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Overweight and obesity and associated factors in adults in a poor urban area of Northeastern Brazil

Sobrepeso, obesidade e fatores associados aos adultos em uma área urbana carente do Nordeste Brasileiro

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ABSTRACT: *Introduction:* The changes that occurred in the health/disease process, especially in the field of nutrition, corroborate the replacement of nutritional deficiencies with the pandemic emergency of overweight (overweight/obesity). *Objective:* To analyze the prevalence and factors associated with overweight in adults living in a poor urban area in Recife, Northeast Brazil. *Methods:* This is a cross-sectional study with a sample of 644 adults aged 20–59 years. Possible associations of overweight with demographic, socioeconomic, behavioral and morbidity factors were analyzed through Poisson Regression, considering as statistically significant those with p < 0.05. *Results:* The prevalence of overweight was 70.3%, being lower in the age range of 20–29 years, greater in the range of 30–39 years and stabilizing in the others. In the final multivariate model, it was observed that the age group, economic class, diabetes mellitus and high blood pressure were directly associated with overweight, while bean consumption showed an inverse association. The high prevalence of overweight found indicates that poor communities are already included in the nutritional transition process that is in course in country. *Conclusion:* The significant result of overweight found at this poor urban area imposes the need to include this problem as a public health priority in these communities.

Keywords: Overweight. Obesity. Adult. Poverty.

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RESUMO: *Introdução:* As mudanças produzidas no processo saúde/doença, sobretudo no campo da nutrição, corroboram a substituição das carências nutricionais com emergência do excesso de peso (sobrepeso/obesidade). *Objetivo:* Analisar a prevalência e fatores associados ao excesso de peso em adultos residentes em uma área urbana carente do Recife, Nordeste do Brasil. *Métodos:* Trata-se de um estudo transversal analítico, com uma amostra de 644 adultos de 20 a 59 anos. Analisaram possíveis associações do excesso de peso aos fatores demográficos, socioeconômicos, comportamentais e morbidades por meio de regressão de Poisson, considerando como estatisticamente significantes aquelas com valor de p < 0,05. *Resultados:* A prevalência do excesso de peso foi de 70,3%, sendo menor na faixa de 20–29 anos e maior na faixa etária de 30–39 anos, e estabilizando-se nas demais. No modelo de regressão multivariado, foi observado que a faixa etária, classe econômica, diabetes *mellitus* (DM) e hipertensão arterial sistêmica (HAS) mostraram-se diretamente associada ao excesso de peso, enquanto a variável consumo semanal de feijão mostrou-se inversamente associada. A alta prevalência do excesso de peso encontrado pressupõe que as comunidades carentes das quais os indivíduos fazem parte já se incluem no processo de transição nutricional que está em curso no país. *Conclusão:* Os resultados significativos de sobrepeso/obesidade detectados na área urbana carente estudada, impõe a necessidade de incluir esse problema como prioridade de saúde pública nessas comunidades.

Palavras-chave: Sobrepeso. Obesidade. Adulto. Pobreza.

INTRODUCTION

The great changes that occurred in the health/disease process from the second half of the twentieth century began to present a very peculiar configuration in the field of nutrition, typified by the overlapping of global and specific nutritional deficiencies due to the epidemic or pandemic emergence of overweight and obesity[1].

Overweight and obesity are characterized by the accumulation of body fat, exceeding the acceptable standards of anthropometric normality in different degrees and belonging to the group of chronic non-communicable diseases (CNCDs)[2]. They act as important risk factors for the morbidity and mortality of adult populations, being associated with 63% of the global total of deaths caused by the CNCD. Of that amount, 78% of mortality occurs in middle and low income countries[3].

The worldwide prevalence of overweight/obesity has shown a rapid and progressive increase in the last decades. Currently, 2.1 billion adults have this condition, which represents almost 30% of the world population. It should also be noted that, from 1980 to 2013, overweight increased by 27.5% among adults[4].

