



The benefits of playing for children's health: a systematic review

Os benefícios do brincar para a saúde das crianças: uma revisão sistemática

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Resumo

Introdução: The definition of play is complex and there is no consensus in this regard. Play allows a healthy development of children and naturally prepares them to face the challenges of adulthood. Despite the perceived worth of this topic to the public health, systematic reviews summarizing the different findings about play are still rare. **Objetivo:** This study aims to review the recent literature on play and summarize its positive effects on children's health. **Material and Methods:** This systematic review was developed through search for articles published in Portuguese or English languages, between 2006 and 2016, in Elsevier Scopus, Medical Literature Analysis and Retrieval System Online, Latin American and Caribbean Health Sciences Literature and Scientific Electronic Library Online databases. **Results:** The search strategy identified 12 articles that met the eligibility criteria: six qualitative studies, three narrative reviews, one systematic review, one quantitative study and one quali-quantitative study. **Conclusion:** Presented data reinforce that play is extremely important for children's health. The benefits of play go beyond contributing to an adequate biological growth and development of children. Play positively influences mental and social development as well as it contributes to good psychosocial health. Nowadays, the reduced time to play deprives children of fundamental experiences for their social and affective development, creativity and welfare. Possibly, this deprivation in childhood will have effects in adulthood.

Descritores: Play and Playthings; Child; Health; Child Health; Child Development; Review.

Abstract

Introdução: A definição do brincar é complexa e não há consenso a este respeito. O brincar permite um desenvolvimento saudável das crianças e, naturalmente, prepara-as para enfrentar os desafios da idade adulta. Apesar da valorização em saúde pública, revisões sistemáticas que resumam os diferentes achados sobre o brincar ainda são raras. **Objetivos:** Este estudo tem como objetivo rever a literatura recente sobre o brincar e resumir seus efeitos positivos sobre saúde das crianças. **Material e Métodos:** Esta revisão sistemática foi desenvolvida através de busca por artigos publicados nos idiomas português ou inglês, entre 2006 e 2016, nas bases de dados Elsevier Scopus, Medical Literature Analysis and Retrieval System Online, Latin American and Caribbean Health Sciences Literature e Scientific Electronic Library Online. **Resultados:** A estratégia de busca identificou 12 artigos que atendiam aos critérios de elegibilidade: seis estudos qualitativos, três revisões narrativas, uma revisão sistemática, um estudo quantitativo e um estudo quali-quantitativo. **Conclusão:** Os dados apresentados reforçam que o brincar é extremamente importante para a saúde das crianças. Os benefícios do brincar vão além de contribuir para um adequado crescimento biológico e desenvolvimento das crianças. Brincar influencia positivamente o desenvolvimento mental e social, bem como contribui para uma boa saúde psicossocial. Nos dias de hoje, o tempo reduzido para brincar priva as crianças de experiências fundamentais para seu desenvolvimento social, afetivo, criatividade e bem-estar. Possivelmente, essa privação na infância terá efeitos na idade adulta.

Descriptors: Jogos e Brinquedos; Criança; Saúde; Saúde da Criança; Desenvolvimento Infantil; Revisão.

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Conflito de interesses: Não

Contribuição dos autores: NRRG coleta, tabulação, delineamento do estudo e redação do manuscrito. ECM coleta, delineamento do estudo, discussão e tradução do manuscrito para língua inglesa. IVDV orientação do projeto e delineamento do estudo.

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Introduction

The definition of play is complex and there is no consensus in this regard. Play is an innate instinct, motivated by pleasure, that is present in human life from birth. The human beings acquire their first skills, develop primary interactions, discover themselves, their peers and the world through play in childhood⁽¹⁻³⁾. Thus, children experience the reality, traditions, environment and culture to which they belong. Play is part of the social construction of children, in so far as it allows a fantasy world, in which the make-believe and the reality are confused. The experience of play is fundamental to the formation of active subjects in society, in so far as it allows children to develop social living, self-confidence, language, thinking, curiosity, and autonomy⁽⁴⁾.

The enjoyment of health is one of the most fundamental rights of every human being. The constitution of the World Health Organization (WHO) defines that health is a state of complete physical, mental and social well-being and not merely the absence of disease or infirmity⁽⁵⁾. Play is considered essential to the cognitive, physical, social, and emotional well-being of children and youth. The role of play on children's development is so important that it was recognized as a right of every child by the United Nations^(6,7).

In the last decades, a growing number of public health interventions have focused on active play and outdoor physical activity as a health promotion strategy among children. The provision of child life services is considered an indicator of excellence and a quality benchmark in pediatric care institutions. In fact, this has also allowed the development of playrooms within health institutions⁽⁸⁻¹²⁾. The therapeutic use of play has been increasingly valued in healthcare environments, such as hospitals and other health institutions. On mental health, some professionals use play as a therapeutic tool to help children manage their pains, fears and concerns. For this reason, these professionals also became known as "play therapists"⁽¹³⁻¹⁹⁾. Even electronic games, specially designed to promote active movement and cognitive challenges, have been used for physical and cognitive rehabilitation purposes^(20,21).

