FACTORS ASSOCIATED WITH FOOD INSECURITY AMONG PEOPLE LIVING WITH HIV/AIDS

Fatores associados à insegurança alimentar em pessoas que vivem com HIV/AIDS

Factores asociados con la inseguridad alimentaria de personas con VIH /SIDA

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ABSTRACT

Objective: To analyze factors associated with food insecurity in people living with HIV/AIDS. **Methods:** Cross-sectional study carried out with 205 patients treated, from December 2016 to April 2017, at a referral hospital in infectious diseases in the state of Ceará. The study collected socioeconomic (income, occupation, housing conditions, schooling), demographic (sex, age, marital status), and anthropometric (weight and height) data, along with data on habits (use of alcohol, drugs and practice of physical activity) and food safety. Food insecurity was evaluated through the Brazilian Food Insecurity Scale, and its associations, with use of Pearson's chi-square test and prevalence ratio. **Results:** Out of 205 patients, 68.3% (n=140) were men; 56.1% (n=115) were 39 to 58 years old; 61% (n=125) were single; 60% (n=124) were unemployed; 49.8% (n=102) had income lower than 1½ minimum wage; 38.5% (n=79) had studied only up to middle school; 47.3% (n=97) were overweight; 70.7% (n=145) lived with 4 or fewer people; 79.5% (n=163) did not use alcohol; 87.3% (n=179) did not use drugs, and 64.4% (n=132) did not practice any physical activity. Food insecurity was 47.3% (n=97). Of these, 10.7% (n=22) were at a serious level. Statistical associations were found between food insecurity and age group (p = 0.009), schooling (p = 0.013), number of people per household (p < 0.001), and monthly household income (p < 0.001). **Conclusion:** A high prevalence of food insecurity was observed in the sample, and it was associated with demographic (age) and socioeconomic characteristics (income, schooling and housing conditions).

Descriptors: Food and Nutrition Security; Social Vulnerability; Acquired Immunodeficiency Syndrome.

RESUMO

Objetivo: Analisar fatores associados à insegurança alimentar em pessoas que vivem com HIV/AIDS. Métodos: Estudo transversal, realizado com 205 pacientes atendidos, de dezembro de 2016 a abril de 2017, em um hospital de referência em doenças infecciosas do estado do Ceará. Foram coletados dados socioeconômicos (renda, ocupação, condições de residência, escolaridade), demográficos (sexo, idade, estado civil), antropométricos (peso e altura), sobre hábitos (uso de álcool, drogas e práticas de atividade física) e de segurança alimentar. Avaliou-se a insegurança alimentar por meio da Escala Brasileira de Insegurança Alimentar, e as suas associações, através do teste qui-quadrado de Pearson e razão de prevalência. Resultados: Do total de 205 pacientes, 68,3% (n=140) eram homens; 56,1% (n=115) tinham de 39 a 58 anos; 61%, (n=125) estavam solteiros; 60% (n=124) não estavam empregados; 49,8% (n=102) possuíam renda inferior a 1 e ½ salário-

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*mínimo; 38,5 % (n=79) possuíam apenas nível fundamental; 47,3% (n=97) estavam sobrepesados; 70,7% (n=145) moravam com 04 ou menos pessoas; 79,5% (n=163) não consumiam álcool; 87,3% (n=179) não usavam drogas e 64,4% (n=132) não praticavam atividade física. A insegurança alimentar foi de 47,3% (n=97). Desses, 10,7% (n=22) estavam em nível grave. Encontrou-se associações estatísticas entre insegurança alimentar e faixa etária (p = 0,009), escolaridade (p = 0,013), número de pessoas por domicílio (p < 0,001) e renda mensal domiciliar (p < 0,001). **Conclusão:** Observou-se alta prevalência de insegurança alimentar na amostra, que esteve associada às características demográficas (idade) e socioeconômicas (renda, escolaridade e condições de moradia).*

Descritores: *Segurança Alimentar e Nutricional; Vulnerabilidade Social; Síndrome de Imunodeficiência Adquirida.*

