121 - PREVALENCE OF OVERWEIGHT AND OBESITY IN SCHOOL: SYSTEMATIC LITERATURE REVIEW

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1. INTRODUCTION

Obesity is considered, in developed countries, an important public health problem, and the World Health Organization (WHO) consider it a worldwide epidemic (Brazil, 2010a). This epidemic has become worrisome because it has resulted in large proportion in the juvenile population increasing rate of morbidity.

According to the World Health Organization (WHO), currently one in ten children worldwide is obese, which represents about one hundred fifty-five million (WHO, 2013).

Studies showed obesity as a prevalent nutritional problem in the United States, reaching affect a third of the adult and adolescent population. Estimates indicate that with is no intervention, the US population will reach by 2035 with 90% of overweight individuals (FRISBERG, 2004).

In recent decades the prevalence of obesity has increased in developing countries and also shows excess weight in the higher economic classes, which indicate the socioeconomic factor is a reality. According to Melo et al (2010), in Brazil, in the last 30 years, the number of children with above-average weight tripled, while the United States has doubled. This increase was more important in the South and Southeast of Brazil, in the more affluent population.

Still, according to the Guidelines Manual of Obesity in childhood and adolescence (SBP, 2008), studies in Brazil indicate prevalence of overweight ranging between 10.8% and 33.8% in different regions of the country and include at child age. Data from the Brazilian Association for the Study of Obesity show that approximately 40% of the population are overweight and that obesity has tripled in the last twenty years; since children are 15% overweight and 5% are obese (ABESO, 2009).

Changes in dietary patterns and physical activity as well as the environment and the unfavorable family background has provided conditions for the development of overweight and obesity in childhood and adolescence (WHO 2009c).

Economic, social, demographic and health-related in Brazil from the twentieth century transitions indicate changes in dietary patterns of the population replacing the food shortage by excess. The insertion of a diet rich in fats (mainly animal), sugar and refined foods, and low in complex carbohydrates and fiber have contributed to the rise in obesity (HONÓRIO and HADLER, 2012).

According to Melo, Luft and Meyer (2004), obesity determines various disorders both in childhood and adolescence and adulthood, childhood being the most difficult to control because it is related to dependence on parents and consequently the change of habits, and lack explanation and understanding of the child as the problems related to obesity.

The prevalence of other chronic non-communicable diseases related to overweight and especially obesity increases worldwide, prompting researchers and practitioners in the area to health intervention measurements (ABESO, 2009).

Aware of the consequences of this epidemic that begins in childhood and offers health risks during adolescence and emerging adulthood, with some urgency, the need to devise strategies for prevention. Thus, this study is relevant for pointing out the increasing rates of overweight and obesity in childhood, as well as health problems such conditions lead to these individuals.

In this context, this systematic review aims to point out the prevalence of overweight and obesity in school children 6-10 years.

2. MATERIALS AND METHODS

This study consists of a systematic literature review by searching for articles published between January 2002 and January 2013 on the basis of electronic data Google Scholar Brazil Scientific Electronic Library Online (SciELO), Latin American and Caribbean Literature Health Sciences (LILACS), PubMed (US National Libary of Medicine, Bethes¬da, MD) and Virtual Health Library (VHL, Ministry of Health, Brazil) that addressed the prevalence of overweight and obesity. The keywords "obesity", "overweight", "children", "school", "prevalence", "6-10 years", "from 2002," "impact," "treatment," "physical activity were used "," exercise "," since 2013 ". Through the reading of the articles found were chosen that contained the information according to the research purposes.

Inclusion criteria were:

- Studies of the prevalence of overweight, obesity (excess weight, nutritional status), and / or association between overweight and obesity (overweight) in school;
- Studies with diagnostics for calculating the extent that they had a body mass index (BMI), using as cut-off values established by Cole et al and WHO criteria were considered overweight children with a BMI for age greater or equal to the percentile 85 and less than the 95th percentile; with obesity were considered children with BMI greater than or equal to the 95th percentile age; those used as the reference standard growth curves of National C'enter for Health Statistics (NCHS) according to sex and age based on standards proposed by the Center for Disease Control and Prevention (CDC), as the population of reference the National Health and Nutrition Examination Survey (NHANES I), as recommended by WHO;
- Studies published from January 2002 to January 2013.

