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FOOD INSECURITY IN FAMILIES ASSISTED BY THE FAMILY HEALTH STRATEGY INSEGURANÇA ALIMENTAR EM FAMÍLIAS ASSISTIDAS PELA ESTRATÉGIA SAÚDE DA FAMÍLIA INSEGURIDAD ALIMENTARIA EN FAMILIAS ASISTENCIADAS POR LA ESTRATEGIA DE SALUD DE LA FAMILIA

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ABSTRACT

Objective: investigating the prevalence of food insecurity in families assisted by the Family Health Strategy. **Method:** a cross-sectional, descriptive study conducted with 224 families of a Piauí municipality in the period from March to June 2012. Data were collected using a structured questionnaire. They were analyzed using the Statistical Package for the Social Sciences (SPSS/ PASW), version 18.0. Descriptive analyzes were performed, inferential, as well as bivariate analyzes presented in a figure and tables. The research project was approved by the Research Ethics Committee, CAAE 0389.0.043.000-11. **Results:** 88,4% of the families had food insecurity. Among the levels, there is, light in 46,4%; 25,0% moderate and 17,0% severe. **Conclusion:** high levels of food insecurity prevail over the published findings showing risks of malnutrition and health problems. The restructuring of food and nutrition security policy in the municipality for effective assistance to families becomes necessary. **Descriptors:** Food and Nutritional Security; Food; Family Health.

RESUMO

Objetivo: investigar a prevalência de insegurança alimentar em famílias assistidas pela Estratégia Saúde da Família. **Método:** estudo transversal, descritivo, realizado com 224 famílias de um município piauiense, no período de março a junho de 2012. Os dados foram coletados por meio de um questionário estruturado. Eles foram processados com a utilização do aplicativo Statistical Package for the Social Sciences (SPSS/PASW), versão 18.0. Foram realizadas análises descritivas, inferenciais, como também análises bivariadas, apresentados em uma figura e tabelas. O projeto de pesquisa foi aprovado pelo Comitê de Ética em Pesquisa, CAAE 0389.0.043.000-11. **Resultados:** 88,4% das famílias apresentaram insegurança alimentar. Dentre os níveis, verificou-se, leve em 46,4%; moderado 25,0% e grave 17,0%. **Conclusão:** elevados índices de insegurança alimentar superam os achados da literatura evidenciando riscos de desnutrição e agravos à saúde. Faz-se necessária a reestruturação da política de segurança alimentar e nutricional no município para o efetivo atendimento às famílias. **Descritores:** Segurança Alimentar e Nutricional; Alimentos; Saúde da Família.

RESUMEN

Objetivo: investigar la prevalencia de la inseguridad alimentaria en las familias asistidas por la Estrategia Salud de la Familia. **Método:** un estudio transversal, descriptivo realizado con 224 familias del municipio de Piauí, en el período de marzo a junio de 2012. Los datos fueron recolectados a través de un cuestionario estructurado. Ellos fueron procesados utilizando el programa Statistical Package for the Social Sciences (SPSS/PASW), versión 18.0. Se realizaron análisis descriptivos, análisis inferencial, así como bivariantes, presentadas en una figura y tablas. El proyecto de investigación fue aprobado por el Comité Ético de Investigación, CAAE 0389.0.043.000-11. **Resultados:** 88,4% de las familias tenían la inseguridad alimentaria. Entre los niveles, verificó se leve en el 46,4%; 25,0% moderado y el 17,0% grave. **Conclusión:** los altos niveles de inseguridad alimentaria son mayores que los resultados publicados en la literatura, que muestran los riesgos de problemas de desnutrición y agravios a la salud. Es necesaria la reestructuración de la política de seguridad en la alimentación y nutrición en el municipio para la asistencia efectiva a las familias. **Descriptores:** la Seguridad Alimentaria y la Nutrición; Alimentación; Salud de la Familia.

