Analysis of Covid-19 in models of play in children. Systematic review

Análisis del Covid-19 en los modelos de juego en niños. Revisión sistemática

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ABSTRACT

During the health emergency caused by the COVID-19 pandemic, the child and youth population has faced a series of challenges that have affected both their health and their way of life. The main aim of this study was to analyse the documents related to the transformation of leisure and free time in children and young people and the main characteristics of game during and after confinement because of COVID-19. A systematic review of the scientific literature was carried out using the PRISMA method, using the search phrase: ("COVID-19" AND "play" AND "leisure" AND "children") in the Web of Science, PubMed and Scopus databases as of 1 September 2023. The results show a decrease in leisure-time physical activities during the pandemic and an increase in sedentary behaviours. The development of physical activity during the COVID-19 pandemic improved the quality of life, as well as the opportunities for physical and emotional development of students.

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KEYWORDS
Physical activity, virtual games, leisure, sedentary lifestyle

RESUMEN

Durante la emergencia sanitaria provocada por la pandemia de la COVID-19, la población infanto-juvenil ha enfrentado una serie de desafíos que han afectado tanto a su salud como su forma de vida. El objetivo principal de este trabajo fue analizar los documentos relacionados con la transformación del ocio y tiempo libre en personas infanto-juveniles y las principales características de los juegos durante y después del confinamiento como consecuencia del COVID-19. Para ello, se realizó una revisión sistemática de la literatura científica mediante el método PRISMA, empleando la frase de búsqueda: ("COVID-19" AND "play" AND "leisure" AND "children") en las bases de datos Web of Science, PubMed y Scopus a día 1 de septiembre de 2023. Los resultados muestran un descenso de las actividades físicas de ocio durante la pandemia y un aumento de los comportamientos sedentarios. El desarrollo de actividad física durante la pandemia de COVID-19 mejoró la calidad de vida, así como las oportunidades de desarrollo físico y emocional del alumnado.

PALABRAS CLAVES
Actividad física, juegos virtuales, ocio, sedentarismo

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1. INTRODUCTION

Currently, it is recommended that children between 6- and 12-years old practice a minimum of 60 minutes of Physical Activity (PA), of moderate to vigorous intensity every day (Colley *et al*., 2012), to guarantee healthy development, as well as to prevent obesity and sedentary lifestyle (Hernández-Beltrán *et al.*, 2023; Piercy & Troiano, 2018). Similarly, since the pandemic caused by COVID-19, boys and girls seem to have increased the time they engage in PA in natural environments, in their free time, which may have a general benefit for their health (Tulchin- Francis *et al.*, 2021). Therefore, free time is understood as the residual time that is outside daily obligations, where different types of activities are usually voluntarily performed with the purpose of generating fun, rest, and the search for personal development (Díaz-Herrera *et al.*, 2022). Consequently, leisure and free time play a fundamental role in the physical, cognitive, emotional, and social development of children from 6 and 12 years old (Linaza, 2013; Gallardo-López & Gallardo Vázquez, 2018). In this way, PA and play are not only limited to physical development and health but also have the purpose of enhancing the motor, social, psychological, moral, and hygiene areas (Carbonell-Ventura *et al.*, 2018).

During the health emergency caused by COVID-19, the child population faced a series of challenges that have significantly affected their health (Tulchin-Francis *et al.*, 2021), producing serious negative consequences due to the reduction in PA. and the psychological repercussions caused by social isolation (Andreu, 2020). Likewise, several prevalent health problems have been identified in children during this period, including mental health disorders, lack of PA, delays in medical care, and malnutrition, as well as a negative impact on the immune system. (Margaritis *et al.*, 2020; Sallis *et al.*, 2020). In addition, this caused a disruption in the social interaction of children, with a decrease in social skills and a high impact on mental health, since it increased the risk of developing diseases such as destructive dysregulation disorder, depressive disorder, major acute and post-traumatic stress disorder, as well as a higher incidence of general psychological symptoms such as emotional disorders, depression, stress, low mood, irritability and insomnia (Guessounm *et al.*, 2020; Rider *et al.*, 2021; Madrigal *et al.*, 2023).

