

46 - OVERWEIGHT AND OBESITY PREVALENCE IN SCHOOL STUDENTS OF PERNAMBUCO'S COUNTRYSIDE, BRASIL.

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INTRODUCTION

Nowadays, obesity is considered a metabolic disease with extremely dangerous consequences and increasing prevalence (KASPARY et al., 2006). The obesity took epidemic proportions both in developed and in development countries, regardless of age and gender (WHO, 2000). Between 1980 and 2000, it is estimated that the overweight and obesity prevalence in children rose 5 times in developed countries and 4 times in those in development (WANG, MONTEIRO, POPKIN, 2002; OGDEN et al., 2006). Besides that, the rise in childhood obesity may have dangerous consequences to their health and that may have repercussion in their adult life (FALKNER; MICHEL, 1999).

In Brasil, studies about obesity prevalence with representativity are based on a survey made by Instituto Brasileiro de Geografia e Estatística (IBGE): Estudo Nacional de Despesa Familiar (ENDEF), Pesquisa Nacional sobre Saúde e Nutrição (PNSN), Pesquisa de Padrões de Vida (PPV) and Pesquisa de Orçamentos Familiares (POF), throughout the years of 1975, 1989, 1999 and 2002-2003. Recently, specialists have warned about the obesity prevalence increase in childhood and adolescence (Reilly, 2005; 2006). In the Northeast, especially in Recife, we can highlight the studies of Balaban and Silva (2001) that investigated 2564 students of a private school and found a overweight and obesity prevalence of 26,2% (IC95%: 23-29%) and 8,5% (IC95%= 6,5-10,5%). Silva, Balaban and Mota (2005) investigated the overweight and obesity prevalence in children and teenagers from different socioeconomical conditions, finding overweight in 14,5% and obesity in 8,3%. Tassitano et al. (2009) investigated a sample of 4.210 students of a public school, finding a overweight and obesity prevalence of 11,5% (IC95%: 10,7-12,8) and 2,4% (IC95%: 1,7-2,7).

However, studies about overweight and obesity prevalence in countryside towns are still practically scarce. Besides, it is known that the socioeconomical status interferes in food availability and information access, as well as be associated to some physical activities patterns, constituting a determinative factor to obesity prevalence (Balaban et al., 2001).

Therefore, the objective of this present study was to describe the overweight and obesity prevalence in students of a public school from Alagoinha, Pernambuco.

MATERIAL AND METHODS

The present descriptive study, with transversal lineation, was made in a public school located at Perpetuo Socorro district in Alagoinha, rural area of Pernambuco. The individuals age range was 10 and 11 year old children and 12 to 17 year old teenagers, middle school students of the 6th to the 9th grade (5th to 8th grade from primary school), registered in the year 2010, totaling a sample of 256 individuals from both genders

The individuals had their body mass and height measured during the first semester of 2010. The measurements were made by the school's physical education teacher. At the measurement moment, the students were barefeet and facing the scales back, in a straight position and the head adjusted to the Frankfurt plan (height), in a Filizola scale that had a stadiometer.

With those measures, we calculated the Body Mass Index (BMI), using as cut values the ones suggested by the Center for Disease Control and Prevention (CDC, 2000), where it considers children and teenagers with low weight those who have BMI lower than 5% for their age; with overweight those who have BMI equal or higher than 85% for their age; with obesity those who have BMI equal or higher than 95% for their age.

The data analysis was made with the aid of SPSS software, 13.0 version. We used the qui-square proportion or Fisher test. The significance level established was $p < 0,05$.

RESULTS

From the 256 children, 142 were females (55%) and 114 were males (45%). Concerning overweight, 9,7% of the sample was framed in that category, occurring more frequently among the girls (12%). In relation to obesity, 3,9% of the individuals were considered obese ($n=10$), which 6,9% ($n=8$) were boys and 1,4% ($n=2$) were girls, as showed in Table 1. We found significative differences between overweight and obesity ($p < 0,05$) between gender.

TABLE 1 – Difference between genders in relation to classification of body mass index.

Gender	Underweight	Totally	Totally	%	%	Test	P
M	2	114	116	1,72	98,28	Fisher	1,00
F	2	140	142	1,41	98,59		
	Eutrophic						
M	96	20	116	82,75	17,24	Qui	0,71
F	121	21	142	85,21	14,78		
	Overweight						
M	8	108	116	6,89	93,10	Qui	0,24
F	17	125	142	11,97	88,02		
	Obesity						
M	8	108	116	6,89	93,10	Fisher	0,04*
F	2	140	142	1,41	98,59		

Table 2 showed the overweight and obesity prevalence according to age range, where the higher percentual values for overweight were registered between 12 and 13 years old (10,8%) and between 16 and 17 years old (10,7%). Concerning obesity, the higher indexes were found in the age range between 10 and 11 years old (5,7%) and between 12 and 13 years old

(5,4%).

TABLE 2 – Overweight and obesity prevalence in children and teenagers concerning age range.

