107 - OVERWEIGHT AND OBESITY AMONG CHILDREN AGED 6 TO 10, ENROLLED IN A PUBLIC STATE SCHOOL IN CAMPO GRANDE MS.

PAULO RICARDO MARTINS NUNEZ
ALBERTO ZEOLLA VIEIRA
RAFAEL DE WERK
CARLOS ALEXANDRE HABINTANTE
JUNIOR VAGNER PEREIRA DA SILVA
LABORATÓRIO DE PESQUISAS EM EDUCAÇÃO FÍSICA, RENDIMENTO HUMANO E SAÚDE
UNIVERSIDADE PARA O DESENVOLVIMENTO DO ESTADO E DA REGIÃO DO PANTANAL
CAMPO GRANDE/MATO GROSSO DO SUL/BRASIL
prnunez@uol.com.br

INTRODUCTION

For a long time, low weight was considered one of the main problems related to the nutritional aspect. However, on the last decades, with industrialization and urbanization, it could be observed a change on this problematic issue, the population is changing from a deficit to a high body mass (KAC and VELÁSQUEZ-MELÉNDEZ, 2003; BRANDÃO et al, 2005). This change was proved on the World Health Organization WHO, indicating that in 2003, on a 1 billion adult group, millions had any kind of obesity and 20 million of children were with overweight.

In Brazil, In 1989, there was an estimate that almost one million and a half of children younger than 10 were obese (TADDE, 1995) and in 2000, almost 1/4 were obese or showed overweight (OLIVEIRA et al., 2003).

The fast and high weight excess increase that happened on the last decades is being considered as an epidemic and a world public health problem (OLIVEIRA and FISBERG, 2003; TARDIDO and FALCÃO, 2006), once that is associated to many health problems, among which, the coronary disease is the mot important, as it is the primary risk factor. However, it also keeps a secondary relation to diabetes and low plasma cholesterol concentration (HDL) and high concentration cholesterol density (LDL) (ANGELIS, 2006), high blood pressure, (McARDLE, KATCH e KATCH, 1996), triglycerides and gall bladder (ANGELIS, 2006), higher levels of plasmatic lipids, metabolic alterations, premature menarche, osteoarthritis, skin problems among others (SOARES e PETROSKI, 2003).. And it also can result on social and psychological problems (LEMES, 2005).

Considering that Campo Grande, the state capital of Mato Grosso do Sul, was classified as the fifth capital with overweight and obesity among adults higher percent (IBGE, 2004) and that practically do not exist studies with children in the city, and as the importance of the having childhood evaluations, because as earlier as the body mass excess are diagnosed, better may be the prognostic, this study had as its aim to evaluate the BMI on 6 to 10 year-old scholars, enrolled on a public state school in Campo Grande MS.

MATERIALS AND METHODOLOGY

The sample studied was 315 children aged from 6 to 10, both sexes, enrolled on a public state school in Campo Grande MS. From these 315 children, 176 were girls and 139 boys.

A document (Termo de Consentimento Livre e Esclarecido) in which the responsible o the child could sign in order to let him participate on the study was given to all responsible, and the ones that signed and gave it back to the school and the lack of any physical limitation on the evaluation day, were used as inclusion criteria.

The investigation technique used was the measurement to the weight (kg) and height (m), using te formula $BMI=weight/height^2$, as indicated by Pollock and Wilmore (1003). To the classification, it was used the reference values proposed by Conde and Monteiro (2006).

The measurement of the body mass was made with barefoot children, wearing only shorts (boys) and bikini (girls), stand up, back to the scale, and inferior members laterally distant. The measurement of their height happened with barefoot children, back to the estadiometer, keeping contact to the back superficies of the heel, pelvic waist, scapular waist and occipital region, and having their head oriented to the Frankfurt plan, and the children on apnea.

The tools used were a Tanita brand scale, HS301 model, and one Gofeka estadiometer.

The data showed on this study are part of a broader project named Multisubject action on the prevention and intervention of childhood obesity: ludic-motor activities, nutritional reeducation and psychological orientation", developed by the Physical Education Course of the Universidade para o Desenvolvimento do Estado e da Região do Pantanal, financed by the Fundação Manoel de Barros and approved by the Research Ethics Committee, under the certificate number 097/2007.

