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REVIEW ARTICLE

The importance of the role of primary caregivers in the development or prevention of childhood obesity: an integrative review

La importancia del papel de los cuidadores primarios en el desarrollo o la prevención de la obesidad infantil: una revisión integradora

A importância da atuação dos cuidadores primários no desenvolvimento ou prevenção da obesidade infantil: uma revisão integrativa

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Abstract

The aim was to analyze a compilation of scientific articles that address childhood obesity, with the aim of establishing the relationship between the involvement of parents and guardians in the development, or not, of this disease. An integrative literature review was carried out based on data contained in the Virtual Health Library, where the following descriptors were used: "child nutrition, pediatric obesity, obesity and body weight". In all, after selecting the filters, 27 journals were found and following the inclusion and exclusion criteria, 13 were selected. It was observed that childhood obesity can be associated with multiple factors, and, for this reason, its prevention must be directly linked to educational actions in the child's lifestyle and eating habits through their guardians.

Descriptors: Child Nutritional Physiological Phenomena; Pediatric Obesity; Obesity Management; Body Weight Changes; Child.

Resumén

El objetivo fue analizar una recopilación de artículos científicos que abordan la obesidad infantil, con el objetivo de establecer la relación entre la implicación de los padres y tutores en el desarrollo, o no, de esta enfermedad. Se realizó una revisión integradora de la literatura a partir de los datos contenidos en la Biblioteca Virtual en Salud, donde se utilizaron los siguientes descriptores: "nutrición infantil, obesidad pediátrica, obesidad y peso corporal". En total, luego de seleccionar los filtros, se encontraron 27 revistas y siguiendo los criterios de inclusión y exclusión, se seleccionaron 13. Se observó que la obesidad infantil puede estar asociada a múltiples factores y, por ello, su prevención debe estar directamente vinculada a acciones educativas en el estilo de vida y hábitos alimentarios del niño a través de sus tutores.

Descriptores: Fenómenos Fisiológicos Nutricionales Infantiles; Obesidad Pediátrica; Manejo de la Obesidad; Cambios en el Peso Corporal; Niño.

Resumo

Objetivou-se analisar um compilado de artigos científicos que abordam sobre a obesidade infantil, com o propósito de estabelecer a relação entre o envolvimento de pais e responsáveis no desenvolvimento, ou não, dessa doença. Foi realizado uma revisão integrativa da literatura com base nos dados contidos na Biblioteca Virtual de Saúde, onde foram utilizados os seguintes descritores: "nutrição da criança, obesidade pediátrica, obesidade e peso corporal". Ao todo, após a seleção dos filtros, foram encontrados 27 periódicos e seguindo os critérios de inclusão e exclusão, 13 foram selecionados. Foi observado que a obesidade infantil pode ser associada a múltiplos fatores e, por esse motivo, sua prevenção deve estar diretamente ligada a ações educativas no estilo de vida e nos hábitos alimentares da criança através de seus responsáveis.

Descritores: Fenômenos Fisiológicos da Nutrição Infantil; Obesidade Pediátrica; Manejo da Obesidade; Alterações do Peso Corporal; Criança.

Introduction

The prevalence of childhood obesity has been considered a public health problem and is generating great concern worldwide. It is considered by the World Health Organization (WHO) as a global epidemic for being responsible for causing health risks and reduced quality of life, generating long-term consequences. According to WHO data, in 2016, 41 million children under 5 were overweight or obese and, according to the 2019 Food and Nutrition Surveillance System (Sisvan), one in three Brazilian children is overweight[1-4].

Obesity is defined as the excessive accumulation of fat in the body, classified as a chronic disease that also affects babies and children up to 12 years of age. According to WHO, a person is considered obese when the Body Mass Index (BMI) is above thirty. BMI is the result of a calculation that considers weight, height, and age. Obesity, being a multifactorial disease, when started in childhood can follow the individual throughout their life, for this reason it requires specific care, specialized attention and a multidisciplinary approach[1,2,5,6].

