111 - OVERWEIGHT AND OBESITY IN SCHOOL TEENAGERS

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INTRODUCTION

The world prevalence of infant and juvenile obesity comes presenting a fast increase in last decades, being characterized as a true epidemic (OLIVEIRA; FISBERG, 2003).

According with Ogden et al. (2006), it was verified an increase in prevalence of overweight and obesity between the years of 2001-2002 and 2003-2004 in United States, as evidenced by the data from National Health and Nutrition Examination Survey (NHANES). In 1999-2000, the indicator was of 13.8%, which in 2003-2004 increased to 16% in case of children and teenagers.

The Research of Brazilian Household Budget Survey – HBS, promoted by Brazilian Institute of Geography and Statistics – IBGE (2006), in 2003-2004, detected in 30 years a considerable increase in proportion of population with overweight. In 1974-1975, 3.9% of boys and 7.5% of ladies with ages between the 10 and 19 years were overweight and in 2002-2003 the percentage encountered were of 18% and 15.4%, respectively.

According studies realized in Brazil, it was possible to observe total values around 30% of children and teenagers with overweight and obesity. Specifying studies, Guedes and Guedes (2003), in research realized in "Londrina – Paraná", with young between 13 and 17 years, concluded that 20% of ladies and 17% of boys from Londrina were obese and that 16% of ladies and boys presented overweight. In "Recife – Pernambuco", a study realized with teenagers from school of middle and upper classes presented prevalence of 20% of overweight and 4.2% of obesity (BALABAN; SILVA, 2000). In "Belo Horizonte – Minas Gerais", a study with teenagers aged 10 to 20 years revealed overweight prevalence of 18.5% (LAMOUNIER et al., 2000). In "Rio de Janeiro", Castro et al. (2000) verified that 10.9% of teenagers in age line of 10 to 13 years were overweight and 7% were obese. In same study, it was reported that teenagers aged over 14 years presented prevalence of 9.3% of overweight and 5.2% were obese.

The obesity can initiate in any time of life. However, its onset occurs with more frequency in first year of life, between five and seven years old, and in adolescence (FERRIANI; SANTOS, 2007).

Currently children not only grow more than the previous generation, such as reach their biological maturity sooner. According Malina and Bouchard (1991), the limits of variation of the start and end of adolescence occur frequently between 8 and 19 years old in girls and between 10 and 22 years in boys. Damiani (2000) points to age period between 10 and 13 years old as the most sensible and which young manifest a higher or lower predisposition for be obese when adults. Still according the same source, one obese child in first six months of life have 2 or 3 times more probability becoming obese adult, while an obese teenager, in age line cited, has 5 or 6 times more probability to be, justifying the importance to be realized works of observation about obesity levels in this period of adolescence.

For obesity evaluation, WHO (1995) indicates the anthropometry as method more useful to identify obese people, since it is the cheapest, non-invasive, universally applicable and with good acceptance by population, being indexes obtained from the combination of two or more basic anthropometric information (weight, sex, age, height).

As Abrantes, Lamounier and Colosimo (2003), one way to measure the levels of obesity is the Body Mass Index (BMI), which use in teenagers and children started to be more diffused after publication of Must, Dallal and Dietz in 1991, which presented values of percentiles by age and sex. Cole et al. (2001) proposed values of cut for ages understood between 2 and 18 years. These values were adjusted to the values preconized for the overweight classification and obesity in adults, with basis in international sample that involved young of six countries, including Brazil.

The interest growing obesity prevention in childhood and adolescence is justified as prevention way of obesity in adult life, as well of the chronicle-degenerative diseases associated in obese teenagers, before predominant in adults. Faced to the problem diagnosed of public health, is of elementary importance to know the magnitude of overweight and obesity index in adolescence to search better strategies of prevention (FERRIANI; SANTOS, 2007; RAMOS, BARROS FILHO, 2003).

In that way, this present article has as objective to describe the prevalence of overweight and obesity, as well to realize a comparison of values found between the ages (12 to 14 years) and the gender (male and female) in school teenagers, residing in city of Montes Claros-MG.

MATERIALS AND METHODS

Rendering with the Secretary from the State of Education of Minas Gerais, through the school census 2007, the city of Montes Claros counts currently with 53 public schools in urban region of city, in which the total of students aged from 12 to 14 years regularly enrolled is closely 5102 individuals.

The sample, from broad study with Embodied opinion of No. 528/2006 approved by the Ethics Committee of the Universidade Estadual de Montes Claros – Unimontes – was selected of randomly and stratified way. The present schools were sorted between those which socioeconomic level of individuals was more diversified, in other words, that received students from many pieces of Montes Claros city.