Also, multiple studies show the impact of COVID-19 on leisure in children, since confinement meant the loss of contact in different circles of socialization, such as educational spaces, places of leisure, and free time (Álvarez-Muñoz *et al.*, 2023), or the street itself (Orte *et al.*, 2020), negatively impacting the psychomotor development of children, and consequently, their mental (Madrigal *et al.*, 2023), physics and emotional health status (Sánchez-Torres *et al.*, 2022). During the COVID-19 pandemic, there were limitations to the development of psychomotor skills; however, teachers adapted to the new normality and found in play a way to motivate itself (Checo-Pacheco *et al.*, 2022). On the other hand, during the confinement period, parents had to deal with the work obligations of teleworking (Salcedo-Benites *et al.*, 2021), along with accompanying and monitoring their children's school practices (Belmonte *et al.*, 2022; González Rivera, 2022), with these could generating an increase in anxiety and stress levels (Moreno & Molins, 2020; Vallejos Salazar & Guevara Vallejos, 2021). Therefore, leisure time routines had to adapt to the new conditions imposed by the COVID-19 pandemic (Lorenzo-Sánchez *et al.*, 2022; Álvarez-Muñoz *et al.*, 2023). Therefore, green areas can offer opportunities for the regular practice of PA, providing benefits for the physical and mental health of children's life (Bello Albeal *et al.*, 2022).

The results of this research are expected to provide information on how the pandemic and confinement measures have influenced the leisure and free time activities of children aged 6 to 12 years old. This will allow us to identify possible repercussions on their comprehensive development, provide recommendations to support their well-being and promote play and PA strategies adapted to new contexts. Therefore, the main objective of this study was to analyse the documents related to the transformation of leisure and free time in children and how the COVID-19 pandemic affected their free time.

2. METHODS

2.1. Type of study and design

This study is theoretical research (Ato *et al.*, 2013), with the purpose of updating and classifying articles related to the topic, through the compilation of scientific documents and studies selection processes (Thomas *et al.*, 2012). As a design, a systematic review of the scientific literature was carried out using the PRISMA method (Urrútia & Bonfill, 2010; Robleda, 2019); using the PRISMA declaration guidelines, in order to guarantee that the included documents met the eligibility conditions (Page *et al.*, 2022, 2023).

2.2. Review question

To carry out the PICO (Population, Intervention, Comparison, and Outcome) strategy (Baptista-González, 2007; Carrión-Pérez *et al.*, 2020), a series of questions related to the object of research were formulated, which are shown in Table 1. The items formulated through the PICO strategy allow us to understand the problems related to games during the moments of leisure and free time of the population from 6 to 12 years old (what effects related to the game have the children suffered? children during and after the COVID-19 pandemic? Also, what characteristics do the games present at the different times analyzed?).

Table 1

PICO questions related to the effects of COVID-19 on leisure and free time in children aged 6 to 12 years.

Population	Intervention	Context	Results
Select those manuscripts that analyse the child population aged 6 to 12 years during and after the COVID-19 pandemic.	Identify the documents that examine the different intervention proposals related to play during moments of leisure and free time of children during and after the COVID-19 pandemic.	Analyze the different contexts of games during moments of leisure and free time of children during and after the COVID-19 pandemic.	Collect documents that clearly specify what happened to children during and after the COVID-19 pandemic.

2.3. Inclusion and exclusion criteria

Considering the PICO strategy and the two research questions, a series of criteria for the inclusion and exclusion of documents were established in order to select the most suitable documents for the object of study (Table 2).

Selection criteria	Inclusion
Typology	Be an original or review scientific article, indexed in JCR and SJR
Date range	Published between January 2019 and August 2023.
Search descriptors	Have the following key terms as search descriptors: "COVID-19" or "COVID19", "play", "leisure", and "children".
Language	Be written in English and/or Spanish.
	Exclusion
Theme	Manuscripts that are not directly related to games during leisure and free time of people from 6 to 12 years old*.
Type of document	Documents that are not scientific articles.
Moment	Manuscripts that do not mention any of the characteristics of the games during and/or after the COVID-19 pandemic.

*Articles that showed a different age range were included, but as long as they included the established age period (6 to 12 years old). Also, studies related to family members were included, as long as they were related to the topic under study

2.4.Search strategy

The search process was carried out on September 1, 2023. For this, the data platforms Wef of Science (WoS), Pubmed (NIH) and Scopus (Elsevier) were used. The following search terms in English, and their corresponding ones in Spanish, were used: "COVID-19" AND "play" AND "leisure" AND "children".