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INTRODUCTION

The concept of Food and Nutritional Security (SAN) is understood as the comprehension of all to regular and permanent access food of quality in sufficient quantity, without compromising access to other essential needs, based on food health-promoting practices that respect cultural diversity and that are socially, economically and environmentally sustainable.¹⁻²

The Food Insecurity (IA) is determined mainly by poverty and social inequalities³, the IA situations can be identified by various manifestations, such as hunger, malnutrition, specific deficiencies, overweight, diseases of inadequate nutrition and consumer products harmful to health.⁴⁻⁶

The severity of the IA is classified into the following levels: the worry of missing food (IA Take), the commitment of family food quality (IA Moderate) and quantitative reduction of food among children and/or rupture the resulting power standards the lack of food among children; hunger (when someone gets the whole day without eating, for lack of money to buy food) as more serious aspect, the quantitative restriction in the availability of food (IA Grave).⁵ In its most severe forms (moderate and severe) contributed to the reduction of all food groups, further increasing dietary inadequacy observed in children.⁶

Ensuring the act of feeding dignity is still far from reality for millions of people worldwide. In Brazil about 17 million people go hungry and suffer from malnutrition. The Food Insecurity (IA) reaches on average 30,2% of the population. Considering the five major regions, the Northeast showed the highest proportion of IA (46,1%), in all its states, with the Piauí the second state worse off, with more than half of its population (58,6%) affected by the injury, second only to the Maranhão (64,6%).⁷

Piauí has 224 municipalities, of which more than half is located in the semiarid region which is characterized by the occurrence of savanna biome, high temperatures, low humidity and volume of rainfall and low rainfall, erratic and poorly distributed throughout the year, and its social indicators for health, education and income are considered the worst in the national average.⁸ Among the municipalities of the region, is Francisco Santos, which has a resident population of 8.592 inhabitants⁹, assisted by four teams of the Family Health Strategy (FHS).

The primary care role is to monitor all the families, especially the Bolsa Família Program (PBF); consist of people with social vulnerability, including food inaccessibility.¹⁰⁻¹ The relational approach to food and nutrition contributes to the practices offered by the health sector in the valuation of the human being, apart from the biological condition and the recognition of its centrality in the health production process.⁴

Considering the influence of food access on the health situation and the responsibility of the health sector to monitor the diet and nutrition of the cities, this study aims to evaluate the prevalence of food insecurity in families assisted by the Family Health Strategy in a city of Piauí semiarid in order to contribute to the (re) targeting protection actions and confrontation of this disease, mainly in the municipalities of similar conditions.

METHOD

There was performed a descriptive, cross-sectional study with a quantitative approach to families assisted by the Family Health Strategy and registered in the Bolsa Família Program. The survey was conducted in the municipality of Francisco Santos (PI), located in the center-south of the state, integrating micro of Agricultural Regions, with land area of 419,860 km². The town has a resident population of 8.512 inhabitants, with 3.979 living in the urban area and 4.613 in the countryside.⁹

The study population is composed of 224 families benefited by the Family Grant Program which are assisted by the Family Health Strategy (FHS), selected according to the following inclusion criteria: be registered families in the Bolsa Família Program, having children under five years old and the program owner sign the Informed Consent (IC).

Data were collected at home, through interviews, using structured questionnaire with the holder of the Bolsa Família, valuing the knowledge domain that family member on the daily dynamic of the house. The survey was conducted by the researcher who is Nutritionist of the municipality, by appointment, in order not to interfere with the respondent's routine activities and ensure time and place suitable for data collection.

The questionnaire addressed issues related to socioeconomic and demographic profile, the characteristics of households, such as income, composition, type of home, number of rooms, water supply, sewerage and garbage collection, health services used, as well as

information about the interviewee such as gender, age, occupation and position in the family. This instrument was previously tested with ten families also enrolled in the Program, made only by adults.

The situation of domestic food insecurity was investigated from the Brazilian Food Insecurity Scale (EBIA), a structured form adapted from the United States Department of Agriculture and validated to Brazil, currently used in national surveys. The instrument consists of 14 closed questions with yes or no answers about the experience in the three previous months, food insufficiency in its various levels of intensity. The scoring scale varies in a range of 0 to 15 points. This tool allows you to sort the situation of families in Security or Food Insecurity - IA, being able to identify, in the latter, three different levels: Mild, Moderate or Severe.⁷

EBIA is the one-dimensional scale of perceived food insecurity that captures the progressive worsening of the situation, through intermediate levels where families resort to distribution strategies less food to its members, worsening nutritional quality and diet diversification, due to lower costs, but also the elimination of some meals.¹²

Data were analyzed using the Statistical Package for Social Sciences application (SPSS/PASW), version 18.0. Descriptive analyzes were performed, inferential, as well as bivariate analyzes to observe the

relationship between food insecurity and other study variables. The variables were analyzed for normal distribution using the Kolmogorov-Smirnov test. Chi-square tests were used to check the association between variables, and ANOVA and Bonferroni Posthoc to verify differences between the averages of the variables and the three levels of food insecurity. Statistical significance was set at $p<0,05$, with a 95% confidence interval.

