time physical activity²⁶. The mean leisure-time physical activity duration was 125.3 minutes/week, being higher in boys (160.6 min/week) than in girls (87.7 min/week)⁴.

Regarding physical activity intensity, playing outdoors, living in houses with a yard and indoor space, and attending schools with courtyards and playgrounds appear to favor opportunities for children to experience moderate-to-vigorous physical activity²⁷. Among adolescents, the prevalence of low-intensity leisure-time physical activity was 44.4%, and 50.8% for moderate-to-vigorous intensity²⁹.

Three studies^{18,22,24,29} addressed leisure-time physical activity and psychosocial aspects. Another study indicated that having two or more physical education classes per week increased the likelihood of engaging in active play outside school¹⁹. Gender-related issues were also addressed in the studies, indicating that girls presented lower values for active play and/or active leisure than boys^{4,20,21,23,25}.

The only longitudinal study¹⁶ showed an increase in leisure-time activities at moderate-to-vigorous intensity after a 2-year follow-up (107.72 min/week to 165.85 min/week) among children and adolescents. Small fluctuations in leisure-time physical activity were also identified in the results of the National School-Based Health Survey (PeNSE) in the 2012 (122 min/week), 2015 (115.4 min/week), and 2019 (138.5 min/week) editions⁴.

Regarding the assessment of active play, three studies used accelerometers and questionnaires²⁵⁻²⁷, one used a pedometer and questionnaire²³ one used the observational method¹⁷, and ten studies used self-report questionnaires. The main results of each study are presented in Chart 1.

Chart 1. Main findings of the studies included in the review.

Authors	Results
Albuquerque and Günther ¹⁷	Two distinct spaces were analyzed. A total of 56.9% of the observed children were engaged in active leisure activities in Area 1, and 76% were engaged in active leisure activities in Area 2. The periods of greatest use of the spaces for leisure activities occurred between 10:00 a.m. and 12:00 p.m. and in the late afternoon. The peak of activity occurred between 4:00 p.m. and 8:00 p.m. Spaces such as parking areas and parks were used for play activities. Activity was observed on playground equipment, ping-pong tables, bicycles, and benches and fitness equipment, which were used to simulate play.
Volz et al. ¹⁸	More than 60% of adolescents reported receiving social support from parents or friends to engage in leisure-time physical activity. Physically active adolescents showed greater emotional regulation and greater capacity for decision-making and social advice when compared with insufficiently active and physically inactive peers. Active adolescents had nearly twice the odds of presenting a higher level of wisdom compared with inactive students.
Jesus et al. ¹⁹	Children and adolescents who reported attending ≥ 2 physical education classes per week showed a significantly higher likelihood of reporting active play (girls: 40%; boys: 49%). The active play activities considered were: playing with a ball, playing catch-up, soccer, dance, marbles, jump rope, gymnastics, elastics, playing in the park, playing in the water/swimming, riding a bicycle, rollerblading/skateboarding/riding a scooter, flying a kite, dodgeball, hide-and-seek, playing with a dog, and hopscotch.
Andrade et al. ²⁰	Girls had a 77% higher likelihood of being insufficiently active during leisure time than boys. The prevalence of insufficient leisure-time physical activity was high (54.8%) among the adolescents evaluated and was associated with sociodemographic characteristics (female sex; 15 to 17 years of age; low or middle socioeconomic class) and nutritional status.
Jesus et al. ²¹	In urban areas, active play was 12% lower among girls compared with boys. In rural areas, girls showed greater engagement in activities such as playing with dolls, hopscotch, and other play activities. Boys, in turn, reported greater participation in activities such as soccer, flying kites, playing marbles, and spinning tops than girls.
Ferreira et al. ²²	Only 44.4% of adolescents were classified as active (≥ 300 minutes/week). A total of 29.1% reported no leisure-time physical activity (0 minutes/week), and 26.5% were considered insufficiently active (1–299 minutes/week). Additionally, 52.4% of adolescents did not practice any sport. The prevalence of common mental disorders was higher among adolescents who did not practice sports, did not participate in physical education classes at school, and were inactive during leisure time. Leisure-time physical activity, regardless of modality, duration, or weekly frequency, reduced the odds of common mental disorders among adolescents by 26%.
Valentini et al. ²³	The mean time spent in active play at home was 188.7 (184.5–193.0) minutes per day. Boys were more active than girls and spent significantly more time in moderate- and vigorous-intensity physical activity than girls. In addition, boys tended to be more active throughout the day. Opportunities for motor practice in sports courts, playgrounds, and vacant lots were positively associated with physical activity among children. Children with different levels of motor impairment and with high BMI were less engaged in active play at home.

Chart 1. Continued...