2.5. Data extraction and study selection

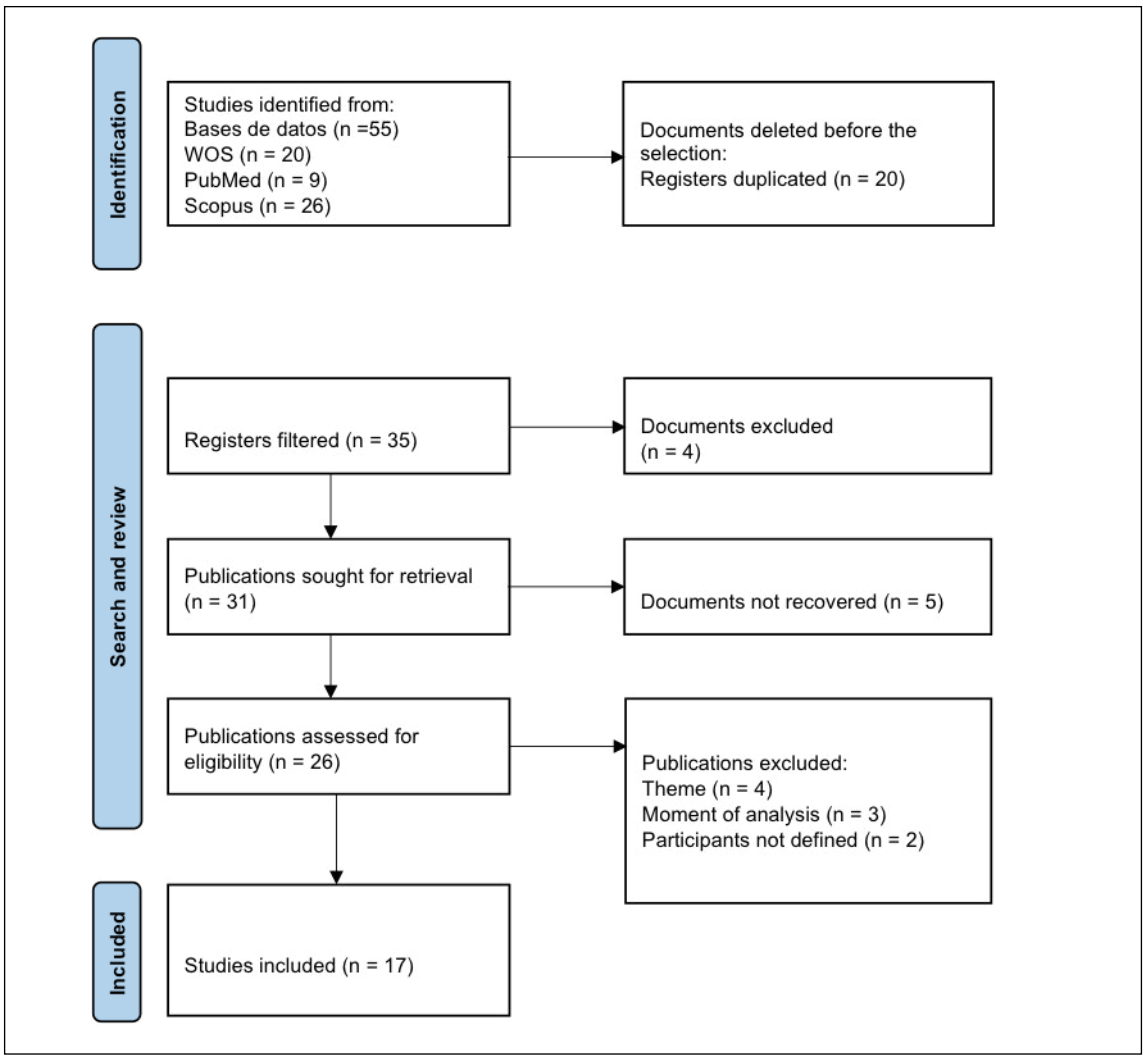
The data extraction and study selection process were performed by two external researchers, who independently evaluated the possible documents identified by the review authors. The initial documents were chosen based on the title and abstract. In cases in which the title and abstract were related to the research topic, an exhaustive reading of the document was carried out to determine its definitive inclusion.

