11 7 - DIAGNOSIS OF OVERWEIGHT AND OBESITY IN TEENAGERS FROM A PUBLIC SCHOOL OF FORTALEZA-CE

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INTRODUCTION

The overweight and the obesity in children, teenagers and adults are public health crescent problems not only in developed countries, therefore the World Health Organization (WHO) announced recently that the obesity is the newest world syndrome, in view that a high prevalence may be found also in rising economic nations, the case of Brazil (DUTRA, ARAÚJO e BERTOLDI, 2006).

National studies about the prevalence of overweight and obesity, in Brazil, are scarce. Normally the available data about it are those obtained in National study of the Familiar Expenditure (Estudo Nacional da Despesa Familiar - ENDEF), done in 1974-75; in the National Research about Health and Nutrition (Pesquisa Nacional sobre Saúde e Nutrição - PNSN), done between June and September in 1998; and in the Research about the Life Styles (Pesquisa sobre Padrões de Vida - PPV), done in 1996-1997 only in the southeast and northeast regions from Brazil (COSTA, CINTRA e FISBERG, 2006).

In the last years have been observed a rise of obesity prevalence in the poorer regions and reduction in the richer ones, becoming this way the obesity present in the different economic levels, like in the firs world countries, where the biggest majority of the overweight or obese children belong to a medium-low economic level families (REZENDE, 2006; RONQUE et al., 2005).

A fact that has concerned the specialists is that the overweight and obesity developing are been verified each time more in earlier ages. This way, the obesity prevalence in childhood and adolescence has occupied a detach duty in discussions related to the young health, motivating the achievement of diverse studies, once a time that the body fat excess in children and teenagers, like that in older populations, may represent a danger risk factor to the health (MONTEIRO et al., 2000).

The rise of obesity prevalence in teenagers, is accompanying a tendency already observed some years ago in the developed countries, even in regions where the prevalence appointed the undernourishment and the knowledge about these advances may contribute to a better comprehension of the problem and possible interventions (VASCONCELOS & SILVA, 2003).

Therefore this study aims to verify the overweight and obesity index in both sex teenagers in a public school from Fortaleza-CE.

METODOLOGY

Sample

This study has a transversal character, was done with students from the Liceu do Ceará school, in the city of Fortaleza-CE, comprehending the age of 14 - 19 years old, which the sample was chose by convenience. The data collect was done in August and September 2006.

AGE	Female	Male	Total
14	8	3	11
15	42	27	69
16	63	54	117
17	24	24	48
18	15	17	32
19	2	5	7
Total	154	130	284

Instruments and Procedures

Before the data collect, was done a training of the evaluators in view of guarantee the precision of the measure obtained and the faithfulness of the study. The technical material used was a flexible rule, with precision of 1 cm, brand *Easy read*, model *Cateb*. Also was used a digital balance, brand *Plenna*, model *Wind*, graduated in 100g and maximum capacity of 150 kg.

To determinate the stature was adopted this procedure: The children barefoot, with the heels on the wall where the rule was put, looking forward orientating the head to let the Frankfurt Line parallel to the floor and with non-breathing inspiration, after a maximum expiration. To determinate the body weight was adopted this procedure: The children stood up, looking forward, non-touching anywhere and wearing only light clothes. After the data acquisition, was applied the BMI form (Weight/Stature²) and after that the result was inserted in the curls of the *Centers for Disease Control and Prevention* (CDC) that give the BMI according to the age, and later the result was inserted in one of the levels: undernourishment, normal, overweight or obesity. The Waist Circumference was measured in the natural waist, like, between the down ribs and the iliac top.

Statistic Treatment

To analyze the results was used the descriptive statistic and the Test of "Qui-Quadrado", among the male and female groups and Person to correlaction using the statistic package SPSS 13.00.

RESULTS

Were evaluated 286 students, being 156 females (54,5%) and 130 males (45,5%). In the table 1, are the percentages of overweight, obese, undernourishment and normal weight students. The overweight and the obesity, together, reached 17,7% of the boys and 12,1% of the girls.

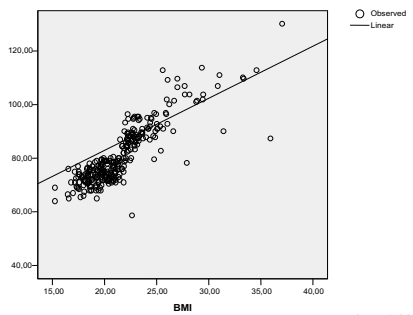
TABLE 2. SAMPLE CLASSIFICATION ACCORDING TO THE GENDER.

