94 - STUDY OF PREVALENCE OF THE INFANT-JUVENILE OBESITY IN SCHOLARS

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INTRODUCTION

The obesity is a multifactorial disease and difficult treatment, having several causes involved (FRANCISCHI et al., 2000; MANCINI, 2000). The related factors of obesity can be divided in interns (biological) and external (environmental) (PINHEIRO et al., 2004). The internal factors are inherent and unalterable to human nature. They are divided in genetics and metabolic. The external factors are those that are part of environment which the subjects live. They are factors that associated or isolated, resulting in obesity (FRANCISCHI et al., 2000).

The obesity is characterized by an unbalance between the alimentary and energy spent (LIMA et al., 2004). The excess of fat and body weight elevates extraordinarily the morbidly and mortality indexes, reducing the life expectations. The obesity represents great risk for health, deteriorating organics functions contributing to appearance of metabolic and chronic diseases as cardiac illness, hypertension, certain types of cancers and diabetes (FRANCISCHI et al., 2000).

The increase of prevalence of obesity is related not only with the quality of consumed food, but also, with the amount of alimentary ingestion. The contemporary diets are composed by caloric excess and extremely incomplete in relation with quality of ingested nutrients. The substitution of food prepared by industrialized foods (fast foods, appetizers, sweets, sodas) contributes to development of obesity (MENDONÇA and ANJOS, 2004).

The physical activity is extremely important for loss and maintenance of body weight when associated to appropriate diet, because, it elevates the daily energetic expense, it increases the aerobic capacity and reducing the percentile of body fat (MELO et al., 2004).

The obesity became a growing world epidemic with a larger risk if initiated in the childhood and adolescence. Results of studies accomplished in Brazilian children point as principal factors related to the development of the obesity, irregular alimentary habits (larger ingestion of food rich in carbohydrates, fats and calories) and reduction of the level of physical activities (lack of games, smaller inclusion in sporting groups and larger time in front of television and computers) (MONTEIRO et al., 2000; DOMINGUES et al., 2004; LIMA et al., 2004; MENDONÇA and ANJOS, 2004).

Thus, this study had for aim verify the prevalence of the obesity in scholars of Conselheiro Lafaiete and the influence of levels of physical activity in prevalence of obesity.

METHODOLOGY

Sample

They're evaluated 112 scholars (60 girls and 52 boys) with age between 10 and 17 years, from 5th to 11th grades, residents in Conselheiro Lafaiete city.

Methods

It was realized anthropometric measures for estimated Body Mass Index (IMC). For evaluation of habits of physical activity, the " Questionnaire of habitual physical activities" was used (NAHAS, 2003).

Anthropometric Measures

The weight measure a balance of platform of the mark Filizola® was used, with a maximum load of 150kg and divisions of 100g. The balance was calibrated before each measurement. The adolescents were weighted in foot, barefoot and using light clothes.

The height was obtained with scale coupled in balance with a maximum capacity of 200cm and precision of 0.1cm. The individuals they were measured barefoot, leaning the heels, hips, scapula and the occipital part of cranium in surface of equipment.

Obesity levels

The body mass and the height were used for estimation of BMI. The BMI was calculated by following formula:
$BMI = BM/(H^2)$, where:
BMI = Body Mass Index, BM = Body mass and H^2 = Height.

The obesity prevalence was determined by BMI, adopting as a reference of WHO (1995), that characterizes as a overweight the percentil above 85 and obesity BMI above percentil 95. The obesity prevalence was determined for girls' group, boys' group and for the total sample.

Evaluation of the levels of physical activity

All subjects that participated in the study answered to the questionnaire for evaluation of habits of physical activity, the "Questionnaire of habitual physical activities" was used (Pate apud NAHAS, 2003).