People provide constructive affective relationships to their social groups when they are satisfied with their lives, psychologically healthy and socially adapted, as well as they tend to be more productive and creative. The process of human development begins in childhood and the implications of environmental factors on child development have been considered relevant to the fate of human groups^(22,23). A child who plays would have a greater chance of becoming a balanced and healthy subject due to the increased motor, sensory, emotional, social and cognitive stimulations⁽¹⁾. In fact, this confers to play a significant role in the development of healthy individuals.

Play allows a healthy development of children and naturally prepares them to face the challenges of adulthood. Therefore, it is important for health care professionals who work in children's health care to be aware of the repercussions of play deprivation and to value this playful moment in their routines. Despite the perceived worth of this topic to the public health, systematic reviews summarizing the different findings about play are still rare. This study aims to review the recent literature on play and summarize its positive effects on children's health.

Material and Methods

This systematic review was developed through search in Elsevier Scopus (Scopus), Medical Literature Analysis and Retrieval System Online (MEDLINE/PubMed), Latin American and Caribbean Health Sciences Literature (LILACS) and Scientific Electronic Library Online (SciELO) databases, because of their wide reach and international recognition between health professionals, thus meeting the demand of this review. The descriptors "play" AND "health" were used in English language, as well as "brincar" AND "saúde" in Portuguese language. The chosen terms are in agreement with the Medical Subject Headings/Descritores em Ciências

da Saúde (MeSH/DeCS) terminology. The filter "year of publication" was used to restrict the search to publications between 2006 and 2016. In addition, the search was also refined to ensure the presence of descriptors in the title.

After identifying the descriptors in the title, the adequacy in relation to the eligibility criteria was verified by reading the abstracts. The eligibility criteria were defined as follows: (1) Original or review articles; (2) Portuguese or English languages; (3) Full text available online and charge-free; (4) Identification of play as a central or secondary theme; (5) For original articles, the study population should be composed exclusively of children under 18 years old. Books, book chapters, case reports, conference papers, dissertations, editorials, monographs and theses in their original formats were excluded from this review.

In Brazil, the Statute of the Child and Adolescent (ECA), established by the national law n° 8.069 in 1990, considers the age of 12 years old incomplete for the citizen to be considered a child. Considering that different nations may have different definitions of child, the age cut-off point defined by the United Nations General Assembly in the "Convention on the Rights of the Child" was used in this study. Therefore, "Child" is considered here as every human being below the age of 18 years unless⁽⁷⁾.

Results

The search strategy resulted in a total of 477 results. The results were distributed in the different databases as follows: 279 in Scopus, 168 in MEDLINE/PubMed, 16 in LILACS and 14 in SciELO. Of the identified articles, 122 articles were excluded because they were repeated in the databases. After the abstract reading, 343 articles were excluded in accordance to the established eligibility criteria: 84 articles were not original or review articles; five articles were not in Portuguese or English languages; 187 articles did not have the full text available online and charge-free, 66 articles were not in accordance with the theme; and one article involved subjects over 18 years old. The Figure 1 presents a flowchart of the articles reviewing process.

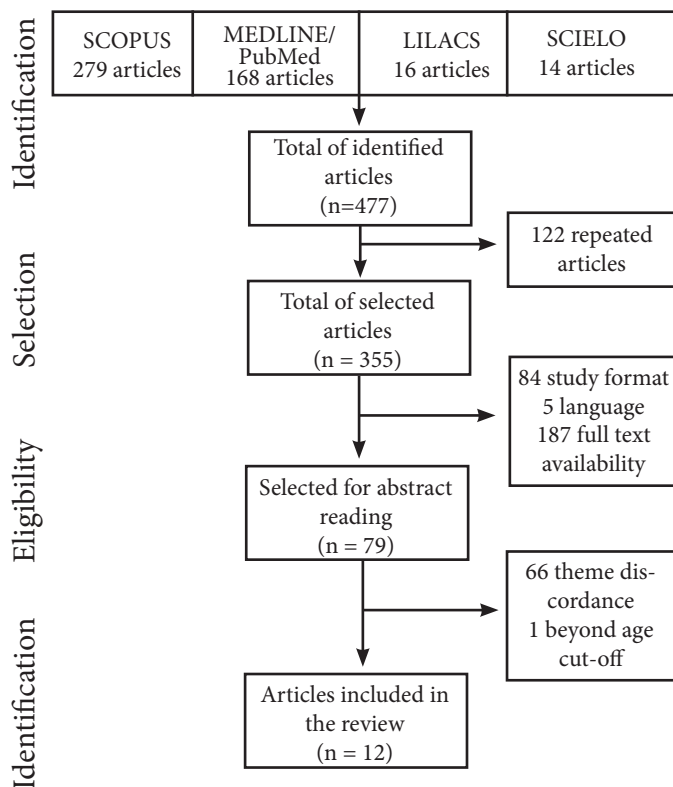


Figure 1. Flowchart detailing the reviewing process.