3. RESULTS AND DISCUSSION

89 studies were identified, 13 of these addressed the issue with the client profile of interest. These ten (76.92%) addressed the prevalence of overweight and obesity, while others described in proportionately the same form (7.69%) analysis of obesity and the prevalence of obesity, overweight, eating habits and frequency of physical activity . Considering the types of schools studied (6) - 46.15% showed students from public and private (5) schools - 38.46% reported for public schools and two (15.39%) only students from private schools (table 1 and 2).

This study analyzed that, regardless of gender and school type used, the prevalence of overweight and obesity in schoolchildren ranged from 5.6% to 25% and 2.2% to 23%, respectively.

Table 1 - Overview of studies on the prevalence of overweight and obesity in schoolchildren 6-10 years by sex (2002-2013).

Author	Local	School type	Age	Sample	Criteria of Diagnostic	Results			
						Overweight		Obesity	
						Male	Fem	Male	Fem
FORTES, 2003	Florianópolis	Public and private	7 to 10 years	640	IMC - IOFT	15,6 %, 18,3%; 12,2%,4,9%			
SOAR et al., 2004	*Florianópolis*	Public	7 to 9 years	*419*	IMC	*17,9%*		*6,7%*	
GIUGLIANO E CARNEIRO, 2004	Taguatinga, DF	Private	6 to 10 years	452	IMC - IOFT	16,7%, 16,9%; 4,4%, 6,0%			
RONQUE et al,(2005)	Londrina, Paraná	Private	7 to 10 years	511	IMC - IOFT	19,7%,17,3%; 17,5%, 9,3%,			
COSTA, CINTRA &FISBERG, 2006	Santos - SP	Public and private	7 to 10 years	10.822	IMC (Cole et al)	13,7%,14,8%; 16,9%,14,3%			
CASANOVA, 2007	Balneário Camboriú, SC	Public	6 to 10 years	624	IMC - IOFT	5,6%, 6,9%; 3,9%, 4,8%			
RICARDO et al. 2009	Santa Catarina	Public and private	6 to 10 years	4.964	IMC - IOFT	14,9%, 15,9%; 6,7%, 5,5%			
NETTO-OLIVEIRA et al. 2010	Maringá, Paraná	Public and private	6 to 8 years	1634	IMC (Cole et al)	6,7%, 7,1%; 4,3%, 4,0%			
MELO et al. 2010	Marialva – Paraná	Public	6 to 10 years	356	IMC (Cole et al - IOTF	20%; 7%			
Medeiros et al, 2011	Campina Grande, Paraíba	Public and private	6 to 10 years	285	IMC (Cole et al)	14,7%, 8,8%			
LACERDA E MELO, 2011	Taguatinga Sul – DF	Public	6 to 10 years	83	IMC (Cole et al)	15,6%, 13,2%; 2,2%, 2,6%;			
SILVA, 2005	Fernandópolis – SP	Public and private	6 to 10 years	319	IMC (Cole et al)	*22%, 25%; 22%, 20%. **18%,19%; 23%, 19%			
HONÓRIO e HADLER, 2012	Goiânia - GO	Public	6 to 9 years	320	IMC (CDC)	23,6%, 18,2%; 10,6%; 5,6%			

Legend: * Public School; ** Private School

Regarding the prevalence of overweight and obesity among boys and girls associated. Fortes (2003) assessed that the boys had a higher prevalence of obesity than girls, regardless of the type of school.

Silva, 2005; Netto-Oliveira et al. 2010; Medeiros et al, 2011 and Costa, Cintra & Fisberg, 2006, compared the prevalence of obesity and overweight in private and public schools, and perceived a higher estimate of children overweight even in the wealthier sections of society, represented by private schools. However, the risk for overweight was considered the largest public school students, suggesting that the situation in the lower layers of society moves in the same direction (SILVA, 2005).

When this prevalence was associated with demographic and socioeconomic conditions of the school was found that a higher income (Casa Nova, 2007; snore et al, 2005;. Netto-Oliveira et al 2010), studying in private schools (Costa & Cintra Fisberg 2006; Strong, 2003;) may influence overweight and obesity in children. These authors found that students from more privileged economic risk level showed approximately twice the present excess weight from the lowest level. The prevalence of overweight and obesity in children has also been associated with low maternal education (GIUGLIANO and ARIES, 2004).