Age range	Low weight		Eutrofic		Overweight		Obesity		Total	
	n	%	n	%	N	%	n	%	n	%
10-11	2	3,8	44	83,0	4	7,5	3	5,7	53	100
12-13	-	-	78	83,9	10	10,8	5	5,4	93	100
14-15	2	2,4	72	85,7	8	9,5	2	2,4	84	100
16-17	-	-	25	89,3	3	10,7	-	-	28	100

DISCUSSION

In our study, made with children and teenagers residing in Pernambuco's rural area, the overweight and obesity prevalence observed in the individuals total evaluation was similar to the study made by Ribeiro (2006), that evaluated students from public and private schools in Belo Horizonte, finding the following indexes for overweight (8,4%) and obesity (3,1%). This percentage was inferior than the rates find in Brazil as a whole, in several Latin American countries and the United States (FILOSOF et al., 2000; OGDEN et al., 2002).

Troiano et al. (1995) reported that 22% of american children aged between 6 to 11 years old presented BMI equal or superior to 85%, and 11% had BMI equal or superior to 95%. Amongst the children of low income community, the overweight and obesity prevalence were lower (8,7% and 4,4%, respectively) (TROIANO et al., 1995).

There are reports that in Latin America, that childhood obesity tends to be more frequent in urban areas and in families with more elevated maternal school and socioeconomical level (MARTORELL et al., 1998). Balaban, Silva and Motta (2001) found obesity (4,4%) and overweight (8,7%) prevalences in children of a low socioeconomical level community in Recife. According to Granville-Garcia et al (2009), the overweight prevalence in children seems to be more elevated than obesity nationally and worldwide. In Brazil, the overweight incidence variates from 8,4% to 21,2%, and from 3,1% to 24% for obesity (MOTTA; SILVA, 2001; SILVA et al., 2003; RONQUE et al., 2005; RIBEIRO et al. 2006; OLIVEIRA et al., 2003; CORSO et al., 2004; SILVA, 2008; SANTOS; LEÃO, 2008; PINTO; OLIVEIRA, 2009; GRAVILLE-GARCIA, 2009).

In our investigation, the overweight was more prevalent among teenagers than children, and the opposite happened with obesity, that occurred with higher frequency among individuals of lower age range.

One of the possible explanations for the reduced overweight and obesity values found among the individuals analyzed may be related to the more active life style that this population has, due to, the majority of times, the necessity of physical activities realization in their daily routine, deallocating and at leisure time. This routine is not commonly inserted in the life of individuals with similar characteristics that live in the urban areas. Another justification could be related to their eating habits, pronounced by their small consume of industrialized products.

CONCLUSION

The results showed that the overweight prevalence was bigger among the girls, and among the boys a higher obesity index. Concerning age range, the overweight was more frequent in teenagers with age ranging from 12 and 13 years old, while the opposite occurred with the obesity prevalence in children, showing bigger values than in teenagers.

In summary, we can conclude that the children and adolescents of this study had reduced overweight and obesity indexes when compared to individuals residing in urban centers of similar age range and higher socioeconomical status. This difference may be related to their small access to industrialized food, rich in saturated fat, and their more active life style.

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OVERWEIGHT AND OBESITY PREVALENCE IN SCHOOL STUDENTS OF PERNAMBUCO'S COUNTRYSIDE,

BRASIL.

ABSTRACT

The objective of this present study was to describe the overweight and obesity prevalence in students of a public school from Alagoinha, Pernambuco. The sample was composed by children and teenagers with age ranging from 10 to 11 and 12 to 17 years old, respectively. They were middle school students from 6th to 9th grade, in a total of 256 students, where 142 were females and 114 were males. Their height and body mass were measured to acquire their body mass index (BMI). We considered children and teenagers with BMI lower than 5% for their age with low weight; BMI higher or equal to 85% and lower than 95% for their age were overweight; BMI equal or higher to 95% for their age were considered obese. The data analysis was made through the qui-square proportion or Fisher test. The significance level established was $p < 0,05$. The results showed that in relation to overweight, 9,7% of the individuals were in this category, occurring with higher frequency between the girls (12%). In relation to obesity, 3,9% of the sample was considered obese ($n=10$), which 6,9% ($n=8$) were boys and 1,4% ($n=2$) were girls. Concerning the age range, we observed that the overweight was more frequent among teenagers between 12 and 13 years old (10,8%). For obesity, the values were more relevant for children (5,7%). In summary, we conclude that the overweight was more prevalent among the boys than among the girls.

KEY-WORDS: Obesity. Overweight. Teenagers. Children.