Authors	Results
Gomez-Baya et al. ²⁴	A total of 41.3% of children in Brazil reported playing/spending time outdoors every day. Additionally, 10.4% reported never engaging in this type of leisure-time activity. The prevalence of children who never practiced sports/exercised during leisure time was higher in Brazil (18.6%) compared with Chile (8.9%) and Spain (4.7%). Among Brazilian children, outdoor play did not show positive effects on happiness. Brazilian children spent more time watching television, using social media, and playing electronic games during leisure time compared with Spanish and Chilean children.
Gonçalves et al. ²⁵	Children accumulated, on average, 34 minutes/day of active play (measured by accelerometry). Girls spent less time in active play (28 min/day) than boys (40 min/day). Parental practices such as <i>“rules regarding active play in indoor environments”</i> and <i>“limiting outdoor play due to weather conditions”</i> were associated with lower physical activity in children. Rules regarding active play in indoor environments were significantly more prevalent for girls than for boys. Parents living in rural areas reported less limitation of outdoor play due to weather conditions and less logistical support for such play when compared with parents living in urban areas.
Confortin et al. ²⁶	The city of São Luís showed the highest prevalence of adolescents engaging in leisure-time physical activity (54.6%). Among adolescents, not attending school or not working was associated with a higher prevalence of leisure-time physical activity.
Nobre et al. ²⁷	A total of 96.1% of the children evaluated accumulated 180 minutes/day of physical activity. Physical environmental opportunities for activity explained 20% of the classification of children as active and 16% of the time spent in moderate- to vigorous-intensity physical activity. Outdoor play, living in a house with a yard and indoor space, and attending schools with a playground and schoolyard appear to facilitate preschoolers' engagement in moderate- to vigorous-intensity physical activity.
Dall'Alba et al. ²⁸	A positive, moderate, and significant correlation was found between motor performance and active play. Parental practices (attitudes regarding feeding, dressing, and active play) were the most influential factors and the best predictors of development, explaining 79% of the variance in children's motor performance.
Sehn et al. ¹⁶	Leisure-time physical activity in children and adolescents at moderate- to vigorous-intensity was 107.72 min/week at baseline and 165.85 min/week at the 2-year follow-up. Leisure-time physical activity at the beginning of the study was not associated with cardiometabolic risk two years later.
Soares et al. ⁴	Girls had a lower percentage of physically active individuals compared with boys in all survey waves. Leisure-time physical activity showed a decreasing trend across the surveys, with an average reduction of 40 minutes. Leisure-time physical activity varied between capital cities and the countryside. When analyzing only the capitals, an alarming decrease of 81.5 minutes/week in leisure-time physical activity was observed among boys.
Coledam et al. ²⁹	Only 22% of the sample engaged in ≥420 minutes/week of moderate- to vigorous-intensity leisure-time physical activity. A better mental health profile (suicidal ideation, suspected common mental disorders, and self-perceived mental health) was observed in adolescents who reported moderate- to vigorous-intensity leisure-time physical activity, regardless of volume. No association was found for low-intensity physical activity.

DISCUSSION

This review evaluated Brazilian studies that addressed unstructured active play, at any intensity, in indoor or outdoor environments, among children and/ or adolescents. In addition, it identified the percentage of children/adolescents who participate in active play, the time spent in these activities, and the most frequently performed active play activities.

Based on the 15 studies included in this review, active play remains underexplored despite the existence of studies related to physical activity in children and adolescents. Active play as a primary variable was identified in only three studies, whereas the remaining studies addressed it as a secondary outcome or included it within broader physical activity groups^{17,19,23,27}. This finding supports international evidence emphasizing the limited focus on active play, despite its importance for children's socioemotional, cognitive, and motor development³⁰.

The prevalence of leisure-time physical activity/active play among children ranged from 41.3% to 76%, and among adolescents it was 45.2%. In addition, a significant difference between sexes was identified. Boys showed higher levels of leisure-time physical activity/active play (60.9%) and a higher mean time

(160.6 minutes/week) spent in these activities than girls (prevalence = 29.6%; mean time = 87.7 minutes/week). This result demonstrates a slight increase in the overall prevalence of active play among Brazilian children and adolescents compared with the findings of Mendes et al.¹², who reported a mean prevalence of 36%. Moreover, this result is consistent with findings reported in the literature: boys are less physically inactive (47% to 80%) than girls (26% to 91%)^{12,31}, and these differences become more pronounced with increasing age. The social and family context provides greater support for exploratory and physically vigorous habits among boys, whereas gender stereotypes as well as social norms limit girls' autonomy in active play and make them more susceptible to sedentary activities^{21,32}. Furthermore, studies on gender socialization emphasize that caregivers tend to impose more restrictions on girls' active play within the home, a finding consistent with the studies included in this review.

In addition to individual factors, the present review highlighted a strong influence of the physical environment. Factors such as access to playgrounds, school courtyards, safe communal spaces, and living in houses with yards were associated with higher levels of movement and moderate-to-vigorous physical activity. Corroborating these findings, international evidence indicates that environments conducive to motor opportunities promote voluntary movement behaviors and stimulate children's autonomy³³. Similarly, one of the strongest predictors of total physical activity in children is outdoor play³⁰.