Thus, only 12 articles met the eligibility criteria and were included in this review. Regarding the methods, the included articles consisted in six qualitative studies (50%), three narrative

reviews (25%), one systematic review, one quantitative study and one quali-quantitative study. Table 1 lists the articles included in this review (all titles are presented in English).

Table 1. List of included articles according to author, year, type of study and title in chronological order.

	Author	Year of publication	Type of study	Title
1.	Azevedo DM et al. ⁽²⁴⁾	2007	Qualitative	Playing as a therapeutic instrument in the view of a health care team
2.	Mitre RMA, Gomes R ⁽²⁵⁾	2007	Qualitative	The standpoint of healthcare practitioners on the promotion of play in hospitals
3.	Sakamoto CK ⁽²²⁾	2008	Narrative review	Child's play: creativity and health
4.	Nascimento LC et al. ⁽²⁶⁾	2011	Qualitative	Playing in the waiting room of a Children's Outpatient Clinic: the view of health professionals
5.	Venâncio DR et al. ⁽²⁷⁾	2011	Qualitative	Oral health promotion: developing play material for children aged preschool
6.	Alcântara DB, Brito CMD ⁽²⁸⁾	2012	Qualitative	Project 'play and tell': occupational therapy in primary health care
7.	Alexander SA, Frohlich KL, Fusco C ⁽²⁹⁾	2012	Narrative review	Playing for health? Revisiting health promotion to examine the emerging public health position on children's play
8.	Alexander SA, Frohlich KL, Fusco C ⁽³⁰⁾	2014	Qualitative	Problematizing "play-for-health" discourses through children's photo-elicited narratives
9.	Azevêdo AVS ⁽³¹⁾	2013	Quali-Quantitative	Healthcare team and the play of the child with burns
10.	Hewes J ⁽³²⁾	2014	Narrative review	Seeking balance in motion: the role of spontaneous free play in promoting social and emotional health in early childhood care and education
11.	Badura P et al. ⁽³³⁾	2015	Quantitative	When children play, they feel better: organized activity participation and health in adolescents
12.	Brussoni M et al. ⁽³⁴⁾	2015	Systematic review	What is the Relationship between Risky Outdoor Play and Health in Children? A Systematic Review

Selection content

Play is considered critical to children's development, because it enhances the acquisition of physical, cognitive, social and affective skills. Thus, a child who plays would be healthier than a child who does not have enough play opportunities⁽²⁾. In general, the studies included in this review reinforce the benefits of play and its importance for children's health. Considering the biopsychosocial concept of health, we didactically divided the studies in two major domains: (A) Biological domain and (B) Psychosocial domain. Obviously, this division is merely theoretical, since it is impossible to dissociate the benefits of play.

(A) Biological domain

Researches carried out in developed countries emphasize the concern about health problems related to sedentary lifestyle in childhood. A cross-sectional study analyzed the association between the participation in organized leisure-time activities (OLTA) and physical and mental health in 11-, 13- and 15-year-old adolescents. Approximately four in each five adolescents were involved in at least one of the six types of OLTA and over 70% participated in individual or team sports. Nevertheless, only 19,3% of the adolescents were engaged in recreation/leisure centres. The self-rated health was strongly associated with participation in OLTA and active adolescents were almost twice as likely to perceive themselves as in excellent health. Consequently, the authors conclude that participation in OLTA is associated with better physical health among adolescents, although the prevalence of health complaints differ by gender and age and the number of inactive adolescents grow with increasing age⁽³³⁾.

Alexander et al.⁽³⁰⁾ analyzed children's perspectives of play through photographic, interview, and observational data

from 25 children aged seven to 11 years. They intended to problematize the emerging trend in Canadian public health of promoting play for improving children's physical health. The authors major concern is that public health interventions could resignify the meanings of play for children. The study pointed that children have different motivations to play than those presented in public health efforts. The so-called "active play" is generally promoted to achieve a public health goal: reduce childhood obesity. However, play for children involves more than active play, is pleasurable if it involves risk and, perhaps the most important, is an end in itself.