As statistic treatment, the frequency analysis was used.

RESULTS/ DISCUSSION

On the BMI analysis, the results show that the majority of the children are euthrophic, however, 21,9% show overweight and 8,5% obesity, as it can be seen on the figure 1.

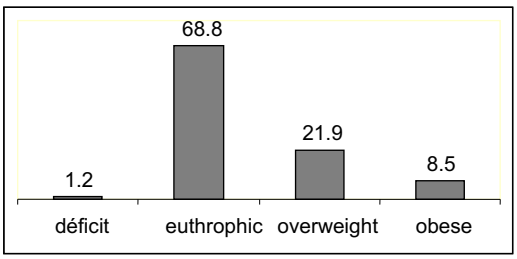

Figure 1 - Classification of the Body Mass Index percent on children aged from 6 to 10, enrolled on a public state school in Campo Grande MS.

The results obtained on the overweight were superior to the ones founded on the studies with children in Belo Horizonte MG (GARCIA et al., 2004), Taquatinga DF (GIUGLIANO and CARNEIRO, 2004), Cajamar SC (MONDINI et al.,

2007) e Florianópolis SC (TRONCON et al., 2007),, which were, respectively 14%, 16,8%, 12,8% and 16,5%, the same happened to obesity in Belo Horizonte MG (GARCIA et al., 2004), Taquatinga DF (GIUGLIANO and CARNEIRO, 2004) e Cajamar SC (MONDINI et al., 2007) 3,7%, 5,3% e 6,2%.

When the percent of children with body mass excess (overweight and obesity) was analysed, it could be seen that 30,1% showed this condition, and this percent were also higher than in the studies held in Belo Horizonte MG (GARCIA et al., 2004), Cajamar SC (MONDINI et al., 2007), Cascável PR (PELEGRINI et al., 2008) e Florianópolis SC (SILVA et al., 2008), respectively 14%, 17%, 16% e 12,9%. However, the studies held by Troncon et al. (2007) in Campinas/SP showed higher percentuals (36,69%).

High percent on body mass excess that were found by this study must be carefully treated, as overweight is the first sign of a bigger problem related to body mass, and an obese child has from 68% to 77% more chances to keep fat when a teenager (ZACK et al., 1979); and obesity in the adolescence keeps on adulthood from 30% to 50% (DIETZ, 1998). One of the reasons that make a child maintain its fat until adulthood is increasing of fat cells (hyperplasia), this process will never be reverted (McARDLE, KATCH and KATCH, 1996).

Moreover, studies show that obese children, when compared to euthrophic ones, had triple chances to develop high blood pressure, 3,6 chances to present systolic increased blood pressure, 2,7 chances to diastolic blood pressure increase and 3,8chances to have total cholesterol increase, and 1/3 of the children with total cholesterol increased have a moderate to advance risk to develop aterosclerotic disease when becoming an adult (RIBEIRO et al., 2006).

The presence of three or more health risk factors, as mentioned above, results on an increase of metabolic syndrome (BRANDÃO *et al.*, 2004).

However, the problems related to childhood obesity are not limited to physical health, as it is common the submission of obese people to prejudicial actions, as they are frequently victims of bad nicknames or jokes (LEMES, 2005), which sometimes come to social exclusion and isolation, anxiety and depression (AXELRUD, GLEISER and FISCHAMANN, 1999), affecting, with this the psychological and social health of these people.

CONCLUSION

It could be concluded that the percent on body mass excess among the children of this study was high, with a predominance of overweight. These data must worry, as an obese child presents bigger chances to keep this problem on adulthood, when compared to an euthrophic child. Moreover, it must be considered the deleterial effects of the obesity to he physical, social and psychological health in a medium to long time.

Considering that obesity is a multifactorial problem, new studies must be developed in order to evaluate the influence of other variables (social-economic level, parental scholarship, eating habits, lifestyle, physical activities level, among others) about the child nutrition level.