	Undernourishment		Adequated		Overweight		Obesity		TOTAL	
	N	**%**	**N**	**%**	**N**	**%**	**N**	**%**	**N**	**%**
Boys	101	4.6	6	77,7	16	12,3	7	5,4	130	100
Girls	131	3,8	6	84	13	8,3	6	3,8	156	100
Total	232	4,2	12	81,1	29	10,1	13	4,5	286	100

The overweight and the obesity prevailed in the age of 14 - 16 years old respectively, with 10,7% and 4,6%. Trough the Qui-Quadrado Test was verified the exists a dependence between the sex and the nutritional classification with a significant level

(á = 5%).

About the WC and BMI correlations, the data showed an association statistically relevant (r= 0,64) among the measured teenagers. See graphic 1.



About the physical activity practice among the teenagers the results (50%) were equal to both genders.

DISCUSSION

In this study the weight adequacy index showed was considered relevant. However, the overweight and obesity index showed was considered high in the sample studied. Like nutritional classification method, was used the BMI that comes being advised by the International Obesy Task Force to describe the obesity prevalence in children and teenagers in the whole world and analyze the secular tendencies (SOUZA LEÃO et al. 2003).

The National Health and Nutrition Examination Survey made a research in the years 1999 - 2000, which indicated that 15,5% of the american teenagers, among 12 - 16 years old were classified as overweight. Not being limited until the USA, also was verified that teenagers in Mexico and from Africa that already were living in the country, were 26,6% classified as obese (SLYPER, 2004).

In Brazil the overweight and obesity index comes rising relevantly. Some studies showed a high overweight index in teenagers from better economic levels (GUEDES & GUEDES, 1999). However other studies start to detach the rise of excess weight in teenagers from a lower economic level, like in the USA where the overweight and obesity index have bigger representative, related to the low and medium economic level classes (Bar-Or, 2003; SOUZA LEÃO, 2003; COSTA, CINTRA e FISBERG 2006).

In the city of Fortaleza already was observed, trough a study with students from the public school web, that 72,7% of the children are in the normality, 4,6% are obese and 6,6% are in overweight. In the same study was verified an undernourishment decline and increase in the obesity and overweight index (MORAIS et al., 2006). Corroborating what is cited by other studies when they emphasize the transition from undernourishment to the obesity and overweight in lower economic levels.

This study, just like many others is proving that in some places in Brazil the overweight and obesity index comes being detached specially in male students, mainly from the public school web (QUADROS, et al. 2006; COSTA, CINTRA e FISBERG, 2006; SILVA et al., 2003).

Being opposite to this study, articles prove that the overweight index among the female gender, is much bigger than the male gender (ABRANTES, LAMOUNIER e KOLOSSIMO, 2003; SILVA & MALINA, 2000).

Even that the female gender have more tendency to the overweight, because the bigger fat and body weight accumulation get worse in the adolescence (GUEDES & GUEDES, 1998).

Even that the aim of this study was not the nutritional prevalence, being present in many articles of this same research line, the nutritional question is really relevant. Even during the data collect many measured students were consuming candies that, have a great caloric index and a low nutritional quality, like, candies, snacks, among many others in the same nutritional line. Like risk factor, the obesity duty is controversy, however, the best explanation to the relation among obesity and heart illness is that this would happen in an obese subgroup, like, in the people that show accumulation of localized fat in the abdominal, or central, even in the absence of the generalized obesity. In the newest studies, the abdominal fat is being considered like a strong heart risk, in contraposition to diverse others fat indicators like cardiovascular factor (PITANGA & LESSA, 2006).

In the analyses between the BMI and the WC was found a good correlation (r=0,64), confirming other studies which showed bigger coefficient when is related BMI and WC than when is related BMI and RCQ (SOAR et al., 2004; TAYLOR et al. 2000). This way was verified that, even with the incidence of overweight does not have reached it majority like in other studies, the correlation shows a good indicative to coronaries illness among the measured students.