Some studies relate the triggering factors of childhood obesity from birth and, according to the Department of Nutrition of the Brazilian Society of Pediatrics (SBP), the intrauterine phase, as well as the first year of life and adolescence, are critical periods for development of obesity. Other aspects such as sex, breastfeeding, food introduction, genetics, hormonal failures, low level of physical activity, dietary pattern with high consumption of fat and sugars, economic situation, and the environment in which they live influence weight gain and health of the kid[1,3,4,5,7,8].

In addition to the probability of persisting into adulthood, obesity can lead to risks such as hypertension, type 2 diabetes mellitus, cardiovascular diseases, respiratory and lung problems, sleep disorders, growth and development deficits, psychiatric disorders, among others. In this regard, the parents, relatives, and guardians of these children have a fundamental role in terms of their nutritional status and in the development of preventive measures to reduce the levels of childhood obesity[1-6].

Thus, the objective of this study on childhood obesity is to define how parents and guardians can contribute to prevention and education in obesogenic environments.

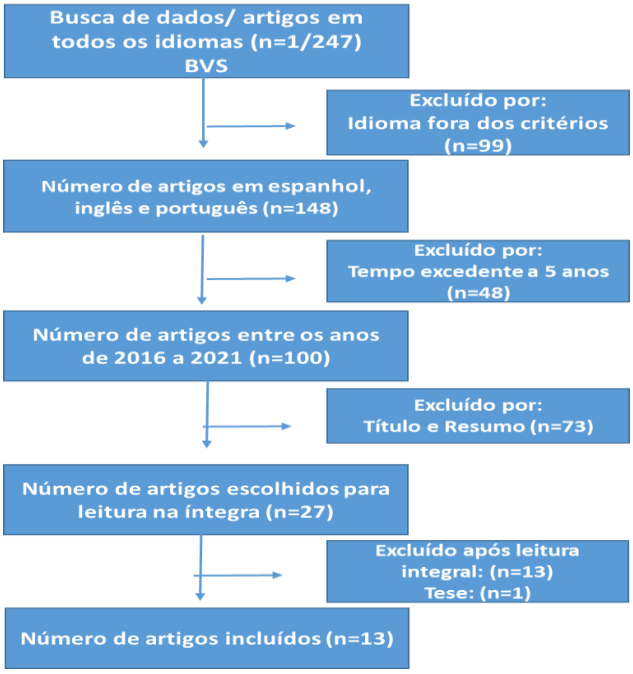
Methodology

The present study is an integrative literature review that establishes an analysis of texts, making it possible to obtain a compilation of information on various studies. This analysis is based on identifying and summarizing research results with the same theme to contextualize the guiding question addressed in each study. The data, when synthesized and compared, bring conclusions about the research problem, and allow us to understand the need for further studies on the topic[9].

To carry out this integrative review, the following steps were used: choice of the topic to be researched, elaboration of the guiding question, choice of descriptors and the database, definition of inclusion and exclusion criteria, as well as the analysis of articles and collection of the results found. Thus, the established theme focused on childhood obesity and the problems that this condition can cause in the long term. In view of this, the guiding question was elaborated: How parents and guardians can contribute to prevention and education in obesogenic environments?

A flowchart of Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) was created to demonstrate the choice of articles selected for the present study. Finally, a table was developed containing year, journal, title, authors, level of evidence and summary of results[10].

Figure 1. Synthesis of the results of the integrative review. Rio de Janeiro, RJ, Brazil, 2021



The Health Sciences Descriptors (DECS) were used for child nutrition, pediatric obesity, obesity, and body weight. The Boolean AND operator was also used in order to limit the search by optimizing the results found. The research was started in March 2021 through the Virtual Health Library (VHL) database through the stipulation of the inclusion and exclusion criteria.

The inclusion criteria were articles available in full and that were in Portuguese, Spanish, and English, published between 2017 and 2021. Duplicate texts, whose title was not appropriate to the theme, incomplete, theses, books and not free of charge were discarded. After using the filters mentioned above, 27 articles were read and analyzed in their entirety and 14 were discarded, bringing a total of 13 articles.

Results

The countries of origin of the selected articles were Brazil with 4 articles, the United States with 4, followed by Mexico, Argentina, France, Spain, and the United Kingdom with 1 article each. Therefore, it can be stated that 69.3% of the studies were published in foreign journals and only 30.7% were published in national journals, being by region: South America 38.46%, North America 38.46% and 23.08% on the European continent. In Chart 1 below, the selected articles are presented according to year, journal, article title, authors, level of evidence and article synthesis.