REFERÊNCIAS

ANGELIS, R. C. **Riscos e prevenção da obesidade:** fundamentos fisiológicos e nutricionais para tratamento. São Paulo: Atheneu, 2006.

AXERLRUD, E.; GLEISER, D.; FISCHMANN, J. B. **Obesidade na adolescência: Uma abordagem para pais, educadores e profissionais da saúde.** Porto Alegre/RS: Mercado Aberto, 1999.

BRANDÃO, A. A.; MAGALHÃES, M. E. C.; FREITAS, E. V.; POZZAN, R.; BRANDÃO, A. P. **Prevenção da doença cardiovascular: a aterosclerose se inicia na infância?** Revista da SOCERJ , v. 17, n. 1, p. 37-44, 2004.

BRANDÃO, A. P.; BRANDÃO, A. A.; BERENSON, G. S.; FUSTER, V. Síndrome Metabólica em Crianças e Adolescentes. **Arquivos Brasileiros de Cardiologia**, v. 85, n. 2, p. 79-81, 2005.

CONDE, W. L.; MONTEIRO, C. A. Valores críticos de Índice de Massa Corporal para classificação do estado nutricional de crianças e adolescentes brasileiros. **Jornal de Pediatria**, v. 82, n. 4, p. 266-72, 2006.

GARCIA, F. D.; TERRA, A. F.; QUEIROZ, A. M.; CORREIA, C. A.; RAMOS, P. S.R.; FERREIRA, Q.; ROCHA, R. L.; OLIVEIRA, E. A. Avaliação de fatores de risco associados da elevação da pressão arterial em crianças. **J. Pediatria**, v. 80, p. 29-34, 2004.

GIUGLIANO, R.; CARNEIRO, E. C. Fatores associados à obesidade em escolares. **Jornal de Pediatria**, v. 80, n. 1, p. 17-22, 2004.

IBGE. **Inquérito domiciliar sobre comportamento de risco e morbidade referida de doenças e agravos não transmissíveis.** Brasil, 15 capitais e distrito federal, 2002-2003. Rio de Janeiro: Instituto Nacional de Câncer, 2004.

KAC, G.; VELÁSQUEZ-MELÉNDEZ, G. A transição nutricional e a epidemiologia da obesidade na América Latina. **Cadernos de Saúde Pública**, v. 19, sup. 1, p. 4-5, 2003.

LEMES, S. O. Acompanhamento Emocional da Obesidade na Infância e Adolescência. In: FISBERG, Mauro. **Atualização em obesidade na infância e adolescência.** São Paulo/SP: Editora Atheneu, 2005. p. 54-68.

MCARDLE, W. D; KATCH, F. L.; KATCH, V. L. Peso excessivo, obesidade e controle ponderal. In: MCARDLE, W. D.; KATCH, F. L.; KATCH, V. L. **Fisiologia do Exercício: energia, nutrição e desempenho humano.** 4 ed. Rio de Janeiro: Guanabara Koogan, 1996. p. 842-888.

MONDINI, L.; LEVY, R. B.; SALDINA, S. R. D. M.; VENÂNCIO, S. I.; AGUIAR, J. A.; STEFANINI, M. L. R. Prevalência de sobrepeso e fatores associados em crianças ingressantes no ensino fundamental em um município da região metropolitana de São Paulo, Brasil. **Cad. Saúde Pública**, v. 23, n. 8, p. 1825-1834, 2004.

OLIVEIRA, A. M. A.; CERQUEIRA, E. M. M.; SOUZA, J. da S.; OLIVEIRA, A. C. Sobrepeso e Obesidade Infantil: influência de fatores biológicos e ambientais em Feira de Santana, BA. **Arq Bras Endocrinal Metab**, v. 47, n. 2, p. 144-150, 2003.

OLIVEIRA, C. L.; FISBERG, M. Obesidade na infância e na adolescência: uma verdadeira epidemia. **Arquivo Brasileiro de Endocrinologia e Metabolismo**, v. 47, n. 2, 2003.