The reasons of the nowadays epidemic of the young obesity are not clear. However ca not be excluded the nutritional consume and the sedentary. This way, the incentive to the physical activity practice should be stronger among the children and teenagers, because already many students come showing relation between obesity and free time watching TV. In this study, was verified that 50% of the students practiced physical activities, being the school physical education the most cited among them (BAR-OR, 2003; CRESPO& COL, 2001; NHANES III, 1996).

CONCLUSION

The results of this study revealed that the overweight and obesity index were bigger in the male students than in the female gender, being a relevant difference in the relations between the gender.

With the results obtained in this research, suggest an accompanying in the nutritional diet to improve the health conditions of these streets, and an incentive to the physical activity practices at home, at gym or in the school.

REFERENCES

ABRANTES, M.M. ; LAMOUNIER, J.A. ; COLOSIMO E.A. Prevalência de sobrepeso e obesidade no nordeste sudeste do Brasil. Ver Assoc. Med Bras v.49,n.2,p.162-166,2003.

BAR-OR, O. A epidemiologia de obesidade juvenil: a atividade física é relevante? Gatorade Sports Science Institute. V.16, n. 2, 2003.

COSTA R.F.; CINTRA I.P.; FISBERG M. Prevalência de sobrepeso e obesidade em escolares da cidade de Santos, SP. Arquivo Brasil Endocrinol Metabol, v.50, n.1, p. 60-67, 2006.

CRESPO, C.J.; E. Smit, R.P. TROIANO, S.J. BARTLETT, C.A. MACERA, and R.E. Andersen. Televition watching

energy intake, and obesity in U.S.A. Children: Results from the third national realf and Nutrition examination survey, 1988 - 1994. Art Pediatr. Adolesc. Med., v.155, p.360-365, 2001.
Department of Health and Human Services, U.S. Public Health Service. NHANES III anthropometric procedures video. Washington: (Stock No. 017-022-01335-5). 1996.
DUTRA L.C.; ARÁUJO C.L.; BERTOLDI A.D. Prevalência de sobrepeso em adolescentes: Um estudo de base populacional em uma cidade no sul do Brasil. Caderno de Saúde pública, Rio de Janeiro, v.22, n.1, p.151-161,2006.
MORAIS, T.B.; NETO, A.F.S.; ROCHA, F.S.; SOUZA, E.A. Decline of undernourishment in students of public schools according to criterion of CDC. Fiep Bulletin, v.76, Spec. Edition, p. 368-370, 2006.
PITANGA, F.J.G.; LESSA I. Razão cintura estatura como discriminados do risco coronariano em adultos. Revista Assoc. Méd. Bras., São Paulo,v.52,n.3,p.157-161,2006.
QUADROS, T.M.B.; GORDIA, A.P.; JÚNIOR, G.B.V.; KALINOWSKI, F.G. Prevalence of overweight and obesity and level of physical activite in adolescents attending grad school or high school in public educational institutes in Lapa PR municipal rural district. Fiep Bulletin, v.76, Spec. Edition, p. 82-84,2006.
RONQUE, E.R.; SIRINO, E.S.; DOREA, V.R.; JUNIOR, H.S.; GALDI, E.H.G.; ARRUDA, M. Prevalência de sobrepeso e obesidades em escolares de alto nivel socioeconômicos em Londrina,PR,Brasil. Revista de Nutrição, Campinas. v.18,n.6,p.709-717,2005.
SILVA, G.A.P.; BALABAN G; FREITAS M.M.V., BARACHO, J.D.S., NASCIMENTO, E.M.M. Prevalência de sobrepeso e obesidade em crianças pré-escolares matriculadas em duas escolas particulares de Recife, Pernambuco. Revista Bras. Saúde Matern. Infant, Recife, v.3, n.3, p.323-327, 2003.
SILVA, R.C.R., MALINA, R.M. Nível de atividade física em adolescentes do município de Niterói, Rio de Janeiro, Brasil. Cad Saúde Pública, Rio de Janeiro, v. 16, n. 4, p. 1091-1097, 2000.
SLYPER, A.H. The Pediatric Obesity Epidemic: Causes and Controversies. The Journal of Clinical Endocrinology & Metabolism, v.89, n.6, p.2540-2547, 2004.
SOAR, C., VASCONCELOS, F.A.G., ASSIS, M.A.A., GROSSEMAN, S., LUNA, M.E.P. Prevalência de sobrepeso e obesidade em escolares de uma escola pública de Florianópolis, Santa Catarina. Ver. Bras. Saúde Matern. Inf, Recife, v.4, n.5, p.391-397, 2004.
SOUZA LEÃO, L.S.C., ARAÚJO, L.M.B., MORAES, L.T.L.P., ASSIS, A.M. Prevalência de obesidade em escolares de Salvador, Bahia. Arquivo Brasileiro Endocrinol.Metab.,v.47,n.2,p.151-157,2003.
VASCONCELOS V.L., SILVA G.A.P. Prevalência de sobrepeso e obesidade em adolescentes masculinos no Nordeste do Brasil, 1980 - 2000. Caderno de Saúde, Pública Rio de Janeiro, v.19, n, 5, p. 1445- 1451, 2003.
MONTEIRO, C.C.; CONDE, W.L. Tendência secular da desnutrição e da obesidade na infância na cidade de São Paulo (1974 - 1996). Revista de Saúde Pública, v.34,Suplemento nº6,p.52-61,2000.