Thus, snore et al. (2005) found the prevalence of overweight and obesity in Brazilian schoolchildren aged between seven and ten years, of both sexes and of high socioeconomic status, and results indicate rates of overweight (19.7%) and obesity (17 5%), both in male students (Table 1). These authors also established the relationship of obesity in both life stages and estimated that obese children can have between 68% and 77% probability of remaining obese in adolescence, whereas obese adolescents may be at risk of 30% to 50% of obesity in adulthood.

Soar et al. (2004) suggested that waist circumference (WC) is used in conjunction with BMI in diagnosing the type of adiposity. This study evaluated 419 school 7-9 years and found that waist circumference showed a good correlation with BMI (Table 1). They said that besides knowing the degree of obesity, it also becomes important to know the distribution of body fat seen to be changing this as a predictor of risk for the metabolic syndrome in children and adolescents (type 2 diabetes mellitus, hypertension and dyslipidemia) . According to the authors the results are worrying, because excess central adiposity is associated with risk of cardiovascular disease in children, adolescents and adults (SBP, 2008).

By analyzing the conditions of sedentary lifestyle, diet and physical activity, Fortes (2003) observed that the factors that set the multivariate logistic model for obesity, the child is about dieting or not, was the male, overweight and / or parental obesity, consumption of snacks with high fat content 4-7 times a week and spend more than four hours a day watching TV. Silva (2010) found in their study that 59% of students preferred to play video games, watch TV or computer. In this same analysis, Casanova (2007) observed that 90.2% of students amused themselves in computer and video games on average between 0-2 hrs / day and children who watch more television eat less vegetables and consume sweets at breakfast morning. These habits are associated with higher prevalence of overweight and obesity. Medeiros (2011) reported that 66.3% of students practiced for less than three days of physical activity per week. Melo (2010) estimated that 51.6% of boys spend more hours in sedentary activities.

According to Alves et al. (2005) can also be listed risk factors of sedentary lifestyle, such as physically inactive parents, schools with no sports activities, being female, living in urban areas and presence of a television in the child's bedroom.

The primary cause of obesity is a chronic imbalance between food intake and energy expenditure, which results in high caloric intake and low physical activity (MEIRELLES; GOMES, 2004). It is evident that the combination of diet and exercise can provide more efficient weight loss during short or long term, compared to only one of these interventions alone (Hauser et al., 2004). According Mondini and Collaborators (2007), the prevalence of children entering the first grade of elementary school in a metropolitan region of São Paulo, who were overweight was 10.8% and obesity was 6.2%. The mothers obesety were associated with 'high consumption of "unhealthy" foods, watch television daily for four hours or more and household availability per capita

above the recommended oil.

According to the Brazilian Institute of Geography and Statistics almost 90% of Brazilian children consuming above the recommended fat as excess sugar is part of the diet of 80% of them (BRAZIL, 2007).

3. PROPOSED ACTION TO CHANGE THE FRAMEWORK OF CHILD OBESITY

Studies show environmental factors as one of the main villains for the rise in childhood obesity. These factors are characterized by poor diet and lack of exercise mediated inactivity. Faced with such a problem which faces the world's population becomes necessary change in supply and change in the sedentary lifestyle occur. But for that to happen, it is essential to active participation from family, teachers and the school community, as children tend to reproduce the practices of their families and educators (SILVA, 2005; Medeiros, 2011 and Melo, 2010)

Studies have shown physical activity as a supporting factor to combat and prevent childhood obesity. Exercise contributes to the removal of the child from television, computers and video games, as these sedentary practices have a great contribution in the growth of childhood obesity. Note that these are activities that children tend to consume foods rich in fats and sugars and low in nutritional value (SILVA, 2005; GIUGLIANO AND SHEEP, 2004).

The agreement between the family and the school at this prevention strategy becomes paramount once the feeding of children, sometimes, is influenced by the habits of their parents, in contrast, is at school that children awaken to educational standards . Are due to deploy systematic prevention strategies and easy acceptance with the participation of a multidisciplinary team mediated primarily with proposals to raise awareness and ultimately, awareness of customers whose target population will engage the conditions of healthy life starting from childhood. After all, the quality of working life for children is to decrease the morbidity and mortality still early.