In our country, more than half of the adult population — that is, 56.9% — is overweight[5]. A study carried out in adults living in deprived urban areas of Maceió found 41.2% had this problem[6], and in Pernambuco, according to the III State Survey of Health and Nutrition (2006), 51.5% of adults were in this condition[7]. It is a pandemic process that goes beyond geopolitical boundaries, economic and cultural blocks and social strata, with the surprising

observation that nowadays, unlike the past, it is the poorest strata in rich or developing countries that constitute the most exposed segments[8,9].

Overweight and obesity have multifactorial causes and result from a complex interaction of dietary factors, genetic predisposition and human behavior[10,11]. Along with diet and physical inactivity, we must also assesse working conditions, housing, supply networks and other determinants that may be included in the causal models of this problem[11].

Studies that assess how excess weight behaves in populations under recognizedly precarious conditions, especially in deprived urban areas (favelas), are still scarce and isolated in Brazil, particularly in the Northeast Region[6]. It is worth considering, however, that 11 million people live in slum areas in the country, representing about 5% of the population[6,12].

Characterized as communities with no land ownership, poor urban areas usually have an unstable work space, low individual and family income, informal occupations, unhealthy housing, poor sanitation conditions, lack or insufficiency of health, education, and public security services. In this configuration, what would the nutritional status of the population be like in an urban scenario with major restrictions on goods and services?

In view of the social, structural, environmental, demographic and economic context that permeates the epidemiological context of overweight/obesity and its impact on the population's health/disease process, especially in deprived urban areas, this study is justified, whose objective was to analyze the prevalence and factors associated with excess weight in adults aged 20–59 years living in a poor urban area in Recife, Northeastern Brazil.

METHODS

This is a descriptive and analytical cross-sectional study, based on data from the research "Health, nutrition and assistance services in a slum population in Recife: a baseline study", developed by Instituto de Medicina Integral Professor Fernando Figueira (IMIP) in partnership with the Nutrition Department of Universidade Federal de Pernambuco (UFPE) and the Recife City Hall. Data collection was home based and took place between June and December 2014, in a poor urban area known as the Coelhos community, located in the Boa Vista neighborhood, in the municipality of Recife, capital of the State of Pernambuco.

To calculate the sample, a group of 3,816 adults aged 20 to 59 years was used as reference. As was estimated by the Primary Care Information System (SIAB) in Recife, there is a prevalence of 51.5% of overweight and obesity of adults in this age group in the Recife Metropolitan Region of Pernambuco[7]. An estimate error of 4% and a confidence interval of 95% were assumed, and 10% was added to compensate for possible losses, cases of non-response or questionnaires eventually invalidated by inconsistencies, thus obtaining an initial sample of 570 participants. The final sample included a total of 644 adults. The number of observations assessed here constitutes a subset of the representative sample of people over 20 years old, calculated to represent the universe of adults in the Coelhos community.

Sampling was probabilistic, and the adults were selected by simple random drawing, without substitution. Pregnant women, individuals with congenital or acquired physical limitations which made anthropometric measurements impossible to measure, and cases with visible edema or psychic disorders that hindered collaboration were excluded.

The relationship between weight and height was obtained based on the body mass index (BMI). According to WHO recommendations[13], adults were classified as: weight deficit (< 18.5 kg/m²), eutrophy (≥ 18.5 e < 25 kg/m²), overweight (≥ 25 e < 30 kg/m²), obesity (≥ 30 kg/m²) and severe obesity (≥ 40 kg/m²). For this study, the response variable was represented by overweight (overweight/obesity), considering adults with a BMI ≥ 25 kg/m².

Weight was measured on a digital scale, Seca® 876, with a capacity of up to 250 kg and a scale of 100 g, with individuals barefoot, wearing minimal clothing and without any objects in their pockets, hands or head. For height measurement, a portable millimeter stadiometer, brand Alturexata LTDA., with precision of up to (1 mm) was used. The volunteers were in an upright position, barefoot, with upper limbs dangling along the body. In order to ensure accuracy, measurements were taken in duplicates and, when the difference between them exceeded 0.5 cm for height and 100 g for weight, the two measurements were repeated and noted with closer values, and then the average of these measures was used.