Relationship between physical activity and obesity levels

To verify the relationship between the overweight and obesity prevalence and habits of physical activity, the data were allocated in contingency tables 2 X 3, where the lines represented the classification in relation to patterns of WHO (eutrophy or overweight and obesity), and the columns represented the classification related to habits of physical activity (inactive and a low active, moderately active and very active).

Statistical analysis

The descriptive statistic was used to characterize the sample in variables BMI. After that, was conduced the test t for the independent samples to verify anthropometric differences between boys and girls. Later, was realized Qui-square test to verify significant differences among the subgroups classified in tables. The level of significance adopted was 5%.

RESULTS

The Table 1 presents the children classified with overweight and obesity in relation to patterns of World Health Organization (WHO, 1995).

Table 1: Percentile of overweight and obesity in relation to the sex according the classification of the WHO.

Classification	Boys	Girls	Total
Eutrophycs	84.62%	85%	84.82%
Overweight	11.54%	10%	10.71%
Obesity	3.84%	5%	4.47%

The overweight and obesity prevalence found was similar for both sexes ($p < 0.05$), 15.38% for boys and 15% for the girls, or when analyzed 15.18% jointly (Table 1). To the girls, the values of BMI for the percentil 85 and 95 were 24.07 Kg/m2 and 31.51 Kg/m2, respectively. To the boys, the same percentage corresponded to 23.35 Kg/m2 and 31.60 Kg/m2, respectively. The Table 2 presents the percentage distribution and absolute of total sample in relation qualification with eutrophy and obesity (WHO, 1995) and habits of physical activity (NAHAS, 2003).

Table 2 - Distribution of the sample in relation to the level of physical activity (NAHAS, 2003) and overweight and obesity classification by the patterns of WHO (1995).

	Inactive and low active	Moderately active	Very active	Total
Eutrophycs	18 (15.79%)	36 (31.59%)[a]	40 (35.08%)[a]	94 (82.46%)
erweight and obesity	5 (4.39%)	10 (8.76%)	5 (4.39%)	20 (17.54%)
Total	23 (20.18%)	46 (40.35%)	45 (39.47%)	114 (100%)

a = significant difference among percentage of same column ($p < 0.05$)

In agreement with the Table 2 there was a larger percentage of eutrophic children moderately active and very active, in relation to the percentage of children overweight and obese moderately active or very active ($p < 0,05$).

DISCUSSION

The main limitations of this study are in the students' gathering in one unique category of analysis, where were appraised together children from 11 to 17 years old. This can disguise the results, once 11 year-old children come in inferior stage of body maturation (ZEFERINO et al., 2003). Other factor that limits the inclusion of results is the absence of nutritional evaluation, what could contribute to explain the obesity levels that found.

In opposition of other studies, which a larger prevalence of obesity were observed in the feminine sex, independent of the age (COUTINHO, 1999; LEWIS et al., 2000). The prevalence of obesity observed in the current study was similar for both sexes (Table 1), as observed in study of OLIVEIRA et al. (2003).

The obesity values found in current study were superior to found in Northeastern children (8.45%) and southeast region (11.53%) (MAGALHÃES and SILVA MENDONÇA, 2003). In other studies, the inferior indexes found to obtained in scholars from Florianópolis, where the overweight and obesity indexes, were 24.6% (SOAR et al., 2004), of Pelotas, where they were found 42% of overweight and obesity in boys and 23.9% in girls (MONTEIRO et al., 2000) and about Santo André, where overweight and obesity indexes for boys and girls went respectively 44.2% and 18.9% (CONTI et al., 2005).

In spite of low index of overweight and obesity found in the current study (Table 1) these values are preoccupying, once the excessive fat in the childhood can be reflected in adult life (MONTEIRO et al., 2000). About the total sample 5.26% presented BMI above the percentage 95, what predisposes these children from a moderated level to severe risk to development of cardiovascular disease (SOAR et al., 2004). Similar results were found by LIMA et al. (2004), where children classified as obese larger levels of plasmatic LDL and low HDL, what increases chances for development of atherosclerosis and possibly a heart disease.