According to Costa et al (2001) Physical Education helps in the awareness of children to physical activity in daily life and also cause these students to think more on their quality of life by improving their eating habits.

The Pan American Health Organization recommends keeping daily physical activity, consuming more fruits and vegetables, replacing saturated animal fats with unsaturated vegetable fats and decrease the amount of fatty foods in the diet (PAHO, 2003).

The purpose and importance of physical education as a collaborator in the prevention of childhood obesity is an issue addressed today by science and important that they realize the importance of positive interference that professional physical education can have on forming healthy habits in childhood reflecting positively in adulthood. (MAESTRI; Fiamoncini, 2006).

4. CONCLUSION

This study revealed that most authors pointed out that private schools in the prevalence of obesity was higher than in public schools, however, overweight was evident more often in public schools thereby demonstrating that the lower strata of society already tread steps for obesity.

It can be observed that among the main factors that influence the genesis of obesity is related to the environment due to behavioral changes such as poor eating habits and sedentary lifestyles. Such behaviors in children showed up worrying because these spending most of the day watching television or playing video games instead of more active play. Consequently, these, consume foods high in simple sugars and fat, energy-dense and energy efficient.

The studies highlight the need for intervention measures, particularly at school level as an alternative to prevent or minimize the problem of obesity. Faced with such an epidemic it becomes prudent to be a prime location for school intervention, where small changes in terms of diet and physical activity can help to curb the escalating obesity and lead a healthier life styles. However, must be entered in prevention policies such epidemic a multidisciplinary team in order to enter into such interventions, not only the school, but also as your family's education as it is the best way to provide health.

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PREVALENCE OF OVERWEIGHT AND OBESITY IN SCHOOL: SYSTEMATIC LITERATURE REVIEW

ABSTRACT

The obesity is one of the health problems most graves and increasing that affect the world. Nowadays, it is considered a problem of public health, especially for the fact of increase of its prevalence children and teenagers. In Brazil, it is noticeable worried data in all regions, fundamentally among schools. The causes of obesity are multifactorial, being the majority of it are the physical inactivity and inadequate alimentation, rich in fat. The objective of this study was to analyze the prevalence of the overweight and obesity in schools to create strategies of prevention to this sickness. It was a research using literature revision with schools from 6 to 10 years that had as base of data articles and periodic published electronically in the databases: Scielo, Pubmed, Lilacs and Bibblioteca Virtual em Saude in the period between January of 2002 and January of 2013. Studies point out that because of the technology advance and nutritional transition in Brazil , children have been turned more vulnerable to the risk of obesity, since risks in fat, sugars and a few physical activity. Also, the study showed a bigger prevalence of overweight and obesity in boys and in private schools. With the achievement of this results, this evidences the importance of implant educational programs, with the especial goal of formation of a nutritional behaviours healthier and the regular practice of physical ativities, since childhood.

KEYWORDS: Overweight, Obesity, School, Prevalence.

PRÉVALENCE DE L'EMBONPOINT ET L'OBÉSITÉ CHEZ ECOLE: REVUE DE LA LITTÉRATURE

RÉSUMÉ

L'obésité est un des problèmes de santé les plus graves et croissantes que la population du monde. Actuellement, il est considéré comme un problème de santé publique, en particulier en raison de sa prévalence accrue chez les enfants et les adolescents. Au Brésil, perçoivent elles-mêmes se soucier des données dans toutes les régions, principalement chez les enfants. Les causes de l'obésité sont multifactorielles, dont les principaux sont l'inactivité physique et une alimentation inadéquate riche en graisses. Le but de cette étude était d'analyser la prévalence du surpoids et de l'obésité à l'école afin de concevoir des stratégies pour prévenir cette maladie. Ce fut une revue systématique de la littérature de recherche avec des écoliers de 6-10 ans était fondée sur les articles et revues les données publiées par voie électronique dans les bases de données: SciELO, PubMed, Lilas et la bibliothèque virtuelle de la santé pour la période Janvier 2002 et janvier 2013. les études montrent que, en raison de l'avancement technologique et la transition nutritionnelle chez les enfants Brésil sont devenus plus vulnérables au risque de surpoids et d'obésité car ils vivent plus longtemps en utilisant l'ordinateur, regarder la télévision ou jeu vidéo, préférer les aliments en graisses et en sucres et peu actifs physiquement. L'étude a également révélé une prévalence plus élevée de surpoids et d'obésité chez les garçons et dans les écoles privées. En obtenant ces résultats soulignent l'importance de la mise en œuvre des programmes éducatifs, visant en particulier à la formation de saines habitudes alimentaires et l'activité physique régulière dès l'enfance.