PRÉPONDÉRANCE DE SURPOIDS ET OBÉSITÉ EN LES ÉCOLIERS DE L'INTÉRIEUR DE PERNAMBUCO,

BRÉSIL

RÉSUMÉ

L'objectif de cette recherche a été décrire la prévalence du surpoids et de l'obésité en les étudiants d'une école publique dans la ville de Alagoinhas, Pernambuco. L'échantillon a été composé par des enfants et adolescents avec des âges qui variaient entre 10 et 11 ans et entre 12 et 17 ans, respectivement. Ils sont des élèves de la 6ème au 9ème année de l'enseignement fondamental, comprenant 258 individus, il était 142 du sexe féminin et 116 du sexe masculin. On a mesuré la masse corporelle et la stature pour obtenir l'indice de masse corporelle (IMC). On a considéré comme une personne de faible poids de naissance, les enfants et adolescents avec IMC pour l'âge mineur que le percentile 5; et avec surpoids, IMC pour l'âge majeur ou égal au percentile 85 et mineur que le percentile 95. On a considéré obèse les individus avec IMC pour l'âge majeur ou égal au percentile 95. L'analyse des données furent réalisés à travers les essais de proportion qui-carré ou Fisher. Le niveau de signification établi fut de $p < 0,05$. Les résultats ont montré que par rapport au surpoids, 9,7% des individus se sont encadré dans cette catégorie. Cela arrive davantage parmi les filles (12%). En ce qui concerne l'obésité, 3,9% de l'échantillon furent considérés obèses ($n=10$), des cette-ci 6,9% ($n=8$) étaient garçons et 1,4% ($n=2$) filles. Concernant à cet étage, on peut observer que le surpoids est plus fréquent chez les adolescents avec l'âge entre 12 et 13 ans (10,8%). Pour l'obésité, les valeurs se présentaient plus important entre les enfants (5,7%). En bref, on peut conclure que la prévalence de surpoids fut majeur entre les garçons que entre les filles.

MOTS-CLÉF: Obésité. Surpoids. Adolescents. Enfants.

PREVALENCIA DE SOBREPESO E OBESIDAD DE NIÑOS EN EDAD ESCOLAR DEL INTERIOR DE PERNAMBUCO, BRASIL.

RESUMEN

El objetivo de este estudio fue describir la prevalencia de sobrepeso y obesidad en estudiantes de una escuela pública en la ciudad de Alagoinha, Pernambuco. La muestra fue compuesta de niños y adolescentes con edades comprendidas entre 10 y 11 años y 12 y 17 años respectivamente, estudiantes de 6º a 9º año de la escuela primaria, de los cuales 256 individuos, 142 hembras y los machos 114. Se midió la masa corporal y la altura, para obtener el índice de masa corporal (IMC). Se consideró niños y adolescentes con IMC para la edad por debajo del percentil 5, el sobrepeso, el IMC para la edad mayor o igual al percentil 85 y menor que el percentil 95, los individuos obesos con un IMC para la edad mayor o igual al percentil 95. El análisis de datos se realizó mediante pruebas de proporciones chi-cuadrado o Fisher. El nivel de significación se fijó en $p < 0,05$. Los resultados mostraron que, en relación con el sobrepeso, el 9,7% de los pacientes se ajustan a esta categoría, que se

producen con mayor frecuencia entre las niñas (12%). Con respecto a la obesidad, el 3,9% de la muestra fueron considerados obesos (n = 10), de los cuales 6,9% (n = 8) eran niños y el 1,4% (n = 2) niñas. En términos de edad, se puede observar que el sobrepeso fue más frecuente en adolescentes de 12 a 13 años (10,8%). Para la obesidad, los valores fueron más altos entre los niños (5,7%). En resumen, podemos concluir que la prevalencia de sobrepeso fue mayor en los niños que en niñas.

PALABRAS-CLAVE: Obesidad. Sobrepeso. Adolescentes. Niños.

**PREVALÊNCIA DE SOBREPESO E OBESIDADE EM ESCOLARES DO INTERIOR DE PERNAMBUCO, BRASIL.
RESUMO**

O objetivo do presente estudo foi descrever a prevalência de sobrepeso e obesidade em estudantes de uma escola da rede pública da cidade de Alagoinha, Pernambuco. A amostra foi composta por crianças e adolescentes com idades que variavam entre 10 e 11 anos e 12 e 17 anos respectivamente, estudantes do 6^a ao 9^a ano do ensino fundamental, compreendendo 256 indivíduos, sendo 142 do sexo feminino e 114 do sexo masculino. Foram mensuradas a massa corporal e a estatura, para obtenção do índice de massa corpórea (IMC). Considerou-se com baixo peso as crianças e adolescentes com IMC para a idade menor que o percentil 5; com sobrepeso, IMC para a idade maior ou igual ao percentil 85 e menor que o percentil 95; com obesidade os indivíduos com IMC para a idade maior ou igual ao percentil 95. A análise dos dados foi realizada através dos testes de proporções qui-quadrado ou Fisher. O nível de significância estabelecido foi de $p < 0,05$. Os resultados mostraram que em relação ao sobrepeso, 9,7% dos indivíduos se enquadraram nesta categoria, ocorrendo maior frequência entre as meninas (12%). No que concerne à obesidade, 3,9% da amostra foram consideradas obesas (n=10), das quais 6,9% (n=8) eram meninos e 1,4% (n=2) meninas. Em relação à faixa etária, pode-se observar que o sobrepeso foi mais frequente em adolescentes com idades entre 12 e 13 anos (10,8%). Para a obesidade, os valores apresentaram-se mais relevantes entre as crianças (5,7%). Em suma, pode-se concluir que a prevalência de sobrepeso foi maior entre os meninos do que nas meninas.

PALAVRAS-CHAVE: Obesidade. Sobrepeso. Adolescentes. Crianças.