RESUMEN

Objetivo: *Analizar los factores asociados con la inseguridad alimentaria de personas con el VIH/AIDS.* **Métodos:** *Estudio transversal realizado con 205 pacientes asistidos entre diciembre de 2016 y abril de 2017 en un hospital de referencia en enfermedades infecciosas del estado de Ceará. Se recogieron los datos socioeconómicos (renta, ocupación, condiciones de vivienda, escolaridad), demográficos (sexo, edad, estado civil), antropométricos (peso y altura), sobre los hábitos (uso del alcohol, drogas y prácticas de actividad física) y de seguridad alimentaria. Se evaluó la inseguridad alimentaria a través de la Escala Brasileña de Inseguridad Alimentaria y sus asociaciones a través de la prueba Chi-cuadrado de Pearson y la razón de prevalencia.* **Resultados:** *Del total de 205 pacientes, el 68,3% (n=140) eran hombres; el 56,1% (n=115) tenían entre 39 y 58 años; el 61%, (n=125) eran solteros; el 60% (n=124) sin trabajo; el 49,8% (n=102) tenían renta inferior a 1 y ½ sueldo mínimo; el 38,5% (n=79) tenían solamente la educación primaria; el 47,3% (n=97) tenían sobrepeso; el 70,7% (n=145) vivían con 4 personas o menos; el 79,5% (n=163) no consumían el alcohol; el 87,3% (n=179) no usaban drogas y el 64,4% (n=132) no practicaban actividad física. La inseguridad alimentaria ha sido del 47,3% (n=97). De eses, el 10,7% (n=22) estaban con el nivel grave. Se encontró asociaciones estadísticas entre la inseguridad alimentaria y la franja de edad (p = 0,009), la escolaridad (p = 0,013), el número de personas por domicilio (p < 0,001) y la renta mensual del domicilio (p < 0,001).* **Conclusión:** *Se observó elevada prevalencia de inseguridad alimentaria en la muestra que estuvo asociada con las características demográficas (edad) y socioeconómicas (renta, escolaridad y condiciones de vivienda).*

Descriptores: *Seguridad Alimentaria y Nutricional; Vulnerabilidad Social; Síndrome de Inmunodeficiencia Adquirida.*

INTRODUCTION

Food and nutrition security (FNS) assumes that everyone has the right to regular and permanent food, from access to the table. The food offered should be suitable, in sufficient quantity and quality, without compromising other basic needs such as education, health and housing. Moreover, food security must also respect the dignity and cultural diversity of the individuals. It represents the right of everyone to nourish themselves with dignity[1].

In order to ensure a healthy and adequate diet for everyone, Brazil makes use of legal instruments comprised in the National Policy on Food and Nutrition Security (*Política Nacional de Segurança Alimentar e Nutricional - PNSAN*), by means of Federal Law 11.346, dated September 15, 2006, which is regarded as the Organic Law on Food and Nutrition Security (*Lei Orgânica de Segurança Alimentar e Nutricional - LOSAN*)[1], and Constitutional Amendment no. 64 of the 1988 Constitution, which, in 2010, included food as a social right, and was considered a milestone in the struggle for the human right to food[2].

Unlike FNS, food and nutritional insecurity (FNI) occurs when there is a violation of these rights, thus rendering impossible the adequate, safe and sufficient access to food and nutrients. It can be characterized from the fear and concern of not being able to provide food at the table daily, up to the lack of adequate distribution of food for the family and the lack of food itself[3,4].

FNI was evaluated, in Brazil, through the National Household Sample Survey (*Pesquisa Nacional por Amostra em Domicílios - PNAD*) in 2013. The findings pointed out an estimate of 52 million (25.8%) inhabitants living in food insecurity. Of these, 12 million were living in the countryside, corresponding to 40% of the rural population (n = 30 million). Of all regions in the country, the Northeast was identified as the one with the highest number of households in food insecurity, accounting for 44.2%[5].

Food insecurity can be identified in several circumstances, including: hunger, malnutrition, poverty, social inequalities, uncertainty regarding food acquisition, abusive prices, diseases, and other situations[2,3].