The independent variables were presented categorically, classified as:
- demographic: sex (male and female) and age group (20–29, 30–39, 40–49 and 50–59);
- socioeconomic: economic class, assessed based on the criteria of the Brazilian Association of Research Companies (ABEP)[14], defined based on a points system that considers the possession of goods and the education level of the head of the family (B1/B2, C1/C2 and D/E), schooling (illiterate/incomplete elementary school, complete elementary school/incomplete primary school, complete primary school/incomplete secondary school and complete secondary school/complete higher education/incomplete higher education), race/ethnicity, which was self-reported (white, black, brown and others), occupation ((not working, unemployed, sporadic work, social benefits, employed/self-employed), housing — wall (brick/masonry and others), number of rooms (> 4 and ≤ 4), basic sanitation — garbage disposal (public collection and others), waste disposal and water supply (general network and others);
- behavioral: weekly food consumption — beans, vegetables, fruits, soda or artificial juice, (1–2 times a week or never, 3–4 times and 5–7 times), meats with excess fat (no and yes) and physical activity (sufficiently active and insufficiently active);
- diabetes and high blood pressure (no/yes).

Food consumption was assessed using the weekly consumption questionnaire used by the Ministry of Health[15]. To determine the level of physical activity, the International Physical Activity Questionnaire (IPAQ) was used, in its short version[16]. This instrument measures the frequency and duration of moderate, vigorous physical activities and walks performed in the last week for at least 10 continuous minutes, including standardized exercises, sports, occupational and recreational physical activities performed at home, in free time, as a means of transportation and at leisure.

The criteria established by IPAQ refer to four categories of the level of physical activity: very active, active, irregularly active and sedentary. For analysis purposes, a these variables were re-categorized into:

- "sufficiently active" (very active + active), applied to people who reported practicing vigorous activity with a frequency greater than or equal to three times a week for 20 minutes or more, or who practiced moderate activity, or walking with a frequency greater than or equal to five times a week for at least 30 minutes, or any activity that added up was equivalent to a frequency greater than or equal to five times a week and greater than or equal to 150 minutes a week (walking + moderate activity + vigorous activity);
- "insufficiently active" (irregularly active + sedentary), people who do not fit the aforementioned criteria.

Regarding morbidities, the diagnosis of diabetes was performed by biochemical examination, with individuals with blood glucose ≥ 126 mg/dL or with a report of use of a hypoglycemic agent being considered "cases"[17]. Blood pressure was measured according to standardized procedures[18]. Two measurements were taken at different times (interval of 15 minutes), and adults with systolic blood pressure ≥ 140 mmHg, and/or with diastolic blood pressure ≥ 90 mmHg, or with reports of use of anti-hypertensive agents.

Initially, descriptive analyzes were performed in order to characterize the frequency distribution of the variables under study. Subsequently, bivariate analyzes were performed using simple Poisson regression, to show possible associations with excess weight with the independent variables. In the adjusted model, the criterion for inclusion of the variables was the association in the crude analysis with excess weight, with a value of $p < 0.20$. The variables with $p < 0.05$, obtained through multivariate Poisson regression, with robust adjustment of the standard error, remained in the final model. The results were expressed by prevalence ratio (PR) and 95%CI. Statistical analyzes were performed using the SPSS software, version 13.0 (SPSS Inc., Chicago) and Stata, version 13.0 (StataCorp., College Station, United States).

This study was approved by the IMIP Research Ethics Committee, protocol No. 4017-14, in accordance with the requirements of CNS Resolution No. 466/12. All respondents were informed about voluntary participation in the research and signed the Informed Consent.

RESULTS

In the final sample of the present study, there were a total of 644 adults, however, there were differences in sample values in some variables, due to the loss of responses for incomplete questionnaires and/or inconsistent data.