MOTS-CLÉS: surpoids, obésité, l'école, la prévalence.

PREVALENCIA DE SOBREPESO Y OBESIDAD EN LA ESCUELA: REVISIÓN SISTEMÁTICA DE LA LITERATURA

RESUMEN

La obesidad es uno de los más graves y crecientes problemas de salud que afectan a la población mundial. Actualmente, se considera un problema de salud pública, sobre todo debido a su mayor prevalencia en niños y adolescentes. En Brasil, perciben a sí mismos preocupándose de datos en todas las regiones, sobre todo entre los niños. Las causas de la obesidad son multifactoriales, las principales son la inactividad física y la dieta inadecuada, rica en grasas. El objetivo de este estudio fue analizar la prevalencia de sobrepeso y obesidad en la escuela con el fin de diseñar estrategias para la prevención de esta enfermedad. Esta fue una revisión sistemática de la literatura de investigación con niños en edad escolar de 6-10 años se basó en los artículos y revistas publicado datos por vía electrónica en las bases de datos: SciELO, PubMed, Lilacs y Biblioteca Virtual de Salud para el período de enero 2002 y enero de 2013. los estudios demuestran que, debido a los avances tecnológicos y la transición nutricional en niños de Brasil se han vuelto más vulnerables al riesgo de sobrepeso y obesidad, ya que viven más tiempo utilizando el ordenador, ver la televisión o los videojuegos, prefieren los alimentos en grasas y azúcares y poco activos físicamente. El estudio también reveló una mayor prevalencia de sobrepeso y obesidad en los niños y en las escuelas privadas. Con la obtención de estos resultados ponen de manifiesto la importancia de la implementación de programas educativos, dirigidos sobre todo a la formación de hábitos de alimentación saludable y actividad física regular desde la infancia.

PALABRAS CLAVE: sobrepeso, la obesidad, la escuela, la prevalencia.

PREVALÊNCIA DE SOBREPESO E OBESIDADE EM ESCOLARES: REVISÃO SISTEMÁTICA DE LITERATURA

RESUMO

A obesidade é um dos problemas de saúde mais graves e crescentes que afeta a população mundial. Atualmente, é considera um problema de saúde pública, especialmente pelo fato do aumento de sua prevalência em crianças e adolescentes. No Brasil, percebem-se dados preocupantes em todas as regiões, fundamentalmente entre escolares. As causas da obesidade são de etiologia multifatorial, sendo as principais delas a inatividade física e a alimentação inadequada, rica em gorduras. O objetivo deste estudo foi analisar a prevalência de sobrepeso e obesidade em escolares de forma a traçar estratégias de prevenção a essa enfermidade. Tratou-se de uma pesquisa de revisão sistemática da literatura com escolares de 6 a 10 anos que teve como base de dados artigos e periódicos publicados eletronicamente nas bases de dados: Scielo, Pubmed, Lilacs e Biblioteca Virtual em Saúde no período compreendido entre janeiro de 2002 e janeiro de 2013. Estudos apontam que devido ao avanço tecnológico e a transição nutricional no Brasil as crianças tem se tornado mais vulnerável ao risco de sobrepeso e obesidade visto que vivem mais tempo usando o computador, assistindo televisão ou vídeo game, preferem alimentos ricos em gorduras e açúcares e realizam pouca atividade física. O estudo também revelou uma maior prevalência de sobrepeso e obesidade em meninos e nas escolas privadas. Com a obtenção destes resultados evidencia-se a importância de implantar programas educacionais, voltados especialmente à formação de hábitos alimentares mais saudáveis e a prática regular de atividades físicas, desde a infância.

PALAVRAS-CHAVE: Sobrepeso, Obesidade, Escolares, Prevalência.