The values presented in the Table 2 demonstrated that individuals characterized with overweight and obesity is less active. Low levels of physical activity result in lower energy expense, which, as SABIA et al. (2004), it aids in enlarging of body fat mass and it reduces levels of physical fitness. According to FRANCISCHI et al. (2000), these individuals are predisposed to larger risks of morbidly and mortality, reducing the life expectations, also contributing to appearance of metabolic and chronic diseases.

The exercise for obese individuals can reduce risk of complications as encephalic vascular accident, once exercise causes arterial hypotension (CHRIST et al., 2004). Besides the regular physical activity it also should be worried with physical fitness level performed by child in other periods of day, because the time spent in front of television has been associated to high obesity degree in children (COUTINHO, 1999; FRUITY et al., 2003).

It cannot be ignored that the inadequate feeding and lack of physical activity must constitute in the principal form of excessive accumulation of body fat in any life stage (DOMINGUES et al., 2004). However, in this stage of life the motivation and disposition for practice of physical activity is important for adhesion to healthy life habits (DOMINGUES et al., 2004; MELLO et al., 2004). In this sense it becomes important the positive influence of physical education teacher and of family to reduce the prevalence of infantile obesity (CONTI et al., 2005).

Therefore the physical education teacher, as an allied professional to promotion of health, finds itself in a privileged way to develop mechanisms that make possible to children and adolescents to obtain healthy habits in this phase and also in adult phase.

For futures studies it is recommended the division in smaller age groups, where more specific basis for each zone they can be obtained, besides use of other indicators as percentile of fat.

CONCLUSIONS

The obesity levels found in the scholars were inferior to obtained in other studies, however the prevalence above 15% of overweight and obesity, independent of the sex is preoccupying, once excess of weight can be reflected in adult life. Approximately 5% presented IMC above the percentage 95. The permanence of indexes can result in development of cardiovascular diseases in adult life. The prevalence of obesity was similar in girls and boys.

The levels of habitual physical activities demonstrated to be a decisive factor of obesity in the evaluated scholars. Evidencing, this way, the importance of involving children in regular programs of physical activity.

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ABSTRACT

The obesity became a growing world epidemic, presenting a larger risk if initiated in the childhood and adolescence. This study evaluated the prevalence of obesity in scholars of Conselheiro Lafaiete city and related factors. It was measured 112 students (52 boys and 60 girls) with age varying between 11 and 17 years old from Queluz de Minas School. It was measured the body weight and the height for determination of the Body Mass Index (BMI). The appraised answered a questionnaire on habitual levels of physical activity (NAF). The overweight and obesity classification was adopted the recommendation of World Health Organization (WHO, 1995). The prevalence of overweight and obesity was similar for both sexes (approximately 15%). According the results obtained by NAF, it was observed a larger prevalence of eutrophycs moderately active or very active in relation to overweight and obese ($p < 0.05$). In spite of levels of overweight were inferior to observed in other studies, it should be watched the prevention of weight gain in children's, once these can reflect in problems of health in adult life.