An Excel spreadsheet was created to record the data of the articles that met the selection criteria, including author(s), sample size, objective, study variables, instruments used, and main findings.

Figure 1 shows the PRISMA Flow Chart related to the search for documents related to the transformation of leisure and free time in children from 6 to 12 years old. In the initial search, a total of 55 documents were obtained, which after eliminating duplicates and applying the inclusion and exclusion criteria, were reduced to 17 documents that were included in this review. 4 studies were deleted because the theme it were not related to the topic, 3 documents because the moment of analysis wasn't during the pandemic, and finally, 2 of them were deleted because the participant's year were not specified.

Figure 1

Diagram of the PRISMA Flow Chart



3. Results

Table 3 shows the scientific articles related to the transformation of leisure and free time in children aged 6 to 12 years old, including the main characteristics of games during and after confinement because of the COVID-19 pandemic. In turn, the methodological quality of the documents is indicated by using the questionnaire of Law *et al.* (1998). After obtaining the scores, the documents were classified according to the scores obtained: Excellent quality (>75), Good quality (51-74.99) and Poor methodological quality (<49.99) (Sarmento *et al.*, 2018).

Table 3

Selected documents related to the transformation of leisure and free time in children.

Author/s (Year)	Sample		Methodology		Results			Quality
	n	Age	Variables	Instrument	Changes in leisure and play	COVID-19 effects	Moment	
Moore et al. (2020)	1503 fathers and mothers.	From 5 to 17 years old.	Socio-demographic data, questionnaire on immediate changes in PA and play behaviors during COVID-19 including PA and play, sedentary time, and sleep.	Survey regarding the movement and play behaviors of children and adolescents during the COVID-19 outbreak.	Children and youth experienced a significant decrease in participation in PA, especially outdoor PA. An increase was experienced in the time spent using screens for leisure, as well as the use of social networks. Increased sleep time and sedentary activity time.	Confinement during the COVID-19 pandemic has caused children to spend more time indoors, decreasing their PA time and increasing the number of hours dedicated to sedentary activities, demonstrating an adverse effect on movement and play behaviors of Canadian children and youth.	During	A
Dunton *et al.* (2020)	211	Mean age 8.73 years old.	Socio-demographic data, Effects of the COVID-19 pandemic on PA and sedentary behavior, Parent notifications based on changes in children's behaviors, Changes in locations of physical-sports activities, Use rates of remote services.	"Active Where" online survey.	Without the structure of school and the demands of classes, children have more time for free play.	Children do not have access to school PA, physical education, recreation time, and walking to school. Therefore, there is a serious problem of excessively sedentary lifestyle that relates to overweight, obesity, type II diabetes, and metabolic syndrome in childhood and adulthood.	During	A
Tulchin-Francis *et al.* (2021)	1310 fathers and mothers.	From 3 to 18 years old.	Socio-demographic data, time of light PA and moderate to vigorous PA, child's adaptability to the pandemic, and access to the community.	Cross-sectional online survey of the modified version of the "Godin Leisure Time Exercise Questionnaire".	Wellbeing that extends beyond physical fitness, including improved mental health and reduced anxiety and symptoms of depression. Furthermore, peer interaction during PA is essential for social development.	Impact of the pandemic on the PA and play behavior of American children to improve their PA.	During and after	A
Wang *et al.* (2021)	Men (n=5552) and Woman (n=6680).	From 10 to 18 years old.	Gender, psychosocial status, daily activities and sources of information about COVID-19.	Non-specified	PA and leisure for adolescents, psychosocial support is good to overcome or intervene in gambling crises.	The school closure cut off an important channel to receive information and knowledge related to COVID-19 for school-aged adolescents, school dropouts, and gender differences.	During and after	A
Dodd *et al.* (2021)	245	149 mothers and 96 fathers of 154 children of 5 to 11 years old.	Time for participation in games, and participation of children in adventure games in each place.	Questionnaire from parents and experts in children's games.	Mothers spend more time with their children. Parents play in nature and in adventurous places. Additionally, play and PA creates children who are physically active when they are in their neighborhood or at parks.	Perceptions of risk can change traumatic events, and new ways of children's play emerge.	During and after	B