The nutritional status of the studied population is shown in Figure 1. The prevalence of overweight and obesity were similar, around 35%, exceeding the prevalence of eutrophy. Furthermore, it is detailed that 3.4% of the total obese people had severe obesity, which

is practically twice the frequency of cases of weight deficit. The joint frequency of over-weight/obesity, representing excess weight, was 70.3%.

The variables sex, age group, economic class, race/ethnicity, occupation, number of rooms, water supply (Table 1), weekly consumption of beans, consumption of meat with excess fat, high blood pressure and diabetes (Table 2) showed an significant association with excess weight (p < 0.20).

The PRs adjusted through Poisson's multivariate regression analysis showed that categories C1/C2 and B1/B2 presented an association with excess weight, in relation to the reference category (D/E), thus revealing that the higher the class, the the higher the prevalence of overweight.
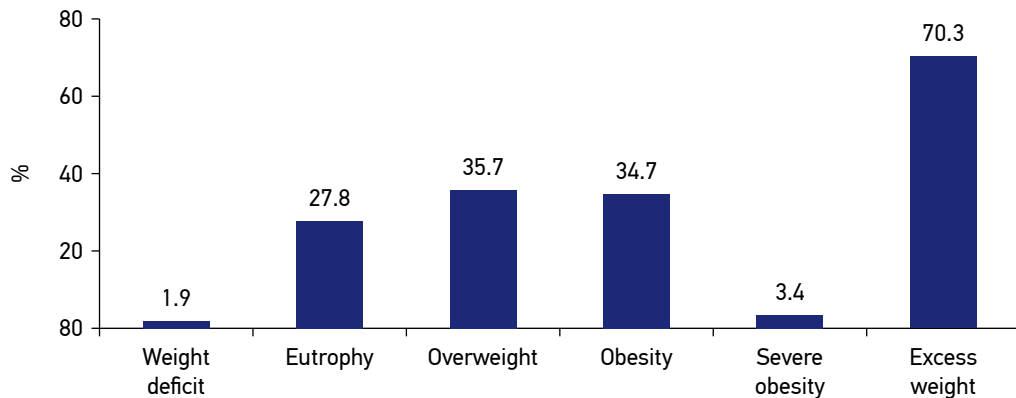

Figure 1. Nutritional status of adults (20–59 years) in a poor urban area (Coelhos community). Recife, 2014.

Table 1. Prevalence and crude prevalence ratio (PR) of overweight in adults (20–59 years) in an poor urban area, according to demographic and socioeconomic variables. Recife, 2014.

Variables	Sample		Excess weight		Crude PR	p
	n = 644	%	n	%	(95%CI)	
Demographic						
Sex	44					
Male	220	34.2	146	66.4	1.0	0.120
Female	424	65.8	307	72.4	1.04 (0.99 – 1.08)	
Age group (years)						
20–29	127	19.7	68	53.5	1.0	
30–39	177	27.5	134	75.7	1.14 (1.07 – 1.22)	
40–49	172	26.7	128	74.4	1.14 (1.06 – 1.22)	< 0.001
50–59	168	26.1	123	73.2	1.13 (1.06 – 1.21)	

Table 1. Continuation.