So, taking into account a population of 5102 teenagers, were selected 300 teenagers shared between ages of 12, 13 and 14 years and between the male and female sex, enrolled in three schools from state network of high school in Montes Claros-MG.

The elementary dependent variable was the Body Mass Index, and the independent variables were the male and female gender and the age.

As instruments, for the weight determination we used a digital scale with wide platform, capacity of 150 kg and scale of 100 grams, on which the student remained immobile until the value to be measured. For the stature measures, we used a stadiometer.

The most sample way found to assess the quantity of physical activity practiced by teenagers was through the

questionnaire, in which was asked not only about the activities proposed by school, by also about those teenager practice in their day to day in any place. The questionnaire was applied to the student together with data collection for the BMI obtainment.

The indexes of overweight and obesity were estimated through the use of Body Mass Index (BMI), based on cutoffs of 25 kg/m² for overweight and 30 kg/m² for obesity, adjusted to age and sex, proposed by Cole et al. (2001).

The BMI was calculated through the division of body mass value in kilograms by state square in meters (BMI = kg/m²) (LOHMAN; ROCH; MARTORELL, 1988).

To verify the behavior of samples studied in relation to prevalence of overweight and obesity, we used the percent frequencies observed. To compare the values of overweight and obesity verified, according age and gender, was used the X^2. The data were analyzed using the SPSS 13.0 program for Windows. In descriptive analysis, were calculated the means and the standard deviations and then was made the analysis of variance. To verify the differences between sexes and between the ages of same sex, we applied the Tukey Test with p-value of test <0.05. For verification of possible correlations between variable analyzed, it was realized the Pearson correlation matrix.

RESULTS

Through analysis of outcomes of this study, resultant of statistic treatment previewed in methodology, we search to verify, through Body Mass Index, the prevalence of overweight (OW) ad obesity (OB) in teenagers aged 12 to 14 years.

Table 1 – Frequency of overweight and obesity in total sample.

IMC Classification	Frequency	%
Normal	270	90.0
Overweight	27	9.0
Obesity	3	1.0
Total	300	100.0

The results of Table 1, considering the total group (n = 300), revealed that 9% of sample studied have overweight and 1% has obesity, making a 10% of teenagers with overweight and 90% with normal weight.

Table 2 – Frequency and comparison (x^2) of overweight and obesity by gender.

Sex	Overweight	Obesity	% Total	X^2	p
Female	10.7%	1.3%	12%	0,00	1.0
Male	7.3%	0.7%	8%		

Analyzing the results encountered in Table 2, it is observed that the prevalence of overweight and obesity was higher for female gender (OW=10.7%; OB=1.3%) in relation to male gender (OW=7.3%; OB=0.7%). To realize a comparison of these results between genders, it is observed that significant statistically differences were not found (x^2=0.00; p<0.05).

Table 3 – Frequency and comparison (x^2) of overweight and obesity by age.

Age	Overweight	Obesity	% Total	X^2	p
12 years	9%	-	9%		
13 years	8%	2%	10%	436.4	0,00*
14 years	10%	1%	11%		

*p≤0.05.

Observing the result of comparative study (x^2= 436.4) between the ages, it is registered significant statistically differences (p=0.00), from prevalence of higher overweight in 14 years old (10%), followed by age of 12 years (9%) and 13 years (8%). Relatively to obesity, only the teenagers with 13 and 14 years demonstrate some prevalence, being this of 2% and 1%, respectively.

Table 4 – Frequency of overweight and obesity by age and gender

Age	Female		Male	
	Overweight	Obesity	Overweight	Obesity
12 years	8%	-	10%	-
13 years	12%	4%	4%	-
14 years	12%	-	8%	2%

According with Table 4, it can be observed that obesity was not present in female gender ages of 12 and 14 years, occurring only in age of 13 years, with 4% of prevalence. Only in age of 14 years it is observed that prevalence (2%) in male gender.

Relatively to overweight, it seems this occurred in all ages and both genders, being that ladies presented a prevalence of 8% in 12 years and 12% in 13 and 14 years. With relation to boys, there was an occurrence of overweight in percent values of 10%, 4% and 8% for the ages 12, 13 and 14, respectively.

DISCUSSION

The concern to realize informative population surveys about the proportion of children and teenagers with overweight and obesity come increasing through last decades. This factor is due to close relation existing between overweight and obesity in that life step and its continuity in adult phase, as well the negative consequences of that overweight to health and quality of life of the human being (FARIAS JÚNIOR; LOPES, 2003; RAMOS; BARROS FILHO, 2003).