Among the groups vulnerable to FNI, people living with HIV/AIDS stand out. Food insecurity and HIV/AIDS are related in a vicious cycle that can lead to macro- and micronutrient deficiencies and reduced adherence to treatment, and may even interfere with HIV transmission. Stigma also gives rise to an environment that is more susceptible to food insecurity, due to decreased social support[6].

The number of people living with HIV/AIDS (PLWHA) in 2015, worldwide, was 36.7 million, with 2.1 million new cases and 1.1 million deaths from HIV/AIDS. In Brazil, there were 830,000 cases and, in Ceará, up to June 2016, 16,790 cases of HIV/AIDS were reported, and the metropolitan region of Fortaleza accounted for the highest concentration of cases[7,8].

Regarded as one of the leading causes of morbidity and mortality worldwide, food insecurity is closely associated with the HIV epidemic. It is estimated that around 1 billion people worldwide lack the availability of enough food, which shows that the prevalence of food insecurity among PLWHA is particularly high[7].

Given the important relationship between food insecurity and HIV/AIDS, the possibility of direct interference with the patient's adherence to treatment and disease progression, as well as the absence of papers published in Ceará, this study aimed to analyze the factors associated with food insecurity in people living with HIV/AIDS.

METHODS

This is a cross-sectional, observational and analytical study, with a quantitative approach, carried out with patients with HIV/AIDS, who were treated at the outpatient clinic of a referral hospital in infectious diseases in the state of Ceará, during the data collection period from December 2016 to April 2017.

Convenience sampling was determined by using the calculation of sample size for finite population[9], through the monthly average of patients attended (n = 989). The percentage of 44% of food insecurity, which is the average of the studies held in Brazil, was taken as outcome of interest, with 90% confidence level of data and a margin of error of 5%; this led to a sample of 205 patients, in total, for the interview.

The invitation to participate in the present study occurred before or after consultations with the doctor or other health professional, on the working days of the HIV/AIDS outpatient clinic, and after having the Informed Consent Form signed, the interviews were initiated in a reserved room.

During the interview, a questionnaire was applied addressing socioeconomic (income, occupation, housing conditions, schooling) and demographic (sex, age, marital status) variables, with questions on alcohol or drug use habits, and physical activity practices. The Brazilian Food Insecurity Scale (*Escala Brasileira de Insegurança Alimentar - EBIA*) [10] was adopted and the anthropometric evaluation was carried out, collecting information on weight and height, in compliance with the Ministry of Health[11] guidelines.

In order to classify the food insecurity level of the population, this study used the *EBIA*, composed of 15 yes-no questions, for which each affirmative answer scores 1 point. For families with persons under 18 years of age, the cutoff points were: 0 indicates security (FNS); 01-05 indicates mild insecurity (MiFNI); 06-10, moderate insecurity (MoFNI); 11-15, severe insecurity (SeFNI). For families without children under 18, the cutoff points were: 0, FS; 01-03, MiFNI; 04-05, MoFNI and 06-08, SeFNI[10].

For the anthropometric evaluation, weight and height were measured using a digital scale with stadiometer (Balmak®) model BK-200F[11]. The nutritional status was determined by using the Body Mass Index (BMI) for adults and the elderly, adapted from WHO parameters[12]. It was decided to classify adults into leanness (BMI < 18.5 kg/m²), eutrophy (BMI from 18.5 to 24.9 kg/m²) and excess weight (BMI > 24.9 kg/m²); and the elderly into leanness (BMI < 22 kg/m²), eutrophy (BMI from 22 to 27 kg/m²) and excess weight (BMI > 27 kg/m²).

GraphPad Prism (version 5.0) was the software used for data analysis, with the statistical significance level set at 5%. Firstly, a descriptive analysis was carried out to measure the frequency of the study variables. Next, the prevalence of FNI was also calculated, according to the different categories of variables under analysis.

In order to investigate the association between the independent variables and the prevalence of food insecurity, Pearson's chi-square test was performed. For measurement of the intensity of the association, the crude prevalence ratio (PR) was used, with a 95% confidence interval (95% CI), and taking as statistically significant associations those that obtained a value of p < 0.05.

The present study was approved by the Human Research Ethics Committee with of the hospital of reference in infectious diseases of Ceará, under Approval no 1.803.201.