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DIAGNOSIS OF OVERWEIGHT AND OBESITY IN TEENAGERS FROM A PUBLIC SCHOOL OF FORTALEZA-CE

ABSTRACT

The overweight and the obesity are increasing, not only in the developed countries. Recently the World Health Organization (WHO) considered the obesity the newest world syndrome. In Brazil, studies about obesity and overweight prevalence are even scarcer, but specialists and researches have a sure: the overweight and obesity developing is reaching ages each time younger. Therefore, this study aims to verify the obesity and overweight index in teenagers from both sex in a public school from Fortaleza - CE. The study had a transversal character and was done in the Colégio Liceu do Ceará, with students from 14 to 19 years old. Was done a training to the evaluators to guarantee the precision of the measures and faithfulness in the study. To the data collect, was used a flexible ruler (Easy read) with a precision of 1 cm and a digital balance (Plenna) with a capacity to 150 kg. Was measured the weight and the stature to determinate the Body Mass Index (BMI), according to the criterions of CDCK. The results were analyzed according to a descriptive statistic and to the "Qui-quadrado" tests and Person test. From the 284 students measured, 154 are females (54,5%) and 130 (45,5%). The overweight and the obesity were higher to the sex male, prevailing in the age of 14 and 16 years old. The "Qui-quadrado" test verified dependence between sex and nutritional classification. The BMI and the WC (waist circumference), showed an association of r=0,64 and the realization of physical activity was the same for both sex. The obtained results in this study suggest a nutritional support to improve the health condition of these students, beyond the incentive to physical activity practice at home or even in their schools.

Key-words: obesity, overweight, students

DIAGOSTIC DU SURPOIDS ET DE L´ OBÉSITÉ ENTRE ADOLESCENTS D´UNE ÉCOLE PUBLIQUE DE FORTALEZA-CE

RÉSUMÉ

Le surpoids et l´obésité n´augmentent pas seulement dans les pays développés. Récemment, l´Organisation Mondiale de la Santé (OMS) a considéré que l´obésité devient le nouveau syndrome mondial. Au Brésil, les études concernant la prévalence du surpoids et de l´obésité sont encore rares, cependant spécialistes s´accordent à constater que le surpoids et l´obésité apparaissent chez des sujets de plus en plus jeunes. C´est pourquoi cette étude a eu pour objectif de vérifier l´indice de surpoids et d´obésité parmi les adolescents des deux sexes d´une école publique de Fortaleza-CE. Il s´est agi d´une recherche transversale réalisée au Lycée du Ceará entre élèves de 14 à 19 ans. Les enquêteurs ont suivi une formation qui permette de garantir la précision des mesures et la fidélité de la recherche. Pour recueillir les données, un ruban métrique flexible (Easyread) précis à 1 mm près et une balance digitale Pienna limitée à 150 kg ont été utilisées. Le poids et la taille ont permis le calcul de l´IMC, selon les critères du CDC. Les résultats ont été analysés à partir de la statistique descriptive et les tests de Khi-carré et de Person ont été réalisés. Sur 284 élèves évalués il y avait 154 filles (54,5 %) et 130 garçons (45,5%). Le surpoids et l´obésité sont apparus plus importants chez les garçons, avec une prévalence entre 14 et 16 ans. Le test Khi-carré a révélé une dépendance entre le sexe et la classification nutritionnelle. La corrélation IMC et CC a présenté une association de r=0,64. Les résultats obtenus par cette recherche suggérent un accompagnement nutritionnel afin d´améliorer l´état de santé de ces jeunes, ainsi que

l´encouragement de la pratique d´activités physiques au domicile ou à l´école.