Chart 1. Articles selected for the study. Rio de Janeiro, RJ, Brazil, 2017

YEAR	JOURNAL	TITLE	AUTHORS	EVIDENCE	SUMMARY OF ARTICLES
2020	Cuidarte Enfermagem	Obesidade infantil: Recomendações para orientação original	Scaraficci AC, Plantamar JPS, Tanimoto RMJ, Martis VMB, Stuchi-Peres EG.	1A	Health professionals who guide parents in the first outpatient consultation make clear the comorbidities that childhood obesity can cause.
2020	BMC Public Health	Locally implemented programs prevention may reverse weight trajectories in half of children with overweight/obesity amid low child-staff ratios: results from a quase experimental study in France	Constant A, Boulic G, Lommez A, Chaillou R, Guy-Grand B, Raffin S.	3B	It showed that the interventions made by employees had a positive influence on the prevention of childhood obesity and families living in deprived areas have more difficulty in accessing treatment.
2019	MDPI Nutrients	School-Based Interventions in Low Socioeconomic Settings to Reduce Obesity Outcomes among Preschoolers: A Scoping Review	Luybli M, Schmillen H, Sotos-Prieto M	1A	Obesity can be related to the socioeconomic context. Schools, along with parents, can intervene in nutrition and physical activities that, when combined, reduce obesity outcomes.
2019	Revista de Enfermería del Instituto Mexicano del Seguro Social	Prevalencia de sobrepeso y Obesidade en niños de 2 a 4 años de edad de una guardería de Veracruz, México	Briones-Alemán KA, Osuna GD, Pedraza-Zárate MA, Martínez EH	2B	It was observed that there is a possibility that richer regions with easier access to food are a factor for childhood obesity, as opposed to more marginalized regions. It also showed that the older the age, the greater the presence of obesity and overweight.
2019	International Journal of Behavioral Nutrition and Physical Activity	Changes in diet quality and home food environment in preschool children following weight management.	Robson SM, Ziegler ML, McCullough MB, Stough CO, Zion C, Simon SL, Ittenbach RF, Stark LJ	1A	Given the results, with a focus on diet quality and food availability at home, reducing high-calorie, low-nutrient foods may be more beneficial than eating fewer calories and more nutrients.
2018	*The American Journal of Clinical Nutrition*	An exploration of the longitudinal relation between parental feeding practices and child anthropometric adiposity measures from the West Midlands Active Lifestyle and Healthy Eating in Schoolchildren (WAVES) Study	Hurley LK, Pallam JM, Lancashire RE, Adab P, Waves study investigators	2A	The aim of this study was to investigate the relationship between parents' feeding practices to reduce childhood adiposity. The relationship between food restriction in overweight children and pressure to eat in underweight children was positively associated.
2018	MDPI Nutrients	Improved Diet Quality and Nutrient Adequacy in Children and Adolescents with Abdominal Obesity after a Lifestyle Intervention	Ojeda-Rodríguez A, Zazpe I, Morell-Azanza L, J. Chueca, Azcona-sanjulian MC, Marti A	1A	With the assessment of lifestyle and dietary quality in children and adolescents with abdominal obesity, the results show that intensive lifestyle intervention was able to reduce BMI in children and adolescents.