RESULTS

A total of 205 people living with HIV/AIDS, who were treated at a referral hospital in Ceará, Brazil, were evaluated: 68.3% (n = 140) were males and 31.7% (n = 65), females; there was a higher prevalence (56.1%, n = 115) of individuals in the 39- to 58-year-old group and of the single persons (61%, n = 125). In addition, 60% (n = 124) were unemployed, or on sick leave/ receiving retirement benefits; and 49.8% (n = 102) of the population had a household income lower than 1.5 minimum wage. On schooling, 38.5% (n = 79) only studied up to middle school (Table I).,

Regarding the nutritional evaluation, 6.8% (n = 14) were diagnosed with thinness, 45.8% (n = 94), with eutrophy and 47.3% (n = 97), with overweight. A significant percentage the interviewees lived in households with four or less residents (70.7%, n = 145), did not use alcohol (79.5%, n = 163) or drugs (87.3%, n = 179), and did not practice physical activity (64.4%, n = 132) (Table I).

Associations between food insecurity and the variables are shown in Table I. They were statistically significant between food insecurity, age group (p = 0.009), schooling (p = 0.013), number of people per household (p < 0.001) and monthly household income (p < 0.001).

According to the prevalence ratios and their respective confidence intervals, it was observed that, for people living with HIV/AIDS, those who are most likely to be in a situation of food insecurity are individuals under 59 (PR = 1.98, CI = 1.07 - 3.66) and who studied only up to middle school (RP = 1.44, CI = 1.08 - 1.91) and those with monthly family income under 1.5 minimum wage (RP = 2.76, CI = 1.93 - 3.94). Households with more than four residents are less likely to, though (Table I).

Table I - Distribution of food security /insecurity, crude prevalence ratio (PR) and confidence interval (CI) in people living with HIV/AIDS treated at a referral hospital in infectious diseases. Fortaleza, Ceará, 2017.

Variable	Total Individuals (205)		Food Security (108)		Food Insecurity (97)		Crude PR	95 % CI	p Value*
	n	%	n	%	n	%			
Sex									0.060
Female	65	31.7	28	43.1	37	56.9	1.33	0.99-1.77	
Male	140	68.3	80	57.1	60	42.9	1.00	-	
Age group (years)									0.009
< 59	174	84.9	85	48.8	89	51.2	1.98	1.07-3.66	
≥ 59	31	15.1	23	74.2	8	25.8	1.00		
Marital status									
Singles	125	61	66	52.8	59	47.2	1.03	0.72-1.47	0.872
Married	48	23.4	26	54.2	22	45.8	1.00	-	
Divorced	13	6.3	6	46.2	7	53.8	1.17	0.65-2.12	0.608
Widower	19	9.3	10	52.6	9	47.4	1.03	0.59-1.82	0.910
Schooling									0.013
Up to middle school	79	38.5	33	41.8	46	58.2	1.44	1.08-1.91	
High school and higher	126	61.5	75	59.5	51	40.5	1.00	-	
Occupation									
On employment	81	39.5	41	50.6	40	49.4	1.00	-	
Unemployed	58	28.3	24	41.4	34	58.6	1.19	0.87-1.62	0.282
Sick leave or retirement benefits	66	32.2	43	65.2	23	34.8	0.71	0.48-1.05	0.077
Own home									0.153
Yes	139	67.8	78	56.1	61	43.9	1.00	-	
No	66	32.2	30	45.5	36	54.5	0.85	0.60-1.07	
Number of persons per household									< 0.001
≤ 4	145	70.7	62	42.8	83	57.2	2.45	1.52-3.96	
> 4	60	29.3	46	76.7	14	23.3	1.00	-	
Monthly household income									< 0.001
< 1½ minimum wage	102	49.8	31	30.4	71	69.6	2.76	1.93-3.94	
≥ 1½ minimum wage	103	50.2	77	74.8	26	25.2	1.00	-	
Use of alcohol									0.091
Yes	42	20.5	27	64.3	15	35.7	0.71	0.46-1.1	
No	163	79.5	81	49.7	82	50.3	1.00	-	
Use of drugs									0.333
Yes	26	12.7	16	61.5	10	38.5	0.79	0.48-1.32	
No	179	87.3	92	51.4	87	48.6	1.00	-	
Practice of Physical Activity									0.105
Yes	73	35.6	44	60.3	29	39.7	0.77	0.56-1.07	
No	132	64.4	64	48.9	68	51.5	1.00	-	
Nutritional Diagnosis (BMI)**									
Thinness	14	6.8	8	57.1	6	42.9	0.84	0.44-1.59	0.567
Eutrophy	94	45.8	46	48.9	48	51.1	1.00	-	
Overweight	97	47.3	54	55.7	43	44.3	0.87	0.64-1.17	0.352