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Graber et al. (2021)	295	From 5 months to 21 years old.	Age, restricted environment, games, and related activities.	Interview.	The game supports children in isolation. Adolescents participate in creative and expressive activities. The game provided opportunities for social connectivity and the development of social skills. Opportunities for self-expression, creative and artistic activities to develop a part of the brain, and creative or expressive activities used in therapy and the classroom.	Barriers to play, unsafe spaces, lack of toys, lack of interaction with others, lack of time outdoors, inactivity, and boredom among children.	During and after	A
Bertrand *et al.* (2022)	225	From 4 to 18 years old.	Socio-demographic data, relationship between the school environment and daily activities of play, sleep, and leisure.	Cross-sectional quantitative survey of parents during the pandemic.	There was a relationship between the type of education (virtual or face-to-face), with the children who remained in virtual education having less time participating in gaming activities and recreational leisure activities.	The closures of school centers due to COVID-19 have affected the development of children and young people. Virtual education had negative consequences on participation in schoolchildren's leisure and gaming activities.	During and after	A
Allen & Velija (2022)	925	From 0 to 5 years old.	Socio-demographic and economic data, PA practice before and during the pandemic, money invested in PA practice before and during COVID-19.	Online survey and semi-structured interview.	Many parents sought to use informal play and online PA during lockdown periods, with mixed levels of success. There was a reduction in PA practice time during COVID-19.	Directed face-to-face activities were appreciated as more beneficial than virtual activities. Online PA classes aimed at young children did not provide the type of cultivation that most parents valued, such as participation with the child, socialization through group interaction, and routine outside the home.	During and after	A
Oliveira *et al.* (2022)	110	From 7 to 11 years old.	Socioeconomic data, children's daily activities, children's general well-being outcomes	A short version of the Q25 questionnaire and the KIDSCREEN-27 questionnaire	During COVID-19, there was an increase in time spent on sedentary behaviors (screen time) and a decrease in active leisure activities and games, especially among socially and economically vulnerable children.	Risks for child well-being were found in relation to sedentary and low stimulation profiles, especially in socially vulnerable children, but also protective factors related to active, stimulating, and adaptive family behaviors; therefore, opportunities for intervention were identified.	During and after	A

Camas *et al.* (2022).	126	From 3 to 17 years old.	Type of residence, Family work situation, educational level, valuation of free time and play space, valuation of your recreational company, type of leisure activities carried out, age, type of population, perception of playtime, perception of play spaces game, perception of playmates, type of leisure activity, screen time, missing and desired aspects.	ACP and CAP questionnaire.	Psychosocial and cultural. In addition, benefits related to well-being and comprehensive development, opportunities for socialization, resilience, expression, and regulation of adverse experiences, as well as a sense of protection against risk.	Mobility restrictions led to an increase in playing time during lockdown. Negative effects: excessive screen use, and reduced opportunities for leisure and play.	During	A
Oliveira *et al.* (2022)	110	From 7 to 11 years old.	Socioeconomic variables, family adversity, and adaptation.	KIDSCREEN-27 Questionnaire and Strengths and Difficulties Questionnaire.	Health, socialization, learning, youth well-being.	Parents with higher education had higher intensity of sleep, PA, active play, online socialization, and activity with parents, and lower intensity of housework and home school.	During and after	A
Szpunar *et al.* (2022).	819	Mean age of 6.5 years old.	Parents' daily routines regarding play/sport, Influence of parent demographics, and PA risk tolerance.	Online surveys	Comfort for parents when their children return to playing sports, security of having the children at home, living in rural areas, and, living with dogs.	Loss of health benefits of extracurricular activities, lack of interaction with peers, loss of socialization, demands of parenting and homeschooling, fear, worry, and urban areas worsen PA.	During and after	A
Wilson *et al.* (2022)	253	From 11 to 13 years old.	Impact of physical and sociocultural environments on children's PA, sedentary behavior and play during the pandemic play in and out of school.	Repeated cross-sectional surveys	Students attending schools in lower socioeconomic areas may benefit from interventions to mitigate the increase in SB and decrease in PA experienced during the pandemic, particularly within the comprehensive school day. If in-person learning is interrupted in the future, school administrators should prioritize recess as a scheduled movement opportunity to promote healthy social and physical behavior.	Less PA during remote recess in 2021 ($M = 3.42$, $SD = 0.80$ v. $M = 2.99$, $SD = 0.86$, $p<0.05$). PA outside of school decreased during the pandemic.	During	B
Kellstedt *et al.* (2022)	144 (2019) and 174 (2020).	NS	Academic year, gender, participation in extracurricular activities in children, children's participation in extracurricular activities organized by adults, and spaces.	Non-specified	Health benefits of PA: being physically active from an early age, improves cognitive development and mental health, participating in moderately vigorous PA 60 minutes a day.	Concerns about short- and long-term negative impacts related to children's physical and mental health, changes in school, and cancellation of children's extracurricular activities PA patterns and behaviors. Children in rural areas are at increased risk for obesity and other poor health outcomes that may be linked to physical inactivity and nutritional behaviors.	During and after	A