Variables	Sample		Excess weight		Crude PR	p
	n = 644	%	n	%	(95%CI)	
Socioeconomic						
Economic class						
D/E (1 MW)	227	35.2	144	63.4	1.0	< 0.001
C1/C2 (1,5–2 MW)	380	59.0	275	72.4	1.06 (1.01 – 1.10)	
B1/ B2 (3,5–7 MW)	37	5.8	34	91.9	1.17 (1.10 – 1.25)	
Schooling*						
Illiterate/incomplete elementary school	132	20.8	89	67.4	1.0	0.828
Complete elementary school/ incomplete primary school	139	22.0	101	72.7	1.03 (0.97 – 1.10)	
Complete primary school/ incomplete secondary school	133	21.0	93	69.9	1.01 (0.95 – 1.08)	
Complete secondary school/complete higher education/incomplete higher education	229	36.2	161	70.3	1.02 (0.96 – 1.08)	
Race/ethnicity*						
Brown and others	443	69.1	301	67.9	1.0	0.053
White	119	18.6	86	72.3	1.03 (0.97 – 1.08)	
Black	79	12.3	63	79.7	1.07 (1.01 – 1.13)	
Occupation*						
Sporadic work[a]	115	17.9	76	66.1	1.0	0.192
Not working[b]	83	12.9	66	79.5	1.20 (1.01 – 1.43)	
Unemployed[c]	110	17.1	74	67.3	1.02 (0.85 – 1.22)	
Social Benefits[d]	32	5.0	23	71.9	1.09 (0.84 – 1.40)	
Employee/Self-employed	302	47.0	212	70.2	1.06 (0.91 – 1.23)	
Housing						
Wall						
Brick/masonry	531	82.5	374	70.4	1.0	0.913
Others	113	17.5	79	69.9	1.00 (0.94 – 1.06)	
Number of rooms						
> 4	327	50.1	239	73.1	1.0	0.122
≤ 4	317	49.2	214	67.5	0.97 (0.93 – 1.01)	

Table 1. Continuation.

Variables	Sample		Excess weight		Crude PR	p
	n = 644	%	n	%	(95%CI)	
Basic sanitation						
Garbage disposal						
Public collection	580	90.1	409	70.5	1.0	0.773
Others	64	9.9	44	68.8	0.99 (0.92 – 1.06)	
Waste disposal						
General network	316	49.1	219	69.3	1.0	0.572
Others	328	50.9	234	71.3	1.01 (0.97 – 1.06)	
Water supply*						
General network	601	93.5	427	71.0	1.0	0.152
Others	42	6.5	25	59.5	0.93(0.85 – 1.03)	

95%CI: 95% confidence interval; MW: minimum wage; [a]sporadic/odd jobs/street work; [b]never worked and housewives; [c]has worked before, but had been unemployed for 30 days or more; [d]retired, pensioner, provisional benefits; *differences in sample values in some variables are due to the loss of observations: schooling (n = 633), race/ethnicity (n = 641), occupation (n = 642), water supply (n = 643).

Table 2. Prevalence and crude prevalence ratio (PR) of overweight in adults (20–59 years) in a poor urban area, according to behavioral variables and morbidities. Recife, 2014.

Variables	Sample		Excess weight		Crude PR	p
	n = 644	%	n	%	95%CI	
Behavioral						
Beans						
5–7 times	436	67.7	295	67.7	1.0	0.079
3–4 times	106	16.5	81	76.4	1.06 (1.00 – 1.11)	
1–2 times or never	102	15.8	77	75.5	1.05 (0.99 – 1.11)	
Vegetables and legumes						
5–7 times	276	42.9	199	72.1	1.0	0.458
3–4 times	119	18.5	86	72.3	1.00 (0.95 – 1.06)	
1–2 times or never	249	38.7	168	67.5	0.97 (0.93 – 1.02)	
Fruit						
5–7 times	200	31.1	142	71.0	1.0	0.387
3–4 times	147	22.8	109	74.1	1.02 (0.96 – 1.08)	
1–2 times or never	297	46.1	202	68.0	0.98 (0.94 – 1.03)	

Table 2. Continuation.

Variables	Sample		Excess weight		Crude PR	p
	n = 644	%	n	%	95%CI	
Soft drink or artificial juice						
1–2 times or never	360	55.9	260	72.2	1.0	
3–4 times	82	12.7	52	63.4	0.95 (0.89 – 1.02)	0.320
5–7 times	202	31.4	141	69.8	0.99 (0.94 – 1.03)	
Meats with excess fat						
No	440	68.3	301	68.4	1.0	
Yes	204	31.7	152	74.5	1.04 (0.99 – 1.08)	0.104
Physical activity						
Sufficiently active	506	78.5	355	70.2	1.0	
Insufficiently active	138	21.4	98	71.0	1.01 (0.96 – 1.06)	0.844
Morbidities						
Diabetes *mellitus**						
No	395	79.5	271	68.6	1.0	
Yes	102	20.5	90	88.2	1.10(1.03 – 1.17)	0.003
High blood pressure*						
No	401	62.3	222	62.8	1.0	
Yes	230	37.7	193	83.9	1.13(1.09 – 1.17)	< 0.001

95%CI: 95% confidence interval; *diabetes n = 497, high blood pressure n = 631.