Key-words: obesity, physical activity, children, adolescences

LE RAPPORT ENTRE DES NIVEAUX D´ACTIVITÉ PHYSIQUE ET LA PREVALENCE DE L´OBÉSITÉ CHEZ LES ÉCOLIERS

RESUME

L´obésité est en croissance dans tout le monde et est devenue un´épidémie qui présente plus de risques aux enfants qu´aux adolescents. Cette recherche a analysé la prevalence de l´obésité chez des écoliers à Conselheiro Lafaiete (Minas Gerais, Brésil). L´échantillon a été composé de 112 élèves (52 garçons et 60 filles) âgés de 11 à 17 ans qui étudent au lycée Queluz de Minas. Pour déterminer l´Indice de Masse Corporelle (IMC) on a mésuré le poids corporel et la taille de tous les élèves. Les élèves ont répondu à l´enquête sur leurs habitudes par rapport à l´activité physique (NAF) et habitudes alimentaires (HA). On a utilisé le standard de l´Organisation Mondiale de la Santé - OMS - (WHO, 1995) pour la définition du surpoids et de l´obésité. D´après les résultats la prevalence du surpoids et l´obésité (15% environ) a été presque égale aussi aux garçons qu´aux filles. Les résultats du NAF ont montré la prevalence des eutrophiques actifs de façon modérée ou fortement actifs par rapport à ceux qui ont présenté surpoids et obésité (seuil 5%). Malgré la fréquence rélative de surpoids soit inférieure aux études décrits il faut faire attention à la prévention de l'augmentation du poids corporel chez les enfants pour éviter de problèmes à la santé à l'âge adulte, par example les maladies cardiovasculaires.

Mots clés: obésité, activité physique, enfants, adolescents

RELACIÓN ENTRE NIVELES DE ACTIVIDAD FÍSICA Y INCIDENCIA DE OBESIDAD EN ESCUELA
RESUMEN

La obesidad se torno una epidemia mundial creciente, presentando mayor riesgo cuando iniciada en la infancia y adolescencia. Esto estudio evaluó la incidencia de obesidad en una escuela de la ciudad de Conselheiro Lafaiete y factores relacionados. Fueron medidos 112 alumnos (52 niños e 60 niñas) con variación de edad entre 11 y 17 años de la Escuela Queluz de Minas. Fue mensurado la masa corporal y la talla para determinación del Índice de Masa Corporal (IMC). Los evaluados respondieron una encuesta sobre niveles habituales de actividad física (NAF). Para clasificación de sobrepeso y obesidad se utilizo el padrón de la Organización Mundial de Salud - OMS (WHO, 1995). En acuerdo con los resultados, la incidencia de sobrepeso y obesidad fue similar para ambos los sexos (aproximadamente 15%). En acuerdo con los dados obtenidos por el NAF, fue observada mayor incidencia de eutróficos moderadamente activos o mucho activos en relación a los con sobrepeso y obesos ($p < 0,05$). A pesar de los niveles de sobrepeso inferiores a los observados en otros estudios tiene que atentar para la prevención de la ganancia de masa en niños, una vez que estos pueden resultar en problemas de salud en la vida adulta.

Palabras-clave: obesidad, actividad física, niños, adolescentes

RELAÇÃO ENTRE NÍVEIS DE ATIVIDADE FÍSICA E PREVALÊNCIA DE OBESIDADE EM ESCOLARES
RESUMO

A obesidade tornou-se uma epidemia mundial crescente, apresentando maior risco se iniciada na infância e adolescência. Este estudo avaliou a prevalência de obesidade em escolares da cidade de Conselheiro Lafaiete e fatores relacionados. Foram medidos 112 alunos (52 meninos e 60 meninas) com idade variando entre 11 e 17 anos do Colégio Queluz de Minas. Mensurou-se o peso corporal e a estatura para determinação do Índice de Massa Corporal (IMC). Os avaliados responderam o questionário sobre níveis habituais de atividade física (NAF). Para a classificação de sobrepeso e obesidade adotou-se o padrão da Organização Mundial de Saúde - OMS (WHO, 1995). De acordo com os resultados, a prevalência de sobrepeso e obesidade encontrada foi similar para ambos os sexos (aproximadamente 15%). De acordo com os dados obtidos pelo NAF, observou-se maior prevalência de eutróficos moderadamente ativos ou muito ativos em relação aos sobrepesados e obesos ($p < 0,05$). Apesar de níveis de sobrepeso inferiores aos observados em outros estudos deve-se atentar para a prevenção do ganho de peso em crianças, uma vez que estes podem refletir em problemas de saúde na vida adulta.

Palavras-chave: obesidade, atividade física, crianças, adolescentes.