Comparing results observed in this present study with others researches that involve Brazilian young and that use the BMI as indicator for the overweight and obesity determination of prevalence, were verified lower indexes of overweight (OW) and obesity (OB) (OW=9%; OB=1%), as, for example, in comparison to research realized by Guedes and Guedes (2003), which encountered a overweight and obesity prevalence of 12.3% and 13.7% in ladies and 11.3% and 12.3% in boys, respectively.

The same could be observed with relation to study of Balaban and Silva (2000), which showed an overweight

prevalence of 20% in teenagers aged between 10 and 19 years. In study of Lamounier et al. (2000), the overweight prevailed in 18.5% of total sample.

The overweight prevalence in teenagers encountered in this present study was similar just in Castro et al. (2000), whose results indicated an index of 10.4% of overweight; and to the Farias Junior and Lopes (2003), with overweight prevalence in 12% of scholar teenagers.

Relatively to the high incidence of overweight in adolescence, mainly in its start (ages of 10/12 to 14 years), Guedes and Guedes (2003) explain that this fact usually happens because in that period occur changes more significant in young lifestyles.

Through the adolescence, the body composition suffers great differentiations between boys and girls. Anjos, Veiga and Castro (1998) considerer that, from 10 years old, the girls present differences always higher than boys with relation to BMI, which are usually attributed to adrenal and ovarian hormones that actuate during onset of puberty (SILVA, BALABAN; MOTTA, 2005).

From another perspective, Balaban and Silva (2000), to find an overweight and obesity prevalence in teenagers of male gender (OW = 34.6% and OB = 14.7%) much larger than female gender (OW = 20.6% and OB = 4.4%), advocate that a higher preoccupation with body image can be a possible explanation for lower prevalence of overweight and obesity between female teenagers in their study.

Despite affirmations previously cited, to be realized a comparison (X^2) between overweight and obesity frequency between boys and girls, were not found significant statistically difference (p=1.0) between the same.

Relatively overweight indexes through ages, the results of present research (9% to the 12 years, 10% to the 13 years and 11% to the 14 years) did not corroborate to the findings of Silva, Balaban and Mota (2005), which observed decreasing values according ages. According authors, those results already assumed, since that moderate overweight can be compensated by future children growth, in other words, the growth that comes from process of biological maturation of each individual results decrease of obesity. This affirmation do not find echo in the results of this study, once that levels tend to increase with age and not the contrary, as proposed by Silva, Balaban and Mota (2005). However, is important to highlight that values found here meet the outcomes encountered by other organizations and authors who researched in this area of knowledge.

Unlike results obtained in the study of Fonseca, Sichieri and Veiga (1998), the overweight levels for male gender of present study (10% to 12 years, 4% to 13 years and 8% to 14 years) indicate that there was not growth of BMI according ages, neither decreasing values for girls (8% to 12 years and 12% to 13 and 14 years). But, for female gender, the overweight prevalence was higher in 13 and 14 years than 12.

CONCLUSION

Considered as risk factor for many diseases, the obesity has been identified as a public health problem due alarming increase of its prevalence. Of all ages that experienced increase in obesity prevalence, a special attention must be destined to adolescence, whose prevalence presents in intense growth in full world.

The results found here demonstrate that overweight prevalence in city of Montes Claros is worrying, having in view the levels relatively observed as high. In other side, the obesity, which is considered a chronic disease presented low rates of prevalence in studied teenagers.

However, there must be a permanent attention in relation to eating habits and physical activity of these teenagers, in way to develop interventionist actions that stimulate adoption of more active lifestyle by the same, favoring, thus, a higher control of overweight indexes in those ages and, therefore, adulthood.

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OVERWEIGHT AND OBESITY IN SCHOOL TEENAGERS

ABSTRACT

The objective of this research was to describe the prevalence of overweight and obesity, as well to realize a comparison of values encountered in ages from 12 to 14 years and the gender in school teenagers. Regarding the methods, the obesity was calculated through the Body Mass Index based on cutoff, adjusted to the age and sex. To verify the behavior of the samples studied in relation to prevalence of overweight and obesity, we recurred to observed percentages. We used the X^2 to determine the differences between genders and ages, relatively to incidence of obesity. The results revealed that prevalence of overweight was 9%; the girls presented a higher prevalence (10.7%) in relation to the boys (7.3%); the overweight rate occurred of growing kind according ages (9% to the 12 years, 10% to the 13 years and 11% to the 14 years); were found higher indexes of overweight from 13 to 14 years for girls (12%). In case of boys, the 12 years old group was that presented the highest values (10%). We conclude the results encountered showed that prevalence of overweight in Montes Claros city presents preoccupant values requesting preventative measures.