* Pearson's chi-square test. ** BMI - Body Mass Index.

The prevalence of food insecurity was found at 47.3% (n = 97), being: 24.9% (n = 51) of mild insecurity (MiFNI), 11.7% (n = 24) of moderate insecurity (MoFNI) and 10.7% (n = 22) of severe insecurity (SeFNI), as shown in Table II.

Among food-insecure households, 36.1% (n = 35) of had individuals under 18 years of age. When comparing households with and without underage persons, the prevalence of SeFNI was higher in the former group (25.7%, n = 9) (Figure 1).

Table II - Frequency distribution of food security and insecurity of people living with HIV/AIDS treated at a referral hospital in infectious diseases, according to the Brazilian Food Insecurity Scale (*EBIA*). Fortaleza, Ceará, 2017.

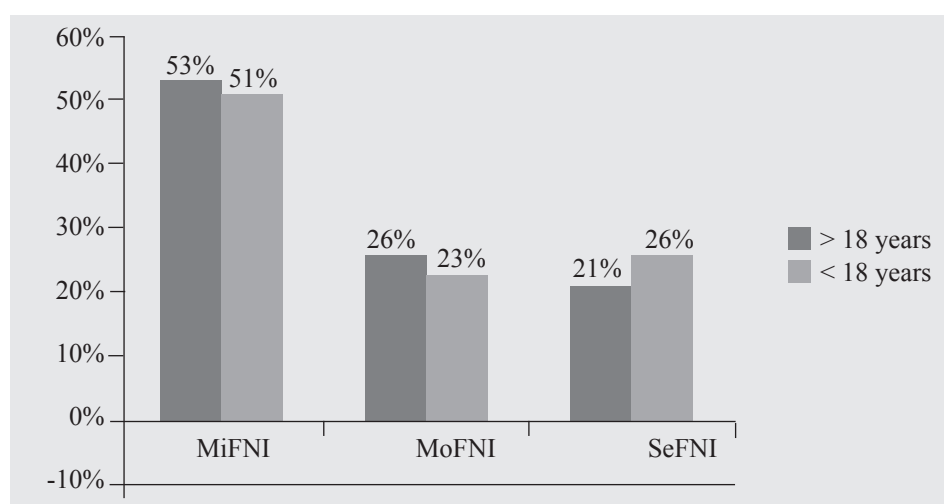| EBIA	n	Frequency (%)
Food security	108	52.7
Food insecurity	97	47.3
Mild	51	24.9
Moderate	24	11.7
Severe	22	10.7

Figure 1 - Prevalence of different food insecurity conditions, according to the existence or not of persons under 18 years of age in the residences of people living with HIV/AIDS treated at a referral hospital in infectious diseases. Fortaleza, Ceará, 2017.
Legenda: MiFNI: mild food insecurity; MoFNI: moderate food insecurity; SeFNI: severe food insecurity

DISCUSSION

In Brazil, in 2015, the highest concentration of HIV/AIDS cases was in the age range of 25 to 39 years, with a majority of men and higher occurrences among those with schooling ranging from 5th grade to incomplete 8th grade (29.8%)[7,13]. When Ceará is focused, the characteristics of the population change somewhat, with higher rates of disease in the 30- to 39-year-old group, but also concentrated in male sex[8].

The highest prevalence of men with HIV/AIDS occurs in Brazil, especially in Ceará, as observed in this study as well. This fact was already expected given the gradual reduction of cases among women and an increase among men. Information evidenced by the epidemiological bulletin, released in 2006, showed that, for each case in a woman, there were 1.2 cases in men. This value increased in 2015, when, for each case in woman, there were 3 cases in men[7,13].