Mots-clés: obésité, surpoids, élèves

DIAGNÓSTICO DE SOBREPESO Y OBESIDAD EN ADOLESCENTES DE UN LICEO PÚBLICO EN LA CIDAD DE FORTALEZA-CE

RESUMEN

El sobrepeso y la obesidad no solo son recientes en países desarrollados. Recientemente la organización mundial de la salud (OMS) considero a la obesidad las reciente síndrome mundial. En el Brasil estúdios de prevalecía de sobrepeso y obesidad todavía son escasos, por ende especialistas están seguros que, el desenvolvimiento de sobrepeso y obesidad esta atingiendo edades cada vez mas precoses. Por lo tanto el presente estúdio tiene como objeto verificar el índice de sobrepeso y obesidad en adolescentes de ambos sexos de una escuela publica de Fortaleza-CE. El estúdio tuvo un carácter transversal y fue realizado en el Colegio Liceu do Ceará con escolares de 14 a 19 años de edad, fue realizado un entrenamiento con los avaladores para garantizar la precisión de las medidas y la versatilidad del estudio. Para la recolección de los datos fue utilizada una trena flexible (Easyread) con precisión de 1 cm y una balanza digital Plenna con capacidad de 150 kg. Fue mensurado el peso y la estatura para la determinación del IMC, según los criterios del CDC. Los resultados fueron analizados a través de estadística descriptiva y realizados los test de Qui-quadrado e Person. De los 284 escolares avalados, 154 son del sexo femenino (54,5%) e 130 del sexo masculino (45,5%). El sobrepeso e obesidad fueron mayores en el sexo masculino, prevaleciendo en la faja etária de 14 a 16 años. El test qui-quadrado constato dependencia entre sexo e clasificación nutricional. La correlación IMC e CC, presento asociación de r=0,64 y la realización de actividad fisica fueron iguales para ambos sexos. Los resultados obtenidos en esta pesquisa sugieren un acompañamiento nutricional para mejorar el estado de salud de estos estudiantes, a demás del incentivo a la práctica de actividades fisicas en casa o en las escuelas de los mismos.

Palabras-importante: obesidad, sobrepeso, escuela

DIAGNÓSTICO DE SOBREPESO E OBESIDADE EM ADOLESCENTES DE UMA ESCOLA PÚBLICA DA CIDADE DE FORTALEZA-CE

RESUMO

O sobrepeso e a obesidade são crescentes não só em países desenvolvidos. Recentemente a Organização Mundial da Saúde (OMS) considerou a obesidade a mais nova síndrome mundial. No Brasil, estudos de prevalência de sobrepeso e obesidade ainda são escassos, porém especialistas têm uma certeza: o desenvolvimento do sobrepeso e obesidade está atingindo idades cada vez mais precoces. Portanto, o presente estudo objetiva verificar o índice de sobrepeso e obesidade em adolescentes de ambos os sexos em uma escola pública de Fortaleza-CE. O estudo teve o caráter transversal e foi realizado no Colégio Liceu do Ceará com escolares de 14 a 19 anos de idade. Foi realizado um treinamento com os avaliadores para garantir precisão das medidas e fidedignidade no estudo. Para a coleta dos dados, foi utilizada uma trena flexível (Easyread) com precisão de 1 cm e balança digital Plenna com capacidade de 150 kg. Foi mensurados o peso e estatura para determinação do IMC, segundo os critérios do CDC. Os resultados foram analisados através da estatística descritiva e realizados o teste do Qui-quadrado e Person. Dos 284 escolares avaliados, 154 são do sexo feminino (54,5%) e 130 do sexo masculino (45,5%). O sobrepeso e obesidade foram maiores no sexo masculino, prevalecendo na faixa etária de 14 a 16 anos. O teste qui-quadrado constatou dependência entre sexo e classificação nutricional. A correlação IMC e CC apresentou associação de r=0,64 e a realização de atividade física foram iguais para ambos os sexos. Os resultados obtidos nesta pesquisa sugerem um acompanhamento nutricional para melhorar o estado de saúde destes estudantes, além do incentivo a prática de atividades físicas em casa ou nas escolas dos mesmos.

Palavras-chave: obesidade, sobrepeso, escolares.