KEYWORDS: Adolescence. Overweight. Obesity.

SURPOIDS ET D'OBÉSITÉ ADOLESCENTS DU SECONDAIRE

RÉSUMÉ

Le but de cette étude était de décrire la prévalence du surpoids et de l'obésité, ainsi que de faire une comparaison entre les valeurs trouvées à l'âge de 12 à 14 ans et le sexe chez les adolescents. Méthodes: L'obésité a été calculée en utilisant l'indice de masse corporelle basée sur les seuils, ajustés pour l'âge et le sexe. Pour vérifier le comportement des échantillons étudiés en fonction de la prévalence du surpoids et de l'obésité, nous avons utilisé les pourcentages observés. X2 a été utilisé pour déterminer les différences entre les sexes et les âges, sur l'incidence de l'obésité. Les résultats ont révélé que la prévalence du surpoids était de 9%, les filles avaient une prévalence plus élevée (10,7%) que les garçons (7,3%), le taux de surpoids s'est produite progressivement selon les âges (9% à 12 ans, 10% à 13 ans et 11% moins de 14 ans), a trouvé des taux plus élevés de surpoids à l'âge de 13 et 14 ans pour les filles (12%). Pour les garçons, le groupe était de 12 ans avaient les valeurs les plus élevées (10%). Nous concluons que les résultats ont montré que la prévalence du surpoids dans la ville de Montes Claros présente souci des valeurs nécessitant des mesures préventives.

MOTS-CLÉS: Adolescence. Excès de poids. L'obésité.

SOBREPESO Y OBESIDAD EN ADOLESCENTES ESCOLARES

RESUMEN

El objetivo de este estudio fue describir la prevalencia del sobrepeso y de la obesidad, así como hacer una comparación de los valores que se encuentran en las edades de 12 a 14 años y el sexo en los estudiantes adolescentes. Métodos: La obesidad se calculó utilizando el índice de masa corporal a base de puntos de corte, ajustados por edad y sexo. Para verificar el comportamiento de las muestras estudiadas en relación con la prevalencia del sobrepeso y la obesidad, se utilizaron los porcentajes observados. X2 se utilizó para determinar las diferencias entre los sexos y edades, sobre la incidencia de la obesidad. Los resultados revelaron que la prevalencia de sobrepeso fue del 9%, las chicas tenían una mayor prevalencia (10,7%) que de hombres (7,3%), la tasa de exceso de peso se produjo de forma gradual según las edades (9% a los 12 años, el 10% a los 13 años y el 11% a los 14 años), encontró tasas más altas de sobrepeso en edades comprendidas entre 13 y 14 años para las niñas (12%). Para los niños, el grupo de 12 años de edad que tenían los valores más altos (10%). Llegamos a la conclusión de que los resultados mostraron que la prevalencia de sobrepeso en la ciudad de Montes Claros presenta valores preocupación, que requiere medidas preventivas.

PALABRAS CLAVE: Adolescencia. Sobrepeso. Obesidad.

SOBREPESO E OBESIDADE EM ESCOLARES ADOLESCENTES

RESUMO

O objetivo desta pesquisa foi descrever a prevalência de sobrepeso e obesidade, bem como realizar uma comparação dos valores encontrados nas idades de 12 a 14 anos e o gênero em escolares adolescentes. Os métodos: a obesidade foi calculada através do Índice de Massa Corporal com base nos pontos de corte, ajustados à idade e ao sexo. Para se verificar o comportamento das amostras estudas em relação à prevalência de sobrepeso e obesidade, recorreu-se às percentagens observadas. Foi utilizado o X2 para determinar as diferenças entre os gêneros e idades, relativamente à incidência de obesidade. Os resultados revelaram que a prevalência de sobrepeso foi de 9%; as meninas apresentaram uma maior prevalência (10,7%) em relação aos meninos (7,3%); a taxa de sobrepeso ocorreu de forma crescente de acordo com as idades (9% aos 12 anos, 10% aos 13 anos e 11% aos 14 anos); foram encontrados índices mais elevados de sobrepeso nas idades de 13 e 14 anos para as meninas (12%). No caso dos meninos, foi o grupo de 12 anos de idade que apresentou os maiores valores (10%). Concluímos que os resultados encontrados demonstraram que a prevalência do sobrepeso na cidade de Montes Claros apresenta valores preocupantes requerendo medidas preventivas.

PALAVRAS-CHAVE: Adolescência. Sobrepeso. Obesidade.