In regard to the age group, it was observed that, in Ceará, it is higher than in the remaining states of Brazil. However, the ones found in the present study are even higher than the age group of the state, since it is between 39 and 58 years, a higher-than-expected result. This may be due to the fact that the distribution of HIV/AIDS does not occur homogeneously[14].

On schooling, the current study found that 38.5% of the research participants studied until middle school, and the others (61.5%) achieved high school or higher education. This is contradictory to data regarding Brazil, which shows the largest part of this population having studied only up to incomplete middle school[13]. Such information was considered favorable for the study population, since low schooling is a predictor of food insecurity and, once more, it reflects the non-homogeneous distribution of HIV/AIDS[14].

Studies carried out in Brazil with patients living with HIV/AIDS have also characterized the study population, coinciding with some results found in the present study. For instance, the prevalence of the male majority and the age group higher than the national (which is between 43 and 45 years old), which may be related to a change in the demographic profile of this population, with an increase in the prevalent age group[15,16]. As for the marital status, only one of the Brazilian studies[16] has investigated this question, and it also found a significant number of single people. Such result may be related to the fact that the disease is sexually transmitted. Nevertheless, no study evaluating the difficulty faced by patients with HIV to establish relationships was found. Further studies should be able to verify whether this type of difficulty exists for these patients.

Studies associating food insecurity with HIV/AIDS in Brazil are scarce, despite the fact that the national population with HIV/AIDS and food insecurity data are large. Only in two cities, Brasília[16], Federal District, and Limeira, São Paulo[15], have such studies been found, pointing out as their main findings the association of FNI with low income and lower consumption of fruits and meat[15], in addition to low level of education and social class[16].

HIV/AIDS is closely linked to food insecurity and nutritional status, as this association leads to reduced adherence and response to the antiretroviral therapy, thus reducing differentiation cells (CD4) and increasing the viral load. All this, along with opportunistic infections, can accentuate the socioeconomic impacts on people living with HIV/AIDS (PLWHA), accelerating disease progression and decreasing individual survival rates[16,17].

The threat posed by HIV/AIDS to food security was first recognized only in the late 1980s and early 1990s, pointing out low schooling and low family income as some predictors of food insecurity[17].

In the present study, data on food insecurity showed a high percentage (47.3%) for the sample evaluated. SeFNI was quite high (10.7%) when compared to data from the National Household Sample Survey (*PNAD*), which evaluated that, up to 2013, there was a percentage of 25.8% of people in Brazil who were living in food insecurity, 17.1% of which were in MiFNI, 5.1% in MoFNI and 3.6% in SeFNI[5].

The results found in the current study are higher than the national ones presented for Brazil but, when compared to data on the Northeast region, the values approach. It is worth noting that this region is identified with the largest number of food insecure people in Brazil, corresponding to 45% of the Brazilian population and 38.1% of the Northeastern population, whose values were: 23.6% in MiFNI, 8.9% in MoFNI and 5.6% in SeFNI[5]. The only exception was related to SeFNI, whose percentage was almost twice the expected one. This may be due to the virus infection itself, which may cause family members to weaken and have their individual and family economic capacity reduced, thereby intensifying the food insecurity of this population[6].

Studies addressing food insecurity in PLWHA, in Brazil, have also found high values for FNI when compared to the national prevalence, although they were not performed in the Northeast Region. In the Southeast, in Limeira, São Paulo, where the FNI prevalence was 51% [15], and in the Central-West Region, in Brasília, Federal District, with 36.8% of FNI[16].

In other countries, there are more studies on the relationship between HIV/AIDS and food insecurity, such as the findings in Ethiopia (63%)[17], San Francisco (54.6%)[18], British Columbia (71.3%)[19] and the Democratic Republic of Congo (57%)[20], showing that food insecurity is present everywhere, mainly in marginalized and stigmatized populations.

This study also shows that there were individuals under the age of 18 in 36.1% of the households with food insecurity. This is a factor that can exacerbate the family's insecurity situation, as it has been observed that SeFNI is higher in the underage group, which may have occurred because the adults in the household decreased their food supply in order to provide children with adequate amount of food, a fact also found in a research with children in Colombo (Paraná)[21].