The 30–39 years and 40–49 years age groups also showed an association with the outcome, in relation to the reference category (20–29 years), that is, as the age group increases, the prevalence of the problem was higher in relation to the reference category. The weekly frequency of bean consumption (≤ 2 times/week and never) showed an association with excess weight, in relation to the reference category (5–7 times/week), the lower the weekly frequency of bean consumption, the greater the prevalence of overweight. The referred morbidities diabetes and high blood pressure were also associated with the outcome, those who reported these morbidities had a higher frequency of excess when compared to those who did not (reference category). Such variables remained significantly associated with the outcome p < 0.05 (Table 3).

DISCUSSION

The high prevalence of excess weight found presupposes that poor or low-income communities are already included in the nutritional transition process. This result would

be unusual in an urban environment of marked poverty, since a few years ago the forecast would be high frequencies of weight deficit[9].

The most current study that can be taken as a reference was carried out in 2009, in a sample of 3,214 adults from deprived urban areas of Maceió (AL)[6]. This research revealed that 41.2% of adults were overweight/obese, while our study found a prevalence of 70.3%, well above the value found in Brazil in 2013 (56.9%)[5]. On an international level, practically identical prevalence rates to those of the Coelhos community (around 73%) were found in studies with poor populations in the United States[19] and Afghanistan[20].

The much higher prevalence obtained in this assessment could result in three possible interpretations. As excess weight represents a rapidly progressive epidemic in Brazil, it is acceptable that a marked difference in five years may result in the very rapid pace of this problem's increase. The second version would accept that the situation of adults in the analyzed area may be very different from that found in Maceió, in a larger sample distributed

Table 3. Adjusted analysis of excess weight in adults (20–59 years) in a poor urban area. Recife, 2014.

Variables	Adjusted PR	95%CI	p
Age group (years)			
20–29	1.0	1.0	
30–39	1.27	1.04 – 1.52	
40–49	1.23	1.01 – 1.49	0.018
50–59	1.07	0.87 – 1.31	
Economic class			
D/E (1 MW)	1.0	1.0	
C1/C2 (1.5–2 MW)	1.17	1.04 – 1.33	< 0.001
B1/B2 (3.5–7 MW)	1.40	1.20 – 1.64	
Weekly bean consumption			
5–7 times	1.0	1.0	
3–4 times	1.13	0.98 – 1.30	0.001
1–2 times or never	1.23	1.10 – 1.38	
Diabetes mellitus			
No	1.0	1.0	
Yes	1.20	1.09 – 1.32	< 0.001
High blood pressure			
No	1.0	1.0	
Yes	1.25	1.12 – 1.39	< 0.001

PR: prevalence ratios; 95%CI; 95% confidence interval; MW: minimum wage.

over several slum areas. A third conjecture would be that favela populations start to reproduce, and even exceed, a generalized pattern for the whole country, as part of the epidemiological homogenization expressed as the most updated scenario of the Brazilian population's nutritional status. This may represent the most consistent interpretation, although without the support of sequential, up-to-date and representative data on populations living in deprived urban areas.

In the Coelhos community, there was a statistically significant association between overweight/obesity and the age group, highlighting a higher prevalence among adults aged 30 to 39 years, and then stabilizing. In Brazil[4], a study on the nutritional status of the beneficiaries of the Bolsa Família Program[21] and on low-income women in Rio de Janeiro[22] also found an association between the problem and the age group, showing a higher prevalence of overweight among adults aged 40 years or over and 50–59 years, respectively. This finding may be related to the decrease in the level of physical activity[23], as well as basal metabolism and hormonal changes that happen with the aging process, which lead the body to store more fat[24]. Internationally, research carried out in the district of Kalutara, in Asia, found a higher prevalence of overweight in low-income adults, from the age of 40, with a reduction at the age of 50[25]. It is likely that the differences in life ecosystems specific to each low-income population may justify these mismatches in the results.