2018	Scientific Electronic Library Online	Agreement between the nutritional status of schoolchildren and the perception of their guardians	Pivatto BC, Lima LA	3A	Through the results, it was shown that those responsible do not have the adequate vision to identify the risks of obesity and do not know how to correctly identify the nutritional status of their children.
2018	Archivos argentinos de pediatría	Estado nutricional antropométrico, bioquímico e ingesta alimentaria en niños escolares de 6 a 14 años, General Pueyrredón, Buenos Aires, Argentina	Lázaro Cuesta L, Rearte A, Rodríguez S	1B	It was observed that children who ate breakfast were at lower risk of being overweight and men were at higher risk of obesity.
2018	American Academy of Pediatrics	An Integrated Clinic-Community Partnership for Child Obesity Treatment: A Randomized Pilot Trial	Hoffman J, Frerichs L, Story M	1A	An integrative study was conducted, a treatment in a community where there were clinics located in parks and places with easy access to recreation. Treating childhood obesity improved physical activity and quality of life.
2018	Cadernos de Saúde Pública	Individual characteristics and public or private schools predict the body mass index of Brazilian children: a multilevel analysis	Biazzi Leal D, Altenburg de Assis MA, Conde W, Lobo A, Bellisle F, Andrade D	2B	It showed that the greatest variable for weight gain in children is socioeconomic status, mother's BMI and consumption of sweets, with the mother's excess weight being the most significant. It also pointed out the importance of preventing childhood overweight with strategies that involve the family and school environment.
2016	Archivos Latinoamericanos De Nutrición	Aleitamento materno, introdução da alimentação complementar e excesso de peso em pré-escolares.	Lopes A, Rocha EM, Silva JP, Nascimento VG, Bertoli C, Leone C.	2A	The study shows that introducing food early does not have a major influence on excess weight. It also shows that a prolonged period of breastfeeding can be considered a protective factor for the risk of developing excess weight.
2015	Public Health Nutrition	The influence of parental encouragement and caring about healthy eating on children's diet quality and body weights	Faught E, Ploeg K, Li Chu Y, Storey K, J Veugelers P	3A	It showed that the behavior of parents towards a healthier diet changes the child's body weight. In addition to the research, encouraging the promotion of health actions for food care, reducing the prevalence of childhood obesity.

Through the synthesis of selected articles, it was possible to observe that 100% of the studies mention the importance of the role of parents and guardians in weight reduction. The importance of breastfeeding in the first six months of life and the defense of breastfeeding promotion as a risk-reducing factor for obesity was mentioned in 15.38% of the selected articles. Socioeconomic factors were cited in 38.46% of the studies with the authors' varying opinion between having higher purchasing power as a positive factor for reducing the number of childhood obesity and between lower purchasing power resulting in a higher BMI. The socioeconomic factor can be considered inconclusive when compared to another studies[1-8,11-15].

The daily low consumption of fruits and vegetables was pointed out by 30.77% of the authors in the pediatric population, while one of the studies shows that a nutritional education study carried out in Germany for six months indicated that the consumption of fruits and vegetables is not parallel to the increase of anthropometric measures. As a result, the decrease in the intake of these foods can be related to a greater introduction of energy-dense foods with low nutritional content. Regarding gender as a variant in childhood overweight or abdominal obesity, 38.46% state that boys are the most affected group, 7.69% defend the same condition related to girls and 53.85% did not specify the object of study in this variant[1-8,11-15].

As for physical exercise, the results showed that more than 95% of children are not in the habit of doing them until there is a real need. The relationship between the performance of parents and the school environment was also associated with the daily intake of unhealthy foods during the break between classes, such as sweets, sugary drinks, and snacks rich in fat and sodium. This association shows that an uncontrolled intake of these foods is capable of directly influencing the development of early excess weight. The articles concluded that poor diet in early childhood induces bad eating habits throughout life[1-8,11-15].

Discussion

In the studies presented, obesity is treated as a serious public health disease that affects one in five children. It is a chronic disease, as defined by the World Health

Organization, obesity is excess body fat, in an amount that causes harm. the health. A person is considered obese when their Body Mass Index (BMI) is greater than or equal to 30 kg/m2 and the normal weight range varies between 18.5 and 24.9 kg/m2. With these data, there is an uncontrolled growth among children, which can affect the quality of life of their adult phase[2,4,8,9].

The causes of obesity are related to multiple factors, such as genetic, physiological (endocrine and metabolic), environmental (food and physical activity) and psychological such as eating disorders. Data from the National Health and Nutrition Examination Survey (NHANES), from the United States, brought in the Luybli study show that obesity in children aged 2 to 5 years reached 13.9% in 2014, the State Health Survey and Nutrition (ESANUT) showed the prevalence of obesity and overweight in children under 5 years of age in 14.4%. In Brazil, the prevalence of overweight in children is in the southern region of the country and is 36.3%[1-6].