They were seen all the ethical principles contained in Resolution 196/96 of the National Council on Health, which regulates research involving human subjects. The study was approved by the Research Ethics Committee of the University Center Uninovafapi - CAAE No. 0389.0.043.000-11.

RESULTS

The proportion of households in food insecurity situation (IA) found was 88,4% (equivalent to 198 households), about 4,5 residents per household. Of these homes, 46,4% were in a situation of food insecurity, the lightly; 25,0% in moderate; 17,0% in severe (Figure 1).

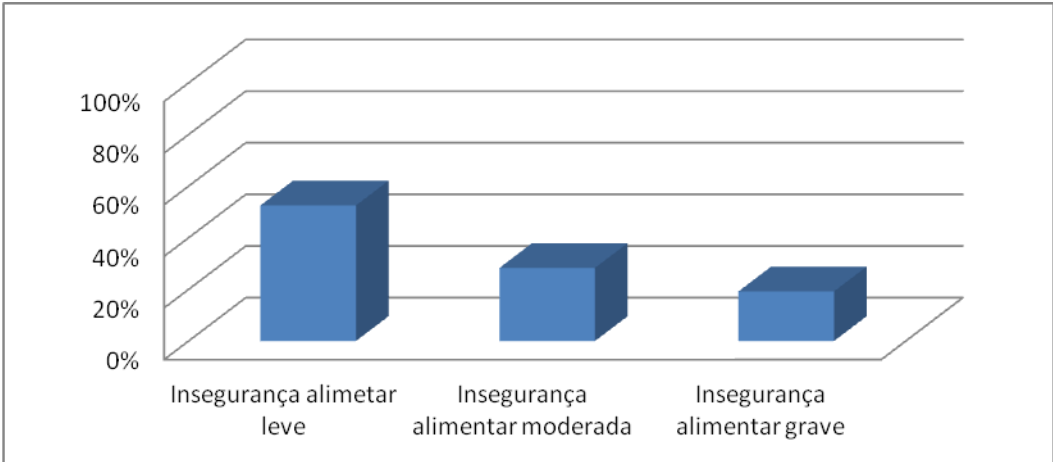


Figure 1. Distribution of families in households according to food-insecurity. Francisco Santos (PI), 2012.

In households whose Bolsa Familia program holders are in the age group 22-30 years old, although no statistical significance, the IA prevalence are higher. Also be presented as important contributors to the results found,

the educational level and occupation rural work, which is presented as a determinant of the most serious forms of IA (55,3%, 49,2%, respectively) (Table 1).

Table 1. Association between levels of food insecurity and socioeconomic and demographic variables of the holder of the Family Health Strategy program. Francisco Santos (PI), 2012.

Variables	Food Insecurity			P value
	Mild food insecurity	Moderate food insecurity	Serious food insecurity	
	n(%)	n(%)	n(%)	
Age (years)				0,86
18 - 21	15(57,7)	05(19,2)	06(23,1)	
22 - 30	53(52,0)	30(29,4)	19(18,60)	
31 and over	36(51,4)	21(30,0)	13(18,6)	
Gender				0,29
Male	08(72,7)	01(9,1)	02(18,2)	
Female	96(51,3)	55(29,4)	36(19,3)	
Occupation				*
Housewife	62(55,4)	31(27,1)	19(17,0)	
Rural worker	30(46,9)	19(29,7)	15(23,4)	
Self-employed	02(50,0)	01(25,0)	01(25,0)	
Civil servant	02(110,0)	-	-	
Secretary	07(50,0)	05(35,7)	02(14,3)	
Other	01(50,0)	-	01(50,0)	
Hability to read and write				0,73
Knows	40(48,2)	23(27,7)	20(24,1)	
Does not know	35(50,7)	21(30,4)	13(18,8)	

(*)Restriction of the Chi-square test, because more than 25% of the cells with distribution < 5.

About the use of basic services (water, sanitation and health services), there was a slight prevalence of IA in households using well water (51,8%) and open sewage (52,7%). With regard to health services, 53,1% of

families with moderate and severe IA they reported not being assisted by the Family Health Strategy in the city (Table 02), though included in the monitoring of the unified health system registration.

Table 2. Association between levels of food insecurity and the conditions of residence. Francisco Santos (PI), 2012.