There was no association between overweight and education. According to VIGITEL[26], the frequency of overweight tends to decrease with increasing schooling, however we did not observe this in this study, since the prevalence of overweight was similar in different age groups, regardless of the level of education. This is probably because the low socioeconomic condition and the social context in which the study population is inserted ends up favoring the acquisition of cheaper and caloric foods.

In the higher classes of the sample, the highest prevalence of overweight was identified (B1/B2). However, this represented only 5.8% of the sample. The size of the study sample may have influenced this result, since a higher prevalence of the problem was expected in the poorest classes. However, it should be considered that the population studied is a poor community and, therefore, a homogeneous population, so the expectations may have been found with a larger sample, such as the case of the studies conducted in Maceió[6] and in Ceará[27], in which a higher prevalence of overweight was observed among adults with lower income.

A higher frequency of the problem was found among the black race/ethnicity and among adults without an occupation, although no significant association was observed. It is important to emphasize that being overweight has shifted its focus of risk to the most socially disadvantaged ethnicities, such as blacks and browns or other groups close to the condition of poverty, such as rural families and lower income strata[28,29].

In the present study, approximately 70% of the population consumes beans five or more times a week. According to the Family Budget Survey, in 2008 and 2009, beans are still among the most consumed foods by the Brazilian population ($\cong 70\%$)[30]. However, the low weekly consumption of beans (≤ 2 times) was shown to be associated with excess weight in this study, corroborating the study carried out in Belém (PA) on the consumption of beans in

adults[31], which may indicate a higher consumption of ultra-processed foods, in detriment to healthy foods such as beans. Furthermore, no associations were observed with other food consumption variables.

There was no association between the level of physical activity and the prevalence of overweight. The coexistence of 70.2% of sufficiently active individuals and approximately 70% of overweight/obesity are apparently conflicting results; similar findings were also observed in Pernambuco[7]. The high prevalence of active adults can be justified by the fact that the measurement of physical activity was performed by an instrument that considers activities performed in leisure, commuting, domestic and occupational activities, as well as by the socioeconomic condition of the population, which causes active commuting, occupational tasks and domestic activities to be the predominant type of physical activity, to the detriment of physical activity performed during leisure time, which is more common in developed countries[32,33].

As expected, according to what other studies show, high blood pressure and diabetes were associated with overweight/obesity[34-36]. It is a trilogy of comorbidities (high blood pressure, type II diabetes and overweight/obesity) that are commonly observed together.

The cross-sectional design stands out as a limitation of the study, as it constitutes a limitation in the analysis of the association between the associated variables and the outcome, due to the impossibility of inferring a causal relationship, disregarding the before/after relationship which, due to formal logic, must condition the relationship.

The fact that the study was carried out in a poor community is considered to be a positive point, considering that few studies are still carried out in these communities, and the knowledge of the health situation of poor populations is important for planning interventions.

CONCLUSION

The 70% prevalence of overweight/obesity in a poor area of Recife is well above the results identified in other urban populations with similar characteristics and even much higher in representative samples from Brazil. The high prevalence of the problem, standing at around 30% above the frequencies found in studies published in the country after 2003 implies that the population analyzed is included in the rapid process of nutritional transition that the country has experienced in the last 40 years.

From the analytical point of view, of the 22 groups of variables investigated, age group, economic class, weekly bean consumption, diabetes and high blood pressure, were the variables that made up the final model, adjusted to define the risks associated with overweight.

Conclusively, the high prevalence of overweight/obesity detected in the studied underprivileged urban area imposes the need to include this problem as a public health priority in these communities. Furthermore, it imposes the recommendation to expand similar studies and also a qualitative approach to other similar communities that are spread across the national territory, in order to get a glimpse of a still somewhat unknown situation and to signal priority interventions to them.

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