Regarding diet, with the increase in access to processed foods that accompanies urbanization and the lack of adequate information, dietary errors occur in the consumption of foods rich in salt and fat. The wrong practice of feeding done in childhood and adolescence tends to be delayed until adulthood, which can lead to future health problems. In one of the studies points out that, in Brazil, the National Survey of School Health (PeNSE) reports that children from public schools are less exposed to unhealthy foods, as their data show that 94.8% of children in private institutions have access to snacks in canteens[1,3,4,5,7,8,13].

An important element for the development of pediatric obesity is the lack of guidance from parents and guardians on the subject, as mentioned by different authors. The justification is because in childhood, it is necessary to have a panoramic view of guardians regarding nutrient intake, types of food and their effects on the body, not only about the child, but also regarding their own diet. Examples of parenting practices in relation to eating include pressuring children to eat certain foods, offering others as reward, or restricting eating[1,4-6, 11,12,14,15].

Another factor related to childhood obesity is early weaning associated with the introduction of bottle feeding and solid foods, which contain a high concentration of solutes that cause thirst in the child, which is rewarded with more milk, thus becoming a vicious cycle of ingested calories. The association of parental encouragement and care in physical activity contributes to weight maintenance or gain. The practice of sports together between parents and children decreases the probability of creating obesogenic environments, after all, the child sees the responsible person as an example and their lifestyle ends up reflecting in their choices. Therefore, this visual incentive is important for the construction of good eating habits and the practice of physical activity[1,4,6,7,12].

Low socioeconomic status is an important factor that can cause excess weight in children. Some families living in poverty find it more difficult to get treatment and health promotion often does not arrive as it should in places of extreme need, which makes it impossible for parents to obtain information and means to reverse this situation, as access to health centers and hospital centers are far from these areas, resulting in a higher percentage of children with childhood obesity[2,7,8,12,13].

Authors discuss the perception of those responsible for the implementation of such eating habits. Realizing the weight gain together with a critical look at the increase in waist circumference are essential to carry out measures of restriction, prevention, and food introduction. This restriction was observed in children who had greater adiposity as well as those who ate more often during the day. Parallel to this fact, the non-perception of this change in anthropometric measurements would also be beneficial when considering image disturbances that may be caused by excess weight, and the way parents deal with the choice of whether to include a diet ends up preventing eating disorders in the search for the perfect body[4,6,11].

The consequences of childhood obesity tend to carry over into adulthood, if there is no change in the child's lifestyle, many of these consequences are linked to long-term health problems such as: diabetes, hypertension, high cholesterol, cardiovascular disease, and body image disorders. Early childhood is where the child is growing and childhood obesity can cause damage to the development of the child's body structures, impairing bone formation. Thus, to combat the exacerbated increase in childhood obesity, it is necessary to have attitudes that enable the adoption of preventive measures[3-5].

The prevention of childhood obesity is directly related to changes in the child's lifestyle and unhealthy eating habits. As for parents, as they have a lot of influence on the child's diet, it is important that they are aware of the harm that obesity can cause to their children's lives and thus achieve adequate prevention, reducing children's vulnerability to childhood obesity[1-5].

Conclusion

It can be said that childhood obesity is a factor that develops due to multiple conditions that cause difficulties in the family, school, and social context. Therefore, this review sought to collect data on the relationship of parents and guardians of these children in the development of pediatric obesity and how they can act in prevention in environments considered obesogenic. Furthermore, it was observed that the early introduction of food with excessive consumption of processed foods and the parents' lack of perception of signs of weight gain and high waist circumference are crucial agents in child health.

It was also observed that because of family habits, children acquire bad eating habits, practice little or no physical exercise and end up causing a sedentary lifestyle with low nutritional content. Not only, the lack of information from parents about the importance of adhering to a food intervention, as well as health problems caused by overweight in childhood, aggravate the problem. As a result, it is necessary that health professionals are trained to assist families in Basic Health Units, conveying the importance of good eating habits and the practice of physical activities in childhood.

Thus, it is necessary that a union of responsible health professionals and the school environment be carried out, as this is where children spend a large part of their day, through public policies that can spread how harmful to obesity yeah, especially when started in childhood.

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