OLIVEIRA, A. M. de; OLIVEIRA, A. C.; ALMEIDA, M. S.; ALMEIDA, F. S.; FERREIRA, J. B. C; SILVA, C. E. P.; ADAN, L. F. Fatores ambientais e antropométricos associados à hipertensão arterial infantil. **Arq Brás. Endocrinologia e Metabologia**, v. 48, n. 6, p. 849-854, 2004.

PELEGRINI, A.; BORGES, L. J.; SILVA, J. M. F. L.; SILVA, K. E. S.; CYRINO, E; S.; BARROS FILHO, A. A. Estado nutricional em escolares de baixo nível socioeconômico de Cascavel PR. **Revista Digital Buenos Aires**, ano 13, n. 119, p. 15-25, 2008. Disponível em: www.efdesportes.com. Acesso em: 15/09/2008.

POLLOCK, M. L.; WILMORE, J. H. **Exercício na Saúde e na Doença:** Avaliação e prescrição para prevenção e reabilitação. São Paulo: Medsi, 1993.

RIBEIRO, R. Q. C.; LOTUFO, P. A.; LAMOUNIER, J. A.; OLIVEIRA, R. G.; SOARES, J. F.; BOTTER, D. A. Fatores adicionais de risco cardiovascular associados ao excesso de peso em crianças e adolescentes. O estudo do coração de Belo Horizonte. **Arquivos Brasileiros de Cardiologia**, v. 86, n. 6, p. 408-418, 2006.

SILVA, K. S.; PELEGRINI, A.; HOEFELMANN, L. P.; VASQUES, D. S.; LOPES, A. S. Prevalência de excesso de peso corporal em escolas públicas e privadas da cidade de Florianópolis SC. **Arq. Bras. Endocrinologia e Metabologia**, v. 52, n. 3, p. 574-575, 2008.

SOARES, L. D.; PETROSKI, E. L.. Prevalência, fatores etiológicos e tratamento da obesidade infantil. **Revista de Cineantropometria e Desenvolvimento Humano**, v. 5, n. 1, p. 63-74, 2003.

TADDEI, J. A. A. Epidemiologia da obesidade na infância e adolescência. In: FISBERG, M. (Org). **Obesidade na infância e adolescência.** São Paulo: Fundação BYK, p. 14-18. 1995.

TARDIDO, A. P.; FALCÃO, M. C. O impacto da modernização na transição nutricional e obesidade. **Revista Brasileira de Nutrição Clinica**, v. 21, n. 2, p. 117-124, 2006.

TRONCON, J. K.; GOMES, J. P.; GUERRA JÚNIOR, G.; LALLI, C. A. Prevalência de obesidade em crianças de uma escola pública e de um ambulatório geral de Pediatria de um hospital universitário. **Rev. Paulista de Pediatria**, v. 25, n. 4, p. 305-310, 2007.

VANZELLI, A. S.; CASTRO, C. T.; PINTO, M. S.; PASSOS, S. D. Prevalência de sobrepeso e obesidade em escolares da rede pública do município de Jundiaí, São Paulo. **Revista Paulista Pediatria**, v. 26, n. 1, p. 48-53, 2008.

ZACK P. M.; HARLAN W.R.; LEAVERTON P. E.; CORNONI-HUNTLEY J. A longitudinal study of body fatness in childhood and adolescence. **Pediatrics**, v. 95, n. 1, p. 126-30, 1979.

OVERWEIGHT AND OBESITY AMONG CHILDREN AGED 6 TO 10, ENROLLED IN A PUBLIC STATE SCHOOL IN CAMPO GRANDE MS

ABSTRACT

The main aim of this study was to diagnose the percent of overweight and obesity among 6 to 10 year-old children in a public state school in Campo Grande MS. This research specifically tried to analyse the sex differences. The sample was made of 315 children aged from 6 to 10, which were 176 girls and 139 boys. The anthropometric (weight and height) was adopted as a research technique, using the formula BMI=weight/height^2 to identify the Body Mass Index (BMI). The results show that 30,1% of the studied group have high indices of body mass, 21,9% of this group with overweight and 8,5% with obesity. It was concluded that the researched sample shows higher percents of body mass excess (overweight and obesity), and action must be taken in order to ease this problems still on the childhood, as, if it goes on the adult age, the consequences will be even worst.