Food insecurity in PLWHA is often related to the nutritional status of the patient, as they present a high risk for malnutrition, due to reduced energy intake resulting from anorexia and early satiety. Similarly, FNI is also related to the systemic effects of coinfections; swallowing impaired by oral opportunistic infections; and progressive incapacity, which leads to unemployment and, consequently, to difficulty in obtaining food. Furthermore, the virus infection itself increases metabolic requirements and is associated with malabsorption of fat and carbohydrates, which aggravates the association between malnutrition and disease progression[6].

Moreover, micronutrient malnutrition is also very present in PLWHA by means of increased oxidative stress, which can elevate viral loads of HIV and, thereby, increase the individual's infectivity and the likelihood of HIV transmission to others[6].

Despite the strong evidence linking malnutrition in PLWHA to food insecurity, the present study did not find a statistically significant association between these two variables, which probably occurred because of the small percentage of leanness (6.8%) in the sample studied.

Not only can malnutrition be involved with food insecurity, but also can other factors, such as alcohol dependence, drug use, low income and low schooling[4]. These aspects constitute the process of uncertainty of access to safe food in a socially acceptable way, which leads to hunger experiences[17]. Low schooling and low family income are important features in studies on food insecurity and HIV/AIDS, showing that there is an association between these variables. The results of this and other studies[15,16] consolidate this relationship.

Another association found in this study was: for individuals aged under 59, the prevalence of FNI; and the number of people living in the same household revealed higher FNI (57.2%) in the group with four or fewer people living together, which

is contrary to *PNAD* results, which showed a percentage of 8.2% for households with four to six residents and 6.5% for those with up to three residents[5].

Until recently, food insecurity could not be assessed, since there was no official Brazilian instrument with that purpose. This changed when a tool named Brazilian Scale of Food Insecurity (*EBIA*), adapted from the scale developed by the United States Department of Agriculture (USDA)[10], was validated. Since then, this scale has been recognized as a sensitive indicator to identify families vulnerable to food insecurity[22,23].

The scale measures food insecurity and classifies it into mild, moderate and severe, and also attests to the individual's food security in case the food needs are fully satisfied. *EBIA* is based on the economic and dietary conditions of the family, on the perceptions and experiences reported by the individuals involved[10,23].

All the studies analyzed used the *EBIA* or the USDA scale to measure FNI by means of studies following similar methodological paths, which renders it possible to have the findings compared. Moreover, *EBIA* offers several advantages in its application, such as: to learn how people who are involved in food insecurity and/or hunger perceive it; catch the psychological and physical dimensions of the people involved; classify individuals and families according to the level of food insecurity they are experiencing, in addition to the low cost of applying the instrument[22,23].

In order to control food insecurity, Brazil relies on the Organic Law on Food and Nutrition Security (*LOSAN*), which aims to guarantee the human right to food and considers that food and nutritional security comprises: access to food, sustainability, health promotion, biological, health, nutritional and technological quality of food; cultural diversity; access to information and implementation of public policies[1] and thus in community health.

Despite all the artifices implemented in Brazil to combat food insecurity, it is still very prevalent[5], especially in marginalized and stigmatized populations with PLWHA. The scarcity of studies in the area increases the lack of knowledge and uncertainties on the subject, which makes the results of this research relevant.

The present study presents limitations due to its cross-sectional design, rendering it impossible to establish causal relationships between the studied variables and the outcome, in addition to using random sampling, thus limiting the results to populations with similar characteristics. It stands out, however, that the findings may reveal interesting hypotheses for other studies to formulate their own hypotheses for causality analysis.

In view of the high prevalence of food insecurity found among people living with HIV/AIDS, it is understood that this can directly interfere with patient adherence to treatment and disease progression. The result of this research should be viewed with care, aiminh to have more interventions of public health policies carried out in order to ensure food and nutritional security of this population.

CONCLUSION

There was a high prevalence of food insecurity in the sample, which was associated with demographic (age) and socioeconomic characteristics (income, schooling and housing conditions).

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