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Franzoni *et al.* (2022).	101	From 6 to 18 years old.	Gaming addiction, awareness of reading time, height, weight, and skin color.	Non-specified	Know the online gaming applications preferred by urban schoolchildren during confinement.	Online games with your friends, little attention to online classes, and multiple psychological effects.	During and after	A
Casey & Mckendrick (2022)	NS	Children and adolescents in school age.	Gambling in times of crisis: gambling in crisis, threat of gambling in times of crisis, and gambling as a remedy to the crisis.	Non-specified	Children's basic development, health, and well-being needs do not disappear during crises, few resources to be able to play, and play can strengthen resilience and provide a sense of normality for children in crisis situations.	Lack of outdoor play, and independent mobility of children to access the game, campaigns, and initiatives seek to recover the "every day" of play in children's lives, children are affected physically, emotionally, and psychologically, especially in countries that have declared states of emergency and mandatory confinements, the digital game is not the same for everyone, due to the lack of resources.	During and after	A
Hill *et al.* (2023)	536	From 0 to 8 years old.	Well-being, demographic variables, food security, children's daily routines and habits, parents' daily routines and habits.	Questionnaire with open and closed questions to explore changing family experiences and emerging issues related to well-being.	Due to the COVID-19 pandemic, the social-ecological system that supports children and families has been forced to change rapidly to meet the needs of families. One silver lining coming out of the pandemic is positive changes to family life, such as increased time spent together.	The well-being of the child, the parent, and the family shared the same major contributing factor, which was family closeness. The other main predictors of well-being were related to family leisure time, such as increased time spent playing together, preparing meals, resting, and caring for themselves, which can inform programming and policy aimed at promoting family well-being. children and their families	During	A

ACP: Advanced care planning; CAP: Children and adolescent psychiatry; M: Mean; PA: Physical activity; SB: Sedentary behavior; SD: Standard Deviation

4. DISCUSSION

The results show the existence of 17 articles related to the topic under study. In the scientific literature, there are no documents that corroborate the results obtained, however, it is important to note that games and recreational activities during and after the COVID-19 pandemic have experienced a significant transformation as a result of the isolation imposed by the pandemic situation, that has caused health and socialization problems (Graber *et al.*, 2021; Camas *et al.*, 2022), and lack of learning opportunities for children (Oliveira *et al.*, 2022). On the other hand, it has been observed in previous research that parents who participate in outdoor play with their children tend to have higher levels of PA compared to those who play in more restrictive or limited environments (Dodd *et al.*, 2021). This suggests that engaging in PA in nature could be a beneficial strategy to improve people's health and PA levels.

It is important to recognize that PA needs and preferences vary throughout child development, and this may have influenced the selection of different age ranges in the studies. Furthermore, the home isolation produced by the COVID-19 pandemic caused the loss of contacts in different socialization circles, such as educational spaces, places of leisure, and free time (Álvarez-Muñoz *et al.*, 2023; Hernández-Beltrán *et al.*, 2023), as well as anyone was really prepared to experience the situations caused by the pandemic.

It is essential to highlight that the child population experienced a series of significant challenges during and after the COVID-19 pandemic in relation to their basic development, health, and well-being needs (Casey & McKendrick, 2022). These challenges arose from the exceptional circumstances and restrictions imposed by the pandemic and had a profound impact on the lives of children (Álvarez-Muñoz *et al.*, 2023).