Variables	Food Insecurity			p value
	Mild food insecurity	Moderate food insecurity	Serious food insecurity	
	n(%)	n(%)	n(%)	
Monthly Household Income				0,13
Up to 1 minimum wage	88(50,3)	52(29,7)	35(20,0)	
More than 1 minimum wage	16(72,7)	04(18,2)	02(9,1)	
Place of Domicile				0,04
Urban zone	54(61,4)	23(26,1)	11(12,5)	
Rural zone	50(45,5)	33(30,0)	27(24,5)	
Type of house				<0,01
Masonry Completed	21(43,8)	18(37,5)	08(18,8)	
Unfinished Masonry	69(62,7)	27(24,5)	14(12,7)	
Precarious Construction	14(35,0)	11(27,5)	15(37,5)	
Origino f the water				*
Public network	14(60,9)	05(21,7)	04(17,4)	
Well	87(51,8)	47(28,0)	34(20,2)	
Car Kite	03(60,0)	02(40,0)	-	
Sanitation				*
Public network	04(66,7)	01(16,7)	01(16,7)	
Pit	03(37,5)	04(50,0)	01(12,5)	
Open	97(52,7)	51(27,7)	36(19,6)	
Someone in the family has been assisted by the FHS				0,16
Yes	51(60,0)	19(22,4)	15(17,6)	
No	53(46,9)	37(32,7)	23(20,4)	

(*) Restriction of the Chi-square test, because more than 25% of the cells with distribution < 5.

This study showed significant differences (p = 0,04) between IA levels with the variables: spending on food and number of rooms in the house. Families who spend less on food and those who have fewer rooms in the household are more IA injury (Table 3).

Despite not having been verified statistical significance between the variables number of people per household and family income, it is observed that households with more members and monthly family income are more IA injury (Table 3).

Table 3. Distribution of families assisted by the family health strategy (FHS), according to the levels of food insecurity. Francisco Santos (PI), 2012.

Variables	Food Insecurity			P value
	Mild food insecurity	Moderate food insecurity	Serious food insecurity	
Age (years)	28,8	29,5	29,4	0,90
Number of people per home	4,1	4,0	4,4	0,42
Number of children from 0 to 5 months old	1,3	1,0	2,5	0,30
Number of children from 6 < 10 years old	1,6	1,5	1,9	0,77
Number of teens from 10 < 20 years old	1,4	1,4	1,3	0,85
Number of adults from 20 < 60 years old	2,1	2,0	1,9	0,38
Number of elderly aged 60 or over	1,6	1,0	1,0	0,14
Number of people who work in the family	1,3	1,5	1,4	0,58
Family Monthly Income (R\$)	410,1	400,8	328,2	0,25
Spending on Food (R\$)	212,6a,c	207,5b,c	163,6c,a,b	0,04
Health spending (R\$)	60,4	38,3	50,9	0,60
Total of spending (R\$)	356,2	326,9	299,4	0,15
Number of rooms in the House	4,3 a,b,c	3,8 b,a	3,7 c,a	0,04
Number of rooms used for sleeping	1,8	1,7	1,6	0,15

DISCUSSION

The proportion of households in food Insecurity Situation (IA) found in this study when compared to the National Survey by Household Sampling-PNAD7 demonstrate a more aggravating scenario than that observed in Piauí general population (58,6%) in the region Northeast (46,1%) and recorded as national average (30,2%).

This scenario allows reflecting that beneficiary families of the cash transfer programs earn more vulnerable conditions, leading to reduced access to food, especially the situation in general is due to the marginalization and social exclusion, with serious consequences for the health and welfare of people.

In Paraíba, a study conducted in 14 municipalities, 52,5% of families are on IA situation, of these 11,3% and 17,6% respectively have moderate IA and severe IA.¹³ When comparing the results of the survey conducted in Francisco Santos-PI, with the studies mentioned above, there is a percentage of families in IA situation much higher than in other regions.

The highest concentration of municipalities with food insecurity in the Northeast can be partly explained by a higher concentration of poverty in this area. This draws a reality already known to social disparities, long kept in the country. The Midwest, South and Southeast offer better socioeconomic and environmental conditions for the population

living in them compared to the North and Northeast.

The study revealed the great responsibility of women in the conduct of PBF resources at home (approximately 94% of the holders), and on the other, their exposure to food vulnerability. Comparing PNAD data of 2009 with those obtained in 2004, it turns out that the increasing prevalence of food security occurred with more intensity to the people of younger age groups. All Regions of Brazil showed the same pattern of behavior, and the North and Northeast regions showed IA prevalence higher in all age groups who checked them for other regions.⁷

The low educational profile associated with the informal employment indicates the level of social vulnerability to which families are studied. There is close relationship between the opportunities for access to education and the possibilities of development of the productive potential and working people as well as health protection and the contribution to individual and family self-esteem.¹⁴ Therefore, the persistence in inaccessibility situation or the precariousness of studies, deprive people of the chance of financial autonomy and participation.