Brussoni et al.⁽³⁴⁾ in a systematic review examined the relationship between risky outdoor play and health-related behaviours and outcomes in children. Their results indicate that getting involved in increased risky outdoor play provides greater benefit on a variety of health indicators and behaviours than avoiding outdoor risky play in children aged 3 to 12 years. For example, play where children can disappear/get lost were positively associated with acute physical activity and social health, and negatively associated with sedentary behaviour. Interestingly, play at height was not related to fracture frequency and severity. In conclusion, the authors highlight the importance of promoting children's health and active lifestyles by supporting risky outdoor play opportunities.

Play was also beneficial for children in situations of outpatient care or hospitalization in five studies^(24-26, 28, 31). In this context, children presented lower levels of stress and anxiety, greater cooperation, better response to pain, and even better response to treatment with faster clinical outcome^(24-26, 28). Interestingly, the health care professionals consider the greater humanization as the main contribution of introducing play in health institutions, whether in situations of hospitalization, specialized outpatient appointment or primary health care^(25, 26).

(B) Psychosocial domain

The cross-sectional study mentioned above showed that being involved in at least one activity was significantly associated with higher life satisfaction and self-rated health. Participation in art pursuits was strongly associated with lower occurrence of health complaints, such as feeling low, irritability/bad temper and feeling nervous between 11-year-old in comparison to 15-year olds adolescents⁽³³⁾. Thus, participation in recreational activities may be more important for mental health in younger children, but this still needs to be proven.

Previous researches on childhood education and development established that play is important for early learning. In this field, play is particularly relevant on language development, mathematical understanding and social skills learning. In addition, studies have also demonstrated therapeutic applications of play on children's skill development and well-being. Both free and structured play proved to be useful to promote motor skills, sensory processing and perceptual abilities⁽²⁹⁾. Play has been used as adjuvant therapeutic resource to traditional clinical treatment in order to facilitate children's adherence. In fact, play is considered the main tool to psychologically integrate the child to the technical procedures in a hospital environment, such as dressings, physiotherapy techniques and surgeries⁽³¹⁾.

Venâncio et al.⁽²⁷⁾ evaluated the use of play to enhance the learning and retention of health related information. The purpose of this study was to determine the favorite ludic activities and educational materials of children aged four months to six years, in order to establish the most appropriate approach aiming oral health promotion for each age group. The authors emphasize that teaching-learning process needs to be pleasurable, so that it can stimulate the willingness to learn and achieve the intended goals. The use of ludic activities was an useful tool to the teaching-learning process and contributed to oral health promotion, when contextualized according to the children's daily life. Thus, play also seems to be an interesting resource for health promotion interventions among children.

Two narrative reviews focused on the role of play to the mental, social or emotional health of children. Sakamoto⁽²²⁾ highlights the value of play as a strategy for a healthy development and an experience that greatly influence humans psychic health. Hewes⁽³²⁾ considers there is sufficient evidence to support that spontaneous free play has positive influences on mental and physical health in early childhood. The spontaneous free play promotes self-control, flexibility, resilience, adaptability and emotional balance in early childhood, which contributes to social and emotional health throughout life. However, these benefits would be directly linked to children's freedom to control and direct play.

In summary, the complex process of play seems to have positive influences on the health of pediatric populations. The play contributes to prevent diseases related to the lack of physical activity; improves children's treatment adherence in a hospitalization context; reduces stress and anxiety levels; promotes greater social adaptability; among other benefits. Notwithstanding the search in recognized international databases, a reduced number of articles were included in this review. Perhaps the inclusion criteria have been too narrow, which may have limited the identification and selection of studies. However, it is possible that this reduced number of studies truly reflects the historical lack of scientific concern regarding the role of play on children's health. Fortunately, it seems that the scientific community is more interested in play and its relationship with children's health in recent years, which will certainly contribute to broaden scientific knowledge in this field.

Conclusion

Presented data reinforce that play is extremely important for children's health. Play contributes to the prevention and treatment of diseases related to sedentary lifestyle. It also has

positive effects on the humanization of care in hospitals and outpatient clinics by making the environment less stressful for children, improving treatment adherence and decreasing the institutional length of stay. However, the benefits of play go beyond contributing to an adequate biological growth and development of children. Thus, play has also positive influences on mental and social development, which contributes to the formation of emotionally balanced, self-confident and psychically strong adults, that is, in good psychosocial health.

Nowadays, children have increasingly complex and demanding routines with reduced time for recreation and free play. Consequently, health problems previously related almost exclusively to adults began to occur more frequently among children, such as depression and obesity. In addition, this reduced time to play deprives children of fundamental experiences for their social and affective development, creativity and welfare. Possibly, this deprivation in childhood will have effects in adulthood, resulting in adults with adaptation difficulties, less able to solve problems, more stressed and less flexible, since they did not practice this when they were children. This review highlights the importance of developing field research about play, as well as the need to encourage play in childhood so that children can fully develop their potentials.

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