One of the most obvious problems is related to basic development needs. Children have fundamental needs in terms of education, socialization, PA, and emotional development (Allen & Velija, 2022). During the pandemic, restrictions on mobility and school closures affected their access to formal education, raising concerns about the educational gap and lost learning (Bertrand *et al.*, 2022). Furthermore, the lack of social interaction with friends and classmates had an impact on their social and emotional development, which could have long-term implications on their psychological well-being (Franzoni *et al.*, 2022).

The methodology implemented in the selected documents presents a notable heterogeneity regarding the variables analyzed, which reflects the complexity and breadth of the topic under study. These variables cover various aspects related to the impact of the COVID-19 pandemic on the PA and play of children, as well as the diversity of opportunities and strategies implemented to respond to the identified social and educational restrictions.

There are variables related to the contextualization of the sample such as age (Dunton *et al.*, 2020; Graber *et al.*, 2021), gender (Wang *et al.*, 2021; Kellstedt *et al.*, 2022), type of residence, socioeconomic aspects (Oliveira *et al.*, 2022), and, variables linked to the perception of playtime, perception of play spaces, perception of playmates, type of leisure activity (Wilson *et al.*, 2022), screen time (Dodd *et al.*, 2021; Casey & Mckendrick, 2022), aspects related to lost and desired habits and routines (Camas *et al.*, 2022), as well as parents' daily routines regarding play/sport (Tulchin-Francis *et al.*, 2021), and influence of parental demographics and PA risk tolerance (Szpunar *et al.*, 2022). These variables have a negative influence on the development of the subjects' PA during the pandemic, as they limit free time, as well as the availability of space and time for PA. The wide variety of variables offers a comprehensive view of how the pandemic has impacted the PA and play of children from a multidimensional perspective. This diversity of methodological approaches is essential to obtain a complete understanding of the effects of the pandemic on this population.

Regarding the findings presented in the selected articles, they show both the beneficial aspects and the adverse effects of games during and after the COVID-19 pandemic in the child population. Notably, school-age children living in rural areas experienced higher levels of PA, as they had the opportunity to participate in outdoor activities in natural environments (Dodd *et al.*, 2021). However, people who lived in urban areas suffered from excessive sedentary problems such as being overweight, obesity, type II diabetes, and metabolic syndrome (Dunton *et al.*, 2020). However, these data are contradictory to those obtained by Kellstedt *et al.* (2022) since children in rural areas are at higher risk of obesity and other diseases related to physical inactivity.

Additionally, during the COVID-19 pandemic, there was a significant increase in the time that children aged 6 to 12 spent in front of screens. For this reason, it is essential to design games and activities that are safe and promote the well-being of the child population. Some of the recommendations for carrying out games before, during, and after future pandemics include outdoor activities, team sports, educational games, table games, and group activities, cultural and artistic events, as well as participation in volunteering and community projects, as long as sanitary guidelines permit it.

Finally, the results related to the quality of the selected documents show the existence of 15 studies with excellent methodological quality (score >75), and two with good methodological quality (score between 51 and 75), according to the proposal of Sarmento *et al.* (2018). Thus, the chosen documents that address the transformation of leisure and free time habits in the child population during and after the COVID-19 pandemic have good methodological quality. However, more research is required in this area. Lastly, the main limitation of this study is related to the scarcity of documents available focused on the study topic and the diversity of approaches and contexts. However, this limitation can be considered a point of interest for future research, as it could serve as a basis for establishing guidelines for action in future pandemics.

5. CONCLUSIONS

It is essential to highlight that fathers, mothers, and other family members play a crucial role in shaping healthy lifestyles for children aged 6 to 12 years old. It is strongly recommended to encourage outdoor activities and the practice of team sports as strategies to prevent psychosocial problems. The development of physical activityPA during the COVID-19 covid-19 pandemic produced a large number of benefits in the population, improving the quality of life, as well as the opportunities for physical and emotional development of the students.

It is recommended to perform interventions at the community level that include the design and implementation of programs related to PA and sports, offering participation opportunities to all children, and promoting family leisure activities. Furthermore, given the scarcity of studies and the discrepancy in the results found in the literature regarding this topic, a more exhaustive and wide-ranging investigation is required. It is suggested to carry out longitudinal studies that follow children over time, before, during, and after the pandemic or other disruptive events, with the aim of generating strategies in educational and public access and information policies.

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