Key-words: Childhood. Body Mass Excess. Health.

POURCENTAGE DE POIDS EXCESSIF ET OBÉSITÉ ENTRE DES ENFANTS DE 6 À 10 ANS INSCRITS DANS UNE ÉCOLE PÚBLICO DE CAMPO GRANDE - MS

RÉSUMÉ

Présente étude il a eu objectif diagnostiquer le pourcentage de poids excessif et l'obésité d'enfants de 6 à 10 ans d'une école publique de l'état de Campo Grande - MS. a spécifiquement cherché analyser les différences entre les sexes. L'échantillon s'est composé de 315 enfants entre 6 à 10 ans, en étant 176 filles et 139 garçons. L'anthropométrie (poids et hauteur) a été adoptée mange technique de recherche, en utilisant la formule IMC=peso/altura2 pour identifier l'Indice de Masse Corporelle (IMC). Les résultats indiquent que 30,1% des enfants présente excès de masse corporelle, en étant 21,9% avec poids excessif et 8,5% avec obésité. Il se conclut que l'échantillon enquêté présente sommet de pourcentage d'excès de masse corporelle (poids excessif et obésité), en devant des mesures être prises afin d'égayer ce problème encore dans l'enfance, vu que, si ce problème persiste dans l'âge adulte, les conséquences seront encore pires.

Mots-clé: Enfance. Excès de Masse Corporelle. Santé.

EL EXCESO DE PESO Y LA OBESIDAD ENTRE NIÑOS ENVEJECIERON 6 A 10, ALISTADO EN UNA ESCUELA PÚBLICA PÚBLICA EN EL CAMPO GRANDE MS

RESUMEN

La puntería principal de este estudio era diagnosticar el por ciento de exceso de peso y de obesidad entre niños de 6 a 10 años en una escuela pública pública en Campo grande - ms. Esta investigación intentó específicamente analizar las diferencias del sexo. La muestra fue hecha de 315 niños envejecidos a partir el 6 a 10, que eran 176 muchachas y 139 muchachos. El antropométrico (peso y altura) fue adoptado como técnica de la investigación, usando la fórmula BMI=weight/height2 para identificar el índice de masa de cuerpo (BMI). Los resultados demuestran que los 30.1% del grupo estudiado tienen altos índices de la masa del cuerpo, el 21.9% de este grupo con exceso de peso y el 8.5% con obesidad. Fue concluido que la muestra investigada demuestra el por ciento más alto del exceso total del cuerpo (exceso de peso y obesidad), y la acción debe ser orden admitida todavía para facilitar este problemas en la niñez, as, si va en la edad adulta, las consecuencias será incluso la peor.

Palabras-llave: Niñez. Exceso total del cuerpo. Salud.

PERCENTUAL DE SOBREPESO E OBESIDADE ENTRE CRIANÇAS DE 6 A 10 ANOS MATRICULADOS EM UMA ESCOLA PÚBLICA DE CAMPO GRANDE - MS

RESUMO

O presente estudo teve por objetivo diagnosticar o percentual de sobrepeso e obesidade de crianças de 6 à 10 anos de uma escola pública estadual de Campo Grande - MS. Especificamente buscou analisar as diferenças entre os sexos. A amostra foi composta por 315 crianças entre 6 a 10 anos, sendo 176 meninas e 139 meninos. A antropometria (peso e altura) foi adotada como técnica de investigação, utilizando a fórmula IMC=peso/altura^2 para identificar o Índice de Massa Corporal (IMC). Os resultados indicam que 30,1% das crianças apresentam excesso de massa corporal, sendo 21,9% com sobrepeso e 8,5% com obesidade. Conclui-se que a amostra investigada apresenta alto percentual de excesso de massa corporal (sobrepeso e obesidade), devendo medidas ser tomadas a fim de amenizar esse problema ainda na infância, uma vez que, se esse problema persistir na idade adulta, as conseqüências serão ainda piores.

Palavras-chave: Infância. Excesso de Massa Corporal. Saúde.