An essential aspect that emerged from this study was the influence of parental practices. The studies included in the review showed that restricting activities—particularly in indoor environments—reduces opportunities for active play, whereas parental support, such as logistical support and permission to play outdoors, considerably increases participation. Evidence supports that caregivers are the primary mediators of motor opportunities in childhood and that their habits, values, and concerns significantly influence children's active behavior^{30,32}. This effect is more pronounced in preschool-aged children due to the physical and organizational dependence children have on adults.

Among adolescents, the studies included in the review indicated a high prevalence of leisure-time inactivity and a significant sex difference—a pattern observed in several countries. According to the literature, there appears to be a nearly universal decline in physical activity levels during adolescence, and this phenomenon generally coincides with increased sedentary behavior, high screen use, and reduced voluntary play³⁴. The association found in the studies between leisure-time physical activity and mental health is supported by meta-analyses showing positive effects of physical activity on depressive symptoms, anxiety, and mental well-being in young people³⁵. Additionally, positive effects on children's mental and socioemotional health are endorsed by the pediatric community³⁰. However, as observed in the present study, most evidence derives from cross-sectional studies, which limits causal inference.

Only one longitudinal study reported a long-term increase in moderate-to-vigorous physical activity, but without an association with future cardiometabolic risk¹⁶. Similar findings have been reported in international studies, which highlight that cardiometabolic impacts are subject to prolonged exposure during childhood and adolescence, in addition to maturational factors. Thus, the follow-up duration may have been insufficient to identify more robust physiological changes.

Findings from time-series data (e.g., PeNSE) report variability and a tendency toward a decline in leisure-time physical activity—a pattern similar to that observed in other countries, which have recorded reductions in spontaneous movement among children and adolescents over recent years, followed by increased screen time³¹.

The high methodological heterogeneity observed among the studies – emphasized by the use of both objective and subjective measures (direct observation, self-report, pedometers, and accelerometers) – contributed to considerable variation in estimates of active play duration. Less pronounced results were observed in investigations using accelerometry, whereas more pronounced results were found in studies using questionnaires. This incongruence is well documented in the literature, which suggests that indirect measures tend to overestimate physical activity levels, whereas direct measures are more accurate for assessing intensity but less precise in differentiating specific movements. Therefore, the wide range of time identified in the present study (34–188.1 min/day) corroborates ranges previously observed in international studies.

The diversity in methodological quality among the analyzed studies should also be considered. Several studies presented biases in the sampling process, such as insufficient sampling details or lack of sample size calculation^{18–20,22,29}. Brazilian reviews on childhood physical activity have previously reported similar limitations, highlighting methodological challenges that restrict comparisons and inferences. Furthermore, causal analysis between active play, health, environmental factors, and child development is limited because only one longitudinal study was identified. Likewise, the lack of longitudinal studies is a common limitation in the global literature³⁵.

The present study has limitations that should be considered. First, due to its cross-sectional design, causal inference is not possible. The use of self-report questionnaires, as reported in the studies included in this review, is susceptible to recall and social desirability biases, which may generate error in estimates. The breadth of categories used (e.g., active leisure vs. passive leisure) may be insufficient to differentiate or capture the various domains of physical activity (e.g., active transportation or household tasks). However, strengths include large and representative samples of Brazilian adolescents; the use of validated instruments and, in many cases, objective measures (accelerometry); and the performance of multivariable analyses considering confounding factors (e.g., age, sex). Finally, in some studies, stratification of physical activity (volume and intensity) enabled a more precise understanding of the association between different levels of practice and outcomes.

CONCLUSION

This systematic review is an update of Brazilian studies that address unstructured active play in children and adolescents. The study showed a prevalence of physical activity/active play of up to 76% among Brazilian children and 45.2% among adolescents. In addition, it was observed that boys present greater engagement and higher levels of leisure-time physical activity/active play than girls.

However, due to some gaps observed in the Brazilian literature—such as the scarcity of studies with a specific focus on active play, the absence of a conceptual and instrumental standard for active play, the lack of sample size calculation, the shortage of studies involving infants and preschool children, and the absence of longitudinal studies—the findings should be interpreted with caution.

Finally, the findings suggest an urgent need for interventions aimed at promoting active play, especially for children and adolescents in situations of greater socioeconomic vulnerability and with lower participation in active behaviors, to be undertaken by policymakers, schools, health professionals, and caregivers.

Compliance with ethical standards

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Data Availability Statement

The data that support the findings of this study are available from the corresponding author, upon reasonable 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

Contribution to the design and planning:: YLF, ESN, DTS; Acquisition of data: LESF, RPS, YLF; Analyzed and interpretation the data: DBO, RVBO, ESN, DTS, YLF; Writing and drafting of the article: ESN, DTS, FJFO, JFVNM, YLF Critical intellectual review: JFVNM, YLF; Approval of the final version to be published: ESN, DTS, JFVNM, YLF.

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