The prevalence of IA was directly related to the socioeconomic conditions of the study families, being observed that households located in rural areas and those with poor construction are statistically (p = 0,04; p<0,01, respectively) more likely the moderate and serious food insecurity, predominant forms in more than half of

households with these characteristics (54,5% and 65%, respectively). Among families with monthly income up to minimum wage, 49,7%, reported IA moderate and severe.

The percentage of moderate to serious food insecurity related to income below a minimum wage are more aggravating in Francisco Santos-PI than that observed in other studies such as those conducted in the municipality of Campinas¹⁵ and Federal District¹⁶, where the serious food insecurity values were, respectively, 6,6% and 7,6%, families with incomes up to three minimum wages lived in light IA situations and less frequently, moderate; the severe form had not been observed in families with income above the minimum wage per capita. Scholars have found that even in families belonging to the high socioeconomic level, the slight prevalence of IA reached 25%. In the mid-level strata, the prevalence reached 54,6%, 34% mild, 13,4% moderate and 7,2% severe.³

The above-mentioned municipalities have much higher income than in Francisco Santos, for this reason, it is observed that the lack of income, despite its strong relationship with food insecurity, is not enough to explain it. Families with incomes above the poverty line may experience food insecurity because other conditions may determine access to food.¹⁴ Characteristics of head of household and population access indicators to essential goods and services such as housing, sanitation, health and education are also closely linked to poverty and hunger.⁴

In this research, it observed that families are unaware of the meaning of the IA, in its various levels, about the importance of using basic services (water, sanitation and health services) for the improvement of living conditions.

The North and Northeast regions, which have higher average food insecurity among their municipalities, are also those with the worst results among other predictive social indicators of food insecurity, such as education. In the northeast, for example, most of concentrated (52%) of 14,1 million country illiterate.¹⁷

Although adequate food has been enshrined as a human right one, still lives with significant portion of the population of this private right, distributed between urban, peripheral and rural areas. The most serious forms of IA were observed in rural areas, where the moderate and severe stood cumulatively around 55,8%, marking spatial differences that corroborate the trends found in PNAD⁷ for the whole country. The Northeast

Region, in addition to presenting the highest percentage of households in moderate or severe IA situation, 20,4% in urban areas and 24,0% in rural areas, also recorded the biggest difference between urban and rural areas (3,6 percentage points).

The high results found in Francisco Santos expressed negative experiences accumulated in successive generations who survive below the poverty line, submitting to random and seasonal nature of employment and income associated with the lack of rainfall in the semiarid region contributing to the scarce agricultural production in the field. Periodic and unpredictable crises of drought have negative impacts in the process of socio-economic interactions of the two spaces, urban and rural.¹⁰

The food expenditures have a very different weight in the expenditure of households in different income strata, and the regular and adequate access to food in the lower layers is high (absorbs a significant portion of family income) and can compromise access to other goods and services necessary for a dignified life. The low purchasing power affects a pattern of little varied food consumption.

There is in Francisco Santos the strong relationship between income and food access in the family, especially in households with an average of four living members. This fact also shows the reflection on food prices, in constant descent in recent years, a fact which therefore requires more resources for the acquisition of a smaller amount and/or quality of genres, to be divided among peers.

One of the survival strategies has been the relative change in eating habits in the poorest feed over cereals, flour and fat providing an increase in body weight. Studies^{10,15,17} found relationship between IA and less likely to daily consumption of meat, dairy, fruits, vegetables and beans and atrelam this to the little income available to purchase adequate food, encouraging people to buy food considered to be "cheap" and, in general, fattening, such as oil, sugar, pasta and carbohydrates, that is, an extremely dense calorie diet. So the food insecurity can also lead to nutritional deficiency causing damage to health.

CONCLUSION

The high prevalence of identified IA surpasses the findings in several regions of Brazil. The results show a significant association of food insecurity with the following variables: household income and address of the location, food expenditures and

number of rooms in the house. Thus, food and nutritional security policies in Francisco Santos (PI) must have the ultimate goal of reducing inequalities with immediate and effective measures to minimize the coexistence of hunger and prevent the occurrence of this problem in the community.

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